Curriculum Vitae of Ralf Cuntze

comprising

Family, a bit of history,

Career with professional employment, participation in working groups,

Essential Scientific Findings &

Pictures from the hobby photographer.

Prof. Dr.-Ing. habil. Ralf Cuntze VDI, Ralf_Cuntze@t-online.de

Retired from industry, MAN-Technologie (2004), and from Composites United (2021)



Engineer and hobby scientist:

application-oriented with a touch for material modelling and with the hope to be some bridge-builder between mechanical and civil engineering (construction).

Hobbies: exploring the world, nature photography, gardening, mountaineering, cyclamen breeding, etc.

Collector of documentary materials.

Father of the '*Failure-Mode-Concept'* and of a material symmetry-bsased '*Generic material number'*.



This was my previous LIFE.

For me, this document collects all memories and stories, which were relevant for me during life and which may be of interest for family, friends and scientific partners.

History was added also because of current news repetitions and also novel different perspectives.

The document incorporates results of the author's never funded, non-supported personal research work performed in his vacant time at industry and as retired person.

He assumes no liability for damages resulting from application.

Restrictions for this huge Word document of about 1000 pages: A Word document must be < 512 MB. This means that the CV document had to be split into several individual Word documents. These can then be PDF-transferred and combined using the resulting PDFs and regarding each individual PDF being < 100 MB.

CV in Short

1939 born Sept 8 in Erfurt, Thuringia. Survived bombing at Erfurt and a machine gun fire at the war's end

1964: Dipl.-Ing. Civil Engineering CE (construction, ***TU Hannover***). 1968: Dr.-Ing. in Structural Dynamics (CE) on 'Structural Vibrations of deep beams'. 1978: Dr.-Ing. habil. Venia Legendi in Mechanics of Lightweight Structures (CE, TU-Munich)

1980-1983: Lecturer at *Universität der Bundeswehr München*: on 'Fracture Mechanics' in the construction faculty and 1990-2002 on 'Composite Lightweight Design' in the aerospace faculty

1987: Full professorship 'Lightweight Construction', *not started in favor of industry*

1998: Honorary professorship at Universität der Bundeswehr München

1968-1970: Finite Element Analysis-programming (***DFVLR*** at the airport Essen/Mühlheim)

1970-2004: to ***MAN - Neue Technologie*** (München, Augsburg) instead of being ***DLR***-Postdoc at Stanford University. Headed the Main Department 'Structural and Thermal Analysis'. Thereby facing 50 years of life with Fibers: CarbonF, AramidF, GlassF, BF (bor), Bs(basalt)F.

*Theoretical fields of work: structural dynamics, finite element analysis, rotor dynamics, structural reliability, partial/deterministic safety concepts, material modeling and model validation, fatigue, fracture mechanics, design development 'philosophy' & design verification

*Mechanical Engineering applications at ***MAN****:* ARIANE 1-5 launcher family (design of different parts of the launcher stages, inclusively Booster), propellant motor cases MAGE, IRIS, Cryogenic Tanks, High Pressure Vessels, Heat Exchanger in Solar Towers (GAST Almeria) and Solar Field, Wind Energy Rotors (GROWIAN Ø103 m, WKA 60, AEROMAN. MAN bus, SR 240, Wendelstein VII. Probably the first world-wide wind energy conferences organized in 1979, 1980 with Dr. Windheim), Space Antennas, IRAM antenna, SOFIA telescope (2003), Automated Transfer Vehicle (Jules Verne, supplying the space station ISS), Crew Rescue Vehicle (CMC application) for ISS, Carbon and Steel Gas-Ultra-Centrifuges for Uranium enrichment. Filament winding theory, Material Databank etc.

*Civil Engineering applications: Supermarket statics, armoring plans, pile foundation, 5th German climbing garden (1980 designed, concreted and natural stone-bricked)

1971-2010*:* Co-author in ASMIEG-WG of ***ESA/ESTEC***-Structural Materials Handbook, Co-author and first convener of the ESA-Buckling Handbook and co-author in Working Groups WGs for ESA-Standards 'Structural Analysis', 'High Pressure Vessels' (metals and composites) and 'Safety Factors'

1972–2015, ***IASB***: Luftfahrt-Technisches Handbuch HSB 'Fundamentals and Methods for Aeronautical Design and Analyses'. Author and Co-author of numerous HSB sheets and about 2006-2008 co-transfer with co-translation of the HSB aerospace structural handbook into its present English version.

1980-2011: **Surveyor/Advisor** for German BMFT (MATFO, MATEC), BMBF (LuFo) and DFG

1980-2006: **VDI Guideline 2014**, co-author of Parts 1 and 2, Beuth Verlag '*Development of Fiber-reinforced Plastic Components'* and of Part 3 *'Analysis*', editor/convener/co-author

1986 and 1889: One week **FRP-lecture** on composite design in Pretoria, SA

2000-2013: World-Wide-Failure-Exercises **WWFE** on Uni-directional fiber-reinforced materials (UD) strength: WWFE-I (*2D stress states)* non-funded winner against institutes of the world, WWFE-II (*3D states*) top-ranked

2009-2021 linked to ***Carbon Composites e.V***. at Augsburg, later ***Composites United CU e.V.*** and to TUDALIT Dresden. Since 2011 working on the light weight material Fiber-reinforced (polymer) Carbon Concrete. **Founded and headed the working groups**: (1) 2009: 'Engineering' linked to the WG Non-Destructive Testing and the WG Connection Technologies, mechanical engineering. (2) 2010: 'Composite Fatigue'. In 2010 the author held an event that was excellently attended by international speakers. (3) 2011: 'Design Dimensioning (*Auslegung, Bemessung*) and Design Verification (*Nachweis*)' mainly for carbon concrete. This working group was the foundation stone for the later specialist network ***CU Construction***, aiming at *"Fiber-based lightweight construction*". (4) 2017: 'Automated fabrication in construction including serial production' *("3D-Print")*. (5) 2020, 2021: Forum 'Carbon concrete for practice' at the well-known 'Ulm Concrete Days'

2010: Founder of the Germany-wide Working Group BeNa to base fatigue life prediction 'embedded lamina-wise' in order to become more general in future fatigue life design

2019: *__GLOSSAR__ "Fachbegriffe für Kompositbauteile - *technical terms for composite parts*". Springer 2019. Edited at suggestion of carbon concrete colleagues to improve mutual understanding

2022: **Life-Work Cuntze - a compilation from the author's papers, presentations, published and non-published design sheets and project works in industry* (850 Pages, more design work-related)

2023: **Design of Composites using Failure-Mode-Concept-based tools - from Failure Model Validation to Design Verification*. Mechanics of Composite Materials, Vol. 59, No. 2, May, 2023, pp. 263-282. **Minimum Test Effort-based Derivation of Constant-Fatigue-Life curves, displayed for the brittle UD composite materials*. Mechanics of Composite Materials, Springer, Advanced Structured Materials, Vol.199, 107–146, draft. *Cuntze R and Kappel E: *Benefits, applying Tsai's Ideas 'Trace', 'Double-Double' and 'Omni Failure Envelope' to Multiply UD-ply composed Laminates? * UD-Strength Failure criteria: Which one should I take*? * Elaboration on Finite Fracture Mechanics.

* such marked p*reprints, drafts are fully open for the public and are downloadable from*

https://www.carbon-connected.de/Group/Prof.Ralf.Cuntze

or partly from Research Gate.

Of course, I would rearrange some parts differently now.
However, an often obtained, personally unwanted partly novel formatting prevents any rearrangement.

Have in mind, please:

- *The Research results are intentionally embedded in key life events.*
- *The presented novel scientific ideas shall invite for discussion.*
- *The author asks for forgiveness in advance for inaccuracies, due to missing proofreaders. Of course, the text content in the scientific chapters would have deserved a revision and harmonization, but the author hopes to become 87 nexts year.*

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(The scientific content is collected in 1 → 28 and indepently issued under
"*Structural Design Verification by using Failure Criteria and More - scientific knowhow gained over a long practical working life*") in the Research Gate and Carbon-connected.de/Group/Prof.Ralf.Cuntze

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Other Works of the author (*see* Carbon-connected.de/Group/Prof.Ralf.Cuntze)

If one might be interested one can find information on the following subjects in the author's compilation [*CUN22*], especially on various projects at MAN the author was involved.

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0 Family, Home, School and University

Time before contracted Working at University, MAN-Technologie and Composites United, or contracts from ESA/ESTEC and Airbus

Guess 1939: " ***Birth of son Ralf*** in the first week of World War-II was one of the few rays of hope".

Birthday present to myself, 2025: The author after the yearly 'pilgrimage', 27 miles (44km). To and from the monasteries Kloster Indersdorf (home) ⇔ Kloster Scheyern.





Who swims with the coots and vice versa

STRENGTH is still his Life !

"Anyone who stops learning is old, whether at twenty or beyond eighty.
Anyone who keeps learning stays young.
The greatest thing in life is to keep your mind young".

Henry Ford

Movings

Erfurt → 1945 Heimboldshausen (house of the Grandparents)
→ 1953 Harnrode (parents house)
→ 1959 Hannover
→ 1968 Mühlheim-Ruhr (rental apartment)
→ 1970 Dachau (rental apartment)
→ 1976 Markt Indersdorf (my house).

Marriages

1966, married Jutta Leonhardt (*no children*); in 2012 wife Jutta moved to another place.
2013, meeting Maria Hasler; in 2015, divorced from first wife and marriage of Maria.

Becoming older and older and hopefully a little more wise







I could enjoy an own bathtub, not the common family one







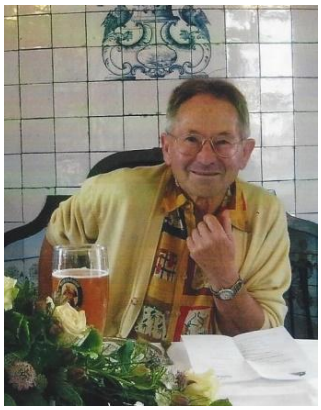


July 1944













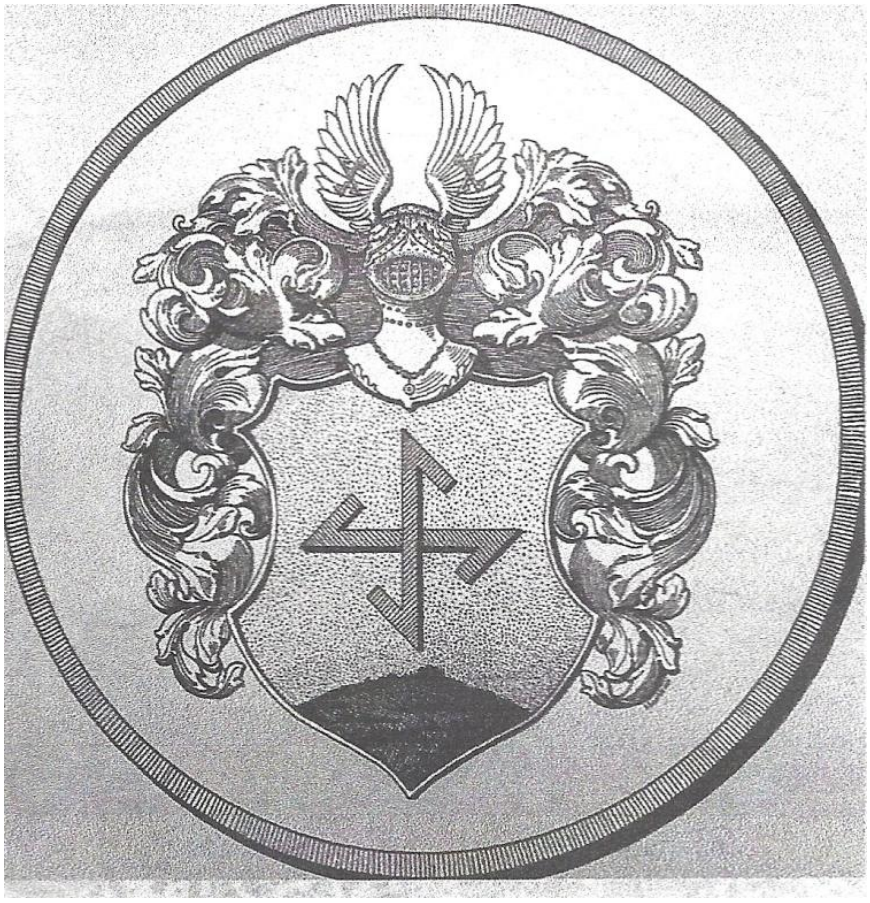






2024

0.1 Family, Ancestors, Coat of Arms, Family Tree



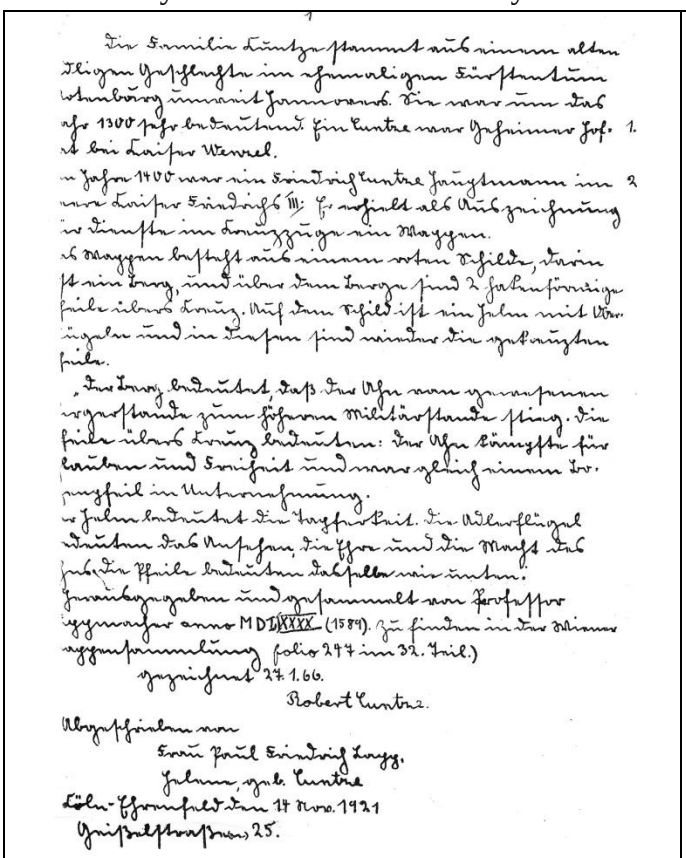
The Cuntze family is a very old lineage in the former Principality of Rotenburg, not far from Hanover. A Cuntze was a court councilor of the Roman-German King Wenczlaw (1361-1419, son of Emperor Karl IV who founded 1348 in Prague the 'Karls-Universität', often referred to as the first 'German university' because emperor Karl was a German-Roman king and German was a language of instruction alongside Latin. .

A Friedrich Cuntze was a captain in the army of the last Roman-German Emperor Friedrich III (1415-1493, emperor of the 'Holy Roman Empire of the German Nation'). He received a coat of arms as an award for his services in the Crusade. This consists of a red shield. It contains a mountain and, above the mountain, two crossed hook-shaped arrows. On the shield is a helmet with upper wings, and within this, in turn, are the crossed arrows.

The mountain signifies that the ancestor rose from a former bourgeois status to a higher military status. The crossed arrows mean that the ancestor fought for faith and freedom. The helmet signifies bravery, while the eagle's wings represent the ancestor's prestige, honor, and also power.

The coat of arms was drawn from the Vienna original, by Robert Cuntze. *(Collected and published by Professor Sippmayer in 1589 according to the Vienna Coat of Arms Collection, Folio 247, Part 32. Copied by Mrs. Helene Lapp, born Cuntze, in 1921).*

The basically two branches of the family have less than 100 members worldwide.



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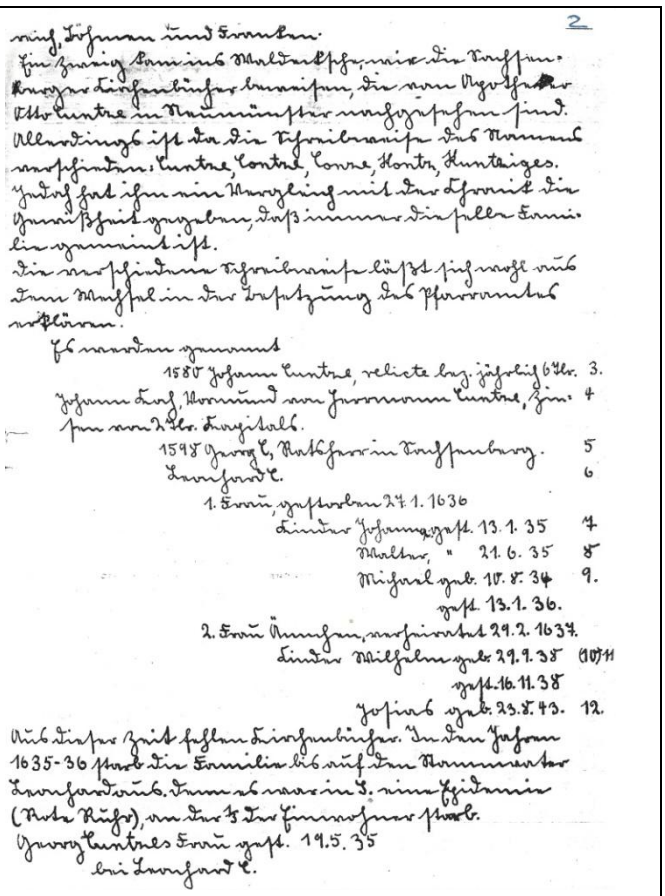
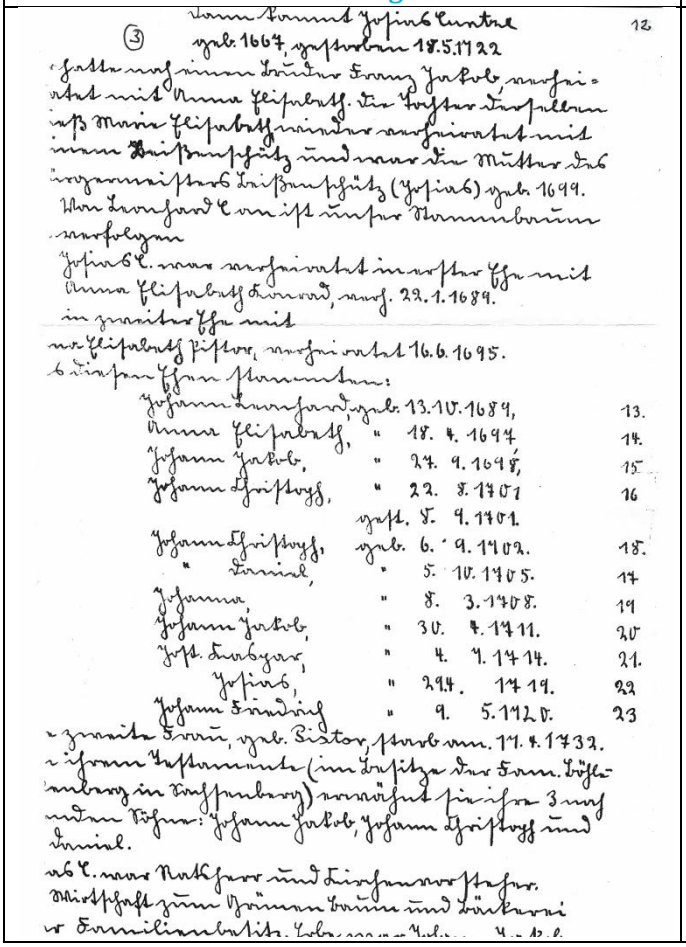
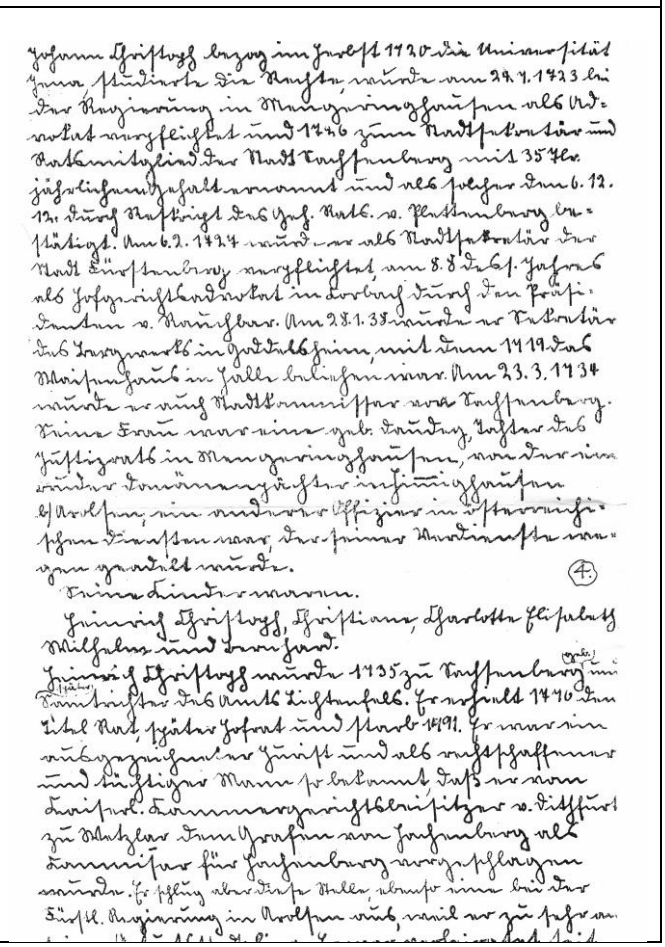
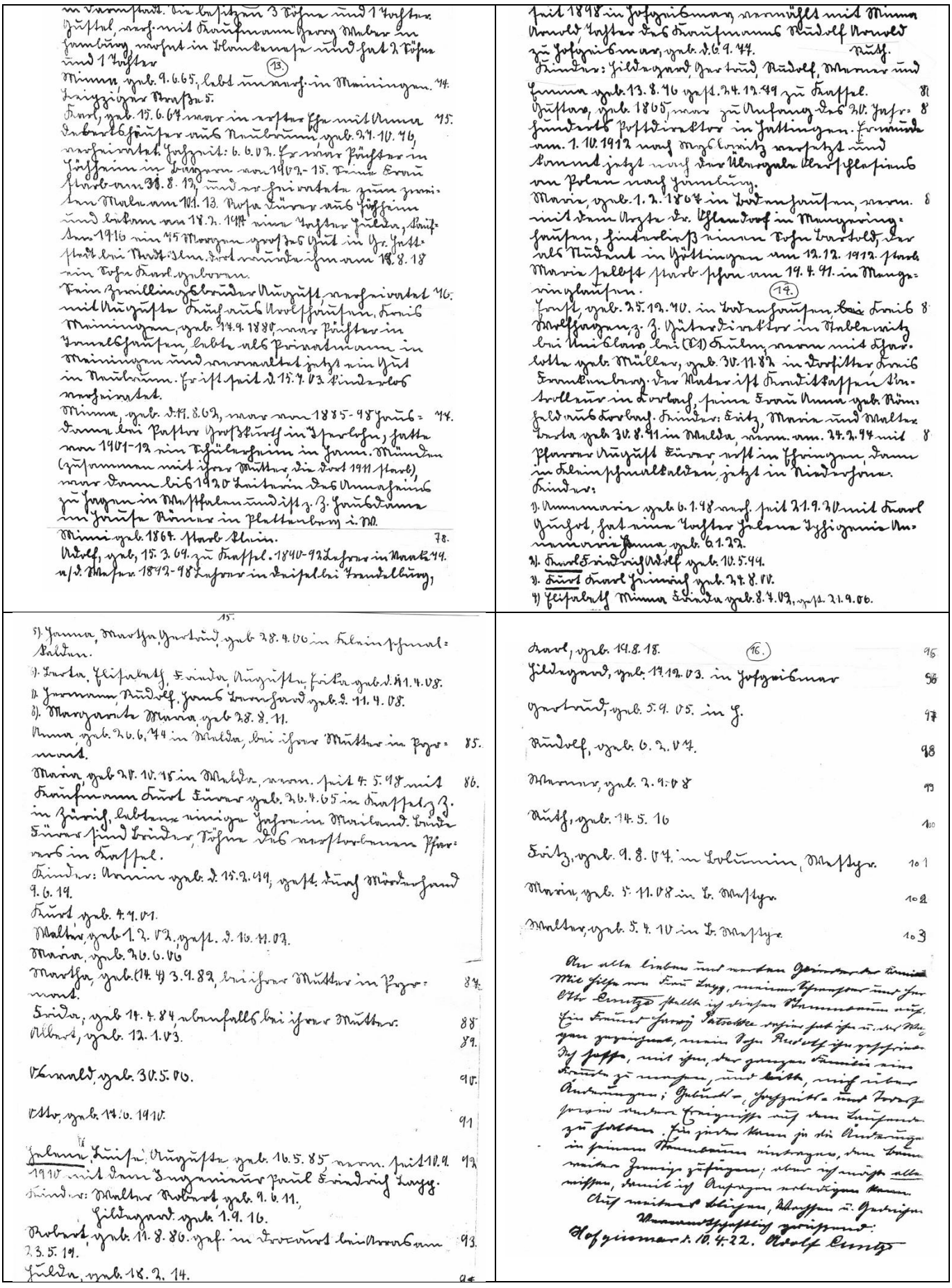








in Darmstadt. Sie besitzen 3 Söhne und 1 Tochter.
Gustel, verh. mit Kaufmann Georg Weber in Hamburg, wohnt in Blankenese und hat 2 Söhne und 1 Tochter

(13.)

Minna, geb. 9.6.65, lebt unverh. in Meiningen. 74.
Leipziger Straße 5.

Karl, geb. 15.6.67 war in erster Ehe mit Anna 75.
Debertshäuser aus Neubrunn, geb. 27.10.76, verheiratet. Hochzeit: 6.6.02. Er war Pächter in Höchheim in Bayern von 1902-15. Seine Frau starb am 31.8.12, und er heiratete zum zweiten Male am 10.1.13. Rosa Dürer aus Höchheim und bekam am 18.2.1914 eine Tochter Hulda, kaufte 1916 ein 75 Morgen großes Gut in Gr. Hettstedt bei Stadt Ilm. Dort wurde ihm am 18.8.18 ein Sohn Karl geboren.

Sein Zwillingsbruder August, verheiratet 76.
mit Auguste Kuch aus Arolshausen, Kreis Meiningen, geb. 17.9.1880, war Pächter in Irmelshausen, lebte als Privatmann in Meiningen und verwaltet jetzt ein Gut in Neubrunn. Er ist seit d. 15.7.03 kinderlos verheiratet.

Minna, geb. d. 19.8.62, war von 1885-98 Haus- 77.
dame bei Pastor Großkurth in Iserlohn, hatte von 1901-12 ein Schülerheim in Hann. Münden (zusammen mit ihrer Mutter, die dort 1911 starb), war dann bis 1920 Leiterin des Annaheims zu Hagen in Westfalen und ist z. Z. Hausdame im Hause Römer in Plettenberg i. W.

Mimi geb. 1864. starb klein. 78.

Adolf, geb. 15.3.69. zu Kassel. 1890-92 Lehrer in Naake 79.
a/d. Weser. 1892-98 Lehrer in Deisel bei Trendelburg,

seit 1898 in Hofgeismar, vermählt mit Minna Arnold, Tochter des Kaufmanns Rudolf Arnold zu Hofgeismar, geb. d. 6.9.77. Ruth.
Kinder: Hildegard, Gertrud, Rudolf, Werner und Emma geb. 13.8.76 gest. 24.12.79 zu Kassel. 81

Gustav, geb. 1865, war zu Anfang des 20. Jahr- 8
hunderts Postdirektor in Hattingen. Er wurde am 1.10.1912 nach Myslowitz versetzt und kommt jetzt nach der Übergabe Oberschlesiens an Polen nach Hamburg.

Marie, geb. 1.2.1867 in Bodenhausen, verm. 8
mit dem Arzte Dr. Ohlendorf in Mengeringhausen, hinterließ einen Sohn Bartold, der als Student in Göttingen am 12.12.1912 starb. Marie selbst starb schon am 19.4.91. in Mengeringhausen.

(14.)

Ernst, geb. 25.12.70. in Bodenhausen, bei Kreis 8
Wolfhagen, z. Z. Güterdirektor in Stablewitz bei Unislaw, bei (S1) Kulm, verm. mit Charlotte geb. Müller, geb. 30.11.82 in Dorfitter, Kreis Frankenberg. Der Vater ist Kreditkassen-Kontrolleur in Korbach, seine Frau Anna geb. Römfeld aus Korbach. Kinder: Fritz, Marie und Walter.

Berta geb. 30.8.71 in Welda, verm. am 24.2.94 mit 8
Pfarrer August Dürer, erst in Ehringen, dann in Kleinschmalkalden, jetzt in Niederhone.
Kinder:
1). Annemarie geb. 6.1.98 verh. seit 21.9.20 mit Karl Guchot, hat eine Tochter Helene Iphigenie Annemarie Anna, geb. 6.1.22.
2). Karl Friedrich Adolf geb. 10.5.99.
3). Kurt Karl Heinrich geb. 24.8.00.
4) Elisabeth Minna Frieda geb. 8.7.02, gest. 21.9.06.

15.

5). Hanna, Martha, Gertrud, geb. 28.4.06 in Kleinschmalkalden.
6). Berta, Elisabeth, Frieda, Auguste, Erika geb. d. 11.4.08.
7). Hermann, Rudolf, Hans Bernhard geb. d. 11.4.08.
8). Margarete Maria, geb. 28.8.11.

Anna, geb. 26.6.74 in Welda, bei ihrer Mutter in Pyrmont. 85.

Maria, geb. 20.10.78 in Welda, verm. seit 4.5.98 mit 86.
Kaufmann Kurt Dürer geb. 26.4.65 in Kassel z. Z. in Zürich, lebten einige Jahre in Mailand. Beide Dürer sind Brüder, Söhne des verstorbenen Pfarrers in Kassel.
Kinder: Armin geb. d. 15.2.99, gest. durch Mörderhand 9.6.19.
Kurt, geb. 4.7.01.
Walter, geb. 1.2.02, gest. d. 16.11.02.
Maria, geb. 26.6.06

Martha, geb. (14.4) 3.9.82, bei ihrer Mutter in Pyrmont. 87.

Frida, geb. 14.4.84, ebenfalls bei ihrer Mutter. 88

Albert, geb. 12.1.03. 89.

Oswald, geb. 30.5.06. 90.

Otto, geb. 17.6.1910. 91

Helene, Luise, Auguste, geb. 16.5.85, verm. seit 10.9. 92
1910 mit dem Ingenieur Paul Friedrich Lapp.
Kinder: Walter Robert, geb. 9.6.11.
Hildegard, geb. 1.9.16.

Robert, geb. 11.8.86. gef. in Drocourt bei Arras am 23.5.19. 93.

Hulda, geb. 18.2.14. 94

Karl, geb. 19.8.18. (16.) 95

Hildegard, geb. 17.12.03. in Hofgeismar 96

Gertrud, geb. 5.9.05. in H. 97

Rudolf, geb. 6.2.07. 98

Werner, geb. 2.9.08 99

Ruth, geb. 14.5.16 100

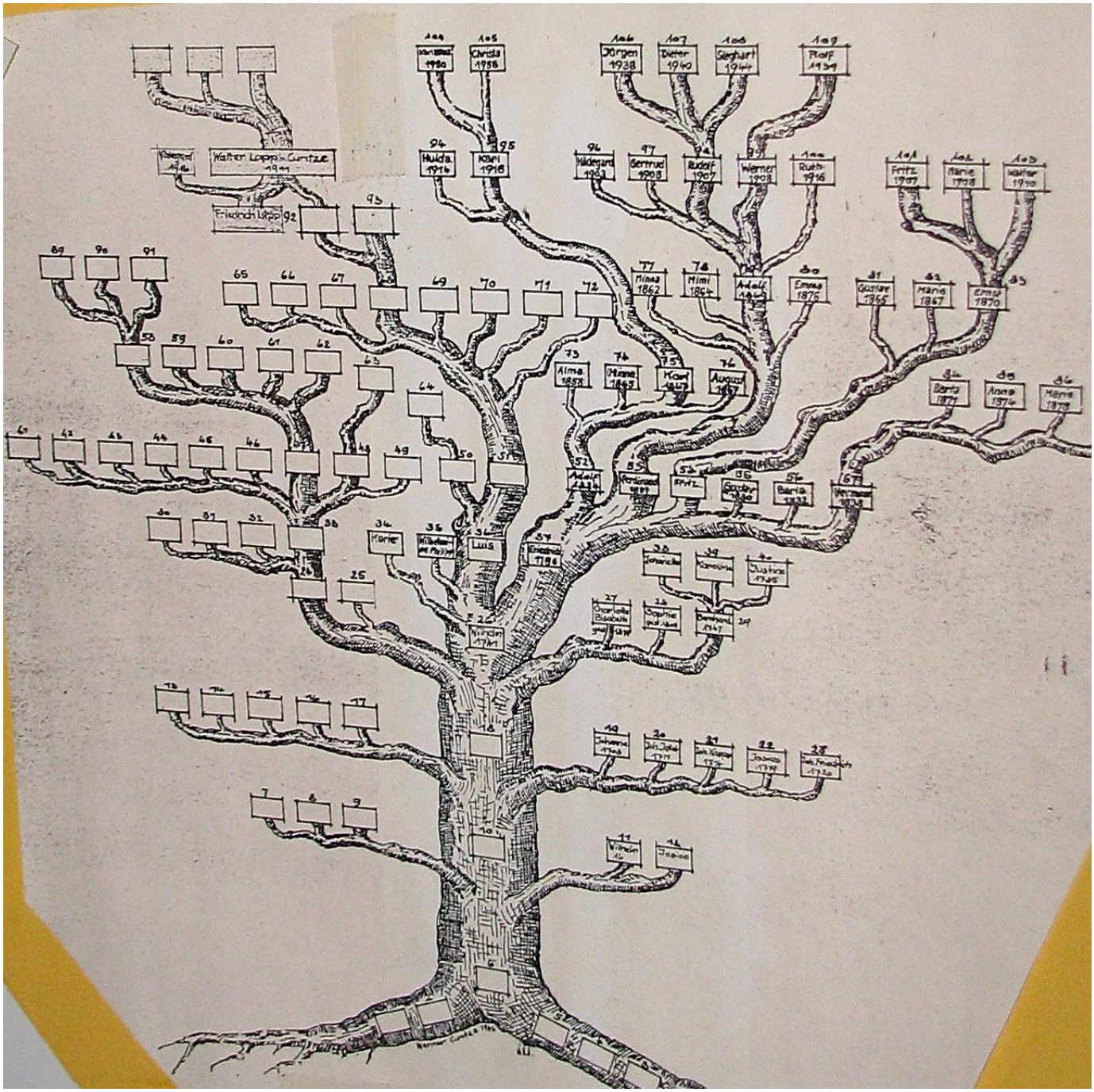
Fritz, geb. 9.8.07. in Bolumin, Westpr. 101

Marie, geb. 5.11.08 in B. Westpr. 102

Walter, geb. 5.4.10 in B. Westpr. 103

An alle lieben und werten Gründer der Familie
Mit Hilfe von Frau Lapp, meiner Schwester und Herr Otto Cuntze stellte ich diesen Stammbaum auf. Ein Freund Harry Patschke dahier hat ihn u. das Wappen gezeichnet, mein Sohn Rudolf ihn geschrieben. Ich hoffe, mit ihm, der ganzen Familie eine Freude zu machen, und bitte, mich über Änderungen; Geburts-, Hochzeits- und Todesfälle sowie andere Ereignisse auf dem Laufenden zu halten. Ein jeder kann ja die Änderungen in seinem Stammbaum eintragen, dem Baume weitere Zweige zufügen; aber ich möchte alles wissen, damit ich Anfragen erledigen kann.
Auf weiteres Blühen, Wachsen u. Gedeihen
Verwandtschaftlich grüßend:
Hofgeismar d. 10.4.22. Adolf Cuntze

Family Tree



The **Family member Tree Cuntze** (drafted by my father in 1966, needs to be updated):

My cousin, an IT specialist, wanted to do this. I had sent him all my documents for this purpose. Unfortunately, he died suddenly. And later, his cellar became flooded destroying the documents.

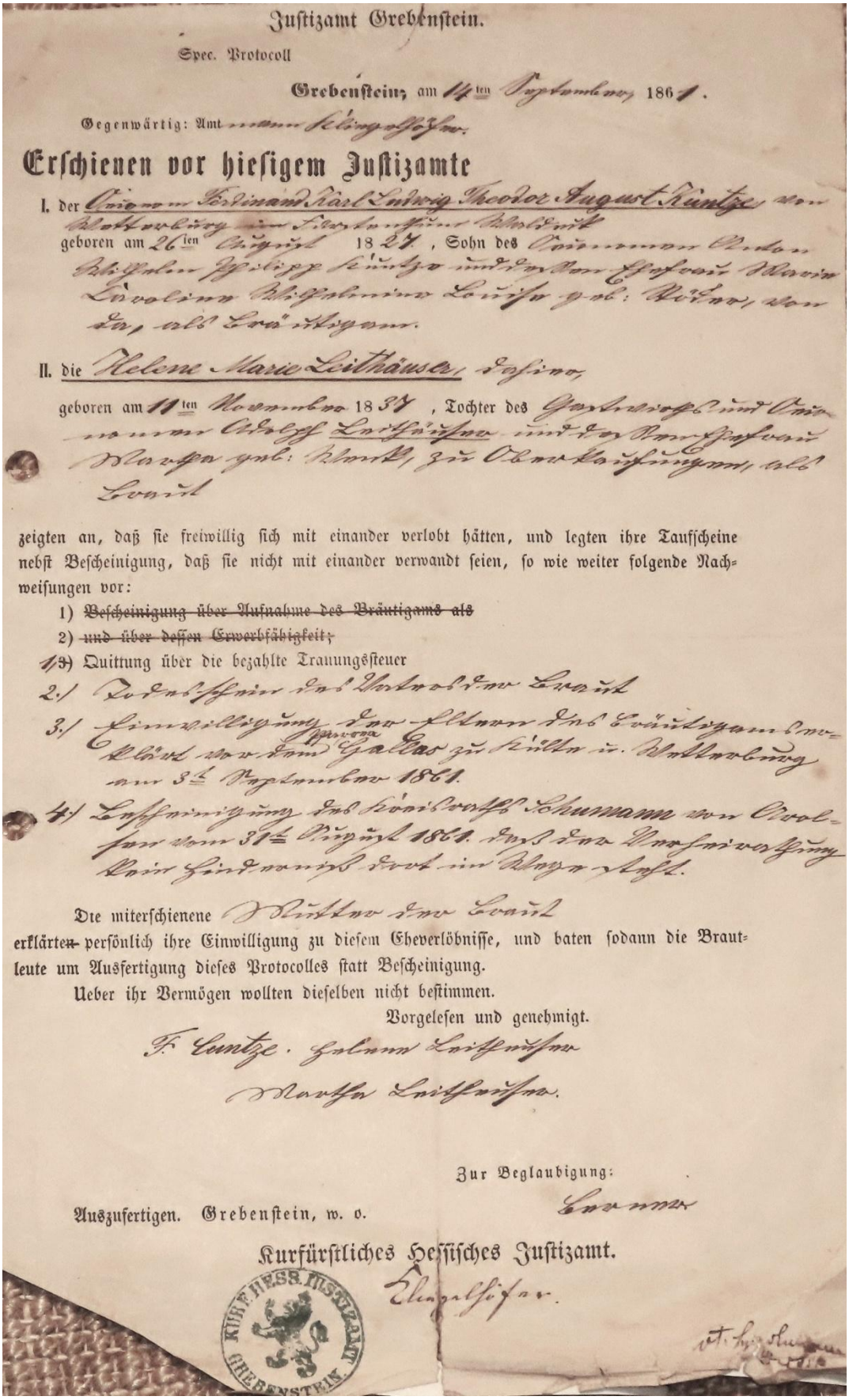
At least I had saved a digital picture.

Status: I will try together with Dr. Ulrich Cuntze, member of the other branch, an update.

Who will take over this work in future ???

0.2 Parents, Grandparents and Documents before

'Before' Documents (Of interest: How did they look like?)



Justizamt Grebenstein.

Spec. Protocoll

Grebenstein, am 14ten September 1861.

Gegenwärtig: Amt[illegible]

Erschienen vor hiesigem Justizamte

I. der Ferdinand Karl Ludwig Theodor August Kuntze von [illegible] geboren am 26ten Brgpt 1827, Sohn des [illegible] Ludwig [illegible] und [illegible] Maria Louise Philippine Luise geb: Köhler, von da, als Bräutigam.

II. die Helene Marie Leithäuser [illegible] geboren am 11ten November 1837, Tochter des [illegible] und [illegible] Adolph Leithäuser und der [illegible] Marie geb: Schmidt, zu Obermeiser, als Braut

zeigten an, daß sie freiwillig sich mit einander verlobt hätten, und legten ihre Taufscheine nebst Bescheinigung, daß sie nicht mit einander verwandt seien, so wie weiter folgende Nachweisungen vor:

1) ~~Bescheinigung über Aufnahme des Bräutigams als~~
2) ~~und über dessen Erwerbfähigkeit;~~
1/3) Quittung über die bezahlte Trauungssteuer
2.) [illegible] der Braut
3.) Einwilligung [illegible] Eltern [illegible] Vormunds [illegible] Gallas zu Kassel v. Verlobung vom 3ten September 1861.
4.) Taufschein des Königlichen Schumann von Cassel vom 31ten Brgpt 1861. [illegible] Verlobung [illegible] Kindermann Braut in Allgemeinheit.

Die miterschienene Braut [illegible] erklärten persönlich ihre Einwilligung zu diesem Eheverlöbnisse, und baten sodann die Brautleute um Ausfertigung dieses Protocolles statt Bescheinigung.

Ueber ihr Vermögen wollten dieselben nicht bestimmen.

Vorgelesen und genehmigt.

F. Cuntze. Helene Leithäuser

Marie Leithäuser.

Zur Beglaubigung:

Auszufertigen. Grebenstein, w. o.

[illegible]

Kurfürstliches Hessisches Justizamt.

[illegible]

KURFL. HESS. JUSTIZAMT GREBENSTEIN



Mother of father.
GrandDad (teacher) passed away before my birth
(Hofgeismar)



Father



Mother , 1936



Parents of mother
(Heimboldshausen)



Father's mother (Oma):
After WW-II:
Happy with her two sons
(3 girls and 2 sons).
See pictures later

Mother parents: (my other Oma and Opa**)** →



Young grandpa (right)









Pictures of
mother' s mother
(born 1881)

During the war
happy with the second daughter.

The first daughter, sister Anna,
terribly died from pulmonary
tuberculosis









(left) my mother, sister, grandmother



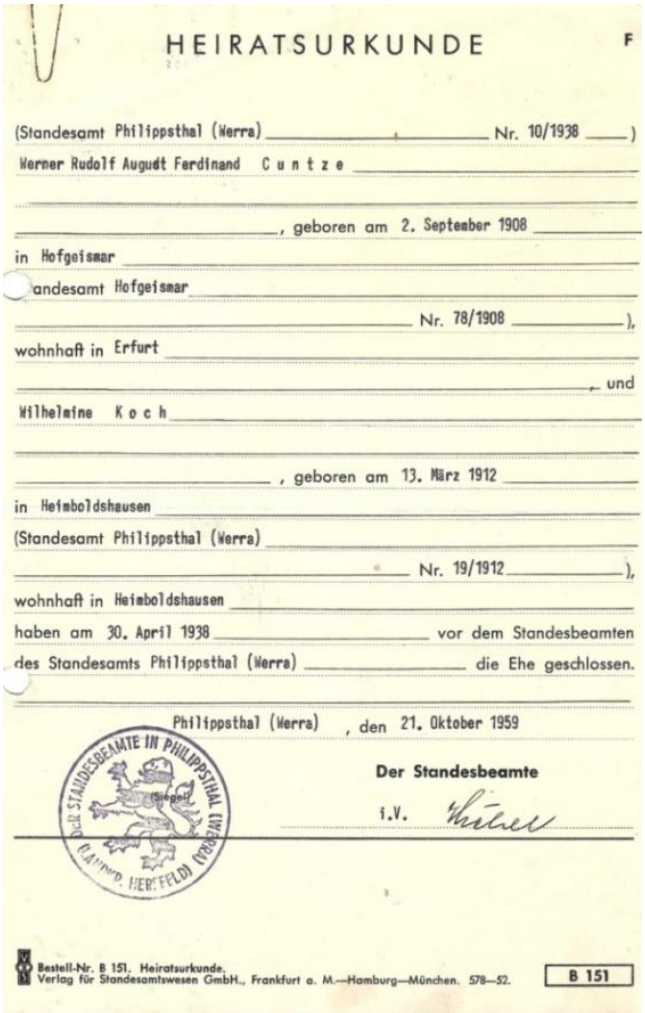
Mind the fashion



daughter and father



mother and aunts



HEIRATSURKUNDE

F

(Standesamt Philippsthal (Werra) Nr. 10/1938)
Werner Rudolf August Ferdinand C u n t z e
, geboren am 2. September 1908
in Hofgeismar
(Standesamt Hofgeismar
Nr. 78/1908),
wohnhaft in Erfurt
, und
Wilhelmine K o c h
, geboren am 13. März 1912
in Heimboldshausen
(Standesamt Philippsthal (Werra)
Nr. 19/1912),
wohnhaft in Heimboldshausen
haben am 30. April 1938 vor dem Standesbeamten
des Standesamts Philippsthal (Werra) die Ehe geschlossen.

Philippsthal (Werra) , den 21. Oktober 1959

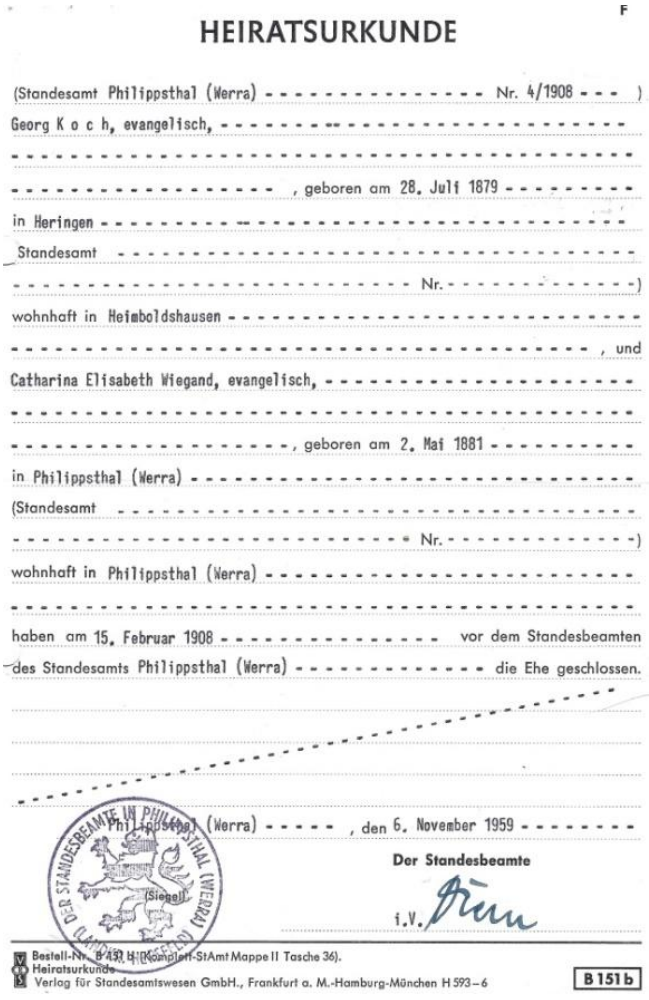
Der Standesbeamte
i.V.

(Siegel)

Bestell-Nr. B 151. Heiratsurkunde.
Verlag für Standesamtswesen GmbH., Frankfurt a. M.—Hamburg—München. 578—52.

B 151

marriage certificate of parents



HEIRATSURKUNDE

F

(Standesamt Philippsthal (Werra) Nr. 4/1908)
Georg K o c h, evangelisch,
, geboren am 28. Juli 1879
in Heringen
Standesamt
Nr.)
wohnhaft in Heimboldshausen
, und
Catharina Elisabeth Wiegand, evangelisch,
, geboren am 2. Mai 1881
in Philippsthal (Werra)
(Standesamt
Nr.)
wohnhaft in Philippsthal (Werra)
haben am 15. Februar 1908 vor dem Standesbeamten
des Standesamts Philippsthal (Werra) die Ehe geschlossen.

Philippsthal (Werra) , den 6. November 1959

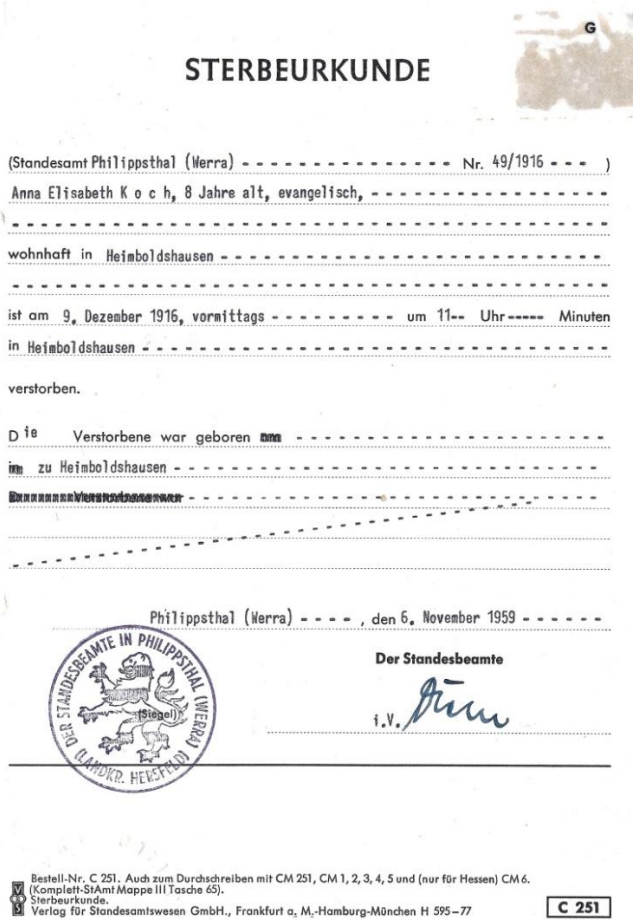
Der Standesbeamte
i.V.

(Siegel)

Bestell-Nr. B 151. Heiratsurkunde. (Kompleff-StAmt Mappe II Tasche 36).
Verlag für Standesamtswesen GmbH., Frankfurt a. M.-Hamburg-München H 593 – 6

B 151 b

marriage certificate of mother's parents



STERBEURKUNDE

(Standesamt Philippsthal (Werra) - - - - - - - - - - - - - - - - Nr. 49/1916 - - -)
Anna Elisabeth K o c h, 8 Jahre alt, evangelisch, - - - - - - - - - - - - - - - - -
- -
wohnhaft in Heimboldshausen -
- -
ist am 9. Dezember 1916, vormittags - - - - - - - - - um 11-- Uhr----- Minuten
in Heimboldshausen -
verstorben.

Die Verstorbene war geboren am -
in zu Heimboldshausen -
[redacted] -
- -
- -

Philippsthal (Werra) - - - - , den 6. November 1959 - - - - - -

DER STANDESBEAMTE IN PHILIPPSTHAL (WERRA) (LANDKR. HERSFELD) (Siegel)

Der Standesbeamte
i.V. [signature]

Bestell-Nr. C 251. Auch zum Durchschreiben mit CM 251, CM 1, 2, 3, 4, 5 und (nur für Hessen) CM 6. (Komplett-StAmt Mappe III Tasche 65). Sterbeurkunde. Verlag für Standesamtswesen GmbH., Frankfurt a. M.-Hamburg-München H 595–77 C 251

death certificate of sister Anna



G 1, G 2

Sterbeurkunde

(Standesamt Philippsthal Nr. 29/45
Katharina Koch geborene Wiegand
wohnhaft in Heimboldshausen
ist am 31. März 1945 um 20 Uhr 30 Minuten
in Heimboldshausen gefallen (killed in action) verstorben.
Die Verstorbene war geboren am 2. Mai 1887
in Philippsthal
(Standesamt Philippsthal Nr. 19/87)
Vater: Ackermann Rudolf Wiegand evangelisch
Mutter: Elisabetha Wiegand geborene Bommer, evangelisch
Die Verstorbene war – ~~nicht~~ – verheiratet mit dem Kaufmann Georg Koch.
Philippsthal, den 17. Mai 1945

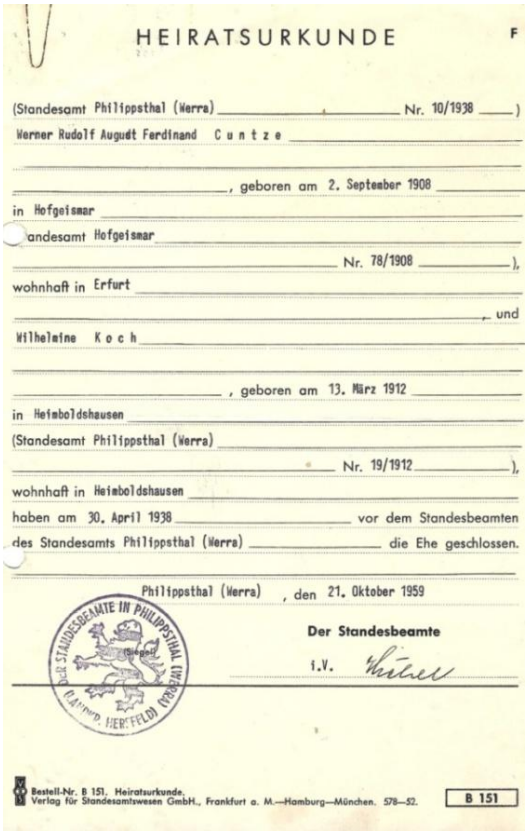
Standesamt

Der Standesbeamte
J.V. Bär

C 251, C 252 Sterbeurkunde (mit Elternangabe bezw. ohne Elternangabe). Verlag für Standesamtswesen G. m. b. H., Berlin SW 61, Gitschiner Straße 109. C. 277% re 10!

C 251 | C 252

death certificate of killed-in-action grandmother



HEIRATSURKUNDE F

(Standesamt Philippsthal (Werra) Nr. 10/1938)
Werner Rudolf August Ferdinand C u n t z e
, geboren am 2. September 1908
in Hofgeismar
Standesamt Hofgeismar
Nr. 78/1908),
wohnhaft in Erfurt
, und
Wilhelmine K o c h
, geboren am 13. März 1912
in Heimboldshausen
(Standesamt Philippsthal (Werra)
Nr. 19/1912),
wohnhaft in Heimboldshausen
haben am 30. April 1938 vor dem Standesbeamten
des Standesamts Philippsthal (Werra) die Ehe geschlossen.

Philippsthal (Werra), den 21. Oktober 1959

DER STANDESBEAMTE IN PHILIPPSTHAL (BEZIRK HERSFELD) (Siegel)

Der Standesbeamte
i.V. [signature]

Bestell-Nr. B 151. Heiratsurkunde. Verlag für Standesamtswesen GmbH., Frankfurt a. M.—Hamburg—München. 578—52. B 151

marriage certificate of parents



STERBEURKUNDE

(Standesamt Bad Hersfeld -/- Nr. 152/1974)
Werner Rudolf August Ferdinand Cuntze,
evangelisch -/-
wohnhaft in Philippsthal (Werra) -/-
ist am 28.März 1974 -/- um 6 Uhr 05 Minuten
in Bad Hersfeld -/-
erstorben.

Der Verstorbene war geboren am 2. September 1908
in Hofgeismar -/-
Der Verstorbene war verheiratet mit Wilhelmine
Cuntze geb. Koch -/-

Bad Hersfeld, den 29. März 1974

DER STANDESBEAMTE IN BAD HERSFELD (Siegel)

Der Standesbeamte
[signature]

Bestell-Nr. 15/131-1 - CMZ 251 - (Passend zum Durchschreibesatz 15/13...) (Komplett-StAmtMappe III Tasche 63). Sterbeurkunde. Verlag für Standesamtswesen GmbH. Frankfurt/M.
15/131

death certificate of father

Heiratsurkunde.

Nr. 21.

Hofgeismar, den 6. Juli 1901.

Vor dem unterzeichneten Standesbeamten erschienen heute zum Zwecke der Eheschließung:

1. Der Lehrer Karl Adolph Julius Cuntze, der Persönlichkeit nach bekannt, evangelischer Religion, geb. am 15. März 1869 zu Cassel, wohnhaft in Hofgeismar: Sohn des zu Hofgeismar verstorbenen Oekonom Ferdinand Cuntze und dessen Ehefrau Helene, geb. Leithäuser, wohnhaft in Hofgeismar:
2. die ledige gewerbslose Wilhelmine Friedericke Arnold, der Persönlichkeit nach bekannt, evangelischer Religion, geb. am 6. September 1877. zu Hofgeismar, wohnhaft in Hofgeismar: Tochter des Kaufmanns Paul Rudolf Arnold und dessen Ehefrau Anna Elisabeth geb Berninger, beide wohnhaft in Hofgeismar.

Als Zeugen waren zugezogen und erschienen:

3. der Kaufmann Paul Rudolf Arnold, der Persönlichkeit nach bekannt, 58 Jahre alt, wohnhaft in Hofgeismar
4. der Buchbindermeister Ferdinand Bächstädt, der Persönlichkeit nach bekannt, 35 Jahre alt, wohnhaft in Hofgeismar.

Der Standesbeamte richtete an die Verlobten einzeln und nacheinander die Frage:

ob sie die Ehe mit einander eingehen wollen.

Die Verlobten bejahten diese Frage und der Standesbeamte sprach hierauf aus:

daß sie Kraft des bürgerlichen Gesetzbuches nunmehr rechtmäßig verbundene Eheleute seien.

Geburtsurkunde

Nr. 103.

Hofgeismar, den 7. September 1877.

Vor dem unterzeichneten Standesbeamten erschien heute, der Persönlichkeit nach bekannt, der Kaufmann Paul Rudolph Arnold, wohnhaft zu Hofgeismar in der Petristraße Nr. 158, evangelischer Religion, und zeigte an, das von der Anna Elisabeth Arnold geborene Berninger, seiner Ehefrau, evangelischer Religion, wohnhaft bei ihm zu Hofgeismar in seiner Wohnung am 6. September des Jahres 1877, nachmittags um 1/2 1 Uhr ein Kind weiblichen Geschlechts geboren worden sei, welches die Vornamen

Wilhelmine Friedericke

erhalten habe.

Vorgelesen, genehmigt und unterschrieben:

R. Arnold

Der Standesbeamte.
In Vertretung:
gez. Bering.

Daß vorstehender Auszug mit dem Geburts=Haupt=Register des Standesamtes zu Hofgeismar gleichlautend ist, wird hiermit bestätigt.

Hofgeismar, am 22. Juni 1933.

(Siegel)

Der Standesbeamte.
gez. Laneus

KREIS-FÜRSORGE- U. JUGENDAMT HOFGEISMAR

Abschrift beglaubigt:

Kreisfürsorgeoberinspektor.



There are no other family members left to care for the individual Cuntze grave at Heimboldshausen.

More than 400 km away, I had to decide to abandon the grave.

In memory of the deceased:

Mama's sister Anna died painfully of pulmonary tuberculosis: According to the knowledge at the time, she was not given anything to drink.

Her mother Katharina, my grandma, was killed in action by US-troops.

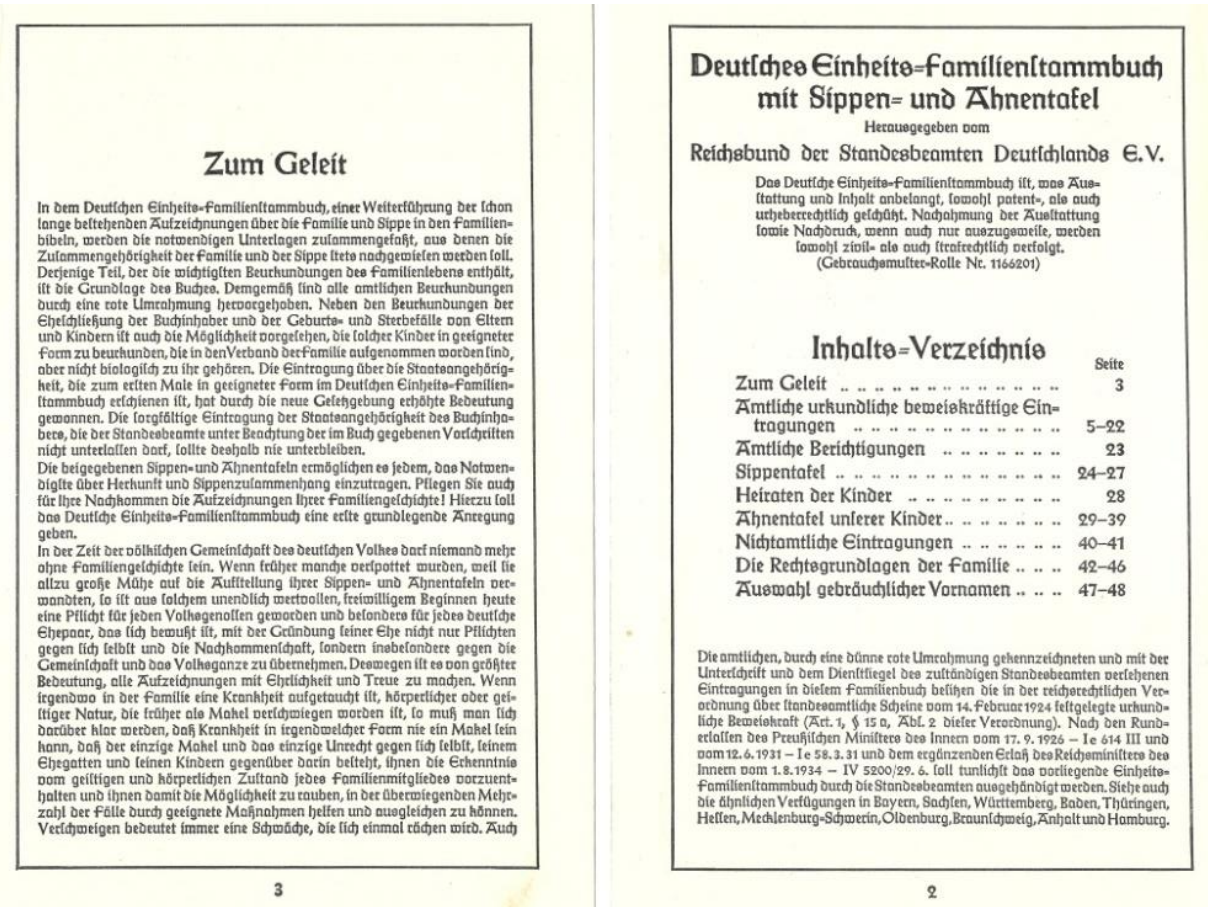
My grandpa died in a nursing home

My father Werner had a fatal accident on the steep slope of our garden

My mother Helmy died at home.

0.3 Ralf's mandatory Family Register

Had to be created for the son Ralf during the Nazi era, after birth in 1939.



Zum Geleit

In dem Deutschen Einheits-Familienstammbuch, einer Weiterführung der schon lange bestehenden Aufzeichnungen über die Familie und Sippe in den Familienbibeln, werden die notwendigen Unterlagen zusammengefaßt, aus denen die Zusammengehörigkeit der Familie und der Sippe stets nachgewiesen werden soll. Derjenige Teil, der die wichtigsten Beurkundungen des Familienlebens enthält, ist die Grundlage des Buches. Demgemäß sind alle amtlichen Beurkundungen durch eine rote Umrahmung hervorgehoben. Neben den Beurkundungen der Eheschließung der Buchinhaber und der Geburts- und Sterbefälle von Eltern und Kindern ist auch die Möglichkeit vorgesehen, die solcher Kinder in geeigneter Form zu beurkunden, die in den Verband der Familie aufgenommen worden sind, aber nicht biologisch zu ihr gehören. Die Eintragung über die Staatsangehörigkeit, die zum ersten Male in geeigneter Form im Deutschen Einheits-Familienstammbuch erschienen ist, hat durch die neue Gesetzgebung erhöhte Bedeutung gewonnen. Die sorgfältige Eintragung der Staatsangehörigkeit des Buchinhabers, die der Standesbeamte unter Beachtung der im Buch gegebenen Vorschriften nicht unterlassen darf, sollte deshalb nie unterbleiben.

Die beigegebenen Sippen- und Ahnentafeln ermöglichen es jedem, das Notwendigste über Herkunft und Sippenzusammenhang einzutragen. Pflegen Sie auch für Ihre Nachkommen die Aufzeichnungen Ihrer Familiengeschichte! Hierzu soll das Deutsche Einheits-Familienstammbuch eine erste grundlegende Anregung geben.

In der Zeit der völkischen Gemeinschaft des deutschen Volkes darf niemand mehr ohne Familiengeschichte sein. Wenn früher manche verspottet wurden, weil sie allzu große Mühe auf die Aufstellung ihrer Sippen- und Ahnentafeln verwandten, so ist aus solchem unendlich wertvollen, freiwilligem Beginnen heute eine Pflicht für jeden Volksgenossen geworden und besonders für jedes deutsche Ehepaar, das sich bewußt ist, mit der Gründung seiner Ehe nicht nur Pflichten gegen sich selbst und die Nachkommenschaft, sondern insbesondere gegen die Gemeinschaft und das Volksganze zu übernehmen. Deswegen ist es von größter Bedeutung, alle Aufzeichnungen mit Ehrlichkeit und Treue zu machen. Wenn irgendwo in der Familie eine Krankheit aufgetaucht ist, körperlicher oder geistiger Natur, die früher als Makel verschwiegen worden ist, so muß man sich darüber klar werden, daß Krankheit in irgendwelcher Form nie ein Makel sein kann, daß der einzige Makel und das einzige Unrecht gegen sich selbst, seinem Ehegatten und seinen Kindern gegenüber darin besteht, ihnen die Erkenntnis vom geistigen und körperlichen Zustand jedes Familienmitgliedes vorzuenthalten und ihnen damit die Möglichkeit zu rauben, in der überwiegenden Mehrzahl der Fälle durch geeignete Maßnahmen helfen und ausgleichen zu können. Verschweigen bedeutet immer eine Schwäche, die sich einmal rächen wird. Auch

3

Deutsches Einheits-Familienstammbuch mit Sippen- und Ahnentafel

Herausgegeben vom

Reichsbund der Standesbeamten Deutschlands E.V.

Das Deutsche Einheits-Familienstammbuch ist, was Ausstattung und Inhalt anbelangt, sowohl patent-, als auch urheberrechtlich geschützt. Nachahmung der Ausstattung sowie Nachdruck, wenn auch nur auszugsweise, werden sowohl zivil- als auch strafrechtlich verfolgt.
(Gebrauchsmuster-Rolle Nr. 1166201)

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Ahnentafel unserer Kinder	29–39
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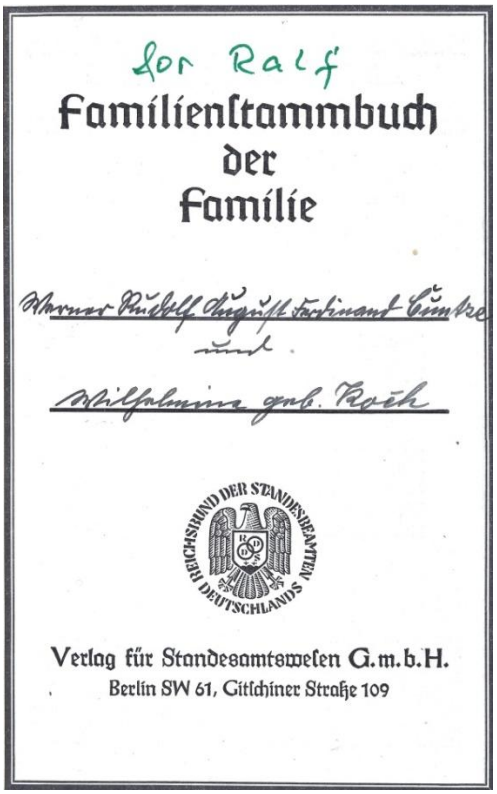
Auswahl gebräuchlicher Vornamen	47–48

Die amtlichen, durch eine dünne rote Umrahmung gekennzeichneten und mit der Unterschrift und dem Dienstsiegel des zuständigen Standesbeamten versehenen Eintragungen in diesem Familienbuch besitzen die in der reichsrechtlichen Verordnung über standesamtliche Scheine vom 14. Februar 1924 festgelegte urkundliche Beweiskraft (Art. 1, § 15 a, Abs. 2 dieser Verordnung). Nach den Runderlassen des Preußischen Ministers des Innern vom 17. 9. 1926 – Ie 614 III und vom 12. 6. 1931 – Ie 58. 3. 31 und dem ergänzenden Erlaß des Reichsministers des Innern vom 1. 8. 1934 – IV 5200/29. 6. soll tunlichst das vorliegende Einheits-Familienstammbuch durch die Standesbeamten ausgehändigt werden. Siehe auch die ähnlichen Verfügungen in Bayern, Sachsen, Württemberg, Baden, Thüringen, Hessen, Mecklenburg-Schwerin, Oldenburg, Braunschweig, Anhalt und Hamburg.

2



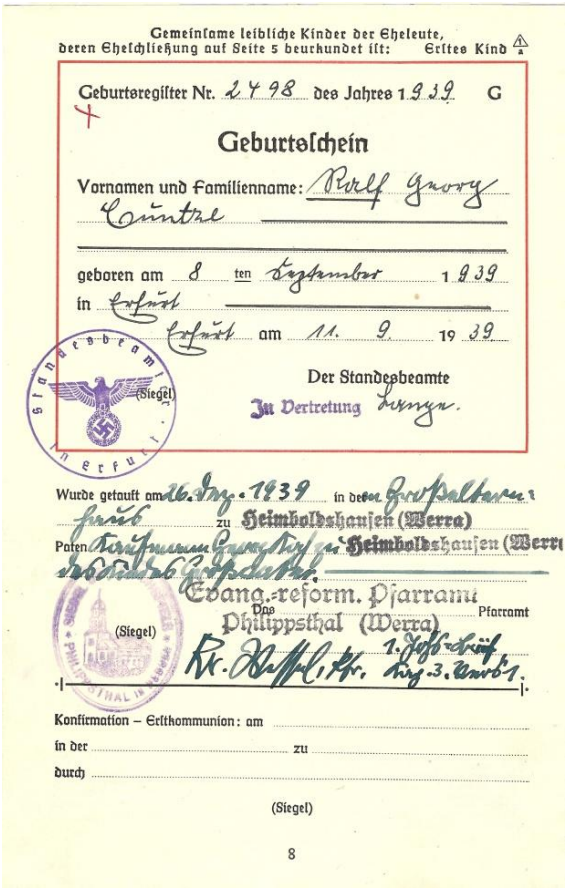
for Ralf

Familienstammbuch der Familie

Verlag für Standesamtswesen G.m.b.H.
Berlin SW 61, Gitschiner Straße 109

German
Unified Family Register
with
Clan and Ancestral Table.

Published by the Association of Civil Registrars of Germany



Gemeinsame leibliche Kinder der Eheleute, deren Eheschließung auf Seite 5 beurkundet ist: Erstes Kind

Geburtsregister Nr. 2498 des Jahres 1939 G

Geburtsschein

Vornamen und Familienname: Rolf Georg Cuntze

geboren am 8 ten September 1939

in Erfurt

Erfurt am 11. 9 1939

Der Standesbeamte

In Vertretung

Standesbeamt Erfurt (Siegel)

Wurde getauft am 16. Dez. 1939 in der Gnadenkirche zu Heimboldshausen (Werra)

Paten: Kaufmann Georg Cuntze, Heimboldshausen (Werra)

Evang.-reform. Pfarramt Philippsthal (Werra) Pfarramt

(Siegel)

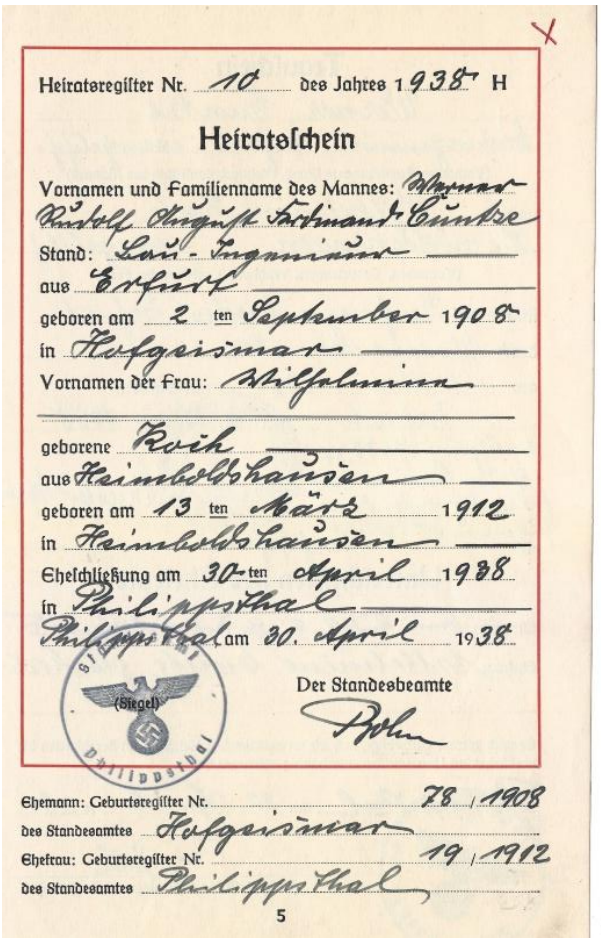
Konfirmation – Erstkommunion: am

in der zu

durch

(Siegel)

8



Heiratsregister Nr. 10 des Jahres 1938 H

Heiratsschein

Vornamen und Familienname des Mannes: Werner Rudolf August Ferdinand Cuntze

Stand: Bau-Ingenieur

aus Erfurt

geboren am 2 ten September 1908

in Hofgeismar

Vornamen der Frau: Wilhelmine

geborene Koch

aus Heimboldshausen

geboren am 13 ten März 1912

in Heimboldshausen

Eheschließung am 30. ten April 1938

in Philippsthal

Philippsthal am 30. April 1938

Der Standesbeamte

Standesamt Philippsthal (Siegel)

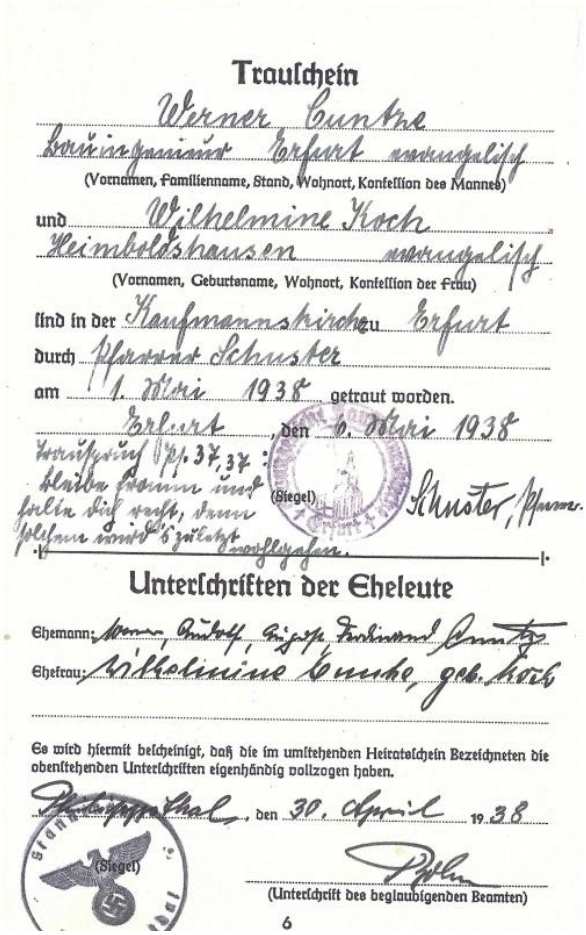
Ehemann: Geburtsregister Nr. 78 / 1908

des Standesamtes Hofgeismar

Ehefrau: Geburtsregister Nr. 19 / 1912

des Standesamtes Philippsthal

5



Trauschein

Werner Cuntze

Bau-Ingenieur Erfurt evangelisch

(Vornamen, Familienname, Stand, Wohnort, Konfession des Mannes)

und Wilhelmine Koch

Heimboldshausen evangelisch

(Vornamen, Geburtsname, Wohnort, Konfession der Frau)

sind in der Kaufmannskirche zu Erfurt

durch Pfarramt Schuster

am 1. März 1938 getraut worden.

Erfurt, den 6. März 1938

Prüfung Pp. 37,37: bleiba Gemeinde und Volk, dein Volk recht, dann Volkem wird's gelingen. Vorgelegen. Schuster, Pfarrer.

(Siegel)

Unterschriften der Eheleute

Ehemann: Werner Rudolf August Ferdinand Cuntze

Ehefrau: Wilhelmine Cuntze, geb. Koch

Es wird hiermit bescheinigt, daß die im umstehenden Heiratsschein Bezeichneten die obenstehenden Unterschriften eigenhändig vollzogen haben.

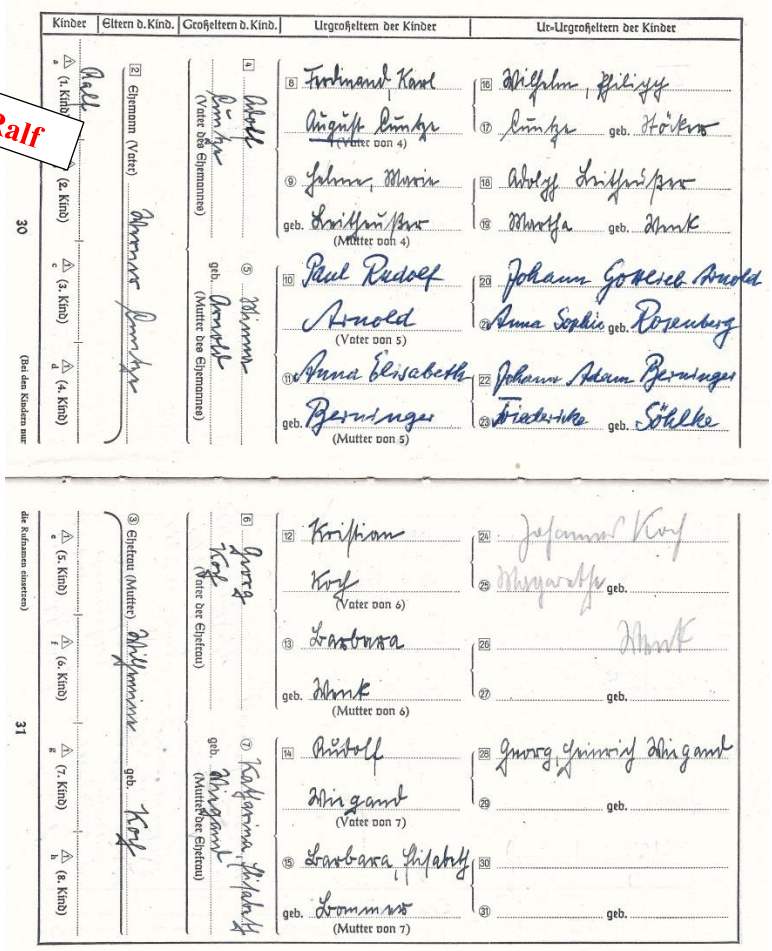
Philippsthal, den 30. April 1938

Standesamt Philippsthal (Siegel)

(Unterschrift des beglaubigenden Beamten)

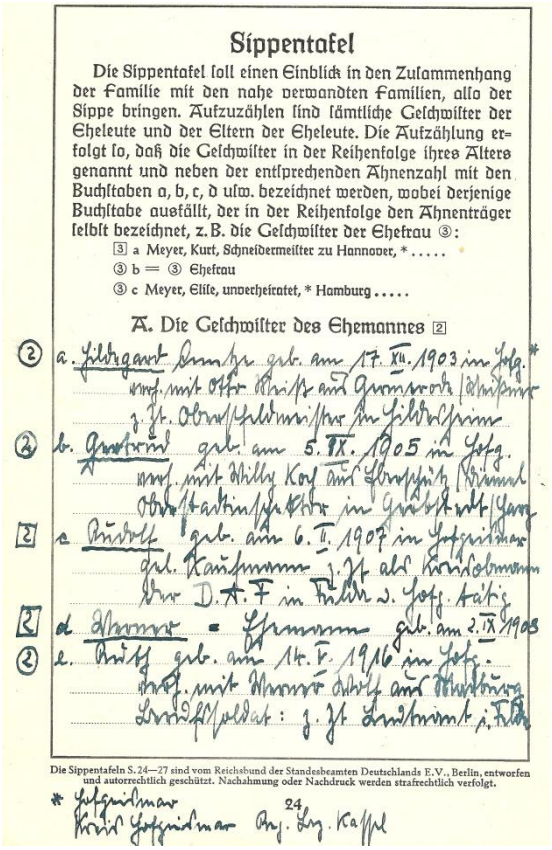
6

Ralf



Family tree,

Husband's siblings



Sippentafel

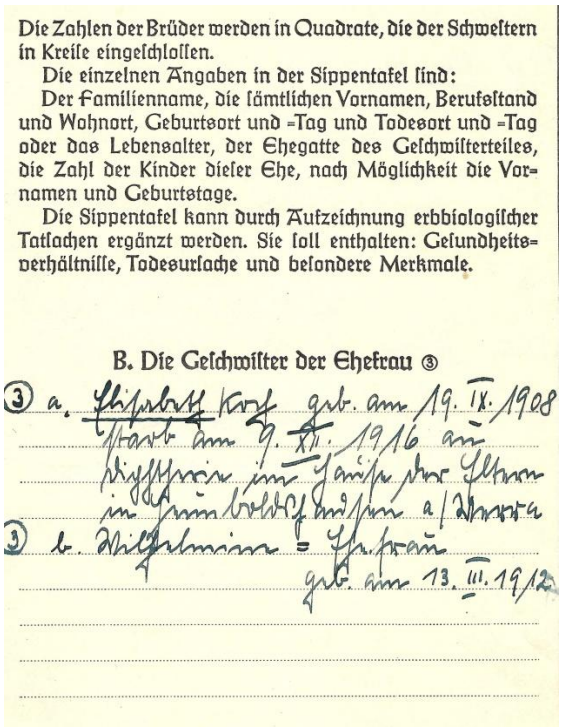
Die Sippentafel soll einen Einblick in den Zusammenhang der Familie mit den nahe verwandten Familien, also der Sippe bringen. Aufzuzählen sind sämtliche Geschwister der Eheleute und der Eltern der Eheleute. Die Aufzählung erfolgt so, daß die Geschwister in der Reihenfolge ihres Alters genannt und neben der entsprechenden Ahnenzahl mit den Buchstaben a, b, c, d usw. bezeichnet werden, wobei derjenige Buchstabe ausfällt, der in der Reihenfolge den Ahnenträger selbst bezeichnet, z. B. die Geschwister der Ehefrau ③:

③ a Meyer, Kurt, Schneidermeister zu Hannover, * .....
③ b = ③ Ehefrau
③ c Meyer, Elise, unverheiratet, * Hamburg .....

A. Die Geschwister des Ehemannes [2]

Die Sippentafeln S. 24—27 sind vom Reichsbund der Standesbeamten Deutschlands E.V., Berlin, entworfen und autorrechtlich geschützt. Nachahmung oder Nachdruck werden strafrechtlich verfolgt.

Wife's siblings



Die Zahlen der Brüder werden in Quadrate, die der Schwestern in Kreise eingeschlossen.

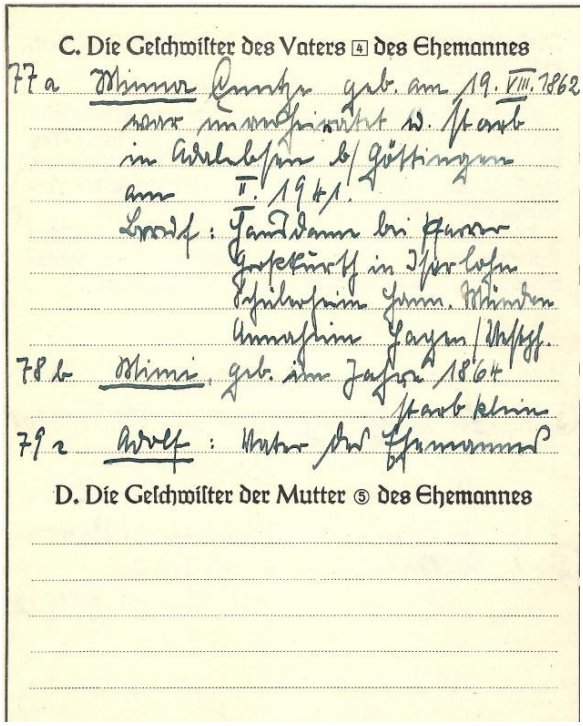
Die einzelnen Angaben in der Sippentafel sind:

Der Familienname, die sämtlichen Vornamen, Berufsstand und Wohnort, Geburtsort und -Tag und Todesort und -Tag oder das Lebensalter, der Ehegatte des Geschwisterteiles, die Zahl der Kinder dieser Ehe, nach Möglichkeit die Vornamen und Geburtstage.

Die Sippentafel kann durch Aufzeichnung erbbiologischer Tatsachen ergänzt werden. Sie soll enthalten: Gesundheitsverhältnisse, Todesursache und besondere Merkmale.

B. Die Geschwister der Ehefrau ③

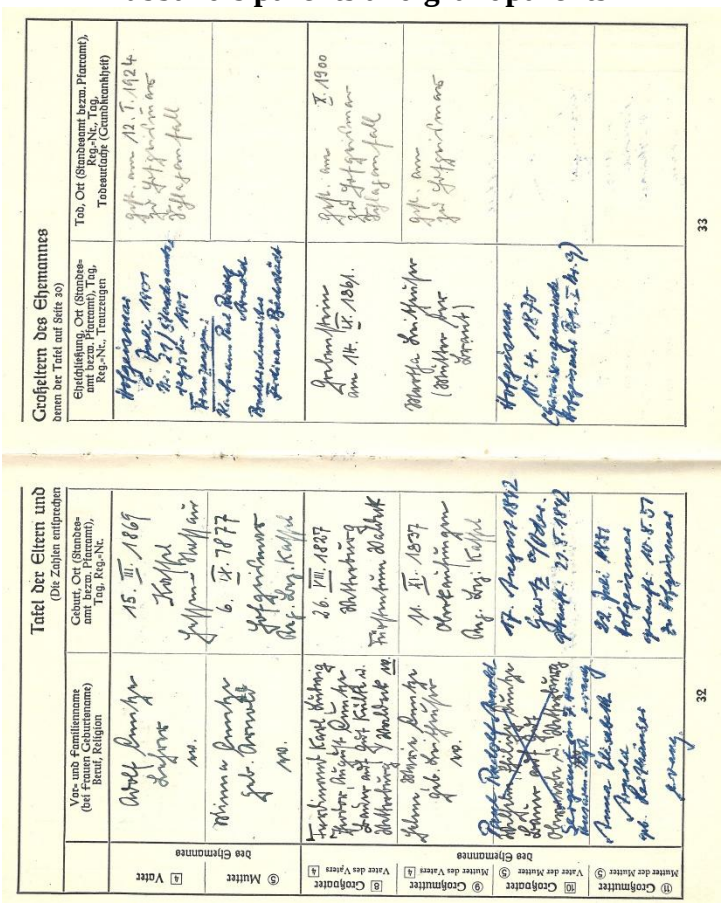
Siblings of the husband's father



C. Die Geschwister des Vaters [4] des Ehemannes

D. Die Geschwister der Mutter ⑤ des Ehemannes

Husband's parents and grandparents



Großeltern des Ehemannes

	Ehe(schließung, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Trauzeugen	Tod, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Todesursache (Gemeinschaft)
	Hofgeismar d. 2. Juli 1907 Nr. 21/Standesamt Trauzeugen: Wilhelm Rau Bürg. Ackerer Bodenmeister Ferdinand Bindseil	Hofg. am 12. 7. 1924 durch Herzschlag Hofgeismar
	Gerbershausen am 14. 12. 1861.	Hofg. am I. 1900 durch Herzschlag Hofgeismar
	Martha Dorothea (Mutter der Mutter)	Hofg. am durch Herzschlag Hofgeismar
	Hofgeismar M. 4. 1870 (Geburtsurkunde Hofgeismar Nr. I A. 9)	

33

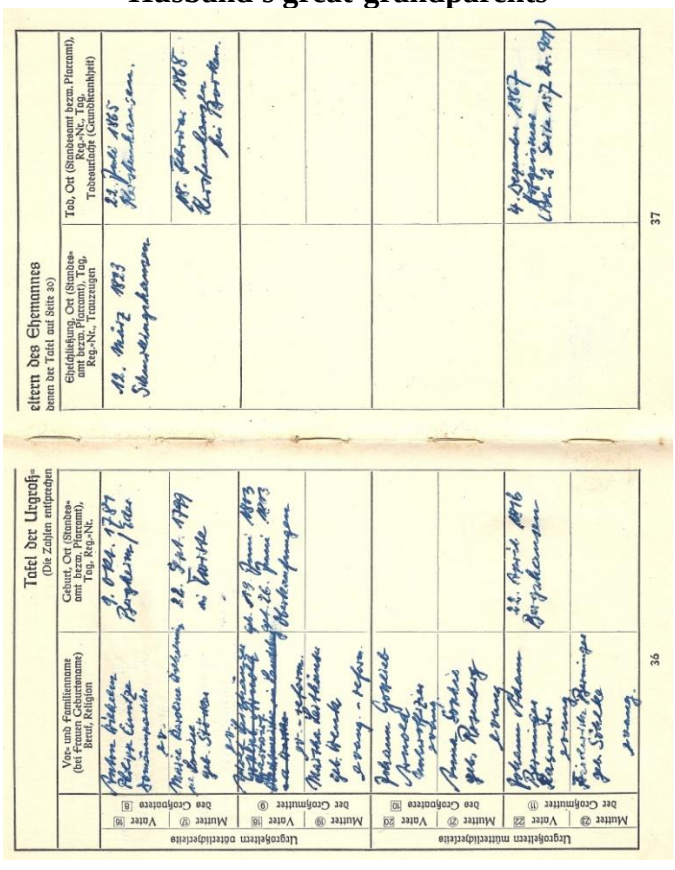
Tafel der Eltern und

(Die Zahlen entsprechen)

	Vor- und Familienname (bei Frauen Geburtsname) Beruf, Religion	Geburt, Ort (Standesamt bezw. Pfarramt), Tag, Reg.-Nr.
⑤ Mutter	Minna Dorothea geb. Arnold ev.	6. IV. 1877 Hofgeismar Reg. Bez. Kassel
4 Vater	Adolf Dorothea Schreiner ev.	15. III. 1869 Kassel Hofgeismar
Des Ehemannes		
[8] Großvater Vater des Vaters 4	Ferdinand Karl Dorothea Tischler, Inhaber einer Bau- und Möbelschreinerei in Hofgeismar, auf der Kasse zu Hofgeismar Mitglied, Kassel ev.	26. VIII. 1837 Wolfhagen Hofgeismar
⑨ Großmutter Mutter des Vaters 4	Johanna Dorothea geb. Dr. Schreiner ev.	1. II. 1837 Obermeiser Reg. Bez. Kassel
[10] Großvater Vater der Mutter ⑤	Karl Rudolph Arnold Wilhelm Heinrich Arnold, Bürgermeister und Standesbeamter in Hofgeismar, auf der Kasse zu Hofgeismar Mitglied, Kassel ev.	17. August 1842 Gut 2 Hofgeismar gestorben: 27.5.1892
⑪ Großmutter Mutter der Mutter ⑤	Anna Elisabeth Arnold geb. Kaufmann ev.	22. Juni 1841 Hofgeismar gestorben 10.8.07 in Hofgeismar

32

Husband's great-grandparents



eltern des Ehemannes

	Ehe(schließung, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Trauzeugen	Tod, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Todesursache (Gemeinschaft)
	12. März 1823 Schneidermeister.	22. Juli 1865 Hofgeismar. Nr. Februar 1868 Kirchenbuchauszug für Hofgeismar
		4. September 1867 Hofgeismar (Ref. 4 Seite 157 d. Reg.)

37

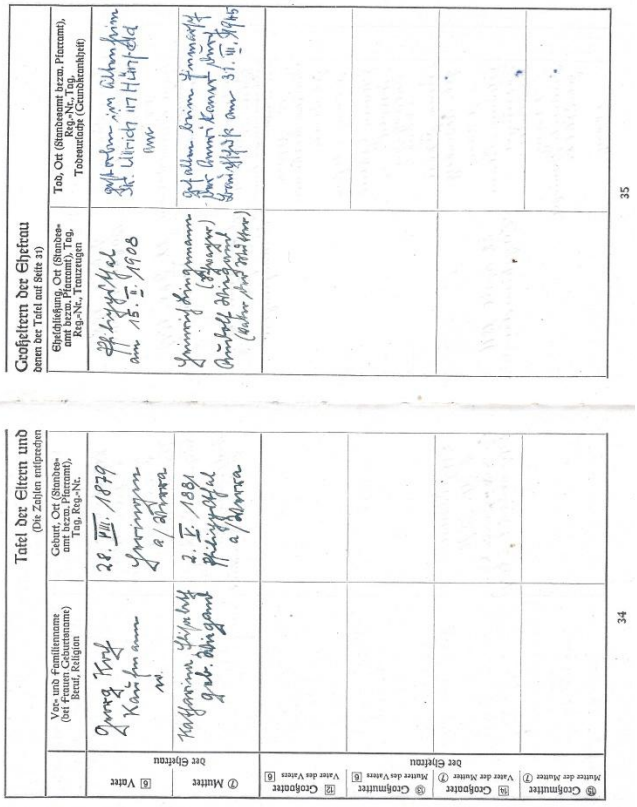
Tafel der Urgroß-

(Die Zahlen entsprechen)

	Vor- und Familienname (bei Frauen Geburtsname) Beruf, Religion	Geburt, Ort (Standesamt bezw. Pfarramt), Tag, Reg.-Nr.
Urgroßeltern väterlicherseits: Mutter ⑨ Vater [10] Des Großvaters [8]	Martha Dorothea geb. Heinde ev.	get. 19 Juni 1813 get. 26. Juni 1813 Wolfhagen
Mutter ⑨ Vater [10] Des Großvaters [8]	Johann Gerhard Arnold Schreiner ev.	get. 19 Juni 1813 Wolfhagen
Urgroßeltern mütterlicherseits: Mutter [12] Vater [13] Des Großvaters [11]	Johann Adam Heinrich Kaufmann ev.	22. April 1816 Hofgeismar
Mutter [12] Vater [13] Des Großvaters [11]	Elisabeth Dorothea Schröder geb. Schröder ev.	

36

Wife's parents and grandparents



Großeltern der Ehefrau

	Ehe(schließung, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Trauzeugen	Tod, Ort (Standesamt bezw. Pfarramt), Reg.-Nr., Tag, Todesursache (Gemeinschaft)
	Hofgeismar am 15. I. 1926	Hofgeismar im Altenheim St. Ulrich in Hünfeld ohne
	Heinrich Ludwig Lingemann (Bräutigam) Gertrud Dorothea Arnold (Mutter der Braut)	Hofgeismar durch Ertrinken Tod Amtl. konstatiert Grundstück am 31. III. 1945

35

Tafel der Eltern und

(Die Zahlen entsprechen)

	Vor- und Familienname (bei Frauen Geburtsname) Beruf, Religion	Geburt, Ort (Standesamt bezw. Pfarramt), Tag, Reg.-Nr.
⑦ Mutter	Katharina Elisabeth Lingemann geb. Arnold	2. I. 1881 Hofgeismar a/Diemel
6 Vater	Georg Karl Wilhelm Kaufmann ev.	28. VIII. 1879 Lingemann a/Diemel
Der Ehefrau		
[14] Großvater Vater des Vaters 6		
⑮ Großmutter Mutter des Vaters 6		
[12] Großvater Vater der Mutter ⑦		
⑬ Großmutter Mutter der Mutter ⑦		

34

Siblings of the wife's father and mother

E. Die Geschwister des Vaters 6 der Ehefrau

a. Wilhelm Karl gest.
b. Jakob " "
c. Katharina " "
d. Georg Vaters der Ehefrau
e. Karl "
f. Christian " "
g. Heinrich " "
h. Anna " "

F. Die Geschwister der Mutter ⑦ der Ehefrau

a. Wilhelmine Wiegand geb. am 3. III. 18?
verh. mit dem Bauern Heinrich Rudolf Lingemann
b. Katharina Elisabeth W. geb. 2. I. 18
Mutter der Ehefrau
d. Georg Wiegand geb. am 5. 6. 1883
verh. mit Sophie W. geb. Goll aus Tuttlingen / Württemberg.
d. Anna W. geb. am 24. V. 1885
verh. mit dem Schmiedemeister Heinrich Schrodt, Philippthal

0.4 Grandfather's Military Service and Food supply via Ration cards in WW-I

Grandpa

Impressed statement of

Terrible World War I

1914-1918

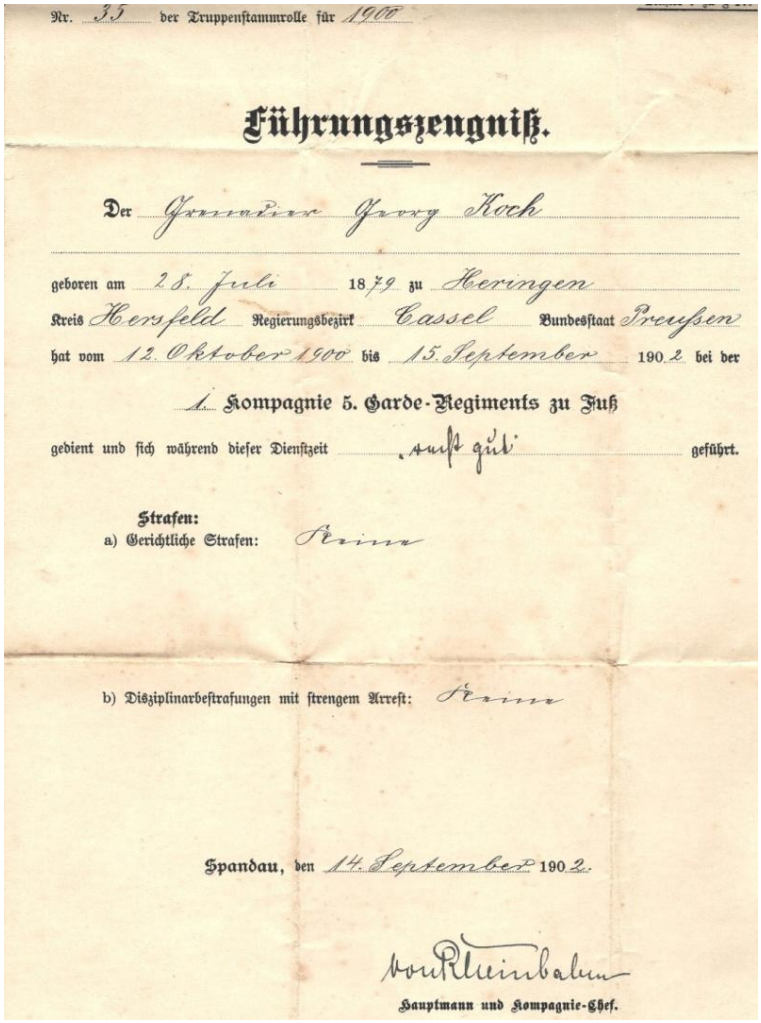
Mother's father was saved from freezing to death in the Carpathians. He said to me

"*My feeling was inner peace and warmth*".

25 years later, a terrible war happened again.







Nr. 33 der Truppenstammrolle für 1900

Führungszeugniß.

Der Gemeiner Georg Koch

geboren am 28. Juli 1879 zu Heringen

Kreis Hersfeld Regierungsbezirk Cassel Bundesstaat Preußen

hat vom 12. Oktober 1900 bis 15. September 1902 bei der

1. Kompagnie 5. Garde-Regiments zu Fuß

gedient und sich während dieser Dienstzeit stets gut geführt.

Strafen:

a) Gerichtliche Strafen: Keine

b) Disziplinarbestrafungen mit strengem Arrest: Keine

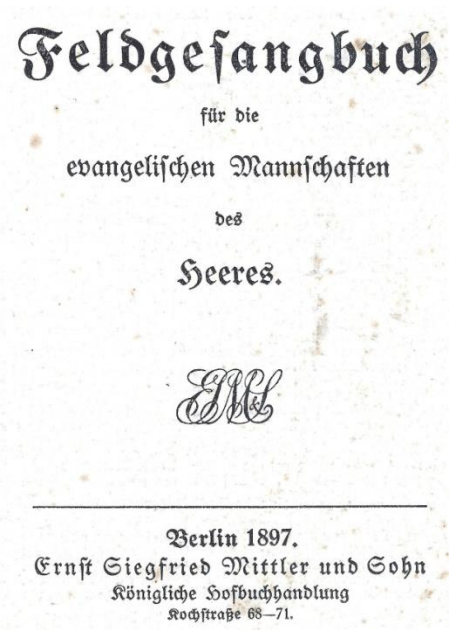
Spandau, den 14. September 1902.

von Kleinbaum

Hauptmann und Kompagnie-Chef.

Certificate of good conduct for his military service

his Songbook



Feldgesangbuch

für die

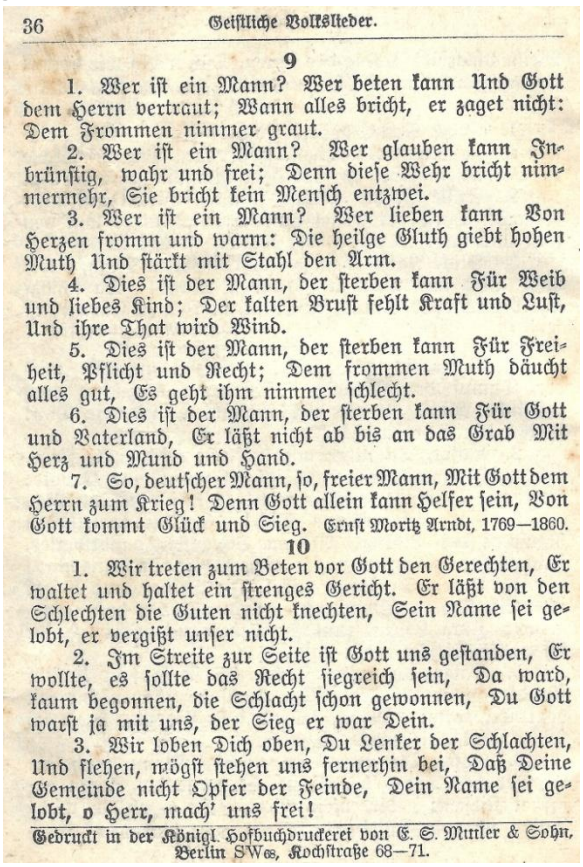
evangelischen Mannschaften

des

Heeres.

Berlin 1897.
Ernst Siegfried Mittler und Sohn
Königliche Hofbuchhandlung
Kochstraße 68—71.

Field Hymnal
for the
Protestant troops of the army



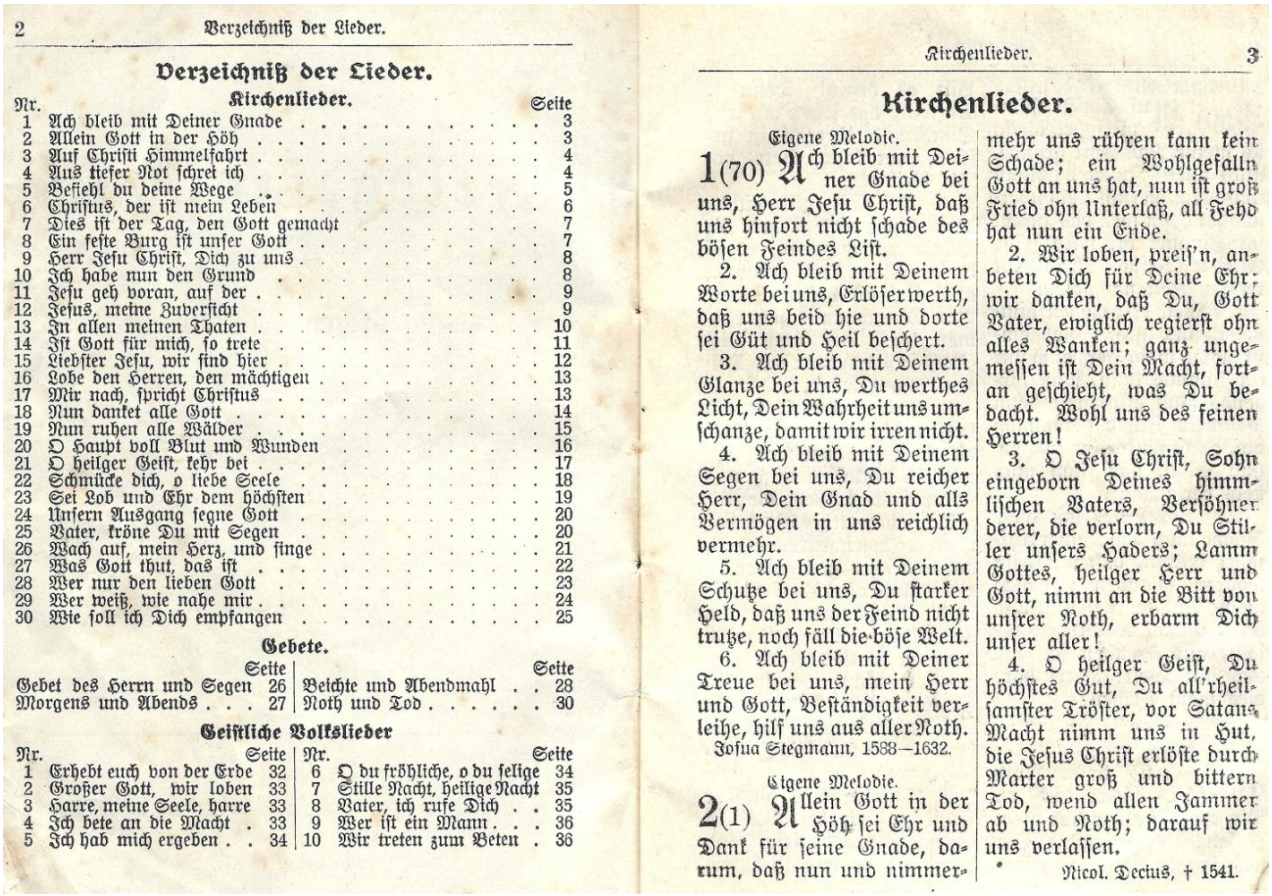
9

1. Wer ist ein Mann? Wer beten kann Und Gott dem Herrn vertraut; Wann alles bricht, er zaget nicht: Dem Frommen nimmer graut.
2. Wer ist ein Mann? Wer glauben kann Inbrünstig, wahr und frei; Denn diese Wehr bricht nimmermehr, Sie bricht kein Mensch entzwei.
3. Wer ist ein Mann? Wer lieben kann Von Herzen fromm und warm: Die heilge Gluth giebt hohen Muth Und stärkt mit Stahl den Arm.
4. Dies ist der Mann, der sterben kann Für Weib und liebes Kind; Der kalten Brust fehlt Kraft und Lust, Und ihre That wird Wind.
5. Dies ist der Mann, der sterben kann Für Freiheit, Pflicht und Recht; Dem frommen Muth däucht alles gut, Es geht ihm nimmer schlecht.
6. Dies ist der Mann, der sterben kann Für Gott und Vaterland, Er läßt nicht ab bis an das Grab Mit Herz und Mund und Hand.
7. So, deutscher Mann, so, freier Mann, Mit Gott dem Herrn zum Krieg! Denn Gott allein kann Helfer sein, Von Gott kommt Glück und Sieg. Ernst Moritz Arndt, 1769—1860.

10

1. Wir treten zum Beten vor Gott den Gerechten, Er waltet und haltet ein strenges Gericht. Er läßt von den Schlechten die Guten nicht knechten, Sein Name sei gelobt, er vergißt unser nicht.
2. Im Streite zur Seite ist Gott uns gestanden, Er wollte, es sollte das Recht siegreich sein, Da ward, kaum begonnen, die Schlacht schon gewonnen, Du Gott warst ja mit uns, der Sieg er war Dein.
3. Wir loben Dich oben, Du Lenker der Schlachten, Und flehen, mögst stehen uns fernerhin bei, Daß Deine Gemeinde nicht Opfer der Feinde, Dein Name sei gelobt, o Herr, mach' uns frei!

Gedruckt in der Königl. Hofbuchdruckerei von E. S. Mittler & Sohn, Berlin SW68, Kochstraße 68—71.



Verzeichniß der Lieder.

Kirchenlieder.

Nr.		Seite
1	Ach bleib mit Deiner Gnade	3
2	Allein Gott in der Höh	3
3	Auf Christi Himmelfahrt	4
4	Aus tiefer Not schrei ich	4
5	Befiehl du deine Wege	5
6	Christus, der ist mein Leben	6
7	Dies ist der Tag, den Gott gemacht	7
8	Ein feste Burg ist unser Gott	7
9	Herr Jesu Christ, Dich zu uns	8
10	Ich habe nun den Grund	8
11	Jesu geh voran, auf der	9
12	Jesus, meine Zuversicht	9
13	In allen meinen Thaten	10
14	Ist Gott für mich, so trete	11
15	Liebster Jesu, wir sind hier	12
16	Lobe den Herren, den mächtigen	13
17	Mir nach, spricht Christus	13
18	Nun danket alle Gott	14
19	Nun ruhen alle Wälder	15
20	O Haupt voll Blut und Wunden	16
21	O heilger Geist, kehr bei	17
22	Schmücke dich, o liebe Seele	18
23	Sei Lob und Ehr dem höchsten	19
24	Unsern Ausgang segne Gott	20
25	Vater, kröne Du mit Segen	20
26	Wach auf, mein Herz, und singe	21
27	Was Gott thut, das ist	22
28	Wer nur den lieben Gott	23
29	Wer weiß, wie nahe mir	24
30	Wie soll ich Dich empfangen	25

Gebete.

	Seite		Seite
Gebet des Herrn und Segen	26	Beichte und Abendmahl	28
Morgens und Abends	27	Noth und Tod	30

Geistliche Volkslieder

Nr.		Seite	Nr.		Seite
1	Erhebt euch von der Erde	32	6	O du fröhliche, o du selige	34
2	Großer Gott, wir loben	33	7	Stille Nacht, heilige Nacht	35
3	Harre, meine Seele, harre	33	8	Vater, ich rufe Dich	35
4	Ich bete an die Macht	33	9	Wer ist ein Mann	36
5	Ich hab mich ergeben	34	10	Wir treten zum Beten	36

Kirchenlieder.

Eigene Melodie.

1(70) Ach bleib mit Deiner Gnade bei uns, Herr Jesu Christ, daß uns hinfort nicht schade des bösen Feindes List.

2. Ach bleib mit Deinem Worte bei uns, Erlöser werth, daß uns beid hie und dorte sei Güt und Heil beschert.
3. Ach bleib mit Deinem Glanze bei uns, Du werthes Licht, Dein Wahrheit uns umschanze, damit wir irren nicht.
4. Ach bleib mit Deinem Segen bei uns, Du reicher Herr, Dein Gnad und alls Vermögen in uns reichlich vermehr.
5. Ach bleib mit Deinem Schutze bei uns, Du starker Held, daß uns der Feind nicht trutze, noch fäll die böse Welt.
6. Ach bleib mit Deiner Treue bei uns, mein Herr und Gott, Beständigkeit verleihe, hilf uns aus aller Noth.

Josua Stegmann, 1588—1632.

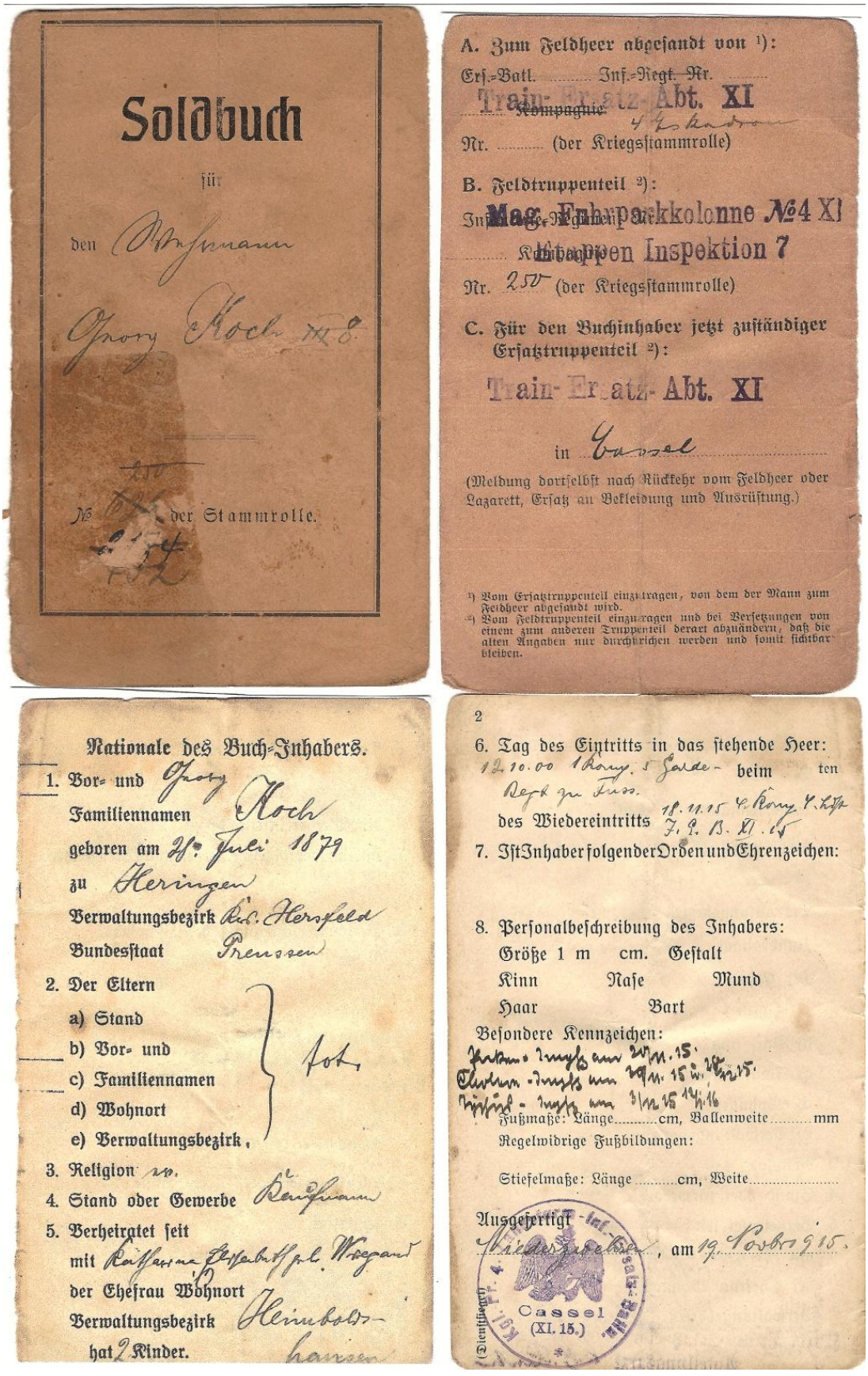
Eigene Melodie.

2(1) Allein Gott in der Höh sei Ehr und Dank für seine Gnade, darum, daß nun und nimmermehr uns rühren kann kein Schade; ein Wohlgefalln Gott an uns hat, nun ist groß Fried ohn Unterlaß, all Fehd hat nun ein Ende.

2. Wir loben, preis'n, anbeten Dich für Deine Ehr; wir danken, daß Du, Gott Vater, ewiglich regierst ohn alles Wanken; ganz ungemessen ist Dein Macht, fortan geschieht, was Du bedacht. Wohl uns des feinen Herren!
3. O Jesu Christ, Sohn eingeborn Deines himmlischen Vaters, Versöhner derer, die verlorn, Du Stiller unsers Haders; Lamm Gottes, heilger Herr und Gott, nimm an die Bitt von unsrer Noth, erbarm Dich unser aller!
4. O heilger Geist, Du höchstes Gut, Du all'rheilsamster Tröster, vor Satans Macht nimm uns in Hut, die Jesus Christ erlöste durch Marter groß und bittern Tod, wend allen Jammer ab und Noth; darauf wir uns verlassen.

Nicol. Decius, † 1541.

his Paybook, as soldier Georg Koch



Soldbuch

für

den Wehrmann

Georg Koch III 8.

№ 250 der Stammrolle.

A. Zum Feldheer abgesandt von [1]):

Ers.-Batl. ..... Inf.-Regt. Nr. .....

Train-Ersatz-Abt. XI

Kompagnie 4 Eskadron

Nr. ..... (der Kriegsstammrolle)

B. Feldtruppenteil [2]):

Inf.-Regt. Nr. Mag. Fuhrparkkolonne №4 XI

Kompagnie Etappen Inspektion 7

Nr. 250 (der Kriegsstammrolle)

C. Für den Buchinhaber jetzt zuständiger Ersatztruppenteil [2]):

Train-Ersatz-Abt. XI

in Cassel

(Meldung dortselbst nach Rückkehr vom Feldheer oder Lazarett, Ersatz an Bekleidung und Ausrüstung.)

[1]) Vom Ersatztruppenteil einzutragen, von dem der Mann zum Feldheer abgesandt wird.
[2]) Vom Feldtruppenteil einzutragen und bei Versetzungen von einem zum anderen Truppenteil derart abzuändern, daß die alten Angaben nur durchstrichen werden und somit sichtbar bleiben.

Nationale des Buch-Inhabers.

1. Vor- und Familiennamen Georg Koch
geboren am 28. Juli 1879
zu Heringen
Verwaltungsbezirk Kr. Hersfeld
Bundesstaat Preussen
2. Der Eltern
a) Stand
b) Vor- und
c) Familiennamen
d) Wohnort
e) Verwaltungsbezirk, } tot.
3. Religion ev.
4. Stand oder Gewerbe Kaufmann
5. Verheiratet seit
mit Katharina Elisabeth geb. Wiegand
der Ehefrau Wohnort
Verwaltungsbezirk Heimboldshausen
hat 2 Kinder.

2

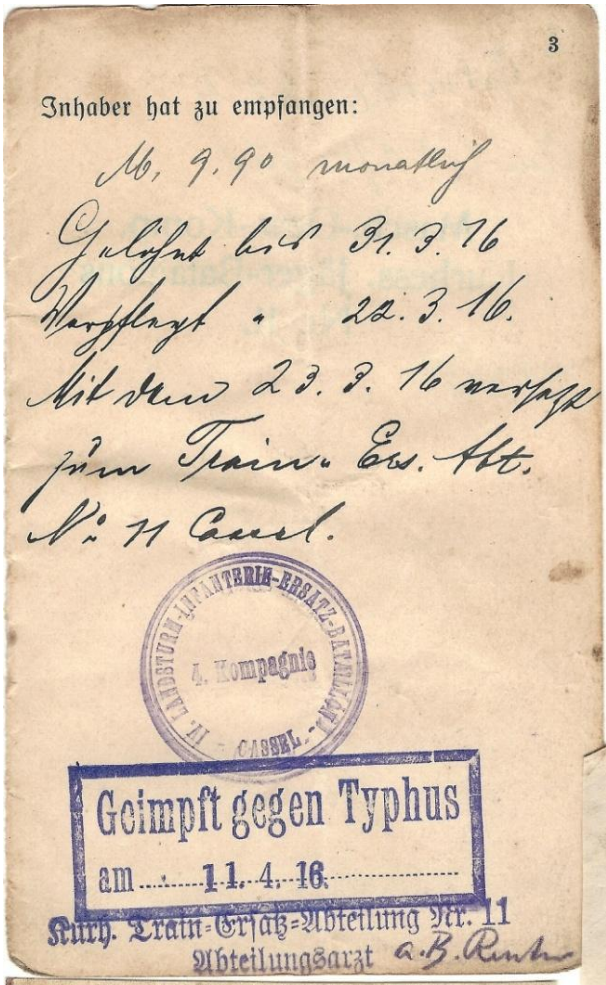
6. Tag des Eintritts in das stehende Heer:
12.10.00 1 Komp. 5 Garde- beim ten
Regt zu Fuss.
des Wiedereintritts 18.11.15 4. Komp. 4. Lstr. F. E. B. XI. 15
7. Ist Inhaber folgender Orden und Ehrenzeichen:

8. Personalbeschreibung des Inhabers:
Größe 1 m cm. Gestalt
Kinn Nase Mund
Haar Bart
Besondere Kennzeichen:
Jacken-Impfg am 20/11.15.
Cholera-Impfg am 29/11.15 u. 28/12.15.
Typhus-Impfg am 3/12.15 14/1.16
Fußmaße: Länge ..... cm, Ballenweite ..... mm
Regelwidrige Fußbildungen:
Stiefelmaße: Länge ..... cm, Weite .....
Ausgefertigt
Niederzwehren, am 19. Novbr 1915.

Kgl. Pr. 4. Inf.-Ersatz-Batln. Cassel (XI. 15.)

(Dienstliegen)

Monthly payment : 9.9 ReichsMark ≡ purchasing power equivalent of about 50€



3

Inhaber hat zu empfangen:

M. 9.90 monatlich

Gelöhnt bis 31. 3. 16

Verpflegt " 22. 3. 16.

Mit dem 23. 3. 16 versetzt

zum Train-Ers. Abt.

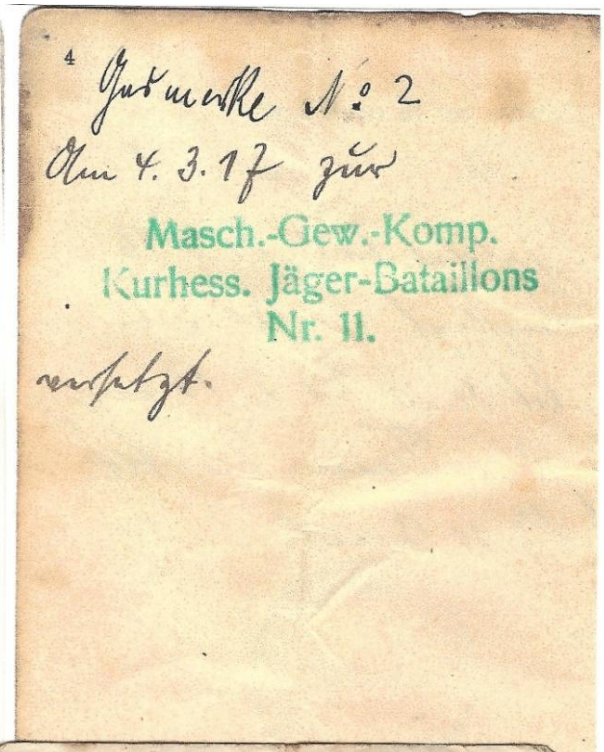
No 11 Cassel.

IV. LANDSTURM-INFANTERIE-ERSATZ-BATAILLON 4. Kompagnie CASSEL

Geimpft gegen Typhus

am 11. 4. 16.

Kurh. Train-Ersatz-Abteilung Nr. 11



Abteilungsarzt a. B. Reuter

4

Gasmerke No 2

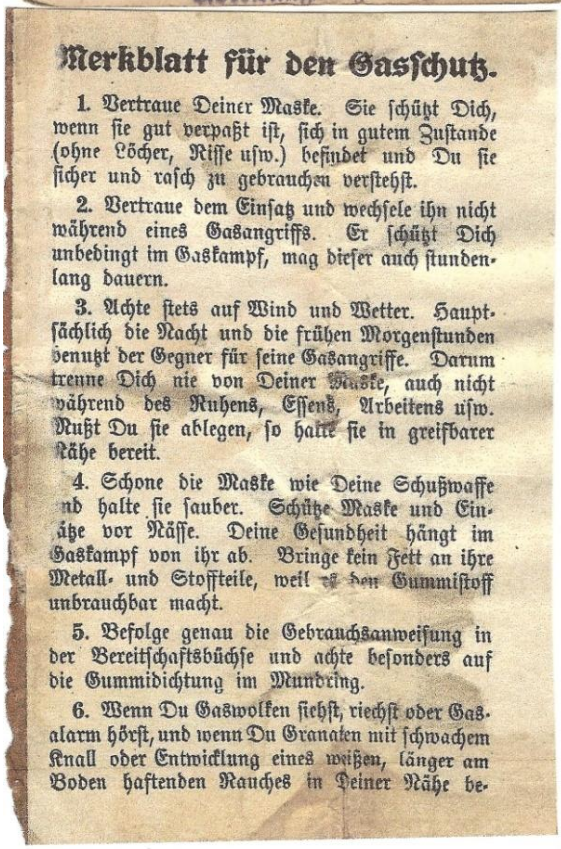
Am 4. 3. 17 zur

Masch.-Gew.-Komp.

Kurhess. Jäger-Bataillons

Nr. 11.

versetzt.



Merkblatt für den Gasschutz.

1. Vertraue Deiner Maske. Sie schützt Dich, wenn sie gut verpaßt ist, sich in gutem Zustande (ohne Löcher, Risse usw.) befindet und Du sie sicher und rasch zu gebrauchen verstehst.

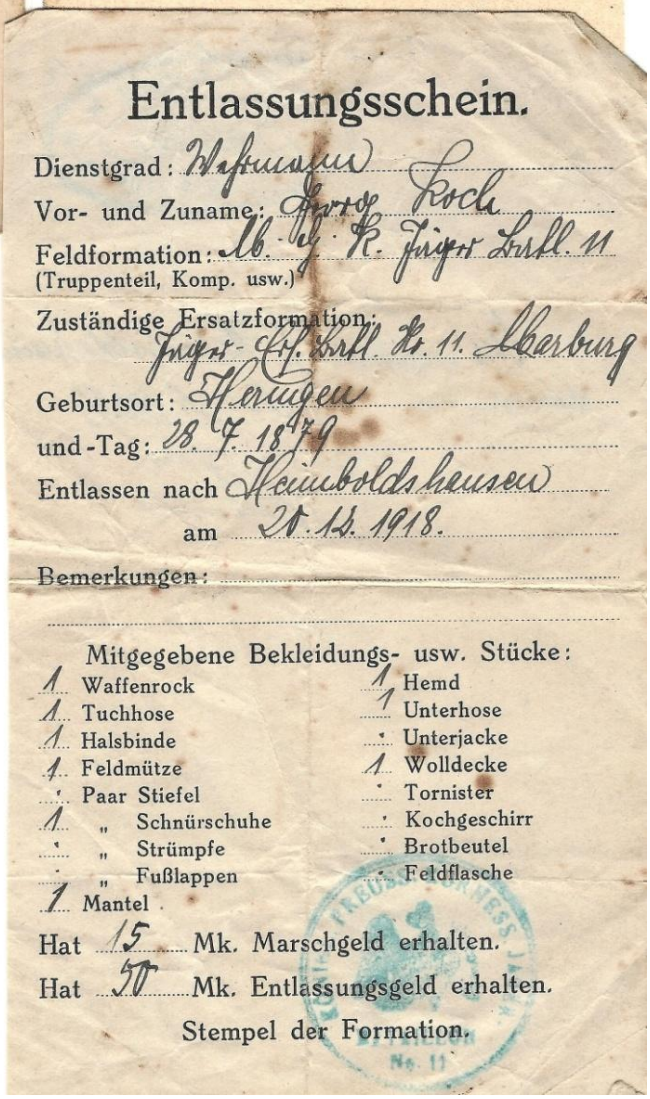
2. Vertraue dem Einsatz und wechsele ihn nicht während eines Gasangriffs. Er schützt Dich unbedingt im Gaskampf, mag dieser auch stundenlang dauern.

3. Achte stets auf Wind und Wetter. Hauptsächlich die Nacht und die frühen Morgenstunden benutzt der Gegner für seine Gasangriffe. Darum trenne Dich nie von Deiner Maske, auch nicht während des Ruhens, Essens, Arbeitens usw. Mußt Du sie ablegen, so halte sie in greifbarer Nähe bereit.

4. Schone die Maske wie Deine Schußwaffe und halte sie sauber. Schütze Maske und Einsätze vor Nässe. Deine Gesundheit hängt im Gaskampf von ihr ab. Bringe kein Fett an ihre Metall- und Stoffteile, weil es den Gummistoff unbrauchbar macht.

5. Befolge genau die Gebrauchsanweisung in der Bereitschaftsbüchse und achte besonders auf die Gummidichtung im Mundring.

6. Wenn Du Gaswolken siehst, riechst oder Gasalarm hörst, und wenn Du Granaten mit schwachem Knall oder Entwicklung eines weißen, länger am Boden haftenden Rauches in Deiner Nähe be-



Entlassungsschein.

Dienstgrad: Wehrmann

Vor- und Zuname: Georg Koch

Feldformation: M. G. K. Jäger Batl. 11
(Truppenteil, Komp. usw.)

Zuständige Ersatzformation: Jäger-Ers. Batl. Nr. 11. Marburg

Geburtsort: Heringen

und -Tag: 28. 7. 1879

Entlassen nach Heimboldshausen

am 20. 12. 1918.

Bemerkungen:

Mitgegebene Bekleidungs- usw. Stücke:

1 Waffenrock	1 Hemd
1 Tuchhose	1 Unterhose
1 Halsbinde	. Unterjacke
1 Feldmütze	1 Wolldecke
. Paar Stiefel	. Tornister
1 " Schnürschuhe	. Kochgeschirr
. " Strümpfe	. Brotbeutel
. " Fußlappen	. Feldflasche
1 Mantel	

Hat 15 Mk. Marschgeld erhalten.

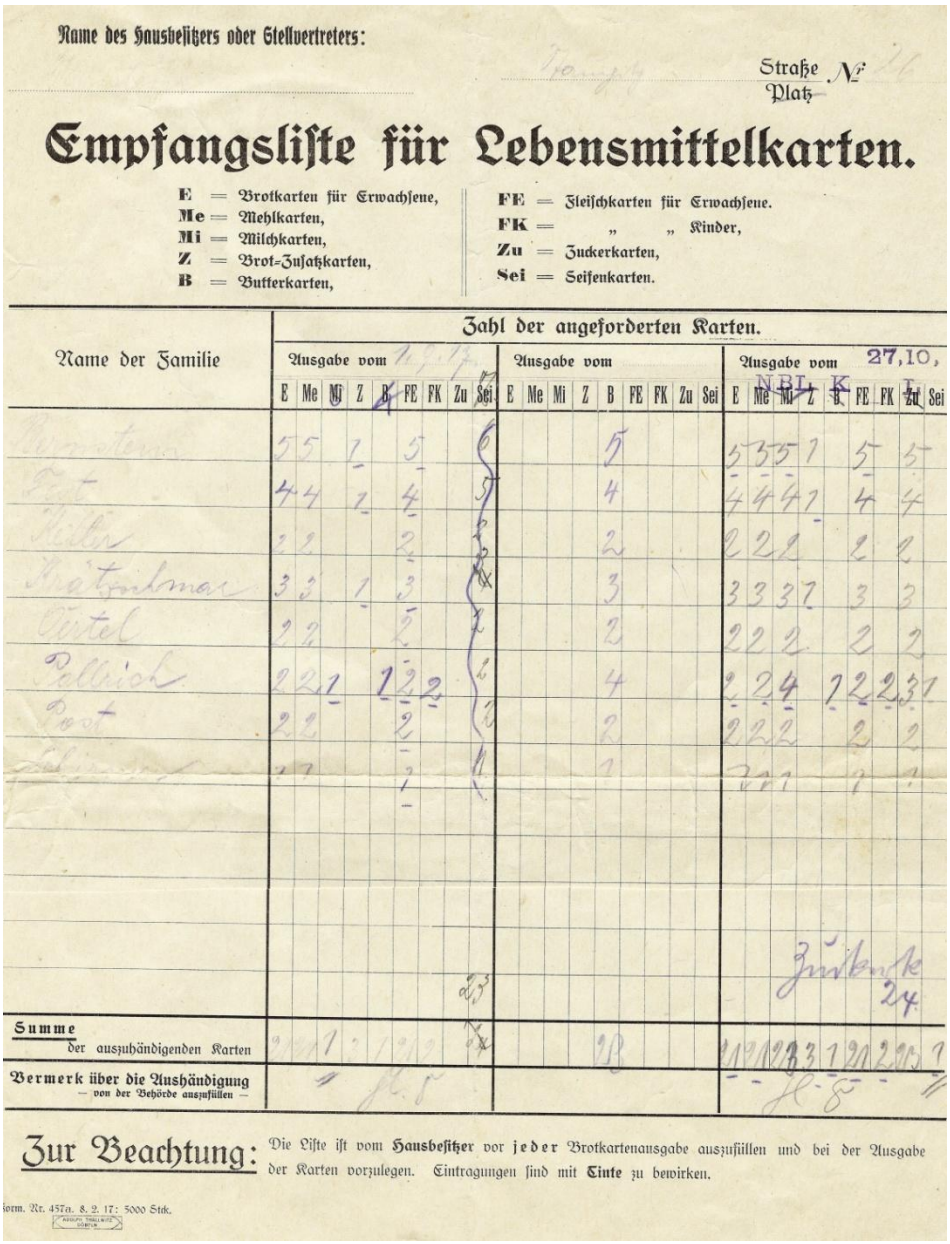
Hat 50 Mk. Entlassungsgeld erhalten.

Stempel der Formation.

KÖNIGL. PREUSS. KURHESS. JÄGER-BATAILLON No. 11

Leaflet for gas protection in World War I !! Discharge certificate from the military

Food supply via Ration cards in WW-I



Name des Hausbesitzers oder Stellvertreters:

Straße / Platz

Empfangsliste für Lebensmittelkarten.

E = Brotkarten für Erwachsene,
Me = Mehlkarten,
Mi = Milchkarten,
Z = Brot-Zusatzkarten,
B = Butterkarten,
FE = Fleischkarten für Erwachsene.
FK = „ „ Kinder,
Zu = Zuckerkarten,
Sei = Seifenkarten.

Name der Familie	Zahl der angeforderten Karten.																											
	Ausgabe vom									Ausgabe vom										Ausgabe vom 27,10,								
	E	Me	Mi	Z	B	FE	FK	Zu	Sei	E	Me	Mi	Z	B	FE	FK	Zu	Sei	E	Me	Mi	Z	B	FE	FK	Zu	Sei
Summe der auszuhändigenden Karten																												
Vermerk über die Aushändigung — von der Behörde auszufüllen —																												

Zur Beachtung: Die Liste ist vom **Hausbesitzer** vor **jeder** Brotkartenausgabe auszufüllen und bei der Ausgabe der Karten vorzulegen. Eintragungen sind mit **Tinte** zu bewirken.

Form. Nr. 457a. 8. 2. 17: 5000 Stck.



Landessperrkarte
für
Magermilch, Quark und Käse.

Königreich Sachsen.
Bezirksvbd. Döbeln.

Die Marken geben **keinen Anspruch** auf Belieferung, da eine Gewähr für die Sicherstellung entsprechender Mengen Magermilch, Quark und Käse nicht übernommen werden kann. Die einzelnen Marken haben während des ganzen aufgedruckten Monats Gültigkeit.

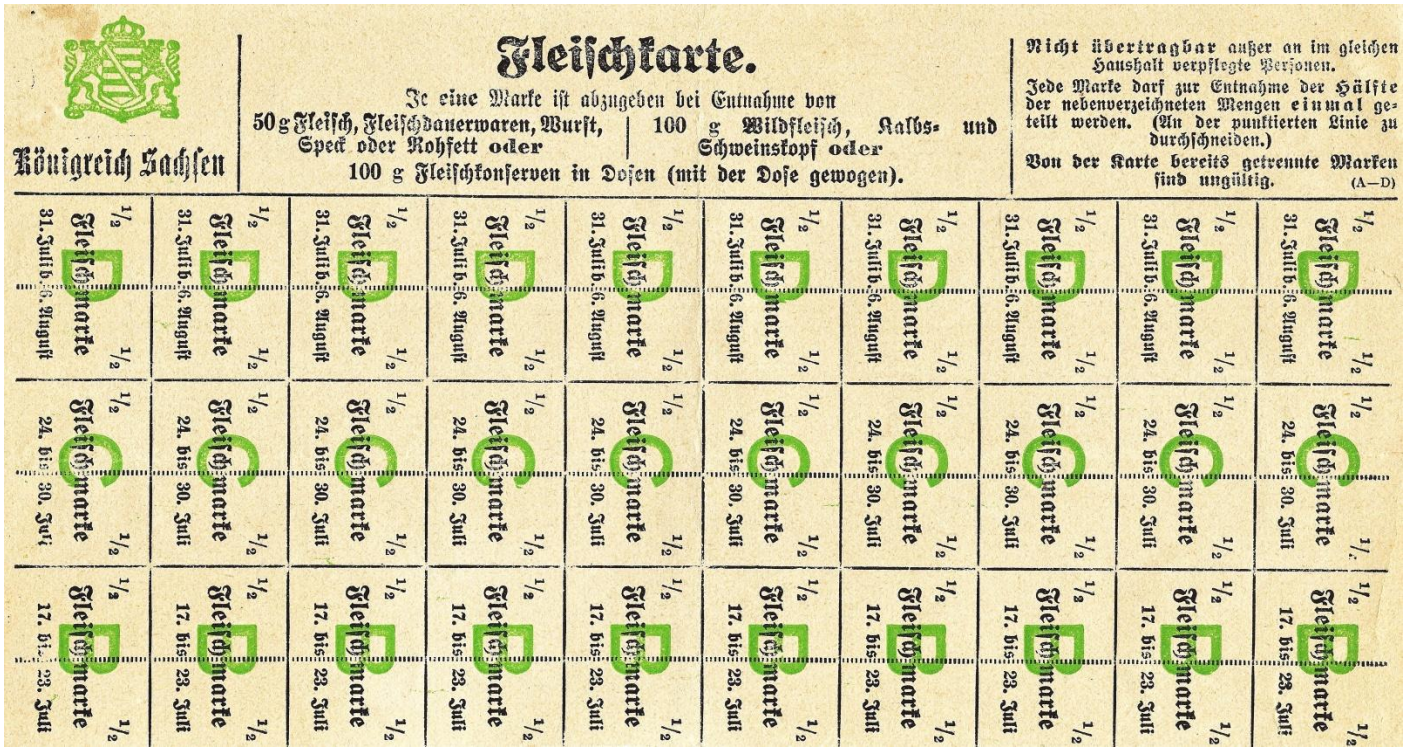
Auf je **vier** Milchmarken über insgesamt 1 Liter Magermilch kann anstatt Magermilch ein **Viertel Pfd. Quark** oder ein **Achtel Pfd.**

¼ Liter Magermilch Juli 1917

Very late in her life, my mother told me something about the terrible hunger during World War I. It is worth noting that Grandpa sold groceries, and his shop was situated between two farms. On the way

home from visiting my grandmother — who was ill at the time — she accused Grandpa: "In the evenings, you send us children to bed, and then you sit down and have a proper meal."

During World War II, this kind of hunger did not exist.























0.5 Dad & Mom



Penny farthing, 1929



On a motor bike with his brother , 1930



Proud student

Dad:



The father, celebrating a festivity in his small birthplace town of Hofgeismar



Father
Semester trip 1932 of
civil engineer students

No engineering work after studies,
1931 → 1935 !

During this time, he worked again
as a bricklayer for a relative and
for other small companies,
at maximum at the technician and
not the engineering level

Auszug aus dem Taufregister

der evangelischen Kirchengemeinde Hofgeismar-Altstadt im Kreis Hofgeismar

Jahrgang 1908 Seite 188 Nr. 1275

Alle für die Abstammung wichtigen Angaben, die in dem vorbezeichneten Eintrag enthalten sind, müssen wiedergegeben werden; auf andere Einträge darf jedoch zur Ausfüllung nicht zurückgegriffen werden.

Täufling	Edmund Rudolf August Cuntze Geboren 2. September 1908 getauft 4. Oktober
Eltern:	Adolf Julius Karl Cuntze, Lehrer an der Stadtschule Wilhelmine Friederike geb. Arnold
Sonstige für die Abstammung wichtige Angaben:	Paten waren Elise Arnold, der Mutter Schwester Apotheker Rudolf Marquart zu Kassel Landwirt August Cuntze zu Immenhausen Ferdinand Hasstadt, Hofgeismar.

Hofgeismar, den 11. April 1938

Evangelisches Kirchenbuchamt

Gebühr 0.60 RM.
Gebührenfrei
(Nichtzutreffendes ist zu durchstreichen)

Stadtschule zu Hofgeismar.

Abgangs-Zeugnis Abschrift

Edmund Cuntze, geboren am 2. September 1908
zu Hofgeismar, ev. Bekenntnisses, Sohn (Tochter) des
Lehrer Adolf C., besuchte seit Ostern 1914
die hiesige Stadtschule und war von Ostern 1916 an Schüler der
Klasse VI b, VI a, V b, V a, IV b, IV a, III b, III a, II b, II a, I erhält heute bei seinem Abgange von der Schule folgendes Zeugnis:
(3 Mädchenjahre)
* Ostern 1917

Betragen: } sehr gut.
Fleiß: }
Aufmerksamkeit: }
Ordnung: }
Schulbesuch: vorschriftsmäßig.

Leistungen (nach den Lehrzielen der Klasse) in

Religion:	gut.
Deutsch:	gut.
Rechnen:	gut.
Raumlehre:	—
Erdkunde:	—
Geschichte:	—
Naturkunde:	—
Schönschreiben:	genügend.
Zeichnen:	—
Singen:	gut.
Turnen:	—
Handarbeit:	—

Bemerkung: Edmund Cuntze trat mit Ostern 1917 in die Sexta der Progymnasium zu Hofgeismar über.

Hofgeismar, am 22. Juni 1917

Der Rektor: Dr. Groppe-Schmidt, Rektor.

Der Klassenlehrer:



Erinnerung
an die Konfirmation

Jesu geh voran
auf der Lebensbahn!

Der Friede Gottes, welcher höher ist, denn alle Vernunft, der bewahre eure Herzen und Sinne in Christo Jesu. Phil. 4, 7.

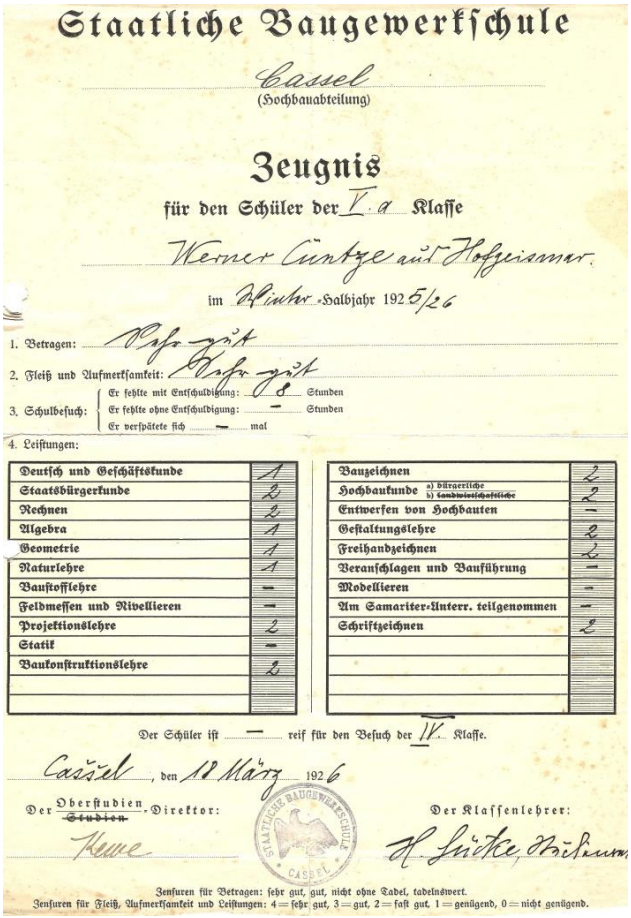
Werner Rudolf August Cuntze
geboren am 2. September 1908
ist nach empfangener Unterweisung im Worte Gottes am 20. März 1923
in der Altpfarrer Kirche zu Hofgeismar
konfirmiert worden.

Dad quit his apprenticeship once, but then got along famously with his master, as evidenced by the award.



Ausstellung
von Lehrlings-Arbeiten

award-winning apprentice work as a bricklayer



Staatliche Baugewerkschule

Cassel
(Hochbauabteilung)

Zeugnis
für den Schüler der V. a Klasse

Werner Cuntze aus Hofgeismar

im Winter-Halbjahr 1925/26

1. Betragen: sehr gut
2. Fleiß und Aufmerksamkeit: sehr gut
3. Schulbesuch: Er fehlte mit Entschuldigung: 18 Stunden; Er fehlte ohne Entschuldigung: — Stunden; Er verspätete sich — mal
4. Leistungen:

Deutsch und Geschäftskunde	1	Bauzeichnen	2
Staatsbürgerkunde	2	Hochbaukunde a) bürgerliche b) ~~landwirtschaftliche~~	2
Rechnen	2	Entwerfen von Hochbauten	—
Algebra	4	Gestaltungslehre	2
Geometrie	1	Freihandzeichnen	2
Naturlehre	1	Veranschlagen und Bauführung	—
Baustofflehre	—	Modellieren	—
Feldmessen und Nivellieren	—	Am Samariter-Unterr. teilgenommen	—
Projektionslehre	2	Schriftzeichnen	2
Statik	—		
Baukonstruktionslehre	2		

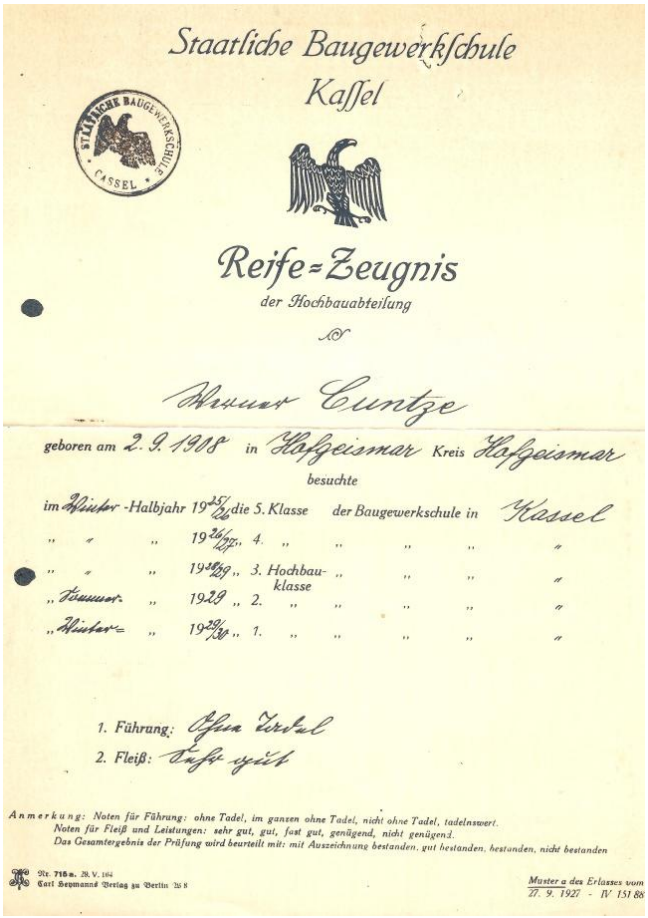
Der Schüler ist — reif für den Besuch der IV. Klasse.

Cassel, den 18 März 1926

Der Oberstudien-Direktor: Heuer

Der Klassenlehrer: H. Lütke, Baurat

Zensuren für Betragen: sehr gut, gut, nicht ohne Tadel, tadelnswert.
Zensuren für Fleiß, Aufmerksamkeit und Leistungen: 4 = sehr gut, 3 = gut, 2 = fast gut, 1 = genügend, 0 = nicht genügend.



Staatliche Baugewerkschule
Kassel

Reife-Zeugnis
der Hochbauabteilung

Werner Cuntze

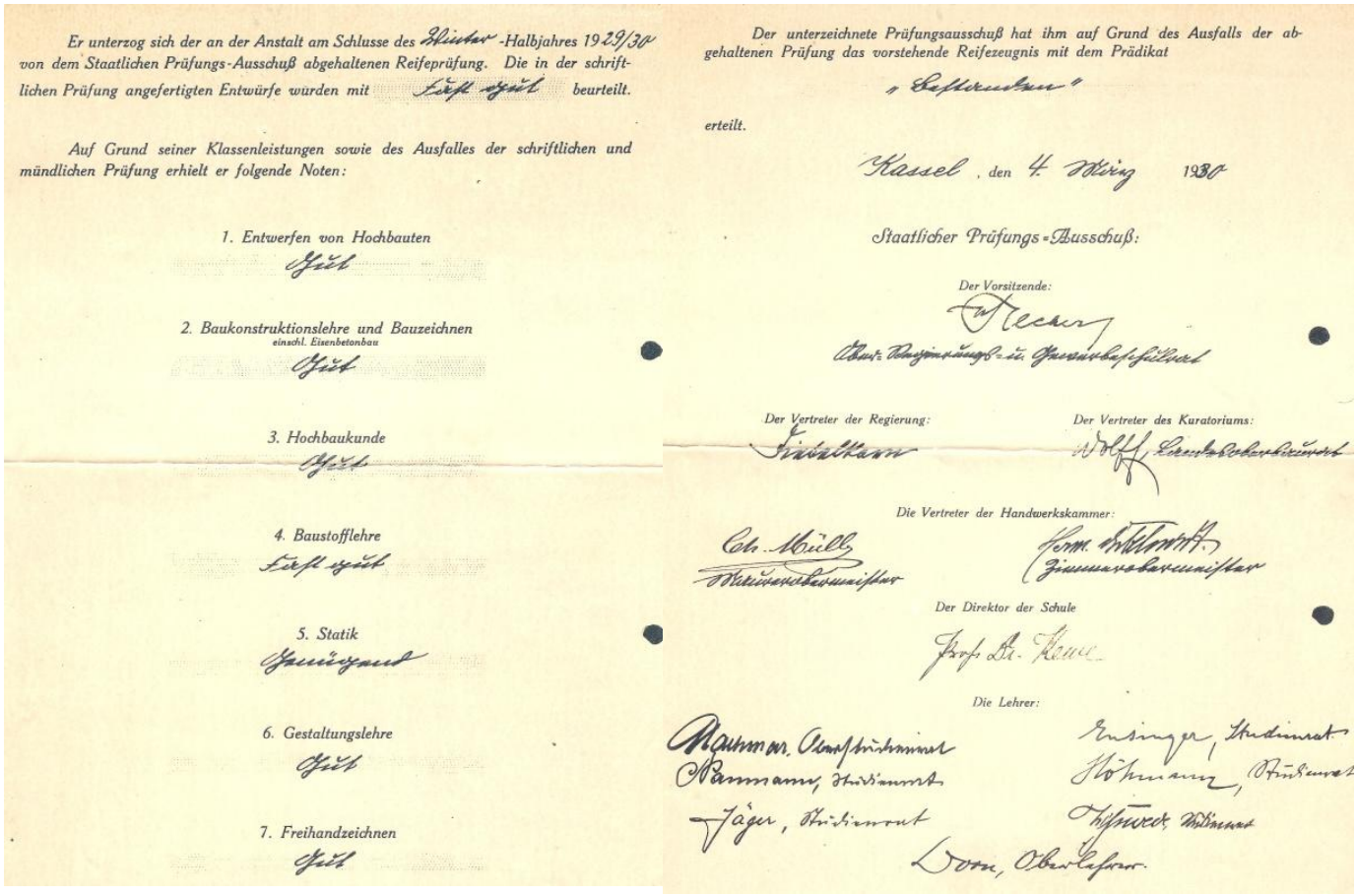
geboren am 2. 9. 1908 in Hofgeismar Kreis Hofgeismar
besuchte
im Winter-Halbjahr 1925/26 die 5. Klasse der Baugewerkschule in Kassel
" " " 1926/27 " 4. " " " " "
" " " 1927/28 " 3. Hochbauklasse " " " "
" Sommer- " 1928 " 2. " " " " "
" Winter- " 1928/29 " 1. " " " " "

1. Führung: ohne Tadel
2. Fleiß: sehr gut

Anmerkung: Noten für Führung: ohne Tadel, im ganzen ohne Tadel, nicht ohne Tadel, tadelnswert.
Noten für Fleiß und Leistungen: sehr gut, gut, fast gut, genügend, nicht genügend.
Das Gesamtergebnis der Prüfung wird beurteilt mit: mit Auszeichnung bestanden, gut bestanden, bestanden, nicht bestanden

Nr. 718 a. 28. V. 164
Carl Heymanns Verlag in Berlin W 8

Muster a des Erlasses vom 27. 9. 1927 - IV 151 88



Er unterzog sich der an der Anstalt am Schlusse des Winter-Halbjahres 1929/30 von dem Staatlichen Prüfungs-Ausschuß abgehaltenen Reifeprüfung. Die in der schriftlichen Prüfung angefertigten Entwürfe wurden mit Sehr gut beurteilt.

Auf Grund seiner Klassenleistungen sowie des Ausfalles der schriftlichen und mündlichen Prüfung erhielt er folgende Noten:

1. Entwerfen von Hochbauten — Gut
2. Baukonstruktionslehre und Bauzeichnen einschl. Eisenbetonbau — Gut
3. Hochbaukunde — Gut
4. Baustofflehre — Sehr gut
5. Statik — Genügend
6. Gestaltungslehre — Gut
7. Freihandzeichnen — Gut

Der unterzeichnete Prüfungsausschuß hat ihm auf Grund des Ausfalls der abgehaltenen Prüfung das vorstehende Reifezeugnis mit dem Prädikat

„Befriedigend"

erteilt.

Kassel, den 4. März 1930

Staatlicher Prüfungs-Ausschuß:

Der Vorsitzende:

Der Vertreter der Regierung:

Der Vertreter des Kuratoriums:

Die Vertreter der Handwerkskammer:

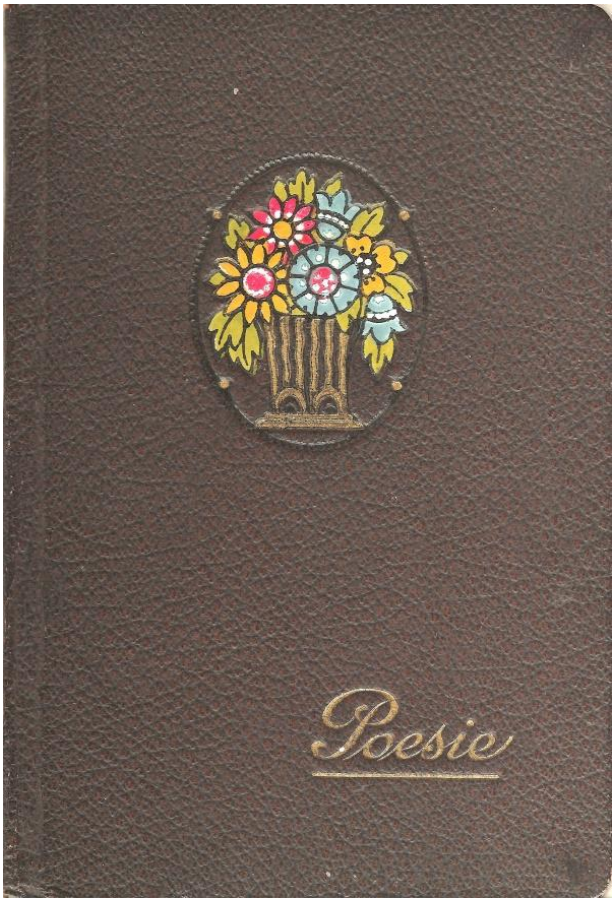
Der Direktor der Schule

Die Lehrer:

Certificates: Good enough to become a passionate engineer.

Similar to me, later.

Mom:



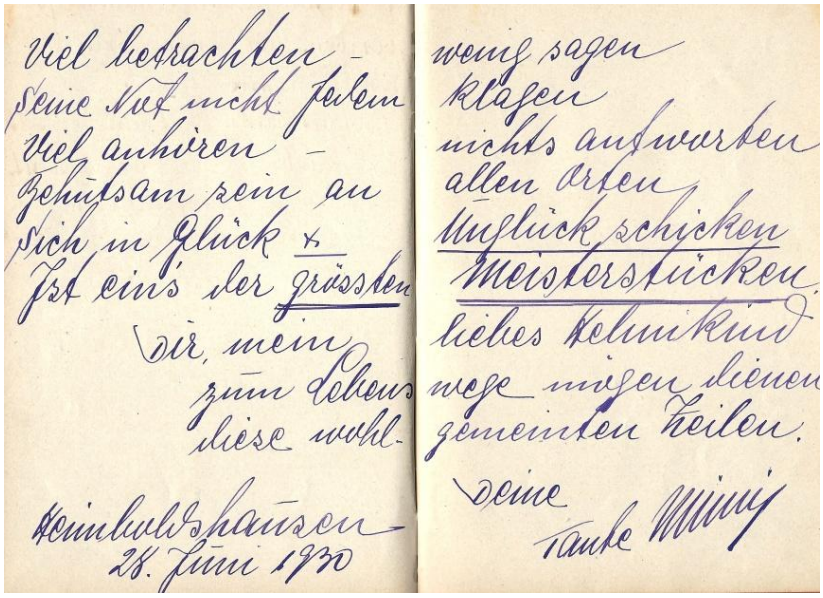
Given to my mother in 1923,
after the First World War, by a friend

Customs & traditions

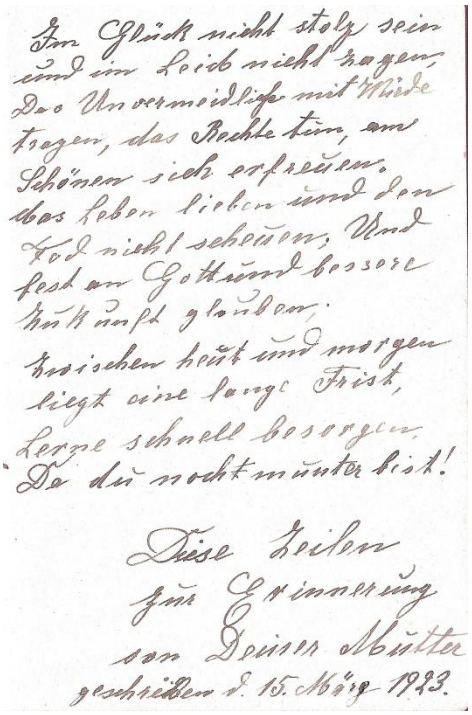
Poetry Album

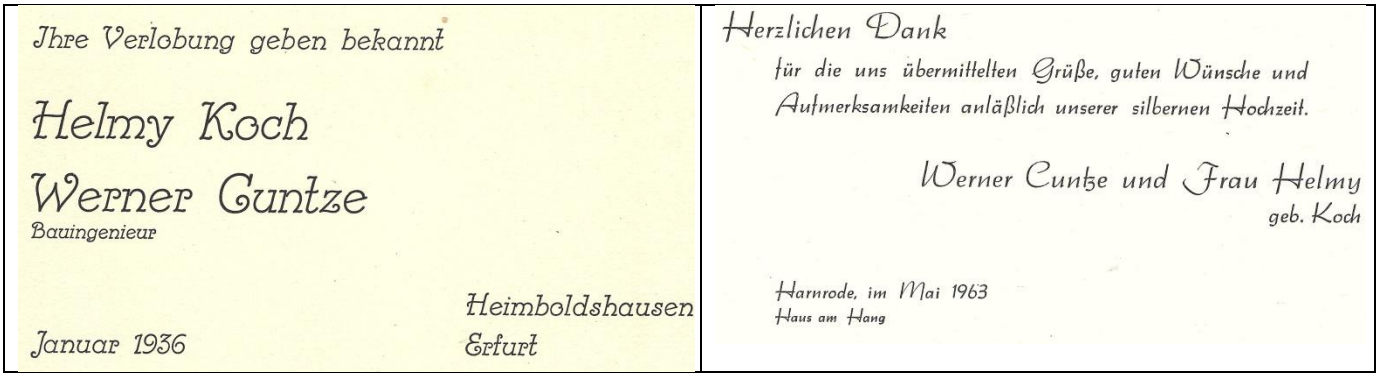
The (*album amicorum; attributed to the reformer Martin Luther*) is a hardbound book (approx. 16 cm) in which relatives and friends record rhymes, sayings, and verses as a remindr.

After the Second World War, the poetry album was no longer in such high demand,
although well-maintained poetry albums contain many interesting items from earlier times.



Poetry texts (left) from a grand aunt
(right) from her mother




Jhre Verlobung geben bekannt

Helmy Koch

Werner Cuntze

Bauingenieur

Januar 1936

Heimboldshausen

Erfurt

Herzlichen Dank

für die uns übermittelten Grüße, guten Wünsche und Aufmerksamkeiten anläßlich unserer silbernen Hochzeit.

Werner Cuntze und Frau Helmy

geb. Koch

Harnrode, im Mai 1963

Haus am Hang

Engagement 1936 at Heimboldshausen



Parents in front of grandfather's house



Grandfather's house, with Grandma and mother's sister



Grandfather's house, a General Store.

Roof structure was destroyed by grenades, March 2045

Happy parents



Dad's beloved AUDI car

1935-1945, now continually working as a Civil Engineer at "Eisenbetonbau Erfurt".

Before 1939 it became again 'normal' for getting jobs in construction industry.

Living at Erfurt during WW II.

When the bombers had planted their 'Christmas trees' in the sky, it was time to run to the bunker as quickly as possible, if there was a bunker at all. (*Thanks God, father built one in the vicinity of our apartment*).



Because of his eyes, dad was not fit for war, he built industrial plants and bunkers



The first independent steps: Comment of the relatives:

"*He's going to be a professor one day*."
This requires Strength *R* + Effort *Eff* !



Potatoe collecting at Cuntze's acre , 1941



On dad's motor bike



Traveling in Dad's company car, 1942





Three times mom





This was our 2nd apartment in Erfurt

(picture 1942, cut-out).

I remembered this view so well that in 1991, during a visit to Erfurt with my mother, I was able to find the house again.

below: Some pictures of about 1940

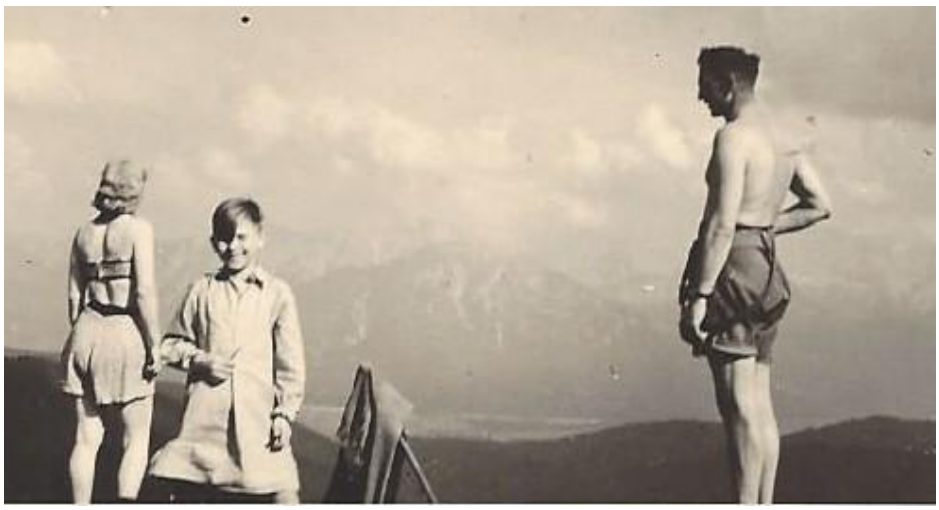




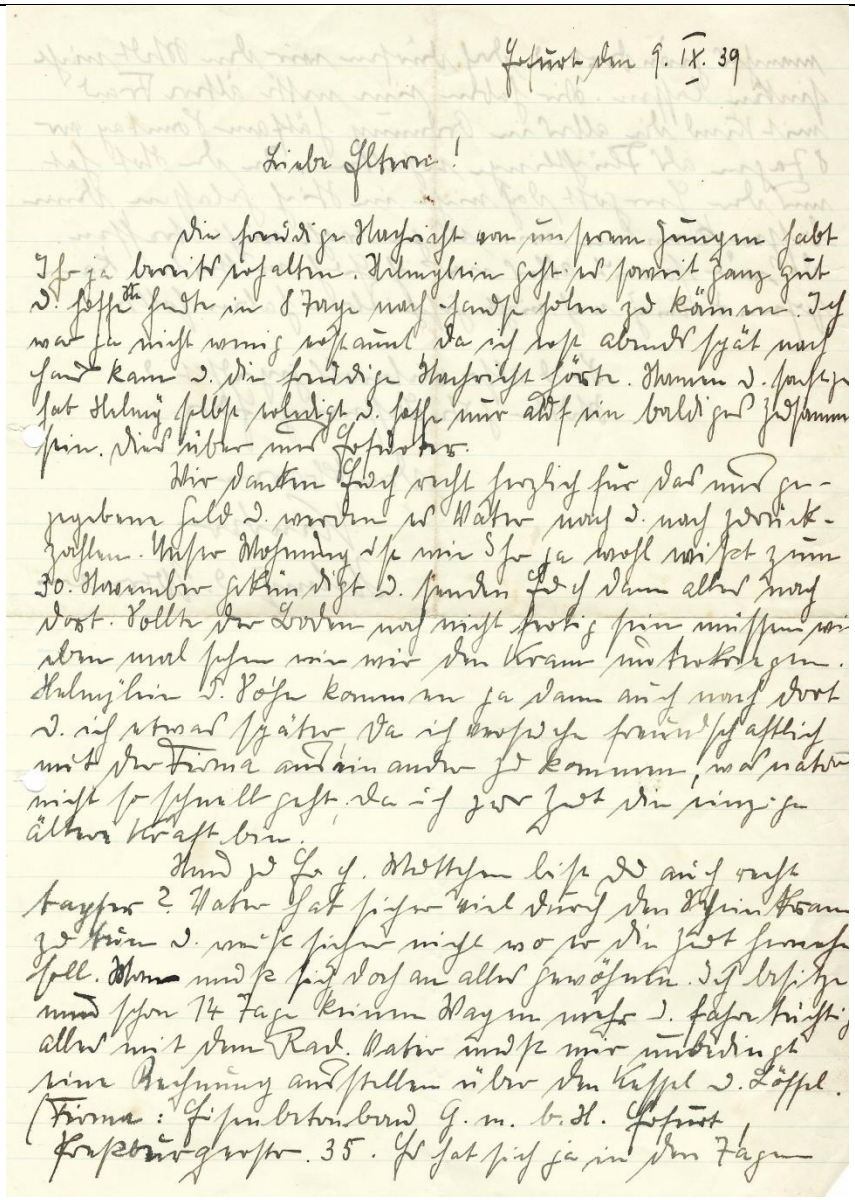




about 1938



about 1950



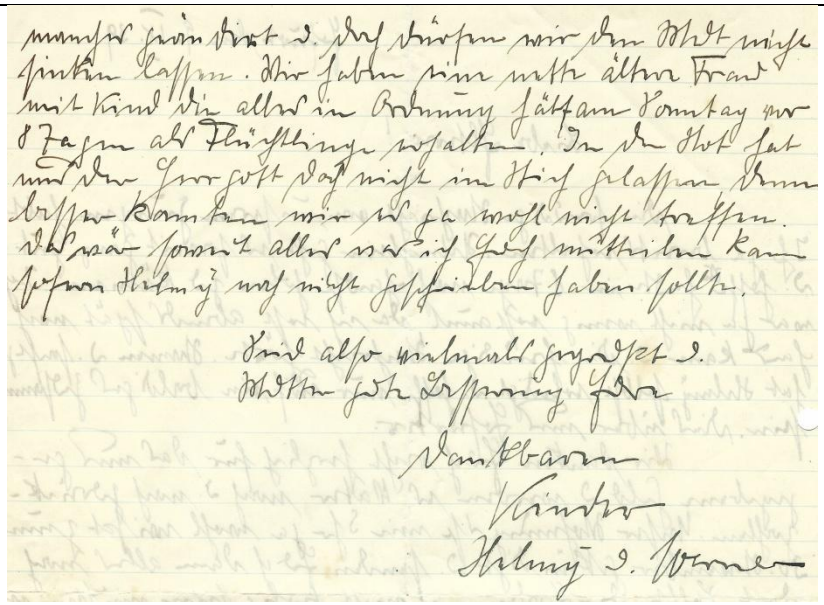
Geburt, den 9. IX. 39

Liebe Eltern!

Die freudige Nachricht von unserem jüngsten Sohn
Ihr ja bereits erhalten. Allmählich geht es soweit ganz gut
d. Hoffe bald in 8 Tage mal Land zu kommen. Ich
war ja nicht wenig erstaunt da ich hoffe abends spät mal
Land kam d. die freudige Nachricht hörte. Hannes d. Junge
hat Helmy selbst telegr. d. hoffe nun alles bald gut überstanden
sein. Viele Grüße von Hannes.

Wir danken Euch recht herzlich für das uns geschenkte Geld d. werden es Walter noch d. noch zurückzahlen. Unsere Absicht war wie Ihr ja wohl wißt zum 30. November fahren d. Hannes d. ich dann aber noch dort. Sollte der Sohn nun nicht früh genug sein müssen wir eben mal sehen wie wir den Kram unterbringen. Helmy hier d. Hoffe kommen wir ja dann auch noch dort d. ich etwas später da ich unbedingt freundschaftlich mit der Firma auseinander kommen! war vorher nicht so schnell fort, da ich der Zeit die einzige ältere Kraft bin.

Und da Ihr y. Weihnachten hier da auch recht traurig? Walter hat sicher viel Arbeit den Weihnachtsbaum zu besorgen d. wäre schön wenn wir die Zeit zusammen sein könnten. Ich und Hannes sind dann allen Besuchen. Ich bleibe noch 14 Tage hier um Wagen noch d. Hafer kriegen allerdings mit dem Rad. Walter muß mir unbedingt eine Rechnung aufstellen über den Kessel d. Löffel. Firma: Heinrich Brandt G. m. b. H. Hofgeismar. 35. Es hat sich ja in den Tagen



manches geändert d. drei stürzen wir den Welt nicht
einfach lassen. Wir haben eine nette ältere Frau
mit Kind die alles in Ordnung hält am Sonntag vor
8 Tagen als Flüchtlinge zugelaufen. In der Not hat
uns der liebe Gott doch nicht im Stich gelassen denn
bessere Leute wie sie wohl nicht treffen.
Das wäre sonst alles was ich Euch mitteilen kann
außer Helmy uns nicht geschrieben haben sollte.

Sind also wiederum gespannt d.
hoffen gute Besserung Eure

Dankbaren
Kinder
Helmy d. Werner

After my birth, my proud dad sent this nice letter to my grandparents.

Supply of Clothing & Food: examples, situation during war and after



Ausstellende Behörde: Gemeinde Heimboldshausen

Bezugschein I № 7507

für ein Paar Straßenschuhe für Frauen

An den — die ..... (Vor- und Zuname)

wohnhaft in Heimboldshausen (Ort), ... (Straße) Nr. 95

von Beruf ....., geboren am 14.3.12 in Heimboldshausen (Geburtsort)

darf innerhalb von drei Monaten vom Tage der Ausfertigung dieses Bezugscheins an ein Paar Straßenschuhe abgegeben werden.

Die Ware darf nur unter gleichzeitiger Aushändigung dieses auf der Rückseite mit einer Empfangsbescheinigung des Bezugsberechtigten versehenen Scheins ausgegeben werden. Wird die Ware durch einen Vertreter oder einen Beauftragten bezogen, so hat dieser die Empfangsbescheinigung zu vollziehen. Andere als die obenbezeichnete Ware darf nicht abgegeben werden. Der Bezugschein ist nicht übertragbar. Jeder Mißbrauch ist strafbar.

Für die Entwertung und Registrierung des Bezugscheins nach der Warenausgabe gelten besondere Vorschriften.

(Dienstsiegel) Gemeinde Heimboldshausen

Heimboldshausen den 24.11.194.

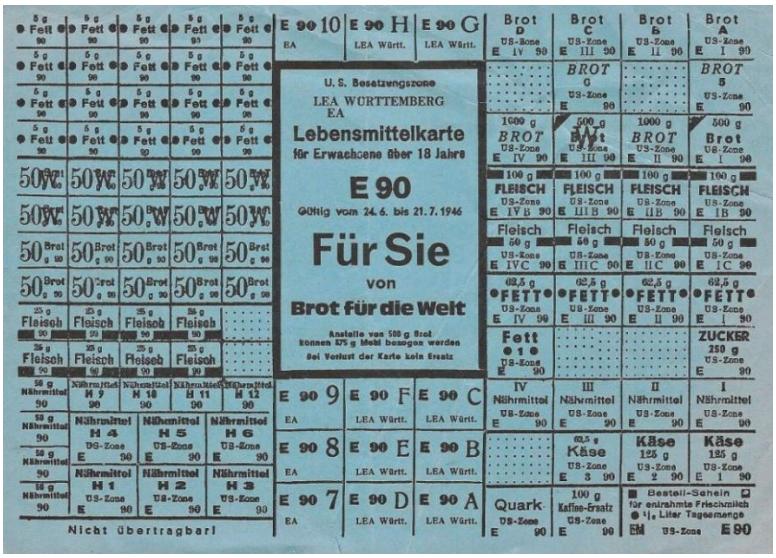
Im Auftrage:

Ausgabe März 1944

Druck: A. Bernecker, Melsungen

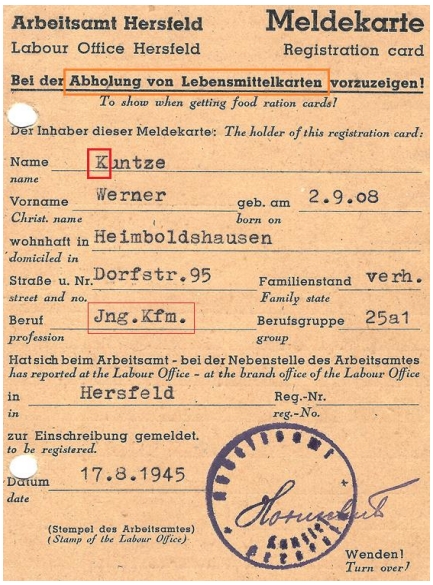
Entitlement certificate

Cloth Card 1944
(within 3 months of the issuance of this voucher, a pair of street shoes is available)



Food Ration Card

after the 2nd World War **1946** as it was in the war



Arbeitsamt Hersfeld — **Meldekarte**
Labour Office Hersfeld — Registration card

Bei der Abholung von Lebensmittelkarten vorzuzeigen!
To show when getting food ration cards!

Der Inhaber dieser Meldekarte: *The holder of this registration card:*

Name (name): Kuntze
Vorname (Christ. name): Werner — geb. am (born on): 2.9.08
wohnhaft in (domiciled in): Heimboldshausen
Straße u. Nr. (street and no.): Dorfstr.95 — Familienstand (Family state): verh.
Beruf (profession): Jng.Kfm. — Berufsgruppe (group): 25a1
Hat sich beim Arbeitsamt - bei der Nebenstelle des Arbeitsamtes (has reported at the Labour Office - at the branch office of the Labour Office)
in (in): Hersfeld — Reg.-Nr. (reg.-No.):
zur Einschreibung gemeldet. (to be registered.)
Datum (date): 17.8.1945

(Stempel des Arbeitsamtes) (Stamp of the Labour Office)

Wenden! Turn over!

Very essential Registration form at the employment office.

Registration card: to be presented when collecting food vouchers.

0.6 Erfurt (my birth town) and Heimboldshausen (growing up there)

Billing Documents of father

EISENBETONBAU GmbH.
Hoch- und Tiefbau
• Zementeinpressungen
• Verfestigungen
• baufälligerBauten etc.
Fernruf 23 466 und 23 467
Bankkonten: Mitteldeutsche Landesbank, Filiale Erfurt
Stadtsparkasse Erfurt
Postscheckkonto: Erfurt 1440
Waggonladungen: Station Erfurt-Nord (Anschlußgleis)

ERFURT, den 25. Januar 1945
Preßburger Straße 35
Reichs-Firmen-Nr. 0/0343/5221

Herrn Buchhltg.
Bauführer
Werner C u n t z e ,
i.Fa. Eisenbetonbau GmbH., Baustelle
Großeutersdorf bei Kahla (Thür.)
R E I M A H G .

Ihre Abrechnung für geleistete Überstunden und Auslagen für die Zeit vom 2.X.-29.XI.44 haben wir durchgesehen.- Für die Bezahlung der Überstunden geht natürlich die Lohnsteuer ab. Wir fügen eine Aufstellung hierbei, wonach Ihnen noch RM 49,50 zustehen, die wir Ihnen heute gleichzeitig mit dem Lohn übermitteln.-

Auch für die Abrechnung mit der Arbeitsgemeinschaft Kirchner fügen wir eine Aufstellung hierbei, wonach Ihnen noch RM 214,90 zustehen. Da Sie die Teilzahlungen schon von der Arbeitsgemeinschaft erhalten haben, ist es richtiger, daß Sie sich auch die Restzahlung von der Arbeitsgemeinschaft geben lassen, damit wir nicht noch eine besondere Rechng.für die Arbeitsgemeinschaft machen und mit Umsatzsteuer und Spesen belasten müssen.-

Heil Hitler !
Eisenbetonbaugesellschaft
m.b.H.

2 Anlagen!

Eisenbetonbaugesellschaft m.b.H.
Erfurt
Preßburgerstraße 35

Erfurt,den 15.9.1944.
Bo/W.

Herrn Bauführer
Werner Cuntze,
K a h l a
Hotel goldener Stern.

Betr.Bunkerbau Reimahg, Kahla.

Durch Herrn Flemming wird uns mitgeteilt, dass sämtliche Firmen für die von ihnen ausgeführten Arbeiten ständig tägliche Rapporte einzureichen haben, aus welchen je nach den bestehenden Verhältnissen auch die Aufnahme der Bauleistungen hervorgehen muss. Diese Rapporte müssen in jeweils 3-facher Ausfertigung eingereicht werden. Aus den Rapporten und ebenso aus den Tagelohnzetteln muss die Art der Arbeiten ersichtlich sein. Die fehlenden Rapporte sind nachzuholen und in Zukunft in obiger Weise zu verfahren. Selbstverständlich ist unserem Büro jeweils eine Abschrift zuzusenden.

Heil Hitler!
Eisenbetonbaugesellschaft
m.b.H.

Spesen-Abrechnung

des Bauführer Wern Cuntze mit der Eisenbetonbau GmbH.,
E r f u r t

	Überstunden:	Auslagen:
2.X. - 8.X.44	RM 62,--	RM 61,50
9.X. - 15.X.44. . . .	" 35,70	" 60,20
16.X. - 22.X.44 . . .	" 68,30 xx	" 66,20
25.X. - 31.X.44 . . .	" 46,20	" 66,50
1.XI.- 6.XI.44 . . .	" 68,30	" 61,20
7." - 12.XI.44 . . .	" 44,10	" 58,80
13." - 19.XI.44 . . .	" 73,56	" 64,80
20. " - 26.XI.44 . . .	" 75,14	" 59,10
27." - 29.XI.44 . . .	" 16,80 x)	" 34,80
	RM 490,10	RM 533,10
ab Lohnsteuer 13% =	" 63,70	..."+ 426,40
		RM 959,50
ab 9 mal RM 100,-- = ...		" - 900,--
bleiben		RM 59,50

x) 8 Uebertd waren nicht berechnet, zugesetzt
xx) es fehlt den 23.-24.XI.44

Erfurt, den 25. Januar 1945.
Eisenbetonbaugesellschaft
m.b.H.

Construction site reporting and overtime billing in Dad's company at the end of the war.

My birth town Erfurt, a carnival stronghold



Der Präsident
der Ersten Thüringer Faschingsgesellschaft
zu Erfurt an das Volk:

Erfurter! Thüringer!

Der gesunde deutsche Mensch faßt das Leben ernst auf. Er ist bereit zur Arbeit und erfüllt bewußt Volk und Vaterland gegenüber seine Pflicht. Er hat aber auch eine fröhliche Saite und ist in der Gegenwart, nachdem der Führer Deutschland befreit und wieder gesund und stark gemacht hat, mehr denn je berechtigt, diese Saite klingen zu lassen. Wenn wir um die Faschingszeit zu närrischem Spiel und Treiben aufrufen, dann haltet das den Meckerern und Mießmachern entgegen und seid mit uns in diesen Tagen lustig beim Wein, beim Sang und Tanz.
Wir wollen nichts Neues mit unserem Erfurter Fasching schaffen. In ihm kommen Sitten und Bräuche vergangener Zeiten zum Ausdruck. Altes, deutsches Brauchtum wollen wir pflegen. Wir rufen euch auf, uns hierbei zu helfen.

Deutschland lebt! Erfurt lebt!

Darum hinein in einen fröhlichen Fasching 1939!

Erfurt, den 5. Hornung 1939. **Dr. Mund,**
SA.-Standartenführer und Stadtrat.

The President of the
First Thuringian Carnival Society
in Erfurt to the people

Erfurters! Thuringians!
The healthy German takes life seriously. He is ready to work and consciously fulfills his duty to the people and the fatherland. But he also has a cheerful side, and in the present, after the Führer (Hitler) has liberated Germany and made it healthy and strong again, he is more than ever justified in letting this chord resonate. When we call for foolish games and activities around Carnival time, then hold this against the complainers and naysayers and join us in these days of fun with wine, song, and dance.
We don't want to create anything new with our Erfurt Carnival. It expresses the customs and traditions of bygone times. We want to cultivate old German traditions. We call on you to help us in this.

Germany lives! Erfurt lives!

So, into a joyful Carnival 1939

Erfurt, 5th Hornung, 1939 . Dr. Mund
SA Standartenführer and City Councilor

Dr. Mund's formulations in my birth year and my birthplace, Erfurt, will be simply felt alien to present readers.

Not signing with *Heil Hitler* !! ??

Associated history:

The Sturmabteilung (SA) was the paramilitary combat organization of the Nazi Party (NSDAP) during the Weimar Republic. As a security force (wearing a brown uniform), it played a crucial role in the rise of the National Socialists, using force to shield their assemblies from groups of political opponents or disrupting opposing events. In the run-up to the Nazi seizure of power in 1933, the organization, in addition to propaganda, devoted itself intensively to street fighting and attacks on Social Democrats, Communists, and Jews.

Hitler's potential rival: *Ernst Röhm*

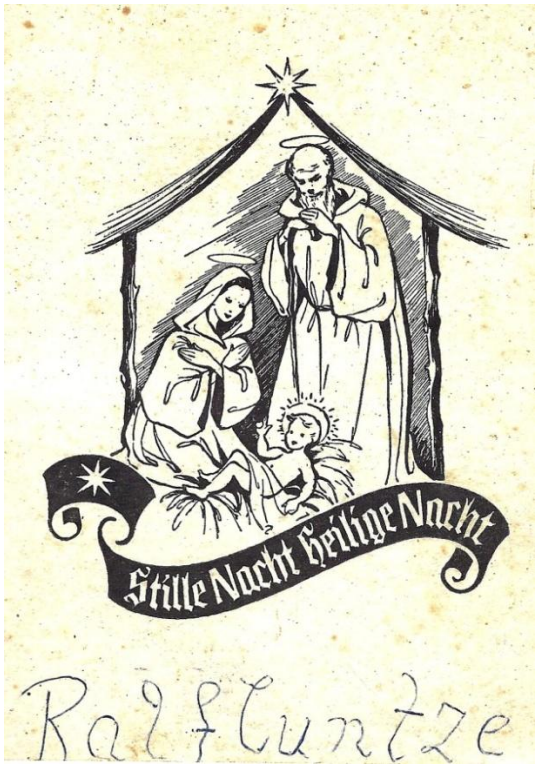
The Schutzstaffel (SS) was an organization during the Nazi era. Founded in 1925, it became the most powerful organization in the Nazi Reich under the leadership of Heinrich Himmler. The SS was responsible for the secret services and commanded the police.
The atrocities committed by the SS, which considered itself an elite force, included the murder of millions of people in concentration camps and numerous war crimes.

With the founding of the SS, the two organizations became rivals. To get rid of Röhm, Hitler falsely accused him of plotting a coup and had him arrested on June 30, 1934. On July 1, Röhm was shot in his prison cell.

The denazification trial of Josef Neckermann (1912-1992) took place in Munich and concluded on May 3, 1948. Neckermann, a member of the Nazi Party, was classified merely as a "fellow traveler" of the Nazi regime. The tough businessman Josef Neckermann founded a textile company in 1948 – the year of the currency reform. His wife Annemarie (balancing Josef ??) took care of their many children and published above booklets for Christmas.
As a dressage rider, Josef Neckermann won a total of 333 tournaments between 1956 and 1981, six Olympic medals, including two gold medals with the German team in 1964 and 1968, and the world championship titles in 1966 in both individual and team competitions.
For me, Neckermann was the leading mail-order company.

Christmas present 1951







Being well-dressed was part of
enjoying life
at that time



Father and colleagues on a civil engineers education trip



enjoyable cigar smoker





In our log cabin



Beloved family members



Visiti of friends



Mother in the kitchen





1960, Visit of my Grandma and of my North-Tyrol friend Alois, who looked for a job at that time, because the job situation was bad in the Alpine regions (contrast to now)

And the traditional yearly Cuntze-Family Festivities *(branch Hofgeismar)*



Family festivity in the fifties.

And in 2025 my nephew Volker (88) said: “Ralf, you are the only one left from the big family for me!”



in front: my generation

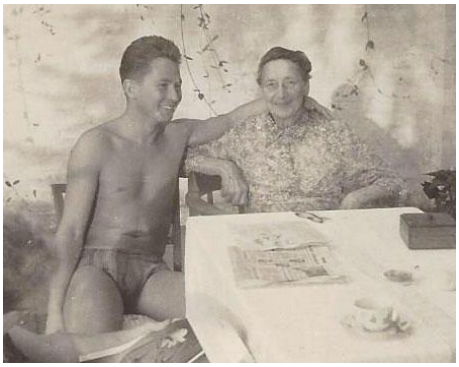


Grandma’s 90 years birthday





Dad and son



Grandma and grandson



Son and mum

and later



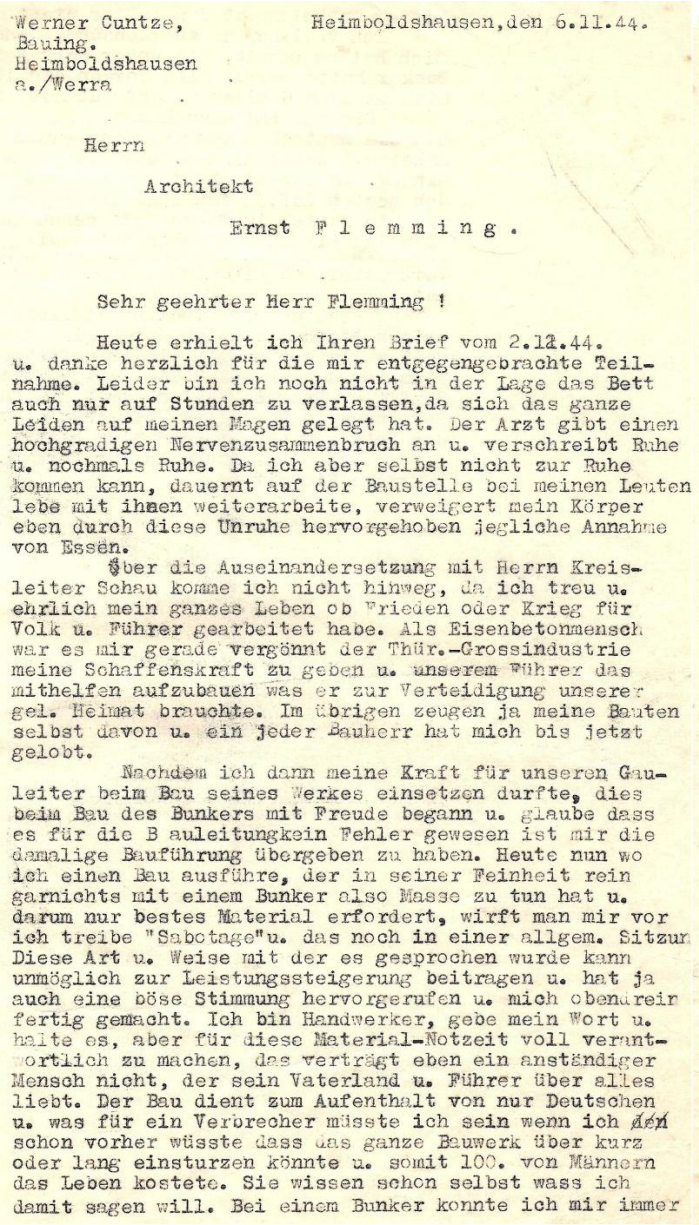




After 1958, our frequent holiday home in Oetz, Tyrol, at the parents house of my friend Alois



Sabotage accusation in 1944 by the Thuringia's- "Gauleiter" Fritz Sauckel



Werner Cuntze, Heimboldshausen, den 6.11.44.
Bauing.
Heimboldshausen
a./Werra

Herrn

Architekt

Ernst F l e m m i n g .

Sehr geehrter Herr Flemming !

Heute erhielt ich Ihren Brief vom 2.12.44. u. danke herzlich für die mir entgegengebrachte Teilnahme. Leider bin ich noch nicht in der Lage das Bett auch nur auf Stunden zu verlassen, da sich das ganze Leiden auf meinen Magen gelegt hat. Der Arzt gibt einen hochgradigen Nervenzusammenbruch an u. verschreibt Ruhe u. nochmals Ruhe. Da ich aber selbst nicht zur Ruhe kommen kann, dauernt auf der Baustelle bei meinen Leuten lebe mit ihnen weiterarbeite, verweigert mein Körper eben durch diese Unruhe hervorgehoben jegliche Annahme von Essen.

Über die Auseinandersetzung mit Herrn Kreisleiter Schau komme ich nicht hinweg, da ich treu u. ehrlich mein ganzes Leben ob Frieden oder Krieg für Volk u. Führer gearbeitet habe. Als Eisenbetonmensch war es mir gerade vergönnt der Thür.-Grossindustrie meine Schaffenskraft zu geben u. unserem Führer das mithelfen aufzubauen was er zur Verteidigung unserer gel. Heimat brauchte. Im übrigen zeugen ja meine Bauten selbst davon u. ein jeder Bauherr hat mich bis jetzt gelobt.

Nachdem ich dann meine Kraft für unseren Gauleiter beim Bau seines Werkes einsetzen durfte, dies beim Bau des Bunkers mit Freude begann u. glaube dass es für die Bauleitungkein Fehler gewesen ist mir die damalige Bauführung übergeben zu haben. Heute nun wo ich einen Bau ausführe, der in seiner Feinheit rein garnichts mit einem Bunker also Masse zu tun hat u. darum nur bestes Material erfordert, wirft man mir vor ich treibe "Sabotage"u. das noch in einer allgem. Sitzur Diese Art u. Weise mit der es gesprochen wurde kann unmöglich zur Leistungssteigerung beitragen u. hat ja auch eine böse Stimmung hervorgerufen u. mich obendrein fertig gemacht. Ich bin Handwerker, gebe mein Wort u. halte es, aber für diese Material-Notzeit voll verantwortlich zu machen, das verträgt eben ein anständiger Mensch nicht, der sein Vaterland u. Führer über alles liebt. Der Bau dient zum Aufenthalt von nur Deutschen u. was für ein Verbrecher müsste ich sein wenn ich den schon vorher wüsste dass das ganze Bauwerk über kurz oder lang einsturzen könnte u. somit 100. von Männern das Leben kostete. Sie wissen schon selbst wass ich damit sagen will. Bei einem Bunker konnte ich mir immer wieder aushelfen aber hier geht das leider nicht.

Ich verlange wirklich keine Anerkennung, denn mich hat es schon tief berührt, als unser Herr Reichsmarschall mir seine Hand bot u. alle Sorgen die ich Bunker hatte waren wie verflogen u. gefreut habe ich mich unserem Gauleiter geholfen zu haben.

Diesmal hat man mich des grössten Verbrechens den ein Deutscher beschuldigt werden kann, der Sabotage" bezichtigt u. darüber komme ich eben nicht hinweg. Wo ich bis heute gelebt habe besitze ich nur den besten Ruf, ja ich lege Ihnen ein Zeugniss bei, da mir die Partei im Jahre 1934 schon ausstellte. Herr Flemming Sie müssen schon entschuldigen wenn ich so ausgreife, aber meine Kinder sollen mal einen guten braven Deutschen als Vater gehabt haben u. nicht ein Verbrecher, so wie mich der Herr Kreisleiter hingestellt hat.

Nach meiner Wiederherstellung werde ich sofort meinen Posten, den ich durch diesen unnötigenZwischenfall verlassen musste wieder aufnehmenu. Ihnen Herr Flemming dessen seien Sie gewiss weiterhin mit aller Krafft u. Energie helfen, damit Sie schnellstens das Werk unserem Gauleiter übergeben u. dieser wiederum dem Volk zum endgüldigem Sieg beitragen wird.

Ich danke nochmals für Ihre netten Zeilen u. begrüsse Sie mit

H e i l H i t l e r !

Following the letter above:

My father was dismissed from his bridge construction site by Sauckel for undermining the war effort (Sabotage). He was accused of wasting materials. This was devastating for my father because he had done everything correctly from an engineering standpoint. He became quite ill at the end of 1944 as a result of this *life-threatening* accusation.

(*Fritz Sauckel was described as the "most brutal slave driver since the Egyptian pharaohs" at the Nuremberg war crimes trials in 1945 and was subsequently executed. As Hitler's "General Plenipotentiary for Labor Deployment," he was responsible for the recruitment of millions of people from all parts of Europe for forced labor in the German Reich*).

Eventually, due to the facts, they had to bring him back to the construction site.

0.7 Dad's effort to get his car (from Audi Union AG, DKW) in the Sovietic Zone

1	Art des Fahrzeugs	*) Personenwagen, Omnibus, Krankenwagen Lastwagen, Kipper, Kraftstoffkesselwagen Zugmaschine, Sattelschlepper Sonstiges Kraftfahrzeug: für Feuerlöschzwecke, für Straßenreinigung, für sonstige Zwecke (Näheres unter Nr. 19)
2	Fahrgestell a) Hersteller b) Fabriknummer c) Baujahr	AUTO UNION A-G 61 587 1939
3	Antriebsmaschine a) Art des Antriebs b) Leistung c) Hubraum (nur bei Verbrennungsmaschinen) d) Fabriknummer e) Hersteller f) Takt	*) Verbrennungsmaschine (Vergaser-, Diesel-, Flüssiggas-, Hochdruckgas-, Glühkopfmotor, Gasgenerator für Holz – für Kohle) – Dampfmaschine – Elektromotor 32 PS 1047 cm³ (Zahl der Zylinder: 4; Durchmesser der Zylinder: 70 mm; Kolbenhub: 68,5 mm) 749 457 AUTO UNION A-G *) Zweitakt – Viertakt
4	Eigengewicht des Fahrzeugs	1010 kg
5	a) Zulässige Belastung b) Zulässiges Gesamtgewicht c) Nutzlast (nur bei Lastwagen und Omnibussen) d) Tragfähigkeit des Fahrgestells (nur bei Lastwagen und Omnibussen)	400 kg 1410 kg kg kg

*) Zutreffendes ist zu unterstreichen.

Kraftfahrzeugbrief I № 561 381 C

6	Zahl der Sitze (einschl. Führersitz und Notsitze)	Bei Personenwagen: 4 Sitzplätze Bei Omnibussen: Sitzplätze, Stehplätze Bei Krankenwagen: Sitzplätze, Liegeplätze
7	Art des Aufbaus a) bei Personenwagen b) bei Lastwagen	*) Offen – Geschlossen – Kabriolett – Roll- oder Schiebedach – Kabrio-Limusine *) Plattform – Offener Kasten – Geschlossener Kasten – Plan mit festem Spriegelgestell – Lose Spriegel (Näheres, z. B. abnehmbarer Limusinenaufsatz, Blecheinsatz für Fleischtransporte, unter Nr. 19)
8	Maße über alles, bei Sattelschleppern einschl. aufgesatteltem Anhänger (Länge, Breite und Höhe des Fahrzeugs einschl. Verdeck oder Spriegel)	Länge 4150 mm Breite 1600 mm Höhe 1650 mm
9	Räder, Bereifung, Gleisketten a) Rad- oder Gleiskettenantrieb? b) Zahl der Räder ohne Ersatzräder (Zwillingsräder sind einfach zu rechnen) c) Zahl der angetriebenen Achsen d) Art der Bereifung e) Mindestgröße der Bereifung f) Felgengröße (z. B. 3,25 E × 17) g) Sind Greifer vorhanden? (nur bei Zugmaschinen)	*) Radantrieb – Gleisketten – Räder und Gleisketten – Räder oder Gleisketten (auswechselbar) 4 1 *) vorn (einfach – doppelt): Luft – Elastik – Eisen hinten (einfach – doppelt): Luft – Elastik – Eisen vorn: 5,25 – 9 × 16, hinten: vorn: 3,25 – 8 × 16, hinten: *) Ja – Nein

*) Zutreffendes ist zu unterstreichen.

Kraftfahrzeugbrief I № 561 381 C

10	Kleinste Bodenfreiheit	190 mm
11	Bremsanlage a) Art der Bremsen b) Hersteller c) Bei Druckluft Höhe des Bremsdruckes d) Besteht Bremsanschluß zum Anhänger?	*) Mechanisch – Druckluft – Saugluft – Hydraulisch AUTO UNION A-G atü *) Ja – Nein
12	Ist Anhängerkupplung vorhanden? Wenn ja: a) Art der Befestigung des Anhängers b) Durchmesser des Durchsteckbolzens oder der Kupplungskugel c) Höhe der Anhängerkupplung über der Fahrbahn d) Größte Zugkraft (nur bei Zugmaschinen einschl. Sattelschleppern) auf der Straße auf dem Acker	*) Ja – Nein *) Durchsteckbolzen–Protzhakenkupplung–Kugelkupplung mm mm kg bei km/Std. kg bei km/Std.
13	Ist Seilwinde oder Spill vorhanden? (außer bei Personenwagen) Wie angetrieben?	*) Ja – Nein *) Von Hand – Von Motor
14	Höchstgeschwindigkeit auf ebener Bahn	95-100 km/Std.

*) Zutreffendes ist zu unterstreichen.

Kraftfahrzeugbrief I № 561 381 C

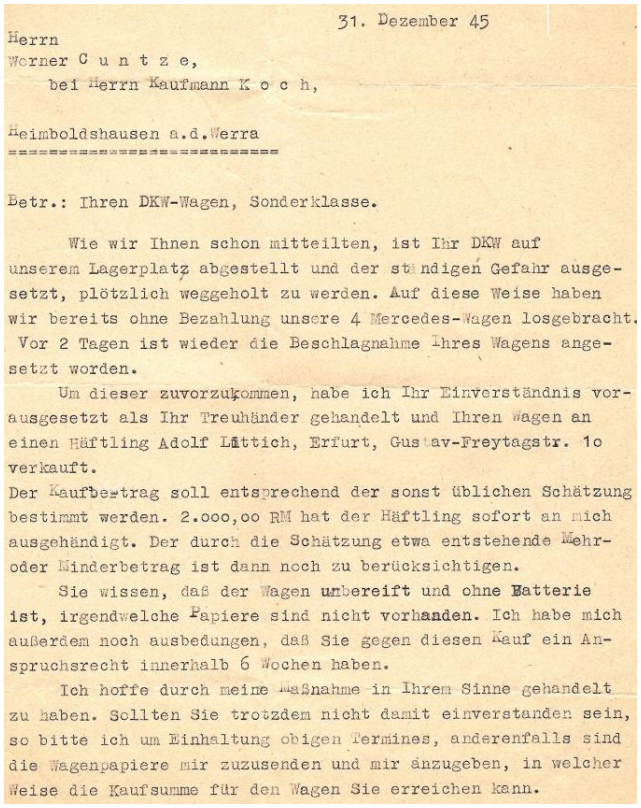
		Achsdruck (in der Reihenfolge der Achsen von vorn nach hinten)	Felgendruck
15	Zulässiger Achs- und Felgendruck im beladenen Zustand (außer bei Krafträdern; Felgendruck nur bei nicht luftbereiften Fahrzeugen)	622 kg 790 kg kg	kg kg kg

16	Laderaum (nur bei Lastwagen) a) Lichte Maße des Laderaums innerhalb der festen Wände Falls Aufsteckbretter vorhanden b) Höhe der Ladefläche über der Fahrbahn c) Ist Ladefläche mit Blech ausgeschlagen? d) Sind Vorrichtungen zur Anbringung von Sitzen vorhanden?	Länge mm, Breite mm, Höhe mm Zusätzliche Höhe mm mm *) Ja – Nein *) Ja – Nein
17	Bei Kraftstoffkesselwagen a) Fassungsvermögen b) An wieviel Stellen kann gleichzeitig gezapft werden? c) Höhe der Zapfstellen über der Fahrbahn d) Ist Vorrichtung zum mechanischen Füllen und Entleeren eingebaut?	m³ An Stellen mm *) Ja – Nein
18	Listenpreis des fabrikneuen Fahrzeugs	3.108,44 RM unbereift

*) Zutreffendes ist zu unterstreichen.

Kraftfahrzeugbrief I № 561 381 C

Back then, a car was the most valuable asset: List price 3108 RM, without tires! Motor 1050 cm^3, 32 PS, max speed 100 km/h.



31. Dezember 45

Herrn
Werner C u n t z e,
bei Herrn Kaufmann K o c h,

Heimboldshausen a.d.Werra

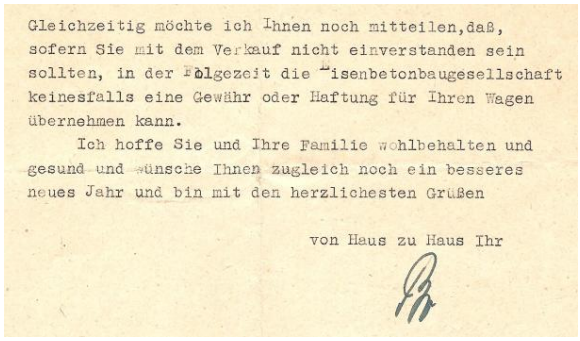
Betr.: Ihren DKW-Wagen, Sonderklasse.

Wie wir Ihnen schon mitteilten, ist Ihr DKW auf unserem Lagerplatz abgestellt und der ständigen Gefahr ausgesetzt, plötzlich weggeholt zu werden. Auf diese Weise haben wir bereits ohne Bezahlung unsere 4 Mercedes-Wagen losgebracht. Vor 2 Tagen ist wieder die Beschlagnahme Ihres Wagens angesetzt worden.

Um dieser zuvorzukommen, habe ich Ihr Einverständnis vorausgesetzt als Ihr Treuhänder gehandelt und Ihren Wagen an einen Häftling Adolf Lüttich, Erfurt, Gustav-Freytagstr. 1o verkauft.
Der Kaufbetrag soll entsprechend der sonst üblichen Schätzung bestimmt werden. 2.ooo,oo RM hat der Häftling sofort an mich ausgehändigt. Der durch die Schätzung etwa entstehende Mehr- oder Minderbetrag ist dann noch zu berücksichtigen.

Sie wissen, daß der Wagen unbereift und ohne Batterie ist, irgendwelche Papiere sind nicht vorhanden. Ich habe mich außerdem noch ausbedungen, daß Sie gegen diesen Kauf ein Anspruchsrecht innerhalb 6 Wochen haben.

Ich hoffe durch meine Maßnahme in Ihrem Sinne gehandelt zu haben. Sollten Sie trotzdem nicht damit einverstanden sein, so bitte ich um Einhaltung obigen Termines, anderenfalls sind die Wagenpapiere mir zuzusenden und mir anzugeben, in welcher Weise die Kaufsumme für den Wagen Sie erreichen kann.

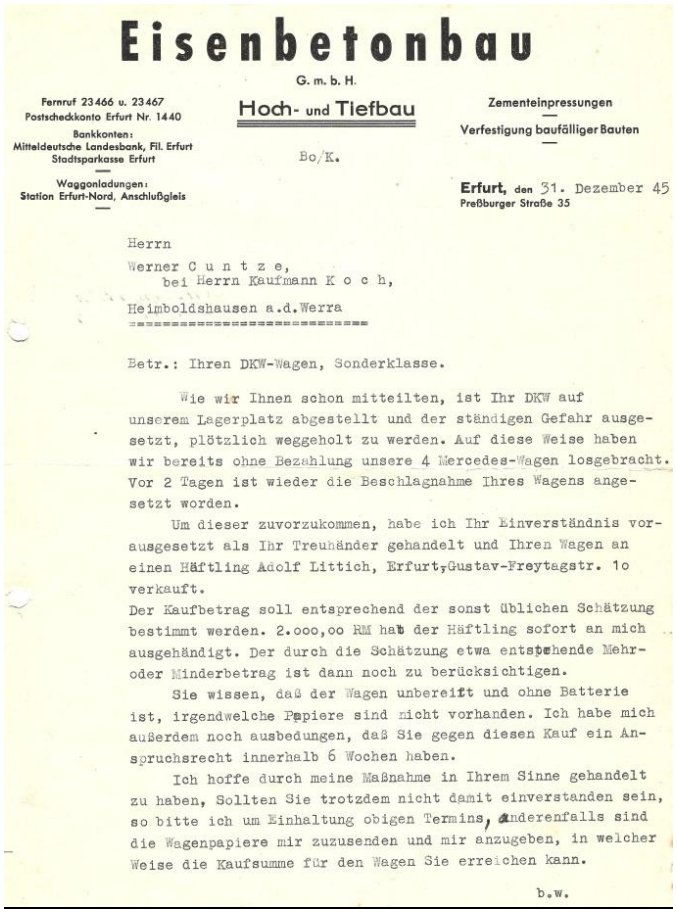


Gleichzeitig möchte ich Ihnen noch mitteilen,daß, sofern Sie mit dem Verkauf nicht einverstanden sein sollten, in der Folgezeit die Eisenbetonbaugesellschaft keinesfalls eine Gewähr oder Haftung für Ihren Wagen übernehmen kann.

Ich hoffe Sie und Ihre Familie wohlbehalten und gesund und wünsche Ihnen zugleich noch ein besseres neues Jahr und bin mit den herzlichesten Grüßen

von Haus zu Haus Ihr

Letter from his former boss in Erfurt regarding Dad's car etc.



Eisenbetonbau
G. m. b. H.

Fernruf 23466 u. 23467
Postscheckkonto Erfurt Nr. 1440
Bankkonten:
Mitteldeutsche Landesbank, Fil. Erfurt
Stadtsparkasse Erfurt
Waggonladungen:
Station Erfurt-Nord, Anschlußgleis

Hoch- und Tiefbau

Zementeinpressungen
Verfestigung baufälliger Bauten

Bo/K.

Erfurt, den 31. Dezember 45
Preßburger Straße 35

Herrn
Werner C u n t z e,
bei Herrn Kaufmann K o c h,

Heimboldshausen a.d.Werra

Betr.: Ihren DKW-Wagen, Sonderklasse.

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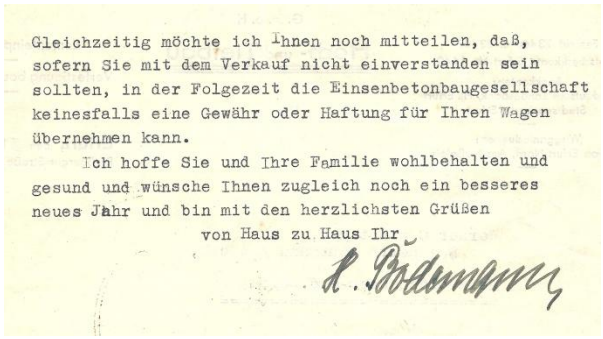
b.w.

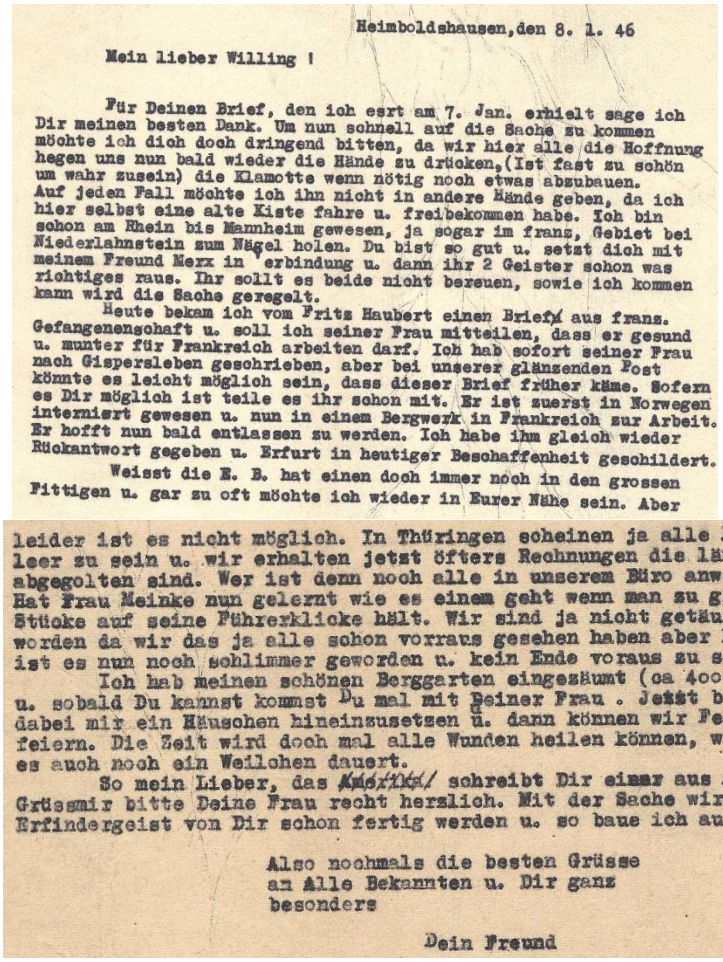


Gleichzeitig möchte ich Ihnen noch mitteilen, daß, sofern Sie mit dem Verkauf nicht einverstanden sein sollten, in der Folgezeit die Einsenbetonbaugesellschaft keinesfalls eine Gewähr oder Haftung für Ihren Wagen übernehmen kann.

Ich hoffe Sie und Ihre Familie wohlbehalten und gesund und wünsche Ihnen zugleich noch ein besseres neues Jahr und bin mit den herzlichsten Grüßen

von Haus zu Haus Ihr

L. Bodemann



Heimboldshausen, den 8. 1. 46

Mein lieber Willing !

Für Deinen Brief, den ich esrt am 7. Jan. erhielt sage ich Dir meinen besten Dank. Um nun schnell auf die Sache zu kommen möchte ich dich doch dringend bitten, da wir hier alle die Hoffnung hegen uns nun bald wieder die Hände zu drücken, (Ist fast zu schön um wahr zusein) die Klamotte wenn nötig noch etwas abzubauen. Auf jeden Fall möchte ich ihn nicht in andere Hände geben, da ich hier selbst eine alte Kiste fahre u. freibekommen habe. Ich bin schon am Rhein bis Mannheim gewesen, ja sogar im franz, Gebiet bei Niederlahnstein zum Nägel holen. Du bist so gut u. setzt dich mit meinem Freund Merx in Verbindung u. dann ihr 2 Geister schon was richtiges raus. Ihr sollt es beide nicht bereuen, sowie ich kommen kann wird die Sache geregelt.

Heute bekam ich vom Fritz Haubert einen Brief aus frans. Gefangenenschaft u. soll ich seiner Frau mitteilen, dass er gesund u. munter für Frankreich arbeiten darf. Ich hab sofort seiner Frau nach Gispersleben geschrieben, aber bei unserer glänzenden Post könnte es leicht möglich sein, dass dieser Brief früher käme. Sofern es Dir möglich ist teile es ihr schon mit. Er ist zuerst in Norwegen interniert gewesen u. nun in einem Bergwerk in Frankreich zur Arbeit. Er hofft nun bald entlassen zu werden. Ich habe ihm gleich wieder Rückantwort gegeben u. Erfurt in heutiger Beschaffenheit geschildert.

Weisst die E. B. hat einen doch immer noch in den grossen Fittigen u. gar zu oft möchte ich wieder in Eurer Nähe sein. Aber leider ist es nicht möglich. In Thüringen scheinen ja alle Kas leer zu sein u. wir erhalten jetzt öfters Rechnungen die längs abgegolten sind. Wer ist denn noch alle in unserem Büro anwese Hat Frau Meinke nun gelernt wie es einem geht wenn man zu gros Stücke auf seine Führerklicke hält. Wir sind ja nicht getäusch worden da wir das ja alle schon voraus gesehen haben aber heu ist es nun noch schlimmer geworden u. kein Ende voraus zu sehe

Ich hab meinen schönen Berggarten eingesäumt (ca 400 m u. sobald Du kannst kommst Du mal mit Deiner Frau . Jetzt bin dabei mir ein Häuschen hineinzusetzen u. dann können wir Feste feiern. Die Zeit wird doch mal alle Wunden heilen können, wenn es auch noch ein Weilchen dauert.

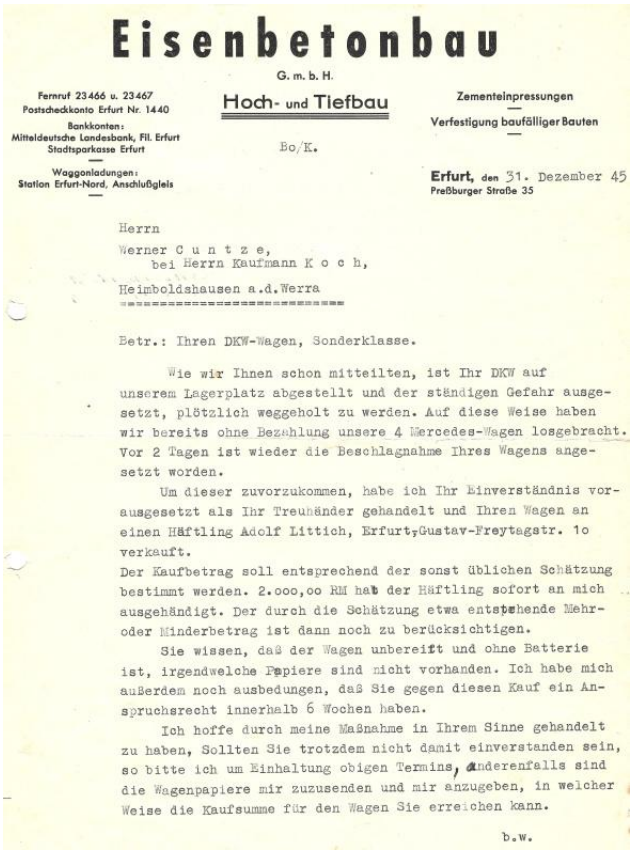
So mein Lieber, das [illegible] schreibt Dir einmal aus Am Grüssmir bitte Deine Frau recht herzlich. Mit der Sache wird d Erfindergeist von Dir schon fertig werden u. so baue ich auf I

Also nochmals die besten Grüsse an Alle Bekannten u. Dir ganz besonders

Dein Freund

Letter to a former colleague of the Eisenbetonbau company in Erfurt (Soviet occupation zone):
This letter addresses not only Dad's AUDI car situation but also the general situation at that time.

Despite all their combined efforts, not only father's car but practically all privately owned cars - accessible to the state - were confiscated.



Eisenbetonbau
G. m. b. H.
Hoch- und Tiefbau
Zementeinpressungen
Verfestigung baufälliger Bauten

Fernruf 23466 u. 23467
Postscheckkonto Erfurt Nr. 1440
Bankkonten:
Mitteldeutsche Landesbank, Fil. Erfurt
Stadtsparkasse Erfurt
Waggonladungen:
Station Erfurt-Nord, Anschlußgleis

Bo/K.

Erfurt, den 31. Dezember 45
Preßburger Straße 35

Herrn
Werner C u n t z e,
bei Herrn Kaufmann K o c h,
Heimboldshausen a.d.Werra

Betr.: Ihren DKW-Wagen, Sonderklasse.

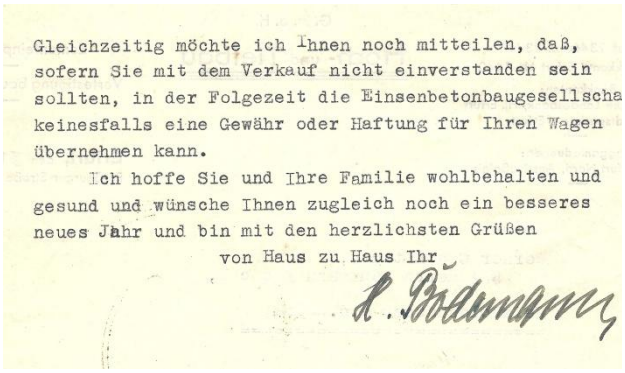
Wie wir Ihnen schon mitteilten, ist Ihr DKW auf unserem Lagerplatz abgestellt und der ständigen Gefahr ausgesetzt, plötzlich weggeholt zu werden. Auf diese Weise haben wir bereits ohne Bezahlung unsere 4 Mercedes-Wagen losgebracht. Vor 2 Tagen ist wieder die Beschlagnahme Ihres Wagens angesetzt worden.

Um dieser zuvorzukommen, habe ich Ihr Einverständnis vorausgesetzt als Ihr Treuhänder gehandelt und Ihren Wagen an einen Häftling Adolf Littich, Erfurt, Gustav-Freytagstr. 1o verkauft.
Der Kaufbetrag soll entsprechend der sonst üblichen Schätzung bestimmt werden. 2.000,oo RM hat der Häftling sofort an mich ausgehändigt. Der durch die Schätzung etwa entstehende Mehr- oder Minderbetrag ist dann noch zu berücksichtigen.

Sie wissen, daß der Wagen unbereift und ohne Batterie ist, irgendwelche Papiere sind nicht vorhanden. Ich habe mich außerdem noch ausbedungen, daß Sie gegen diesen Kauf ein Anspruchsrecht innerhalb 6 Wochen haben.

Ich hoffe durch meine Maßnahme in Ihrem Sinne gehandelt zu haben, Sollten Sie trotzdem nicht damit einverstanden sein, so bitte ich um Einhaltung obigen Termins, anderenfalls sind die Wagenpapiere mir zuzusenden und mir anzugeben, in welcher Weise die Kaufsumme für den Wagen Sie erreichen kann.

b.w.



Gleichzeitig möchte ich Ihnen noch mitteilen, daß, sofern Sie mit dem Verkauf nicht einverstanden sein sollten, in der Folgezeit die Einsenbetonbaugesellscha keinesfalls eine Gewähr oder Haftung für Ihren Wagen übernehmen kann.

Ich hoffe Sie und Ihre Familie wohlbehalten und gesund und wünsche Ihnen zugleich noch ein besseres neues Jahr und bin mit den herzlichsten Grüßen

von Haus zu Haus Ihr

L. Bodemann

►

Ultimately, it was all in vain.

Dad's high-valued car *(one could not get anyone at that time)* ***couldn't be saved.***

Burnt-in Memories of War and Border

1944:

*Child dream: Getting finally a ball as a gift. It was double the size of a tennis ball and had the same surface. Realized 3 years later at Christmas: My parents managed to get a real football for me, being now a boy. Unfortunately older boys took the ball away from me and I had again to keep years of waiting for a ball.

* A dream with a net descending over me, symbolically became true: Descending plane over the house crashing behind the house in Erfurt on a free field in front (wonder) of a hospital.

* Running to the nearest bunker when the so-called 'Christmas trees' enlightened the sky over Erfurt. We were allowed to take this bunker, which had not yet been released, because dad happened to be the construction responsible here

* Relocation of the prisoners of war towards the west (direction →American troops!). March of these unfortunates over the Werra bridge and then impressively through Heimboldshausen

1945:

* Arrival of the US Army, March 31,1945:

Moving the front from Hessia to Thuringia by crossing the Werra bridge at Heimboldshausen.

The population had prepared:. Swastika flags, pictures of Hitler, and anything else associated with Nazi symbols were removed. The inhabitants began to hang white flags from their windows. German soldiers were nowhere to be seen. Only the young members of the German Werwolf guerrilla group (a resistance movement in the German border regions) were hiding, heavily armed with machine guns and ammunition, on a site, what would later become our property.

Target shooting at individual buildings from a mountain range down caused us civilians to flee to the opposite and supposed safe side.

After the Werwolf blowed up the ***Werra bridge*** directly before the arrival of a US reconnaissance tank, we civilians, lined up on a slope trench, were covered with a machine gun fire. Aunt shot in the head, grandmother shot in the stomach, *see memorial plaque*.

Concerning me: I ran crouched 300 m further to my parents into the forest and we were not shot dead on March 31, 1945, because 'our' machine gun salvo was 20 cm too high. One had to keep down. There was one elder man with us, who wanted to get up to pee. I can still hear my dad yelling "*Ship in your pants*!" We then surrendered with a white flag to a US officer. The fact that there were still 4 people in the forest was probably reported by the same tank gunner who had previously shot the civilians dead.

* Air raid, April 3, 1945:

A German tank train - dangerously only partially filled - stood at the train station of the occupied Heimboldshauesen, behind the US front line and was supposed to be destroyed by German fighter planes. The train was spotted at our train station, but American forces had already established themselves (since March 31) in our village opposite to the station. The conquest led to the occupation of the houses at the train station, which meant that their inhabitants had to disappear (which was then their great stroke of luck for survival).

All three German fighter planes had no bombs on board and attacked the train one after another only with their machine guns. The aircraft of Sergeant Major Bunk managed to land several hits and was either struck by parts of the exploding tanks or by anti-aircraft machine guns. His plane crashed near the first houses of Röhrigshof. Sergeant Major Bunk was killed. Lieutenant Paul Kolster's aircraft hit American trucks with fuel canisters and soldiers who were refueling several tanks. Lt. Kolster was still able to fly over Heimboldshausen, but was hit by American anti-aircraft fire and crashed near Unterneurode, a place which I visited. Dozens of US soldiers died and a few Germans, one older class mate. The explosion destroyed 5 houses, blew the roofs off 30 others including parts of our house and shattered all the windows near the train station. At that time, my father was sitting on top of the roof repairing the grenade impact of March 31st. He

was lucky, he didn't fly off the roof. Part of the repair work was destroyed again. A huge piece of a tank wall lay in front of our property on the eastern side of the Werra River for years. A part of an engine landed in the entrance of a classmate's house.

* Contact with the American soldiers in the village: we children were often given gifts like a Wrigley's chewing gum, and sometimes a small bar of Hershey's chocolate or a bottle of milk. We were even allowed to sit on a tank.
* Once, I found a bar of chocolate, probably hidden, in a cupboard and took it, which was forbidden. In no time, a swarm of children were chasing after me, trying to get a piece.

1946: After the WW-II:

* Refugees from Sudetenland and from Balcans: In 1945 and 1946 two families = 8 persons had to be quartered, after repairing the damage caused by shelling and a huge explosion of a train.
* Every homecoming of a prisoner of war was a great village event.
* I remember: War and war-captivities were spoken about, but the Hitler era was not discussed.
* I remember that in 1946 there was excitement again: Suddenly soldiers of the Red Army appeared again with, among other things, Panje horses, they had probably mistakenly oriented themselves on old maps. This would have meant that the place where we wanted to build our new house would not have become western territory. The US Army tanks, however, quickly put an end to this exciting situation

After the war, Heimboldshausen (west) was still the crossing point of a line from Russian-occupied Thuringia to Hesse and then back to Thuringia and further from the route of the inner-Hessian district railway to the district town of Bad Hersfeld, termed Kreisbahn.

* In my grandfather's general store, the train drivers from Thuringia shopped and business was conducted across the border: This offered i.e. the opportunity to have the machines of my uncle's paint factory in Erfurt transported to his new workplace, namely the fully destroyed town Hanau, which had been completely bombed by the allies. They 'only' had to load a wagon in Erfurt, attach it and decouple it in Heimboldshausen and finally transporting on the Kreisbahn, running fully in the West. The new beginning in the West was secured and successful.**(***The Hersfeld district railway, with a track length of 26 kilometers, ran from Bad Hersfeld on a standard-gauge line through the Landecker district to Heimboldshausen on the Werra River, entirely within Hessian territory. In Heimboldshausen, it connected with the Thuringian railway, which had to travel approximately 13 kilometers through non-GDR territory along the Werra.).*
* For me, it was a matter of course to help grandpa with sales. How proud I was when, as a boy, I filled a paper bag with 500g of sugar for the first time without a coorection need
* There was no public children's playground
* Growing up in a shop, I would have loved to have a toy shop to play with.

* During WW-II urban bomb victims had been quartered in the countryside, which means into grandpa's house.

March 31: The mother was shot dead like my grandma (right), the daughter survived and went directly back to her home city.

March 31, 1945
Most impressive life experience

Katharina Koch
Memorial plaque
(see Burnt memories)



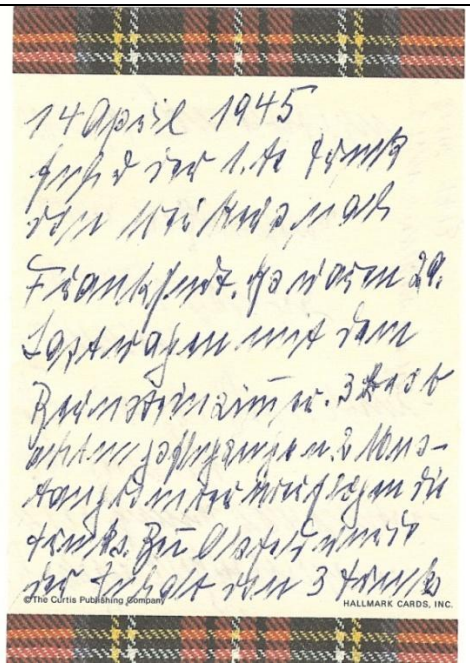
For me, now, it became understandable that the Allies illegally attacked civilians. After all, only a few Germans had offered life-threatening resistance against Hitler (*he had given labor to them).* The 'people' had to be defeated. (compare Putin, Ukraine)
Despite all the bitterness: We were all happy to leave that time behind us.
Despite of being just a child: With the end of the WWII troubles I felt peace.
And despite everything: I had a very nice childhood.

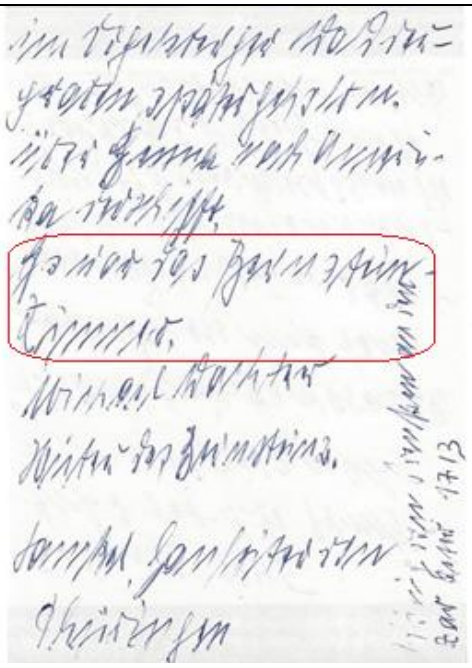
Amber Room (Bernsteinzimmer): a 'Story'??

Transport of the real Amber Room from the Merkers Potash (Salt) Mine by the US Armed Forces!?

In 1716, King Frederick William I, who was not very interested in art, exchanged the Amber Room with Russian Tsar Peter I for tall soldiers. During World War II, the Amber Room was captured by the Wehrmacht in Saint Petersburg in 1941 and subsequently installed in the Königsberg Castle Amber Room. During the advance of the Red Army, it was removed in 1944 and has been lost ever since.

In April 1945, American troops discovered a gigantic treasure in a salt mine, the Nazi regime had hidden it underground, hoping the Allies wouldn't find it. But what about the Amber Room? However, two months ago I found a note in my mother's belongings, a handwritten (Sütterlin script) message about a transport from the hidden safe place in the potash mine Merkers.





My translation of the handwritten* text:

April 14, 1945: The first convoy departs from Merkers to Frankfurt.
There were 29 trucks carrying the Amber Room.
3 reconnaissance planes and 2 Mustang bombers flew over the convoys.
Near Alsfeld, the contents of 3 trucks were buried in the Vogelsberg forest, later retrieved and shipped to America via Genoa.
It was the Amber Room.
Michael Wachter, guardian of the amber, Sauckel, "Gauleiter" of Thuringia (*see a slide before*).

Dec. 2025: Contact to Wolfgang Wollny, former mayor of Merkers and researcher of the history of the Merkers potash mine. We are hoping that a 100 years old lady of the Wachter family might find something.

*Remark: This information must have been so important to my mother that she wrote down Mr. Wachter's spoken words, even though she had other worries two weeks after the terrible events that had occurred on March 31 and the following days (funerals of the deceased, earthquake and explosion of a train with tank wagons). Dad always kept everything neatly organized. However, unfortunately this notice was never discussed in the family.

I spent the happiest months of the war in Tiefenort, neighborhood of the potash mine Merkers, with my surrogate mother, my aunt Friedel.

My Memories from there include the pick-slaughtering, the small livestock, the fantastic gooseberries in the garden, and uncle August, as head of a railway worker's family (aunt Friedel and aunt Gerdel were part of it), polishing his work boots to a shine.

I also remember uncle Heinrich, aunt Friedel's husband, once enjoying a leisurely shave during a short leave from the war front in North Africa.



Me, July 1943, Tiefenort ⇒

Naturally, it was a great source of pride for me to carry a special knife with me while wearing my lederhose. I had a hunting knife termed Hirschfänger in the side pocket of the lederhose.



Cannon Stoves:

Even after the war, fuel was scarce. If there was a sawmill nearby, a sawdust stove was used, termed "cannon stove". It was essentially a simple barrel less than half a meter in diameter with a central air duct. The air duct was provided by an easily extendable, straight, round wooden rod, around which the available driest possible sawdust was pressed. The wooden rod was removed before lighting the fire. The generated good airflow resulted in an oven burning with high heat. My task was to procure the saw dust with a handcart. Heat was just provided in a few rooms, kitchen was best heated. Windows were fully frozen.

Two Events that always bring back war memories (Proust phenomenon**):**

- Hearing a blackbird singing: 1944
  A calming feeling during the war, when I was in my great-uncle garden, Bergstromweg 3 in Erfurt
- Smelling a recently extinguished candle: 1945
  I'm lying on a potato sack, at a distance of 5 m from the air one US tank after the other rattles by, upstairs the grandma lies bleeding to death after her shot in the stomach. Nevertheless, some feeling of safety was in the cellar.

0.8 Liberating Evidence and Confirmation of De-Nazification

Mom:

Incriminating material

Her membersahip in the BDM.

Member of the BDM
(Bund Deutscher Mädels)

The League of German Girls (BDM) was founded in June 1930 as a branch of the male Hitler Youth (HJ), which had been founded four years earlier.



(luck)
This organization was
not classified as criminal

in the Nuremberg Tribunal !

Member of the BDM
(Bund Deutscher Mädels)

Aktenzeichen **Hersfeld,** den 29.4. 1947
Hf/ 6922 207/3131.

Auf Grund der Angaben in Ihrem Meldebogen gehören Sie gemäß der Verordnung zur Durchführung der Weihnachts-Amnestie vom 5. Februar 1947 zu dem Personenkreis, der unter die

Weihnachts-Amnestie

fällt. Ich habe deshalb das nach dem Gesetz zur Befreiung von Nationalsozialismus und Militarismus vom 5. März 1946 gegen Sie schwebende Verfahren eingestellt.

Sollte sich herausstellen, daß die Angaben in Ihrem Meldebogen nicht der Wahrheit entsprechen, oder sollten gegen Sie Beschuldigungen vorgebracht werden, die den Verdacht aufkommen lassen, daß Sie Hauptschuldiger oder Belasteter sind, behalte ich mir vor, erneut Klage zu erheben.

Spruchkammer Hersfeld B

Der öffentliche Kläger

2500. 15. 4. 47. Druck Friedrich Mohr, Hersfeld

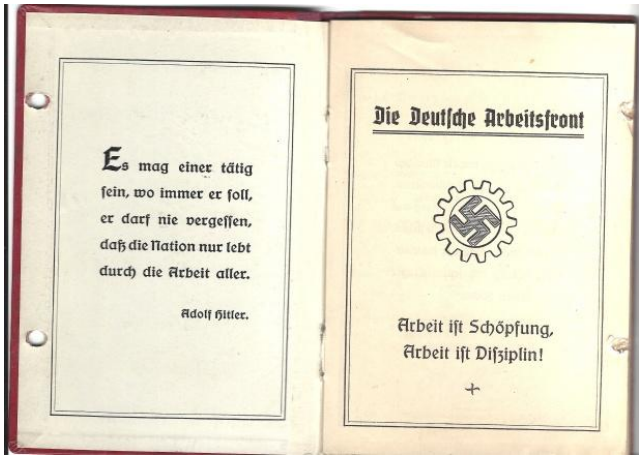
←

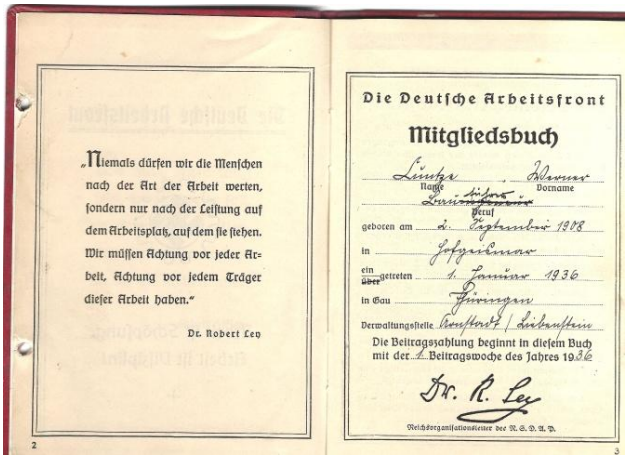
So, by this letter mother became denazified
in contrast to other family members!
Despite of the wrong name!

Dad : De-Nazification = pre-condition for enabling Dad's second run for a job

Incriminating material

His membership in the German Labor Front, since 1936





"One may be active wherever one is called upon, but one must never forget that the nation lives only through the work of all".

Adolf Hitler

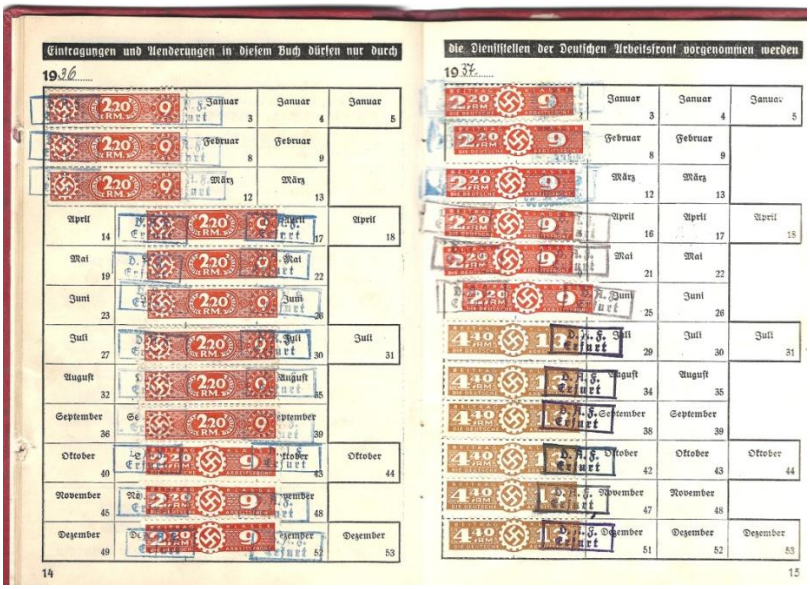
The 'German Labor Front': *"Work is creation, work is discipline!"*

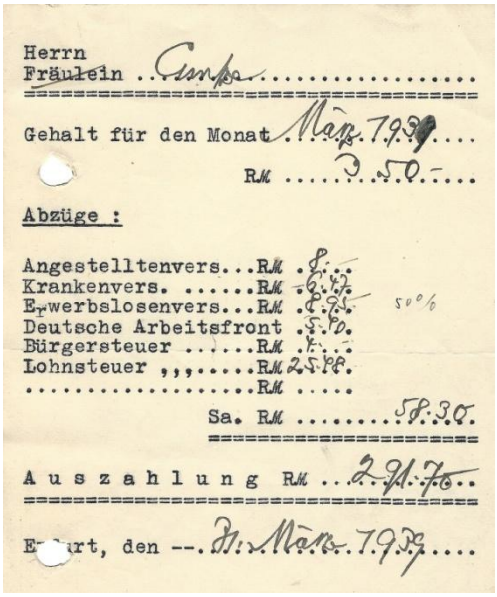
(These Statements sound quite good.)

"We must never judge people based on the type of work they do, but only on their performance in the workplace they occupy. We must have respect for every job, and respect for every person who performs that job".

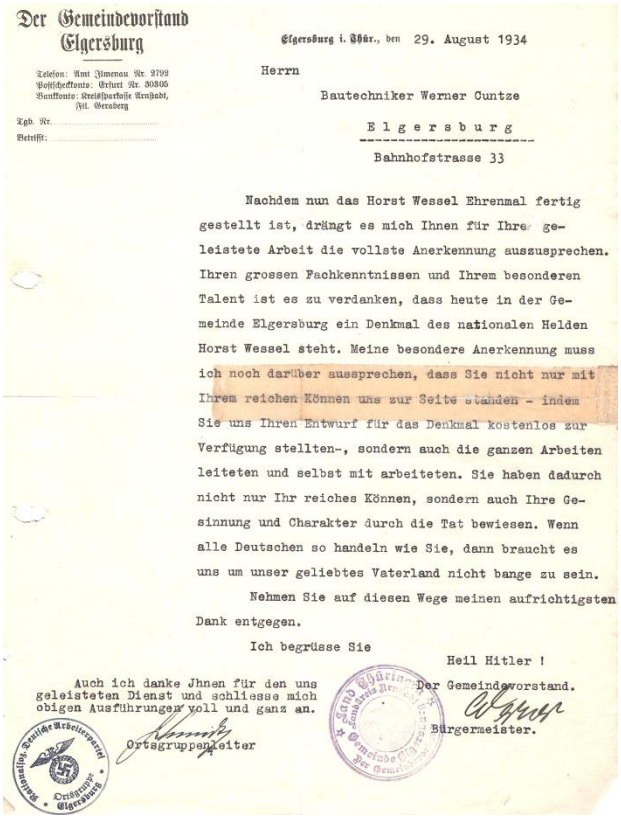
Dr. Robert Ley

Membership Book





Dad's link to NAZI administration:
For people like my 'non-war-usable' dad the membership of 'Die Deutsche Arbeitsfront', headed by Reich Organization Leader of the NSDAP,(Reichsorganisationsleiter der NSDAP = Nationalsozialistische Deutsche Arbeiterpartei) , Dr. Ley, practically was a must.
Father paid monthly, the contribution was withheld and paid by the company Eisenbetonbau!
See slide above, right.



Der Gemeindevorstand
Elgersburg

Elgersburg i. Thür., den 29. August 1934

Herrn
Bautechniker Werner Cuntze
E l g e r s b u r g
Bahnhofstrasse 33

Nachdem nun das Horst Wessel Ehrenmal fertig gestellt ist, drängt es mich Ihnen für Ihre geleistete Arbeit die vollste Anerkennung auszusprechen. Ihren grossen Fachkenntnissen und Ihrem besonderen Talent ist es zu verdanken, dass heute in der Gemeinde Elgersburg ein Denkmal des nationalen Helden Horst Wessel steht. Meine besondere Anerkennung muss ich noch darüber aussprechen, dass Sie nicht nur mit Ihrem reichen Können uns zur Seite standen - indem Sie uns Ihren Entwurf für das Denkmal kostenlos zur Verfügung stellten-, sondern auch die ganzen Arbeiten leiteten und selbst mit arbeiteten. Sie haben dadurch nicht nur Ihr reiches Können, sondern auch Ihre Gesinnung und Charakter durch die Tat bewiesen. Wenn alle Deutschen so handeln wie Sie, dann braucht es uns um unser geliebtes Vaterland nicht bange zu sein.

Nehmen Sie auf diesen Wege meinen aufrichtigsten Dank entgegen.

Ich begrüsse Sie

Heil Hitler !

Der Gemeindevorstand.
Bürgermeister.

Auch ich danke Ihnen für den uns geleisteten Dienst und schliesse mich obigen Ausführungen voll und ganz an.

Ortsgruppenleiter

Now that the Horst Wessel memorial has been completed, I feel compelled to express my utmost appreciation for your work. It is thanks to your great expertise and exceptional talent that a monument to the national hero Horst Wessel now stands in the community of Elgersburg. I must also express my particular gratitude for the fact that you not only assisted us with your extensive skills - by providing us with your design for the monument free of charge -but also supervised all the work and even participated in it yourself.
In doing so, you have demonstrated not only your considerable abilities, but also your convictions and character through your actions. If all Germans acted as you do, then we would have no need to worry about our beloved fatherland.
Please accept my sincerest thanks.
I salute you.

1934, Mayor's signing with *Heil Hitler*

I guess, father was not forced to join the NSDAP due to his party-linkable contributions (letter above) and the to be built bunkers etc he had the management responsibility at the construction site.

The Myth of Horst Wessel:
Horst Wessel was a so-called stormleader in Hitler's SA. Wessel only gained notoriety after his violent death in 1930. A communist killed him, and the Nazi therefore transformed Wessel, a simple 'street Nazi' into a martyr of their movement.



Another construction.
In 1944 after finalizing a construction, built by the company 'Eisenbetonbau Erfurt' he was working for



The march of those involved in the construction following the Nazi leaders and flag

Relief material

- Father's affiliation with the German Labor Front was not classified as criminal.
- All the documents, submitted to the denazification committee, led to a final acquittal.

De-Nazification receipt, 1947



Großhessisches Staatsministerium
Der Minister für Wiederaufbau
und politische Befreiung.
Der öffentliche Kläger bei der Spruchkammer
Hersfeld

Aktenzeichen: He/21738

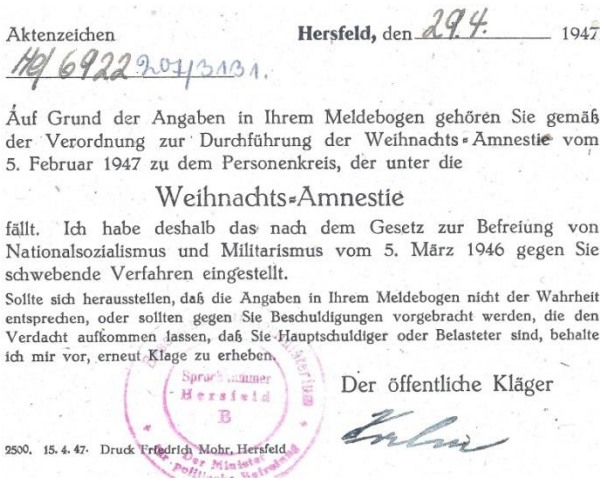
Hersfeld, d. 11.3.47
(Datum)

Auf Grund der Angaben in Ihrem Meldebogen sind Sie von dem Gesetz zur Befreiung von Nationalsozialismus und Militarismus vom 5. 3. 1946 nicht betroffen.

Der öffentliche Kläger:

An Herrn / ~~Frau~~ / ~~Frl.~~
Werner Cuntze
in Heinebaldshausen
Dorfstrasse 95

Formblatt 11 — Mitteilung an Nichtbetroffene —



Aktenzeichen Hb/6922 207/3131.

Hersfeld, den 29.4. 1947

Auf Grund der Angaben in Ihrem Meldebogen gehören Sie gemäß der Verordnung zur Durchführung der Weihnachts-Amnestie vom 5. Februar 1947 zu dem Personenkreis, der unter die

Weihnachts-Amnestie

fällt. Ich habe deshalb das nach dem Gesetz zur Befreiung von Nationalsozialismus und Militarismus vom 5. März 1946 gegen Sie schwebende Verfahren eingestellt.

Sollte sich herausstellen, daß die Angaben in Ihrem Meldebogen nicht der Wahrheit entsprechen, oder sollten gegen Sie Beschuldigungen vorgebracht werden, die den Verdacht aufkommen lassen, daß Sie Hauptschuldiger oder Belasteter sind, behalte ich mir vor, erneut Klage zu erheben.

Der öffentliche Kläger

2500. 15. 4. 47. Druck Friedrich Mohr, Hersfeld

With the receipt of above certificate, one became again a recognized citizen with all rights and obligations.

Very decisive for applyinf for a new job!

Dad was now able to find work as a civil engineer in the potash mine, 1949.

He can go to the employment agency!

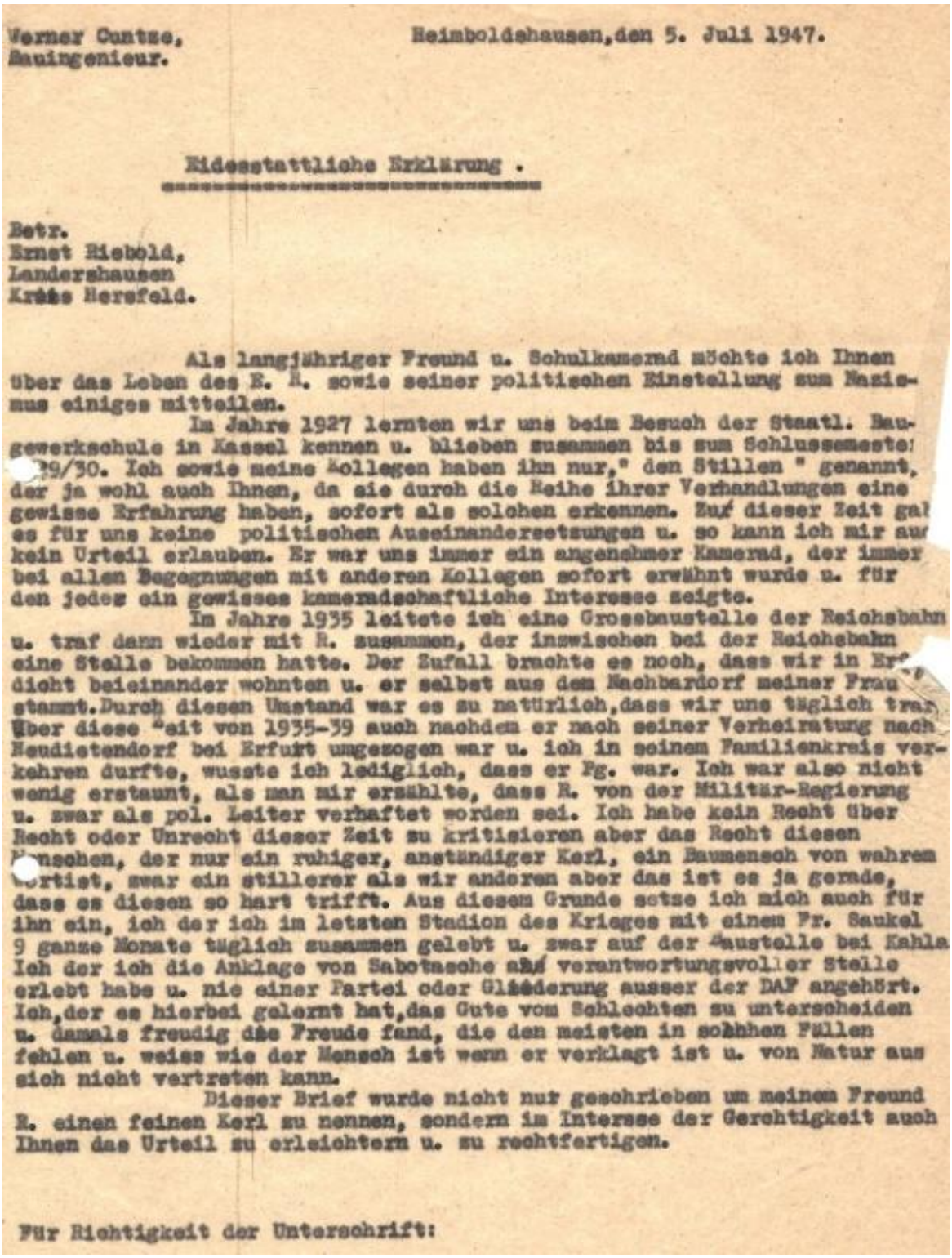
Some special memories, after WW-II

* My uncle Rudi was a ‘Soft Nazi’. In the Russian-occupied zone, it was therefore possible for him to work!! Of course, he also needed things from home. We brought these things (me too, because at childs it was not so ‘easy to shoot’) with the handcart to the border 4 km away. (How could one manage this without a smartphone?). When my uncle later wanted to go home, he was sentenced and then sat in the prison of Hofgeismar. There, we children (when I visited grandma) brought food to the prison with the usual cooking utensils of the soldiers at that time, a so-called approximately ‘bretzel-shaped so-called Henkelmann’, which I always had with me for receiving the school meal).

I experienced something like this again in a prison in Ladakh in 1981, however there the relatives lived 10 km away from the prison and not just a few hundred meters. My uncle was guarded by a warden with a rifle, but this was no problem for the warden to go with the prisoner at his exit time to a newly opened pub.

One Letter of my father supporting the De-Nazification of friends and relatives

Statutory declaration for his very good friend Ernst Riebold (well known to me).



Werner Cuntze,
Bauingenieur.

Heimboldshausen, den 5. Juli 1947.

Eidesstattliche Erklärung.

Betr.
Ernst Riebold,
Landershausen
Kreis Hersfeld.

Als langjähriger Freund u. Schulkamerad möchte ich Ihnen über das Leben des E. R. sowie seiner politischen Einstellung zum Nazismus einiges mitteilen.

Im Jahre 1927 lernten wir uns beim Besuch der Staatl. Baugewerkschule in Kassel kennen u. blieben zusammen bis zum Schlusssemester 29/30. Ich sowie meine Kollegen haben ihn nur," den Stillen " genannt, der ja wohl auch Ihnen, da sie durch die Reihe ihrer Verhandlungen eine gewisse Erfahrung haben, sofort als solchen erkennen. Zur dieser Zeit gab es für uns keine politischen Auseinandersetzungen u. so kann ich mir auch kein Urteil erlauben. Er war uns immer ein angenehmer Kamerad, der immer bei allen Begegnungen mit anderen Kollegen sofort erwähnt wurde u. für den jeder ein gewisses kameradschaftliche Interesse zeigte.

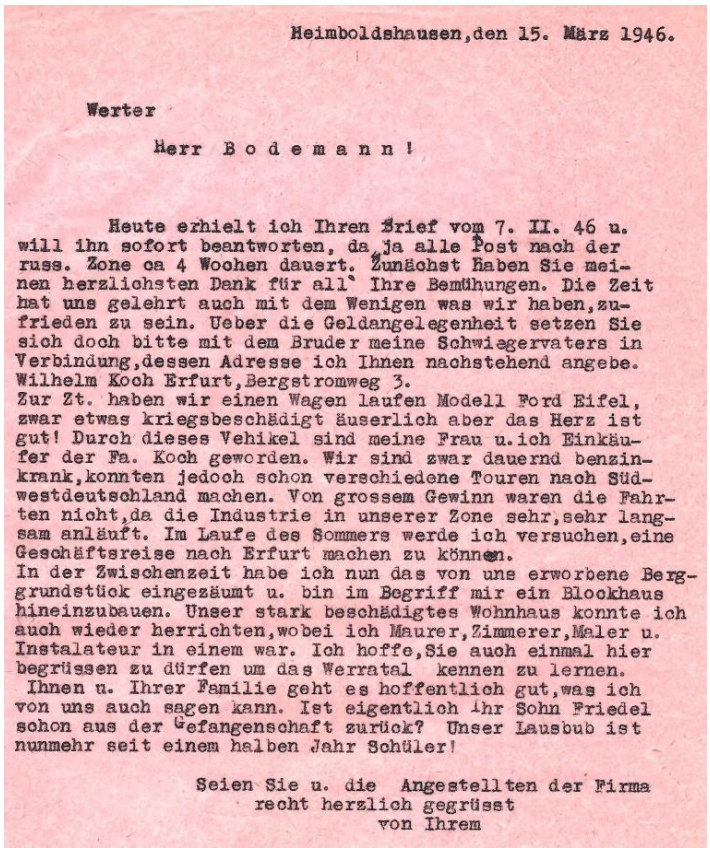
Im Jahre 1935 leitete ich eine Grossbaustelle der Reichsbahn u. traf dann wieder mit R. zusammen, der inzwischen bei der Reichsbahn eine Stelle bekommen hatte. Der Zufall brachte es noch, dass wir in Erf. dicht beieinander wohnten u. er selbst aus dem Nachbardorf meiner Frau stammt. Durch diesen Umstand war es su natürlich, dass wir uns täglich trafen. Über diese Zeit von 1935-39 auch nachdem er nach seiner Verheiratung nach Neudietendorf bei Erfurt umgezogen war u. ich in seinem Familienkreis verkehren durfte, wusste ich lediglich, dass er Pg. war. Ich war also nicht wenig erstaunt, als man mir erzählte, dass R. von der Militär-Regierung u. zwar als pol. Leiter verhaftet worden sei. Ich habe kein Recht über Recht oder Unrecht dieser Zeit su kritisieren aber das Recht diesen Menschen, der nur ein ruhiger, anständiger Kerl, ein Baumensch von wahrem Kortist, zwar ein stillerer als wir anderen aber das ist es ja gerade, dass es diesen so hart trifft. Aus diesem Grunde setze ich mich auch für ihn ein, ich der ich im letzten Stadion des Krieges mit einem Pr. Saukel 9 ganze Monate täglich zusammen gelebt u. zwar auf der Baustelle bei Kahla Ich der ich die Anklage von Sabotasche als verantwortungsvoller Stelle erlebt habe u. nie einer Partei oder Gliederung ausser der DAF angehört. Ich, der es hierbei gelernt hat, das Gute vom Schlechten su unterscheiden u. damals freudig die Freude fand, die den meisten in solchen Fällen fehlen u. weiss wie der Mensch ist wenn er verklagt ist u. von Natur aus sich nicht vertreten kann.

Dieser Brief wurde nicht nur geschrieben um meinem Freund R. einen feinen Kerl su nennen, sondern im Interesse der Gerechtigkeit auch Ihnen das Urteil su erleichtern u. su rechtfertigen.

Für Richtigkeit der Unterschrift:

"This letter was written not only to call my friend R. a fine fellow, but also, in the interest of justice, to make it easier for you to reach and justify your verdict."

boss
Information exchange:
From dad to his former boss



Heimboldshausen,den 15. März 1946.

Werter

Herr Bodemann!

Heute erhielt ich Ihren Brief vom 7. II. 46 u. will ihn sofort beantworten, da ja alle Post nach der russ. Zone ca 4 Woohen dausrt. Zunächst haben Sie meinen herzlichsten Dank für all` Ihre Bemühungen. Die Zeit hat uns gelehrt auch mit dem Wenigen was wir haben,zufrieden zu sein. Ueber die Geldangelegenheit setzen Sie sich doch bitte mit dem Bruder meine Schwiegervaters in Verbindung,dessen Adresse ich Ihnen nachstehend angebe. Wilhelm Kooh Erfurt,Bergstromweg 3.
Zur Zt. haben wir einen Wagen laufen Modell Ford Eifel, zwar etwas kriegsbeschädigt äuserlich aber das Herz ist gut! Durch dieses Vehikel sind meine Frau u.ich Einkäufer der Fa. Koch geworden. Wir sind zwar dauernd benzinkrank,konnten jedooh schon verschiedene Touren nach Südwestdeutschland machen. Von grossem Gewinn waren die Fahrten nicht,da die Industrie in unserer Zone sehr,sehr langsam anläuft. Im Laufe des Sommers werde ich versuchen,eine Geschäftsreise nach Erfurt machen zu können.
In der Zwischenzeit habe ich nun das von uns erworbene Berggrundstück eingezäumt u. bin im Begriff mir ein Blockhaus hineinzubauen. Unser stark beschädigtes Wohnhaus konnte ich auch wieder herrichten,wobei ich Maurer,Zimmerer,Maler u. Instalateur in einem war. Ich hoffe,Sie auch einmal hier begrüssen zu dürfen um das Werratal kennen zu lernen.
Ihnen u. Ihrer Familie geht es hoffentlich gut,was ich von uns auch sagen kann. Ist eigentlich Ihr Sohn Friedel schon aus der Gefangenschaft zurück? Unser Lausbub ist nunmehr seit einem halben Jahr Schüler!

Seien Sie u. die Angestellten der Firma
recht herzlich gegrüsst
von Ihrem

Dear Mr. Bodemann! (from my father)
I received your letter dated February 7, 1946, today and want to answer it immediately, as all mail to the Russian zone takes about four weeks. First of all, thank you very much for all your efforts. Time has taught us to be content with even the little we have. Regarding the money issue (Dad's car), please contact my father-in-law's brother, whose address I am giving you below: Wilhelm Koch, Erfurt, Bergstromweg 3*.
We currently have a Ford Eifel **, a bit war-damaged on the outside, but the heart is good!
*** Thanks to this vehicle, my wife and I became buyers for the company (Georg) Koch. Although we are constantly "gas-sick," we have already been able to make several trips to southwest Germany. The trips weren't particularly profitable, as industry in our (western) zone is starting up very, very slowly. I'll try to make a business trip to Erfurt this summer.
In the meantime, I have fenced the mountain property we purchased **** and am in the process of building a log cabin. I was also able to repair our badly damaged house, acting as a bricklayer, carpenter, painter, and plumber all in one. I hope to welcome you here sometime to get to know the Werra Valley.
I hope you and your family are doing well, which I can also say for us. Has your son Friedel returned from captivity? Our rascal (Ralf) has been a pupil for half a year now!

Best regards to you and the company employees
from your .....

Below are my associated memories:

* When I was looking for my greatuncle's beautiful house on Bergstromweg with my mother, after reunification, in 1991. Being there, I was immediately reminded of the chirping of a blackbird from one of my visits to my great-uncle in 1944. As the only survivor, Mom had claimed inheritance rights, but the city of Erfurt responded by saying that "Bergstromweg 3" doesn't exist.

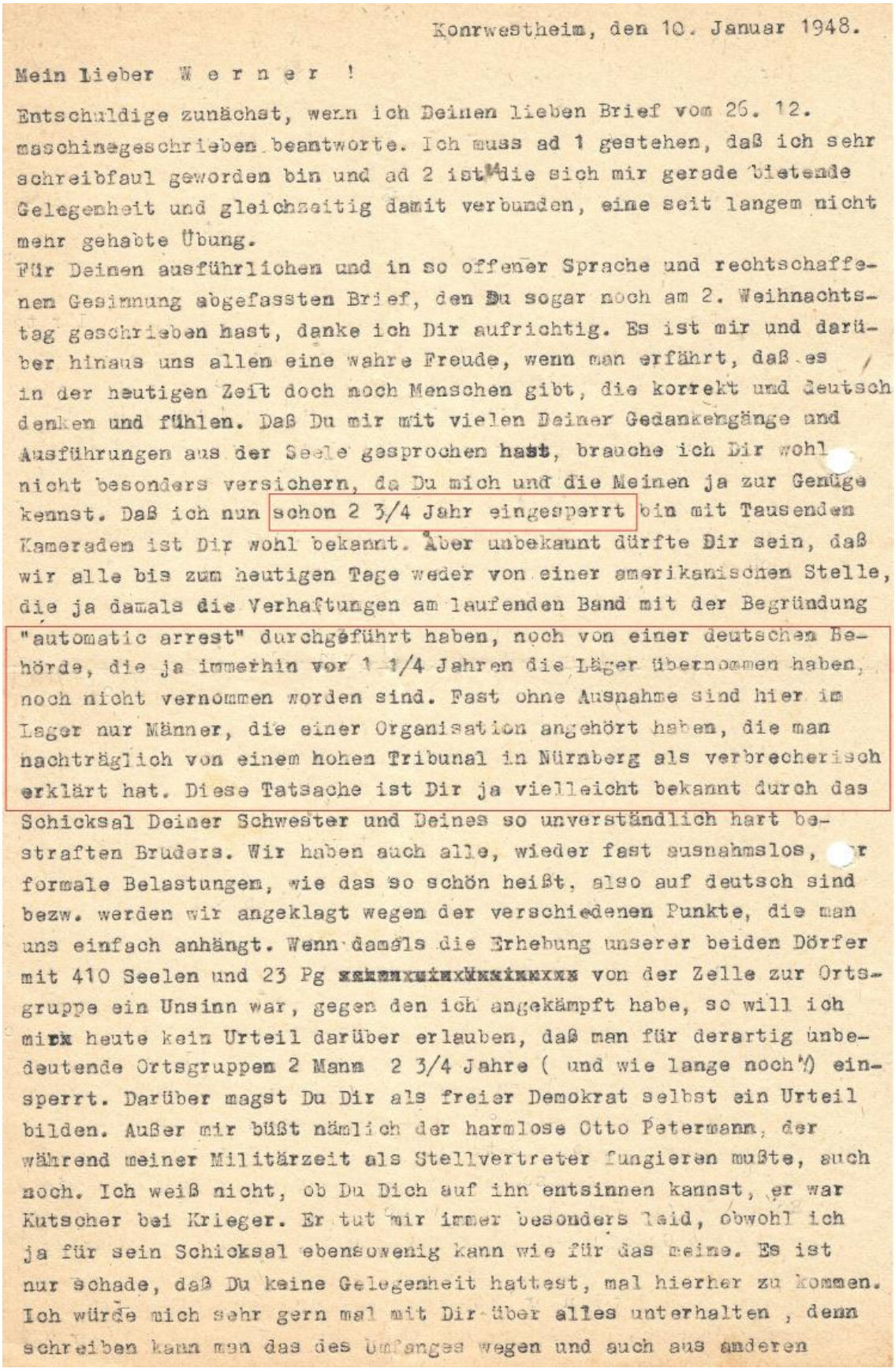
** We had saved the Mercedes car of another uncle at the war's end and in 'exchange' got the so-called 'Buckelford'.

*** But usually the car wouldn't start. So we pushed it up to the train station and then back down with full force until it started, sometimes several times. The engine was warm by then, and those pushing were warmer. Dad transported a maximum of 10 standard sawdust stoves home from Kassel in it, and me.

**** In order to get to our property, where we later build a house, we always had to climb over the remaining beams of the bombed-out bridge, the bombing of which cost the lives of many civilians, like Grandma.

Release of Detainees in a western Internment Camp

(essential first page of my uncle's letter, 1948 !)



Konrwestheim, den 10. Januar 1948.

Mein lieber W e r n e r !

Entschuldige zunächst, wenn ich Deinen lieben Brief vom 26. 12. maschinegeschrieben beantworte. Ich muss ad 1 gestehen, daß ich sehr schreibfaul geworden bin und ad 2 ist die sich mir gerade bietende Gelegenheit und gleichzeitig damit verbunden, eine seit langem nicht mehr gehabte Übung.

Für Deinen ausführlichen und in so offener Sprache und rechtschaffenem Gesinnung abgefassten Brief, den Du sogar noch am 2. Weihnachtstag geschrieben hast, danke ich Dir aufrichtig. Es ist mir und darüber hinaus uns allen eine wahre Freude, wenn man erfährt, daß es in der heutigen Zeit doch noch Menschen gibt, die korrekt und deutsch denken und fühlen. Daß Du mir mit vielen Deiner Gedankengänge and Ausführungen aus der Seele gesprochen hast, brauche ich Dir wohl nicht besonders versichern, da Du mich und die Meinen ja zur Genüge kennst. Daß ich nun schon 2 3/4 Jahr eingesperrt bin mit Tausenden Kameraden ist Dir wohl bekannt. Aber unbekannt dürfte Dir sein, daß wir alle bis zum heutigen Tage weder von einer amerikanischen Stelle, die ja damals die Verhaftungen am laufenden Band mit der Begründung "automatic arrest" durchgeführt haben, noch von einer deutschen Behörde, die ja immerhin vor 1 1/4 Jahren die Läger übernommen haben, noch nicht vernommen worden sind. Fast ohne Ausnahme sind hier im Lager nur Männer, die einer Organisation angehört haben, die man nachträglich von einem hohen Tribunal in Nürnberg als verbrecherisch erklärt hat. Diese Tatsache ist Dir ja vielleicht bekannt durch das Schicksal Deiner Schwester und Deines so unverständlich hart bestraften Bruders. Wir haben auch alle, wieder fast ausnahmslos, formale Belastungem, wie das so schön heißt, also auf deutsch sind bezw. werden wir angeklagt wegen der verschiedenen Punkte, die man uns einfach anhängt. Wenn damals die Erhebung unserer beiden Dörfer mit 410 Seelen und 23 Pg [illegible] von der Zelle zur Ortsgruppe ein Unsinn war, gegen den ich angekämpft habe, so will ich mir heute kein Urteil darüber erlauben, daß man für derartig unbedeutende Ortsgruppen 2 Mann 2 3/4 Jahre (und wie lange noch ?) einsperrt. Darüber magst Du Dir als freier Demokrat selbst ein Urteil bilden. Außer mir büßt nämlich der harmlose Otto Petermann, der während meiner Militärzeit als Stellvertreter fungieren mußte, auch noch. Ich weiß nicht, ob Du Dich auf ihn entsinnen kannst, er war Kutscher bei Krieger. Er tut mir immer besonders laid, obwohl ich ja für sein Schicksal ebensowenig kann wie für das meine. Es ist nur schade, daß Du keine Gelegenheit hattest, mal hierher zu kommen. Ich würde mich sehr gern mal mit Dir über alles unterhalten , denn schreiben kann man das des Umfanges wegen und auch aus anderen

“Thank you sincerely for your detailed letter, written in such open language and with such honest intentions, which you even wrote on the second day of Christmas. It is a true joy for me, and indeed for all of us, to know that there are still people in the present time who think and feel correctly and in a truly German way. I hardly need to assure you that you have spoken from my heart with many of your thoughts and explanations, since you know me and my family well enough.

You are probably aware that I have now been imprisoned for 2.75 years along with thousands of comrades. But what you may not know is that to this day, we have received no information whatsoever, neither from the American authorities, who at the time carried out the arrests continuously under the pretext of "Automatic Arrest," nor from any German authority, even though they took over the camps 1.25 years ago.

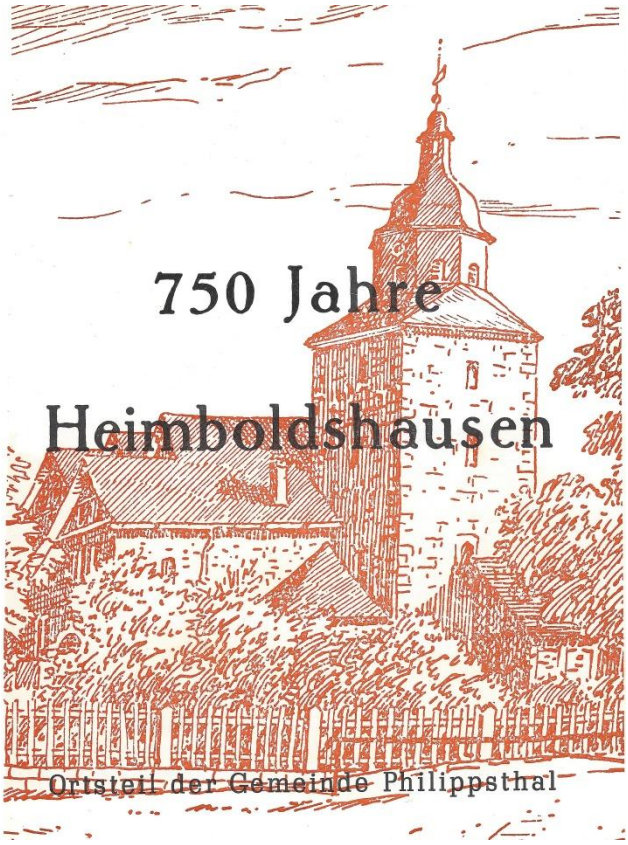
Almost without exception, the only people in this camp are men who belonged to an organization that was subsequently declared criminal by a high tribunal in Nuremberg. You are already aware of this fact through the fate of your sister and your brother (Rudi), who was punished so incomprehensibly harshly.

We all, almost without exception, are also only facing formal charges, as they so nicely put it, which means, in plain German, that we are being or will be indicted on various counts that are simply being leveled against us. If the elevation of our two villages, with 410 inhabitants and 23 party members, from a local cell to *a local* group *was nonsense back then, something I fought against, then I don't want toallow myself a judgement today on the fact that two men are being imprisoned for 2.75 years (and for how much longer?) for such insignificant local groups.*

You can form your own opinion about that as a free democrat. Besides me, the harmless Otto Petermann, who had to act as my deputy during my military service, is also paying the price. I don't know if you remember him; he was a coachman for Krieger. I always feel especially sorry for him, even though I'm just as little to blame for his fate as I am for my own.

It's just a shame that you didn't have the opportunity to come here. I would really like to talk to you about everything, because writing about it is impossible due to its length and for other reasons as well. ……”

0.9 Heimboldshausen after the WW-II





Grußwort

Den Bürgern des Ortsteils Heimboldshausen der Gemeinde Philippsthal übermittle ich anläßlich der 750-Jahr-Feier die Grüße der hessischen Landesregierung.

Die Entwicklung Heimboldshausen spiegelt mit allen Höhen und Tiefen die Ereignisse im hessisch-thüringischen Grenzland wider. Blutige und kriegerische Auseinandersetzungen, Brandschatzung, Hunger und Seuchen waren die Wegbegleiter in der wechselvollen Geschichte. Zweimal wurde Heimboldshausen Zuflucht für Menschen, die aus ihrer Heimat vertrieben wurden. Im 17. Jahrhundert für die Hugenotten und in jüngster Zeit für die Vertriebenen aus den ehemaligen deutschen Ostgebieten. Die Integrationskraft der Einheimischen trug dazu bei, daß sich die Neuankömmlinge einlebten und sich an der Entwicklung der Gemeinde maßgeblich beteiligten.

Immer schon in Grenznähe gelegen, muß die Gemeinde auch heute wieder in einer Randzone leben, die es dem Bürger nicht leicht macht, eine menschenwürdige Existenz zu finden. Durch den Fleiß und die Energie der Einwohner und durch die Unterstützung des Landes Hessen und der Bundesrepublik ist auch in der Jubiläumsgemeinde ein sichtbarer Aufschwung und eine entscheidende Verbesserung der Lebensbedingungen in den letzten Jahrzehnten eingetreten. Diese beispielhafte Eigenhilfe muß aber auch zukünftig durch stetige politische und wirtschaftliche Maßnahmen gestützt werden.

In diesem Sinne wünsche ich den Bürgern und Freunden der Jubiläumsgemeinde festliche Stunden, Verstärkung der nachbarschaftlichen und freundschaftlichen Kontakte und eine gedeihliche Weiterentwicklung des Ortsteiles Heimboldshausen in der größeren Gemeinschaft der Gemeinde Philippsthal.

Dr. Herbert Günther
hessischer Minister der Justiz
und Bevollmächtigter des
Landes Hessen beim Bund



Grußwort

Zur Feier des 750jährigen Bestehens des Ortsteils Heimboldshausen der Gemeinde Philippsthal übermittele ich zugleich auch im Namen der Kreiskörperschaften die herzlichsten Grüße und Glückwünsche. Heimboldshausen gehört zu den alten und traditionsreichen Gemeinden in unserem Landkreis. Aus dem ersten Ortsnamen de Haymboldishusen ist der heutige Name Heimboldshausen entstanden.

Heimboldshausen hat unter den Zeitläufen häufig leiden müssen. Von den Kriegen wurde es heimgesucht, insbesondere vom Dreißigjährigen Krieg, dem Siebenjährigen Krieg und den beiden Weltkriegen. Nach der Chronik lebten im Jahre 1637 nur noch 18 Familien. Heimboldshausen gehört zu den Gemeinden unseres Landkreises, in denen die trennenden Auswirkungen der Grenze durch unser Vaterland täglich spürbar sind.

Den Bürgern gebührt Lob für die bewundernswerte Tatkraft und den immer wieder gezeigten Aufbauwillen.

Kontinuierlich ist die Entwicklung Heimboldshausens weitergegangen, wie dies in der Fertigstellung der Bundesstraße durch die Ortslage und nun auch in der Einweihung des Dorfgemeinschaftshauses sichtbar wird.

Hervorzuheben ist auch das rege Vereinsleben in Heimboldshausen, das dem Ortsteil sein kulturelles Gepräge gibt. Allen, die hier zum Besten der Gemeinschaft mitwirken, sei Dank.

Den vorstehenden Festtagen aus Anlaß der 750-Jahr-Feier wünsche ich einen guten Verlauf und den Einwohnern und Gästen viel Freude an Ihrem Fest.

Norbert Kern
Landrat des Landkreises Hersfeld-Rotenburg



Grußwort

Unser Ort begeht in der Zeit vom 21. bis 25. September 1977 seine 750-Jahr-Feier. Diese Feiertage mögen alle Einwohner unseres Ortes in echter Freundschaft zusammenführen. Ihnen, sowie allen unseren Gästen, rufen wir ein herzliches Willkommen zu.

750 Jahre eines wechselvollen Schicksals hat unsere Gemeinde erlebt. Allein in den letzten Tagen des zweiten Weltkrieges wurden in unserer Gemeinde durch die Kämpfe schwere Zerstörungen verursacht. Alle diese Heimsuchungen hat der Ort überstanden, und die entstandenen Schäden wurden beseitigt. Das stellt der Zähigkeit, dem Gemeinschaftsgeist und dem Fleiß der Heimboldshäuser ein gutes Zeugnis aus.

Der Wunsch des Ortsbeirates ist, daß alle, die diese Feier erleben, mit Heimboldshausen auch in Zukunft verbunden bleiben mögen.

An dieser Stelle möchten wir all denen Dank sagen, die zum Gelingen dieser 750-Jahr-Feier beigetragen haben.

Den Teilnehmern der Veranstaltungen wünschen wir frohe Stunden.

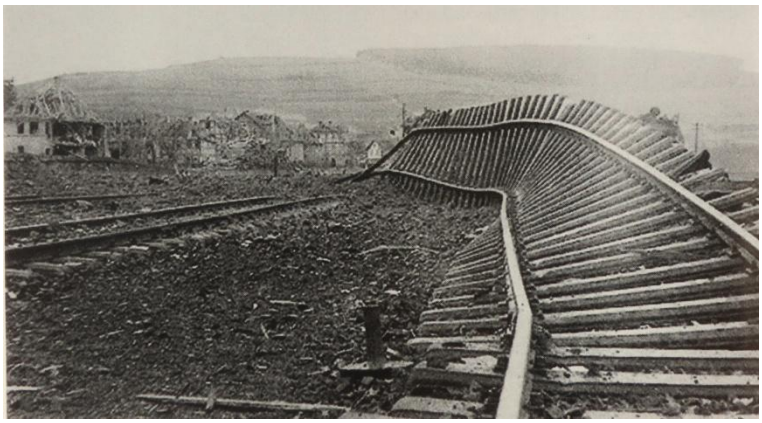
Der Ortsbeirat

i. V. Gerda Roth

(My class mate Gerda)



View over Heimboldshausen 1953 and 2002





Bomb explosion at Heimboldshausen station

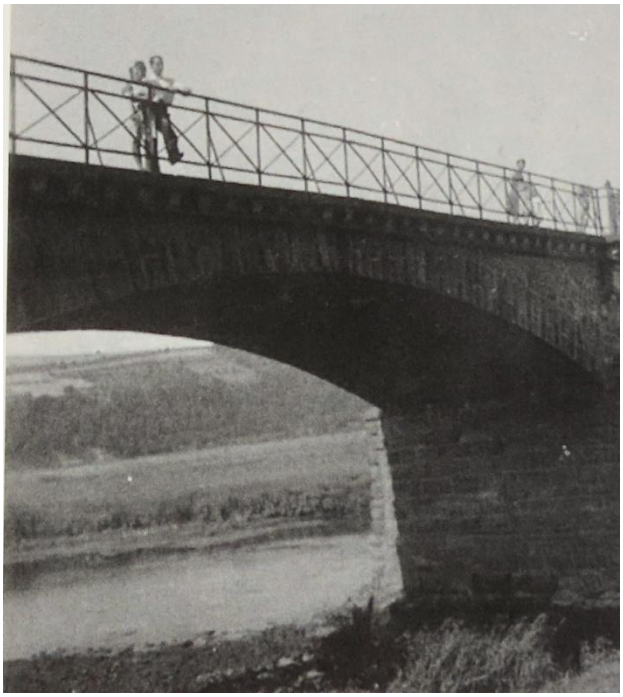
In total, six residents of Heimboldshausen were killed and six seriously wounded by the bomb explosion. The American military newspaper reportedl that the total losses of the American troops during the four days of fighting amounted to 300 dead and wounded.

Living at the two border sides

*In 1950, I was still able to have my appendix removed in Vacha (billing is still possible).

*In 1964, Prime Minister Ulbricht had new banknotes printed for the GDR; coins remained in circulation.

*In the Sovietic Zone GDR, after 1970, it was another 15 years of saving and waiting before buying a car





with my mom on the slightly repaired Werra Bridge, which holds so many bad memories for me



Old forester's lodge.
Site, where the American trrops passed by, when I

the cellar room of the forester's lodge, where I experienced the passage of the advancing US tank forces through the village



old village road along the Stärkelsbach stream



In the 1970s, the Stärkelsbach stream, which was interesting to us children, was piped underground and the road widened. When the stream was dammed in the summer to irrigate the meadows, we used to swim around in it.

Departure into the field.

At the right side grandpa's shop





Cows were kept as draft animals by the village's small farmers. Without male help during and after the war, the women had to tend the fields.



Departure from the field



Our carpenter and 'butcher': On a short leave from the war front



Back to the war front, 1943



Our view from at home to the potash mine (with my father) and
over the border and the famous bridge at Vacha to the Öxen mountain, far away from getting there!



At Heimboldshauen and later the Nazi era wasn't really discussed at home. This is understandable for me:

My father wasn't able to work as a civil engineer until 1935. After his engineer graduation he earned money as a bricklayer and later at a somehow higher paid level..

He eventually in 1935 got work as an engineer in creating German infrastructure, which generally led to the desired better living again. This partly explains it that the resistance against the National Socialist Hitler was weak. After De-Nazification dad could run for a second time as engineer for a job:

However nowadays, having not such a bad situation, nationalism is coming up very fast again. For me, this is not understandable??



In the nearby salt mine, he was now able to supervise large construction sites again.

This was his life.





Dad the biker:
The ‘new’ life approaches the former life.
1938 (above) and
1950 with me and mother →



Pictures from the book of my school colleague
Alfred von der Grün



my shoemaker Nennstiel →

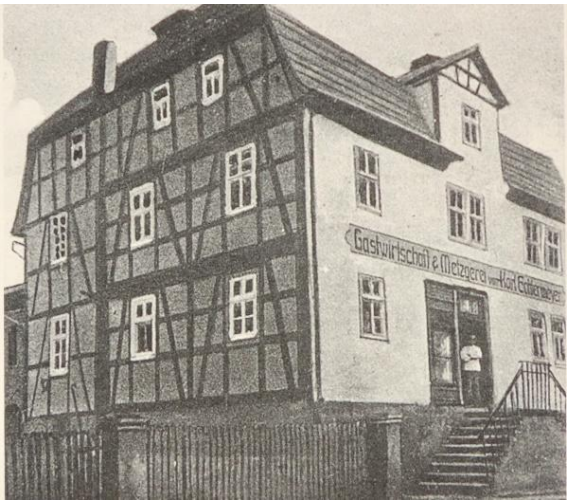


Annual General Meeting of the Choral club 'Heimatlied.
All known to me



All of them singers from the club
who are very familiar to me.

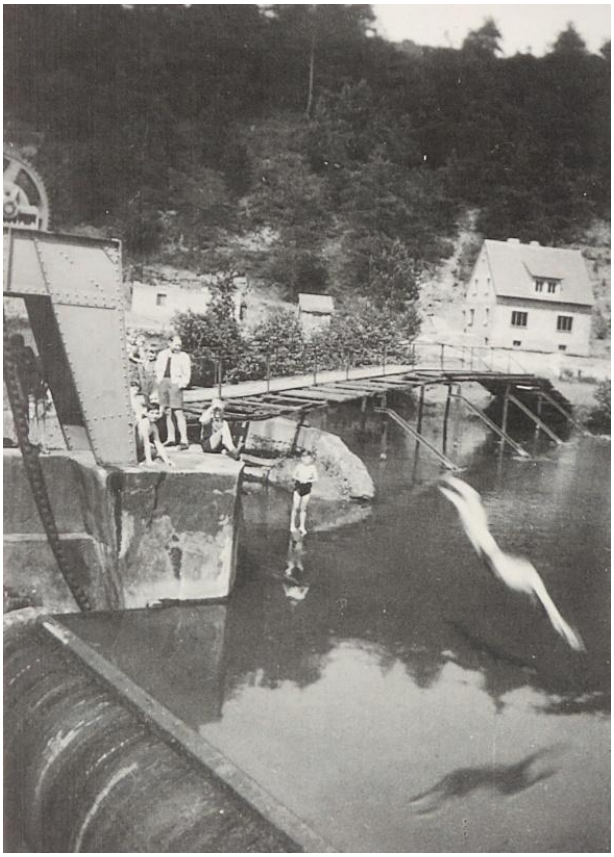




Pictures: Karl Echtermeyer (1961). House (1915)
Butcher shop and inn,where I used to buy a jug of beer for
my grandpa on warm summer evenings
Closed about 1985



Carpenter Willi Stang



Swimming in the Werra River was a popular pastime until the late 1940s, as long as the salinity from the two Thuringian salt mines wasn't so high. Our mine in Hattorf treated the wastewater. By the end of the 1950s, the water had reached North Sea levels, and people then went to the nearest swimming pool. Since our house was built on the Werra, I could paddle there.

After WW-II, in the summer, the time was adjusted by two hours.



Marriage of the two sons of my neighbors 1961 (*me in the back*)



Threshing by hand as still performed in the mountains of the world



experts



Old and new fashion



our traditional and actual potash miners' band

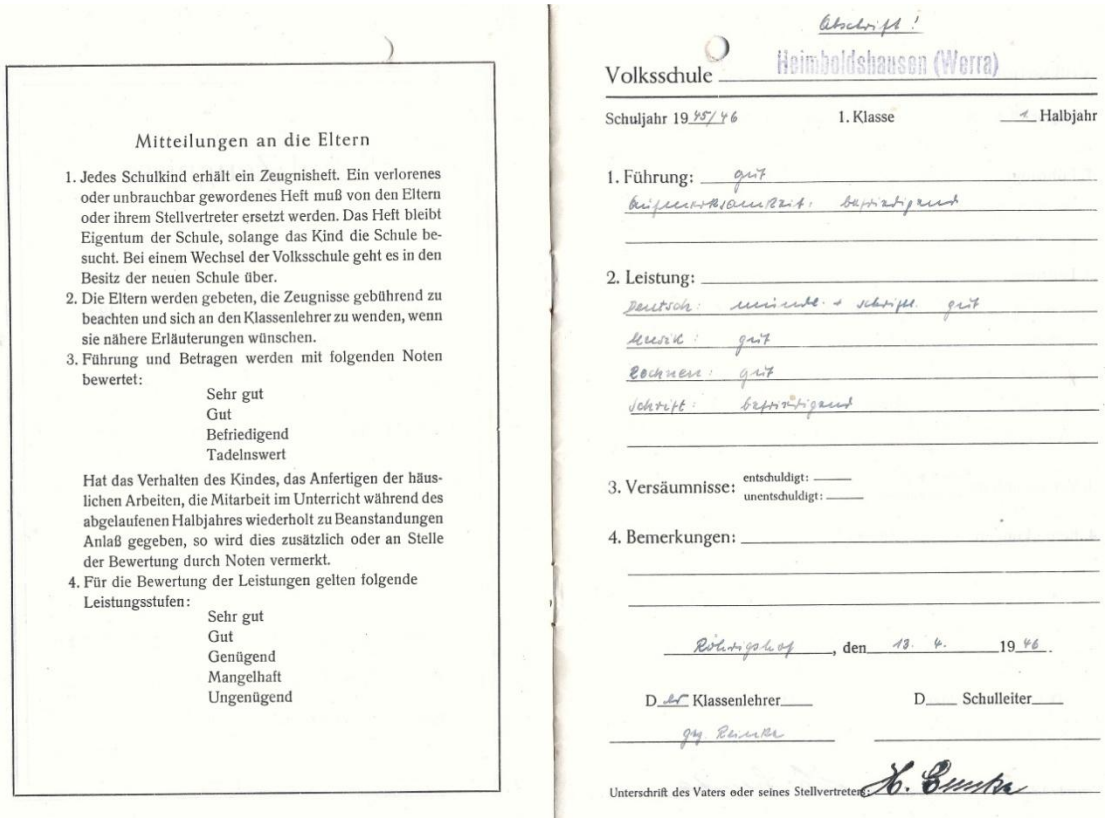


Threshing grain, as I still experienced it annually after the Second World War.



777 years festivity

School at Heimboldshausen:



Mitteilungen an die Eltern

1. Jedes Schulkind erhält ein Zeugnisheft. Ein verlorenes oder unbrauchbar gewordenes Heft muß von den Eltern oder ihrem Stellvertreter ersetzt werden. Das Heft bleibt Eigentum der Schule, solange das Kind die Schule besucht. Bei einem Wechsel der Volksschule geht es in den Besitz der neuen Schule über.
2. Die Eltern werden gebeten, die Zeugnisse gebührend zu beachten und sich an den Klassenlehrer zu wenden, wenn sie nähere Erläuterungen wünschen.
3. Führung und Betragen werden mit folgenden Noten bewertet:
   - Sehr gut
   - Gut
   - Befriedigend
   - Tadelnswert

   Hat das Verhalten des Kindes, das Anfertigen der häuslichen Arbeiten, die Mitarbeit im Unterricht während des abgelaufenen Halbjahres wiederholt zu Beanstandungen Anlaß gegeben, so wird dies zusätzlich oder an Stelle der Bewertung durch Noten vermerkt.
4. Für die Bewertung der Leistungen gelten folgende Leistungsstufen:
   - Sehr gut
   - Gut
   - Genügend
   - Mangelhaft
   - Ungenügend

Abschrift!

Volksschule Heimboldshausen (Werra)

Schuljahr 1945/46 1. Klasse 1 Halbjahr

1. Führung: gut
Aufmerksamkeit: befriedigend

2. Leistung:
Deutsch: mündl. + schriftl. gut
Musik: gut
Rechnen: gut
Schrift: befriedigend

3. Versäumnisse: entschuldigt: ___ unentschuldigt: ___

4. Bemerkungen:

Röhrigshof, den 13. 4. 1946.

Der Klassenlehrer: gez. Reinke

D. Schulleiter:

Unterschrift des Vaters oder seines Stellvertreters: H. Cuntze

Volksschule Heimboldshausen (Werra)

Schuljahr 1949/50 Klasse II 1. Halbjahr

1. Führung:

2. Leistungen:

Deutsch:	Religionslehre gut
a) mündlich } gut	Englisch
b) schriftlich } gut	Musik } gut
Heimatkunde } gut	Zeichnen } gut
Geschichte und Gemeinschaftskunde	Werkunterricht
Erdkunde	Hauswirtschaft:
Naturkunde gut	a) Handarbeit
Naturlehre	b) Hauswerk
Rechnen gut	Schrift genügend
Raumlehre	Leibesübungen genügend

3. Versäumnisse: entschuldigt: — unentschuldigt: —

4. Bemerkungen:

Heimboldshausen (Werra), den 22. Sept. 1949.

Der Klassenlehrer: Raum

D. Schulleiter:

Unterschrift des Vaters oder seines Stellvertreters: H. Cuntze

Volksschule Heimboldshausen

Schuljahr 1949/50 Klasse II., 4. Schj. 2. Halbjahr

1. Führung: gut

2. Leistungen:

Deutsch:	Religionslehre gut
a) mündlich gut	Englisch
b) schriftlich gut	Musik gut
Heimatkunde genügend	Zeichnen
Geschichte und Gemeinschaftskunde	Werkunterricht
Erdkunde	Hauswirtschaft:
Naturkunde	a) Handarbeit
Naturlehre	b) Hauswerk
Rechnen gut	Schrift gut
Raumlehre	Leibesübungen gut

3. Versäumnisse: entschuldigt: ___ unentschuldigt: ___

4. Bemerkungen:

Heimboldshausen, den 13. März 1950.

Der Klassenlehrer: Neubauer Jh.

Der Schulleiter: E. Fack

Unterschrift des Vaters oder seines Stellvertreters: H. Cuntze

Memories:

Christmas:

On December 5th evening, sparkling clean boots were left out in our house, and if you had been good, Saint Nicholas put a small gift in your shoe like nuts, an apple, homemade candy.
On December 6th evening in our region, for us very young children, however, it was usually
In our region, Knecht Ruprecht, actually the companion of Saint Nicholas, used to come. He threatened naughty children with a relatively small juniper switch in his hand and often a rattling chain with which he announced his arrival. In the past, Knecht Ruprecht (termed Krampus in Bavaria), along with parents, had the disciplinary task of punishing naughty children. Promising, our Knecht Ruprecht however was still carrying a sack, hopefully full of presents on his back. He asked if we had behaved well throughout the year and what trouble we had caused. We then had to sing and then to recite a Saint Nicholas poem. Once, two legs peeked out of the sack. This caused great alarm (*the adults however could hardly contain their laughter*) among us six- and seven-year-olds, because Knecht Ruprecht would take us away if we behaved very badly. There were tears then, too. The village street looked terrible the next morning because a group of young village lads (Krampus-like) had been hitting each other with long juniper switches the night before. The air was thick with the scent of juniper.

On December 24th, it is the Christ Child or also the Santa Claus, who brings the presents. The routine is firmly established: At first Church service with a Nativity Play. At the end, everyone sings "Silent Night" (*never sung before Christmas Eve*!). Then going home (*seldom in the snow*), followed by the Christmas Eve Meal. Afterwards, the bell rings and everyone goes into the living room. First, three traditional Christmas carols are sung next to the Christmas tree, which is decorated with real wax candles and tinsel and a bucket of water next to it. Then the desired end: Opening presents and enjoying the treats. We were always delighted with our Christmas presents. However, back then they were much more 'practical': a hand-knitted hat and gloves, hand-knitted long stockings to wear under our shorts. Along with that, a few oranges, nuts, apples, and lots of colorful cookies, quite well known are the beloved socalled filling-puller caramel candy for 1or 2 Pfg.

Kindergarden:

* Our way to kindergarten led us across a goose pasture. However, there was a large, always angry gander, who immediately attacked us little children.

School days in the so-called 'Volksschule' (elementary school):

* The pupils carried a school bag, which they received along with a so-called "sugar cone" when they started school. The younger children kept their slate and pencil case in it. Slate boards and the accompanying slate pencils I used and were used in German primary schools until the 1970s to teach writing and arithmetic. Production ended in the 1960s when they were replaced by plastic boards. Pupils wrote on the boards with pencils, which allowed for easy correction and compensated for the lack of paper, the writing on a slate could be quickly wiped away with a sponge.
  A memory of an experience with a slate: I wanted to show my mother that I had finished my homework and therefore I had to walk backwards in the kitchen, as the only warm room, to do so. I fell into our bathtub, where sheep's wool was being cleaned at the time. I was wet, but I had managed to keep the slate above the water.

  We did learn both the two following scripts. The rounded *German standard script*, introduced in the 1940s, later signaled the end of the 'sharp' German cursive script, such as *Sütterlin*.

* Using a ballpoint pen was somewhat frowned upon in our Elementary school: It was said that it ruined your handwriting! For us, the ballpoint pen was always just the 'Kuli', which was actually the term used for the Asian indentured laborer. What was preferred was writing with ink and a fountain pen.
* Slate boards and the accompanying slate pencils were used in German primary schools until the 1970s to teach writing and arithmetic. Production ended in the 1960s when they were replaced by plastic boards. What was written on them? Pupils wrote on the boards with pencils, which allowed for easy correction and compensated for the lack of paper.





Writing with ink and a fountain pen.
(in the background the scripts to be learned)

What was written on them? Pupils wrote on the boards with pencils, which allowed for easy correction and compensated for the lack of paper.

* Boys and girls were not taught separately. There were over 40 students in one class. The first and second grades were taught together, and the third and fourth grades.
* Each pupil had to take a piece of wood with him on his 2 km footpath to school so that the elementary school in the neighboring village Röhrigshof, which had not been destroyed, could be heated.
* Physical punishment by the class teacher:
  - In 1945/1946 at Röhrigshof: One had to hold the hands palms up and the fingers were hit with a bunch of keys.
  - Since 1947 in Heimboldshausen, school punishment involved rods, canes or rulers, which were rarely used on the hands but mostly on the seat of the trousers.

  Teacher 'Janko' Baum, in the now-repaired elementary school in Heimboldshausen: With a long pointer, he leaned over several desks and demonstrated shooting. For our pranks, all the boys were 'honored' with blows to their short trousers, usually leather ones. Putting cushions in our leather trousers changed the sound and only further fueled the teacher's anger. Before I even got home from school, a classmate, whose name I never learned, had already told my grandfather everything at his shop. That wasn't good for me. Once, this teacher was so enraged at a classmate that he threw him through the hastily repaired classroom door, so that it had to be repaired again.
* In another elementary school, checks were carried out to see if the child had clean fingernails and a clean (at that time, cloth) handkerchief.
* For us younger children, the greatest thing was, when we were allowed to play '*cops and robbers'* with the slightly older children, which led us far out of the village into the forest.
* In our rural area, the children tended the livestock, helped with the hay, potato, and grain harvests, and with threshing. Most of them were only 14 years old when they left school. After that, they

worked like adults. A good pupil of our school was allowed to leave elementary school at the age of 13 because his father had died in the war and there were no other men on the farm.

* During a confirmation lesson (I was 13 years old) when our pastor was replaced by a colleague from the neighboring town. We had to stand up straight during one exercise, which I couldn't do because of severe stomach pains. As a result, the annoyed pastor slapped me and said, "Stand up straight."

Resume: Receiving corporal punishment wasn't a problem for me or the other children if it was justified. But injustices are never forgotten. Particularly very bad was a humiliation, being exposed in front of the class.



Janko, the class teacher at the left,

was member of the German Volkssturm

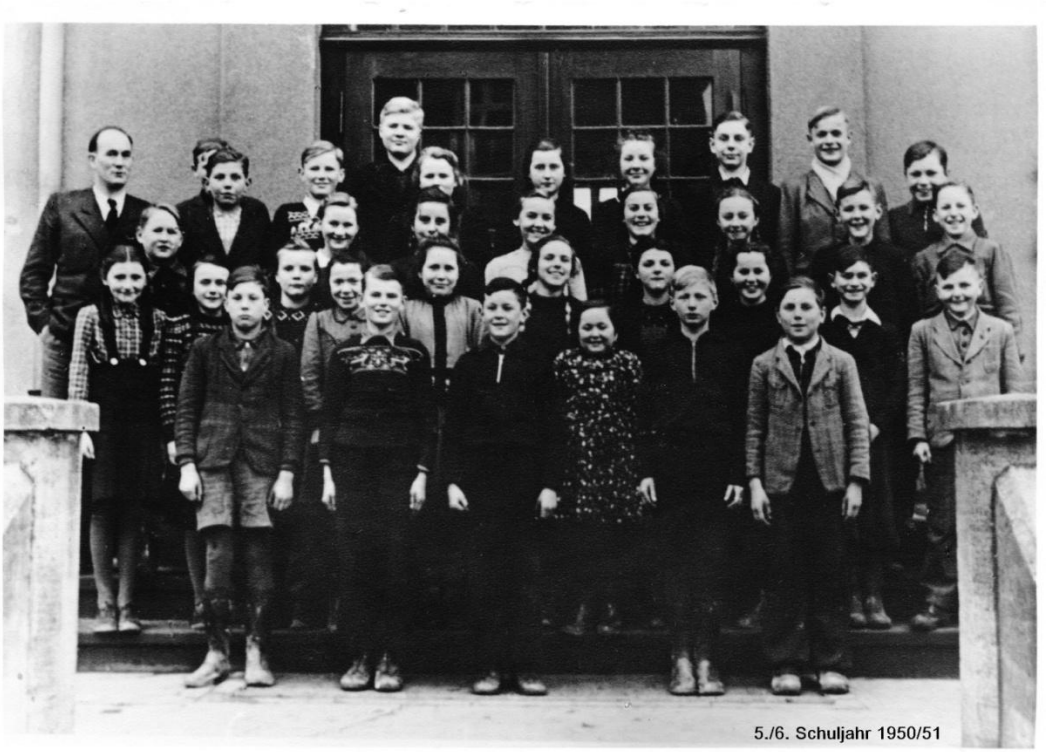
Two level-classes were educated in the elementary school together in one class room



Two grades with over 60 students – taught together – by one teacher at the Heimboldshausen elementary school.

As you can see above and below, **shorts** and woolen stockings were still common in 1950; in winter, the woolen stockings were simply thicker (*the stockings were held up with rubber bands*). Down jackets, thermal underwear, and lined winter boots didn't exist yet. Ice skating involved to screw the

skates onto the very valuable shoes. During the war, sleds shouldn't be damaged. Therefore, I had to use a slow, auxiliary sled. As a result, in 1943, some older children ran me over with their faster sled, causing me to suffer a concussion.



School System:

Elementary school (*Volksschule totally 8 years*: later called Hauptschule = primary school. I started school in the fall of 1945, and finished in February 1950 due to a change in the school year start date!), *secondary school* (*Mittelschule*:10 years, called Realschule from 1965 onwards, preparing students for a practical profession, and renamed back to Mittelschule in 2012), *Grammar school* (*Realgymnasium*: at that time 13 years until graduation with the 'Abitur', which was then called university entrance qualification). The Mittelschule, also called junior high school, junior secondary school, or lower secondary school, is an educational level between primary school and secondary school.

In the first post-war years, there were considerable shortages, as schools were destroyed and many teachers had been killed or were prisoners of war. Teaching was therefore adapted to the circumstances of the time: There was a lack of everything, from food (daily school meals were common) to writing materials. A typical school day included up to five lessons, interrupted by a break and breakfast main break. A lesson lasted 55 minutes with a 5-minute break between lessons, as well as a main break of 15 minutes. There were lessons in the morning and in the afternoon. Due to a shortage of classrooms, lessons were also held on Saturdays.

I always thought I was a "good" child and a well-behaving pupil: According to my parents' records, however, that doesn't seem to have been entirely the case.

My way: Two grades (classes) with over 60 students – taught together – by one teacher at the Heimboldshausen elementary school. Four out of 34 in my classyear were nominated by our homeroom teacher, Mr. Fack, for the entrance exam at the Heringen Gymnasium (high school) in 1950. There were 64 of us students at the lengthy entrance exam; 54 passed (the four of us all made it) and formed a very large first-year class, the so-called Sexta.

Due to caring for my grandfather, I naturally experienced a dip in my academic performance at the beginning of upper secondary school. My father, a civil engineer, said, "No problem. You'll just learn a trade first, and then you can plan the rest yourself." No stress for me!
After the Gymnasium years, only 9 of those 54 passed the Abitur (university entrance exam).
We were among them, with 3 graduates, because unfortunately, our former top student left two years before the Abitur to start earning money faster. No amount of talking to him could change that.



Mandatory Vaccination Certicate of Ralf Cuntze written falsely Rolf Kunze
(Another example: Wrong name, nevertheless always accepted after the WW-II!)

Connections from the border into the interior of West Germany, to Bad Hersfeld:

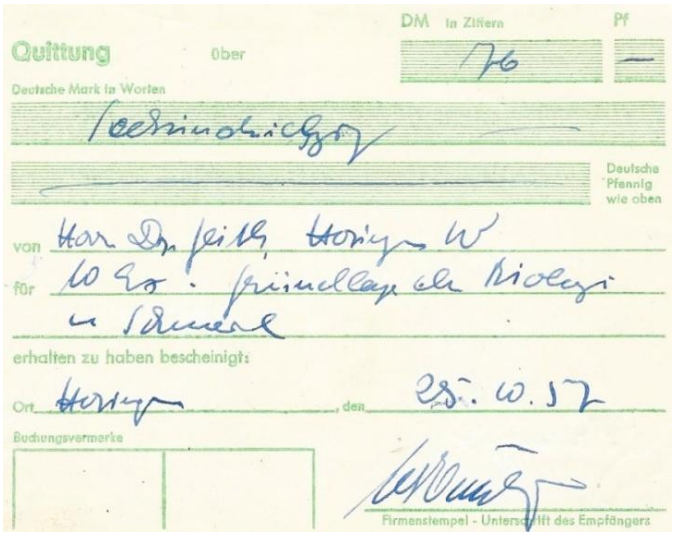
* Besides the very slowly increasing bus connections, the "Kreisbahn" (local railway) was the main means of transport, a very *people-oriented one* back at that time. Once, when I had to go to Hannover at 5 a.m. in 1960, the train didn't go any further. Someone was missing.:"*Where are you, Hans*?" the conductor shouted out into the dark night. After picking Hans up 2 minutes later the train went further.

* For us children, weddings after the war were very significant, especially at the farmer's: the excellent wedding soup, a buttercream cake, the sausages, etc. We children were also allowed to stretch a rope in front of the church. The newlyweds would then throw a handful of small notes, of 5 and 10 Pfennigs. Printing of coins were too expensive.



Small change notes and 5 DM banknote

0.10 Realgymnasium (secondary school) School at Heringen, Werra



Quittung über DM in Ziffern 76 Pf —

Deutsche Mark in Worten

Deutsche Pfennig wie oben

von Herrn Dr. Feith, Heringen W

für 10 Ex. Grundlage der Biologie u. Schmerl

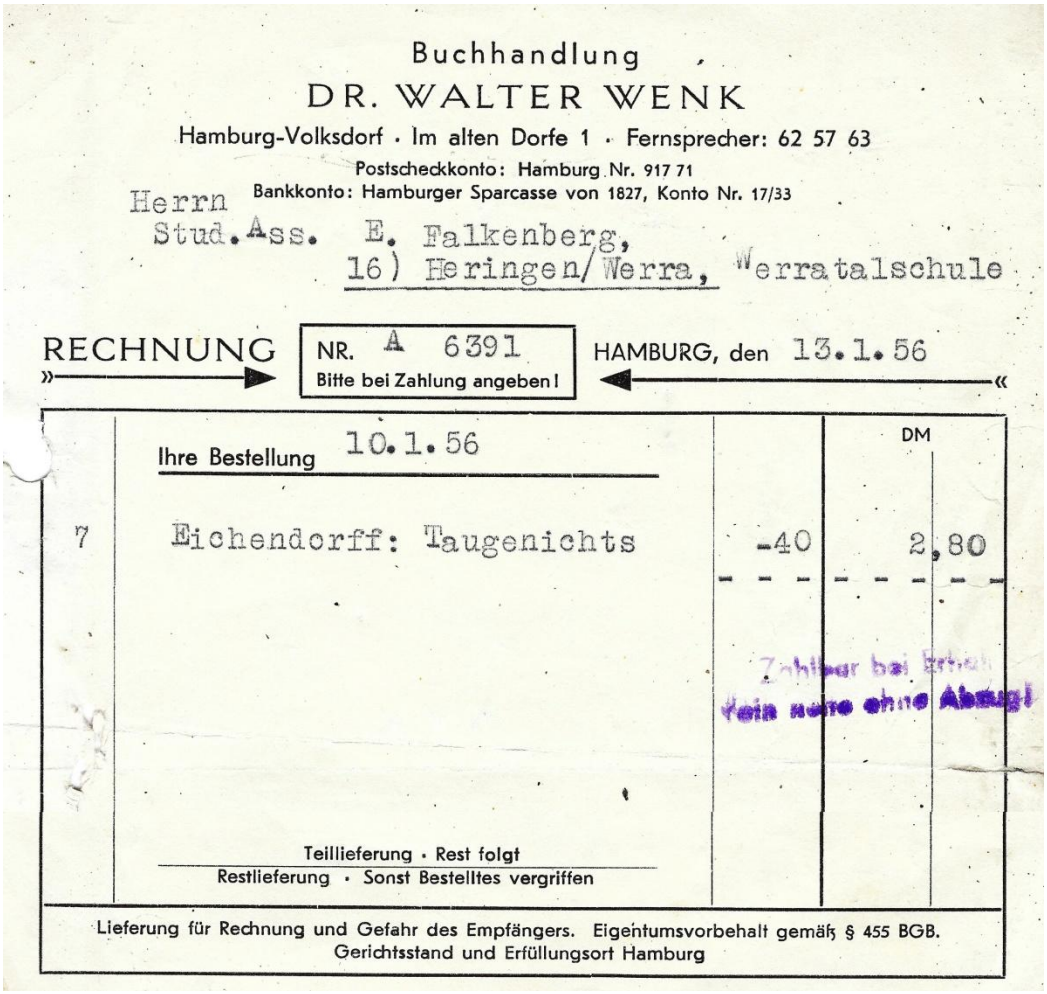
erhalten zu haben bescheinigt:

Ort Heringen, den 25. 10. 57

Buchungsvermerke

Firmenstempel - Unterschrift des Empfängers





Buchhandlung

DR. WALTER WENK

Hamburg-Volksdorf · Im alten Dorfe 1 · Fernsprecher: 62 57 63

Postscheckkonto: Hamburg Nr. 917 71

Bankkonto: Hamburger Sparcasse von 1827, Konto Nr. 17/33

Herrn
Stud. Ass. E. Falkenberg,
16) Heringen/Werra, Werratalschule

RECHNUNG NR. A 6391 Bitte bei Zahlung angeben! HAMBURG, den 13.1.56

Ihre Bestellung 10.1.56

			DM
7	Eichendorff: Taugenichts	-40	2,80

Zahlbar bei Erhalt
Rein netto ohne Abzug!

Teillieferung · Rest folgt
Restlieferung · Sonst Bestelltes vergriffen

Lieferung für Rechnung und Gefahr des Empfängers. Eigentumsvorbehalt gemäß § 455 BGB.
Gerichtsstand und Erfüllungsort Hamburg

Books and class trips had to be privately paid

Werratalschule Heringen
Privates Realgymnasium

Heringen-Werra, den 31. 3. 1950.

Herrn - ~~Frau~~ Bauing Cuntze

in Heimboldshausen

Wir freuen uns, Ihnen mitteilen zu können, daß Ihr Sohn - ~~Ihre Tochter~~ die Aufnahmeprüfung für die Sexta unserer Schule bestanden hat. Der Unterricht beginnt am 18 APR 1950 10⁰⁰ in der neuen Schule zu Heringen.

Gleichzeitig gestatten wir uns, eine Vereinssatzung und eine Erklärung für den Beitritt zum „Schulverein Werratal e. V." beizufügen.

Die Beitrittserklärung erbitten wir möglichst bald, spätestens am 1. Schultag zurück.

Hochachtungsvoll!

Werratalschule Heringen

KÖNIG-DRUCK, HERINGEN / WERRA

Payment: 15 DM monthly

Satzung des Schulvereins Werratal e. V.

§ 1

Name, Zweck, Sitz des Vereins.

1. Der „Schulverein Werratal e. V." hat den Zweck, im hessischen Werrakaligebiet die Errichtung einer Zubringeschule (Werratalschule) für das Staatliche Gymnasium mit Realgymnasium in Hersfeld zu betreiben und ihren Ausbau zu einer selbständigen Vollanstalt ideell und materiell zu fördern.

Der Zweck des Vereins ist nicht auf einen wirtschaftlichen Geschäftsbetrieb gerichtet.

2. Der Verein hat seinen Sitz in Heringen a. W.

3. Der Verein soll in das Vereinsregister eingetragen werden.

Die Anerkennung seiner Gemeinnützigkeit ist zu beantragen.

§ 2

Die Mitgliedschaft.

1. Mitglied des Vereins kann mit Zustimmung des Vorstandes (§ 5) jede natürliche oder juristische Person werden.

2. Der Austritt kann nur am Ende eines Geschäftsjahres (§ 4) erfolgen. Die Austrittserklärung muß spätestens einen Monat vor dem Ende des Geschäftsjahres dem Vorstand gegenüber schriftlich abgegeben werden.

3. Mit dem Ende der Mitgliedschaft erlischt jeder Anspruch auf das Vereinsvermögen.

§ 3

Der Mitgliedsbeitrag.

1. Jedes Mitglied setzt die Höhe seines Beitrages selbst fest. Eine Herabsetzung seines Beitrages kann das Mitglied nur am Ende eines Geschäftsjahres durch eine schriftliche Erklärung vornehmen.

2. Der Mindestbeitrag beträgt 1.– DM monatlich.
Solange Kinder eines Mitgliedes die Werratalschule besuchen, erhöht sich der Mindestbeitrag und zwar bei einem Kind auf 15.– DM monatlich, bei zwei Kindern auf 20.– DM monatlich, bei drei und mehr Kindern auf 30.– DM monatlich.

Mind the different writing of my name!

Impfschein

über eine der gesetzlichen Pflicht genügende Pockenschutz-Wiederimpfung

Impfliste Nr.: 87 **Impfbezirk:** Heringen-Werra
(Entsprechend der amtlichen Liste der zur Wiederimpfung vorzustellenden Impfpflichtigen auszufüllen)

Rolf Cuntze
(Vor- und Zuname des Wiederimpflings)

geboren am 8. 9. 1939 in ..... / ..... (Kreis)

wurde am 9. Mai 1951 19 zum ersten*) — ~~zweiten~~*) — ~~dritten~~*) Male mit*) — ~~ohne~~*) Erfolg gegen Pocken geimpft.

Durch diese Impfung ist der gesetzlichen Pflicht (gemäß Impfgesetz vom 8. April 1874) genügt.

Heringen-Werra, den Mai 1951 19

(Unterschrift des Arztes)

Med. Rat.
(Eigenschaft — Arzt oder Impfarzt)

*) Nichtzutreffendes ist zu streichen.

May 1951

A vaccination certificate had to be delivered

Vordruck I.

Impfschein

Impfbezirk Heimboldshausen Impfliste Nr. 19.

Ralf, Georg Cuntze

geboren den 8. Sept. 1939, wurde am 5. April 1940

zum ersten Male mit Erfolg geimpft.

Durch die Impfung ist der gesetzlichen Pflicht genügt.

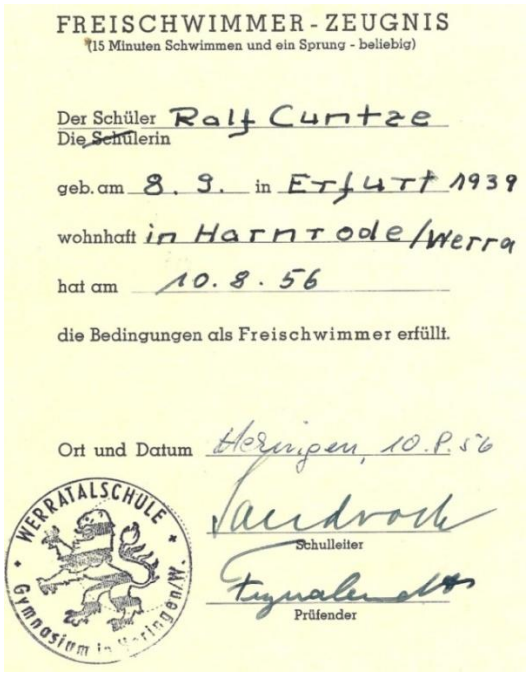
Heimboldshausen, am 12. April 1940

Impf-Arzt

Bemerkung: Die Vordrucke sind bei der Ausfertigung von dem betreffenden Arzt mit seiner Namensunterschrift und seiner Eigenschaft als „Arzt" bezw. „Impfarzt" zu versehen.

Form. Nr. J. 9.
Hermann Flotow, Wandsbek
Vordruckverlag - Buchdruckerei

Accurate April 1940



FREISCHWIMMER-ZEUGNIS

(15 Minuten Schwimmen und ein Sprung - beliebig)

Der Schüler Ralf Cuntze
Die Schülerin

geb. am 8. 9. in Erfurt 1939

wohnhaft in Harnrode/Werra

hat am 10. 8. 56

die Bedingungen als Freischwimmer erfüllt.

Ort und Datum Herrnpfen, 10. 8. 56

Schulleiter

Prüfender

WERRATALSCHULE Gymnasium in Hessingen/Werra

Learning to swim was compulsory in school!



KURZSCHRIFT-URKUNDE

Ralf Cuntze

hat im Schnellschreiben

eine 5-Minuten-Ansage in der Geschwindigkeit von

100 Silben

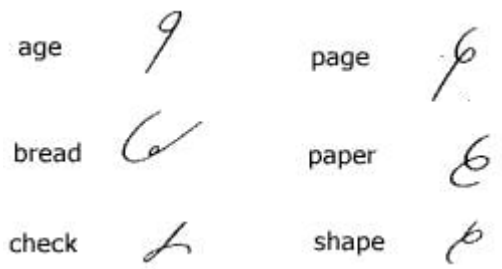
in der Minute aufgenommen und mit der Beurteilung

gut

übertragen

Philippsthal/Werra den 26. 5. 1957

Kurzschriftverein Philippsthal (W.)



age	9	page	6
bread	6	paper	6
check	L	shape	6

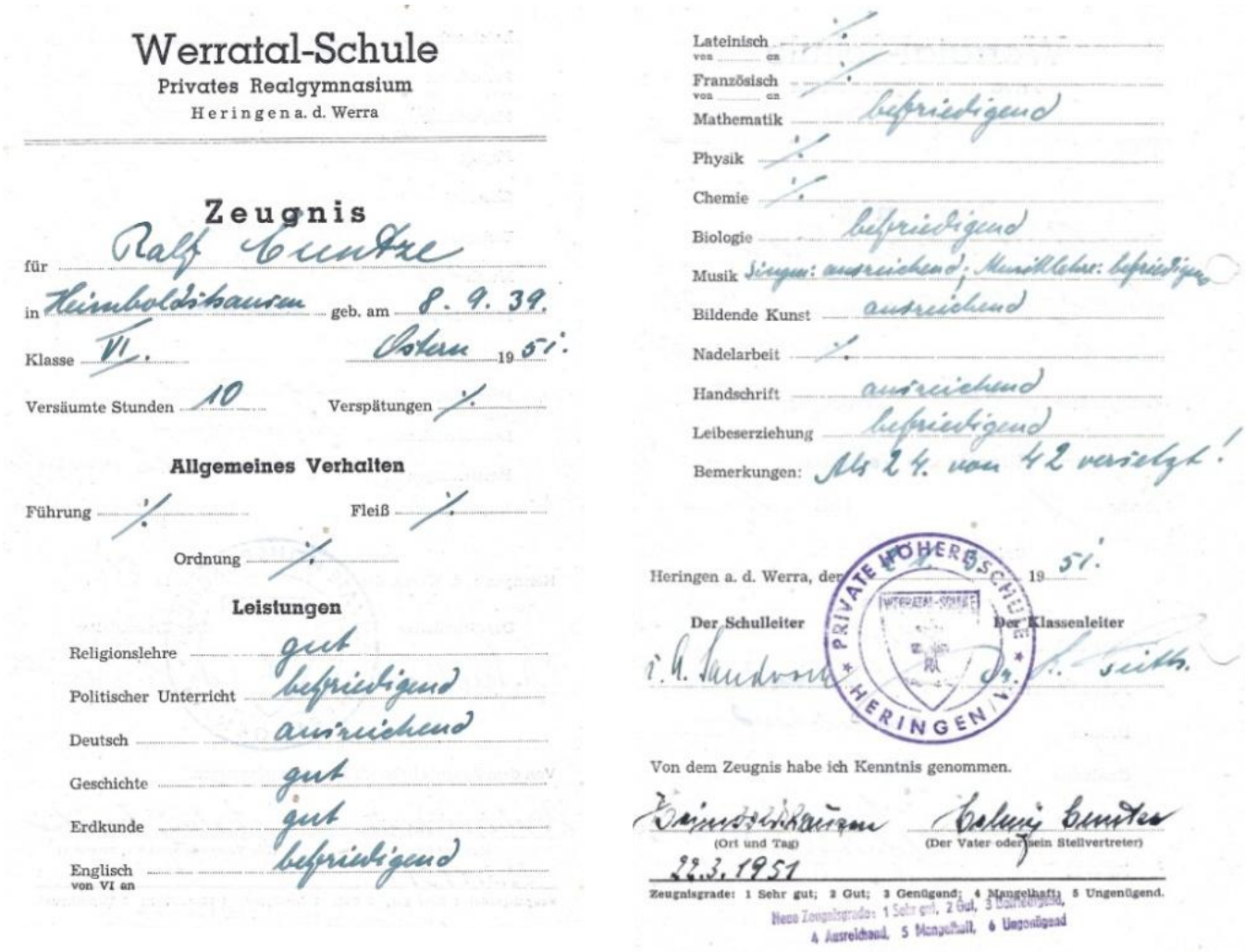
Stenography = "Shorthand: Rapid writing system using special, short symbols, fixed abbreviations, and rules. There are three main areas of application: note-taking for private records, professional writing for telephone notes, minutes, and for recording speeches word for word still in our present German Parliament



me:

1956

This was the
great time
to learn shorthand



Werratal-Schule
Privates Realgymnasium
Heringen a. d. Werra

Zeugnis

für Ralf Cuntze
in Humboldshausen geb. am 8. 9. 39.
Klasse VI. Ostern 19 51.
Versäumte Stunden 10 Verspätungen /.

Allgemeines Verhalten

Führung / Fleiß /.
Ordnung /.

Leistungen

Religionslehre gut
Politischer Unterricht befriedigend
Deutsch ausreichend
Geschichte gut
Erdkunde gut
Englisch befriedigend
von VI an

Lateinisch /.
von ... an
Französisch /.
von ... an
Mathematik befriedigend
Physik /.
Chemie /.
Biologie befriedigend
Musik Singen: ausreichend; Musiklehre: befriedigend
Bildende Kunst ausreichend
Nadelarbeit /.
Handschrift ausreichend
Leibeserziehung befriedigend
Bemerkungen: Als 24. von 42 versetzt!

Heringen a. d. Werra, den ... 19 51.

PRIVATE HÖHERE SCHULE WERRATAL-SCHULE HERINGEN/W

Der Schulleiter Der Klassenleiter

Von dem Zeugnis habe ich Kenntnis genommen.

Heringen (Ort und Tag) (Der Vater oder sein Stellvertreter)
22.3.1951

Zeugnisgrade: 1 Sehr gut; 2 Gut; 3 Genügend; 4 Mangelhaft; 5 Ungenügend.
Neue Zeugnisgrade: 1 Sehr gut, 2 Gut, 3 Befriedigend,
4 Ausreichend, 5 Mangelhaft, 6 Ungenügend

This certificate is from the 'most beloved' teacher, Dr. Geith, at the Werratal School:

- When he was my class teacher, my grades in the relevant subjects dropped by one level. In the final year (called Prima), he slapped me on the balcony of the school building, a terrible humiliation in front of all the other pupils down in the schoolyard. I wanted to retaliate, but I remembered that a former classmate had been expelled from school after fighting back, so I didn't.
- Could it be still acceptable to write today: "*Was ranked 24th out of 42, promoted* ?"

My report card grades were not so good, however,
diligence is usually what counts in the later working life**.**

WERRATAL-SCHULE · REALGYMNASIUM HERINGEN/WERRA

Klasse ~~UII~~ Schuljahr 19~~55~~/~~56~~ – 1 –, Halbjahr

ZEUGNIS

für Ralf Cuntze

Betragen: gut Aufmerksamkeit: Sehr gut

Fleiß: Sehr gut Ordnung: gut

LEISTUNGEN:

1. Religion	gut	12. Chemie	Sehr gut
2. Sozialkunde	Sehr gut	13. Biologie	gut
3. Deutsch	Mangelhaft	14. Kunsterziehung	—
4. Geschichte	Sehr gut	15. Musik	—
5. Erdkunde	gut	16. Leibesübungen	befriedigend
6. Englisch	befriedigend	17. Nadelarbeit/Werken	—
7. Französisch	befriedigend	18. Schreiben	—
8. Lateinisch	befriedigend	19.	—
9. Griechisch	—	20.	—
10. Mathematik	befriedigend	21.	—
11. Physik	gut	22.	—

Notenfolge für Betragen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = nicht immer befriedigend, 5 = unbefriedigend
Notenfolge für Fleiß, Aufmerksamkeit, Ordnung und Leistungen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = ausreichend, 5 = mangelhaft, 6 = ungenügend

Laut Konferenzbeschluß vom — - nicht - versetzt nach Klasse —

Versäumte Tage: —

Bemerkungen:

Heringen, den 8. Oktober 19 55

Der Schulleiter Oberstudiendirektor

Der Klassenleiter Bähr Studienrat, -Rätin, -Assessor

Der Vater oder Stellvertreter

Form.-Nr. 409e Formular-Verlag Gebrüder Müller KG, Kassel, Schlachthofstraße 28-30 Nachdruck verboten

WERRATAL-SCHULE · REALGYMNASIUM HERINGEN/WERRA

Klasse ~~OIII~~ Schuljahr 19~~54~~/~~55~~ – 1 –, Halbjahr

ZEUGNIS

für Ralf Cuntze

Betragen: gut Aufmerksamkeit: gut

Fleiß: gut Ordnung: gut

LEISTUNGEN:

1. Religion	gut	12. Chemie	Befriedigend
2. Sozialkunde	gut	13. Biologie	Mangelhaft
3. Deutsch	Ungenügend	14. Kunsterziehung	—
4. Geschichte	gut	15. Musik	Befriedigend
5. Erdkunde	gut	16. Leibesübungen	Befriedigend
6. Englisch	Befriedigend	17. ~~Nadelarbeit~~/Werken	—
7. Französisch	—	18. ~~Schreiben~~	—
8. Lateinisch	gut	19. Handschrift	Ungenügend
9. Griechisch	—	20.	
10. Mathematik	Ungenügend	21.	
11. Physik	Ungenügend	22.	

Notenfolge für Betragen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = nicht immer befriedigend, 5 = unbefriedigend
Notenfolge für Fleiß, Aufmerksamkeit, Ordnung und Leistungen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = ausreichend, 5 = mangelhaft, 6 = ungenügend

Laut Konferenzbeschluß vom — - nicht - versetzt nach Klasse —

Versäumte Tage: —

Bemerkungen:

Heringen, den 20 September 19 54

Der Schulleiter Oberstudiendirektor

Der Klassenleiter Bähr Studienrat, -Rätin, -Assessor

Der Vater oder Stellvertreter

Form.-Nr. 409e Formular-Verlag Gebrüder Müller KG, Kassel, Schlachthofstraße 28-30 Nachdruck verboten

WERRATAL-SCHULE · REALGYMNASIUM · HERINGEN/WERRA

Klasse ~~UII (OII)~~ Schuljahr 195~~6~~/~~57~~, ~~1~~ 2 Halbjahr

ZEUGNIS

für Ralf Cuntze

Betragen: sehr gut Aufmerksamkeit: sehr gut

Fleiß: sehr gut Ordnung: gut

LEISTUNGEN:

1. Religionslehre	gut	12. Chemie	gut
2. Sozialkunde	gut	13. Biologie	gut
3. Deutsch	ausreichend	14. Kunsterziehung	gut
4. Geschichte	gut	15. Musik	ausreichend
5. Erdkunde	gut	16. Leibeserziehung	befriedigend
6. Englisch	ausreichend	17. Nadelarbeit/Werken	—
7. Französisch	befriedigend	18. Handschrift	—
8. Lateinisch	ausreichend	19.	—
9. Griechisch	—	20.	—
10. Mathematik	befriedigend	21.	—
11. Physik	befriedigend	22.	—

Notenfolge für Betragen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = nicht immer befriedigend, 5 = unbefriedigend
Notenfolge für Fleiß, Aufmerksamkeit, Ordnung und Leistungen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = ausreichend, 5 = mangelhaft, 6 = ungenügend

Laut Konferenzbeschluß vom 8. IV. 57 - ~~nicht~~ - versetzt nach Klasse 12 (~~UI~~)

Versäumte Tage: 2, Stunden: —

Bemerkungen: Die Leistungen im Lateinisch sind nur schwach ausreichend.

Heringen, den 8. IV. 195 7

Der Schulleiter Oberstudiendirektor

Der Klassenleiter Studienrat, -Rätin, -Assessor

Kenntnis genommen:

Erziehungsberechtigter

Form.-Nr. 409e Formular-Verlag Gebrüder Müller KG, Kassel, Schlachthofstr. 28-30
Nachdruck verboten

WERRATALSCHULE
Gymnasium in Heringen/Werra

Klasse ~~12 (OII)~~ Schuljahr 195~~7~~/~~58~~, ~~1~~ 2 Halbjahr

ZEUGNIS

für Ralf Cuntze

Betragen: sehr gut Aufmerksamkeit: gut

Fleiß: gut Ordnung: sehr gut

LEISTUNGEN:

1. Religionslehre	gut	12. Physik	befriedigend
2. Sozialkunde	gut	13. Chemie	befriedigend
3. Deutsch	befriedigend	14. Biologie	befriedigend
4. Geschichte	gut	15. Kunsterziehung	sehr gut
5. Erdkunde	gut	16. Musik	—
6. Englisch	befriedigend	17. Leibeserziehung	gut
7. Französisch	befriedigend	18. Nadelarbeit/Werken	—
8. Lateinisch	ausreichend	19. Handschrift	—
9. Griechisch	—	20. Arbeitsgemeinschaften in:	
10. Hebräisch	—		—
11. Mathematik	befriedigend		—

Notenfolge für Betragen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = nicht immer befriedigend, 5 = unbefriedigend
Notenfolge für Fleiß, Aufmerksamkeit, Ordnung und Leistungen: 1 = sehr gut, 2 = gut, 3 = befriedigend, 4 = ausreichend, 5 = mangelhaft, 6 = ungenügend

Laut Konferenzbeschluß vom 25. März 1958 - ~~nicht~~ - versetzt nach Klasse 13 (OI)

Versäumte Tage: —, Stunden: —

Bemerkungen: —

Heringen/Werra, den 25. März 195 8

Der Schulleiter Oberstudiendirektor

Der Klassenleiter Studienrat, -Rätin, -Assessor

Kenntnis genommen:

Erziehungsberechtigter

Form.-Nr. 409e Formularverlag Hans Meister KG, Kassel, Tischbeinstraße 32
Nachdruck verboten!



about 2012.
With our strict, fantastic class teacher Hans-Heinrich Bähr; Ralf , Kurt



Class 1957. Entrance examination 1950 (*64 pupils*), Abitur 1959 *(just 9 pupils left at exams*

)



A teacher explains

Some non-chronologic pictures of the class







art teacher Gulitz









Class , trip to the island of Sylt.
1958









Our strong, however beloved teacher H.H. Bähr, who finally married a class mate

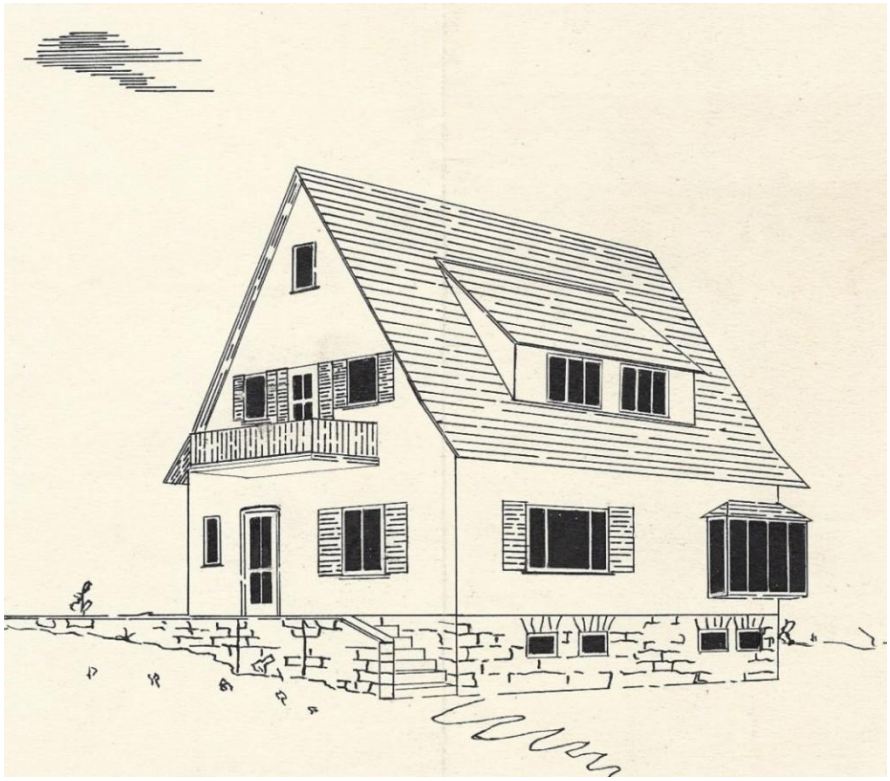


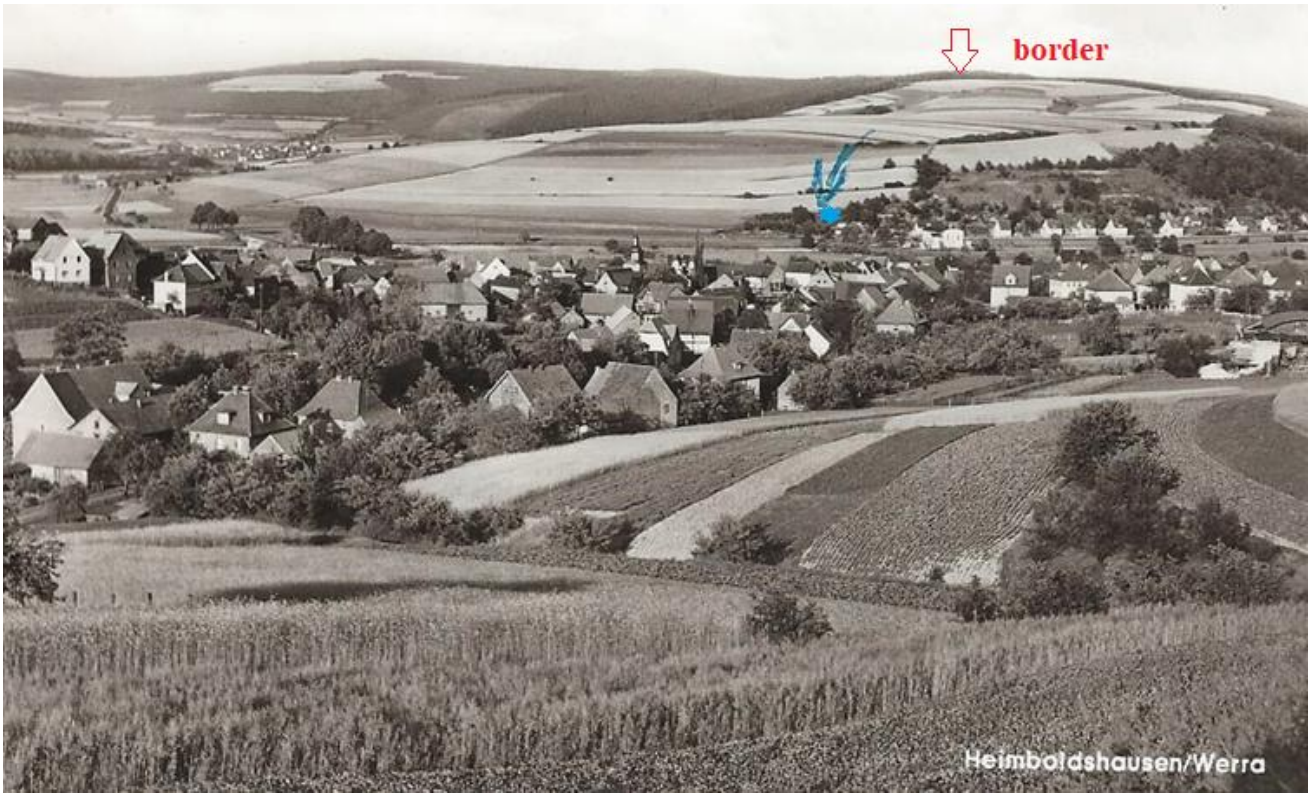

.. and later class meetings



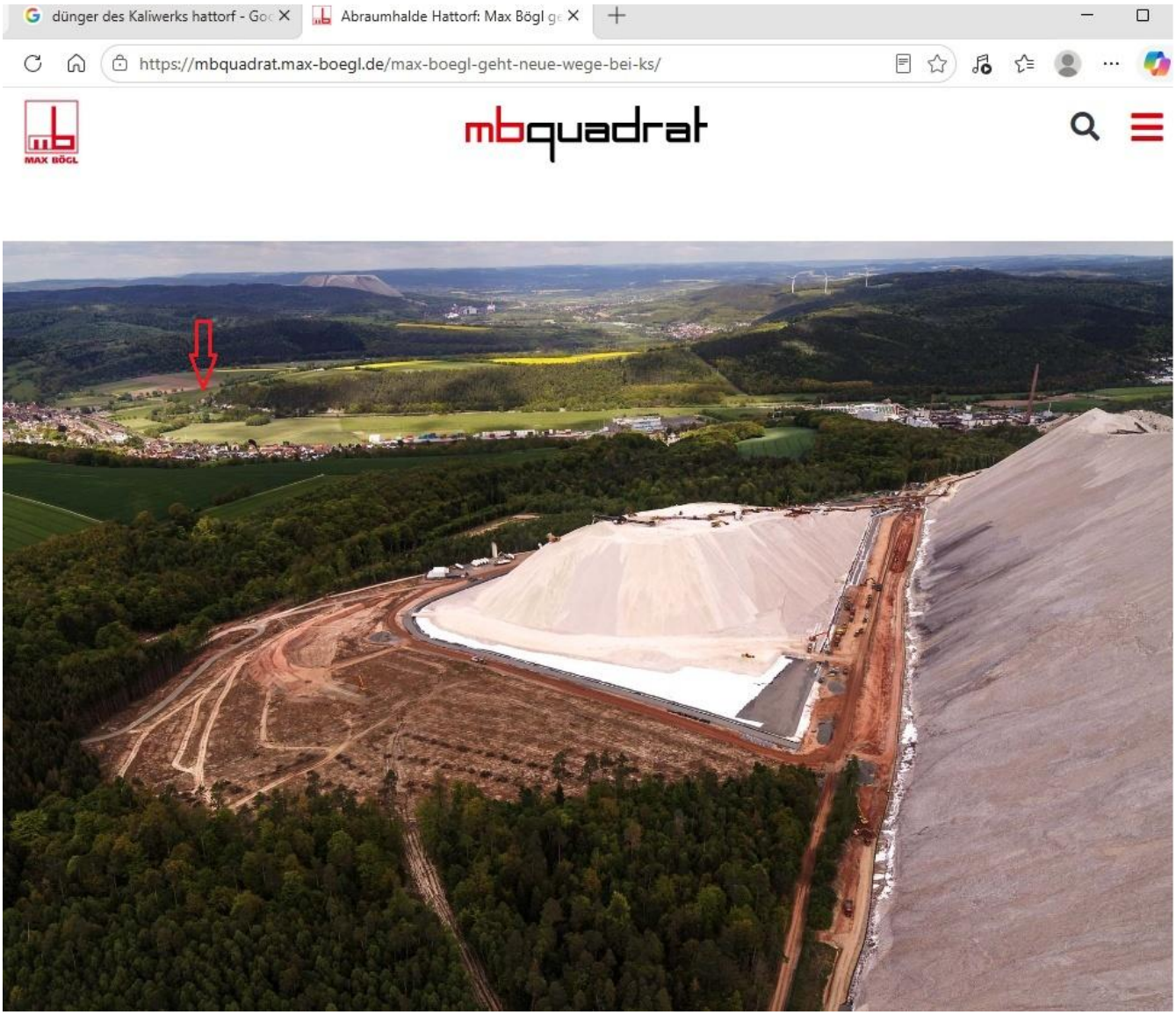
0.11 Harnrode: Building a new home, 1952/1953

My dad's drawing





Home



View of the growing ‘son’ from the high ponash waste mountain ‘Monte Hattorf’, below.

Groundwater-conserving, improved construction of the facility at, above . **Home**

In the back the huge other ponash waste mountain “Monte Kali”, height 510 m, 200 m above ground.

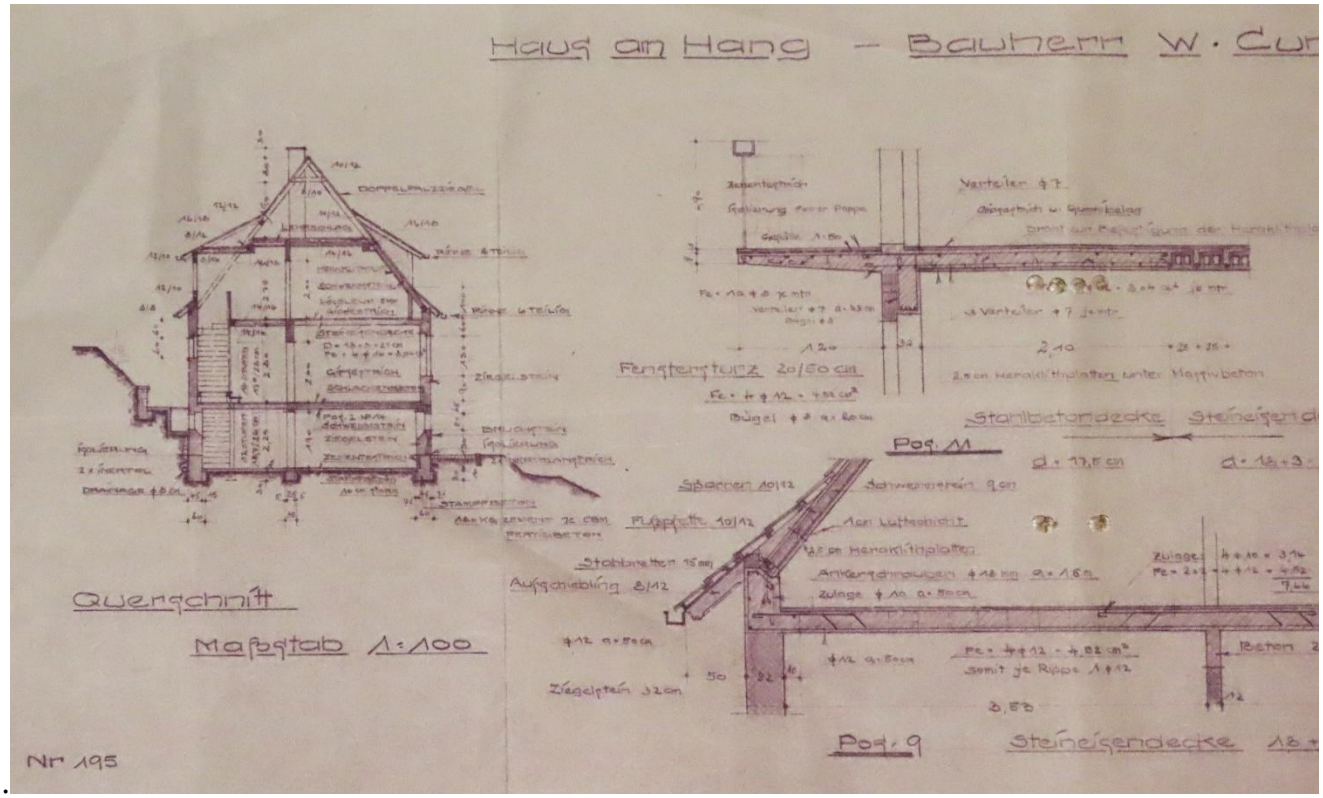
(Shall not become higher than the Maountains nearby!)

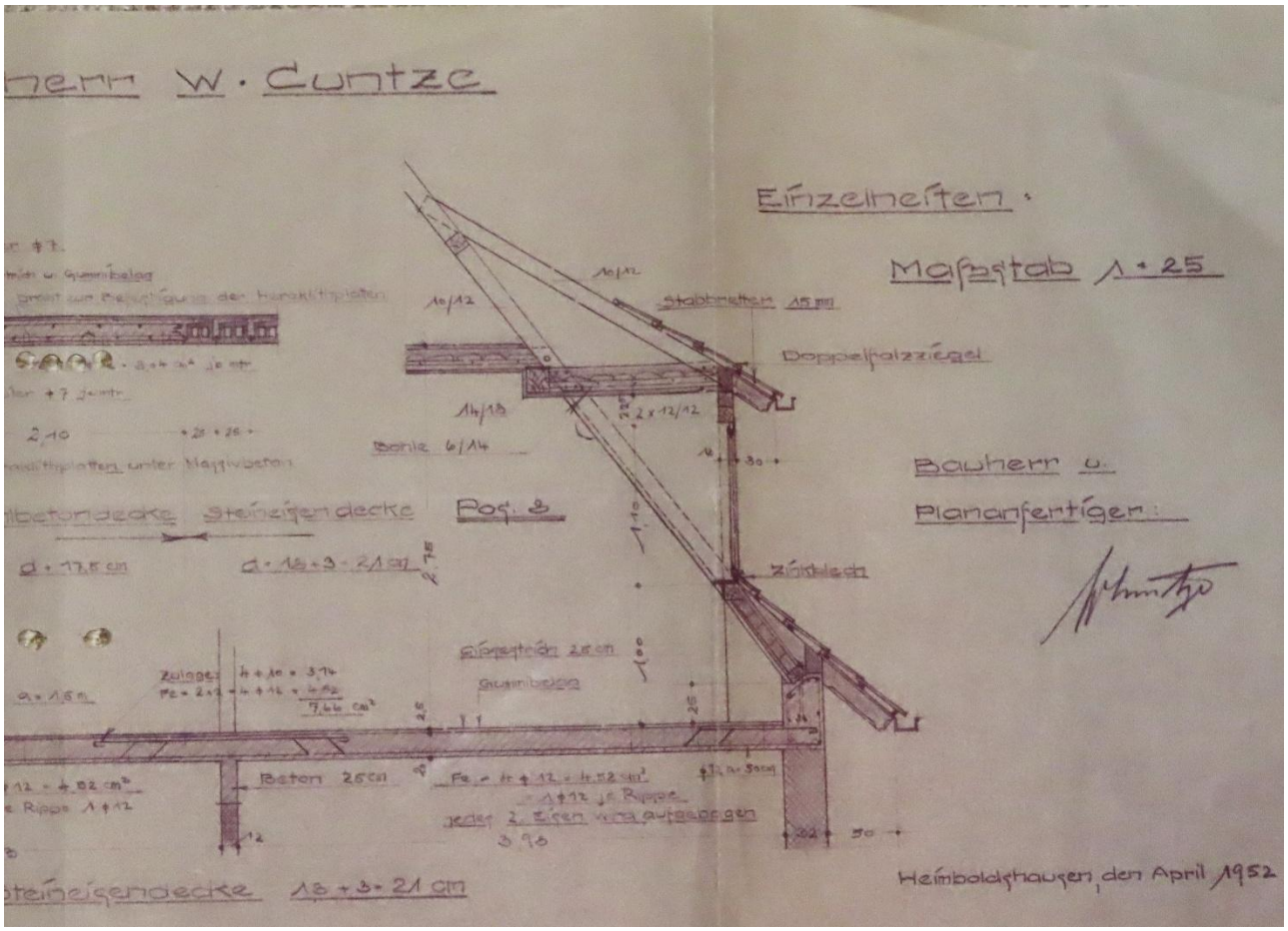
Where people earned their money!



Changes until 2025: Present view ‘Monte Hattorf’, 510 m.

[Abraum7.jpg (6240×4160)]





All buildings ‘hand self-made’ by the father with family support, a good mile away from the border

Living at the new home





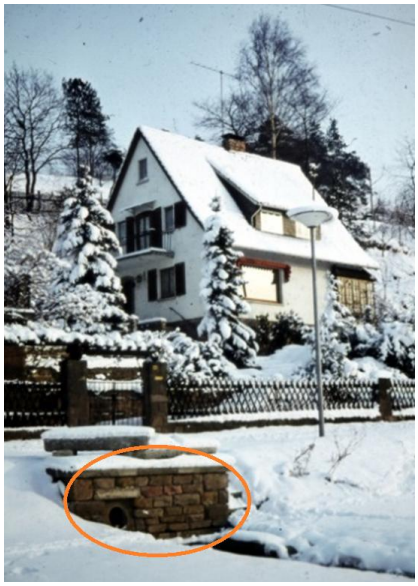
First: a wooden log cabin was built, in 1945/1946











A source for own use, water for the pool



The 100 m long wooden fence asked for Ralf's care, annually !!









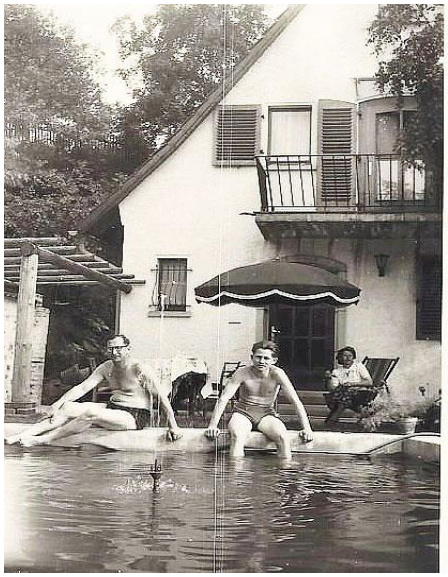
Family Life





Figures planning and laying the tiles (*responsible Ralf*)







Mother relaxing

















Working & Relaxing on the building site





Annual slaughter feast

(left) Our master carpenter was also the best butcher. He also fed our pig.
His sausages were highly valued.







me, aunt Friedel, friend Aloys

Every year, the slaughter of a pig served to obtain an excellent food supply over the year.





With such good care, one had a good laugh







Mybeloved grand aunt Lausy



friends



me & dad



Uncle and aunts





Enjoyment in the former log cabin





chat with pastor











Our beloved river Werra, 100 m away. My father taking children for a boat ride. My first job in the spring was to paint the boat with new paint, not only because it made it watertight but also because it made it more beautiful.



The ‘brick master’ on his steps to our house



Family members



Father enjoyed a good cigar

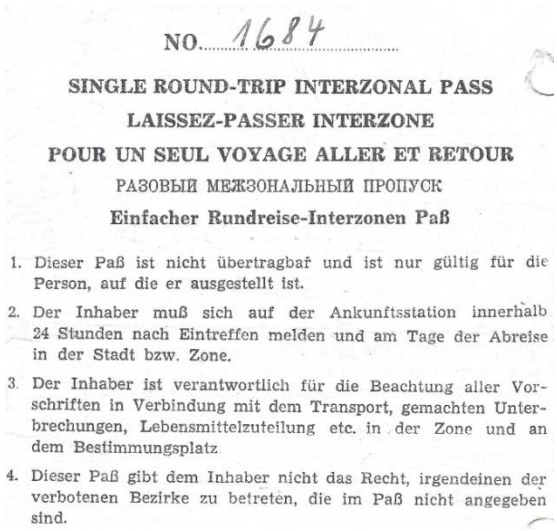


General store of my grand father and later my uncle. Closed 1985, about 1961

In the Grandparents general store at Heimboldshausen, where the author lived and collected experience as a young merchant until 1953. I helped here.

From 1954 on:
The figure shows the later owner, my relatives Heinrich Koch and his wife Friedel, my ’second’ mother.

0.12 Difficult Business Trips (practically only) into the Russian Zone



NO. 1684

SINGLE ROUND-TRIP INTERZONAL PASS

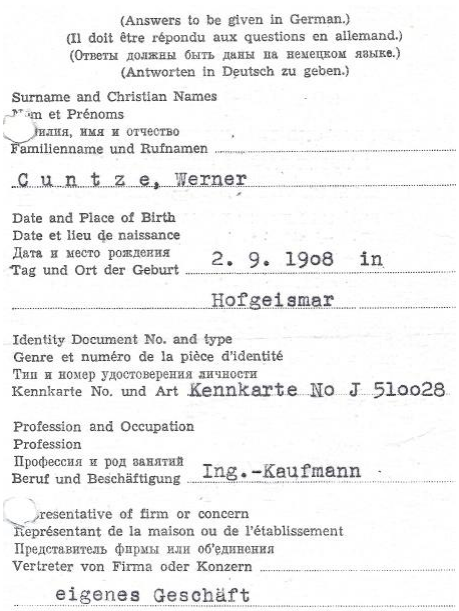
LAISSEZ-PASSER INTERZONE

POUR UN SEUL VOYAGE ALLER ET RETOUR

РАЗОВЫЙ МЕЖЗОНАЛЬНЫЙ ПРОПУСК

Einfacher Rundreise-Interzonen Paß

1. Dieser Paß ist nicht übertragbaf und ist nur gültig für die Person, auf die er ausgestellt ist.
2. Der Inhaber muß sich auf der Ankunftsstation innerhalb 24 Stunden nach Eintreffen melden und am Tage der Abreise in der Stadt bzw. Zone.
3. Der Inhaber ist verantwortlich für die Beachtung aller Vorschriften in Verbindung mit dem Transport, gemachten Unterbrechungen, Lebensmittelzuteilung etc. in der Zone und an dem Bestimmungsplatz.
4. Dieser Paß gibt dem Inhaber nicht das Recht, irgendeinen der verbotenen Bezirke zu betreten, die im Paß nicht angegeben sind.



(Answers to be given in German.)
(Il doit être répondu aux questions en allemand.)
(Ответы должны быть даны на немецком языке.)
(Antworten in Deutsch zu geben.)

Surname and Christian Names
Nom et Prénoms
Фамилия, имя и отчество
Familienname und Rufnamen
C u n t z e, Werner

Date and Place of Birth
Date et lieu de naissance
Дата и место рождения
Tag und Ort der Geburt 2. 9. 1908 in
Hofgeismar

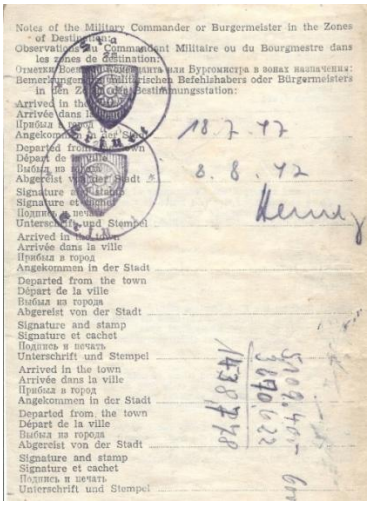
Identity Document No. and type
Genre et numéro de la pièce d'identité
Тип и номер удостоверения личности
Kennkarte No. und Art Kennkarte No J 5100 28

Profession and Occupation
Profession
Профессия и род занятий
Beruf und Beschäftigung Ing.-Kaufmann

Representative of firm or concern
Représentant de la maison ou de l'établissement
Представитель фирмы или об'единения
Vertreter von Firma oder Konzern
eigenes Geschäft

1. This pass is non-transferable and is only valid for the person to whom it is issued.
2. The holder must report to the arrival station within 24 hours of arrival and on the day of departure in the city or zone.
3. The holder is responsible for complying with all regulations relating to transportation, any interruptions, food rationing, etc., in the zone and at the destination.

4. This pass does not entitle the holder to enter any of the prohibited areas not specified in the pass.



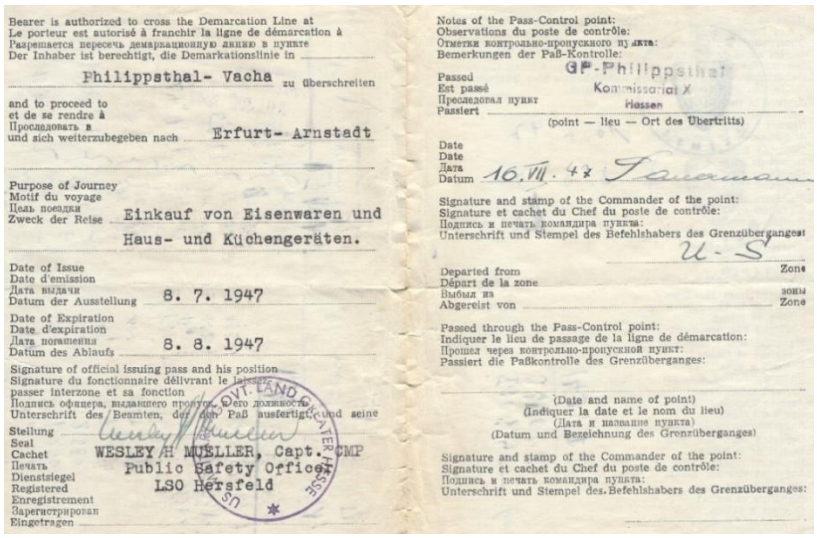
Notes of the Military Commander or Burgermeister in the Zones of Destination
Observations du Commandant Militaire ou du Bourgmestre dans les zones de destination:
Отметки Военного коменданта или Бургомистра в зонах назначения:
Bemerkungen des militärischen Befehlshabers oder Bürgermeisters in den Zonen der Bestimmungsstation:

Arrived in the town 18.7.47
Arrivée dans la ville
Прибыл в город
Angekommen in der Stadt
Departed from the town 8.8.47
Départ de la ville
Выбыл из города
Abgereist von der Stadt
Signature and stamp
Signature et cachet
Подпись и печать
Unterschrift und Stempel

Arrived in the town
Arrivée dans la ville
Прибыл в город
Angekommen in der Stadt
Departed from the town
Départ de la ville
Выбыл из города
Abgereist von der Stadt
Signature and stamp
Signature et cachet
Подпись и печать
Unterschrift und Stempel

Arrived in the town
Arrivée dans la ville
Прибыл в город
Angekommen in der Stadt
Departed from the town
Départ de la ville
Выбыл из города
Abgereist von der Stadt
Signature and stamp
Signature et cachet
Подпись и печать
Unterschrift und Stempel

Purchase of hardware and household and kitchen appliances
1947: referred to as an engineering-merchant



Bearer is authorized to cross the Demarcation Line at
Le porteur est autorisé à franchir la ligne de démarcation à
Разрешается пересечь демаркационную линию в пункте
Der Inhaber ist berechtigt, die Demarkationslinie in
Philippsthal- Vacha zu überschreiten

and to proceed to
et de se rendre à
Проследовать в
und sich weiterzubegeben nach Erfurt- Arnstadt

Purpose of Journey
Motif du voyage
Цель поездки
Zweck der Reise Einkauf von Eisenwaren und Haus- und Küchengeräten.

Date of Issue
Date d'emission
Дата выдачи
Datum der Ausstellung 8. 7. 1947

Date of Expiration
Date d'expiration
Дата истечения
Datum des Ablaufs 8. 8. 1947

Signature of official issuing pass and his position
Signature du fonctionnaire délivrant le laissez-passer interzone et sa fonction
Подпись офицера, выдавшего пропуск, его должность
Unterschrift des Beamten, der den Paß ausfertigt, und seine
Stellung
Seal
Cachet
Печать
Dienstsiegel
Registered
Enregistrement
Зарегистрирован
Eingetragen
WESLEY H MUELLER, Capt. CMP
Public Safety Officer
LSO Hersfeld

Notes of the Pass-Control point:
Observations du poste de contrôle:
Отметки контрольно-пропускного пункта:
Bemerkungen der Paß-Kontrolle:
GP-Philippsthal
Passed Kommissariat X
Est passé
Проследовал пункт Hessen
Passiert
(point — lieu — Ort des Übertritts)

Date
Date
Дата
Datum 16.VII.47

Signature and stamp of the Commander of the point:
Signature et cachet du Chef du poste de contrôle:
Подпись и печать командира пункта:
Unterschrift und Stempel des Befehlshabers des Grenzüberganges:
U-S

Departed from Zone
Départ de la zone
Выбыл из зоны
Abgereist von Zone

Passed through the Pass-Control point:
Indiquer le lieu de passage de la ligne de démarcation:
Прошел через контрольно-пропускной пункт:
Passiert die Paßkontrolle des Grenzüberganges:

(Date and name of point)
(Indiquer la date et le nom du lieu)
(Дата и название пункта)
(Datum und Bezeichnung des Grenzüberganges)

Signature and stamp of the Commander of the point:
Signature et cachet du Chef du poste de contrôle:
Подпись и печать командира пункта:
Unterschrift und Stempel des Befehlshabers des Grenzüberganges:

NO. 15195

SINGLE ROUND-TRIP INTERZONAL PASS
LAISSEZ-PASSER INTERZONE
POUR UN SEUL VOYAGE ALLER ET RETOUR
РАЗОВЫЙ МЕЖЗОНАЛЬНЫЙ ПРОПУСК
Einfacher Rundreise-Interzonen Paß

1. Dieser Paß ist nicht übertragbar und ist nur gültig für die Person, auf die er ausgestellt ist.
2. Der Inhaber muß sich auf der Ankunftsstation innerhalb 24 Stunden nach Eintreffen melden und am Tage der Abreise in der Stadt bzw. Zone.
3. Der Inhaber ist verantwortlich für die Beachtung aller Vorschriften in Verbindung mit dem Transport, gemachten Unterbrechungen, Lebensmittelzuteilung etc. in der Zone und an dem Bestimmungsplatz.
4. Dieser Paß gibt dem Inhaber nicht das Recht, irgendeinen der verbotenen Bezirke zu betreten, die im Paß nicht angegeben sind.

Form OMGUS - 251
(5 Nov 47)
OMGUS AG Pubs/1512/600M/28/5/48

(Answers to be given in German.)
(Il doit être répondu aux questions en allemand.)
(Ответы должны быть даны на немецком языке.)
(Antworten in Deutsch zu geben.)

Surname and Christian Names
Nom et Prénoms
Фамилия, имя и отчество
Familienname und Rufnamen
C u n t z e, Werner

Date and Place of Birth
Date et lieu de naissance
Дата и место рождения
Tag und Ort der Geburt 2. September 1908 in Hofgeismar

Identity Document No. and type
Genre et numéro de la pièce d'identité
Тип и номер удостоверения личности
Kennkarte No. und Art Kennkarte No J 543565

Profession and Occupation
Profession
Профессия и род занятий
Beruf und Beschäftigung Maurer

Representative of firm or concern
Représentant de la maison ou de l'établissement
Представитель фирмы или об'единения
Vertreter von Firma oder Konzern ---

Notes of the Military Commander or Burgermeister in the Zones of Destination:
Observations du Commandant Militaire ou du Bourgmestre dans les Zones de destination:
Отметки Военного Коменданта или Бургомистра в зонах назначения:
Bemerkungen des militärischen Befehlshabers oder Bürgermeisters in den Zonen der Bestimmungsstation:

Arrived in the town
Arrivée dans la ville
Прибыл в город
Angekommen in der Stadt Gotha 11. April 1950

Departed from the town
Départ de la ville
Выбыл из города
Abgereist von der Stadt Gotha 11. April 1950
Volkspolizei - Kreisamt
Gotha

Signature and stamp
Signature et cachet
Подпись и печать
Unterschrift und Stempel

Arrived in the town
Arrivée dans la ville
Прибыл в город
Angekommen in der Stadt

Departed from the town
Départ de la ville
Выбыл из города
Abgereist von der Stadt

Signature and stamp
Signature et cachet
Подпись и печать
Unterschrift und Stempel

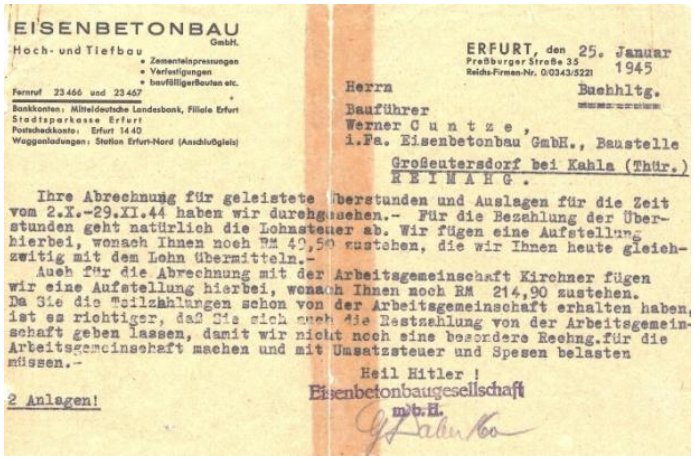
Regulation of inheritance matters
1950: referred to as a brick-layer (advantage for a permission ??)



Bearer is authorized to cross the Demarcation Line at
Le porteur est autorisé à franchir la ligne de démarcation à
Разрешается пересечь демаркационную линию в пункте
Der Inhaber ist berechtigt, die Demarkationslinie in
Philippsthal- Vacha
and to proceed to
et de se rendre à
Проследовать в
und sich weiterzubegeben nach Molsch[illegible] Motha
Purpose of Journey
Motif du voyage
Цель поездки
Zweck der Reise Regelung von Erbschafts-angelegenheiten.
Date of Issue
Date d'emission
Дата выдачи
Datum der Ausstellung 7. April 1950
Date of Expiration
Date d'expiration
Дата истечения
Datum des Ablaufs 6. Mai 1950
Signature of official issuing pass and his position
Signature du fonctionnaire délivrant le laissez-passer interzone et sa fonction
Подпись офицера, выдавшего пропуск, и его должность
Unterschrift des Beamten, der den Paß ausfertigt, und seine Stellung
Seal
Cachet
Печать
Dienstsiegel
Registered
Enregistrement
Зарегистрирован
Eingetragen
Resident Officer 15195

Notes of the Pass-Control point:
Observations du poste de contrôle:
Отметки контрольно-пропускного пункта:
Bemerkungen der Paß-Kontrolle:
Passed
Est passé
Преследовал пункт
Passiert
(point — lieu — Ort des Kontrolls)
Date
Date
Дата
Datum
Signature and stamp of the Commander of the point:
Signature et cachet du Chef du poste de contrôle:
Подпись и печать командира пункта:
Unterschrift und Stempel des Befehlshabers des Grenzüberganges:
Departed from
Départ de la zone
Выбыл из
Abgereist von
Zone
зоны
Zone
Passed through the Pass-Control point:
Indiquer le lieu de passage de la ligne de démarcation:
Прошел через контрольно-пропускной пункт:
Passiert die Paßkontrolle des Grenzüberganges:
(Date and name of point)
(Indiquer la date et le nom du lieu)
(Дата и названия пункта)
(Datum und Bezeichnung des Grenzüberganges)
Signature and stamp of the Commander of the point:
Signature et cachet du Chef du poste de contrôle:
Подпись и печать командира пункта:
Unterschrift und Stempel des Befehlshabers des Grenzüberganges:

Grenzkontrollstelle Philippsthal
E: A: 1.4.50
REGISTRIERT
Дата 8/4 50
№ 1601
КПП Фаха СВАГ
ВЫБЫЛ
№ 1581
КПП Фаха СВАГ
Grenzkontrollstelle Philippsthal
E: 11.4.50 A: Nov 24



EISENBETONBAU GmbH.
Hoch- und Tiefbau
• Zementeinpressungen
• Verfestigungen
• baufälligerBauten etc.
Fernruf 23 466 und 23 467
Bankkonten: Mitteldeutsche Landesbank, Filiale Erfurt
Stadtsparkasse Erfurt
Postscheckkonto: Erfurt 14 40
Waggonladungen: Station Erfurt-Nord (Anschlußgleis)

ERFURT, den 25. Januar 1945
Preßburger Straße 35
Reichs-Firmen-Nr. 0/0343/5221

Herrn
Bauführer
Werner C u n t z e ,
i.Fa. Eisenbetonbau GmbH., Baustelle
Großeutersdorf bei Kahla (Thür.)
R E I M A H G .

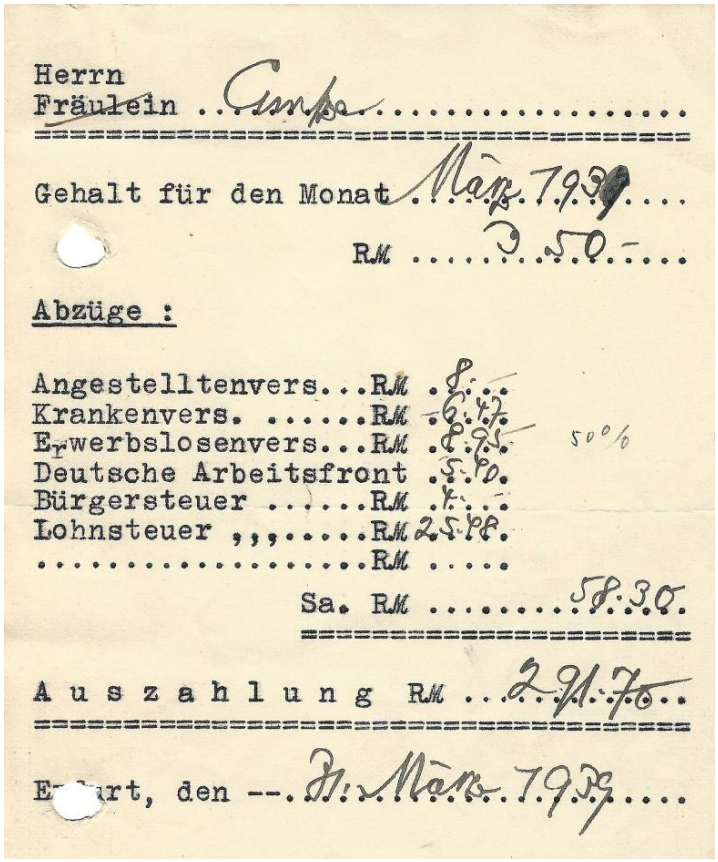
Buchhltg.

Ihre Abrechnung für geleistete Überstunden und Auslagen für die Zeit vom 2.X.-29.XI.44 haben wir durchgesehen.- Für die Bezahlung der Überstunden geht natürlich die Lohnsteuer ab. Wir fügen eine Aufstellung hierbei, wonach Ihnen noch RM 40,50 zustehen, die wir Ihnen heute gleichzeitig mit dem Lohn übermitteln.-

Auch für die Abrechnung mit der Arbeitsgemeinschaft Kirchner fügen wir eine Aufstellung hierbei, wonach Ihnen noch RM 214,90 zustehen. Da Sie die Teilzahlungen schon von der Arbeitsgemeinschaft erhalten haben, ist es richtiger, daß Sie sich auch die Restzahlung von der Arbeitsgemeinschaft geben lassen, damit wir nicht noch eine besondere Rechng.für die Arbeitsgemeinschaft machen und mit Umsatzsteuer und Spesen belasten müssen.-

Heil Hitler !
Eisenbetonbaugesellschaft
m.b.H.

2 Anlagen!



Herrn
~~Fräulein~~ ..Gmbh.....

Gehalt für den Monat März 1939....

RM .....3.50.-....

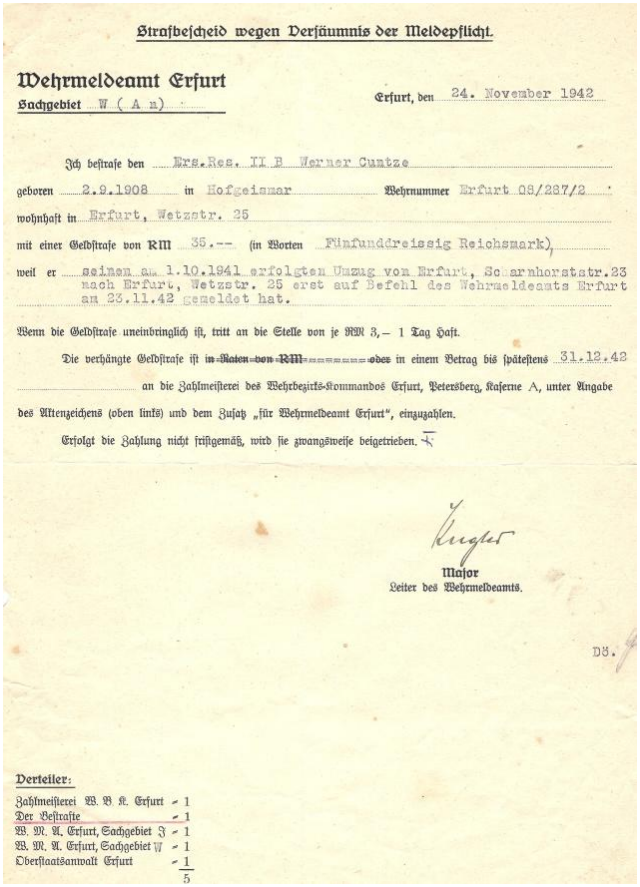
Abzüge :

Angestelltenvers...RM .8.-
Krankenvers. .....RM .6.47
Erwerbslosenvers...RM .8.95 50%
Deutsche Arbeitsfront .5.40
Bürgersteuer .....RM .4.-
Lohnsteuer ,,,.....RM 25.48
.....RM .....

Sa. RM 58.30

A u s z a h l u n g RM ...29.70..

Erfurt, den --.31. März 1939....



Strafbescheid wegen Versäumnis der Meldepflicht.

Wehrmeldeamt Erfurt
Sachgebiet W (A n)

Erfurt, den 24. November 1942

Ich bestrafe den Ers.Res. II B Werner Cuntze
geboren 2.9.1908 in Hofgeismar Wehrnummer Erfurt 08/287/2
wohnhaft in Erfurt, Wetzstr. 25
mit einer Geldstrafe von RM 35.-- (in Worten Fünfunddreissig Reichsmark),
weil er seinen am 1.10.1941 erfolgten Umzug von Erfurt, Scharnhorststr.23 nach Erfurt, Wetzstr. 25 erst auf Befehl des Wehrmeldeamts Erfurt am 23.11.42 gemeldet hat.

Wenn die Geldstrafe uneinbringlich ist, tritt an die Stelle von je RM 3,– 1 Tag Haft.

Die verhängte Geldstrafe ist ~~in Raten von RM~~ ~~oder~~ in einem Betrag bis spätestens 31.12.42 an die Zahlmeisterei des Wehrbezirks-Kommandos Erfurt, Petersberg, Kaserne A, unter Angabe des Aktenzeichens (oben links) und dem Zusatz „für Wehrmeldeamt Erfurt", einzuzahlen.

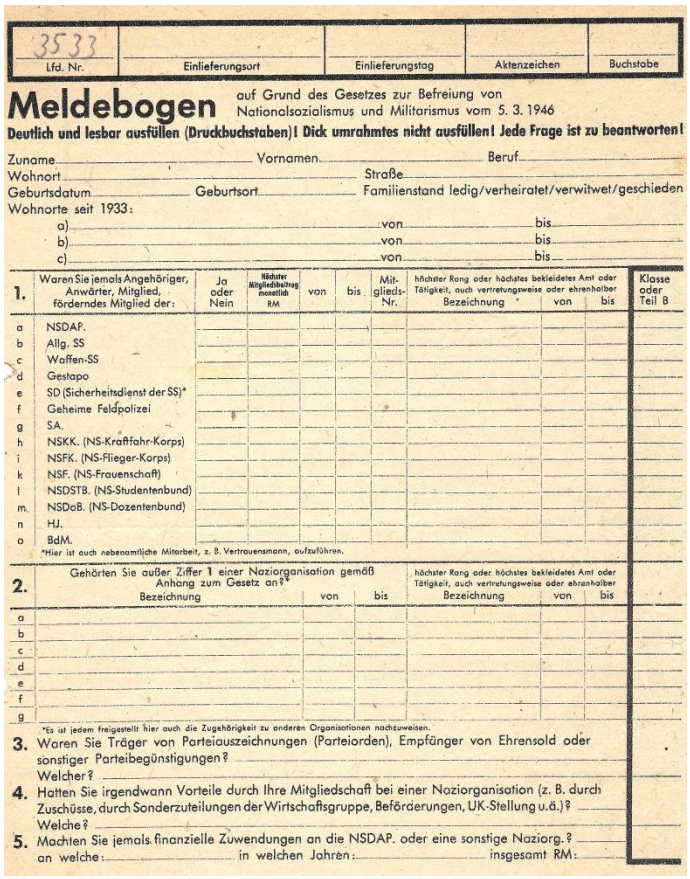
Erfolgt die Zahlung nicht fristgemäß, wird sie zwangsweise beigetrieben.

Major
Leiter des Wehrmeldeamts.

D3.

Verteiler:
Zahlmeisterei W. B. K. Erfurt - 1
Der Bestrafte - 1
W. M. A. Erfurt, Sachgebiet J - 1
W. M. A. Erfurt, Sachgebiet W - 1
Oberstaatsanwalt Erfurt - 1
5

Supply



Lfd. Nr. 3533 | Einlieferungsort | Einlieferungstag | Aktenzeichen | Buchstabe

Meldebogen auf Grund des Gesetzes zur Befreiung von Nationalsozialismus und Militarismus vom 5. 3. 1946

Deutlich und lesbar ausfüllen (Druckbuchstaben)! Dick umrahmtes nicht ausfüllen! Jede Frage ist zu beantworten!

Zuname ____ Vornamen ____ Beruf ____
Wohnort ____ Straße ____
Geburtsdatum ____ Geburtsort ____ Familienstand ledig/verheiratet/verwitwet/geschieden
Wohnorte seit 1933:
a) ____ von ____ bis ____
b) ____ von ____ bis ____
c) ____ von ____ bis ____

1. Waren Sie jemals Angehöriger, Anwärter, Mitglied, förderndes Mitglied der: (Ja oder Nein; Höchster Mitgliedsbeitrag monatlich RM; von; bis; Mitglieds-Nr.; höchster Rang oder höchstes bekleidetes Amt oder Tätigkeit, auch vertretungsweise oder ehrenhalber Bezeichnung; von; bis; Klasse oder Teil II)

a NSDAP. b Allg. SS c Waffen-SS d Gestapo e SD (Sicherheitsdienst der SS)* f Geheime Feldpolizei g SA. h NSKK. (NS-Kraftfahr-Korps) i NSFK. (NS-Flieger-Korps) k NSF. (NS-Frauenschaft) l NSDSTB. (NS-Studentenbund) m. NSDoB. (NS-Dozentenbund) n HJ. o BdM.

*Hier ist auch nebenamtliche Mitarbeit, z. B. Vertrauensmann, aufzuführen.

2. Gehörten Sie außer Ziffer 1 einer Naziorganisation gemäß Anhang zum Gesetz an?* (Bezeichnung; von; bis; höchster Rang oder höchstes bekleidetes Amt oder Tätigkeit, auch vertretungsweise oder ehrenhalber Bezeichnung; von; bis)

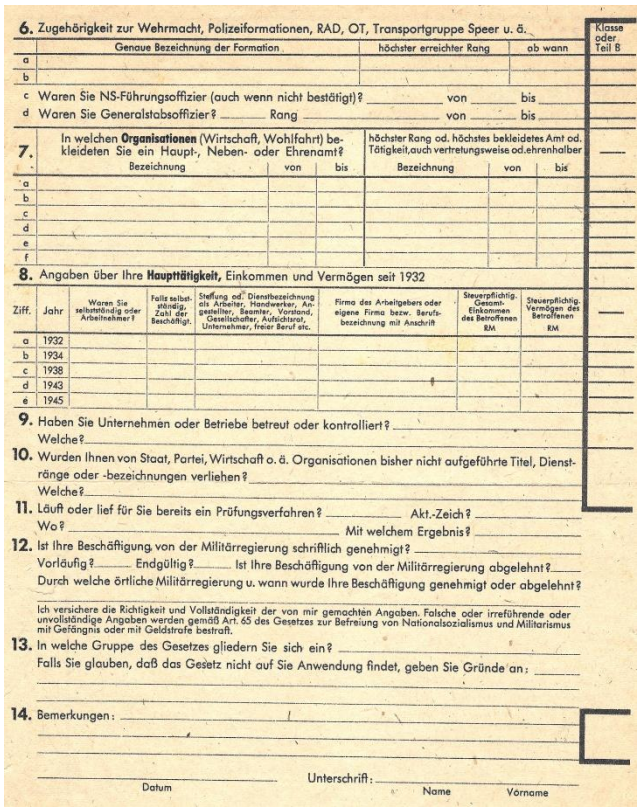
a b c d e f g

*Es ist jedem freigestellt hier auch die Zugehörigkeit zu anderen Organisationen nachzuweisen.

3. Waren Sie Träger von Parteiauszeichnungen (Parteiorden), Empfänger von Ehrensold oder sonstiger Parteibegünstigungen?
Welcher? ____

4. Hatten Sie irgendwann Vorteile durch Ihre Mitgliedschaft bei einer Naziorganisation (z. B. durch Zuschüsse, durch Sonderzuteilungen der Wirtschaftsgruppe, Beförderungen, UK-Stellung u.ä.)? ____
Welche? ____

5. Machten Sie jemals finanzielle Zuwendungen an die NSDAP. oder eine sonstige Naziorg.? ____
an welche: ____ in welchen Jahren: ____ insgesamt RM: ____



6. Zugehörigkeit zur Wehrmacht, Polizeiformationen, RAD, OT, Transportgruppe Speer u. ä. (Genaue Bezeichnung der Formation; höchster erreichter Rang; ab wann; Klasse oder Teil II)

a
b
c Waren Sie NS-Führungsoffizier (auch wenn nicht bestätigt)? ____ von ____ bis ____
d Waren Sie Generalstabsoffizier? ____ Rang ____ von ____ bis ____

7. In welchen **Organisationen** (Wirtschaft, Wohlfahrt) bekleideten Sie ein Haupt-, Neben- oder Ehrenamt? (Bezeichnung; von; bis; höchster Rang od. höchstes bekleidetes Amt od. Tätigkeit, auch vertretungsweise od. ehrenhalber Bezeichnung; von; bis)

a b c d e f

8. Angaben über Ihre **Haupttätigkeit**, Einkommen und Vermögen seit 1932

Ziff.	Jahr	Waren Sie selbstständig oder Arbeitnehmer?	Falls selbstständig, Zahl der Beschäftigt.	Stellung od. Dienstbezeichnung als Arbeiter, Handwerker, Angestellter, Beamter, Vorstand, Gesellschafter, Aufsichtsrat, Unternehmer, freier Beruf etc.	Firma des Arbeitgebers oder eigene Firma bezw. Berufsbezeichnung mit Anschrift	Steuerpflichtig. Gesamt-Einkommen des Betroffenen RM	Steuerpflichtig. Vermögen des Betroffenen RM
a	1932						
b	1934						
c	1938						
d	1943						
e	1945						

9. Haben Sie Unternehmen oder Betriebe betreut oder kontrolliert? ____
Welche? ____

10. Wurden Ihnen von Staat, Partei, Wirtschaft o. ä. Organisationen bisher nicht aufgeführte Titel, Dienstränge oder -bezeichnungen verliehen? ____
Welche? ____

11. Läuft oder lief für Sie bereits ein Prüfungsverfahren? ____ Akt.-Zeich? ____
Wo? ____ Mit welchem Ergebnis? ____

12. Ist Ihre Beschäftigung von der Militärregierung schriftlich genehmigt? ____
Vorläufig? ____ Endgültig? ____ Ist Ihre Beschäftigung von der Militärregierung abgelehnt? ____
Durch welche örtliche Militärregierung u. wann wurde Ihre Beschäftigung genehmigt oder abgelehnt? ____

Ich versichere die Richtigkeit und Vollständigkeit der von mir gemachten Angaben. Falsche oder irreführende oder unvollständige Angaben werden gemäß Art. 65 des Gesetzes zur Befreiung von Nationalsozialismus und Militarismus mit Gefängnis oder mit Geldstrafe bestraft.

13. In welche Gruppe des Gesetzes gliedern Sie sich ein? ____
Falls Sie glauben, daß das Gesetz nicht auf Sie Anwendung findet, geben Sie Gründe an: ____

14. Bemerkungen: ____

Datum ____ Unterschrift: ____ Name ____ Vorname ____



August Nabitz
Schornsteinfegermeister
Heimboldshausen

L/0909

Adam Handke
Heringen/Werra
Schuhmacher

Stadt Weimar
Stadt Erfurt

№ 354061

Vierte Reichskleiderkarte

für Herrn Werner Cuntze
geboren am 2.9.08
Wohnort Erfurt
Wohnung Ritzpraser 25

Die Karte gilt bis 30. Juni 1944; sie ist nicht übertragbar. Die Karte darf nur zur Bedienung des Bedarfs des Karteninhabers benutzt werden. Mißbräuchliche Benutzung wird bestraft. Aus dem Zusammenhang der Karte gelöste Kartenteile und Abschnitte sind ungültig.
Auf die Karte können die umstehend genannten Waren bezogen werden. Bei jeder Ware ist angegeben, wieviel Abschnitte von dem Verkäufer vor Aushändigung der Ware von der Karte abgetrennt werden. Beim Bezug von Socken und Strümpfen fremder Verkäufer außer den Abschnitten den entsprechenden Bezugsnachweis von derselben Reichskleiderkarte ab. Der Bezug von Socken und Strümpfen ist auf 2 Paare beschränkt. Davon sind 5 Paare gegen Abtrennung der vorgesehenen Abschnitte erhältlich. Zwei weitere Paar Socken oder Strümpfe können nur gegen die entsprechende Anzahl von Abschnitten bezogen werden. Die Abschnitte a—e sind für den Bezug von Waren vorgesehen, die gegebenenfalls besonders bekanntgemacht werden. Für bestimmte Stoffe und Fertigwaren sind Sonderregelungen ergangen. Sie können in das Geschäftes ertragt werden.

Bewertung der Stoffe
soweit nicht eine Sonderregelung getroffen ist

A. Wollene, wollhaltige, naturseidene und naturseidenhaltige Stoffe:
140 cm Fertigbreite = 16 Punkte,
je volle 9 cm größere oder geringere Breite = 1 Punkt mehr oder weniger.

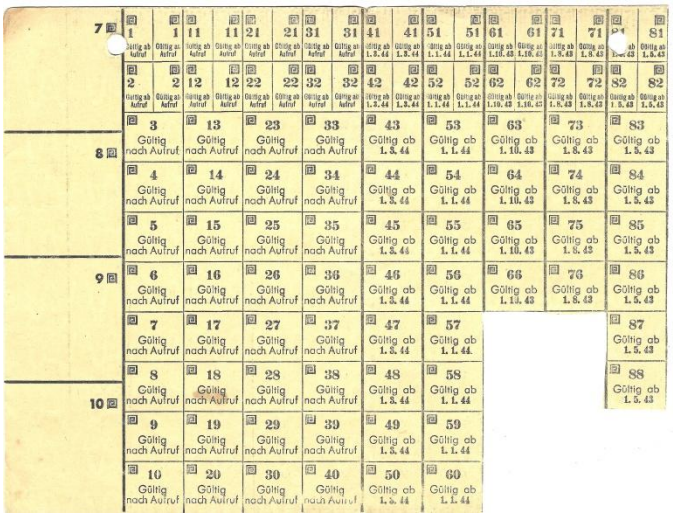
B. Kunstseidene und kunstseidenhaltige Stoffe:
Bis 51 cm Fertigbreite = 3 Punkte,
je angefangene 17 cm größere Breite = 1 Punkt mehr.

C. Alle übrigen Stoffe:
80 cm Fertigbreite = 8 Punkte,
je volle 10 cm größere oder geringere Breite = 1 Punkt mehr oder weniger.

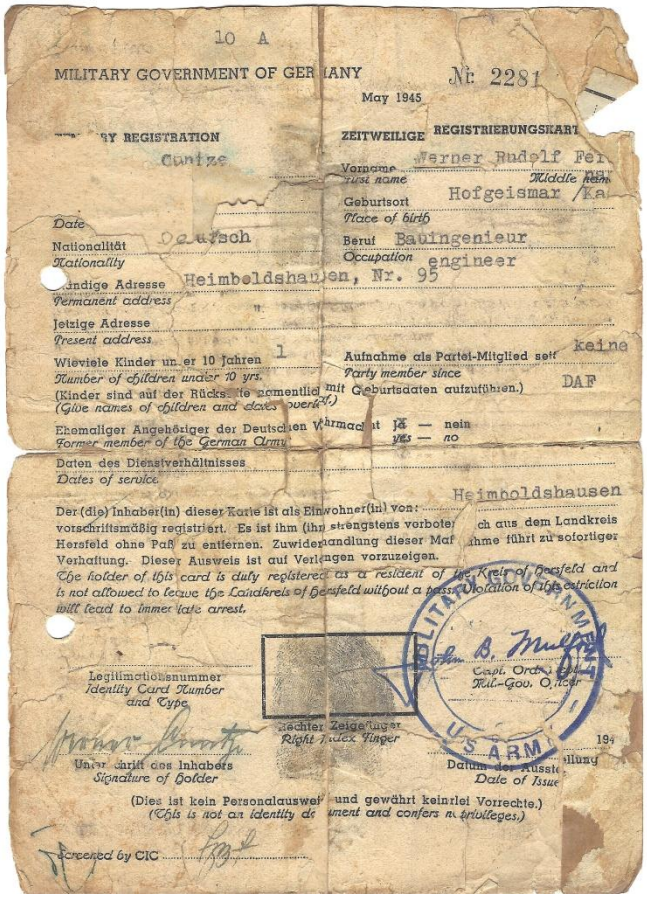
Punktwert der Waren

Spalte I: Punktwert für Waren, die nicht nach II—IV unterschiedlich bewertet sind.
Spalte II: Punktwert für wollene, wollhaltige, naturseidene und naturseidenhaltige Waren.
Spalte III: Punktwert für kunstseidene und kunstseidenhaltige Waren.
Spalte IV: Punktwert für Waren aus allen übrigen Spinnstoffen.

Nähmittel werden nur abgegeben gegen gleichartige Abtrennung eines Nähmittelabschnitts und eines weiteren Abschnitts der Reichskleiderkarte für jeden Nähmittelabschnitt.



7	1 Gültig ab Aufruf	1 Gültig ab Aufruf	11 Gültig ab Aufruf	11 Gültig ab Aufruf	21 Gültig ab Aufruf	21 Gültig ab Aufruf	31 Gültig ab Aufruf	31 Gültig ab Aufruf	41 Gültig ab 1.9.44	41 Gültig ab 1.8.44	51 Gültig ab 1.1.44	51 Gültig ab 1.1.44	61 Gültig ab 1.10.43	61 Gültig ab 1.10.43	71 Gültig ab 1.9.43	71 Gültig ab 1.8.43	81 Gültig ab 1.8.43	81 Gültig ab 1.8.43	
	2 Gültig ab Aufruf	2 Gültig ab Aufruf	12 Gültig ab Aufruf	12 Gültig ab Aufruf	22 Gültig ab Aufruf	22 Gültig ab Aufruf	32 Gültig ab Aufruf	32 Gültig ab Aufruf	42 Gültig ab 1.8.44	42 Gültig ab 1.8.44	52 Gültig ab 1.1.44	52 Gültig ab 1.1.44	62 Gültig ab 1.10.43	62 Gültig ab 1.10.43	72 Gültig ab 1.8.43	72 Gültig ab 1.8.43	82 Gültig ab 1.8.43	82 Gültig ab 1.8.43	
8	3 Gültig nach Aufruf		13 Gültig nach Aufruf		23 Gültig nach Aufruf		33 Gültig nach Aufruf		43 Gültig ab 1.8.44		53 Gültig ab 1.1.44		63 Gültig ab 1.10.43		73 Gültig ab 1.8.43		83 Gültig ab 1.8.43		
	4 Gültig nach Aufruf		14 Gültig nach Aufruf		24 Gültig nach Aufruf		34 Gültig nach Aufruf		44 Gültig ab 1.8.44		54 Gültig ab 1.1.44		64 Gültig ab 1.10.43		74 Gültig ab 1.8.43		84 Gültig ab 1.8.43		
	5 Gültig nach Aufruf		15 Gültig nach Aufruf		25 Gültig nach Aufruf		35 Gültig nach Aufruf		45 Gültig ab 1.8.44		55 Gültig ab 1.1.44		65 Gültig ab 1.10.43		75 Gültig ab 1.8.43		85 Gültig ab 1.8.43		
9	6 Gültig nach Aufruf		16 Gültig nach Aufruf		26 Gültig nach Aufruf		36 Gültig nach Aufruf		46 Gültig ab 1.8.44		56 Gültig ab 1.1.44		66 Gültig ab 1.10.43		76 Gültig ab 1.8.43		86 Gültig ab 1.8.43		
	7 Gültig nach Aufruf		17 Gültig nach Aufruf		27 Gültig nach Aufruf		37 Gültig nach Aufruf		47 Gültig ab 1.8.44		57 Gültig ab 1.1.44						87 Gültig ab 1.8.43		
	8 Gültig nach Aufruf		18 Gültig nach Aufruf		28 Gültig nach Aufruf		38 Gültig nach Aufruf		48 Gültig ab 1.8.44		58 Gültig ab 1.1.44						88 Gültig ab 1.8.43		
10	9 Gültig nach Aufruf		19 Gültig nach Aufruf		29 Gültig nach Aufruf		39 Gültig nach Aufruf		49 Gültig ab 1.8.44		59 Gültig ab 1.1.44								
	10 Gültig nach Aufruf		20 Gültig nach Aufruf		30 Gültig nach Aufruf		40 Gültig nach Aufruf		50 Gültig ab 1.8.44		60 Gültig ab 1.1.44								



10 A

MILITARY GOVERNMENT OF GER[illegible]ANY

Nr. 2281

May 1945

[illegible]GY REGISTRATION

ZEITWEILIGE REGISTRIERUNGSKARTE

Cuntze

Vorname *First name* Werner Rudolf Fer[illegible] *Middle name*

Geburtsort *Place of birth* Hofgeismar /Ka

Date

Nationalität *Nationality* Deutsch

Beruf *Occupation* Bauingenieur engineer

[illegible]ändige Adresse *Permanent address* Heimboldshausen, Nr. 95

Jetzige Adresse *Present address*

Wieviele Kinder unter 10 Jahren *Number of children under 10 yrs.* 1

(Kinder sind auf der Rückseite vollständig mit Geburtsdaten aufzuführen.) (Give names of children and dates over.)

Aufnahme als Partei-Mitglied seit *Party member since* keine

DAF

Ehemaliger Angehöriger der Deutschen Wehrmacht *Former member of the German Army* ja — nein *yes — no*

Daten des Dienstverhältnisses *Dates of service*

Heimboldshausen

Der (die) Inhaber(in) dieser Karte ist als Einwohner(in) von: [illegible]

vorschriftsmäßig registriert. Es ist ihm (ihr) strengstens verboten, [illegible]ch aus dem Landkreis Hersfeld ohne Paß zu entfernen. Zuwiderhandlung dieser Maßnahme führt zur sofortigen Verhaftung. Dieser Ausweis ist auf Verlangen vorzuzeigen.

The holder of this card is duly registered as a resident of the Kreis of Hersfeld and is not allowed to leave the Landkreis of Hersfeld without a pass. Violation of this restriction will lead to immediate arrest.

Legitimationsnummer *Identity Card Number and Type*

Capt. Ord. [illegible] Mil.-Gov. Offr.

U S ARM[illegible]

rechter Zeigefinger *Right Index Finger*

Unterschrift des Inhabers *Signature of holder*

Datum der Ausstellung *Date of Issue* 194[illegible]

(Dies ist kein Personalausweis und gewährt keinerlei Vorrechte.)
(*This is not an identity document and confers no privileges.*)

Screened by CIC

Pre-Condition for a new job:

De-Nazification sheet.

1949
Thanks God
Finally permanently employed again

VEREINIGTE KALIWERKE SALZDETFURTH A.G.

WERK HATTORF

6433 PHILIPPSTHAL (WERRA)

Bahnstation: Heimboldshausen für Stückgut und Waggons
Drahtanschrift: Hattorf Philippsthal (Werra)
Fernsprecher: Philippsthal (Werra) Nr. 343, 344, 345, 346 u. 347
Fernschreiber: Nr. 0493387
Postscheckkonto: Frankfurt am Main 8173
Bankkonten: Deutsche Bank A.-G., Filiale Bad Hersfeld
in Bad Hersfeld
H. Kirchholtes & Co., Frankfurt am Main

Herrn
Werner Cuntze
6431 Harnrode
Am Rain 40

Unsere Akte — Ihre Nachricht vom — Ihr Zeichen — Philippsthal, den 5. Juli 1968

Unser Zeichen Bom/Ech

Betrifft: Ihr Arbeitsverhältnis

Sehr geehrter Herr Cuntze!

Wir beziehen uns auf die kürzlich mit Ihnen geführte Unterredung. Dabei haben wir Ihnen mitgeteilt, daß die Weltmarktlage und unsere derzeitige betriebliche Gesamtsituation die Durchführung weiterer Rationalisierungsmaßnahmen erfordern und daß in deren Verlauf eine weitere Verminderung der Belegschaft leider nicht zu vermeiden ist.

Wie Ihnen ferner mitgeteilt wurde, sind wir unter diesen Umständen leider gezwungen, das mit Ihnen bestehende Arbeitsverhältnis zum 15. 7.1968 zu kündigen.

Über die Gründe, die zur Beendigung Ihres Arbeitsverhältnisses führen, haben wir das zuständige Arbeitsamt unterrichtet.

Wir bitten Sie, sich am 16. 7.68 beim Arbeitsamt Bad Hersfeld, als arbeitslos zu melden.

Auf Grund der Gesamt-Betriebsvereinbarung vom 7. Juli 1967 / 8.2.1968 erhalten Sie vom Werk auf freiwilliger Basis folgende Zuwendungen:

1. Für die Zeit Ihrer Arbeitslosigkeit, längstens jedoch bis zum Zeitpunkt von dem an Sie Anspruch auf das vorgezogene Knappschaftsruhegeld haben, eine Übergangsbeihilfe in Höhe des Unterschiedsbetrages zwischen dem Arbeitslosengeld und 90 % Ihres derzeitigen regulären Nettoverdienstes auf dem Werk = DM 1.211,-- im Monat.
2. Jahresurlaub und tarifliches Urlaubsgeld für 1968 in voller Höhe;

- 2 -

Vorsitzender des Aufsichtsrats: Clemens von Velsen · Vorstand: Wilhelm Millemann · Dr. jur. Heinz Foerstner · Max Stephan Schulze. · Sitz: Bad Salzdetfurth

Vereinigte Kaliwerke Salzdetfurth A.G., Werk Hattorf — Blatt 2

zum Brief vom 5.7.1968 an Herrn Werner Cuntze, 6431 Harnrode, Am Rain 40

3. Weihnachtsgeld 1968 in voller Höhe;
4. Abschlußvergütung für 1968 (Frühjahrsgeld 1969) anteilig.

Voraussetzung für die Zahlung der Übergangsbeihilfe gemäß Ziffer 1 ist, daß Sie uns die Höhe Ihres Arbeitslosengeldes und jede während des Bezuges der Übergangsbeihilfe eintretende Änderung unter Vorlage entsprechender Belege (Bescheide des Arbeitsamtes) umgehend mitteilen.

Den Tag Ihrer Verabschiedung geben wir Ihnen noch bekannt.

Sollten noch Unklarheiten bestehen, gibt Ihnen die Personalstelle für Lohnempfänger Auskunft.

Sie wissen, daß uns die Beendigung Ihres Arbeitsverhältnisses angesichts Ihrer langjährigen treuen Mitarbeit nicht leicht gefallen ist. Wir möchten daher nicht versäumen, Ihnen für Ihre Mitarbeit sowie für Ihr Verständnis und Ihre Einsicht in die betrieblichen Notwendigkeiten zu danken. Für Ihr weiteres Wohlergehen wünschen wir Ihnen alles Gute.

Mit freundlichem Glückauf
Vereinigte Kaliwerke Salzdetfurth A.-G.
Werk Hattorf

Anlagen
Zur Vorlage beim Arbeitsamt
1. Arbeitsbescheinigung
2. Lohnsteuerkarte 1968

NB.
Bitte geben Sie uns zum Zeichen Ihres Einverständnisses mit der hier aufgeführten Regelung die beigefügte Durchschrift des Schreibens gegengezeichnet zurück.

Einverstanden: .....

1966
Due to poor potash sales, my father was out of work again, at 60, since new constructions were no longer underway, his cooperation was no longer necessary.

0.13 With my Mother at her new home at Kassel, 1974 -2004





her own apartment in her cousin's house



Confirmation at Kassel, family



a trip with mom



Visit of Sujeeth from Madras
at my mother's
new home at Kassel.

He learned German from cassettes!

My mother moved to Kassel
after my father had a fatal accident in the garden in 1974

From time to time one guest in mother's home at Kassel was my friend Rolands Rikards, leader of the big Composites Institute at Riga and co-father of the Latvian constitution after the Soviets left Latvia.



Visit of Rolands

The story, Rolands *told me:* A special unit of the Soviet Interior Ministry (identified by their black caps, "Black Berets") stormed the Latvian Interior Ministry on Sunday evening, January 22, 1991, killing five people. After the ministry was evacuated, newly armed Latvians moved in as defenders. When the Black Berets ordered the Latvians to evacuate, they did not respond and did not fire a shot, so as not to give the Russians a pretext for storming the building. The changing tone of the voice from the Beret commander's megaphone indicated that the threat was slowly fading. If Rolands had been captured, he would certainly have been shot because he had intimate knowledge of the design of nuclear submarines. Even then, he feared that the Russian population would have difficulties integrating due to Stalin's mass deportation to Siberia in 1941.

Later, in 2004,
I experienced the grace of being present at my mother's passing away
and to be able to close her eyes.

GENERATIONEN-GESPRÄCH

Schönstes Geschenk: Zwei Stunden mehr

Zeit - der eine verbindet damit Streß, der andere Muße. Wir luden drei Jugendliche und drei Senioren zu einem Gespräch der Generationen und unterhielten uns über die ganz persönlichen Zeiterfahrungen.

Was bedeutet für Euch Zeit?

Sebastian: Meistens hat man zu wenig. Die Zeit rinnt einem davon. Langeweile, das kenne ich nicht.

Sabrina: Der Schulstreß ist so groß. Zeit habe ich nur am Wochenende und in den Ferien.

Manuel: Manchmal würde ich mir wünschen, daß der Tag 48 Stunden hätte. Das schönste Weihnachtsgeschenk wäre ein Gutschein über zwei Stunden mehr am Tag. Ich sehne mich manchmal nach Zeit für mich persönlich, stattdessen herrscht ständig Termindruck.

Sabrina: Das kenne ich auch. Manchmal sag ich mir: Jetzt ist Schluß, jetzt lerne ich nicht mehr, um endlich mehr Zeit für mich und andere zu haben.



Wilhelmine Cuntze (86), Hausfrau

Manuel: Ich bin ein Workaholic, ich bin nur zufrieden, wenn ich arbeiten kann. Ich sehe Streß auch als etwas Positives, das spornt an, man leistet mehr und setzt sich neue Ziele.

Sebastian: Ich denke immer, verlier keine Zeit! Wenn ich ein Buch lese, frage ich mich: bringt mir das was für meine Zukunft?

Die Jugend ist im Streß und hat keine Zeit für sich selbst. Kennen Sie das auch?

Frau Cuntze: Früher kannte ich das auch, heute nicht mehr. Meine Zeit ist terminlos, außer den Arztterminen. Streß gibt es für mich nicht mehr. Früher war das anders. Als Kind mußte ich viel arbeiten. Schon mit 12 Jahren, denn meine Mutter war krank und wir hatten ein Geschäft auf dem Lande. Zum Nachdenken kam man da nicht.

Herr Sames: Meine Eltern hatten Landwirtschaft mit Sägerei, da mußte man mitarbeiten. Die Kartoffelferien waren ja auch so gesetzt, daß man helfen konnte. Arbeiten war selbstverständlich, das wurde aber nicht als Streß empfunden. Freizeit gab es nur Sonntag nachmittags. Dann sind wir mit Kameraden spazierengegangen im Wald, das war schön.

Herr Hartung: Wir hatten einen Kolonialwarenladen daheim, mithelfen war selbstverständlich. Aber wir haben Hobbys gehabt, dafür war Zeit. Als Kind habe ich aus dem Fenster die Tauben auf dem Dach beobachtet. Mit 13 bekam ich dann zwei Tauben geschenkt. Das war der Anfang – 70 Jahre lang habe ich Tauben gezüchtet. Dafür war immer Zeit.

Manuel: Heute ist es in den Familien nicht mehr selbstverständlich, daß die Kinder mithelfen. Ich kenne Fälle, da werden Kinder bezahlt, wenn sie im Haushalt was machen, frei nach dem Motto: Time is money – Zeit ist Geld.

Wann bekamen Sie Ihre erste Uhr?

Herr Hartung: In der Schule war ich der „Läutnant", weil ich der einzige war, der eine Uhr hatte. Das war eine Taschenuhr, die lag immer auf dem Tisch. Wenn die Stunde um war, ging ich raus und drückte die Klingel.

Frau Cuntze: Ich hatte das erste Damenfahrrad im Ort und den ersten Rodelschlitten. Meine erste Uhr bekam ich mit 20.

Herr Sames: Wenn wir als Kinder auf dem Feld waren, haben wir gewartet, bis das Sägewerk die Sirene gehen ließ. Meine erste Uhr bekam ich dann zur Konfirmation.

Sebastian: Heute haben die Kinder schon im Kindergartenalter eine Uhr. Bevor sie Buchstaben lesen können, lesen sie die Uhr.

Sabrina: Meine erste Uhr war eine mit Pumuckl drauf und rotem Lederarmband. Das weiß ich noch ganz genau. Meine Eltern haben damals sehr viel Wert darauf gelegt, daß ich das Ziffernblatt lesen konnte und rechtzeitig zu Hause war.

Sebastian: Es gibt ja auch Leute in unserem Alter, die ganz bewußt keine Uhr haben. Die werden als Verweigerer betrachtet und abgestempelt als welche, die sich der Modernität verschließen.

Manuel: Also ich fühle mich unwohl ohne Uhr.

Herr Hartung: Früher hatte man die Uhr am Rathaus. Wir wohnten am Markt Nr. 4 und haben immer auf die Rathausuhr geguckt. Später, mit der eigenen Familie, guckten wir auf die Bahnhofsuhr. Mein kleiner Sohn guckte immer aus dem Fenster. Da haben wir uns einen Spaß gemacht und gefragt: Wie spät ist es denn? Da zeigte er mit den Armen, wie die Zeiger standen.

Sebastian: Wenn ich Ihre Erzählungen höre, dann haben wir Jungen eigentlich viel Zeit. Aber unser Problem ist das Gefühl, etwas zu verpassen - es gibt so viele Möglichkeiten.

Manuel: Heute ist alles viel schneller, wir haben eine hohe Mobilität. Es gibt auch einen anderen Heimatbegriff: Ich kann mir vorstellen, woanders hinzuziehen, um dort zu leben. Wir haben mehr Optionen, als wir wahrnehmen können.

Sebastian: Wir konnten schon von frühester Jugend an über unsere Zeit verfügen. Die Eltern gingen auf unsere Interessen ein, sie wurden dafür eingespannt: Fährst Du mich mal dahin, zum Tischtennis oder sonstwo? Das ist heute doch normal.



Manuel Hartung (17), Schüler

Fühlen Sie sich vom heutigen Tempo abgehängt?

Frau Cuntze: Im Alter lebt man anders, man läßt sich nicht mehr treiben. Man versucht beim Leben der Jugend ein bißchen mitzugehen, ein bißchen „in" zu sein, sonst käme ja Langeweile auf. Konservativ zu sein, das finde ich nicht richtig.

Herr Sames: Also ich glaube, wir sind total überfordert. Bei der Tagesschau werden wir in 15 Minuten durch die Welt gejagt. Dafür sind wir nicht geschaffen. Da muß man abstumpfen, sonst überlebt man das nicht. Das ist ja heute nur noch Quantität und keine Qualität mehr.

Manuel: Ist da Resignation dabei, oder ist das innere Ausgeglichenheit?

Herr Sames: Im März habe ich einen Computer gekauft. Der Enkel hat mir sein altes Ding gegeben. Für den Opa ist das gut genug, heißt es immer. Damit ist jetzt Schluß. Ich mache schon den zweiten Lehrgang, das ist für mich eine Herausforderung.

Sebastian: Ich hatte einen C-64 von Commodore. Das war damals das Maximum. Wenn ich heute die ganz neuen Computer sehe, denke ich: tolle Sache. Und für die Kinder ist das schon wieder normal. Wir sind vielleicht geprägt durch unser erstes Jahrzehnt, das wir erleben. Wir sind Teil einer anderen Welt und müssen irgendwann sagen: Das ist nicht mehr meine Welt.

Herr Sames: Der Reifeprozeß verlief bei uns doch viel schneller. Wir kamen mit 17 an die Front, da mußten wir innerhalb von drei Wochen erwachsen werden. Dann war ich drei Jahre in Gefangenschaft, kam nach Hause mit einer offenen Tuberkulose und mußte lange in die Lungenheilstätte. Wir waren einfach froh, davongekommen zu sein. Wir haben Zeit anders gesehen.

Sebastian: Heute hat fast jeder ein Auto. Das ist für mich normal. Sie haben eine andere Perspektive...

Herr Sames: Das ist nicht mehr meine Welt – dieser Gedanke kommt schon. Ich möchte heute Zeit nutzen, nicht hetzen. Ich denke, man darf Zeit nicht nur mit dem Lineal messen, sondern auch nach dem Gewicht.





Hermann Sames (72), ehemaliger ev. Pfarrer

Frau Cuntze: Das ist ein gravierender Unterschied.

Herr Sames: Gott hat Termine, die stehen nicht in unserem Terminkalender. Ich habe eine Nichte verloren, mit 39. Da fragt man sich schon: Was ist mit deiner Zeit, wo komme ich her, wo gehe ich hin?

Manuel: Ich empfinde da ein riesiges Stück Dankbarkeit. Ich bin 17 Jahre hier auf Erden und mir ist noch nie was passiert. Ich danke Gott und meinen Eltern. Das kommt bei vielen Jugendlichen zu kurz.

Herr Sames: Waren Sie schon mal verliebt? Da hat man auch ein anderes Zeitempfinden, da wiegt Zeit ganz anders. Oder im Krankenhaus. Der Besucher sagt: Oh, ist es schon so spät? Und der Patient sagt: Oh, ist es erst so spät?

Manuel: Das ist wie: Das Glas ist halb voll oder halb leer.

Zukunft – was bedeutet das im 2. Lebensjahrzehnt, was im 8. oder 9. Lebensjahrzehnt?

Frau Cuntze: Daß man gesund bleibt.

Wie weit denken Sie in die Zukunft?

Frau Cuntze: Das lasse ich auf mich zukommen.

Herr Hartung: Wir können ja doch nichts ändern.

Sabrina: Ein bißchen Einfluß hat man doch immer.

Frau Cuntze: Damit sollte man sich nicht belasten. Jeder Tag sollte einen kleinen Höhepunkt haben, zum Beispiel nachmittags eine Tasse Tee trinken. Man sollte immer etwas zu tun haben, damit keine Langeweile aufkommt. Sonst gerät man ins Grübeln.

Herr Hartung: Eine Hilfe war mir da die Taubenzucht. Ich hatte das Gefühl, so jetzt warst du 20 Minuten draußen, und meine Frau sagte, jetzt warst du wieder zwei Stunden draußen.

Frau Cuntze: Als Kind kam man vom Spielen zu spät nach Hause. Das war schön.

Herr Sames: Unser Leben geht zu Ende – aber ist es wirklich das Ende? Für mich nicht. Den letzten Atemzug hier, den nächsten tue ich bei ihm, meinem Herrn Jesus Christus. Das ist für mich ein Fundament. Ohne diesen lebendigen Christus könnte ich nicht leben.

Sabrina: Zukunft, das bedeutet für mich, daß ich meine Träume und Ziele erreiche. Sie sagen, Sie wollen nicht ins Grübeln kommen. Wir jungen Leute hätten manchmal gerne Zeit zum Grübeln. Das meine ich gar nicht negativ.

Manuel: Zukunft, das sind doch immer zwei Dinge: das, was man sich für sich wünscht, also Selbstverwirklichung und das Leben mit und für andere.

Sebastian: Ich glaube nicht an Marsmännchen. Meine reale Vorstellung ist: Du hast Ziele und in gewisser Weise kannst du sie verwirklichen. Träume sind Perspektiven, ich plane also gewissermaßen in die Zukunft. Und trotzdem kommt es immer anders als man denkt, und das ist auch gut so. Aber manchmal frage ich mich: Was bleibt von dir übrig?

Frau Cuntze: Deine Kinder.

Sebastian: Ja, zum Beispiel. Das finde ich auch wichtig. Sie sind ein Teil von dir, der überlebt.

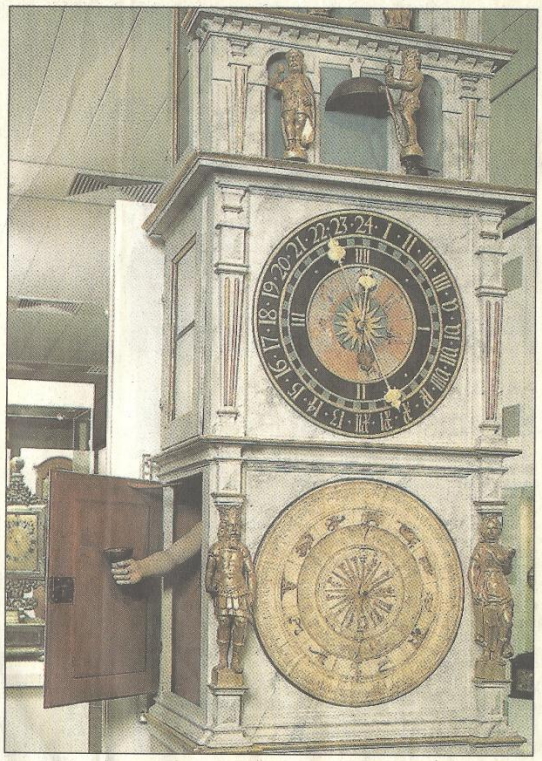


Sabrina Zappe (18), Abiturientin

Welche Vorstellung von Zukunft hatten Sie, als Sie jung waren?

Frau Cuntze: Damals im Krieg hat man nicht an Zukunft gedacht, das war eine traurige, hungrige Zeit.

Man hat aufs Ende gehofft?



Aus dem ersten Viertel des 17. Jahrhunderts stammt die Bärenuhr, bei der sich zu besonderen Stunden an der Seite eine Tür öffnet und ein Bettlerarm erscheint. Die reich bemalte Uhr ist fast drei Meter hoch. (Foto: Museum)

Frau Cuntze: Ja. Und dann kam die Inflation. Das waren wenig schöne Eindrücke, die einen fürs ganze Leben prägten.

Herr Hartung: Wir hatten acht Tage Urlaub. Mein Vater hat uns für eine Reise 30 000 Mark mitgegeben... und der Gepäckträger am Bahnhof nahm allein schon 10 000 Mark.

Manuel: Acht Tage Urlaub – das wäre für mich nicht mehr lebbar. Das würde heute keiner akzeptieren.



Walter Hartung (84), Bundesbahnamtsrat a.D.

Frau Cuntze: Das Niveau von Ansprüchen ist gewachsen.

Herr Sames: Wir wurden um unsere Jugend betrogen. Schade um die Jahre.

Sebastian: Früher ging's ums pure Überleben. Wir gucken heute Science-Fiction-Filme. Damals hatte man nicht den Anspruch zu wissen, was in 80 Jahren ist.

Frau Cuntze: Man hat nur für den Tag gelebt.

Sebastian: Wir leben auf die Zukunft projiziert. Früher dachte man: Erst muß ich überleben, dann kommt... Heute sind die Ängste der Jugend zum Beispiel die Umweltzerstörung. Auch die Ängste projizieren wir also auf die Zukunft.

Sabrina: Uns ist klar, daß es ein Morgen geben wird. Man fordert etwas für das Morgen. Das kam Ihnen ja gar nicht in den Sinn. Ich wußte schon vor vier Jahren, daß ich einmal im Ausland studieren möchte.

Sebastian: Man rechnet nicht mit Krieg oder so. Natürlich kann das Leben jeden Tag zu Ende sein. Aber trotzdem plant man in weiteren Zeiträumen.

Herr Hartung: Wir waren Heimatvertriebene, wir haben nur von einem Tag auf den anderen leben können. Ich war in Gefangenschaft, da mußte ich eine Karte an meine Frau schreiben. Und als ich die Adresse schrieb, da fiel mir ein: Die ist doch auf der Flucht mit zwei Kindern an der Hand.

Was bedeutete Zeit in Ihrem Berufsleben?

Herr Hartung: Ich war Bahnhofsvorsteher. Pünktlichkeit war ja die erste Voraussetzung. Die Dienstpläne wurden so eingeteilt, daß man nicht länger als 84 Stunden in der Woche arbeiten mußte, das waren 7 mal 12 Stunden.

Herr Sames: Ich war Pfarrer. Wenn man als Seelsorger Menschen besucht und dabei auf die Uhr guckt, dann ist es vorbei.

Herr Hartung: Ich war später im Rechtsamt der Bahn für die Elektrifizierung zuständig. Auf die Stunde durfte man da nicht gucken. Ich mußte ja zu den Bauern aufs Land wegen der Strommasten. Da kam ich dann auf einen Hof und da sagte die Bäuerin: Geht heute nicht - Sau macht Ferkel!

Sebastian: Ich kann heute in kurzer Zeit mehr machen, z. B. per Internet in Sekunden weltweit einen Text verschicken.

Herr Hartung: Durch den Computer kommt ja auch die Hetze.

Sebastian: Ich glaube, es ist kein so großer Unterschied zu früher. Der Zeitvorteil ist wertlos, da heute alles schneller ist. Es ist allgemeingültig, daß etwa die Übermittlung überall hin nur 20 Sekunden dauert.

Herr Sames: Was hilft das Zeitsparen, womit wird die Zeit denn gefüllt? Neulich stand ich beim Einkaufen in einer Schlange, und die Leute regten sich auf. Da hab ich gesagt: Wir müssen zwar warten, aber am Ende kriegen wir wenigstens was.

Das Gespräch führten Anette Schober-Knitz und Holger Schindler.



Sebastian Fischer (20), Zivildienstleistender

Interview with my mother at Kassel: young & old

0.14 Further Memories: Schooltime and life at Heimboldshausen

Proud, when I had precisely weighed a pound of sugar in the shop and filled it into the usual cone, made of paper.

The sitting together on the front steps of the house on warm evenings, listening to the calls of swifts and other swallows and getting Grandpa a pitcher of beer from the pub.

Collecting the voracious larvae of the Colorado potato beetle was an important task in childhood. Potato plants and chickens were happy about the hunting success and the parents.





During the war, great care was taken to consume sufficient vitamins. Iron was highly valued, and therefore eating spinach was the order of the day. Since I didn't like spinach back then (*I do like it now*), I was made to stand naked on the front steps. This had no consequences for me. I probably still sensed that the iron content in spinach was much lower than stated.
A huge calculation error was later discovered. The myth of iron-rich spinach stems from a comma error: The value of 35 mg of iron per 100 g of spinach, (determined by Gustav von Bunge around 1890) was based on the analysis of dried spinach, which, due to its lack of water content, has a ten-fold higher iron content than fresh spinach. In fact, fresh spinach contains iron comparable to other green vegetables.

After 1945, we had a garden with a log cabin and a goat on the other side of the Werra. For this, we had to climb over the remains of the Werra Bridge for about two years, the destruction of which was the cause of our tragedy on March 30, 1945

My grandpa's business: In the midst of the "economic miracle" of the 1950s, the issue of shop closing hours was a long-standing source of controversy among the West German public. Smaller retailers favored restrictions on business hours. This was quite understandable, because in grandpa's general store, people practically still shopped in the evenings and on Sundays.
It was quite common to have the shopping written down and only pay at the end of the month. This meant additional unpaid work.
In principle, the weekend began when the sidewalks and canopy were swept by 3 p.m. on Saturday afternoon when the church bell began to ring.

Working hours in the fifties: After the 48 hours, the 45-hour limit was almost reached by 1959.
On the construction site, we were happy to work longer hours to earn some extra money. This was naturallyalso necessary because the concreting process had to be completed. Nevertheless, the full employment rate at that time was lower than presently because women did and could not job that much.

Primary School, 4 years and Secondary School, 9 years:

- I don't remember my parents ever being in school until I graduated, obtaining the German Abitur.

- Once during school, my grades declined because I was caring for my grandfather (getting up an average of 5 times a night for about a year). Because of this family problem, my father simply said *"If you don't make it, it doesn't matter. Then, you can perform an education in a practical profession, and later you can decide your own path. No problem for us*!"

- My watch story fits in with this. With about 10 years I had finally received a watch as a gift. But the watch suddenly disappeared. There was no replacement, because I must have lost it. When my grandfather died, we found the watch among his belongings. This was hard for me after having been very scolded originally.

- A classmate was doing very well in school, but he no longer wanted to continue school and wanted to earn money. He achieved this despite our attempts to persuade him, even though a practical education at that time was relatively less paid than it is today.

- A feared senior teacher: Whenever this teacher had to help out in my class, I immediately received a lower grade. I also remember a pivotal experience: The graduating class stayed on the platform and didn't have to go down to the schoolyard. This teacher slapped me in the face, visible to everyone (the reason was unknown). I would have liked to hit, but at that moment, I remembered a former classmate who hit back and was then expelled from school, ending his planned life by this.

The way of my final academic education:

*Originally chemistry: Unfortunately, I broke a measuring instrument in class, so my chemistry teacher unashamedly lowered my originally excellent grade.

*Horticultural engineer: I lived this passion almost daily in our large 2000 m² garden. Back then, however, such engineers weren't in such high demand.

*Civil engineer: I learned this from my father and knew what to expect as a structural engineer (‘stress man’). Furthermore, a friend of my father's with a large engineering firm was hoping to hire me as a structural engineer and my then-retired father as a construction site supervisor. Unfortunately, nothing came of it because I wrote my dissertation after my studies.

Hunger in the wars: My mother told me the following story about hunger in the WWs. During World War II, there was no hunger in Germany compared to World War I. Back then, once after visiting my grandmother in the hospital, she said to her father on the train: "*When we've had dinner, you send us children to bed and then really eat*." And this is what the daughter of a merchant who sells food and whose neighbors are farmers.

The most important event after WW-II was the return of a prisoner of war from Siberia! He had to be slowly reaccustomed to his native food. Otherwise, unfortunately, some of them died at when finally reaching home.

My Living at the Inner-German Border

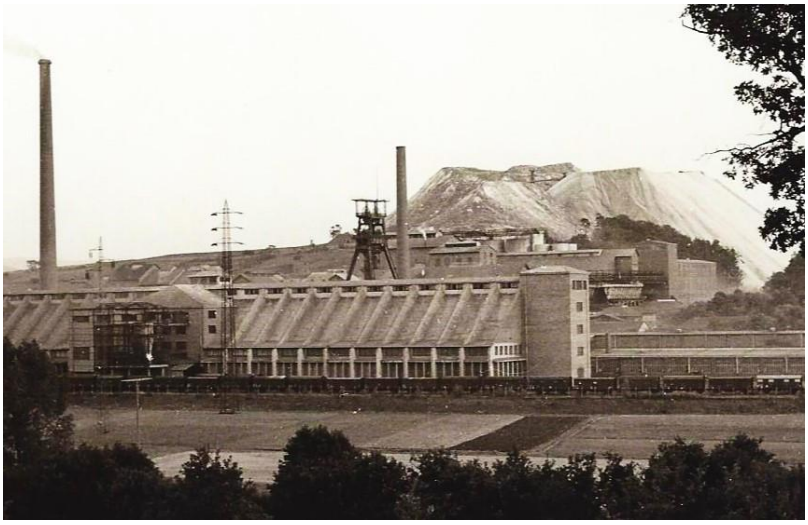


Grown up directly at the Hessian border to, where the spoil heaps (*200m above ground*) from potash extraction are no longer allowed to get higher than the surrounding mountains, 2024.

In this potash (salt) mine my father could finally again find work.
This 4 years after the WW-II end!



By cutting down and clearing strips of land up to 200 m wide, further measures were taken to build deeply staggered barrier systems, which made it impossible to overcome them and thus escape to the west. Until the 1950s, a ‘small border traffic’, the occasional meeting through loopholes in the barbed wire entanglements, was still possible, but now the escape attempt could end fatally. The separation of people of the same history, language and thought was sealed.



Salt Mine, 1967

Exclusion zone at the Philippsthal-Vacha zone border: The very famous bridge

An exclusion zone was established on 26 and 27 May 1952. Its width was 5 km. This was the first tighter lockdown. You were no longer allowed to enter this restricted area of the GDR (DDR) unless you had a pass. The exclusion zone included a protective strip (500 m wide) and a control strip (10 m wide) directly at the border. On 4 June 1962, GDR work detachments began to build a three-metre-high wall from prefabricated elements on the banks of the Werra in Vacha, opposite of Philippsthal, where contact between acquaintances and relatives from Philippsthal and Vacha had previously been possible. (*I still used this to visit relatives. In 1950 I was also able to have an operation on my appendix in a clinic in Vacha*). This meant that the former Hoßfeld printing plant was divided into the FRG BDR) and the GDR. With effect from 1 January 1976, however, this well-known "house on the border" is no longer divided. The Hoßfeld family regains the right to unrestricted use of the walled-off eastern part of the printing house, which had previously been on the territory of the GDR, and the inner-German border is laid around the outside of the house in an imaginary line.

This meant further, that Philippsthal was deprived of an attraction popular with border visitors, all acquaintances living further away were brought there.



This was the point where I crossed the border last time from GDR to BRD, 1951, at the printing office Hoßfeld



The famous old bridge with the GDR watchtower





In order to be allowed to print the Vachaer Zeitung, i.e. a Thuringian newspaper, this Hessian printing company had to have a wall on the Thuringian side when it was built. On New Year's Eve 1952, the eastern annex was walled up as a precaution





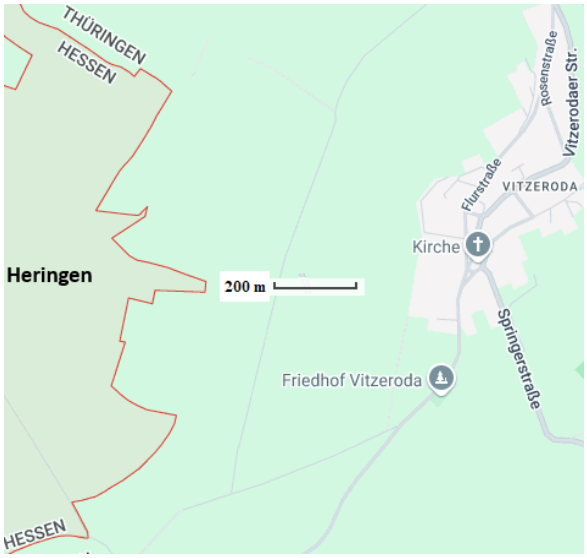


Thanks to the eightieth anniversary celebration of our common uncle, we two cousins were able to see each other again in 1988 after 1957.

The question of us eastern cousins, meeting after 30 years again, was not

How long the separation will last ?

We were only very thankful!
We could not imagine at that time that reunification would come a year later.

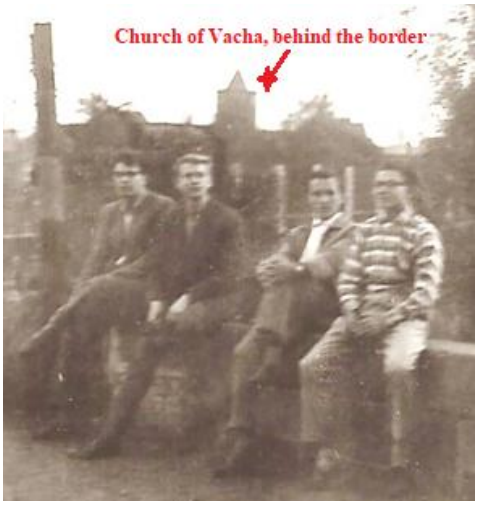


The ‘Sperrgebiet’, an area that is not accessible to the civilian population at all or temporarily!!!

As a result of the division of Germany, Vitzeroda was located in the border area and was declared a restricted area. A barracks of the border troops were built on the outskirts of the village, and access to the village was monitored. The small settlement of Gasteroda, located in the immediate vicinity of the border, was gradually abandoned, and in the autumn of 1989 only one farmstead was still inhabited.



View from the western side Philippsthal to the eastern side , the city Vacha at the beginning of the Rhön mountains. In the back there you can see the scarce basalt mountain Oechsen.



my western cousins at the border at the western side



and
vice versa
a recent view
from the eastern side ,
Vacha



Anyone who grew up directly on a border and had to suffer the increasing isolation between relatives and friends can certainly understand that I was very interested in the Korean border which might show differences (similar unfortunately in 2008) regarding this also a nation-separating border alike Korea.



Similar Impressions below

North Korea

Similar exclusion zone (2006) like with us at home



Looking at the South-Korean Building and neutral demarcation place from the north

Photos of the Confirmands 1954, 2004, 2024



Zur Erinnerung
an den Tag der Konfirmation

„Ich bin die Auferstehung und das Leben. Wer an mich glaubt, der wird leben, ob er gleich stürbe" Joh. 11, 25.

Ralf Georg Cuntze

geboren am 8. 9. 1939, getauft am 25. 12. 1939,

ist am Jo. Lätare, dem 28. 3. 1954, in der evangelisch-reformierten Kirche zu Heimbolshausen konfirmiert worden.

Dersch, Pfarrer.

One can see the difference of announcing confirmation when comparing the mine one with father's

Pre-confirmation students 1953





Confirmation
1954

Grown up in that one year!
See above.



1979













Over the years



The remaining ones who can still move.
2024



Iron Confirmation (80 years old): 2019
Helmut Müller (up left), Horst Haudel, Kurt Kämpen, Walter Witzel, Ernst Barthelmes, Walter Fischer, Konrad Meisinger, Pfarrer Houska, Hannelore Quanz, Ingrid Weigel, Käthe Püschel, Erika Diel, Luise Taubert (right)





Kurt, Reinhold and Günther

Walter, Ralf, Kurt at different times

0.15 Currency Reforms and "Berlin oblation" stamps

During WW-I precious metals were needed for armaments, but many people hoarded 50-pfennig and 1-mark coins, so that the first emergency banknotes were issued as equivalents in East Prussia as early as 1914. Emergency money ('Notgeld') is substitute money. In times of crisis, it replaces the population's defunct supply of state currency.





The actual cause of the rising inflation that began in 1919 and turned into hyperinflation by mid-1922 was the massive expansion of the money supply by the state in the early years of the Weimar Republic due to the high reparations payments, especially to France (natural revenge for 1871). The reparations were paid by printing additional paper money. Starting on November 15, 1923, the Deutsche Rentenbank issued the Rentenmark (equivalent in value to the later Reichsmark). It was immediately accepted by the population, and hyperinflation stopped abruptly.
This stable emergency money (‘Notgeld’) was not denominated in marks, but in tangible assets such as wood or gold. Its issue required backing from gold-denominated treasury bills issued by the German Reich. The value of one Rentenmark (RM) was set at one trillion paper marks. It was thus identical to the value of the gold mark, i.e., the mark before the abolition of the gold standard in August 1914.

Below:
Development of postage money



1. März bis 30. Juni | 1. bis 31. Juli | bis 23. August | bis 9. Oktober | bis 31. Oktober | bis 12. November | 1. Dezember 1923



For German readers:
Read the texts after zooming, please!

Left:

Some of Dad's collected Notgeld-banknotes

Collection of my father and since 50 years our memory-linked wall decoration in the hallway'Notgeld'

The Reichsmark (also letters RM) was the legal tender in the German Reich from 1924 to 1948, a period spanning part of the Weimar Republic and the Nazi era. Purchasing power equivalent:
1 Reichsmark (1929) ≅ 4.30 €, (1933) ≅ 5.60 €, (1939) ≅ 5.20 €, (1944) ≅ 4.60 €.

1923 / 1924

The changeover from the "Mark" (M) to the "Rentenmark" (RM) in November 1923 with a rate of 1,000,000,000,000 M : 1 RM ended the German inflation from 1914 to 1923, which was caused by the financing of WW-I by selling war bonds to the state's own population, the reparation payments after the First World War and the extremely high state expenditure caused by the occupation of the Ruhr.

'Notopfer Berlin' as solidarity surcharge. People in Western Germany were naturally not pleased with the "Berlin oblation" stamps of 2 Pfennig for West- Berlin





Currency reform

1923

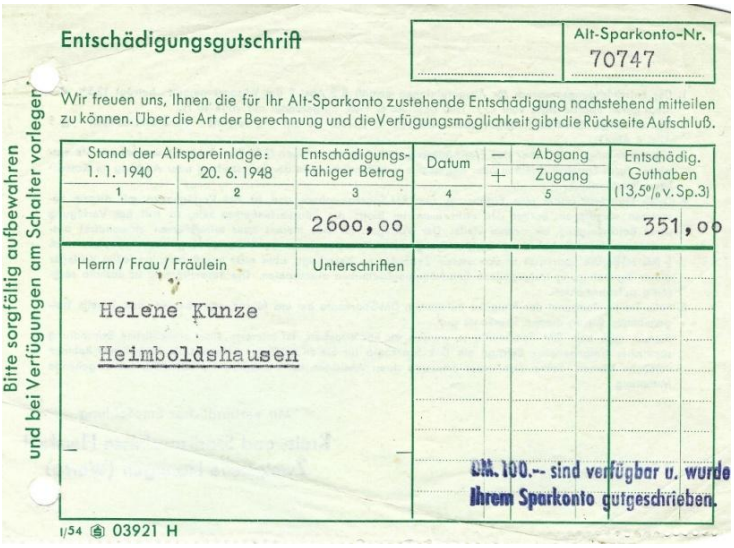
1948

1990

.

1948

The RM largely lost its functions as a means of payment and store of value in favor of food stamps, barter, and substitute currencies. The currency reform of 1948 came into force on 20 June 1948 in the Trizone, Germany's three western occupation zones. From 21 June 1948, the Deutsche Mark was the sole legal tender there. Savings become almost worthless, but the shelves fill up with goods overnight. Americans are pushing ahead with currency reform against the will of the Russians.


Entschädigungsgutschrift

Alt-Sparkonto-Nr. 70747

Wir freuen uns, Ihnen die für Ihr Alt-Sparkonto zustehende Entschädigung nachstehend mitteilen zu können. Über die Art der Berechnung und die Verfügungsmöglichkeit gibt die Rückseite Aufschluß.

Stand der Altspareinlage: 1. 1. 1940	20. 6. 1948	Entschädigungsfähiger Betrag	Datum	— Abgang / + Zugang	Entschädig. Guthaben (13,5% v. Sp. 3)
1	2	3	4	5	
		2600,00			351,00

Herrn / Frau / Fräulein — Unterschriften

Helene Kunze

Heimboldshausen

DM 100.-- sind verfügbar u. wurde Ihrem Sparkonto gutgeschrieben.

Bitte sorgfältig aufbewahren und bei Verfügungen am Schalter vorlegen

1/54 03921 H

My personal memory:
Changing RM into Deutschmark (DM): *I received 3000 RM from my Grandpa and proudly brought him back 30 DM with which one could buy something for.*

Similar. (left)
The change by my mother.

She got the money despite of the false name!!

1990 Re-unification of FRG with GDR

Children under the age of 14 can exchange up to 2,000 GDR marks at a ratio of 1:1, 15 to 59-year-olds up to 4,000 GDR marks, and those older can exchange 6,000 GDR marks. Amounts above this will be converted at a ratio of 2:1.

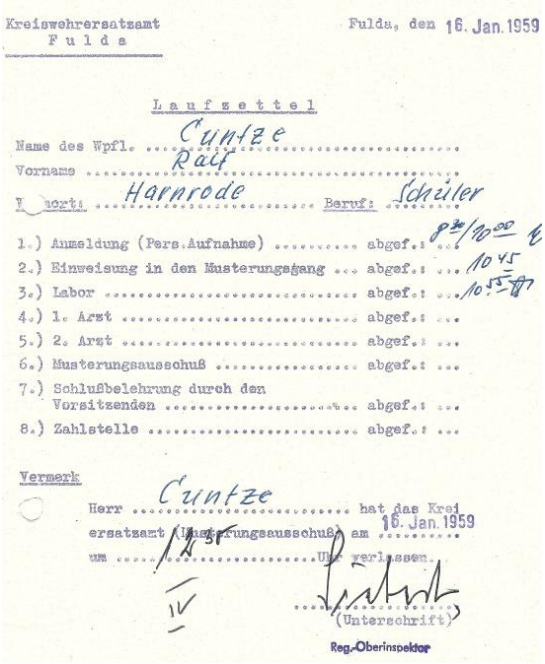
.

Private donations from the U.S. people:

Financed packages labeled "CARE" to alleviate suffering and hunger in the years after World War II. The abbreviation CARE stands for the aid organization "Cooperative of American Remittances to Europe", founded in 1945



0.16 Conscription, Military Service



Kreiswehrersatzamt
Fulda

Fulda, den 16. Jan. 1959

Laufzettel

Name des Wpfl. Cuntze
Vorname Ralf
Wohnort Harnrode Beruf: Schüler

1.) Anmeldung (Pers.Aufnahme) ..... abgef.: 9³⁰/10⁰⁰
2.) Einweisung in den Musterungsgang ... abgef.: 10⁴⁵
3.) Labor ..... abgef.: 10⁵⁵
4.) 1. Arzt ..... abgef.:
5.) 2. Arzt ..... abgef.:
6.) Musterungsausschuß ..... abgef.:
7.) Schlußbelehrung durch den Vorsitzenden ..... abgef.:
8.) Zahlstelle ..... abgef.:

Vermerk

Herr Cuntze hat das Kreiersatzamt (Musterungsausschuß) am 16. Jan. 1959 um 11⁵⁵ Uhr verlassen.

IV

(Unterschrift)
Reg.-Oberinspektor

Conscription was never a topic of discussion among us in 1958, the third generation since the reintroduction of conscription.
Wasting time there was never discussed among us conscripts during this time of cold war.

We knew that the last prisoners of war came home in 1955!



Ärztliches Untersuchungsergebnis
bei der Musterung
nach § 17 Abs. 5 des Wehrpflichtgesetzes

FAMILIENNAME Vorname Geburtsdatum	CUNTZE Ralf, G. 08. 09. 39
Tauglichkeitsgrad	IV
Grund der Einschränkung der Tauglichkeit (für die Tauglichkeitsgrade III bis VI)	Sehschwäche
Infolge ärztlichen Urteils nicht geeignet zur Verwendung bei folgenden Truppengattungen (für den Tauglichkeitsgrad III)	

KREIS-WEHRERSATZAMT FULDA 1

Fulda, den 16.1.59
Ort und Datum

Hauptmusterungsarzt
Dr. med. Gasch

I = Für jeden Wehrdienst uneingeschränkt tauglich	IV = beschränkt tauglich
II = Für jeden Wehrdienst tauglich mit Ausnahme bestimmter Sonderverwendungen	V = vorübergehend untauglich
III = Für den Wehrdienst tauglich mit Einschränkungen nach Maßgabe des ärztlichen Urteils	VI = dauernd untauglich



Kreiswehrersatzamt
FULDA
Musterungsausschuß

Fulda, den 16. Januar 1959

Musterungsbescheid

Der Wehrpflichtige Ralf Georg Cuntze
(Name, Vornamen — Rufnamen unterstreichen)
geb. am 8. September 1939, in Erfurt / Thüringen
(Ort, Kreis)
wohnhaft in Harnrode Kreis Hersfeld, Am Rain Nr. 40
(Ort) (Straße, Hausnummer)
ist am 16. Jan. 1959 vom Musterungsausschuß beim Kreiswehrersatzamt Fulda gemustert worden.

Der Wehrpflichtige erhält auf Grund ärztlicher Untersuchung den
Tauglichkeitsgrad „beschränkt tauglich"
und wird der
Ersatzreserve II
zugewiesen.

Der Wehrpflichtige wird gemäß § 13 Abs. 6 der Musterungsverordnung im Frieden zum Wehrdienst nicht einberufen.

Gemäß § 24 Abs. 1 des Wehrpflichtgesetzes unterliegt der Wehrpflichtige der Wehrüberwachung.

Eine Abschrift des ärztlichen Untersuchungsergebnisses ist beigefügt.

Weitere Entscheidungen:

Rechtsmittelbelehrung:
Gegen diesen Bescheid kann binnen zwei Wochen nach Zustellung schriftlich oder zur Niederschrift beim Kreiswehrersatzamt FULDA Widerspruch eingelegt werden. Die Frist wird auch durch Einlegung beim Bezirkswehrersatzamt für den Wehrbereich IV in Wiesbaden (Ort) gewahrt. Der Widerspruch soll einen bestimmten Antrag enthalten. Die Beschwerdepunkte und die zur Begründung dienenden Tatsachen sollen angegeben werden.

(Dienstsiegel) KREIS-WEHRERSATZAMT FULDA

(Unterschrift)
Vorsitzender

Zugestellt gegen Empfangsbekenntnis *)
durch Postzustellungsurkunde *)
am 16. Januar 1959.

0.17 Immatriculation-Regulations at the University

TECHNISCHE HOCHSCHULE DARMSTADT

Nicht ausfüllen!

Zugelassen:	Nachricht ab:
für das ..... te Fachsemester	
Abgelehnt:	

Antrag

auf Zulassung als ordentlicher Studierender für das Wintersemester / Sommersemester 19.....

in der Fakultät für .....

mit dem Hauptstudienfach .....

Die Bewerbung ist nur in einer der folgenden Fakultäten möglich:

Architektur,
Bauingenieurwesen (einschl. Vermessungswesen),
Maschinenbau (einschl. Papieringenieurwesen sowie Druckmaschinen u. Druckverfahren),
Elektrotechnik,
Chemie (einschl. Biologie, Geologie u. Mineralogie),
Mathematik und Physik (einschl. Meteorologie),
Kultur- und Staatswissenschaften (einschl. Wirtschaftsingenieurwesen)

Der Vordruck ist erschöpfend auszufüllen. Ihm sind ausreichende Unterlagen über die Vorbildung (Reifezeugnis, Abschlußzeugnis einer Fachschule mit Bescheinigung über die wissenschaftliche Befähigung zum Hochschulstudium, Bescheinigung über bestandene Sonderreifeprüfung) und über die zum Studium in der gewählten Fakultät erforderliche praktische Tätigkeit beizufügen.

I. Personalien:

1. ..... Zuname, bei Frauen auch Geburtsname
   ..... Vornamen (Rufnamen unterstreichen)
   ..... / ..... Geburtstag / Konfession
   ..... Geburtsort (Kreis, Provinz)
2. ..... Gegenwärtige Staatsangehörigkeit
3. ..... (Familienstand (ledig, verh., verw., gesch., Kinder)
4. ..... Wohnung in oder bei Darmstadt
5. ..... Gegenwärtige Heimatanschrift (Ort, Kreis)
   ..... (Straße)
6. Haben Ihre Eltern oder diejenigen, die für Sie unterhaltspflichtig sind, ihren Wohnsitz in Hessen?
7. Name, Beruf und Anschrift der Eltern (auch wenn verstorben):
8. Wie sollen Ihr Lebensunterhalt und die Kosten Ihres Studiums bestritten werden?
   (Aus eigenem Vermögen, eigener Arbeit, Zuschüssen der Eltern oder anderer Angehöriger usw.)
9. Leiden Sie an einer ansteckenden Krankheit? ..... Wenn ja, an welcher? .....
10. Sind Sie gerichtlich oder disziplinarisch bestraft? .....
    Wenn ja: a) durch welche Behörde: ..... b) wann? .....
    c) aus welchem Grunde? .....
11. Schwebt gegen Sie ein Straf- oder Disziplinarverfahren oder ein Ermittlungsverfahren?

II. Vorbildung durch die Schule:

1. Wann und wo haben Sie die Reifeprüfung abgelegt: .....
2. War dies a) eine normale Prüfung nach 9 Klassen Schulbesuch? .....
   b) eine Nichtschülerreifeprüfung? .....
   c) eine Sonderreifeprüfung? .....
3. Welche Noten erzielten Sie in:
   Mathematik ..... Deutsch ..... Französisch .....
   Physik ..... Geschichte ..... Englisch .....
   Chemie ..... Lateinisch .....
4. Welche Notenskala (Stufenzahl und Stufenfolge) liegt dem Zeugnis zu Grunde? .....
5. Haben Sie Fachschulabschlußprüfung mit Bescheinigung über die Hochschulreife? .....
   Wann und wo? .....

III. Bisheriger Studiengang, Studien- und Berufsziele:

1. Welche Fachrichtung innerhalb der gewählten Fakultät gedenken Sie einzuschlagen? .....
2. Welches Berufsziel haben Sie? .....
3. Wo und wie lange haben Sie praktisch gearbeitet?
   (Siehe Anmerkung Seite 1)
   Bestanden Sie eine Gesellen- oder Facharbeiterprüfung? .....
   Wann, wo und mit welchem Ergebnis?
4. Wann und wo haben Sie schon eine in- oder ausländische Hochschule besucht?

Zeitraum	Hochschule	Fakultät	Fachrichtung

5. Wieviel Semester haben Sie insgesamt ohne Anrechnung von Beurlaubungen studiert? .....
6. Haben Sie schon die Vor- oder Hauptprüfung oder eine Teilprüfung abgelegt? .....
   a) Wann und mit welchem Gesamtergebnis? .....
   b) Haben Sie noch Wiederholungsprüfungen an einer Hochschule abzulegen? .....
7. Stehen Sie vor einer Abschlußprüfung (Staatsexamen oder Promotion)? .....
   Vor welcher? .....
   Wann wollen Sie sich melden? .....

8. Wo sind Sie gegenwärtig immatrikuliert: .....
9. In das wievielte Fachsemester wollen Sie jetzt eintreten? .....
10. Wurden Sie schon bei Anmeldungen in Darmstadt zurückgewiesen? Wann? .....

IV. Schädigung durch Kriegsereignisse usw.: (Entsprechende Unterlagen sind beizufügen)

1. Sind Sie durch Wehrdienst, Kriegseinsatz oder Gefangenschaft am Studium verhindert worden und wie lange? .....
2. Sind Sie Kriegsversehrter? (Nähere Angaben, % Beschädigung, Stufe) .....
3. Sind Sie Spätheimkehrer (nach dem 1. 1. 1948)? .....
4. Sind Sie Flüchtling oder Vertriebener? Ja/Nein .....
   Wenn ja, aus welchem Gebiet: .....
   Ausweis A, B, C Nr.: .....
5. Haben Sie durch Kriegsereignisse nahe Angehörige (Ernährer) verloren? .....
6. Erlitten Sie durch Kriegsereignisse Sachschaden? .....
   Welche Schadenshöhe wurde amtlich festgestellt? .....
7. Sind Sie seit 1933 aus rassischen, religiösen oder politischen Gründen am Studium verhindert oder sonst erheblich benachteiligt worden? (näher angeben) .....

Sonstige Bemerkungen:

.....

Ich überreiche folgende Anlagen .....

.....

.....

Ich versichere, daß meine Angaben wahr und vollständig sind.

..... (Ort), den ..... 19.....

..... (Wohnort und Wohnung)

..... (Eigenhändige Unterschrift)

The above 4 pages show the nowadays unbelievable post-war admission questions for students at the Technische Hochschule of Darmstadt.

My certificate was not good enough, so I went to Hannover

TECHNISCHE HOCHSCHULE DARMSTADT

Praktikantenamt der Fakultät für Bauingenieurwesen

Merkblatt für die praktische Ausbildung zum Studium des Bauingenieurwesens

1. Die Mindestzeit für die praktische Ausbildung beträgt 6 Monate, die nach Beendigung der Schulzeit vor dem Studium oder auch während der Semesterferien, nach Möglichkeit in größeren Zeitabschnitten zusammengefaßt, abgeleistet werden kann. Diese Praxis ist ein Teil des Studiums und kann nicht erlassen werden. Ausnahmen z. B. bei Kriegsversehrten, Körperbehinderten bedürfen der Genehmigung der Fakultät.
2. Als Praktikantentätigkeit gilt nur praktische Arbeit auf einer Baustelle oder in einer Werkstatt, nicht aber im Büro oder bei einer Bauaufsicht.

Ausbildungsplan:

a) 1monatige Arbeit auf einem einfachen Hochbau (mauern oder zimmern)
b) 1monatige Arbeit an einem Erdbau
c) 1½monatige Arbeit mit dem Werkstoff Stahl (schmieden, schweißen, schlossern, nieten) oder Montage- und Reparaturarbeiten im Großgerätepark bei b) und d)
d) 2½monatige Arbeit auf einem Beton-, Stahlbeton- oder Grundbau.

Es ist erwünscht, während der unter b) und d) angegebenen Zeit sich an Baugrunduntersuchungen nach den neuesten Methoden der Bodenmechanik zu beteiligen.

3. Die Wahl des Betriebes ist dem Praktikanten überlassen; es wird seine eigene Sorge sein, daß seine Ausbildung den angegebenen Richtlinien entspricht. Es wird empfohlen, für die Praktikantenausbildung geeignete Betriebe bei der nächstgelegenen Industrie- und Handelskammer, Handwerkskammer oder bei dem zuständigen Arbeitsamt zu erfragen. Eine Vermittlung oder Empfehlung durch das Praktikantenamt der Hochschule ist nicht möglich.
4. Der Praktikant untersteht in jeder Hinsicht, insbesondere auch der Arbeitszeit, der Betriebsordnung des von ihm gewählten Unternehmens. Anspruch auf Urlaub oder Bezahlung steht dem Praktikanten grundsätzlich nicht zu. Auch gehören Praktikanten, wenn nicht mit dem Betrieb besonders vereinbart, nicht zu dem Pflichtversichertenkreis der Kranken- und Invalidenversicherung. Jedoch stehen sie unter dem Schutz der Unfallversicherung bei der für den Betrieb zuständigen Berufsgenossenschaft. Urlaubs- und Krankheitstage werden von der Arbeitszeit abgezogen.
5. Um die Praktikantenzeit fruchtbar zu gestalten und die Erfahrungen der praktischen Ausbildung für das Studium und die spätere berufliche Tätigkeit nutzbar zu machen, soll das Gelernte bestmöglich verarbeitet und festgehalten werden. Hierzu dient die laufende Führung eines Werkbuches (Heft DIN A 4 mit kariertem Papier). Aus den Eintragungen sollen Ort der Arbeitsstelle und Gegenstand der Arbeit hervorgehen. Die Tätigkeiten sind in zeitlicher Reihenfolge außerhalb der Arbeitszeit in Form von Wochenberichten aufzuführen, d. h. die Arbeitsvorgänge sind durch eigenhändige, mit Angaben der Maße versehene Skizzen und durch knapp gefaßte Beschreibungen darzustellen. Abpausen von Zeichnungen und Abschriften aus Lehrbüchern sind wertlos.

   Die Werkbucheintragungen sollen dem Arbeitgeber wochenweise zur Gegenzeichnung vorgelegt werden. Am Ende eines jeden Ausbildungsabschnittes stellt der Betrieb dem Praktikanten auf dessen Bitte ein Zeugnis aus. Dafür ist keine besondere Form vorgeschrieben, jedoch muß Dauer, Art und Ort der Tätigkeit zu ersehen sein.
6. Der Nachweis über die abgeleistete Praxis ist vor Beginn der Diplomhauptprüfung zu führen und muß spätestens 2 Monate vor der Meldung zu dieser Prüfung dem Praktikantenamt zur Anerkennung eingereicht werden. Das Praktikantenamt stellt Bescheinigungen über die Anerkennung der nach dem Werkbuch geleisteten Arbeiten aus, die bei der Meldung zur Diplomhauptprüfung mit vorzulegen sind. Können anerkannte Zeugnisse nicht erbracht werden, ist die Zulassung zur Diplomhauptprüfung nicht möglich.
7. Handwerkliche Ausbildung und Tätigkeit können nur angerechnet werden, soweit sie den unter Ziffer 2. a - d) aufgeführten Arbeiten entsprechen.
8. Weitere Auskünfte in Fragen der Praktikantentätigkeit und des späteren Berufes können bei dem Praktikantenprofessor der Fakultät für Bauingenieurwesen erbeten werden.

Darmstadt, den 1. April 1957

Der Rektor der Technischen Hochschule Hannover
Immatrikulationsamt

(20a) HANNOVER Datum der Post

Hochschul-Nr. H 5093

Gebühren-Rechnung

Für das ~~Sommer-~~ Winter-Semester 19 59/60 sind an Gebühren insgesamt zu überweisen

232 DM 50 Pf

Der Rechnungsbetrag ist innerhalb von 14 Tagen nach Erhalt der Gebührenrechnung unter Angabe der Hochschul-Nummer durch die Post an die „Kasse der wissenschaftlichen Hochschulen in Hannover", Postscheckkonto Hannover Nr. 5472, zu überweisen.

Den beim Belegen gestellten Anträgen auf Stundung ist (höchstens bis Vorlesungsschluß) stattgegeben, soweit kein gegenteiliger Bescheid ergangen ist oder noch ergeht.

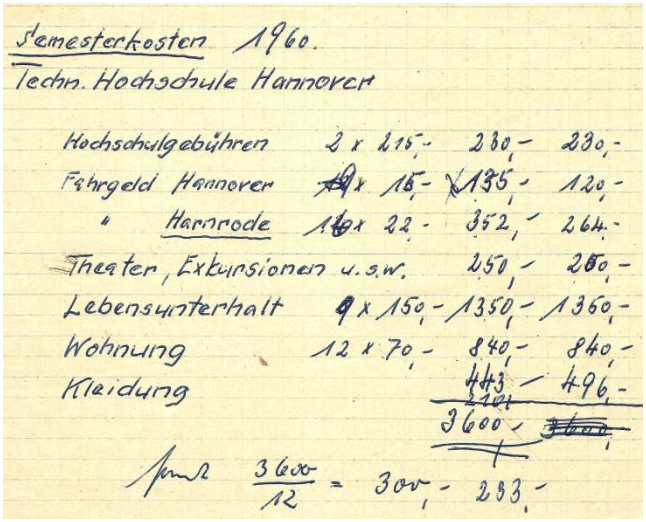
Bei Nichtzahlung der Hochschulgebühren wird der Studierende unter Nichtanrechnung des Semesters in den Listen der Technischen Hochschule gestrichen.

Studienbücher müssen abgeholt werden; sie liegen etwa 8 Tage nach restloser Gebühreneinzahlung im Zimmer 21 (Hauptgebäude) zur Abholung bereit. Nicht abgeholte Bücher können (nach Vorlesungsschluß) gebührenpflichtig durch die Post zugestellt werden.

Auszug aus der Gebührenordnung

I.	**Aufnahmegebühr**	30.— DM
	nach Ablauf der Einschreibefrist	40.— „
II.	**Studiengebühr**	82.50 „
	nach Ablauf der vorgeschrieb. Studienzeit	41.25 „
III.	**Unterrichtsgeld** Wo.-Std. 2.50 x 28 Std. =	70,— „
IV.	**Ersatzgeld** für die mit Materialverbrauch verbundenen Übungen (nur einmalig im Semester)	25.— „
V.	**Gebühr für die Turnlehrerausbildung** .	25.— „
VI.	**Wohlfahrtsgebühren** laut Anschlag z.Zt.	40.— „
VII.	**Praktikantengebühr** von Studenten der Fak. III, der Architektur und des Bauingenieurswesens bei der erstmaligen Einschreibung	10.— „
VIII.	**Prüfungsgeb.:** Diplom-Vorprüfung . . .	40.— „
	Diplom-Hauptprüfung . .	80.— „
	Promotion als Dr.-Ing .	200.— „

Father's estimate of Semester costs



Semesterkosten 1960.
Techn. Hochschule Hannover

Hochschulgebühren	2 x 115,-	230,-	230,-
Fahrgeld Hannover	~~9~~ x 15,-	~~135,-~~	120,-
" Hannrode	~~16~~ x 22,-	352,-	264,-
Theater, Exkursionen u.s.w.		250,-	200,-
Lebensunterhalt	9 x 150,-	1350,-	1360,-
Wohnung	12 x 70,-	840,-	840,-
Kleidung		443,-	496,-
		~~2401~~ 3600,-	~~3600,-~~

Jahr 3600/12 = 300,- 283,-

Student flat: Unheated, water froze in washing bowl (*central heating I already enjoyed at home*). I was able to improve this situation in 1960 after becoming an assistant at the heated structural mechanics department in my third semester until my exams in 1964. AND staying there the full week.

Costs of studying: 5 years
10000 DM, half of which was earned by myself.

My goal was to quickly earn my own money and no longer be a burden on my parents.

By the way, my last employment contract expired when I was 81.5 years old.

I loved my work. The nature of it was always challenging.

For further information, please see the enrollment

regulations of the Technische Hochschule Hannover (later Technical University, not Univerity of Applied Sciences)

Der Rektor der Technischen Hochschule Hannover

Immatrikulationsamt, Hannover, Am Welfengarten 1

Merkblatt

1. Allgemeines über Hochschule und Studium

Die Technische Hochschule gliedert sich in folgende Fakultäten:

I. Fakultät für Natur- und Geisteswissenschaften
Abteilungen: 1. Mathematik und Physik; 2. Chemie; 3. Geisteswissenschaften mit den beiden Fachrichtungen Wirtschaftswissenschaften *(nur für die Dauer von 2 Semestern)* **und** Höheres Lehramt *(Prüfungsfächer: Mathematik, Physik, Chemie, Geographie, Biologie und Sport)*

II. Fakultät für Bauwesen
Abteilungen: 1. Architektur; 2. Bauingenieurwesen und Vermessungswesen

III. Fakultät für Maschinenwesen
Abteilungen: 1. Maschinenbau; 2. Schiffstechnik; 3. Elektrotechnik

IV. Fakultät für Gartenbau und Landeskultur
Abteilungen: 1. Gartenbau; 2. Landespflege

Die Vorlesungen **für Studienanfänger** in den Fakultäten II—IV und in der Fachrichtung Wirtschaftswissenschaften werden nur jeweils im W. S. gehalten.

Die vorgeschriebene **Mindestdauer des Studiums** beträgt in den Fakultäten I—III 8 Semester, in der Fakultät IV 6 Semester. Bis zum Abschluß der Hauptprüfung werden in der Regel noch ein oder mehrere Semester zusätzlich benötigt. **Studienpläne** für die Fakultäten II—IV sind im **Vorl.-Verz.** zu ersehen; es kann etwa ab Mitte August jeden Jahres gegen Nachnahme oder bei Einsendung des Betrages von 1,50 DM portopflichtig übersandt werden. **Das Schiffbaustudium** wird gemeinsam mit der Universität Hamburg durchgeführt, und zwar 6 Semester hier und 2 Semester in Hamburg. Sofern die Zulassung für die Abteilung Schiffstechnik zum 1. Semester wegen der begrenzten Platzverhältnisse hier nicht möglich ist, kann das Studium auch an anderen Technischen Hochschulen in der Abteilung Maschinenbau bis zur Diplomvorprüfung durchgeführt werden. Die vor der Vorprüfung liegenden Fachvorlesungen des Schiffsbaues können hier nachträglich belegt werden. Studentinnen des Lehrfaches **Sport** können sich daneben an der hiesigen Pädagogischen Hochschule noch auf das Lehrfach Nadelarbeit vorbereiten.

2. Studienvoraussetzungen

Voraussetzung für die Zulassung als Student ist grundsätzlich **das Reifezeugnis** einer **staatlich** anerkannten höheren Lehranstalt.

Kriegsreifevermerke genügen zum Studium nur mit der Studienberechtigung des Nieders. Kultusministeriums (Hannover, Abt. III B, Am Schiffgraben 7—9). Bewerber mit Reifevermerk, die bereits vor dem 1. 4. 1946 in der gleichen oder einer artverwandten Fachrichtung studiert haben, können das Studium hier ohne weiteres fortsetzen.

Reifezeugnisse aus der **sowjetisch besetzten Zone** Deutschlands **(SBZ)** sind dem Niedersächsischen Kultusministerium (Anschrift siehe oben) zur Anerkennung vorzulegen. Studienbewerber, die **mehr** als 1½ Jahre Hochschulstudium (ohne Vorpraxis) in der sowjetisch besetzten Zone nachweisen, können ohne weiteres immatrikuliert werden, wenn das Reifezeugnis von einer zur allgemeinen Hochschulreife führenden Oberschule erteilt worden ist. Näheres ist aus einem Sondermerkblatt zu ersehen. Für Inhaber von nur bedingt anerkannten Reifezeugnissen werden an den hiesigen Hochschulen (T.H. und Ti.Ho.) Kurse in Englisch oder Latein eingerichtet, sofern sich eine genügende Teilnehmerzahl findet. Interessenten für Englisch müssen sich in einer Liste des Immatrikulationsamtes der Technischen Hochschule Hannover eintragen lassen.

Abschlußzeugnisse der Oberschule für Mädchen, **hauswirtschaftliche Form,** berechtigen — abgesehen von Leibeserziehung — nicht zum Studium, die vor 1947 erworbenen nur bedingt. Das Abschlußzeugnis der Wirtschaftsoberschulen **(Wirtschaftsabitur)** berechtigt nur zum Studium der Wirtschaftswissenschaften.

Bis zur Wiedereinführung der Sonderreifeprüfung genügt auch das **Fachschul-Sonderabschlußzeugnis** (sehr gut oder gut mit Sonderbescheinigungen **über** Teilnahme am allgemeinbildenden Unterricht **über** besondere wissenschaftliche Befähigung und mit Angabe der Studienfachrichtung) **einer** in der Bundesrepublik oder Westberlin liegenden besonders anerkannten Ingenieur- und Bauschule sowie höheren Gartenbauschule (Geisenheim, Weihenstephan, Osnabrück und Berlin-Dahlem) zum Studium der bisherigen Fachrichtung. Wer die Hochschulreife nachträglich erwerben will **(Begabten- bzw. Nichtschülerreifeprüfung),** muß sich an das zuständige Kultusministerium wenden.

Deutsche Staatsangehörige haben ihr etwaiges **fremdstaatliches** Schulzeugnis vom Nds. Kultusministerium anerkennen zu lassen.

Ausländer reichen eine Photokopie des fremdstaatlichen Schulabschlußzeugnisses mit einer von einer deutschen amtlichen Stelle beglaubigten deutschen Übersetzung ein sowie Lebenslauf in deutscher Sprache und Briefumschlag mit Anschrift und Porto (Coupon Reponse International).

Das fremdstaatliche Schulabschlußzeugnis muß in dem betreffenden Heimatland zum Hochschulstudium berechtigen und einem deutschen Reifezeugnis annähernd gleichwertig sein. Ausreichende Kenntnisse der deutschen Sprache sind eine notwendige Voraussetzung für die nutzbringende Teilnahme an den Vorlesungen und Übungen; sie sind vor der Einschreibung zu erwerben und nachzuweisen. Die hier stattfindende Vorlesung „Deutscher Sprachlehrgang für ausländische Studenten" ist nur zur Vervollkommnung der Sprachkenntnisse gedacht.

Praktische Tätigkeit

In der **Fachrichtung Mathematik** (Prüfung zum Diplom-Mathematiker) ist bis zur Vorprüfung eine praktische Tätigkeit von 4 Monaten nachzuweisen. Für die Studenten der **Fakultät für Maschinenwesen** ist bis zur Hauptprüfung eine praktische Tätigkeit von einem Jahr vorgeschrieben; hiervon sind vor Beginn des Studiums 26 Wochen, bis zur Vorprüfung 39 Wochen abzuleisten. Das Praktikantenzeugnis und das Werkarbeitsbuch sind rechtzeitig vor der Einschreibung dem Praktikantenamt der Technischen Hochschule Hannover zur Anerkennung vorzulegen. Vorschriften für die praktische Tätigkeit können beim Praktikantenamt Maschinenwesen angefordert werden. In der **Fakultät für Bauwesen** dauert die praktische Tätigkeit in allen drei Fachrichtungen (Architektur, Bauingenieur- u. Vermessungswesen) 6 Monate.

In den Fachrichtungen Architektur und Bauingenieurwesen kann sie während der Hochschulferien abgeleistet werden. Es wird jedoch empfohlen, mindestens die Hälfte der Zeit vor Beginn des Studiums zu erledigen. In der Fachrichtung Vermessungswesen soll die Praktikantenzeit in der Regel vor Aufnahme des Studiums abgeleistet sein. Wegen der näheren Bestimmungen wende man sich an das zuständige Praktikantenamt. Für die Fachrichtung Bauingenieurwesen ist gleichfalls ein Werkarbeitsbuch zu führen und dem Praktikantenamt für Bauingenieure vorzulegen.

In der **Fakultät für Gartenbau und Landeskultur** ist eine 2jährige gärtnerische Lehre in einem von einer Landwirtschaftskammer anerkannten Lehrbetrieb mit anschließender Gehilfenprüfung vorgeschrieben. Eine über die Lehrzeit hinausgehende Berufspraxis ist sehr erwünscht. Studierende der Fachabteilung Landespflege haben außerdem bis zur Diplom-Vorprüfung den Nachweis einer 8wöchigen praktischen Tätigkeit in einem Staatlichen Forstamt oder im Lehr-Forstamt der Hochschule zu erbringen. Es wird empfohlen, die praktische Tätigkeit im Forstamt schon vor Beginn des Studiums abzuleisten.

3. Gasthörer

Gasthörer, die sich **neben** ihrer beruflichen Tätigkeit in einzelnen Studienfächern weiterbilden wollen, erhalten die Aufnahmeformblätter bei ihrer persönlichen Vorstellung im Immatrikulationsamt zu Semesterbeginn. Voraussetzung für die Zulassung ist mindestens Obersekundareife oder eine als gleichwertig anerkannte Vorbildung. Abiturienten können erst nach einem abgeschlossenen Studium als Gasthörer zugelassen werden. Ein vollständiges Studium ist Gasthörern nicht gestattet, auch werden sie nicht zu Prüfungen zugelassen. Ein Merkblatt für Gasthörer ist beim Immatrikulationsamt erhältlich.

4. Semester- und Bewerbungstermine

Der Antrag auf Zulassung zum Studium ist auf einem im Immatrikulationsamt erhältlichen Vordruck mit den darin geforderten Unterlagen termingemäß einzureichen. Verspätet eingehende Anträge können ohne besondere Begründung nicht berücksichtigt werden.

Das Sommersemester (SS) beginnt am 1. 4. und endet am 30. 9. des jeweiligen Jahres
Vorlesungsbeginn: voraussichtl. Mitte April
Vorlesungsende: „ Mitte Juli.

Das Wintersemester (WS) beginnt am 1. 10. und endet am 31. 3. des jeweiligen Jahres
Vorlesungsbeginn: voraussichtl. Anfang November
Vorlesungsende: „ Ende Februar.

Die Zulassungsanträge für das jeweilige WS sind für alle Abteilungen bzw. Fachrichtungen bis spätestens 31. 5. jeden Jahres an das Immatrikulationsamt der Technischen Hochschule Hannover einzureichen.

Zulassungsanträge für das jeweilige SS werden nur bis 31. 12. des vorhergehenden Jahres, und zwar von Studienanfängern nur für die Fachrichtung Höheres Lehramt, Chemie, Physik und Mathematik angenommen.

Die Entscheidungen über die eingereichten Anträge ergehen für das SS etwa Mitte Februar und für das WS etwa Mitte Juli.

5. Zulassung zum Studium

Solange die Zahl der Studienbewerber die Anzahl der verfügbaren Studienplätze (Hörsäle, Laborräume usw.) übersteigt, muß eine Auslese stattfinden nach den Bestimmungen der vom Nds. Kultusministerium am 5. 4. 1948 erlassenen Ordnung der Zulassung zum Studium an den wissenschaftlichen Hochschulen Niedersachsens.

6. Anerkennung von Studiensemestern, Prüfungen usw.

Die Fakultäten (ggfs. Prüfungsausschüsse) bzw. die zuständigen Fachprofessoren entscheiden **auf Antrag** über die Anerkennung von bereits angefertigten Übungsarbeiten, von Prüfungen von in anderen Fachrichtungen verbrachten Studienzeiten und auch von Semestern, die bestätigt sind **entweder**

a) von Hochschulen, an denen ein Fach **nicht voll** bzw. **nicht** mit voller Prüfungsmöglichkeit vertreten ist,
b) von Hochschulen ohne Rektoratsverfassung oder
c) von Hochschulen des Auslandes.

Die Hochschule soll grundsätzlich nicht während einer Prüfung, sondern nur entweder vor ihrem Beginn oder nach ihrem Abschluß (z. B. Vorprüfung) gewechselt werden; es ist in der Regel nicht möglich, eine Prüfung auf verschiedene Hochschulen zu verteilen.

Fachschul- und Gasthörersemester werden grundsätzlich **nicht** anerkannt; die zuständige Fakultät kann jedoch in Ausnahmefällen einzelne Studienergebnisse berücksichtigen.

Über die Anträge kann erst nach der Einschreibung entschieden werden. Anträge, die schon zusammen mit der Bewerbung um die Zulassung zum Studium gestellt werden, können in der Regel nicht bearbeitet werden.

7. Studienkosten und Studienförderung

Die **Hochschulgebühren** betragen etwa 180—200 DM je Semester. Außerdem ist bei der Einschreibung eine Aufnahmegebühr von 30,— DM zu entrichten.

Gebührenerlaß und sonstige Beihilfen können grundsätzlich nur bei Eignung, Bedürftigkeit und Würdigkeit gewährt werden. Anträge sind beim Studentischen Hilfswerk zu stellen. Für die Vermittlung von Verdienstarbeit während der vorlesungsfreien Zeit (Semesterferien) ist ebenfalls das Studentische Hilfswerk zuständig.

Die **Wohnraumbeschaffung** wird durch das Studentische Hilfswerk, Hannover, Wilhelm-Busch-Straße 7A, geregelt. Es ist ratsam, sich **persönlich** etwa 4 bis 8 Wochen vor Semesterbeginn mit der vorgenannten Stelle in Verbindung zu setzen. Eine **schriftliche** Zimmervermittlung ist aus verschiedenen Gründen leider **nicht möglich.**

Bei der großen Zahl wohnungssuchender Studenten und dem begrenzten studentischen Wohnraum wird jedem Studenten empfohlen, auch von sich aus um die Beschaffung einer Unterkunft bemüht zu sein.

Ausgaben für Lebenshaltungskosten entsprechend den Bedürfnissen etwa 150—200 DM monatlich. Ein preiswertes Mittagessen kann in der Mensa eingenommen werden.

8. Auskünfte

Anfragen sind zu richten:

In Immatrikulations- und allgemeinen Studienangelegenheiten an den Rektor der Technischen Hochschule (Immatrikulationsamt);

In besonderen Studien-, Prüfungs- und Promotionsangelegenheiten an den Dekan der betr. Fakultät.

In Praktikantenangelegenheiten an die Praktikantenämter für Bau- bzw. für Maschinenwesen.

Ein Umschlag (mit Marke und Anschrift) für die Antwort ist beizufügen. Bei allen Eingaben ist die Studienfachrichtung des Bewerbers anzugeben.

Das Immatrikulationsamt ist geöffnet sonnabends von 10.00—12.00 Uhr und an den übrigen Werktagen von 10.00 bis 13.00 Uhr.

I. A.
(Prof. Dr. Quade)

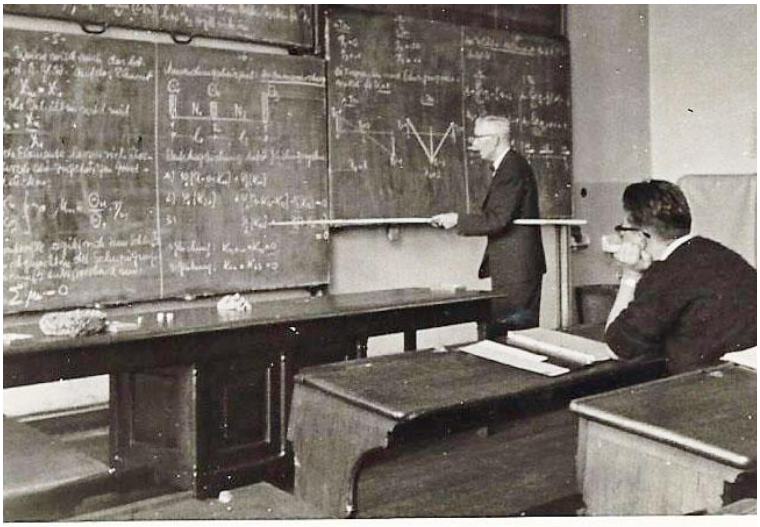
I worked basically as, about 9 months altogether

Practical work on construction > 6 months, thereof 3 months before studying

0.18 Technical University of Hannover with Institute of Civil Mechanics



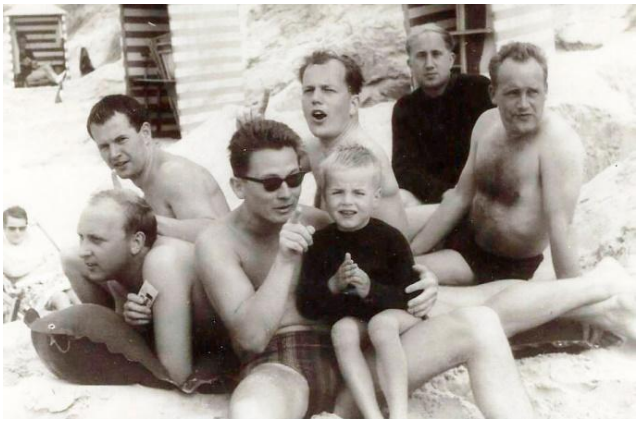
Technische Hochschule Hannover Welfengarten



Supporting Prof. Eugen Doeinck by preparing his lecture tables. He had to stand in for his successor Hans Kauderer, *who died suddenly*, for a while.



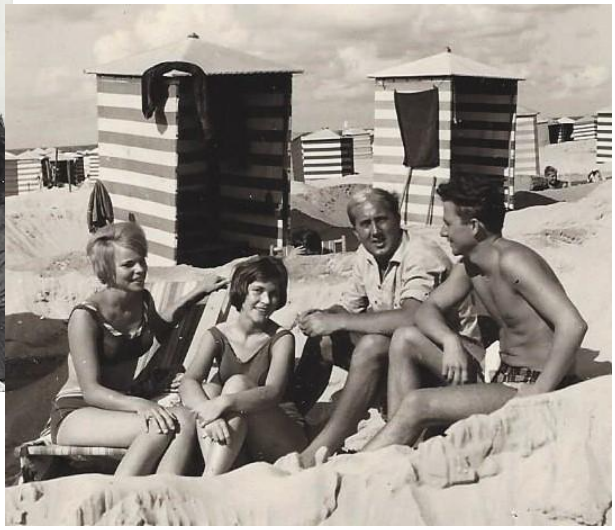
Traditional get-together with the new 'boss' at the civil mechanics chair, Theodor Lehmann



The traditional summer trip of the chair members: Schäfer, Hartung, Lohmann, de Boer, Schroeder



(1962) Christmas table round with emeritus Doeinck. On Juist with Reint and two nice random female acquaintances →





Final measurement exercise: Not without danger, because a young bull was 'guarding' a survey point in one area



The 'inner circle' of the 120 students (1 girl only!) of civil engineering at TU Hannover



Tensor analysis. On the way to becoming an engineer. This is how we worked at the mechanics chair (1962), and this was also the case on Sundays because in the unheated cold student apartment the water in the washbowl froze.

Frederick-Heinz Schroeder:
February 11, 1968
"*What is this on your head* ??"



The job title 'engineer' supposedly appears for the first time in 'Le Roman de Rou' by Robert Wace (*about 1150, citing H. Lange, Technik in Bayern 5/2004).*

Following Google the term engineering is derived from the Latin ingenium, meaning "cleverness" and ingeniare, meaning "to devise". Engineering has existed since ancient times, when humans devised inventions such as the wedge, lever, wheel and pulley. The term engineering is derived from the word engineer, which itself dates back to 1390 when an engine'er (one who operates an engine) referred to "a constructor of military engines."

Later, as the design of civilian structures, such as bridges and buildings, the term ***civil engineering*** emerged to distinguish between military engineers and those specialized in the construction of civil projects



Meeting of former colleagues



Hartung, de Boer, Bothe, Seitz,Schäfer, Wetzell, Spierig, Köper



‘Radiant strength’ of all employees of the Chair of Construction Mechanics in Hannover (*interims time: Kauderer-Lehmann*) on the island of Juist.. Interimsboss: F.H. Schoeder (left), Assistants: de Boer, Lohmann, Seitz, Schäfer, supported by the 3 youngsters Hartung, Cuntze, Köper in the foreground.
This obvious excellent teamwork has made it possible to fill the interregnum until the new chairholder Th. Lehmann took over and thereby to maintain the mechanics standard for the students



Santa Claus F. H. Schroeder (1962)



One of the tea hours with the ’boss’ Th. Lehmann



Dissertation topic from structural dynamics



Anyone who thinks so deeply receives a papier-mâché hat as a reward.



Honorary doctorate of Theo Lehmann in front of the Leibnizhaus in Hannover (June 1990).
Seitz, Hartung, Bruhns, Wunderlich, Lehmann, Spierig, Köper (right)
(I could not participate)



Civil Engineering
FE-Congress at Hannover (1978).
Schäfer, Cuntze, Lohmann

0.19 Numerical Analysis, Drawing Tools and Design Sheets

Tools for practicing engineering in 1960-1968

- ✓ Diploma work:

  Application of an Arithmetic Stick (slide rule: for multiplication, division), the short one and for more precise calculations the 25 cm long one (about 1% error). The slide stick allows you to extract square and cube roots, exponentiation and operations with trigonometric functions of given angles
- ✓ Dissertation:

  I could not finish my dissertation in 1967 because o and 0 where not clearly marked in the coding which cost two months filled with despair.
- ✓ FEA-Practice:

  Later in the sixties, Finite Element Analysis came up, however, there was no commercial tool available. The author had to beg for the building blocks of his intended program (in experience for the program below at the DLR) at his old university in Hannover. To punch cards was a must.

  Waiting for the result: One week !! Now on my PC about one second CPU.

(from WIKIPEDIA, I'm a member) Konrad Ernst Otto Zuse (born 1910 in Berlin, † 1995 in Hünfeld) was a German civil engineer, inventor and entrepreneur (Zuse KG, in my hometown Bad Hersfeld. My girlfriend at that time worked there around 1960). With his development of the Z3 in 1941 Zuse built the first functional, fully automatic, program-controlled and freely programmable computer working in binary floating-point calculation and thus the first functional computer in the world.

A lifelong close friend of Konrad Zuse and my father-friend once told me Zuse's retrospective:

> *"Looking back on my career, I can only hope that in the future there will be room not only for the specialist in his field, but also for the universally gifted. I believe that versatility in particular is the prescriptive for ideas that are out of the ordinary. Such an idea, an 'infidelity' of technology, if you will, was ultimately the computer".*

Progress being in my hand

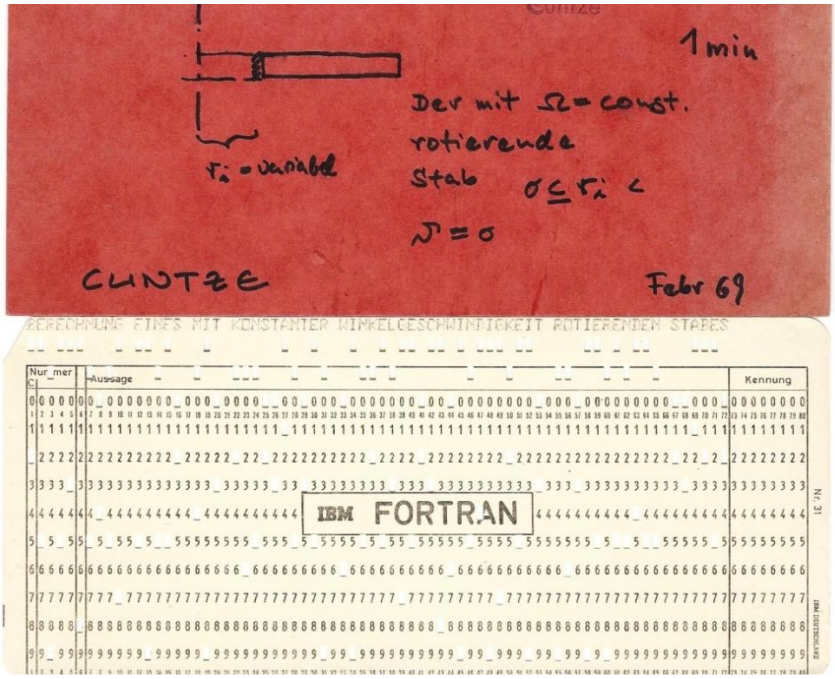
in the Mechanics-institute at Uni Hannover:

The Friden Wurzelautomat model SRW was the only mechanical calculating machine that was able to pull square roots completely automatically. In addition to the four basic arithmetic operations, the SRW root machine is also capable of drawing precise square roots from up to ten-digit numbers.

The square root is pulled on this machine after the radicande has been adjusted by pressing one of the small key buttons in front of the full keyboard.

Vierspezies-Staffelwalzenmaschine mit Wurzelautomatik, © Arithmeum



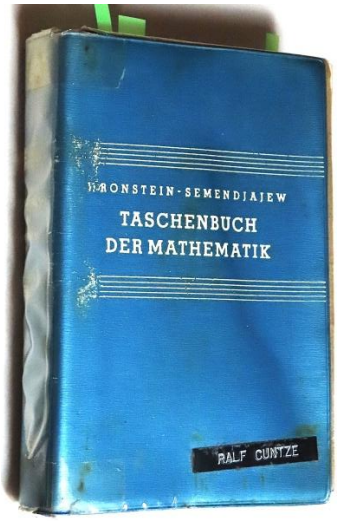


Documenting of results by stamping



Bronstein-Semendjajev about
"*Calculation accuracy and presentation*":

„*When calculating, it is always important to consider the accuracy that you either have to achieve or can achieve. It is quite inadmissible to calculate with great accuracy if the nature of the task either does not allow it or does not require it. If an approximate value contains superfluous decimal numbers, it must be rounded. In some cases, more realistic but more complicated models can be replaced by simpler ones that give a result with an acceptable error*."
(Written by about 1960 in their famous booklet)





Necessary practical tools for performing the

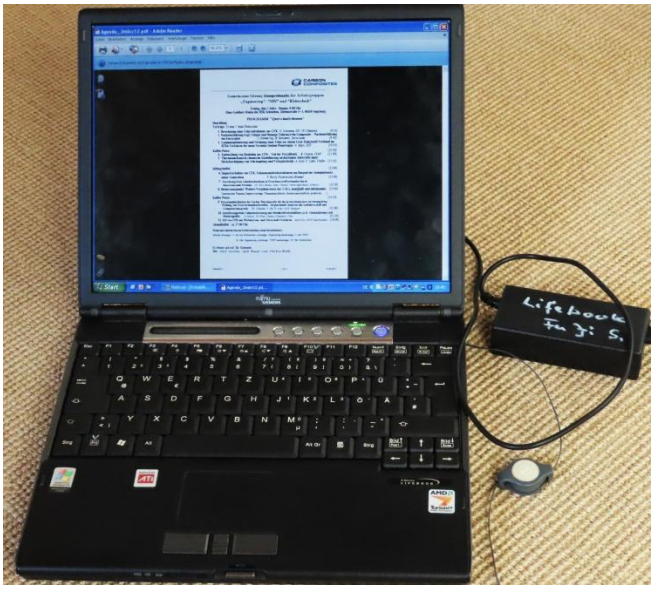


engineering work

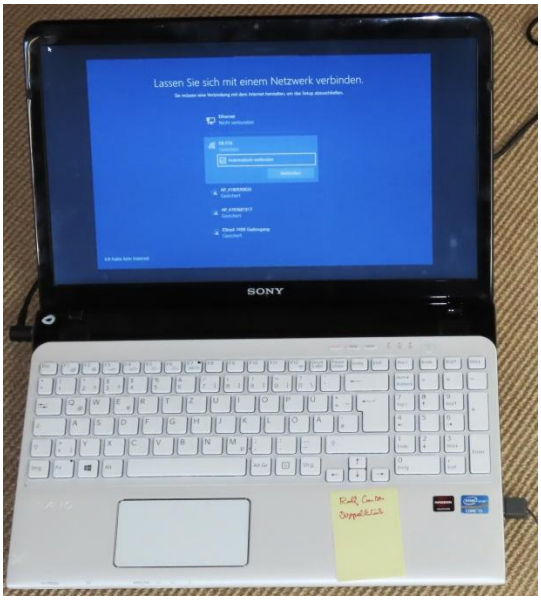
After about 50 years still helpfully working!



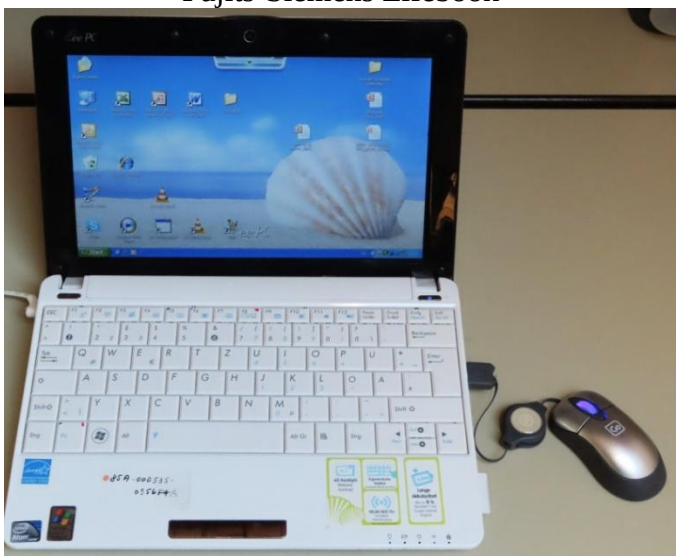
Laptops over the years, *the 3 PCs not presented*



Fujits-Siemens Lifebook



Sony , Vaio



Eee

Al laptops above are still running !!!

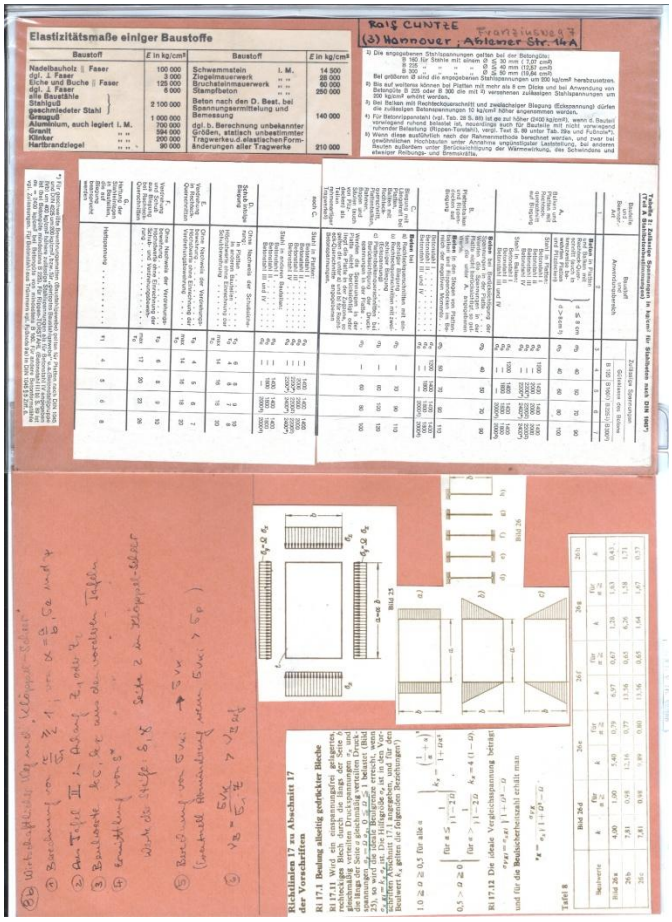
The youngest

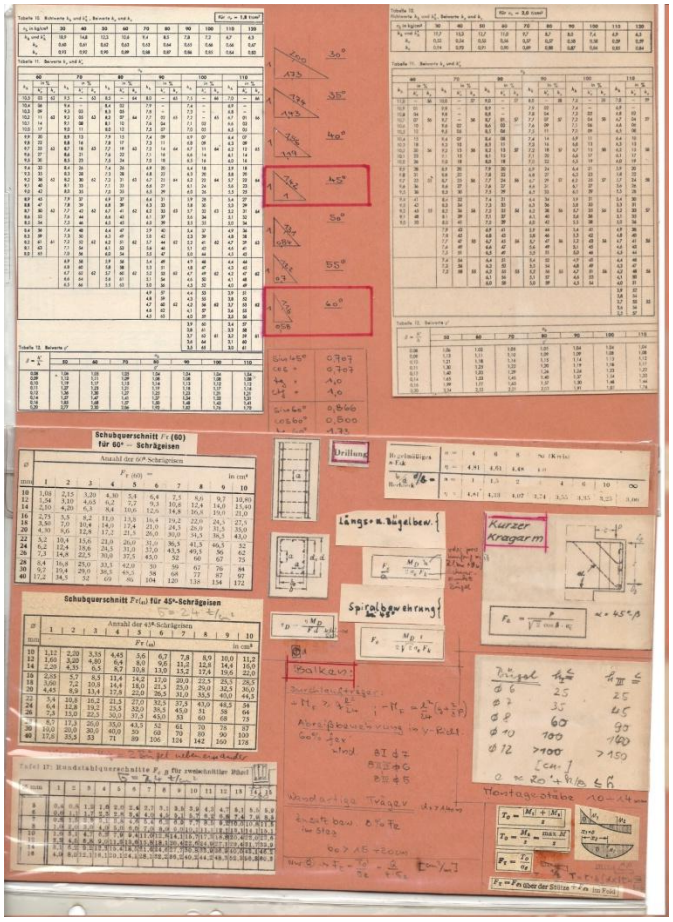
(right) 2021- 2025

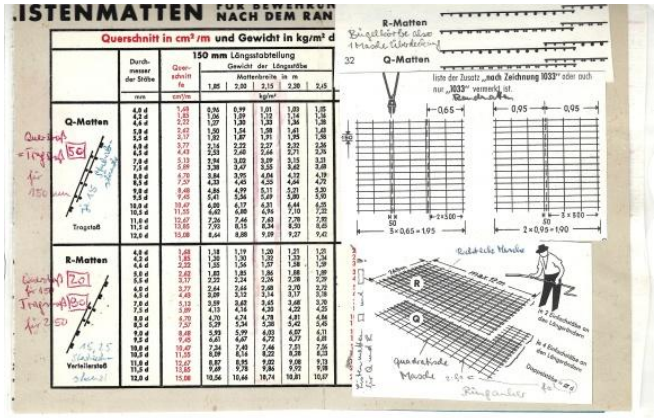
Microsoft
Surface Go 2

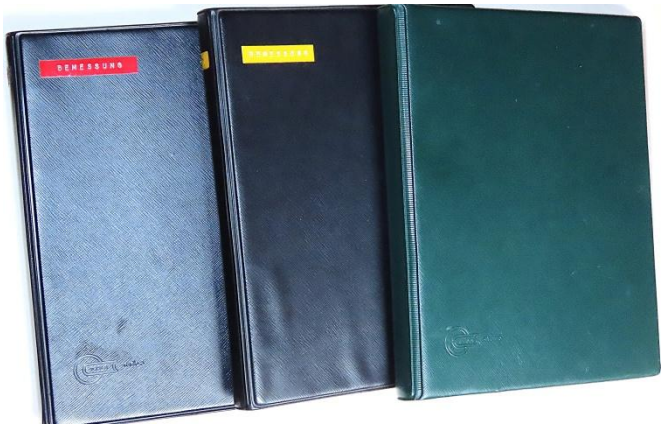
in 2025 not anymore to open
(hardware with the full expensive MS-software lost)

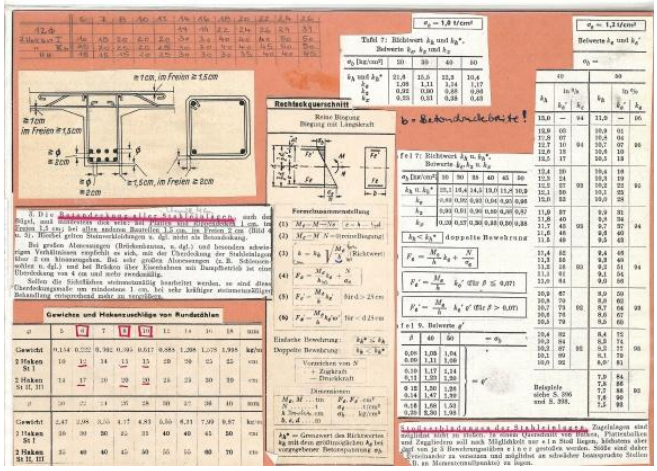










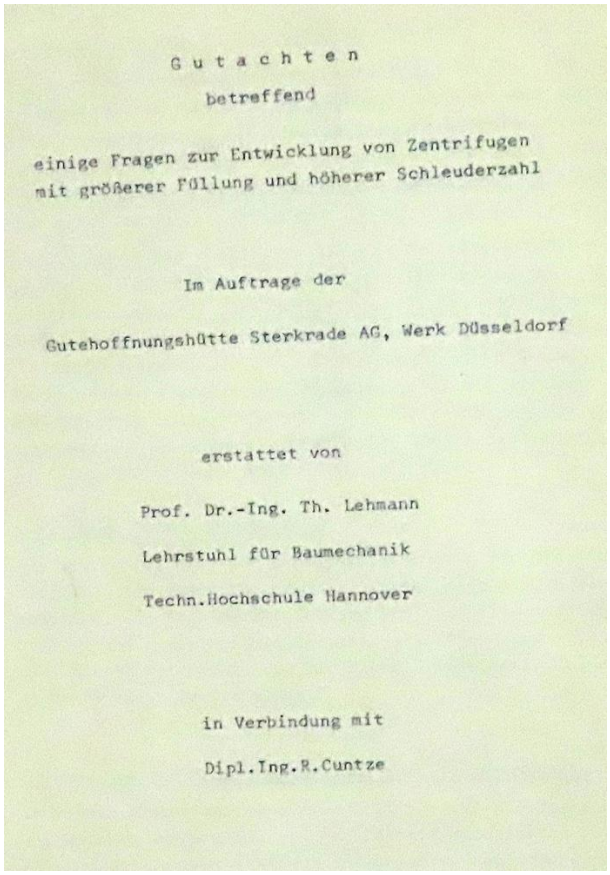


This was my/our way

How to dimension ?

by generating above 'Dimensioning booklets', thus becoming very fast when dimensioning.

This led to an excellent 'written' concrete construction diploma and helped later to compensate for the blackout I had during the oral exam on the topic of bridges. *Just one view at my exam-dates plan would have helped.*



Gutachten

betreffend

einige Fragen zur Entwicklung von Zentrifugen
mit größerer Füllung und höherer Schleuderzahl

Im Auftrage der

Gutehoffnungshütte Sterkrade AG, Werk Düsseldorf

erstattet von

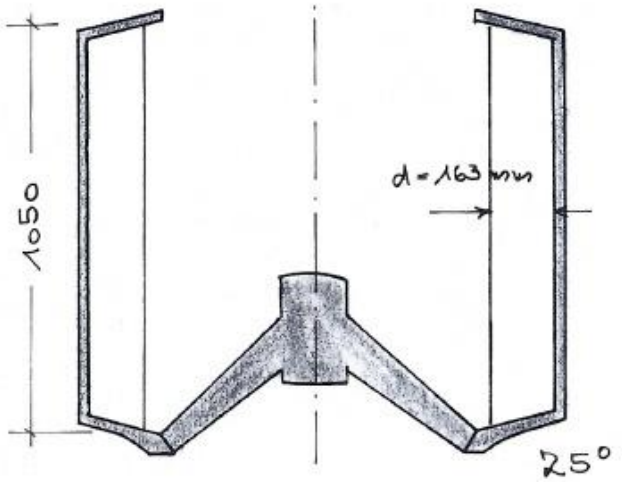
Prof. Dr.-Ing. Th. Lehmann

Lehrstuhl für Baumechanik

Techn.Hochschule Hannover

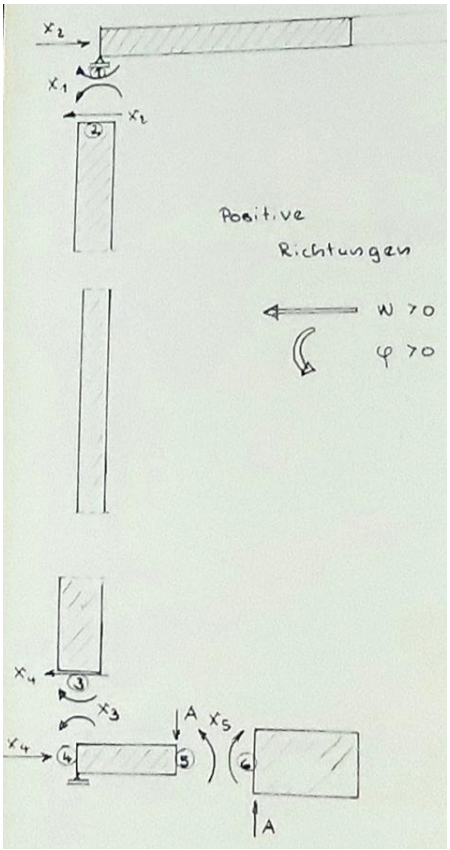
in Verbindung mit

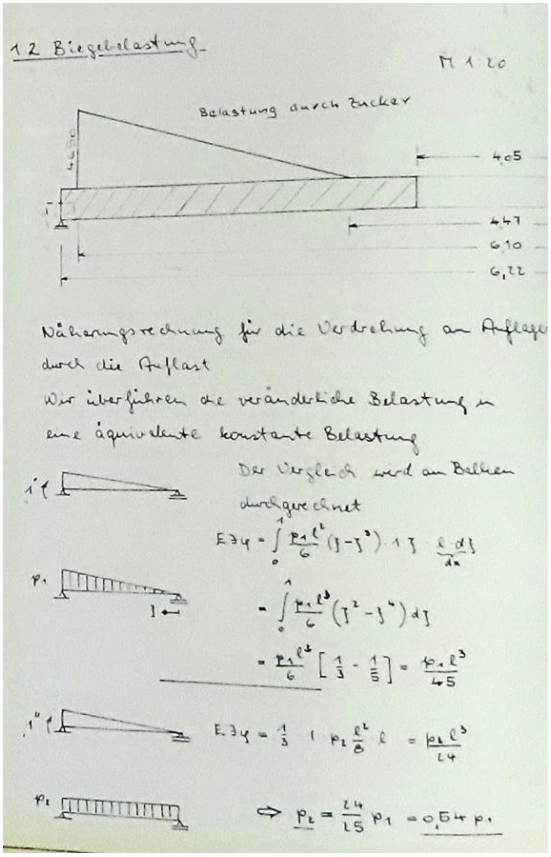
Dipl.Ing.R.Cuntze



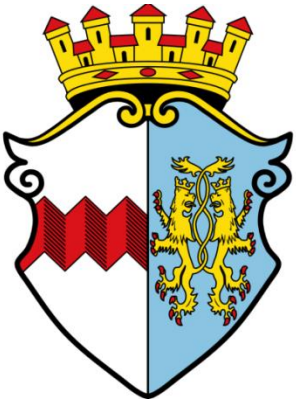
Development goal was a sugar molasses centrifuge for an increased capacity of 1000 kg.
Quasi-static calculation. Loading: Centrifugal forces. Stresses from starting and braking, as well as vibrations, are not taken into account, nor are imbalances.
Rotational symmetric model
The solution of the statically indeterminate system was carried out manually (*see page before*), using residual stress states with the statically indeterminate Xi, which were determined via the strain compatibilities at the joints

My first contact to centrifuges.
Expert Report of the university chair





0.20 Building an Own Home at Markt Indersdorf (30 km north of Munich)



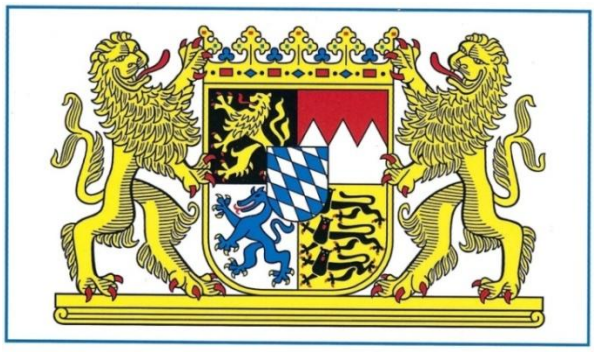
Village Indersdorf
founded in 972.
Districts Glonn and
Langenpettenbach
founded in 774.
Beer brewery since
1300.
Inhabitants: 10.600



Monastery Church
‘ Assumption of Mary’ in
Markt Indersdorf

For over 600 years, Indersdorf Monastery was the spiritual and cultural center of the Dachau region. In 1120, Count Palatine Otto IV of Wittelsbach founded the Augustinian Canonry as atonement for his participation in the capture of Pope Paschal II by Emperor Henry V in 1111. All those involved were excommunicated.





Bayernhymne

Gott mit dir, du Land der Bayern,
deutsche Erde, Vaterland!
Über deinen weiten Gauen
ruhe seine Segenshand!
Er behüte deine Fluren,
schirme deiner Städte Bau
und erhalte dir die Farben
seines Himmels, weiß und blau!

Gott mit dir, dem Bayernvolke,
dass wir, uns'rer Väter wert,
fest in Eintracht und in Frieden
bauen uns'res Glückes Herd!
Dass mit Deutschlands Bruderstämmen
einig uns ein jeder schau
und den alten Ruhm bewähre
unser Banner, weiß und blau!

Urtext von Michael Öchsner (1816 – 1893)

For Bavarians, only !





As late as 1978, one could still in the back of the two pictures see a small pasture belonging to the neighboring small farm with grazing cows



Same view as the above two,

However,
in 2022 after a Hailstorm

.



Break on the construction site in 1976

(*with me and a bottle of beer*)

25 km north of Munich

.



Markt Indersdorf Church

Nonnery, closed.







Folk festival at Markt Indersdorf.





Not so far from the Alps
and the WIESN in Munich,



place of the annually Oktoberfest (Wiesn)



'Carnival stronghold' Markt
Indersdorf



Very large parades take place at carnival time
Picture 1978, F. J. Strauss



the move from Dachau to Markt Indersdorf



In the first years

Yes, and we have been living here happily for almost 50 years now, together with our neighbors on the left and right in the same common building, with Maria and Dr.-Ing. Elmar Streifinger, as well as Rita and Fritz Scharfe.



some years later



still with the fence



In the back: Not yet do surrounding houses exist.
Beginning to enjoy the new garden at Markt Indersdorf.



A garden landscape



Some years later, from the street,
with my accidentally bred *white* daphne



2014 from behind, two parts of the 3-part-building



In the wintergarden and on the balcony

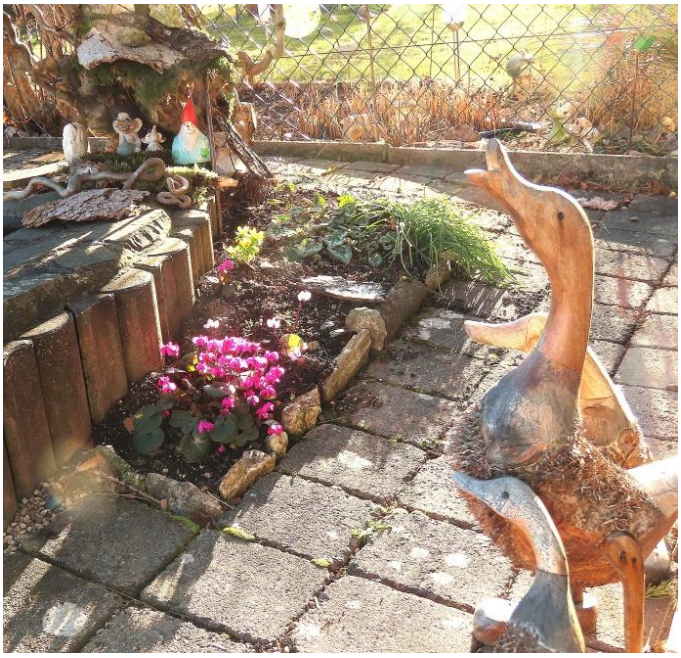






Colorful balls in the hazel bush delight in the wintertime









Usually:
At Eastern is more snow than at Christmas





together
with mountain hikers, bowling friends and Jutta.



Settling accounts after bowling →

.. and celebrating, below.





With our neighbors →



75 years birthday celebration. Hans plays music, Ralf enjoys.
Biggi and Christian (son of Maria) in the background.



Elmar, Fritz and Rita



Maria, Andrea, Biggi, Christian, Hubert, Doris



bees approaching our nut beam





Maria, saying Good-bye to the old Year



Very seldom: high snow in the garden



babbling fountain.

Barbecue with Maria →





3 wood anamones: yellow, white, purple
and red winter alpine lillys
2024



(right): Who will win in summer?
Summer alpine lily or the fern?



Drawing table



The old work place with massive PC-system.
(left) Former working place under the roof



Habitat of the Trolle,
Summer and winter







Mausi: Checking my work
and my healthy food, the apple.
(left) Relaxing, when Ralf works in a complicated position



Maria's larch



Maria presents a Christmas gift



The Chrismastree Master
Ralf is decorating the Christmas tree with over 120 individual pieces.
Again for a green Christmas

0.21 World-Wide-Failure-Exercise (2019-2012), Habilitation (1978) and Honorary Professorship (1998)

Prof. Dr.-Ing. Dr. h.c. G. W. Ehrenstein
LEHRSTUHL FÜR KUNSTSTOFFTECHNIK
UNIVERSITÄT ERLANGEN-NÜRNBERG
D-91058 Erlangen-Tennenlohe, Am Weichselgarten 9, Tel.: 09131/85-29700, Fax: 85-29709, email: ehrenstein@lkt.uni-erlangen.de

Herrn
Prof. Dr.-Ing. Ralf Cuntze
Matthäus-Günther-Str. 32
D-85229 Markt Indersdorf

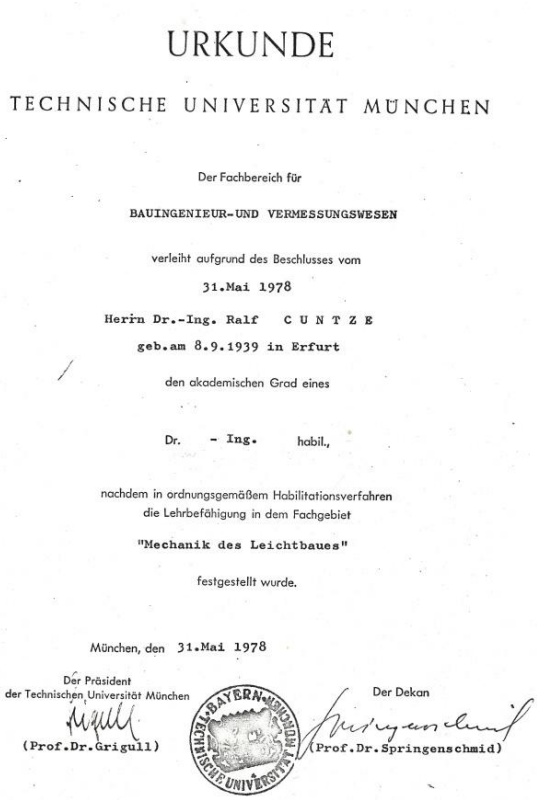
Ihr Zeichen	Bearbeiter	Tel.: 09131/85-	Datum
	Prof. Ehrenstein	29701	10.11.2004/s

Lieber Herr Cuntze,

WWFE-I

von Professorenkollegen habe ich gehört, daß Sie gegen große namhafte Konkurrenz aus vielen Ländern den Wettbewerb "World-Wide Failure Exercise" gewonnen haben. Im Internet habe ich die Bewertung der Darstellungen gelesen. Es bleibt der Eindruck, daß man Ihre Arbeit deutlich würdigt und besonders deren Bedeutung für praktische Anwendungen schätzt.
Die Konkurrenz der Namen ist beachtlich. Umso höher ist Ihr Erfolg zu werten.
Ich jedenfalls freue mich, Ihnen gratulieren zu können für den Erfolg vieler Jahre harte Arbeit, wohl aber auch der Erfahrung, die diesen Erfolg erst möglich gemacht hat.

Mit freundschaftlichen Gruß
Ihr



URKUNDE

TECHNISCHE UNIVERSITÄT MÜNCHEN

Der Fachbereich für

BAUINGENIEUR-UND VERMESSUNGSWESEN

verleiht aufgrund des Beschlusses vom

31.Mai 1978

Herrn Dr.-Ing. Ralf C U N T Z E

geb.am 8.9.1939 in Erfurt

den akademischen Grad eines

Dr. - Ing. habil.,

nachdem in ordnungsgemäßem Habilitationsverfahren
die Lehrbefähigung in dem Fachgebiet

"Mechanik des Leichtbaues"

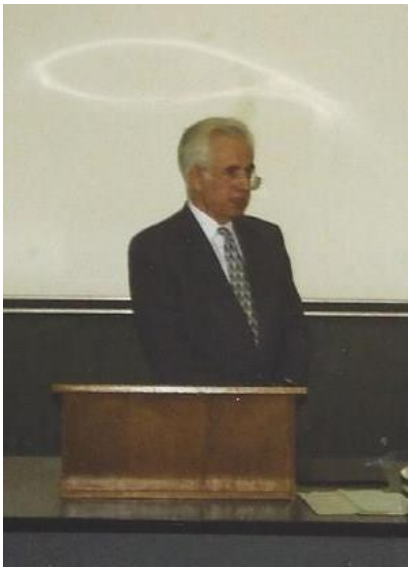
festgestellt wurde.

München, den 31.Mai 1978

Der Präsident
der Technischen Universität München
(Prof.Dr.Grigull)

Der Dekan
(Prof.Dr.Springenschmid)

Honorary Professorship at Universität der Bundeswehr München



Dietmar Könke, vice president:
presentation of the future honorary professor and the certificate



Honorary Professor Talk on
Humans need strength





Gudlath, Zippe, Heimeshoff, Grundmann, Fahlbusch + friends behind

Akademische Feier

27. November 1998

Fakultät für
Luft- und Raumfahrttechnik

UNIVERSITÄT DER BUNDESWEHR MÜNCHEN

Die Fakultät
für
Luft- und Raumfahrttechnik

beehrt sich, zu einer
akademischen Feier
aus Anlaß der

Bestellung von
Dr.-Ing. habil. Ralf G. Cuntze
zum Honorarprofessor

einzuladen.

Die Feier findet statt
am Freitag, den 27. November 1998 um 14.30
im Gebäude 33, Hörsaal 0401.

U.A.w.g. auf beiliegender Karte oder Tel. 089/6004-3031
bis 23. November 1998

Begrüßungen

Vizepräsident der Universität der Bundeswehr Münche
Univ.-Professor Dr.-Ing. Diethard Könke

Dekan der Fakultät für Luft- und Raumfahrttechnik
Univ.-Professor Dr. rer. nat. Bernd Häusler

Laudatio
Univ.-Professor Dr.-Ing. Günter Fahlbusch

Überrreichung der Urkunde

Vortrag

Professor Dr.-Ing. Ralf G. Cuntze

„Der Mensch braucht Festigkeit"

Anschließend Empfang

Im Namen der

Bundesrepublik Deutschland

bestelle ich

mit Genehmigung des Bayerischen

Staatsministeriums für Unterricht, Kultus, Wissenschaft und Kunst

Herrn Dr.-Ing. habil. Ralf G. Cuntze

geb. am 8. September 1939 in Erfurt

zum

HONORARPROFESSOR

an der Universität der Bundeswehr München.

Bonn, den 3. September 1998

Der Bundesminister der Verteidigung

Budapest Collection

Dr.-Ing. Dr. h.c. (H)
Huba Öry
em. Universitätsprofessor
Schmiedgasse 16, D-52074 AACHEN
Tel. 02 41 / 8 31 24 • Fax 8 56 74

Aachen
24. November 1998

Lieber Herr Cuntze,

Herzliche Glückwünsche
zur Anerkennung Ihrer langjährigen
erfolgreichen wissenschaftlichen
Tätigkeiten!

Freundlichst
Ihr Huba Öry

Designed by ABS LINA STUDIO



Welcome in club!
Lieber Herr Cuntze,
bleiben Sie weiterhin
gesund, optimistisch,
gutgelaunt, zufrieden
und kreativ, sowie
ewig jung!

Ich freue mich mit Ihnen,
meine Sympathie wird Sie
immer begleiten!

Freundlichst Ihr
Aachen
24-11-1998 Huba Öry

RISETTE
TINY TOT TITTER
[AP / WIDE WORLD PHOTOS

Dr.-Ing. Dr. h.c. (H)
Huba Öry
em. Universitätsprofessor
Schmiedgasse 16, D-52074 AACHEN
Tel. 02 41 / 8 31 24 • Fax 8 56 74

INSTITUT FÜR
VERBUNDWERKSTOFFE GMBH

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Ralf G. Cuntze
Abt. RA
MAN Technologie AG
Postfach 13 47
85757 Karlsfeld

Institut für
Verbundwerkstoffe GmbH
Erwin-Schrödinger-Strasse
67663 Kaiserslautern
Telefon (06 31) 20 17-0
Telefax (06 31) 20 17-199

Aufsichtsratsvorsitzender:
Heinz-Josef Mentges
Geschäftsführer:
Prof. Dr.-Ing. Manfred Neitzel

Amtsgericht Kaiserslautern
HRB 2486
Bankverbindung:
Stadtsparkasse Kaiserslautern
BLZ 540 501 10 · Kto.-Nr. 000 308 999

USt.-Id-Nr.: DE 148 647 451

Ihre Nachricht vom	Ihr Zeichen	Unser Zeichen/Durchwahl	Datum
		GF/Poi -102	24. November 1998

Lieber Herr Cuntze,

wir freuen uns mit Ihnen über Ihre Ernennung zum Honorarprofessor der Universität der Bundeswehr München.

Wir wissen, wieviel zusätzliche nebenberufliche Arbeit in diesem Erfolg steckt. Trotzdem hoffen wir, daß Sie uns neben Ihrer Vorlesungstätigkeit und der hohen betrieblichen Belastung aus Ihrer fachlichen Perspektive heraus im Rahmen der Evaluation des Instituts neue Anregungen geben können.

Leider sind wir aus terminlichen Gründen nicht in der Lage an der Veranstaltung teilzunehmen, wünschen Ihnen jedoch für die Feier viel Freude.

Mit freundlichen Grüßen

Institut für Verbundwerkstoffe GmbH

M. Neitzel K. Friedrich M. Maier

Neitzel Friedrich Maier

Prof. Dr.-Ing. Dr. h.c. G.W. Ehrenstein

LEHRSTUHL FÜR KUNSTSTOFFTECHNIK
Demonstrationszentrum für Faserverbundwerkstoffe
UNIVERSITÄT ERLANGEN-NÜRNBERG

D-91058 Erlangen-Tennenlohe, Am Weichselgarten 9, Tel.: 0 91 31 / 85 - 2 97 00, Fax: 85 - 2 97 09, email: ehrenstein@lkt.uni-erlangen.de

neu: Tel: 85 2 9700
Fax: 85 2 9709

Herrn
Prof. Dr.-Ing. Ralf Cuntze
MAN Technologie AG
Liebigstr. 5a
D-85757 Karlsfeld

Ihr Zeichen	Bearbeiter	Tel.: 0 9131/85-	Datum
	Prof. Ehrenstein	29701	13.11.1998

Lieber Herr Cuntze,

zu Ernennung zum Honorarprofessor gratuliere ich Ihnen ganz herzlich. Sollte rot/grün sich auch in der Hochschullandschaft durchsetzen, ist das der einzige Professoren-Titel, der dem Besitzer erhalten. Die Gefahr sehe ich für uns nicht so aktuell, solange auch 68iger sich zielstrebig um Titel und Ehren bemühen. In Hessen wurden wir konsequent mit Dr. angeredet und angeschrieben. Sie sind den klassischen Weg gegangen mit Habilitation und Vorlesung und das zählt letzten Endes, und das wissen die meisten, auf die es ankommt.
Also, alles Gute in Zukunft und hoffentlich eine schöne Feier auf die wohlverdiente Anerkennung, die auch ein wenig den kleinen Unterschied innerhalb der vielen anderen deutlich macht.
Sie haben es verdient!

Mit besten Gruß
Ihr
G. Ehrenstein

Location:
Porto Rio Hotel
Rio, Patras, Greece
Tel. + 30 61 992102
Fax + 30 61 992115

Course Fee:
150,- DM; for ATIT Members
250,- DM for non-ATTT Members
The fee covers all course materials and refreshments.

Course Language:
English

Course Schedule:
The daily lectures will start at 9.00 and end at 17.00 hours.

Registration Deadline: 31 August 1994

General Information:

The Porto Rio Hotel is a beautiful and comfortable place offering excellent conference equipments and also various health, ball and sea sport facilities.

Rio is a beautiful resort place with sandy beaches, 8 km east of the city of Patras.

Patras is one of the most ancient cities in Greece (founded in 1080 BC by the Achaians) which has developed into the third largest city in Greece now (population of over 200.000), and which forms an important cultural, industrial and commercial centre. Patras is a capital of the Prefecture of Achaia and is situated in the north-western Peloponnese, 214 km west of Athens. The town itself is interesting to visit and it provides numerous historical places and cultural events.

Other interesting places to visit in the greater area are Nafpaktos, Ancient Olympia, Delphi and Mycenae. During September the weather conditions in Patras are ideal, with average temperatures varying between 15 and 22 °C and average humidity of about 60 %. No rainfall is normally expected.

Accommodation:

Is recommended to book at the Porto Rio Hotel, where the course takes place. Special prices have been negotiated for delegates. Room rates in Drs are: Single room 10,800., Double room 14,300. (incl. cont. breakfast, service charges and taxes) Delegates are requested to make their own hotel reservations, with reference to the COMETT-Course, as soon as possible. (only a limited number of rooms can be provided for delegates through block reservation, because in Rio and Patras the touristic season lasts until October)

Current Exchange Rate:
Current parity 1 DM approximately corresponds to 150 Drs

Travel Connections to Patras:

To reach Athens air travel is most convenient. Patras is connected to Athens by a regular coach and train service. It is recommended to use a taxi or the blue express bus from Athens International Airport to the Main Coach Station (coaches are running every twenty minutes from 6.00 to 24.00 hours). Coach departures from Athens to Patras are from 6.15 to 21.30 every hour. The trip for the 208 km distance is about three hours. From down town Patras to the Porto Rio Hotel (about 8 km) it is recommended to use a taxi.

Lecturers:

- Mr. A. Anastassopoulos, Prof. S. A. Paipetis, Dr. D. Polyzos, University of Patras, Patras, Greece
- Dr.-Ing. F.-G. Buchholz, University of Paderborn, Paderborn, Germany
- Dr.-Ing. R.G. Cuntze, MAN Technologie AG, Munich, Germany
- Prof. M. Kumosa, Oregon Graduate Institute of Science and Technology, Portland, OR, USA
- Prof. R. Rikards, Riga Technical University, Riga, Latvia

Course agenda:

Mr. A. Anastassopoulos, Prof. S. A. Paipetis, Dr. D. Polyzos
(3 hours) **University of Patras, Greece**
- Structural integrity aspects of composites
- Wave propagation in composite materials
- Wave scattering problems - Ultrasonic and accoustic emission techniques
- Advanced interpretation of ultrasonics and AE signals

Dr.-Ing. F.-G. Buchholz **University of Paderborn, Germany**
(4 hours)
- Virtual Crack Closure Integral Method
- Mixed-mode debonding analysis of thermally stresses fibre/matrix models and of fibre pull-out
- Mixed-mode delamination analysis of cross-ply laminated three-point bend specimens

Dr.-Ing. R. G. Cuntze **MAN Technology AG, Germany**
(4 hours)
- Introduction to structural integrity and to procedures and tools to verify and proof it
- A new physically based strength criterion covering 2D/3D-stress states in anisotropic and isotropic materials
- Reliability based optimal preliminary design and proof of final design: Simple Case study on a "Filament wound hollow strut under tension and compression"

Prof. M. Kumosa **Oregon Graduate Institute, USA**
(5 hours)
- Mechanical behavior of composite materials and structures
- Simple and mixed modes of fractures in UD fibre-reinforced composites
- High voltage fracture mechanics in polymer matrix UD composites used in non-ceramic insulators

Prof. R. Rikards **Riga Technical University, Latvia**
(5 hours)
- Optimal design of composite materials and structures with respect to damping properties
- Optimal design based on planning of experiments
- Damping analysis of sandwich and laminated composite structures by the FEM
(including PC software demonstrations and distribution)

Who should attend:

The course should attract engineers, designers, materials scientist, advanced students involved in composite materials developments or applications.

0.22 Working in Civil Engineer Applications

My work in the Aerospace domain is compiled in [CUN 22].

Application-oriented engineer with a scientific touch for material modelling and with the hope to be some bridge-builder between mechanical and civil engineering (construction) my construction links, back to the root.

1964-1968: Freelance worker at the engineering office Kohlhaas-Schaper-Bergmann in Hanover.

1978 onward: Structural engineering, armoring plans.

Working as a bricklayer: 1959, 1960:
Potash plant Hattorf
(*right*, *example*) Wall of a so-called facing masonry. With piecework bricklaying, you were allowed to go home faster. Weekly working hours were 45 hours, overtime was gladly done because of the money, and it was also concreted until Saturday evening. There was no thought of 'work-life balance'.



I had an accident at this construction site: A rope, from the basket we used to deliver bricks, got caught above the spot where I was laying bricks, and a brick fell on my head. Since Dad happened to be visiting his construction site at the time, I simply took our car and drove – still bleeding slightly – to my Uncle Toto's, who was our family doctor. Then, withh a good bandage, I drove back to my work site.

At the weekend, Saturday, we received the so-called (conical) payper bag from the foreman. In this bag were billing, notes and remaining heavy coins with the weekly pay slip.
It gave me a proud feeling at the weekend when carrying home in the paper bag the earned money.

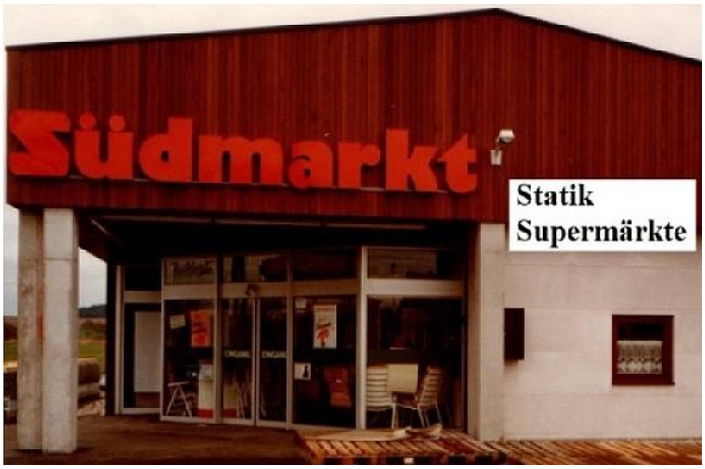
Below a pay slip of my father obtained at the end of the fifties: the mine one later looked the same!



Structural engineering, armoring plans, pile foundation



Example: Südmarkt Pöttmes, with pile foundation.
Late soil investigations made the unexpected driving of piles necessary. However, their installation was not structurally sound, and this had to be reported to the client (below).





DR.-ING. HABIL. RALF CUNTZE
VDI

MATTHÄUS GÜNTHER STR. 32
8062 MARKT INDERSDORF,
den 30.7.1987

Herrn
Helmut Hermann
Industriestr. 11-15
8062 Markt Indersdorf

HONORARRECHNUNG

Im Rahmen des Projektes
SB-Markt Großaittingen
berechne ich Ihnen für die Ingenieurleistungen
Grundrißplanänderungen, Stahlbetonbauteile - Statik (Stützenfundamente, Frostschürze, Bodenplatte, Stützen, Decken, Unterzüge) inklusiv Bewehrungspläne, Stahllisten, Schneideskizzen, Wärmeschutznachweis und Positionsplan (integriert), Bauberatung und Baustellenbesuche

	9 950,00 DM
zuzügl. 14% Mwst	1 393,00 x"
	11.343,00 DM.

Diesen Betrag bitte ich auf mein Konto, Nr. 0089158869, der Stadtsparkasse München zu überweisen.

Mit freundlichen Grüßen
R. Cuntze

zb.
11.075,-
7.8.SUSP
Scheck netto 7.8.
x vorst. abgef. Juli-Meld.

Indersdorf, d. 12.7.84

AKTENNOTIZ

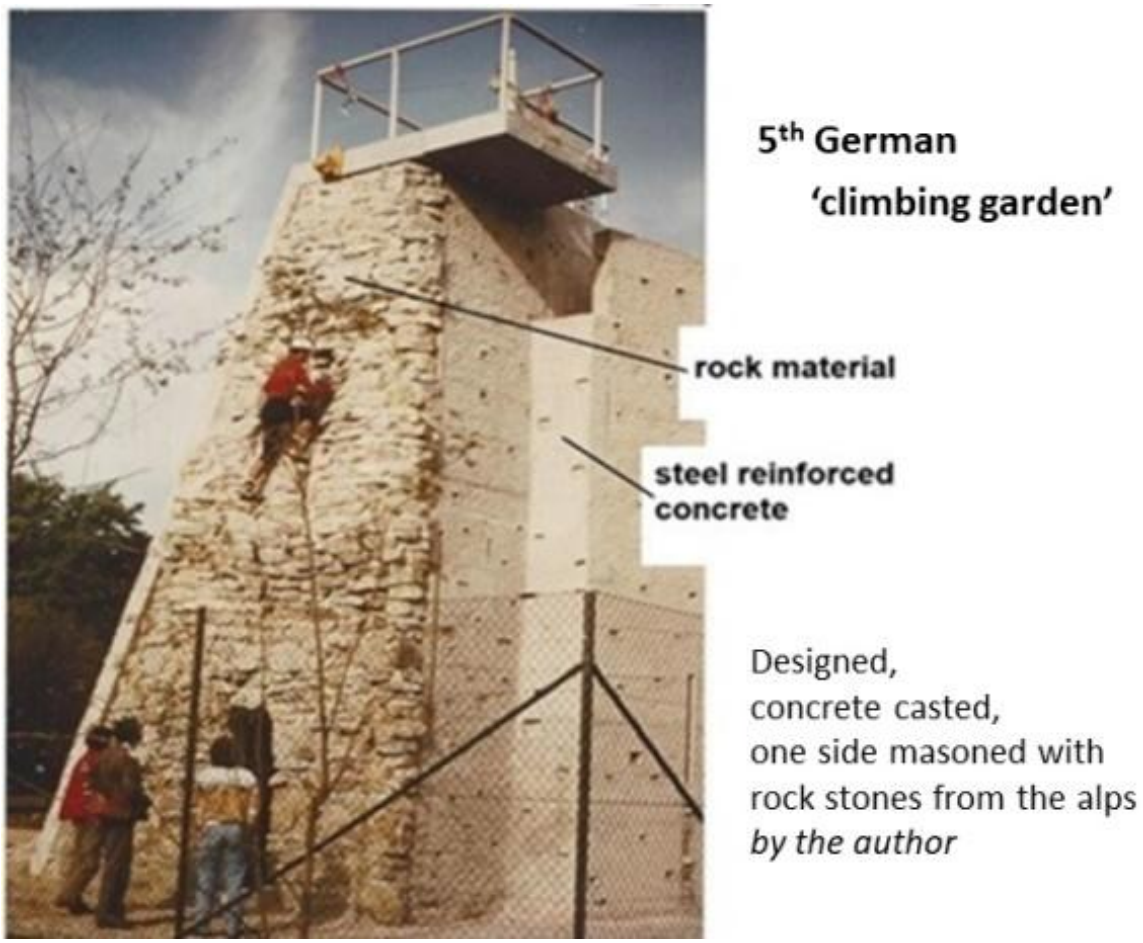
Herrn Helmut Hermann
Industriestr.
8062 Markt Indersdorf

Südmarkt Pöttnes: Herstellung der Rammpfähle

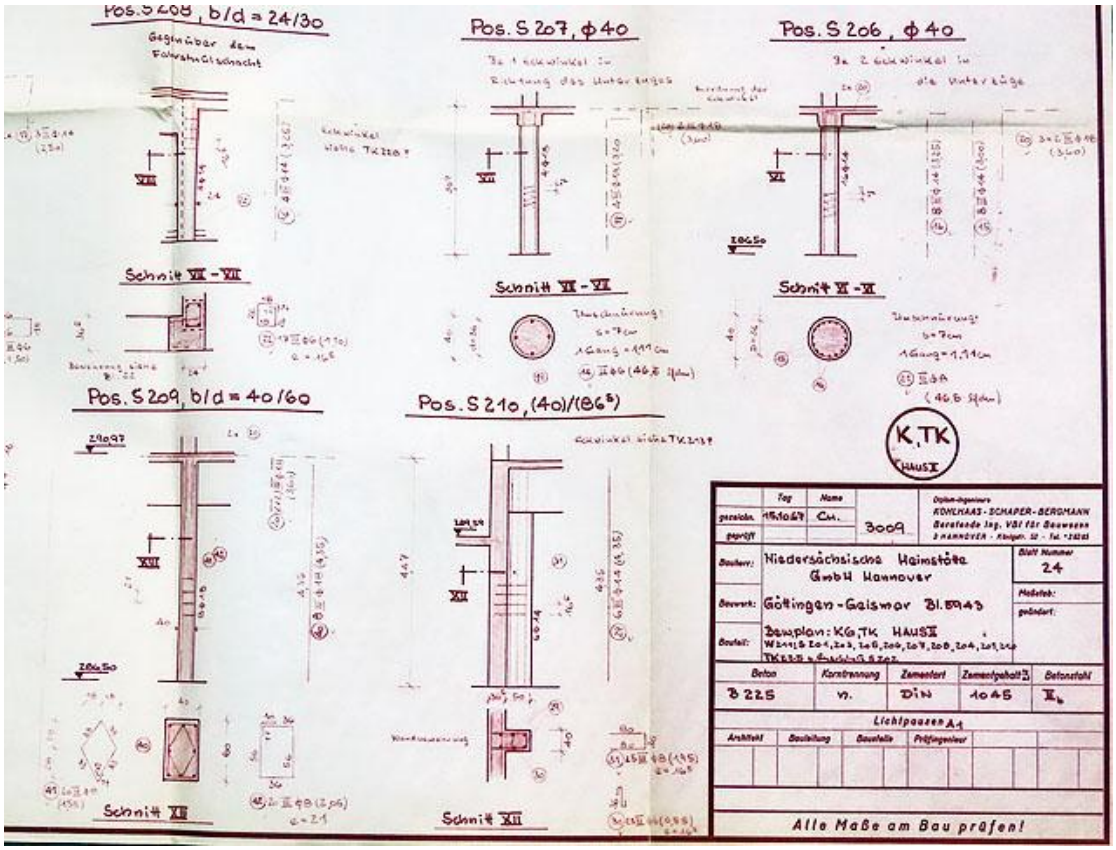
Nach Besichtigung der Herstellung der Rammpfähle muß ich feststellen:

1. Die Ausführung der Bewehrung entspricht bzgl. der Bügelabstände nicht der DIN 4026. Es fehlen bei 6m Pfahllänge etwa 12 Bügel.
2. Die Betonierung der Pfähle bei trockenem Wetter geschah ohne Abdeckfolie, sodaß bei diesen Pfählen relativ große Schwindrisse vorhanden sind.
   Die Schwindrißstellen sind auszukratzen und mit Zementschlemme auszufüllen, damit das Moorwasser die Stahleinlagen nicht wegkorrodiert.
3. Die Einzelbügel waren nicht geschlossen montiert, d.h. die Überlappungsenden waren nicht übereinandergeröddelt.
   (Ein Pfahl ist ebenso wie eine Druckstütze zu bewehren!)

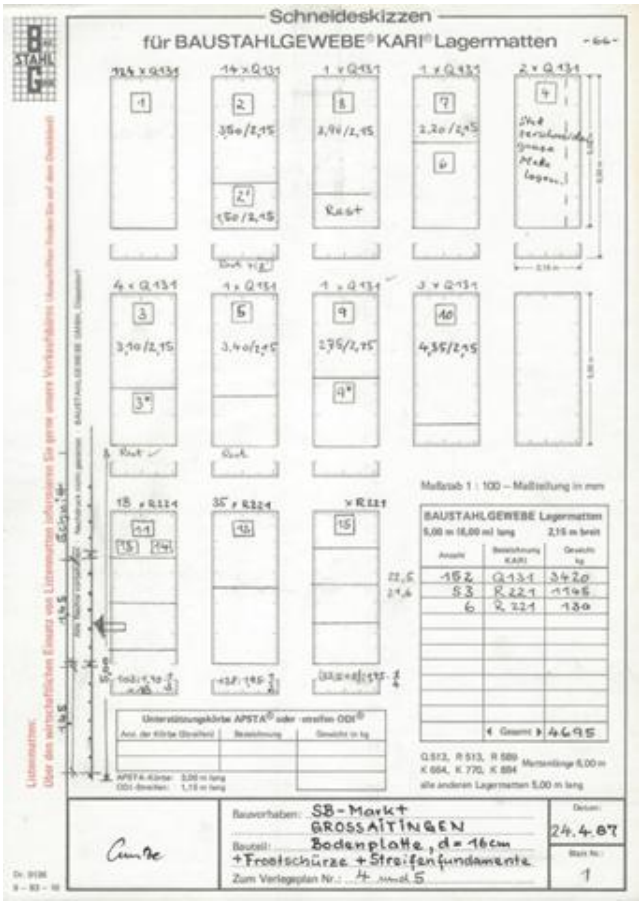
Dr. Ralf Cuntze



Markt Indersdorf 1979/1980. Armoring plan below



Dimensioning



Schneideskizzen

für BAUSTAHLGEWEBE® KARI® Lagermatten

BAUSTAHLGEWEBE Lagermatten

Anzahl	Bezeichnung KARI	Gewicht kg
152	Q 131	3420
53	R 221	1196
6	R 221	130
	Gesamt	4695

Bauvorhaben: SB-Markt GROSSAITINGEN

Bauteil: Bodenplatte, d = 16cm +Frostschürze +Streifenfundamente

Zum Verlegeplan Nr.: 4 und 5

Datum: 24.4.87

Blatt Nr.: 1

Cuntze



Stb.- Bodenplatte

Pos. 35

58

$\Lambda_L = \Lambda_R = 00$

$M_{max} = 20 \cdot 0{,}25 \cdot 0{,}75 = 3{,}75$ kNm/m

$k_h = 13 / \sqrt{3{,}75} = 6{,}7$

$A_s = 3{,}75 \cdot 3{,}8 / 13 = 1{,}1$ cm²/m

gewählt:

Q 131, unten

Betonierfugen:

Schachbrettartig betonieren.
An den Rändern direkt anbetonieren.
Bewehrung durchführen.

Nachweis des Extruderschaums:

$F_{Rad} \approx 10 \cdot 14 = 140$ cm² (Lastverteilung)

$F_{Boden} = (10 + 2 \cdot 16)(14 + 2 \cdot 16) = 1930$ cm²

$P_{max} = 10$ kN

$\sigma = \frac{10}{1930} \approx 5$ N/cm² ≤ 30 N/cm².

Druckfestigkeit ausreichend.

Pos. 36 Ringbalken

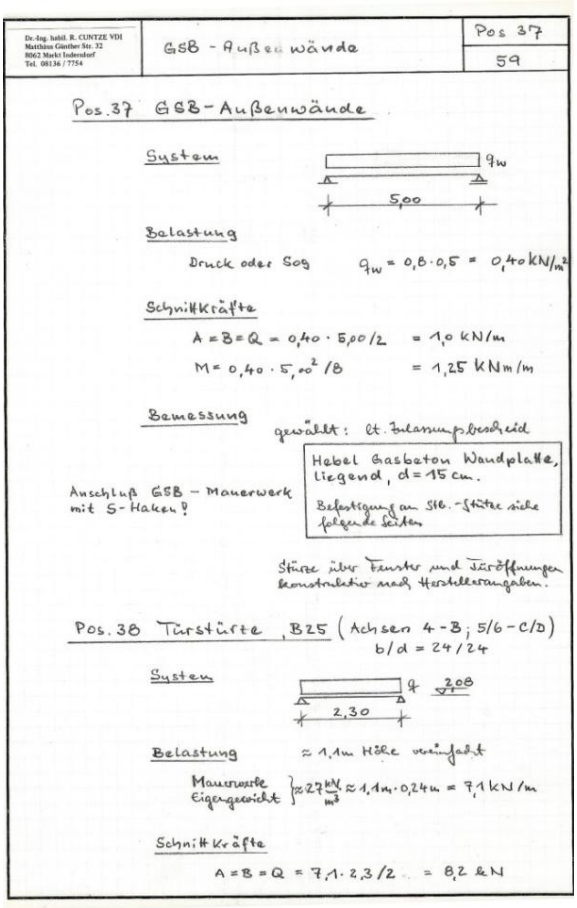
Anordnung, wo die Wände nicht durch eine Decken-Scheibe oder andere ausreichende Konstruktion gehalten sind.

gewählt (konstruktiv):

Beton-Formstein über Innenwände

4 ⅢΦ10, Längs
ⅡΦ6, a=25

Aufen. Verankerung mit Außenwandträger



Dr.-Ing. habil. R. CUNTZE VDI
Matthäus Günther Str. 32
8062 Markt Indersdorf
Tel. 08136 / 7754

GSB - Außenwände

Pos 37

59

Pos. 37 GSB-Außenwände

System

q_w

5,00

Belastung

Druck oder Sog $q_w = 0{,}8 \cdot 0{,}5 = 0{,}40$ kN/m²

Schnittkräfte

$A = B = Q = 0{,}40 \cdot 5{,}00/2 = 1{,}0$ kN/m

$M = 0{,}40 \cdot 5{,}00^2/8 = 1{,}25$ kNm/m

Bemessung

gewählt: lt. Zulassungsbescheid

Hebel Gasbeton Wandplatte, liegend, d = 15 cm.

Befestigung an Stb.-Stütze siehe folgende Seiten

Anschluß GSB – Mauerwerk mit S-Haken!

Stürze über Fenster und Türöffnungen konstruktiv nach Herstellerangaben.

Pos. 38 Türstürze, B25 (Achsen 4-B; 5/6-C/D) b/d = 24/24

System

2,30

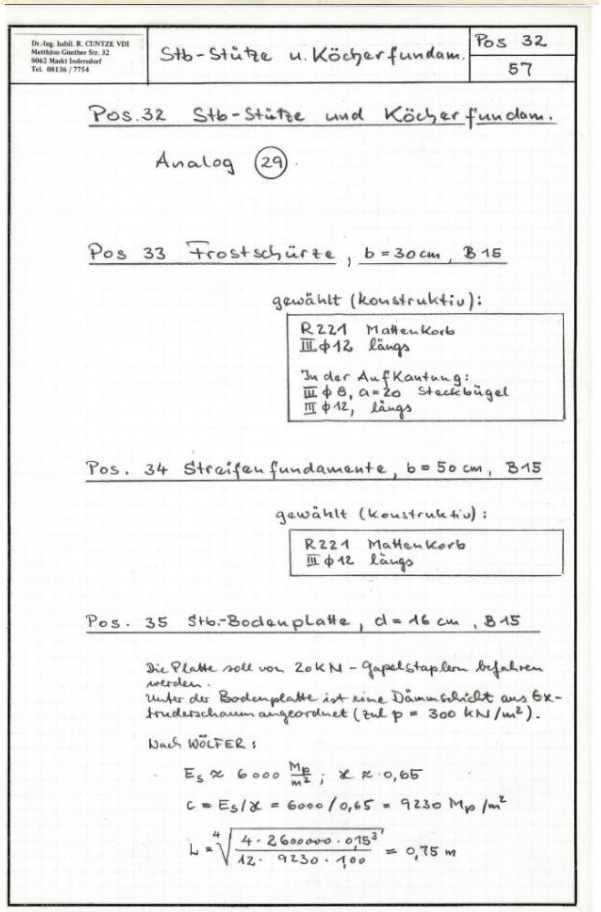
2,08

Belastung ≈ 1,1m Höhe vorhanden

Mauerwerk Eigengewicht $\approx 27 \frac{kN}{m^3} \approx 1{,}1m \cdot 0{,}24m = 7{,}1$ kN/m

Schnittkräfte

$A = B = Q = 7{,}1 \cdot 2{,}3/2 = 8{,}2$ kN



Dr.-Ing. habil. R. CUNTZE VDI
Matthäus Günther Str. 32
8062 Markt Indersdorf
Tel. 08136 / 7754

Stb-Stütze u. Köcherfundam.

Pos 32

57

Pos. 32 Stb-Stütze und Köcherfundam.

Analog (29)

Pos 33 Frostschürte, b = 30cm, B 15

gewählt (konstruktiv):

R 221 Mattenkorb
ⅢΦ12 längs

In der Aufkantung:
ⅢΦ8, a=20 Steckbügel
ⅢΦ12, längs

Pos. 34 Streifenfundamente, b = 50 cm, B15

gewählt (konstruktiv):

R 221 Mattenkorb
ⅢΦ12 längs

Pos. 35 Stb.-Bodenplatte, d = 16 cm, B 15

Die Platte soll von 20kN - Gabelstaplern befahren werden.
Unter der Bodenplatte ist eine Dämmschicht aus Extruderschaum angeordnet (zul p = 300 kN/m²).

Nach WÖLFER:

$E_S \approx 6000 \frac{Mp}{m^2}$; $\alpha \approx 0{,}65$

$c = E_S/\alpha = 6000/0{,}65 = 9230$ Mp/m²

$L = \sqrt[4]{\frac{4 \cdot 2600000 \cdot 0{,}15^3}{12 \cdot 9230 \cdot 1{,}00}} = 0{,}75$ m

Germany: “Beloved Bureaucracy!”

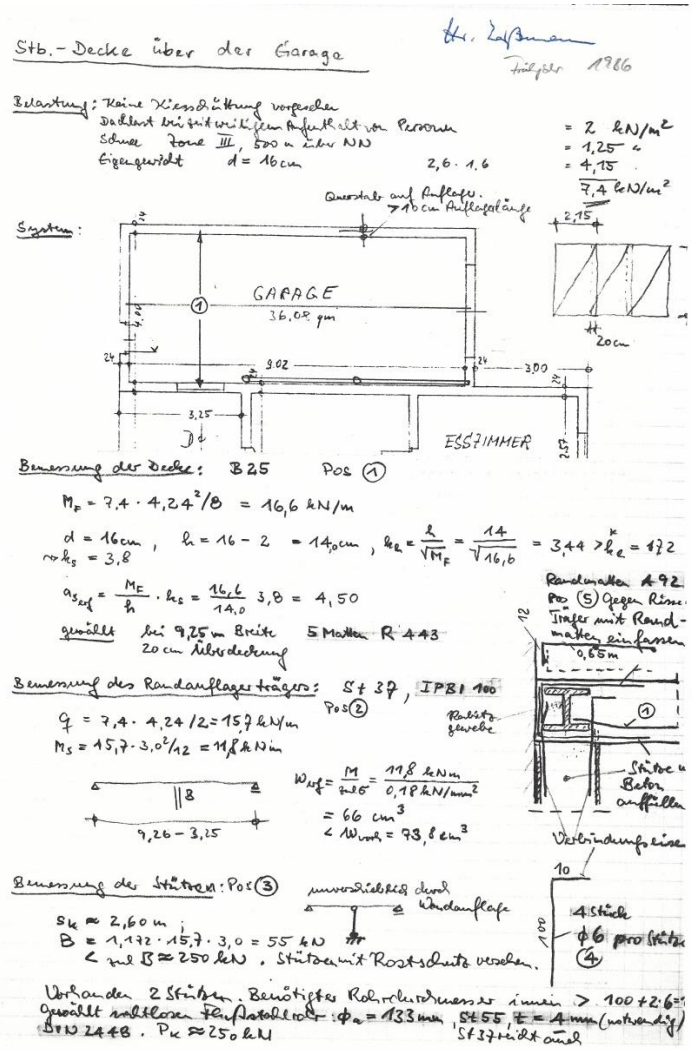
1965, my first encounter with German building regulations:

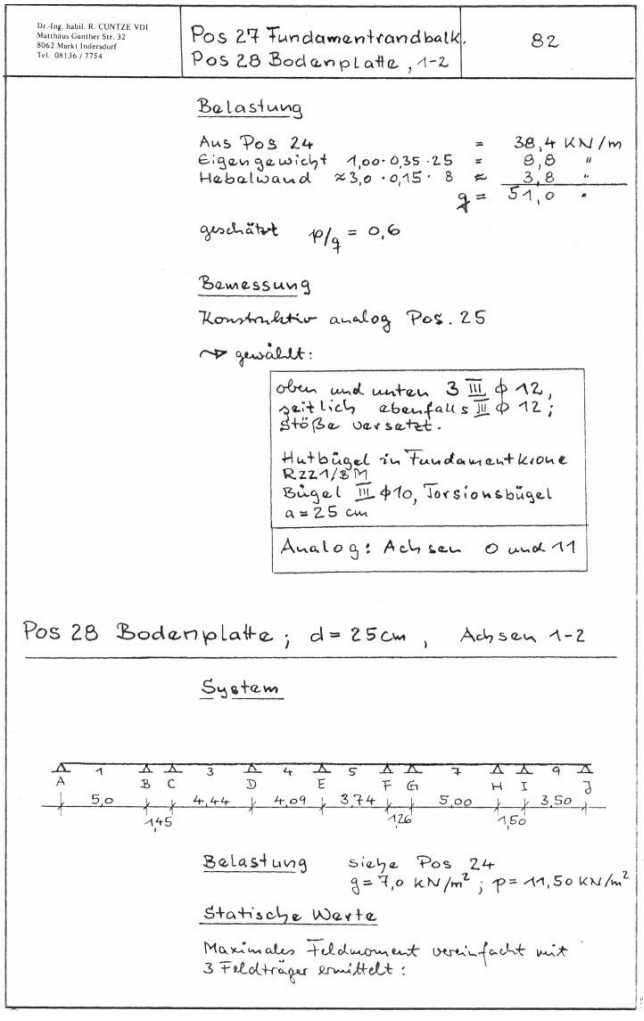
"An English half-timbered series house – approved in England – where the walls were additionally bricked in Germany."

A full review was requested.

The fact that the support length of the timber beams was 2 cm too short according to German regulations could have been rectified more easily**.**

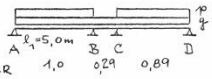
Reinforcement with detailed information on the required bars and mats





Dr.-Ing. habil. R. CUNTZE VDI
Matthäus Günther Str. 32
8062 Markt Indersdorf
Tel. 08136 / 7754

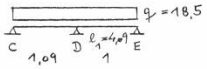
max M_F = max M_1



nach ZELLERER 1,0 0,29 0,89

$= (0,0837 \cdot g + 0,0846 \cdot p) \, l_1^2$ = 39,0 KNm/m

Maximales Stützmoment vereinfacht mit 2 Feldträger ermittelt:



max M_{St} = max M_D nach SCHNEIDER

$= -0,137 \cdot 18,5 \cdot l_1^2$ = -42,4 KNm/m

Stützmomentabminderung

D $\frac{b_o}{8} = 99,3 \cdot \frac{0,35}{8}$ = + 4,3 "

-38,1 "

Maximale Auflagerlast (wie zuvor):

max V = max D nach SCHNEIDER

$= (0,637 + 0,676) \, g \cdot l_1$ = 99,3 KN/m

Feldmoment in den kleinen Feldern:

max M ≤ $g \cdot 1,50^2/8$ = 5,2 KNm/m

Stützmoment in den kleinen Feldern:

max M_{St} ≤ max M_B nach ZELLERER

≤ $(0,0925 g + 0,0999 p) \cdot 5,0^2$ = -44,6 KNm/m

-10% Stützmomentabminderung

≤ -44,6 · 0,90 = -40,1 "

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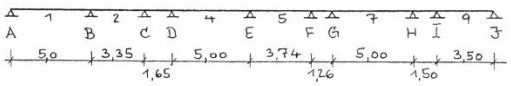
Bemessung

↝ gewählt

Feld 1:	K 664
7:	R 513
3,4,5,9:	R 317
2,6,8:	R 131
Stützen:	K 664

Pos 29 Bodenplatte; d = 25 cm, Achsen 2 → 3

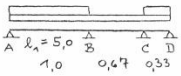
System



Belastung

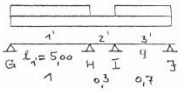
siehe Pos. 24

Statische Werte



max M_F = max M_1

≤ $(0,0825 g + 0,089 p) \cdot 5,0^2$ = 40,0 KNm/m



max M_g ≤ max M_3'

≤ $(0,0463 g + 0,0476 p) \cdot 5,0^2$ = 21,8 KNm/m

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Pos 31 Pfahl ; 30/30 cm, B35

Lasten

1 Pfahl, Eigengewicht, l = 6m 0,3 · 0,3 · 6 · 25	14 KN
1 Stütze, l = 4m, 0,37 · 0,37 · 4 · 25	14 KN
1 m Randbalken 0,35 · 1,0 · 25	8,8 KN/m
1 m Unterzug 0,35 · 0,25 · 25	2,2 "
1 Köcherfundament Gewichtsdifferenz	≈ 55 KN
Hebelwand ≈ 80 kg/m²; h = 3,20 m 1,00 · 3,20 · 0,80	2,6 KN/m

Statische Werte

1) Normalbereich

V = (aus Pos 25; 107,7 · 2,50 = 269
aus Pfahl = 14)

= 283 KN

2) Unter Köcherfundament, Stütze 19

V = ½ (aus Pos 25; 107,7 · 1,25 = 135
aus 2 Pfählen = 28
1 Köcherfundament = 55
Randbalken 5,0 · 8,8 = 44
Hebelwand 5,0 · 2,6 = 13
1 Stütze = 14
Stützenlast Pos 21 = 133
422)

= 211 KN (deckt Pos. 21, 20, 22, 23 mit ab)

3) Unter Köcherfundament, Stütze 18

V = ¼ (aus Pos 25; 107,7 · 2,50 = 270
aus 4 Pfählen = 56

1 Köcherfundament	=	55 KN
1 Stütze	=	14 "
Stützenlast, Pos. 1	=	473 "
		868 ")

V = 217 KN

4) Unter 24er Wand, Pfahlabstand 2,50 m

V = (Pfahlgewicht = 14 KN
Wand, Pos 30; 15,5 · 2,50 = 38,8 "
Decke, Pos 13; 29 · 2,50 = 72,5 "
Bodenplatte; 18,5 · 5,0 · 2,50 = 231,3 ")
356,6 "

Maximalabschätzung

V = (aus Pos 30; 152,2 · 2,50 = 380,5 KN
Pfahl = 14 "
394,5 "

5) Richtabschätzung minimal

V = g · Fläche = 18,5 · 2,50 · 5,0 = 231 KN

↝ gewählt V = 2, Lastfall 1, DIN 1054

Rammpfahl 30/30; zul P = 300 kN
a_{max} = 2,50 im Normalbereich
a_{max} = 2,20 im 24er Wandbereich

Einbindetiefe in den tragfähigen Boden lt DIN 4026 ≈ 2,7 m.

Bei der Durchführung von Probebelastungen sind bei Kenntnis des gesamten Baugrundes durch Probebohrungen die zul. Lasten erhöhbar.

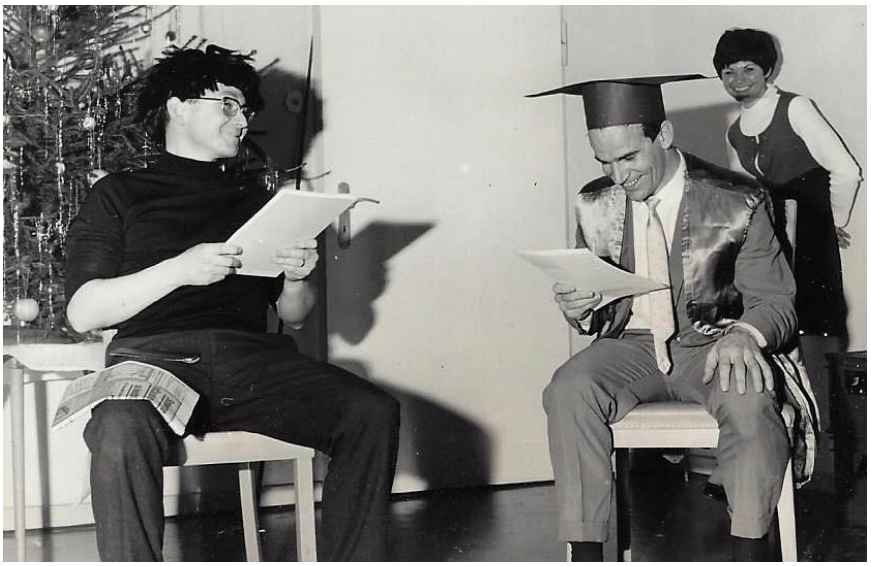
Anordnung der Betonierfugen

Schachbrettartig die Raster 5 × 6 m = kleiner 50 m² betonieren. Nach ca. 1 Woche ausbetonieren.

0.23 DGLR 1968-1970, German Society for Aeronautics & Astronautics

From DFL , DVL to DGLR→DFVLR
Christmas Festivity 1968
with Wolf Elber
(*Father of the crack closure concept in Fracture Mechanics, later director of a NASA institute investigating the Challenger Columbia Booster tragedy reasons*).
The sealing ring material became brittle in the cold January temperatures and failed!

Invitation of Wolf regarding our Ariane Booster connection in 1986.



Ralf Cuntze, Wolf Elber, Frau Borcherd

FE-programming: *Development of a Finite Element calculation program for the calculation of a rotationally symmetrical (more was not possible) centrifugal compressor wheel. However, at that time, the needed program modules for this had to be requested from friends at his former University at Hannover.*
On punch cards with program modules by Prof. Witthum, Hannover, for matrix multiplication, equation solving,

The radial compressor wheel work was desired by MTU (MAN-Mercedes), namely a MTU-affiliated main department, which later became MAN Neue Technologie.

Fachliche Gliederung der DFVLR, status 1970

Fachgebiet			
1	Strömungsmechanik	Prof. Wille	Dr. Fiebig
2	Flugmech. /Flugführung	Dr. Brüning	Dr. Weber
3	Festigkeit, Werkst., Bauw.	Dr. Bunk	Dr. Prinz
4	Antriebe u. Energetik	Prof. Kühl	Dr. Le
5	Elektronik	Dr. Hartl	Becker
6	Flugraumphysik, Raumsimul. Flugmedizin	Prof. Ruff	Dr. Kraemp

Fachgebiet 3

Institute			
	Braunschweig	Prof. Thielem.	Dr. Prinz
	Göttingen	Dr. Försching	Breitbach
	Porz-Wahn	Dr. Bunk	Dr. Munz
	Porz-Wahn	Dr. Schiffner	Dr. Cunzee
	Stuttgart	Prof. Hütter	Grüninger

Access to the single DVL computer:
The computer was located at the air port Porz-Wahn, 1.5 h to drive.

⇒ Computations: Once a week, only!

Problems at that time:

*Punch card too damp or too dry.
*Priority of the administration in Porz-Wahn,
*Server personal not there,
*Computer temporarily broken.
*The card box with the program cards was accidentally left behind. Some issues arose during card correction.
*Box containing over 1000 cards opened during emergency braking, resulting in a mix-up of the card sets.
*Although all the cards are the correct set, the calculation fails due to 'Overflow list 12'.

Later at DLR: Participation in the farewell of the grand old lady of stability theory



(left) Prof. Kurt Klöppel (*Germany's steel bridge construction 'pope'*), honouring
(right) his former co-worker Prof. Maria Eßlinger when retiring after a structural stability-dedicated life.
(*Passing*: my friend Dr.-Ing. Bodo Geier)
(Klöppel, Geier, Lacher, Cuntze, Sorry?, Eßlinger)

0.24 MAN-Neue Technologie (New Technology), general

Founded in 1969 as an independent research and development division of MAN AG.
Objectives at that time: Development of new products and techniques, engage intensively in basic research, applying novel materials, open up new markets for the young division.

Below: Invitation to later join the 'Neue Technologie'

Dr. techn. Dr. phil.
FRIEDRICH LAUSSERMAIR

MÜNCHEN, 27. Okt. 1969
Maschinenfabrik Augsburg-Nürnberg AG
8000 München 50, Dachauer Straße 667
Telefon 54801

Herrn
Dr.-Ing.Ralf Cuntze

5330 Mülheim/Ruhr
Tristanstr. 14

Sehr geehrter Herr Dr. Cuntze!

Obwohl ich mit sehr großem Interesse von Ihren Vorstellungen Kenntnis genommen habe, komme ich doch erst heute zur Beantwortung Ihres Schreibens vom 7.10.69. Ich bitte Sie dies zu entschuldigen und dabei zu berücksichtigen, daß ich im Zuge einer Firmengründung im Augenblick arbeitsmäßig sehr stark in Anspruch genommen bin.

Ich wäre an Ihrer Mitarbeit natürlich sehr interessiert und würde Sie bitten, möglichst bald einen Termin zu einer Besprechung hier in München telefonisch zu vereinbaren. Da ich z. Zt. sehr häufig kurzfristig verreisen muß, kann ich Ihnen leider nur einen kurzfristigen Terminvorschlag machen. Sollte es Ihnen gelegen sein, würde ich Sie für den 3.11. vormittags einladen.

Von den Vorgängen um das Institut für Festigkeit in Mülheim habe ich seit längerer Zeit Kenntnis. Es würde mich trotzdem sehr interessieren, von Ihnen Näheres über die endgültigen Beschlüsse zu hören.

- 2 -

- 2 -

Schon aus meinem Briefbogen können Sie erkennen, daß auch meine Abteilung organisatorische Änderungen durchgemacht hat. Aus der Abteilung "Zentrale Festigkeit und Raumfahrttechnik" in der M.A.N. Turbo ist inzwischen eine Abteilung für "Fortschrittliche Technologie" geworden, die in die Mutterfirma eingegliedert wurde. Für uns war diese Umorganisation mit einer wesentlichen Vergrößerung und mit einem Gewinn an Selbständigkeit verbunden. Allerdings hat sich örtlich kaum etwas geändert. Wir mußten im Werksgelände einige 100 m übersiedeln. Ich glaube aber, daß ich Ihnen über diese Dinge hier in München mehr und ausführlicher erzählen kann und verbleibe inzwischen

mit freundlichen Grüßen

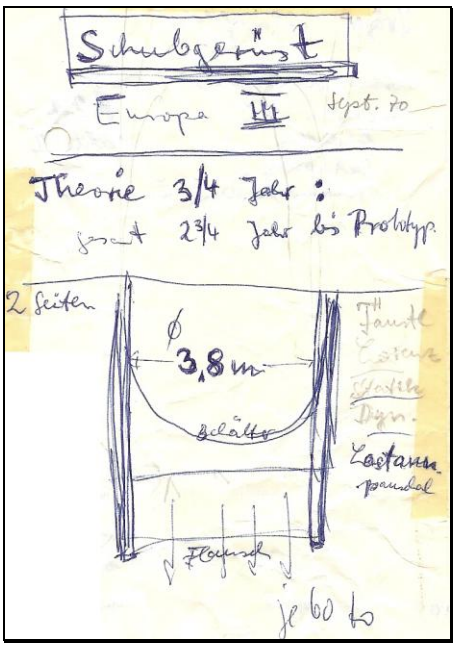
Laussermair

This is how the Launcher project began for me:

Task description for the 'Europa rocket' on a notepaper (1970) from my direct superior:

"*Please prepare a proposal for a thrust frame,*
but keep in mind,
we have enough work
with the gas ultracentrifuge!"

Funny, July 1973, salary discussion with the same superior: "*Mr. Cuntze, you are the only one who has time for a salary negotiation*."



Product Fields

Being a competent partner for components and functional assemblies for the following product fields

- **Solid Motor Cases**
- **Tanks and Tank Components**
- **Structures**
  incl. thermal structures
- **High Temperature Resistant Structures and Components**
- **Ground Infrastructure in the Space Center Kourou**
- **Mobile Bridge Systems**
- **Water Systems for Aircrafts**
- **Antennas and Telescopes**

and Technology Development for these Product Fields

Business Fields







Space
- Components for Launchers, Orbital und Orbit Transfer Systems
- Ground Infrastructure and Service
- Antennas and Mechatronic

Aviation
- Components for Civil and VIP Aircrafts

Defense
- Components for Military Aircrafts and Missiles
- Mobile Bridge Systems

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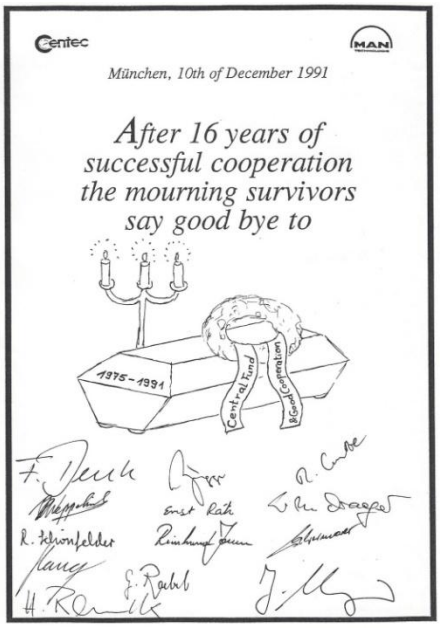


Rätz, Weppelink, Cuntze, Zippe Denk
The production of gas ultracentrifuges for UF6 enrichment was was completed at the end of the 80s, (right). One reason was that the failure rate was fantastically small

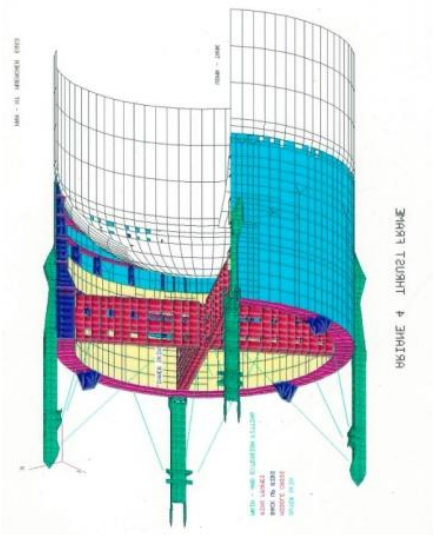
Continuing education at MAN





February 28/29 1980: Finite Element Analysis Meeting at MAN Neue Technologie with the heads Dr. F. Laußermair (*he was responsible for my leaving the DVL*) and H. Rauck, *below*





Welcomed continuing education at New Technology

TEILNEHMERVERZEICHNIS ZUR FEM-TAGUNG AM 28./29. FEBRUAR 1980

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Tel. 0208/692-1

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Hr. Krämer
Hr. Schmidt
Hr. Schwendler

M.A.N.
Katzwanger Str. 101
Postfach 44 01 00
D-8500 Nürnberg 44
Tel. 0911/18-1

Hr. Broscio
Hr. Bürkel
Hr. Fiedler
Hr. Gelnar
Hr. Hammen
Hr. Hartl
Hr. Kaposvari
Hr. Dr. Mohacsi
Hr. Pittr
Hr. Scholz
Hr. Siegl
Hr. Sima
Hr. Sustaric
Hr. Svarovsky
Hr. Vallon
Hr. Dr. Wagenknecht

ALCAN-Aluminiumwerk Nürnberg GmbH
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Hr. Schuster
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Hr. Prof. Dr. Stein

Universität Bochum
Inst. für Konstr. Ingenieurbau
Universitätsstraße 150
D-4300 Bochum

Hr. Prof. Dr. Wunderlich



Dr. Zippe's Original Gas Ultracentrifuges
for uranium-235 enrichment, single-stage.



Optimization task:
separation mechanics, structural dynamics, rotor dynamics (with Kurt Magnus), strength, and manufacturing.
(see [CUN22], too.)



In deep discussion with Dr. Gernot Zippe about (*I guess*) UF6-uranium enrichment centrifuge questions.

I shared 2 patents in this domain



Leaving for my work: daily 6:19 o'clock

Starting in 1946, while a Russian prisoner of war, Dr. Gernot Zippe, together with Russian and other scientists such as Prof. Steenbeck, developed the GasUltraCentrifuge (GUZ in German) for the Russians. The researchers initially worked at an institute on the Black Sea, then in Leningrad from 1952 onwards. The system they developed was intended to be used for the isotope separation of Uranium-235 and Uranium-238. "*Give us an enrichment level of 15% U235, and we'll be satisfied*" the Russians said. The research group achieved an enrichment level of 30% and was allowed to return home in 1956. According to Zippe, the centrifuges they developed were then used on a large scale by the Soviet Union to produce atomic bombs (> 80%). Here, at Urenco, MAN centrifuges - developed with Zippe's assistance - delivered approximately 4% enrichment for the nuclear power plants. Method: Cascade plants, which achieve in a serial way the desired enrichment. Natural uranium is not harmful as long as natural concentrations are not exceeded. MAN- Technologie (*New Technology at that time*) cooperated with Dr. Zippe, father of the German GUZ, who told me, that he had transported natural uranium in his suit pocket for a meeting with a high soviet politician.

M·A·N
NEUE TECHNOLOGIE

1st Troika Materials Symposium
BNFL-Capenhurst. 1985, May 14/15

High Speed Test Vehicle:
"Investigation of Specially Wound Tube Sections".

1. Test techniques and test results (Mr. Deska)
   15 min. speech, 5 min. discussion
   1.1 Characterisation of composite components
   1.1.1 Resin
   1.1.2 Fibres
   1.1.3 Problems with nonlinearity of Young's Modulus of stand tests
   1.2 Test results of composites
   1.2.1 Statistical reliability of composite results
   1.2.2 Test results of tube sections under radial hydraulic pressure
   1.2.3 Applied techniques to investigate fracture mechanisms
   1.2.4 New aspects in acoustic emission analysis.

2. Theoretical investigations with comparison test-theory (Dr. Cuntze)
   15 min. speech, 5 min. discussion.
   2.1 Continuum calculations of the tube section
   (Material data input. Calculation results)
   2.2 Pressure versus radial deformation behaviour after theory and test
   2.3 First ply failure prediction and comparison with acoustic noise and replica results
   2.4 Some reflections on the design philosophy in general and specially on the design of the high speed tubes.
   (Validity of the First Ply Failure design criterium. Allowable strain for the rotor tube.)

The contents meets the symposium sessions 2 and 6!

ULTRA-CENTRIFUGE NEDERLAND NV
STEVE BAKER
URENCO/CENTEC TECHNICAL OF OFFICE
C/O/ UCN ALMELO
Telefax 311 - group 3
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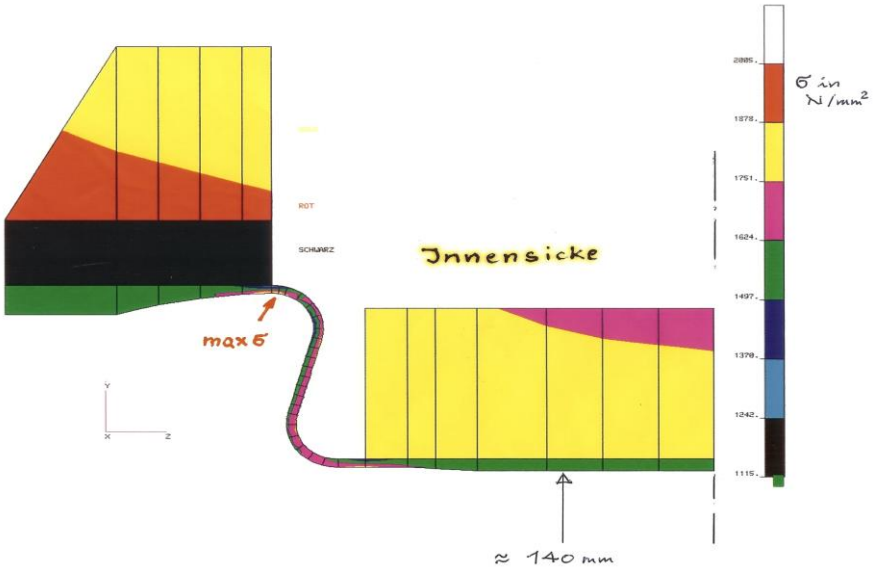
25/3/85
Kind regards.



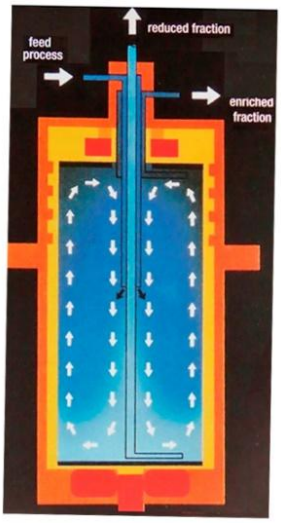
The technological leap:
Colleague Grönert's bellow design,
the breakthrough

to supercritical running
of a multi-stage GUZ.

.------ . ----- . ----- . ---- . ---- . ---- . ---- . ---- . ---- . axis



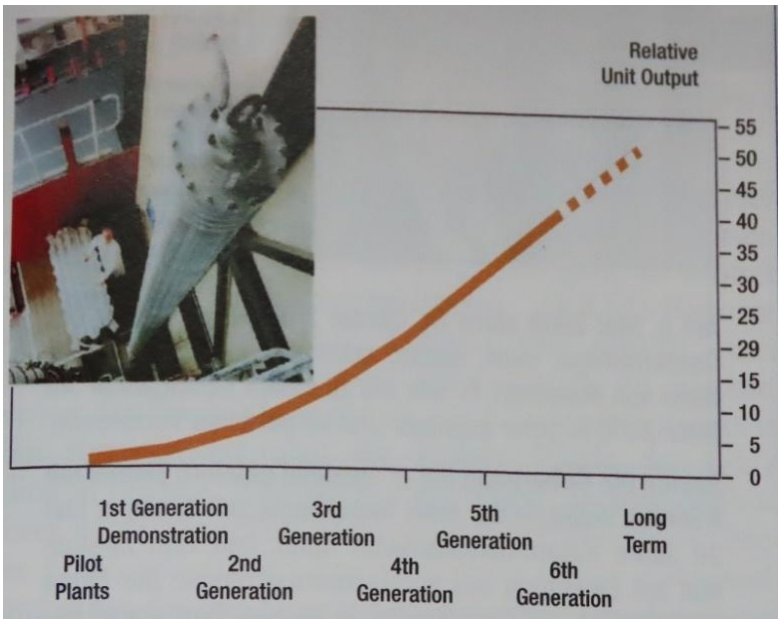
Uranium enrichment Centrifuges



Production system

Tube:, single centrifuge
Block-concept with individual, single centrifuges
Urenco: Development of separation performance over the course of centrifuge development through longer overall centrifuges.







Bellow:
Necessary tool to combine several single centrifuges in order to obtain a longer separation length,
a multi-stage centrifuge.
(1972, creator colleague Grönert)

Although I was more affected through my GUZ-linked job, I still agreed with the NO-vote for atomic energy.
It's now incomprehensible to me that even those who previously would have preferred to shut down nuclear power at the very moment are calling now for nuclear energy (*in Bavaria e.g.),* but aren't offering a final storage facility. This shall be done by others, of course!

The right site is probably not suitable for a final disposal.
(see remarks on atomic enegy in Part E)
Why didn't these people speak up in favor of a sensible phasing out of nuclear power plants? This would not have meant an increase in risks.



Neu entwickelter Schwimmkran für Frans Swarttouw



- Neues Einziehwerk arbeitet mit hoher Geschwindigkeit
- Neue Kanzelanordnung gibt totalen Überblick
- Neue Energieversorgung gewinnt Energie zurück

Drei Neuentwicklungen machen einen M.A.N.-32-t-Greiferschwimmkran für Frans Swarttouw, Rotterdam, zu einem besonders leistungsfähigen Großgerät. Konstruiert zum Bedienen größter seegehender Bulk-Schiffe kann der Schwimmkram mit seiner maximalen Hubhöhe über Wasserspiegel von ca. 36 m, einer Gesamthubhöhe von ca. 66 m jeden Rotterdam anlaufenden Bulker löschen. Seine Klasse erlaubt ein Operieren auf See innerhalb der 15-Seemeilen-Zone.

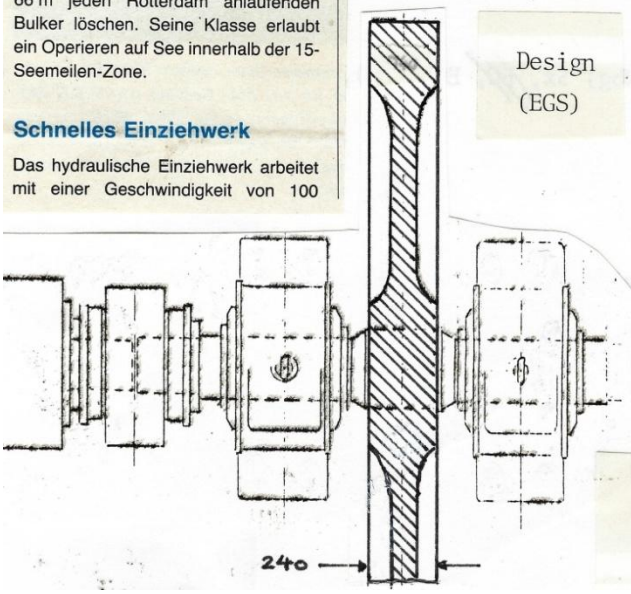
Schnelles Einziehwerk

Das hydraulische Einziehwerk arbeitet mit einer Geschwindigkeit von 100 m/min und einer Beschleunigung von 0,5 m/s². Der Wippdrehzylinder hat die Maße: 480/280 Durchmesser × 4050 mm Länge, Abmessungen, die bisher bei solchen Geräten noch nicht ausgeführt wurden. Das Hydrauliksystem arbeitet mit 4 Pumpen und einem Maximaldruck von 275 bar. Heben des Greifers erfolgt durch Gleichstrommotoren mit 130 m/min, Senken mit Last mit 195 m/min. Gedreht wird der Kran bei max. Ausladung von 42 m mit 1,4 1/min, Drehen und Heben jeweils mit 1 m/s² Beschleunigung.

Mit dem neuen M.A.N.-Schwimmkran wird eine Problemlösung geboten, die ein sehr schnelles und kostengünstiges Bulk-Handling für alle Gegebenheiten gewährleistet.

Energieversorgung mit Energie-Rückgewinnung

Zur Energieversorgung dient ein M.A.N.-Dieselmotor mit einer Leistung von 1980 kW bei 1000 1/min. Er treibt einen Hauptgenerator an, der mit einem Schwungrad gekoppelt ist. Dieses speichert die beim Lastsenken freiwerdende Energie, und dient zum Ausgleich von Belastungsspitzen sowie zur Kraftstoffeinsparung.
Mit diesem neuen Schwimmkran bietet M.A.N. eine Problemlösung, die ein sehr schnelles und kostengünstiges Bulk-Handling für alle Gegebenheiten gewährleistet. Neben einer Standardreihe von 25–350 t Tragkraft als Einfach- und Doppellenker bauen wir, auch in enger Zusammenarbeit mit dem Kunden, Sonderausführungen in „Maßarbeit".



Uploading of a Fly Wheel during Load Down Cycle

1984: Fracture Mechanics design of a Fly Wheel (by the author)

My Sportive Department





Two of the rare pictures of the team over the time with maximally up to 50 people including 10 Dr.-Ings.and free-lancers

Over the years coworkers from 14 nations



Celebrating festivities together
was an important fact









Keen soccer and mountain hiking team





Ralf Cuntze, Raimund Schönfelder, Stan Smith
180 years celebration = 3 x 60
(*see invitation drawings below*)



The two Oldies after retirement with the youngsters in the maoutains.

Raimund suffered from a lung disease. He was therefore very pleased that he was only sick for 1 day in his 32 years at MAN. He always loved going to work!







Marmo tand me







What never should happen in the mountains if one has to go down 1000 m







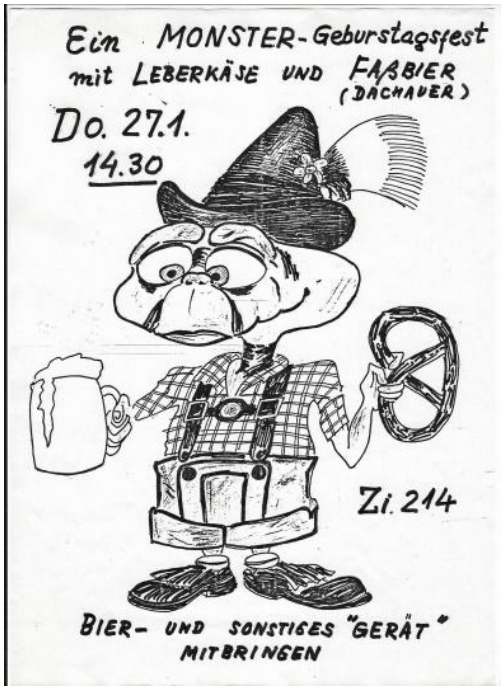




Probably my last participation with our ‘Mountaineering team’

My tyrolian friend Alois took also finally part!







Birthday celebration of the smiling Gunther and some other colleagues





A shared memory (Gunther was my partner) of a mountain tour to the Glungezerhütte (2610m) and the next morning continuing along a ridge in light rain and with only 10 meters of visibility towards the Lizumer Hütte (2019m). There were no more trail markers to the Lizumer Hütte! The hut is practically located on a military training area. After almost two hours, Gunther asked me: "You printed out the route, don't you? Let me take a look," and sat down in some shelter from the rain. I then walked 11 meters further and was able to call out to him: "Come on, we've reached a wide, paved military road." On the remaining path, with no visibility, we were able to see the Lizumer Hütte for a moment after hours of hiking, and then headed cross-country – as far as possible – towards it. We arrived there before dark. The next morning, blue skies and a complete surprise: The hut was located at the edge of a very large military training area.

Our 180 years birthday celebation



Tragen Sie ein Lächeln in Ihrem Gesicht, dann kann bei unserer runden Geburtstagsfeier gar nichts mehr schief gehen.

Wir lächeln trotz der 180 Jahre:

Ralf Cuntze
Stan. Smith
Reimund Schönfelder

3 mal 60 Jahre und kein bißchen weise !

Anläßlich unseres ersten Schrittes in das **Greisenalter** laden wir Sie hiermit als Zeuge dieses umwerfenden Ereignisses zu einem **Imbiß** mit gesundheitlich gerade noch vertretbaren **Betäubungs-getränken** ein.

Ansprechpartner:

Ralf Cuntze
Stanley Smith
Reimund Schönfelder

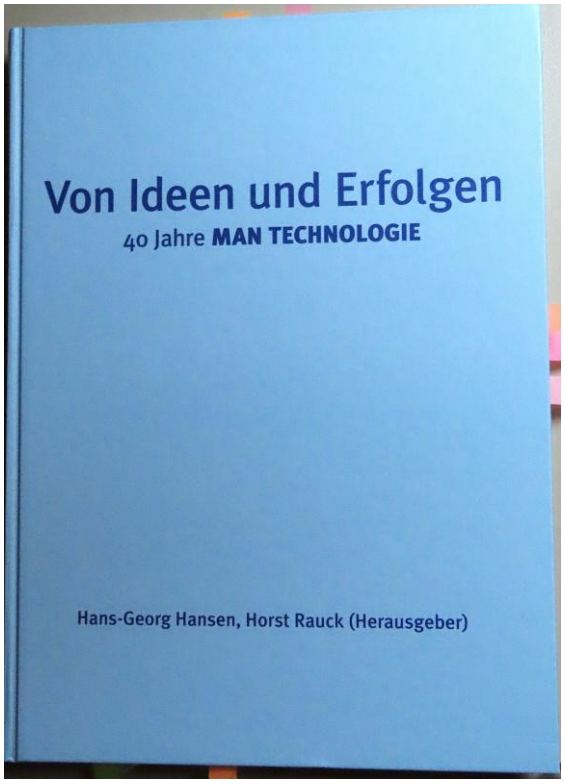
Telefonische Rückantwort bitte bis zum
2. 9. 99, Fr. Schwarz, RA
Tel.: **K 1867** bzw. **08131/891867**

Datum: 16.09.1999
Uhrzeit: **15^{30}**

Ort: **Karlsfeld, Liebigstr. 5a**
in: **Saal 3 und 4**

0.25 Some MAN Project Activities

Book of MT-Remembrance and Software formerly applied



Book on MAN-Technologie history:

'Of ideas and successes'
461 pages, Paartal-Verlag

(The author could not contribute
due to his contract work for ESA)

Used Software Codes

Static, Dynamic and Thermal Structural Analysis Codes

* FEM: NASTRAN, MARC, NONSAP, SAPIV
* Finite differences: BOSOR, ROTOPT
* Pre- & postprocessor: PATRAN/II
  with links to NASTRAN, MARC and NONSAP
. Thermal analysis, heat radiation, heat convection: MARC
. Composite laminates computation: MSV 2
. Viscoelastic, -plastic behaviour: MARC
. Fracture Mechanics: MARC
. Component Life, Crack Propagation: ESA-CRACK, NASGROW
. Special programs for fibre wound vessels,
  bolt connection, ...
. Structure reliability analysis: FORM, SORM
  with links to MSV 2 → FRP Rel
. Structure optimization: SAPOP
. Test data evaluation and monitoring: BASMAN
  and rain flow counting code. Statistic codes, ...
  EV CREEP (θ- projection concept) for fatigue loading
. Computer graphics package: DISSPLA
. Material databank composites
. Geometrical nonlinear beam analysis: PROFI + GROBI
  for wind energy converter (GROWIAN, WKA 60, ...) statics

HARDWARE

Link-up MT Computer VAX 8550
4 TEKTRONIX 4115 Colour Graphics Display Terminal
1 Evans & Sutherland PS390 Colour Graphics Display Terminal
2 TEKTRONIX 4692 Colour Graphics Copier (Inkjet), DIN A 4
Personal Computers. Workstation DEC 2000

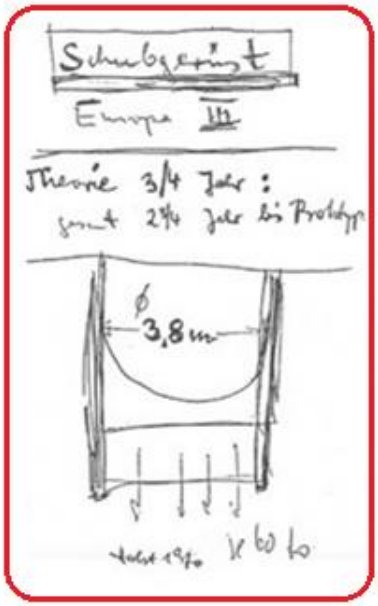
Software and Herdware used in the eighties



From 1973 on

The slip of paper below was the start of my work at
MAN-Neue Technologie in 1970 regarding the development of the **Ariane launcher family**:
"Make a design proposal for an offer, please " (Thrust structure).







Offer **(**center slip**)** ***for Europe III as the Forerunner of Ariane I and following Family***
(nearly all structural parts during the Ariane launcher family Development had to be designed)

The name ARIANE: Officially, the goddess Ariadne is said to have lent her name.
Wasn't it also decisive that a Dornier circle of friends discussed whether the name the French-sounding name Ariane of a little girl would not be ideal for both sides*?*
The father of this girl told me this several years later at a dinner of the Chaine-de-Rotisseur.



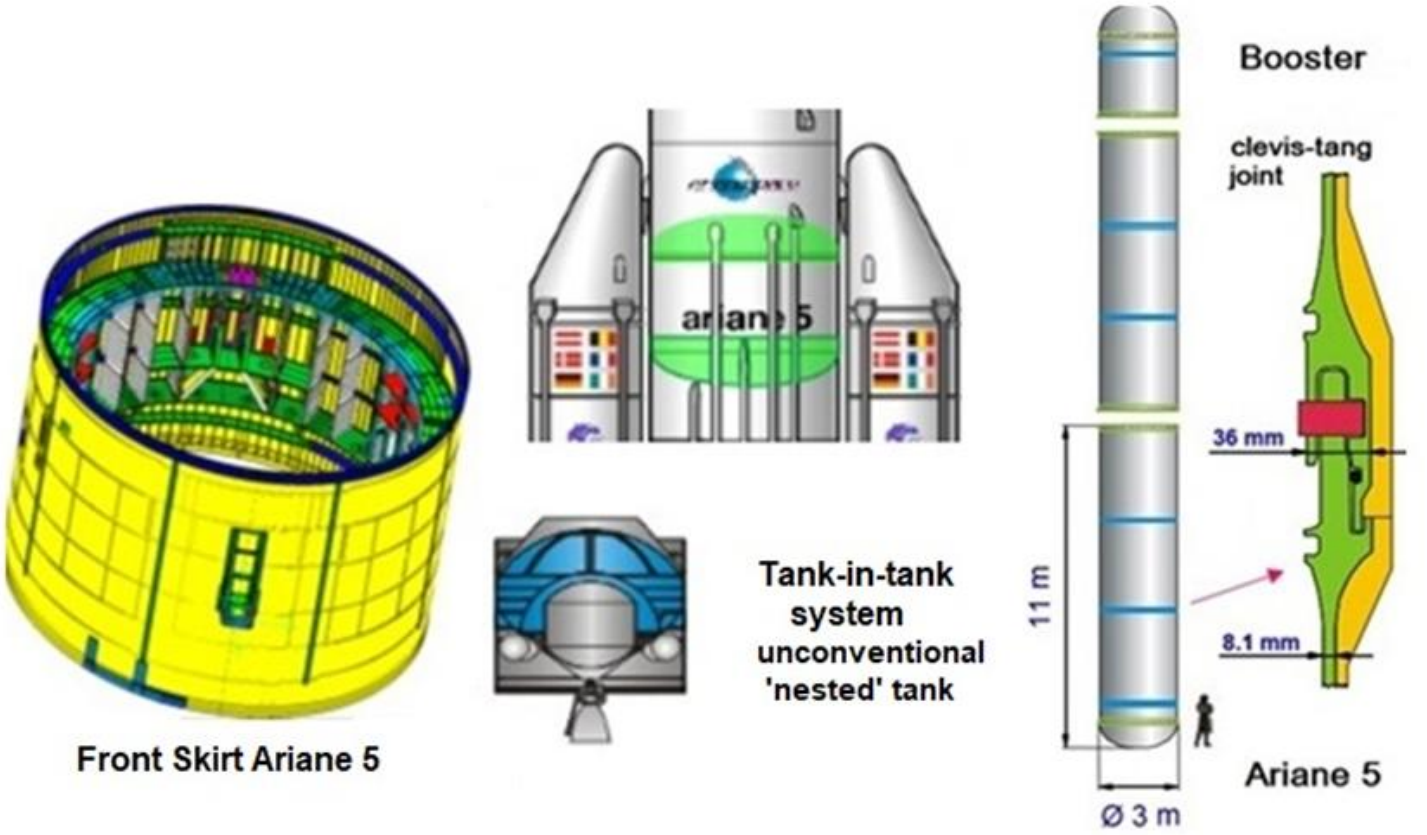
<u>Most intensive Ariane Memory</u>

Toulouse,
sitting in the big conference room.
The clock counts 98, 99, 100 , 99, 98.

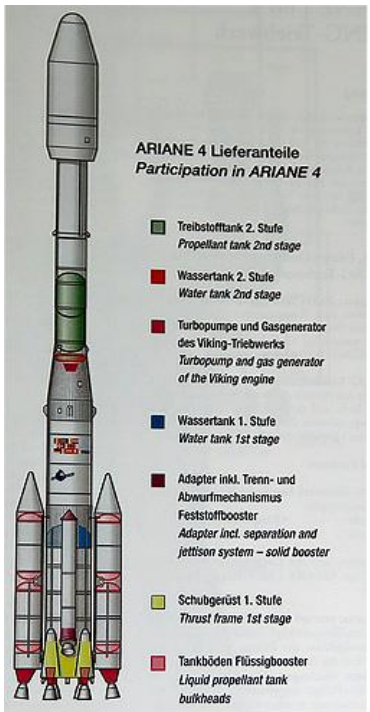
SILENCE
We could directly interpret the backcounting !?

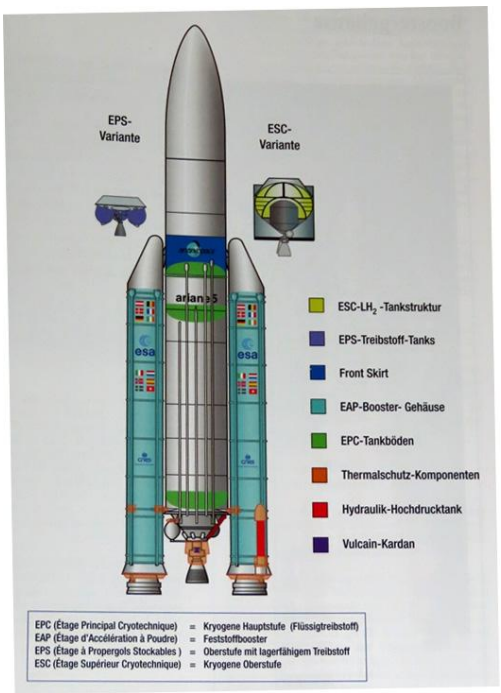
Was this failure perhaps due to the fact that the launch program
of Ariane 4 (100 s) < Ariane 5 (120 s)
was used??

That would be bad, because then the *existing* standards would not have been met.



Ariane Launcher 1-5







Notes on Tank-in-Tank system and Clevis-Tang Joint

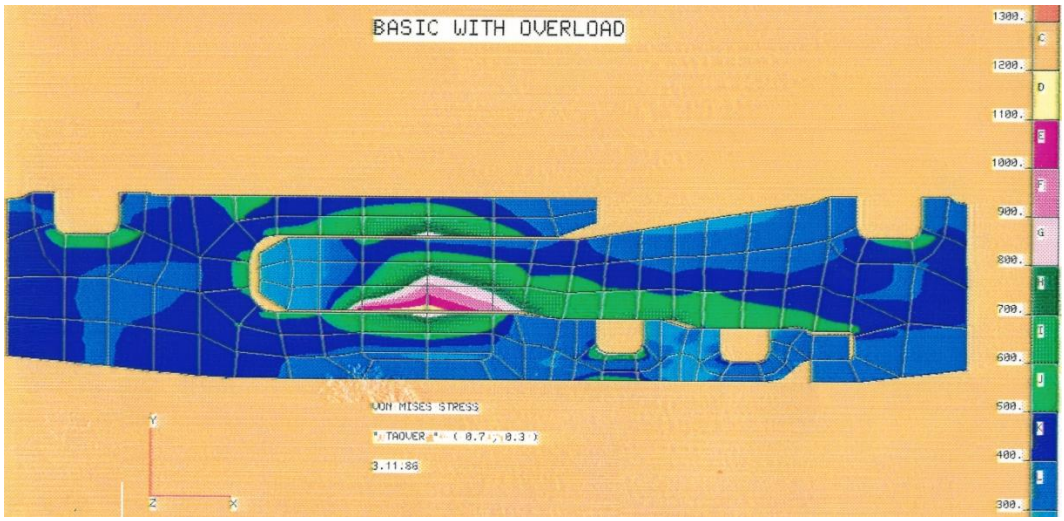
The tank-in-tank construction system was absolutely new. My friend Huba Öry, ERNO, meant: "*We will have to solve a very challenging task*!" The reason was probably the low gate height in Kourou, right? Later, the gate was enlarged.

Clevis-Tang Joint: (Hardware was a highly valued Good-Bye present of my colleagues)

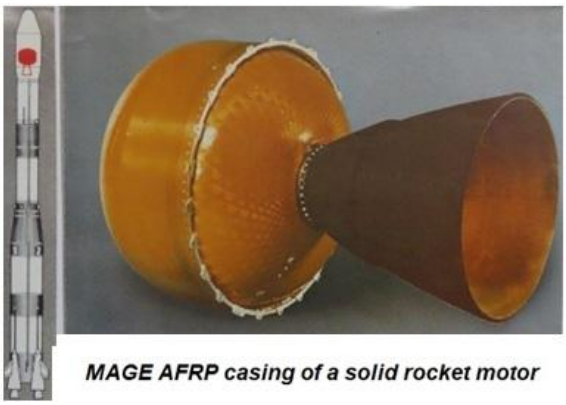


The Challenger tragedy came into play during the development of the Clevis-Tang booster connection. This gave me the opportunity to ask my former DVL colleague Wolf Elber, now head of a NASA institute and one responsible for the Challenger investigation, for his assessment.
Our design causes the joint to close when pressure is applied under a hazard condition in contrast to the Columbia design, sealing O.K..

Application of Software: the challenging Ariane 5, Booster Joint





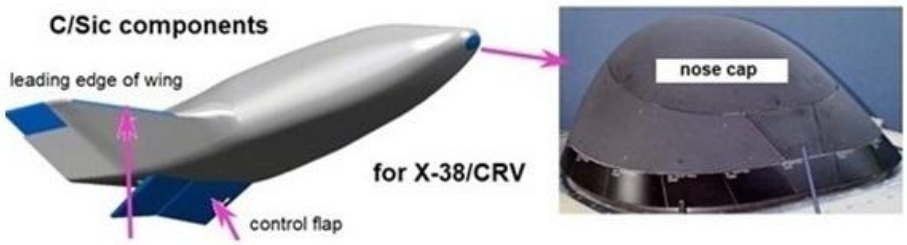


Airbus A330/340 drinking water tanks. High Pressure Vessels. Apogee Kevlar Motor Case

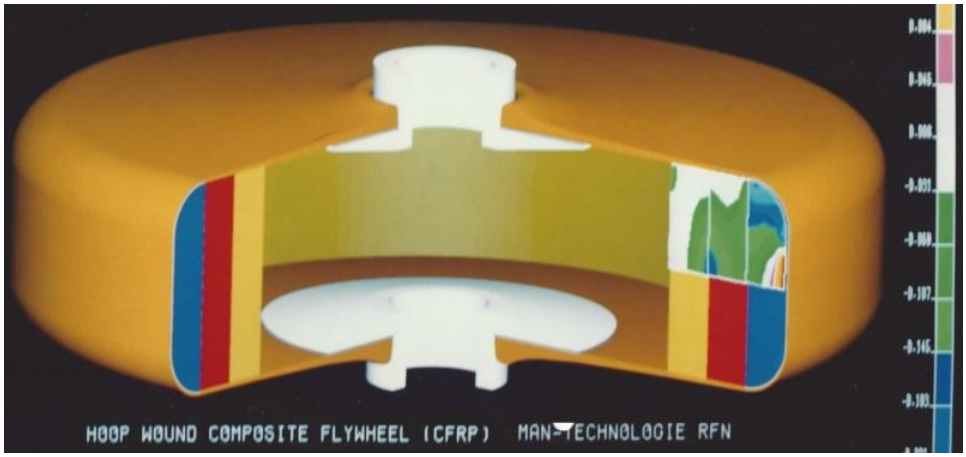


NIESYTO design, S. Guisard,

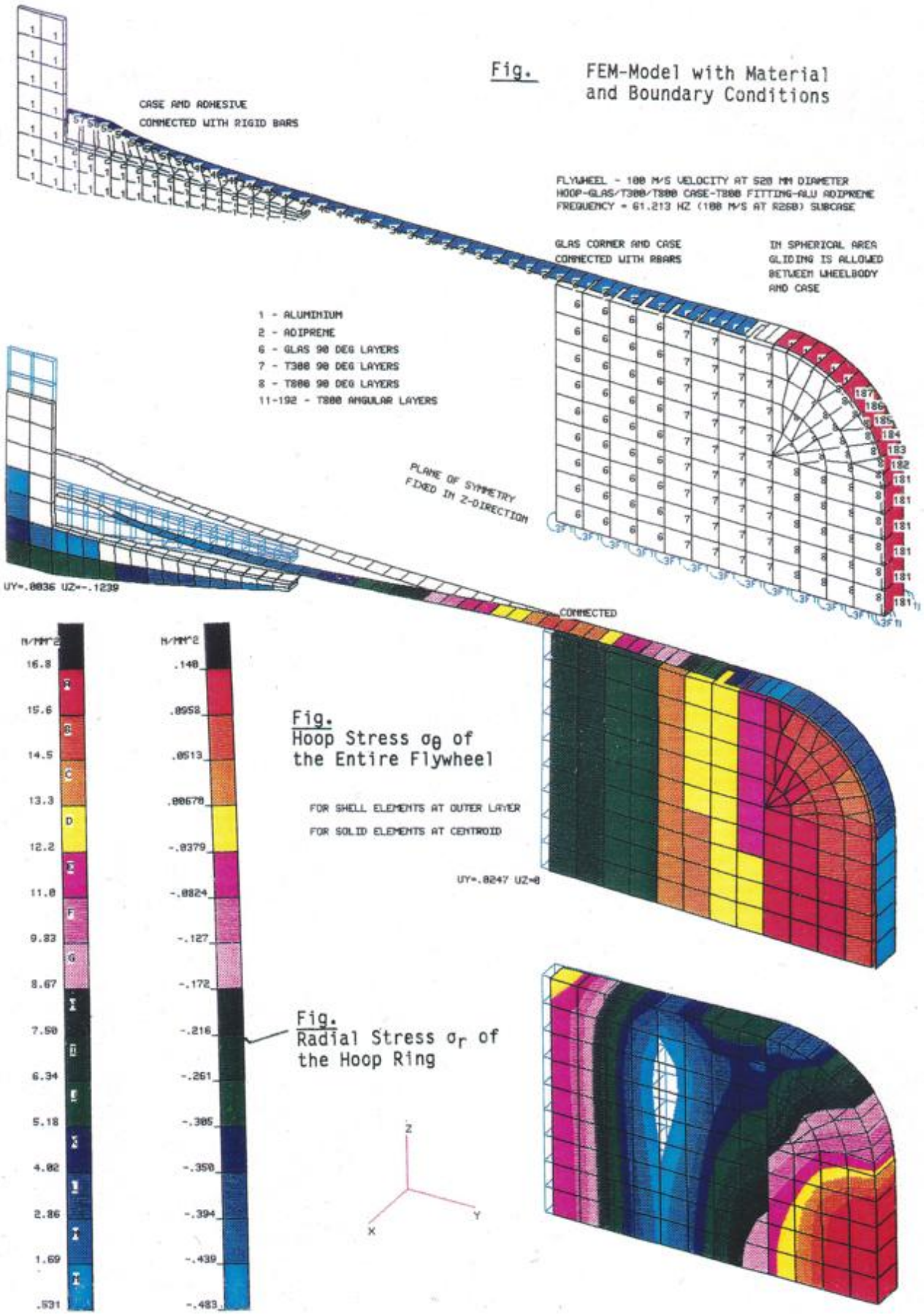




SOFIA telesope, ISS-linked structures



FEA of a no-delamination energy storing fly wheel, according to be able to design with the right stiffness course due to available different stiff fibers (Glass, T300, T700 : internal less stiff glas).



Fly-wheel design after having composites with different Young's moduli (1988)

MAN TECHNOLOGIE

D E P A R T M E N T A L S U M M A R Y

Department EGS: STRUCTURAL ANALYSIS
Head of department: Dr.-Ing. habil. Ralf Cuntze VDI,
Tel. (089) 1480-3279
Address: Dachauer Str. 667, D-8000 Munich 50

FIELDS OF ENGINEERING ACTIVITY:

Design conception, structure analysis and development/qualification test engineering of structures in the following fields of engineering:

Power engineering (gas ultracentrifuge machine; energy storage wheels; heliostats; generator for bottoming cycle; AEROMAN, GROWIAN WKA 60 wind energy converters; atomic fusion: JET supporting structure and torus for Wendelstein VII stellarator; heat exchangers for GAST solar tower etc.))
Transport technology (marine diesel engines, ceramic engine components, touring coach turbochargers, STIRLING motor components)
Space technology (thrust frame for ARIANE 1 to 4: stage 1 water tank, boosters including jettison mechanism; adapter structures. Booster Case ARIANE 5. HERMES Rear Skirt, Hermes Launcher adapter and Front Skirt H120 studies.)
Fibre composite technology (cryogen tanks, MAGE and IRIS apogee engine casings for satellites, thrust cone, compression-tension struts, lightweight components for automotive and mechanical engineering, ARIANE adapter structures, rotor blades)
Steel structural engineering (Static test rigs for ARIANE thrust frames and components, container supporting structures, masts for wind-energy plants, lattice-type towers, oil derricks study).
Apparatus and systems engineering (DESAVAC seawater desalination plant ...)

ENGINEERING DISCIPLINES:

Performance of design concept and structure studies/technical documentation quotation, development and qualification on the basis of the following disciplines.

Statics, strength and stability

- three-dimensional lattice structures, curved plane load-bearing structures, plates, discs, three-dimensional bodies, thick shells
- dynamically balanced bodies under asymmetric load
- apparatus components, pipes (ASME code, TRD)
- towers and masts

Temperature field and tension field calculations

- stationary and non-stationary temperature fields
- non-linear analyses taking into account large deformations, plasticity, creep

Structural dynamics

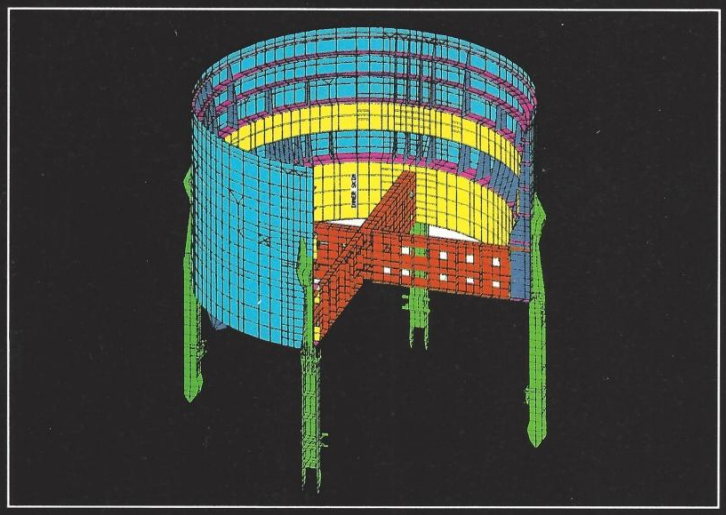
- determination of eigenfrequencies and modal quantities with FEM
- determination of critical speeds of rotors
- calculation of impact procedures and impact forces
- earthquake excitations and loads
- transient and harmonic excitations

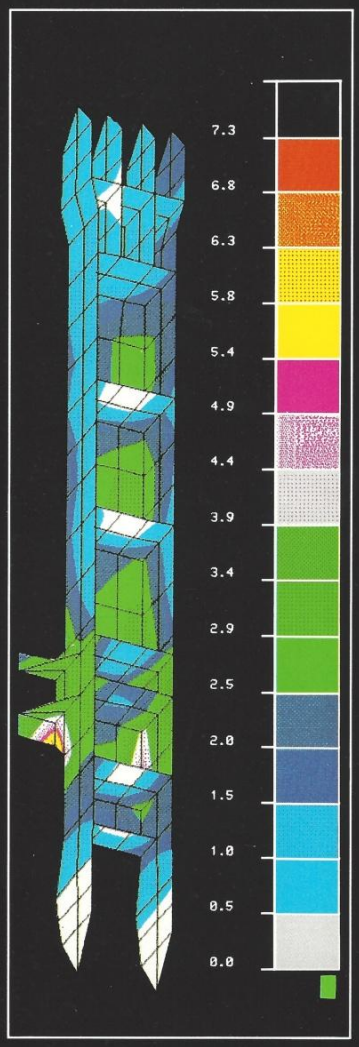
Structure Analyses

Our working disciplines/experiences
- ☐ Statics, strength and stability
- ☐ Fiber composite and ceramic structures
- ☐ High-temperature metallic structures
- ☐ Stationary and non-stationary temperature fields
- ☐ Fatigue behavior
- ☐ Fracture mechanics (linear and non-linear)
- ☐ Structural dynamics and load analysis
- ☐ Applied statistics and structural reliability analysis
- ☐ Plasticity and creep behavior (material models)

Numerical methods
- ☐ FEM programs MSC/NASTRAN, MARC, SAP IV, NONSAP
- ☐ Finite difference programs BOSOR 4, BOSOR 5, and others
- ☐ Pre- and postprocessor program PATRAN G, also with link to MARC

Technical equipment
- ☐ VAX 11/780
- ☐ 2 high-performance color computer display terminals (Tektronix 4115 B)
- ☐ 1 color hard copy printer (Tektronix 4691)







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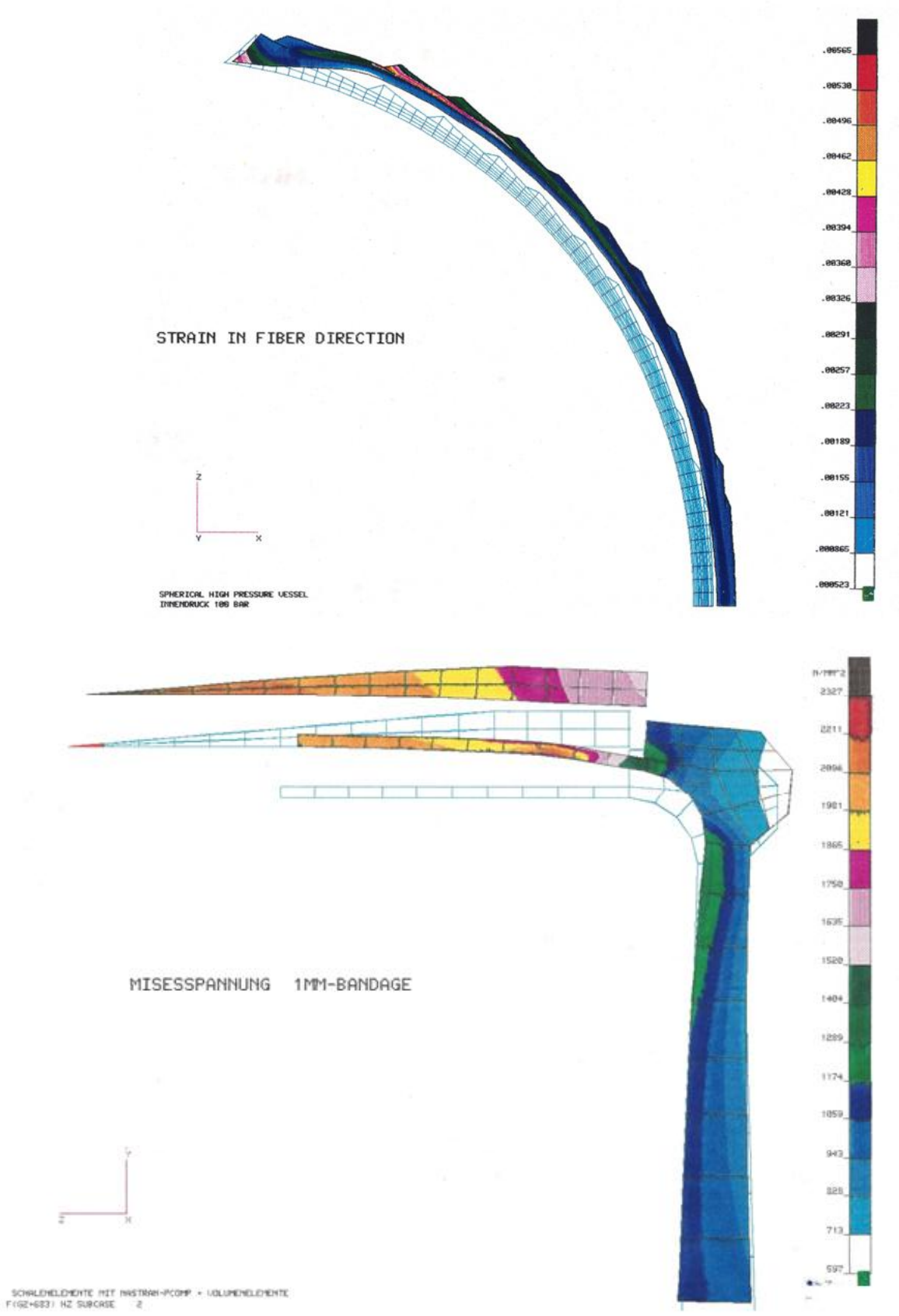


Two FEA's: Filament wound pressure vessel, (below) bottom of a centrifuge

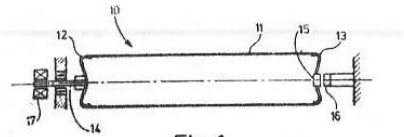


Fig.1

7.1648

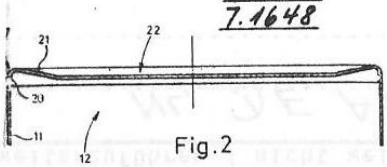


Fig.2

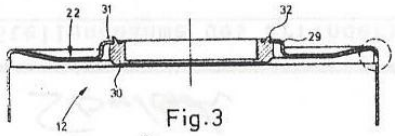


Fig.3

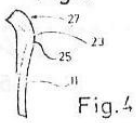


Fig.4

Anspruch 1

Schleudertrommel für hohe Drehgeschwir digkeiten mit einer dünnwandigen Trom- melwand und mindestens einem mit der Trommelwand verbundenen Deckel, dadurc gekennzeichnet, daß der Deckel (12,13) in seinem Grundaufbau eine aus hoch- festem Blech oder Band leicht kegel- förmig geneigte Scheibe ist, deren Aus senkontur für den Anschluß zur Trommel wand (11) einen Ringansatz (20) und deren Innenbereich (22) für die Aufnah oder Verbindung von Antriebs_ bzw. Lagerelementen annähernd kegelförmig oder topfförmig umgeformt ist.

2 - 10

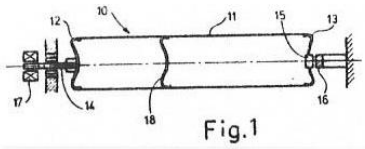


Fig.1

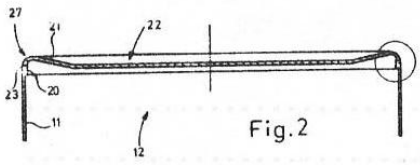


Fig.2

7.1647

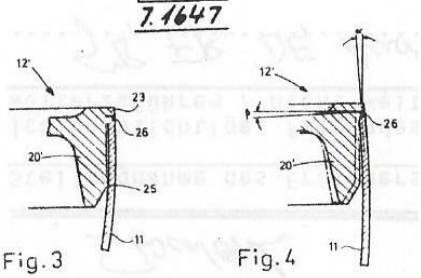


Fig.3 Fig.4

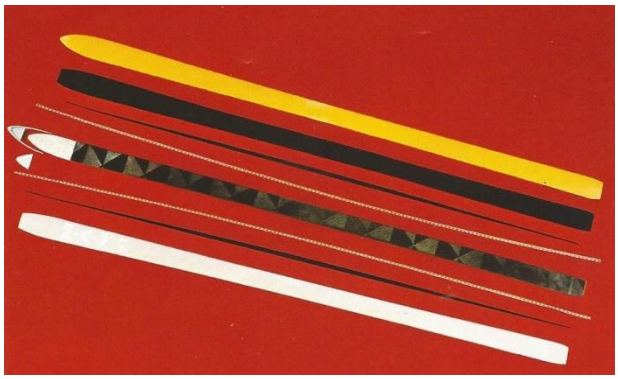
Anspruch 1

Schleudertrommel mit mindestens einer mit der Trommelwand verbundenen ro- tationssymmetrischen Scheibe, dadurch gekennzeichnet, daß die Scheibe (12, 13) am Außenumfang ein im wesentlichen zylindrisches Teil (20) aufweist, das gegenüber dem Innendurchmesser der Trommelwand mit Übermaß ausgelegt ist und entlang einer Ringfläche mit der Innenseite der Trommelwand (11) ver- bunden ist, derart, daß die Scheibe be Betrieb der Trommel aufgrund von Zen- trifugalkräften eine Stülpbewegung ausübt, die Biegemomente der Trommel an der Fügestelle im wesentlichen auf- hebt.

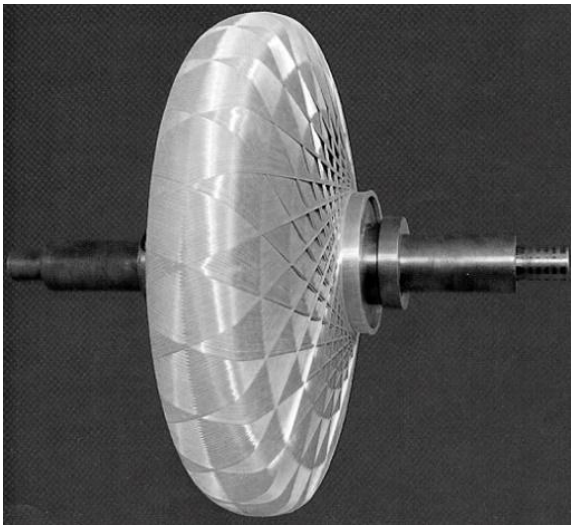
2 - 11

Patentbeteiligung P 27 09 410.6-23 "Thin-walled centrifuge cylinder (Schleudertrommel)". 1983

CFRP with GFRP skis about 1980



A production-ready ski with high torsional stiffness, low bending stiffness, and minimal mass



Composite brake energy storage flywheel for a bus

.

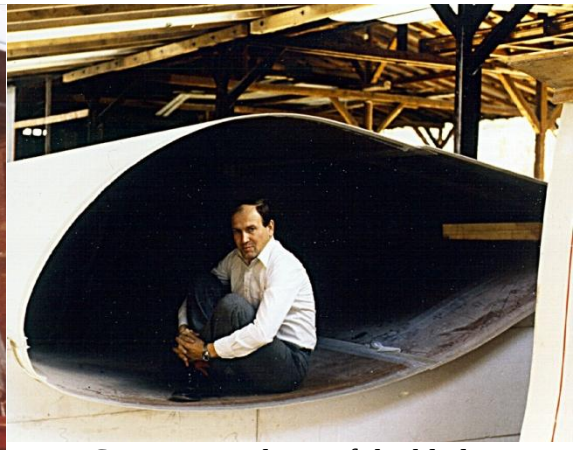


Test at IABG, Munich.
GROWIAN blade (GRoßeWIndeneergieANlage),
1979/1980. Ddetails in [CUN 22, §19]



Formwork GROWIAN

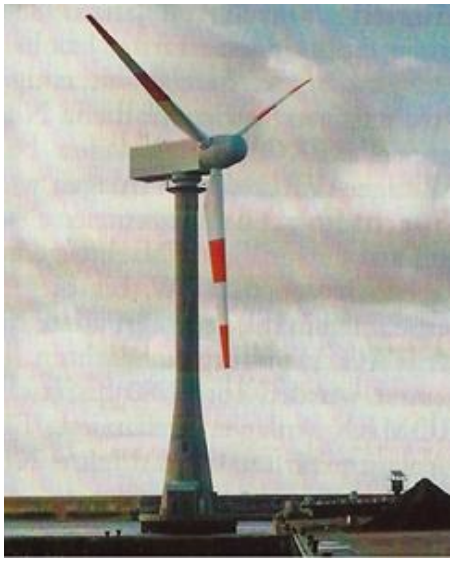




GFRP outer shape of the blade.
Profile NACA 44. Dieter Muser

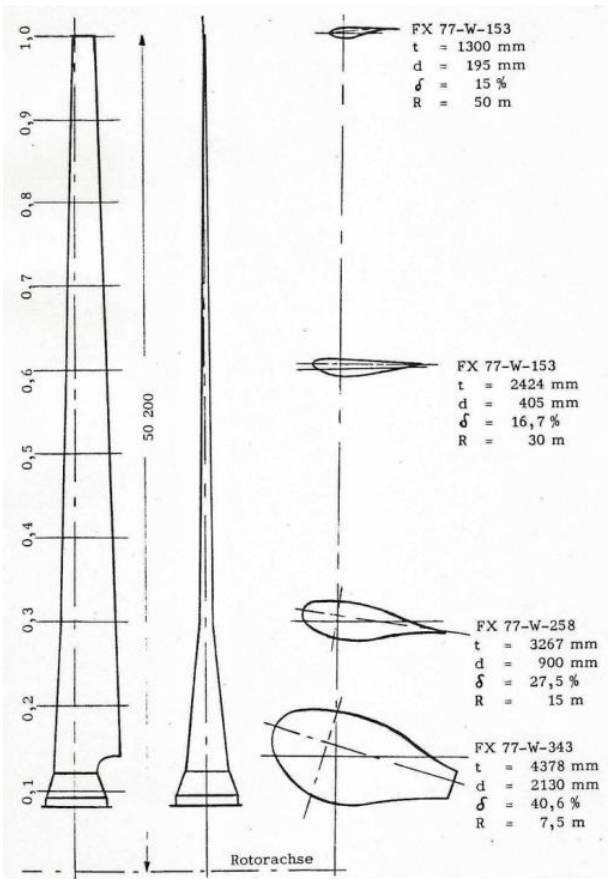


MAN's WKA 60m 3-blade wind turbine at Helgoland (1989)

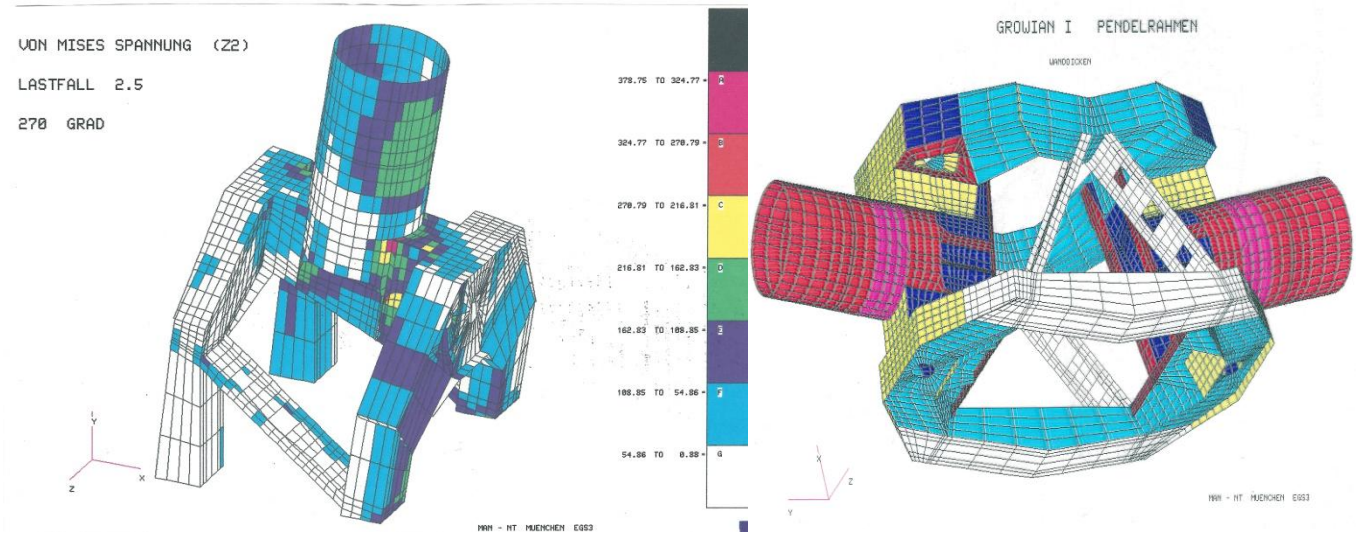


Small 2-blade AEROMAN wind mills in
California (1980)





left, 1982-1987, Kaiser-Wilhelm Koog) GROWIAN with wind speed measurement facility in the background. (right) Cross-section data. Wind Energy Rotor GROWIAN, 1980, 51 m blade, 3 MW electric power. GFRP shell with wind speed measurement facility.



FE modellization of the hub

The text below was a must for the 'GROWIAN living' author regarding reality:

The energy bottleneck in the first oil crisis in 1973 and global warming changed the situation for wind energy. The GROsse WIndenergieANlage GROWIAN research project was launched to establish a basis for the development of upcoming large wind energy converters.

Contrary to some recommendations the construction of the 3 MW turbine in Kaiser-Wilhelm-Koog at the end of 1980 was not carried out in successive increments of size, but rather aimed to be the largest turbine in the world at the time. This placed GROWIAN directly under excessively high expectations.

The structural parts of GROWIAN were (for more design details, see [CUN 22]):

Rotor blade, hub (Nabe), nacelle (Gondel, Maschinenhaus), drive train, tower with guys, foundation.

The blade construction concept was a mixed method with a steel box spar as the load-bearing blade element. The blade outer skin, connected to the spar via fittings, was made of GFRP. The spar box is designed as a welded construction, the fittings - as connections to the skin - are welded and have a tolerance-compensating effect. Transverse ribs and blade skin are made of GFRP as standard. This design, which originates from glider construction, makes it possible to meet the required low surface roughness and waviness of the selected laminar profile.

Basic task was the fitting of the natural frequencies into the free areas, often termed design 'frequency windows', which are given by the first and second operating frequencies including an associated tuning. This tuning is performed by separating the natural frequencies ω from each other and from the excitation frequencies Ω. A very unfavorable system-dynamic coupling was to counteract.

Design Load Cases were (1) Nominal operation, (2) Alternating operational loading, (3) Extreme gust.

When setting the design safety factors j of wind energy rotor plants, it must be taken into account whether an interchangeable component is considered or a practically irreparable component.

Meeting the design Fatigue life was a very big design challenge. Application of a government-desired CFRP blade was not possible: CFRP-SN-fatigue curves were not yet available. Here we could convince the Project Management at Jülich that taking CFRP was too risky especially when viewing the cure process capabilities known at that time. Hence, the spar should be designed with the standard steel of the Deutsche Bundesbahn. The author thought that these fatigue curves should be available for the widely used typical railway steel St 52.3. However in 1978, still here no SN-Curves for fatigue design were officially available for this material. Due to my good personal connections, freshly generated curves could be thankfully obtained from the LBF institute at Darmstadt. One problem vanished. *My thank you to Mr. Oppermann, still now again.*

Some problems we faced during development and operation:

- Initially no drilling at the end of the blade was made, so that penetrated water could not get out and created imbalance due to unequal amount in both blades
- Even for the skin material GFRP no reliable fatigue data were available, but we found a way
- Deformation compatibility of GFRP skin with steel spar (Holm): *Solved by a smart laminate design of the GFRP skin tuned to steel.* This critical connection proved to be fatigue-resistant
- There were no large cranes at that time: Hence, a special expensive mounting system for pulling up the rotor with nacelle (hub) had to be developed
- The openings at the door edges of the hub pendulum frame were relatively cut sharp-edged at the supplier 'MAN–crane construction' at Nürnberg and soon led to inadmissible cracks at the corners. However we could not convince the MAN–crane colleagues to smooth the corners out. A crane faces a fully different fatigue behavior. The criticality of the stress state was proven by FEA, which

then had to be carried out in the author's department at MAN-Technologie. *The* required *FE-calculation at that time took several days for 1 CPU-run.*

After the dismantling of GROWIAN in 1989, my project colleague Dr. Friedrich Körber (MT) wrote the an article, from which I have drawn the structural mechanics sections for my statements.

Ultimately, GROWIAN also made its contribution to wind energy research:

- ✓ The performance was confirmed, which suggests a good aerodynamic design.
- ✓ The decoupling of the guyed tower from the two-blade rotor system was achieved with the support of the pendulum hub: the first bending natural frequency of the 'soft' tower ω lay between the two excitation frequencies, single and double rotor frequencies Ω. This naturally involves operating through the first tower natural frequency (standard application of the MT with the GUZ).
- ✓ Small-scale turbines are not an economically viable solution for industrialized countries.
- ✓ The associated measurement program provided valuable data on wind loads for future installations (for GROWIAN, for example, the load had been underestimated).
- ✓ Wind loads showed to be to low.
- ✓ The alu tape lightning protection had to be replaced after a lightning strike.

A necessary note on a special comment in the web:

"The GROWIAN plant is still considered the ***greatest failure*** in wind energy history".

Was this author really informed about GROWIAN, especially the material problems, he cited?

- ➢ GROWIAN was a joint German technology research project to establish a basis for the development of upcoming large wind energy converters
- ➢ It delivered data for novel static load standards
- ➢ It enabled the responsible authority 'Germanische Lloyd' to establish novel procedures regarding fatigue life (*Phase 2 of fatigue life: Miner, summation of micro-mechanical damage*) and to think about crack growth macro-damage tolerance (*Phase 3, crack growth life*)
- ➢ The necessary multi-body system dynamic program had to be self-made
- ➢ A computation program 'Blade design' was established [*Bureau W.Weber, D.Muser]* and used in future large rotor designs!
- ➢ No application of a Computational Fluid Dynamics CFD method was possible, only relatively simple static FE and fatigue calculations could be performed.
- ➢ Structural dynamics of the guyed wind turbine considering damping could be executed later
- ➢ Cast nacelle beams and rotor hubs made of spheroid ductile iron were developed and became standard and applied in the later MAN WKA 60 and AWEC 90.
- ➢ An extra measurement project had to be planned to further provide reliable wind design load cases. The applied design wind loads were much too low, as the measurement - later carried out - showed. These results were introduced into the novel load standard and improved the novel wind energy rotor design!
- ➢ The problem part was not the blade or the fittings, as feared!
- ➢ Well running a rotor is the consequence of the goodness of the control concept. Leeward running faces air flow perturbations from the tower wind shade. However, this for instance has nothing to do with material problems as it is cited in the internet.

Problems that arose, as occurred with all other turbines worldwide, here mainly affected the nacelle hub (unfortunately, due to MAN's own fault), leading to lengthy operational interruptions.

Of remaining interest will be the

basic result of a speech of Dr. Frank, assurance manage at Allianz, on *Alternative Energies*:

"***The two technologies wind and solar are not cost-effective compared to nuclear energy technology***".

Der Maschinen Schaden

Allianz

Fachzeitschrift für Risiko-Technologie

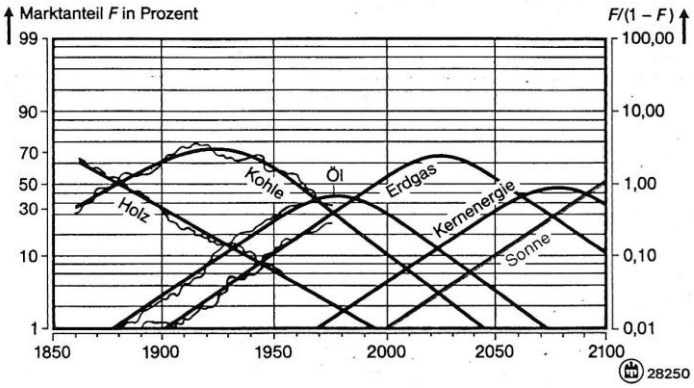
60. Jahrgang (1987), Heft 6, Seiten 225 bis 256 · Allianz Versicherungs-AG

Technik, Risiken und Versicherung der Alternativenergien

DK 620.9:368.1/.2"313"

Überarbeitete Fassung eines Vortrages, den der Verfasser auf dem 12. Allianz-Forum »Technik und Versicherung« am 02. Juni 1987 in München hielt.

Von E. Franck, München



3 Windkraftanlagen

Auf der Suche nach alternativen Energiequellen zur Stromerzeugung erlebt das alte Windrad eine Renaissance im neuen technologischen Gewande.

Bild 5.1 zeigt die »**Gro**ße **Wind**an**lage**« GROWIAN an der norddeutschen Küste nahe der Elbmündung bei Brunsbüttel. Sie stellt mit 3 Megawatt die weltgrößte Experimentalanlage zur Stromerzeugung aus Windenergie dar.

Technisch war GROWIAN ein Experiment mit großen Schwierigkeiten, das die gestellten Fragen aber weitgehend beantwortet hat. Die als Hauptrisiko befürchteten Koppelschwingungen des Rotors (Rotorblattschlag-Schwingungen) mit dem Turm (Torsions-Schwingungen) konnten durch die aufwendige Pendelnabe des Rotors vermieden werden.

Der gravierendste Schaden trat durch Risse im 80 t schweren Pendelrahmen infolge von nicht vorhergesehenen Spannungsspitzen auf. Sie wurden ausgeschliffen, verschweißt und verstärkt durch 4 t zusätzliche Rippen und Bleche.

Den Konstrukteuren muß man zugute halten, daß die systembestimmenden Komponenten von GROWIAN aufgrund ihrer riesigen Abmessungen keinem Prüfstandtest unterzogen werden konnten. Sie mußten an der Anlage erprobt werden. GROWIAN war insgesamt nur etwa 500 Stunden am Netz.

Betriebswirtschaftlich rechnet sich Strom aus Windrädern nicht; weder in Deutschland noch in den USA, andernfalls hätte er sich auf dem Markt durchgesetzt.

4 Solartechniken

Zur Nutzung der unerschöpflichen Sonnenenergie für haustechnische Zwecke kommen

- ☐ Wärmepumpen zur Hausheizung und
- ☐ Sonnenkollektoren zur Warmwasserbereitung

in Frage.

Trotz intensiver öffentlicher Förderung der Kollektorentwicklung in sog. Solarhäusern ist in Mitteleuropa die Heizung von Wohngebäuden mit Sonnenkollektoren und Wärmespeichern nicht möglich – obwohl dies vielfach euphorisch behauptet, erwartet oder geglaubt wird.

ein Solarzellenkraftwerk würde z. B. zehnfach höhere Baukosten als ein Kernkraftwerk erfordern.

Es gibt für unsere öffentliche Energieversorgung *keine alternativen Energiequellen.* Es gibt nur *additive* Energiequellen.

Die *Sonnenenergie* kann dies – leider – *nicht.* Sie ist und bleibt, solange wir noch über andere Primärenergieträger verfügen, eine zwar unerschöpfliche, aber auch unerreichbar teure *Wunschenergie.*

Now it is to cite : "*One can be mistaken*".

Einladung

Mo., 4. Dezember 1978, 11.30 Uhr
Hochschule für Technik, Bremen
Langemarckstr. 116
AB-Trakt, Hörsaal 713

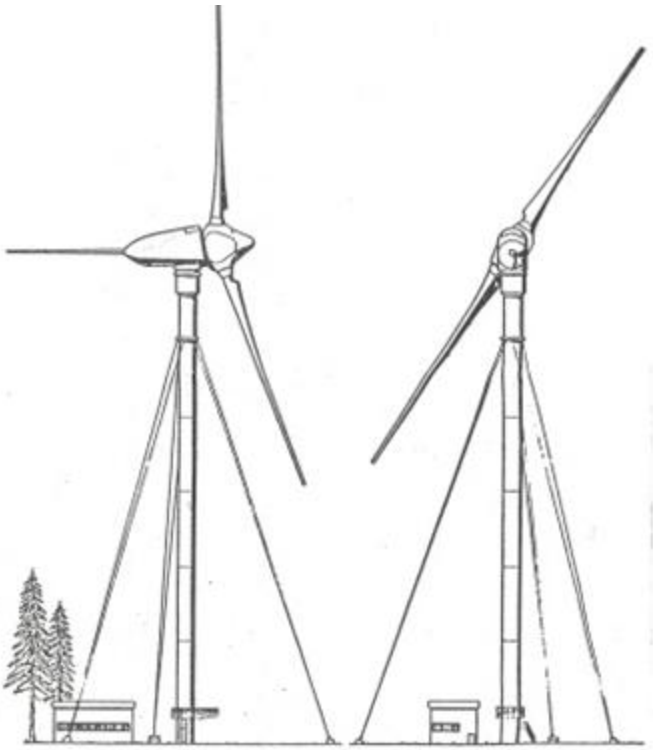
ges. Dr Fette

Auslegung einer großen Windenergieanlage (GROWIAN)

Vortrag von Dr.-Ing. habil. Ralf Cuntze
M.A.N - München
Bereich Neue Technologie

Es wird in einem 1 1/2-stündigen Vortrag die Auslegung einer großen Windenergieanlage vorgestellt. Der Vortrag untergliedert sich wie folgt:

1. Allgemeines zu Windenergieanlagen
2. System des GROWIAN, Kinematik
3. Statische und dynamische Belastungen, Lastfälle
4. Auslegung von Mast, Abspannung und Gründung
   - 4.1 Auswahlkriterien
   - 4.2 Schwingungsberechnung
   - 4.3 Aerodynamische Anregungsmöglichkeiten
5. Maschinenhaus und Rotor-Nabe
6. Auslegung Rotorblatt
   - 6.1 Kräfte am Blatt
   - 6.2 Flügelanzahl
   - 6.3 Werkstoffauswahl und Vordimensionierung
   - 6.4 Bemerkungen zur Schwingungsberechnung
   - 6.5 Schwingfestigkeitsauslegung
7. Schwingungen des Gesamtsystems



Große Windenergieanlage GROWIAN
3MW

International Progress-Meeting on

Wind Energy R & D Programs in Denmark, in the Federal Republic of Germany, in Sweden and in the USA.

- Exchange of Experiences -

Place: Munich, M.A.N.-Neue Technologie
Dachauerstraße 667

Date: October 15 - 16, 1980

Meeting Room: House VS, Großer Sitzungssaal

Time: 9.00 a.m.

Lecture Language: German and English

Discussion Language: German and English (if necessary)

Organisation: Dr. R. Windheim (PLE, KFA)
Dr. R. Cuntze (EGS, M.A.N.)

Lecture proposals are to be delivered to Dr. Cuntze (MAN) before July 31, 1980. They should include a short description of the lecture content.

Please ask for Overhead - and/or Dia-Projector.

The lecture will be published in the same way as the Seminar on Structural Dynamics in 1978. Please take: letter gothic/micronorm 5 mm/0,5.

Goal of the meeting

To show what is happening now,
what problems are dealt with,
what is the current stage of programs.

To offer an exchange of specialist experiences.

Presentations

The meeting is devided into 5 parts as may be seen in the list on the next page. This list contains the KFA-proposals for the German contributions. The exact lecture titles have to be chosen by each lecturer himself.

0. IEA Works
   Overlook at the current stage and future programs.

IV. LS WECS and Storage

1. Integration of wind power into national electricity supply systems, taking particular account of storage systems.
   University of Regensburg.
   ET 4085A. 1 à 25 min.

PS.: To IEA-Members mentioned in the "Teilnehmerkreis" are offered 5 lectures.

A discussion time of different length is foreseen after each lecture.

Attendance list (Teilnehmerliste)

1. Vortragende aus Deutschland

2. Vortragende Gäste des IEA-Abkommens (zur Großtechnischen Nutzung der Windenergie:

   Dr. Spera, NASA
   Mr. Johannson, DEFK, Denmark
   Mr. Petersen, Copenhagen
   Hr. Hugossen, NE, Schweden

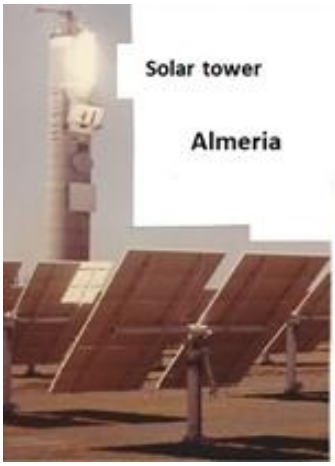
3. Gäste der Unterauftragnehmer von GROWIAN 1:

   DFVLR
   Siemens
   Leonhardt & Andrä (Hr. Dr. Kovacs)

4. Sonstige Zuhörer:

   Etwa 6 Interessenten deutscher Universitäten.
   Etwa 7 Interessenten der M.A.N.
   Etwa 8 Interessenten der deutschen beteiligten Firmen.

   Summe = 55 - 60 Teilnehmer

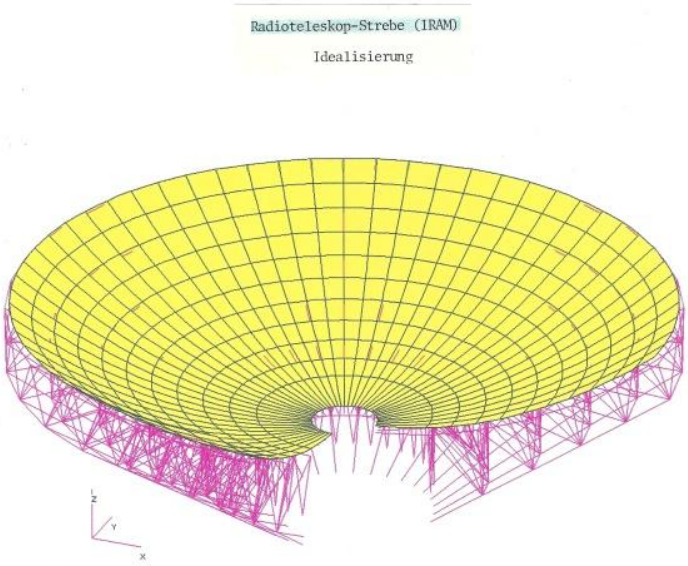


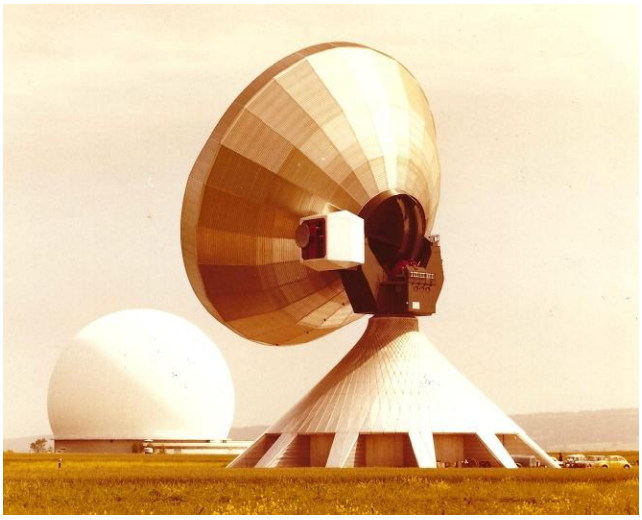


Solar Farm Plant with tower



Almeria





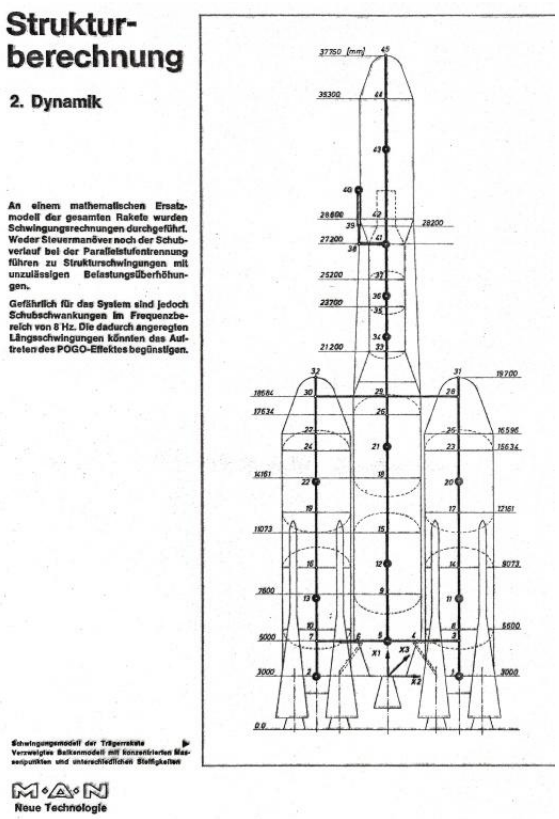
Antennas

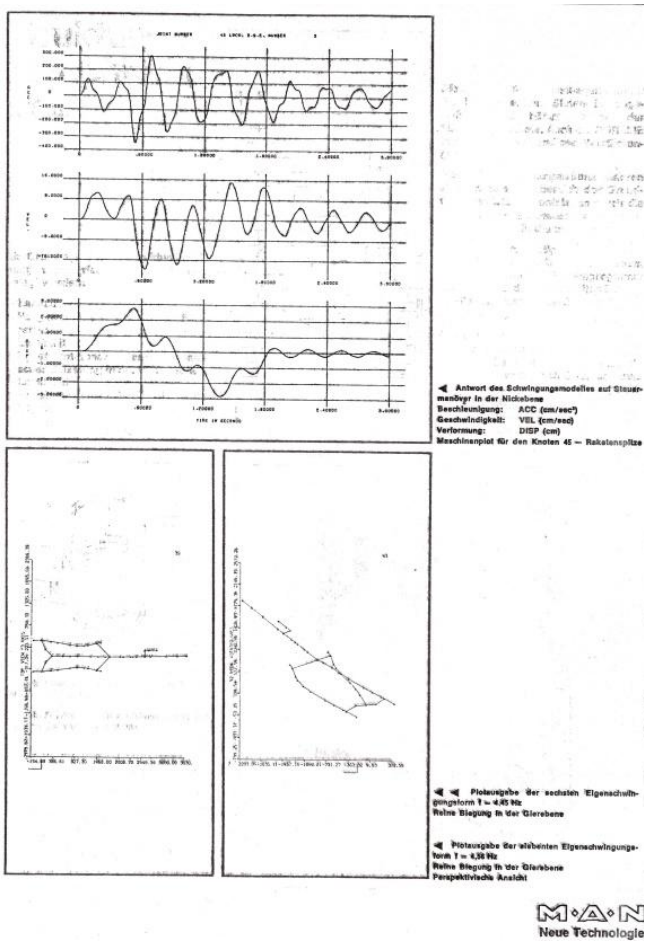


Development of container transport frames

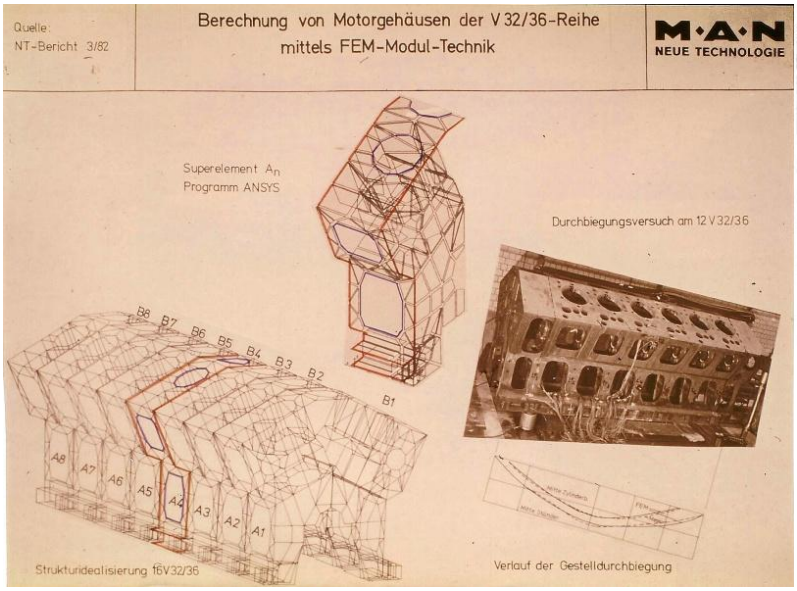
MAN Diesel engine FEM- support →

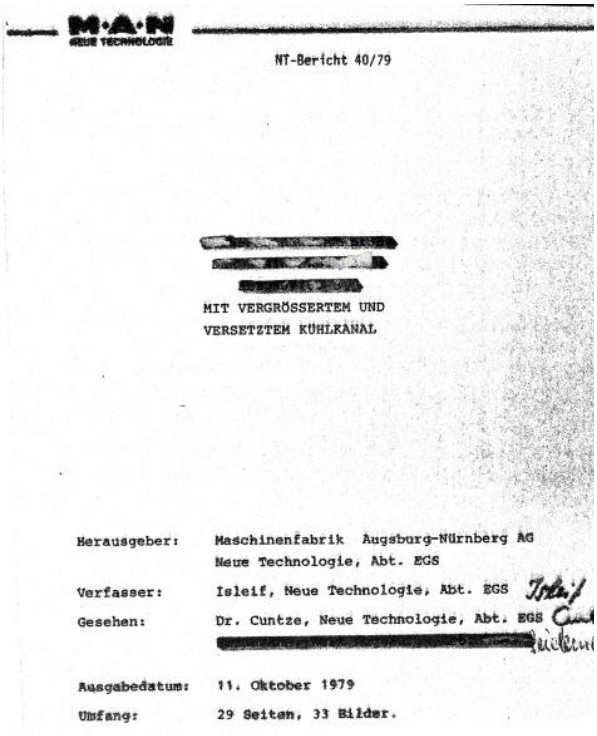






Prior to the Ariane rocket project, MAN had already conducted preliminary studies in the field of space technology, for example, on structural vibrations in clustered launch vehicles.
The documents I obtained when the library of the DFVLR site in Essen-Mühlheim was dissolved proved very helpful in this regard.





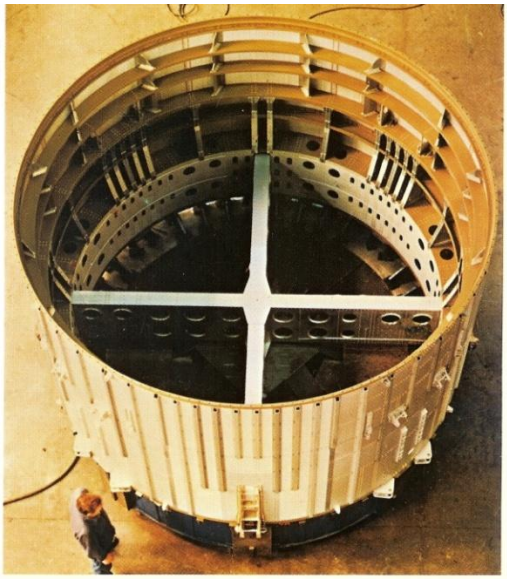


Josef Wein

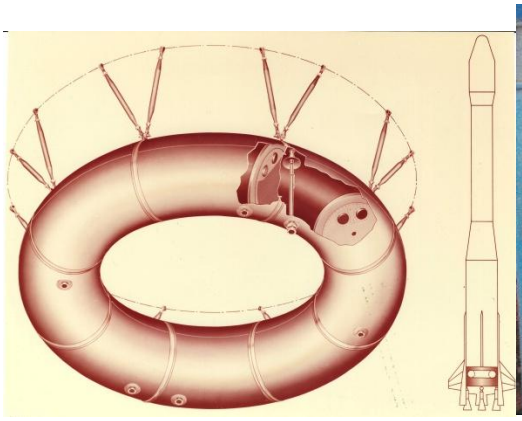
and

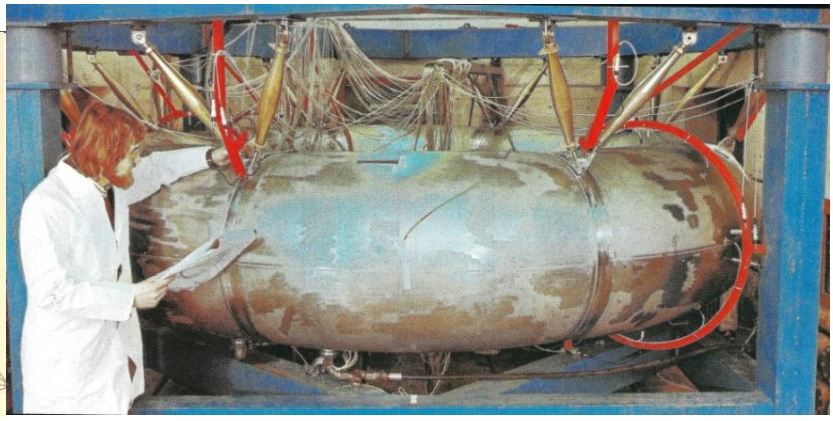
'his' Evans & Sutherland PS 300





Above toroidal Ariane water tank (2500 l) made of chrome-nickel steel for cooling the hot gases of the engine.



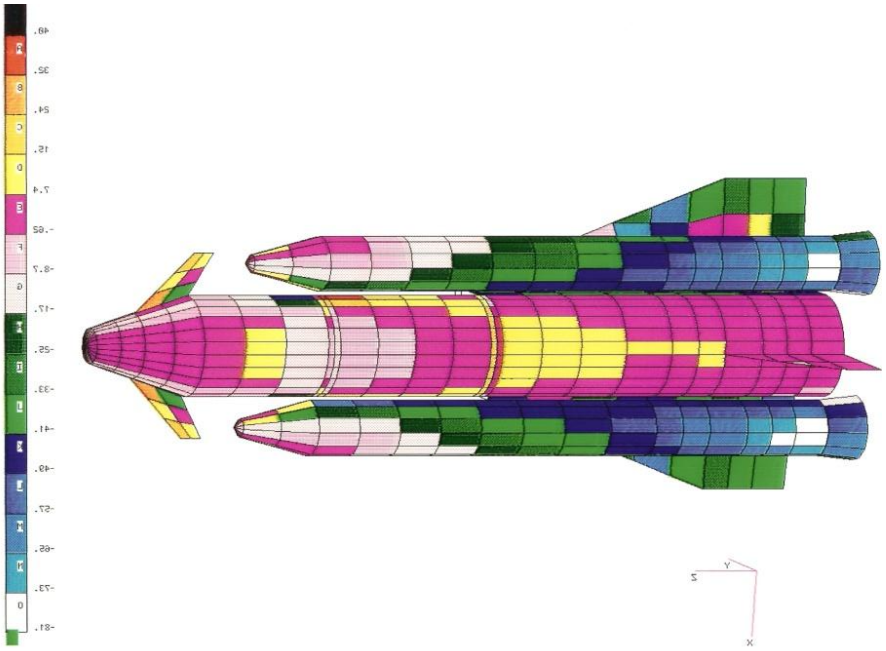


test rig

	Best.Menge	Bestelltext/Materialnummer	Gesamt Einzelpreis
A		LEASING	
B	2	WB-TWO250SLD4 Indigo2 Solid IMPACT graphics, 250 MHz	
C		2MB cache, 128 MB Memory, 4GB System Disk, 20“ Monitor	97888,-
D	2	CR-T5-NOPEN Upgrade to R10000 CPU from Indigo2	
E		IMPACT R4400 System	39976,-
F	2	CR-T5-NOPEN 250MHz R4400 Module, IMPACT 10000	-14896,-
G	2	CR-CPU-UPGRD Credit for Return of R4XXX based CPU	-4408,-
H	2	Vollwartung in der Gewährleistung für Indigo2	3000,-
I			
J		Gesamt: 121.560,- DM	
K		(Anlage: Vorabangebot von Silicon Graphics vom 04.03.96)	
L			
M			
N			
O			
P			
Q		6.3.96	

Hardware and cost

Hour basis for offers: 1 man year = 1560 hours

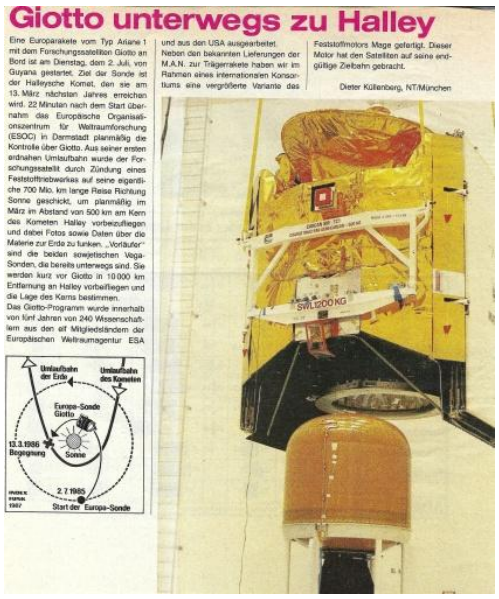


Hermes-A5 = A5B

(*see notes on associated political decisions in Part* E)



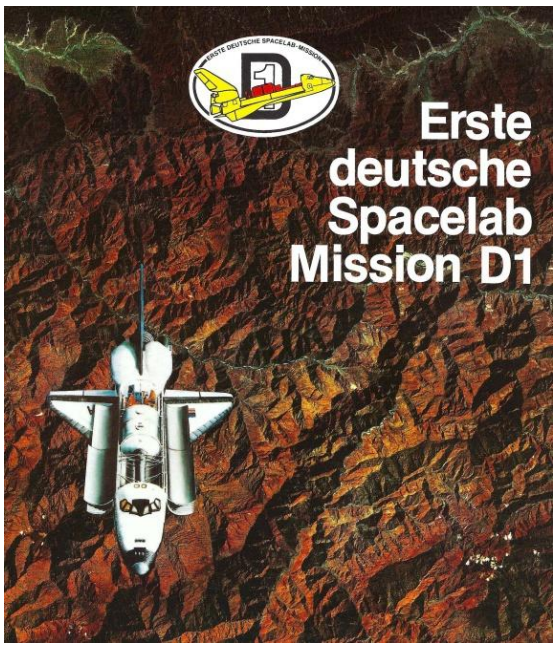
The thrust frame supports all components of the propulsion system and ensures that the 'point-like' thrust applied by the engines is distributed as evenly as possible.



Giotto unterwegs zu Halley

Eine Europarakete vom Typ Ariane 1 mit dem Forschungssatelliten Giotto an Bord ist am Dienstag, dem 2. Juli, von Guyana gestartet. Ziel der Sonde ist der Halleysche Komet, den sie am 13. März nächsten Jahres erreichen wird. 22 Minuten nach dem Start übernahm das Europäische Organisationszentrum für Weltraumforschung (ESOC) in Darmstadt planmäßig die Kontrolle über Giotto. Aus seiner ersten erdnahen Umlaufbahn wurde der Forschungssatellit durch Zündung eines Feststoffriebwerkes auf seine eigentliche 700 Mio. km lange Reise Richtung Sonne geschickt, um planmäßig im März im Abstand von 500 km am Kern des Kometen Halley vorbeizufliegen und dabei Fotos sowie Daten über die Materie zur Erde zu funken. „Vorläufer" sind die beiden sowjetischen Vega-Sonden, die bereits unterwegs sind. Sie werden kurz vor Giotto in 10 000 km Entfernung an Halley vorbeifliegen und die Lage des Kerns bestimmen.
Das Giotto-Programm wurde innerhalb von fünf Jahren von 240 Wissenschaftlern aus den elf Mitgliedstaaten der Europäischen Weltraumagentur ESA und aus den USA ausgearbeitet.
Neben den bekannten Lieferungen der M.A.N. zur Trägerrakete haben wir im Rahmen eines internationalen Konsortiums eine vergrößerte Variante des Feststoffmotors Mage gefertigt. Dieser Motor hat den Satelliten auf seine endgültige Zielbahn gebracht.

Dieter Kültenberg, NT/München



Am Gelingen der Giotto-Mission ist M.A.N. maßgeblich beteiligt

An der erfolgreichen Mission des europäischen Satelliten Giotto waren M.A.N.-Gesellschaften vielfältig beteiligt. So wurde er durch eine Ariane-Rakete von Kourou, Französisch Guayana, aus gestartet.

Von MAN Technologie GmbH stammten die

- Heckstruktur (= Schubgerüst der 1. Stufe);
- Turbopumpen für die vier Motoren der 1. Stufe und den Motor der 2. Stufe;
- der Wassertank der 1. Stufe für die Kühlung der Triebwerke.

Für die Startanlage ELA 1 hat MAN Gutehoffnungshütte GmbH den Starttisch geliefert.

Die für die Giotto-Mission maßgeblichen Parabolantennen für die Bodenstation der ESOC im Odenwald, in Spanien und in Belgien, sowie das Radioteleskop Parkes/Australien stammen von MAN GHH.

Für die optischen Teleskope auf dem Calar Alto in Spanien und in La Silla/Chile, sowie für das Auxiliary Telescope der ESO, ebenfalls in La Silla, wurden die Montierungen der Spiegel mit 2,2 bzw. 1,2 m geliefert.

Das präzise Funktionieren dieser vielen einzelnen Zulieferungen beweist den hohen Qualitätsstandard der Produkte von M.A.N.

Is it possible to produce better materials under weightlessness, for example through crystal production? Following the D1 mission, D2 science astronaut Ulrich Hans Walter was active. He is a physicist and science journalist and has held the chair of space technology at the Technical University of Munich since 2003.
As a further token of my gratitude for accepting my invitation to a CU event, I was able to give him my D2 wristwatch as a gift.



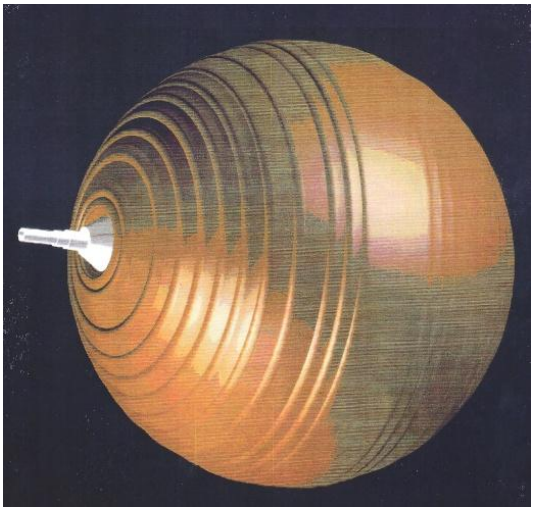
Structural tank of ARIANE 4 for 6200 liter water in order to recool the hot gases that drive the turbopumps of th VIKING emngine



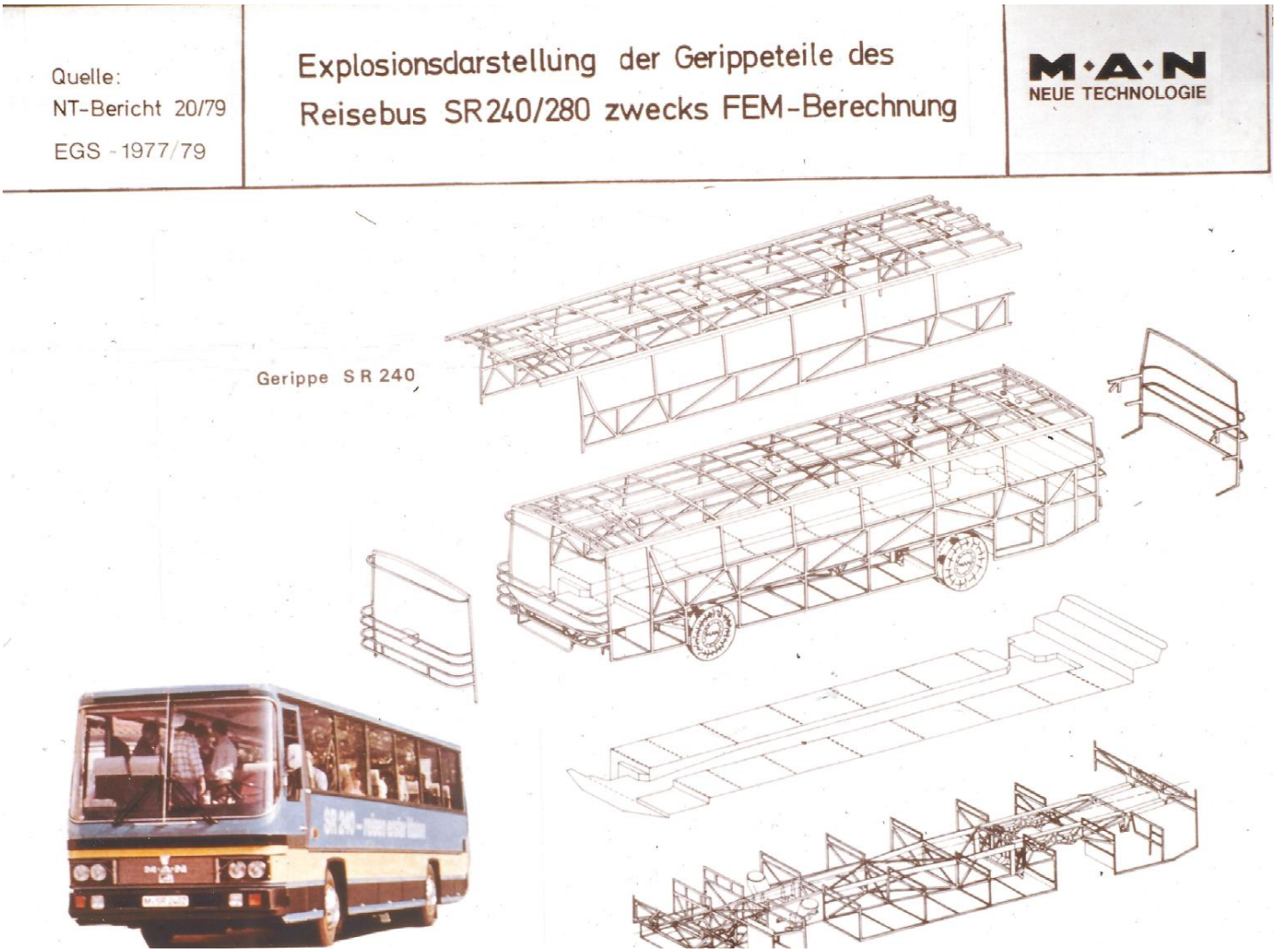
C-SiC panel, part of a re-entry heat shield



CFRP Booster section
Developed since 2001

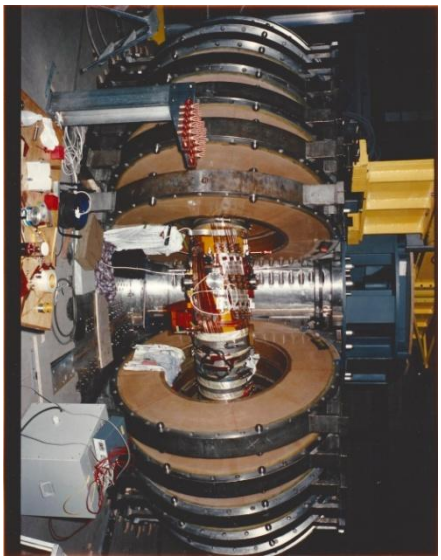


Sphere tanks since 1988.
Meteosat high pressure vessel, 8.2 kg. 1995

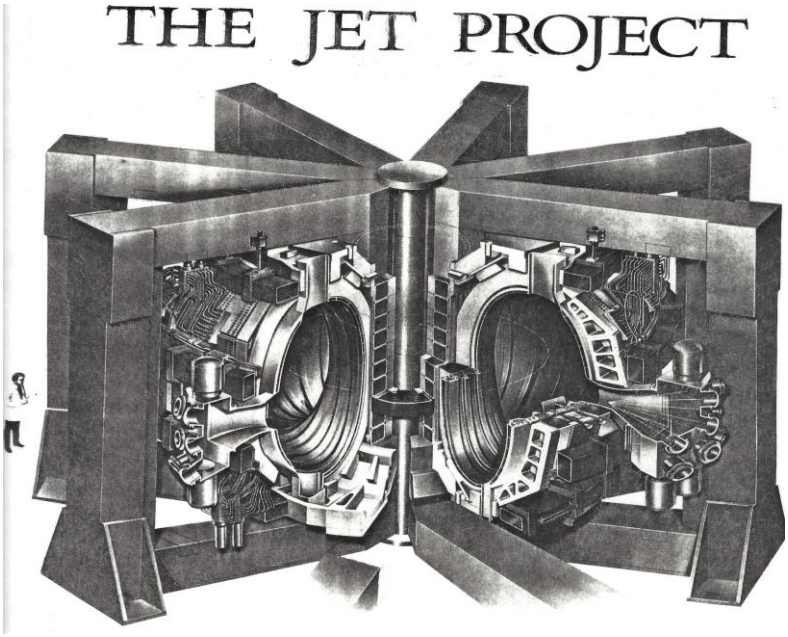


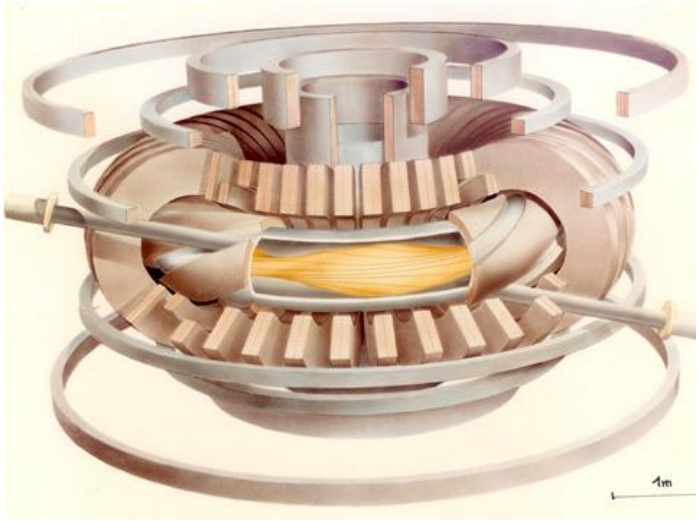
Statical FE- computation for an MAN bus

Delivery of structural parts Fusion reactors



Wndelstein VII in Garching, 1975
Structural parts





The main fuels used in nuclear fusion are deuterium and tritium, both heavy isotopes of hydrogen. Deuterium constitutes a tiny fraction of natural hydrogen, only 0,0153%, and can be extracted inexpensively from seawater. Tritium can be made from lithium, which is also abundant in nature.

The amount of deuterium present in one litre of water can in theory produce as much energy as the combustion of 300 litres of oil. This means that there is enough deuterium in the oceans to meet human energy needs

In nuclear fusion 2 atoms join together to form one. In a fusion reactore hydrogen atoms come together to form helium atoms, neutrons and much energy One of the big challenges holding fusion energy back has been the ability to contain high-energy particles inside fusion reactors
light atomic nuclei are compressed under intense pressure and heat to form heavier ones and release energy in the process
Magnetic fields enclose the plasma so that the wall of the reactor does not melt This only works because the outermost centimetres in the magnetically formed plasma edge are extremely well insulated
150x 106 °C
Nuclear fusion, on the other hand, is based on the opposite principle. In fusion reactors, light atomic nuclei are compressed under intense pressure and heat to form heavier ones and release energy in the process. The process must be optimized to generate more energy than it consumes.

Contributions to the Transrapid

Bridge structure and road dynamics



Not to forget

Early in the eighties:

MAN-T performed a Research project to establish a

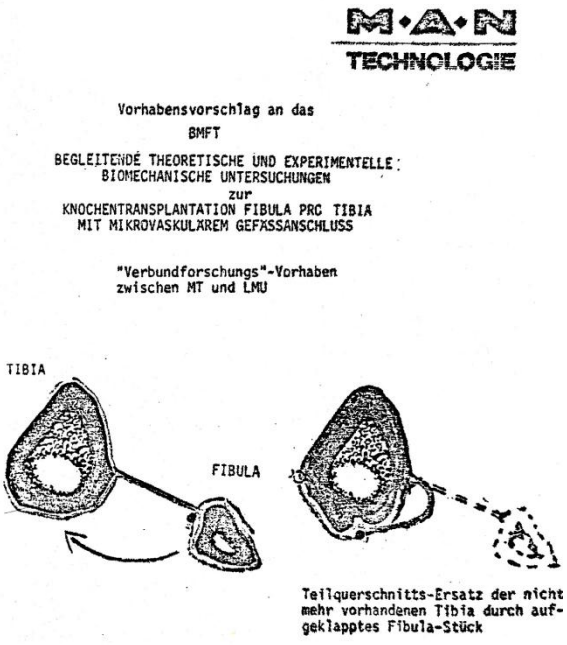
Technical process for the Production of Wooden Pellets !!

Biomechanics-related works on bone transplantation, 1986

Medical University of Munich (Dr. med. habil. Wolfgang Stock) with
(MAN technology (Dr.-Ing. habil. Ralf Cuntze)

Project part MAN:
Development of bone load-bearing capacity by performing Modelling and CT-measurements.

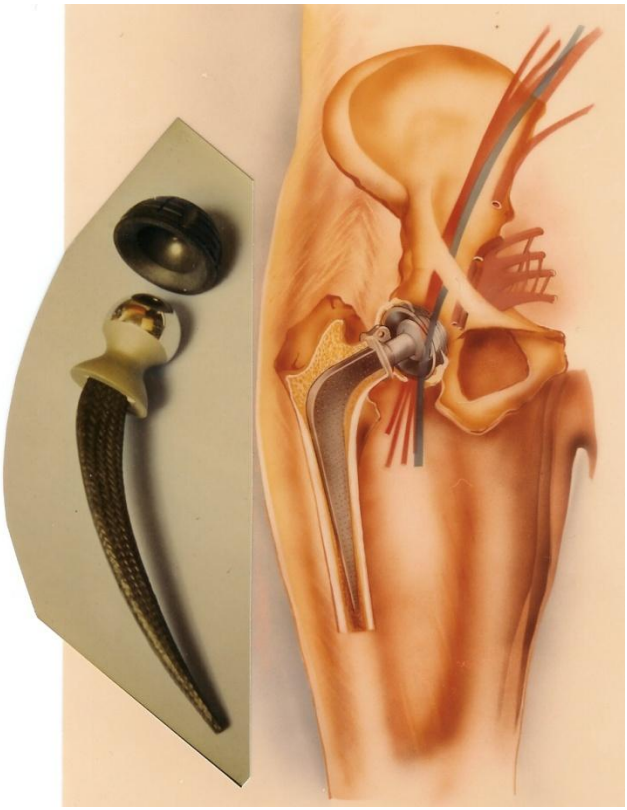
The still proven concept and excellent results of Dr. Stock halved the time to use a maximum damaged leg again, after about one year, and therefore to get to work much faster
► *reduction of medical + social costs.*



Presentation of this research idea
in a big meeting of project proposers to the DLR Project Management by Stock and me
under the Chair of an institute director of the medical university Hamburg-Binnenalster:
After Wolfgang's longer excellent presentation
I got 5 minutes for my part.
After about 2 minutes the chair tapped his watch at the other end of the very long table to say that he wants me (the only engineer in the group) to stop.
This was my most degrading experience in a meeting.

At lunch all were interested in Wolfgang's proposal. After his/our presentation there was silence.
Nothing happens.
After two years, colleagues had copied the concept and obtained the desired funding.
This was a pity for us/me because just MAN had still invested about DM 100,000 in my department.

*This prosthes is consisting of a CFRP stem, head, and socket. Artificial and thus foreign body parts – such as a hip joint endoprosthesis – must be compatible with the body's own tissue. Furthermore, the components must withstand the stresses of walking for as many years as possible. Otherwise, the replacement part must be replaced with a new one. The design requirements for a hip joint endoprosthesis are therefore: *Body tissue compatibility, *High surface pressure and low wear for the socket, *High bending strength of the stem, *Enabling cementless implantation. Re-growing bone material can bond, *Enabling patient-specific installation geometry.*
Stem: High-strength carbon fiber with epoxy matrix (CFRP).
Socket: Molded compound of short carbon fibers + epoxy matrix.
Ball: Ceramic ball.
Stem manufacturing: Core made of short fiber molded compound, pressed to final dimensions and cured. Angular layers on the surface wound onto a cured core using a knitting machine.
Test: Bending test of the stem. The stem clamping corresponds to the connection with the femur.
Human implantation and use: Implantation in some patients proved the implant to be a successful new alternative. However, its serial use was handicapped for various reasons, primarily because a competitor failed due to poor dimensioning,

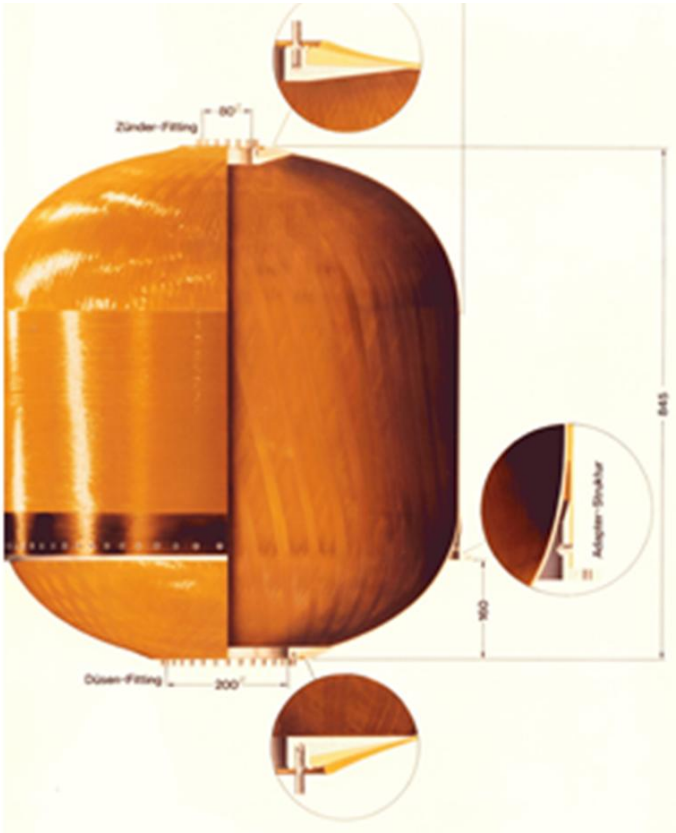


CFK-Hüft-Implantat
Prosthesis, 1976

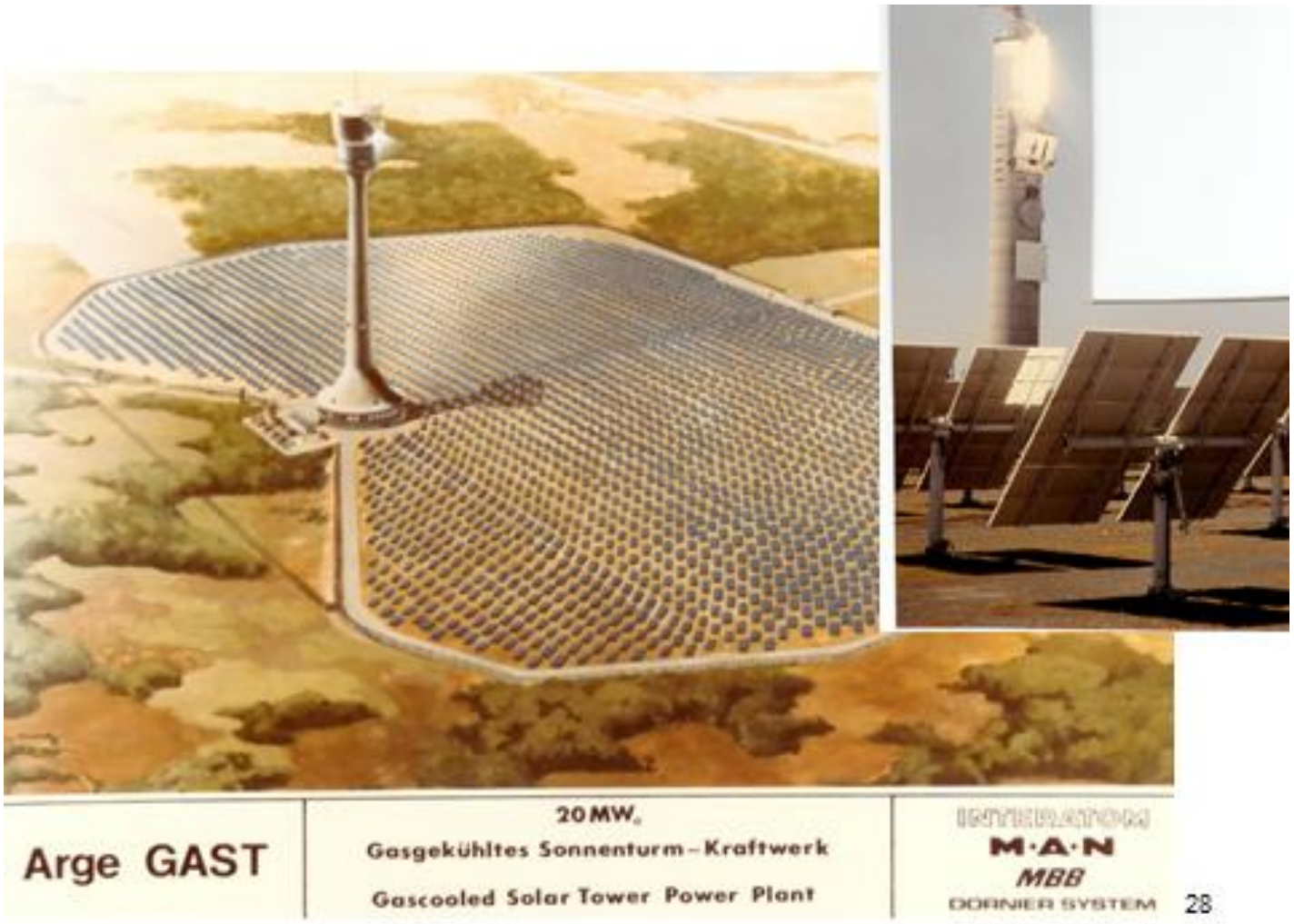




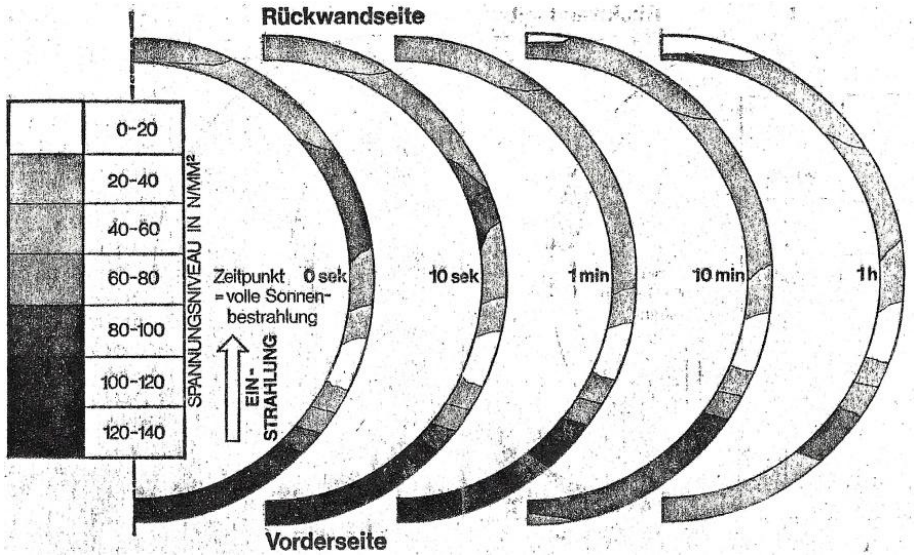
Flywheel for energy saving
(fracture mechanically designed by the author)



solid propellant rocket motor case
using fiber winding technology



Solar tower and solar field at Almeria, Spain



Heat Exchanger Almeria, Solar Tower

M·A·N Neue Technologie	ARBEITSAUFTRAG EGS – INTERN	Auftrags-Nr. B 099078
Beginn des Arbeitsauftrages Datum: 12.7.	Ende des Arbeitsauftrages Datum:	Laufzeit des übergeordneten Projektauftrages von: bis:
Auftraggebende Stelle Abt.: Tel.: Name: Cuntze	Ausführende Stelle Abt.: Tel.: Name: Zielke	Personaleinsatz (Std.): Sachkosten (DM):
Dringlichkeit		
Werkstoff Harz 0502HK/DX 604 $\varphi = 64\%$ in N, mm (T300) (M40)	Früher t 90°-Schicht: $E_{\parallel} = 147200$; $E_{\perp} = 10500$; $G_{\#} = 5800$; $\nu = 0{,}27$ $\sigma_{\parallel 73} = 2560$; $\sigma_{\perp 23} = 58$; $\sigma_{\perp 43} = 141$; $\tau_{\#8} = 93$ α-Schicht: $E_{\parallel} = 256000$; $E_{\perp} = 9000$; $G_{\#} = 5500$; $\nu = 0{,}22$ min-Werte $\sigma_{\parallel 73} = 1300$; $\sigma_{\perp 23} = 33$; $\sigma_{\perp 43} = 141$; $\tau_{\#8} = 76$	AV 190116 EGS001
Randbedingungen Zeichnungs-Nr.	$u_{max} = 0{,}8 \cdot u_{krit.gl.} = u_{max} = f(\text{zul } \sigma_{\parallel}) = 800$ m/s. (1733 Hz) $R = const = 73$ mm $t_v = 0{,}595$ mm Evtl. später $\alpha \geq 25°, 28°, 31°$	

Titel: Ermittlung der Abhängigkeit der Trennleistung δU von Dickenverhältnis t_α / t_{90} und verschiedenen Werkstoffpaarungen

Auszuführende Arbeiten:

TC11 (neue Bezeichnung)

0. Anpassung des vorhand. Rotordatensatzes (~~C6,5~~) an gewünschten Rotor. In Abstimmung mit H. Einmann. Festlegung der "Nicht-Trennlänge" für $L_{eff} = L_D - \underbrace{L_{NT}}_{26mm}$ Berechnung.

0,1 H. Sch. Prüfung Bosor/MSV2 77 Rotoptspannungen

1. Durchführung von ROTOPT-Rechnungen für folgende Werkstoffpaarung und Parametervariationen unter näherungsweiser Berücksichtigung des Werkstoffnichtlinearitätseinflusses bzgl. Spannungen und krit. Drehzahl!

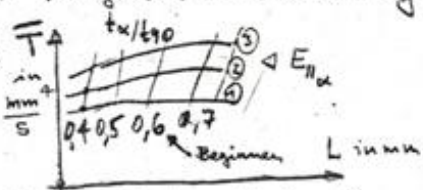
Axiall. $E_{\parallel 90}$ / $E_{\parallel \alpha}$ Umfangsl.	256000	288000	320000
147200	① Beginnen!	②	③
179200	/	④	/

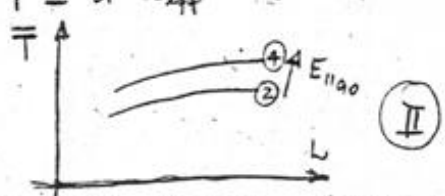
$E_{F_{90}} = 230000; 280000$ N/mm²

$E_{F_{25}} = 400000; 450000; 500000$ N/mm²

L_D = Abstand der Deckelaussenkanten

4. Berechnung der bezogenen Trennleistung $\bar{T} = u^2 \cdot L_{eff}$ und zeichnerische Darstellung





unter Berücksichtigung der korrigierten Spannungen. Jetzigen Rotor zum Vergleich rechnen und eintragen (Absprache mit Cu).

3. Tabellarische Darstellung der Maximalwerte von $\sigma_{\parallel K}$, $\sigma_{\perp K}$, $\tau_{\# K}$ Genaueres noch abzusprechen. (Da Rotopt nur über Bosor orthotrop mit MSV2 zu berechnen!)

5. Auswahl der trennleistungsgünstigsten Rotore nach Festigkeitskriterien inkl. Zwischenfaserbruchkriterium. 2. Feststellung des Werkstoffnichtlinearitätseinflusses mit ROTOPT + MSV2.

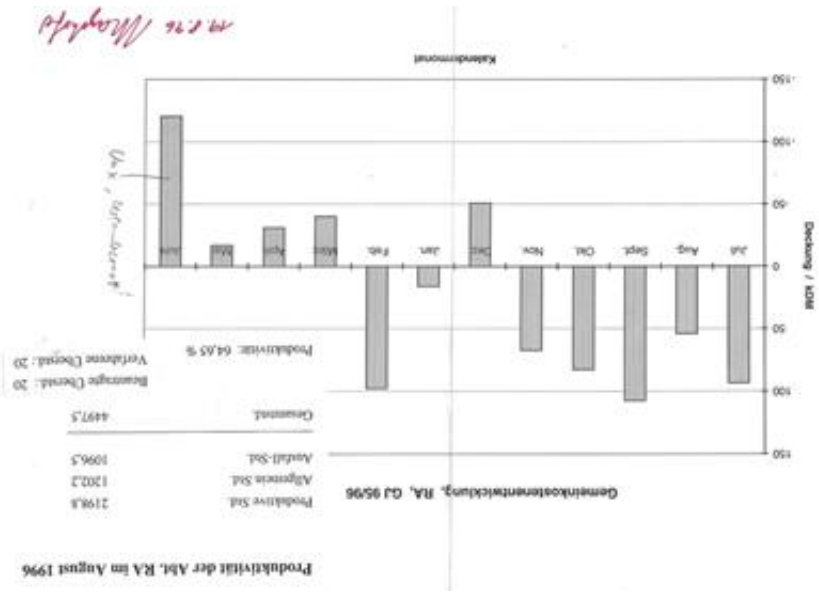
Rechengang bei den Parametervariationsläufen:
1) $V_{SPEED} = 800$ m/s vorgegeben; Safety = 0,80
2) L = variabel (KAEND = 1 ...); Fall 4.1b)

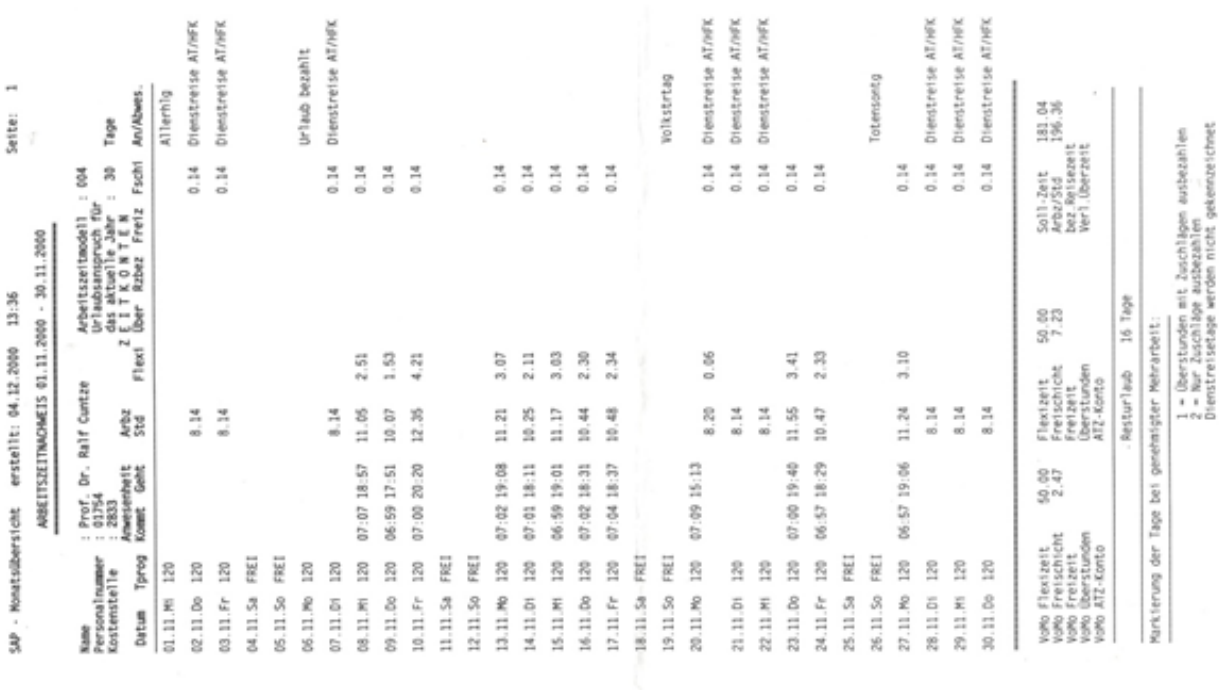
Vorher neue BRK-Formel durch Wein/Scharringhausen einzubauen!

Bei Unklarheiten Absprache mit Cu

Für Auftraggebende Stelle verantwortl. Name: Datum:	Bestätigungszeit	Für Ausführende Stelle verantwortl. Name: Datum:	Erledigungsvermerk
Einmann	Tage		

"Strukturnotiz": Formulation of a departmental work





SAP - Monatsübersicht erstellt: 04.12.2000 13:36 Seite: 1

ARBEITSZEITNACHWEIS 01.11.2000 - 30.11.2000

Name : Prof. Dr. Ralf Cuntze Arbeitszeitmodell : 004
Personalnummer : 01754 Urlaubsanspruch für
Kostenstelle : 2833 das aktuelle Jahr : 30 Tage
Anwesenheit ZEITKONTEN
Datum Tprog Komm Geht Arbz Std Flexi über Rzbez Freiz Fschl An/Abwes.

Datum	Tprog	Komm	Geht	Arbz Std	Flexi über	Rzbez	Freiz	Fschl	An/Abwes.
01.11.Mi	120								Allerhlg
02.11.Do	120			8.14				0.14	Dienstreise AT/HFK
03.11.Fr	120			8.14				0.14	Dienstreise AT/HFK
04.11.Sa	FREI								
05.11.So	FREI								
06.11.Mo	120								Urlaub bezahlt
07.11.Di	120			8.14				0.14	Dienstreise AT/HFK
08.11.Mi	120	07:07	18:57	11.05	2.51			0.14	
09.11.Do	120	06:59	17:51	10.07	1.53			0.14	
10.11.Fr	120	07:00	20:20	12.35	4.21			0.14	
11.11.Sa	FREI								
12.11.So	FREI								
13.11.Mo	120	07:02	19:08	11.21	3.07			0.14	
14.11.Di	120	07:01	18:11	10.25	2.11			0.14	
15.11.Mi	120	06:59	19:01	11.17	3.03			0.14	
16.11.Do	120	07:02	18:31	10.44	2.30			0.14	
17.11.Fr	120	07:04	18:37	10.48	2.34			0.14	
18.11.Sa	FREI								
19.11.So	FREI								Volkstag
20.11.Mo	120	07:09	15:13	8.20	0.06			0.14	Dienstreise AT/HFK
21.11.Di	120			8.14				0.14	Dienstreise AT/HFK
22.11.Mi	120			8.14				0.14	Dienstreise AT/HFK
23.11.Do	120	07:00	19:40	11.55	3.41			0.14	
24.11.Fr	120	06:57	18:29	10.47	2.33			0.14	
25.11.Sa	FREI								
26.11.So	FREI								Totensonn
27.11.Mo	120	06:57	19:06	11.24	3.10			0.14	
28.11.Di	120			8.14				0.14	Dienstreise AT/HFK
29.11.Mi	120			8.14				0.14	Dienstreise AT/HFK
30.11.Do	120			8.14				0.14	Dienstreise AT/HFK

VoMo Flexizeit	50.00	Flexizeit	50.00
VoMo Freischicht	2.47	Freischicht	7.23
VoMo Freizeit		Freizeit	
VoMo Überstunden		Überstunden	
VoMo AtZ-Konto		AtZ-Konto	

Soll-Zeit	181.04
Arbz/Std	196.36
bez.Reisezeit	
Verl.Überzeit	

Resturlaub 16 Tage

Markierung der Tage bei genehmigter Mehrarbeit:

1 = Überstunden mit Zuschlägen ausbezahlen
2 = Nur Zuschläge ausbezahlen
Dienstreisetage werden nicht gekennzeichnet

Stringent continuous check of productivity at MAN
Special problems, when employing Freelancers

Overtime-Balancing *of my time outside of MAN-T for conference memberships and presentations.*
(presenting MAN-T outside was very helpful for recruiting qualified employees!)

► A Constant Life Challenge:

Having too many non-financed co-workers or too few to tackle financed project tasks.

Since we were once unable to reduce staff to the desired lower level, which is very dangerous for a company due to future expectations, the CEO thanked us because we were now able to tackle the new task thanks to the minimal staff reduction.

Fremdbeschäftigte

Zur Erfassung und ordnungsgemäßen rechtlichen Einordnung der bei MT eingesetzten Fremdbeschäftigten bitten wir Sie um Beantwortung folgender Fragen:

Name des Fremdbeschäftigten: J.P. Serle

Tätig für Abteilung: RAL

Kosten-Stelle: 2833

Vertragsinhalt: Strukturanalysen für ARIANE 5

		ja	nein
1.	Der Fremdbeschäftigte ist an die übliche Arbeitszeit in der Abteilung gebunden	☐	☒
2.	Der Fremdbeschäftigte ist an die Pausenzeiten gebunden	☐	☒
3.	Der Fremdbeschäftigte führt die ihm übertragenen Aufgaben regelmäßig im Betrieb aus	☐	☒
4.	Der Fremdbeschäftigte ist Mitglied eines Teams, das Aufgaben nach Vorgaben eines MT-Vorgesetzten durchführt	☐	☒
5.	Der Fremdbeschäftigte hat die ihm übertragenen Aufgaben nach Weisungen von MT-Personal durchzuführen (vorbehalt)	☒	☒
6.	Der Fremdbeschäftigte haftet uneingeschränkt für die Ordnungsmäßigkeit der zu verrichtenden Aufgaben und ist ggf. zu kostenloser Nachbesserung verpflichtet	☒	☐
7.	Der Fremdbeschäftigte ist Arbeitnehmer einer Drittfirma (falls ja: Der Fremdbeschäftigte unterliegt einem Weisungsrecht bezüglich Zeit, Dauer, Ort und Art der Arbeitsausführung)	☐	☒
		☐	☐

München, den 11.3.96

R. Cuntze
Abteilungsleiter

Bereichsleiter

MAN TECHNOLOGIE

☒ Bestellanforderung vom _____ ○ Anfrageanforderung vom _____ an Einkauf _____

Lieferanten-Nr. | Lieferant / Lieferwerk: Ing. Büro Graf Zech, Wolfgangstr. 4, 82266 Inning | Bestell-Nr.

Lieferwerk-Nr. | vom

vorgeschriebener Lieferant ○ durch Auftraggeber ○ durch Konstruktion

ETEXT-NR | TEXT

PREISST. | ZABED.

WÄHR | PR-GLEIT | KONV-ST | SONDERV. | ZOLL | Lieferfirmen

Anlieferort: ○ München ○ Augsburg ○ Karlsfeld | Termin für MAN-Bestellung | Abnahme | W.-Attest | Probe-Mat | Warenempfänger / Ablagestelle

	Best.-Pos.	Best. Menge/ME	Bestelltext (Textschlüssel)	Sach-Nr. oder Warengruppe	Einzelpreis	PE	ME
A			Erstellung von nachfolgenden Dokumenten für A5				
B			Front Skirt				
			1) Strength Analysis/502 BLIS/Loop 4				
D			2) Fracture Mechanics Analysis/502/Loop 4				
E			3) Cat. of Acceptable Defects/502/Loop 4				
F			4) Justification of Technologies/502/Loop 4				
G			5) Q Test Correction Factors/502/Loop 4				
H			6) Q Test Report/502/Loop 4				
I							
J			Laufzeit 01.02.1996 bis 30.09.1996				
K			Der Umfang ist auf DM 80.000 + Mwst beschränkt				
I							
M							
N							

Vorschriften des Auftraggebers: z.B. Gewährleistung

Projekt- bzw. Auftrags-Nr. (SAP) / Kostenstelle (SAP)	Sachkonto / Sachkonto	Einzelmenge	Projekt- bzw. Auftrags-Nr. (SAP) / Kostenstelle (SAP)	Sachkonto / Sachkonto	Einzelmenge
A 273 104 93 0006 / 161 0004					

Antragsteller: Abt. Name Tel. Unterschrift | Bei Bestellung zu Lasten Gemeinkosten genehmigt: Kostenstellenleiter Tel. | Bei Bestellung zu Lasten Projekt genehmigt: Projektleiter Tel. 7751 | Stempel kaufm. Projektkontrolle bei Sach-Konto 60100061/71/73/75 | Einkäufer erledigt / Schreibzimmer

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Urlaubsantrag / Gleitzeitantrag

MAN TECHNOLOGIE | MAN Systemelektronik | MAN Dezentrale Energiesysteme

1754	Dr. Ralf Cuntze	2833	RA
Pers.-Nr.	Name	Kostenstelle	Abtg.

Urlaubsguthaben in Arbeitstagen: Stand 01.01.1998 — Resturlaub Vorjahr : 11,00; Urlaubsanspruch lfd. : 30,00; Insgesamt : 41,00

Bearbeitungsweg: Sekretariat/Vorgesetzter → Gleitzeitbeauftragte zum Verbleib

Abwesenheitsart	von	bis	Anzahl Tage	Rest-Tage	Datum	Mitarbeiter	Vorgesetzter
TU	16.2.98	22.2.98	4,0	32	19.1.98		
TU	6.7.98	24.7.98	15	17	19.7.98		
	20.2. anstand						
	15.5.98		1	16	11.5.98		
	7+8.7	Gleitzeit	1,8		3. GL-Antrag		
	6/9/10.7	Gleitzeit	2,7		3. GL-Antrag		

DO = ABBAU GLEITZEIT TAG/STD.; 0910 = FREIZEITAUSGLEICH FÜR MEHRARBEIT TAG/STD.

PERS.-NR: NAME: Cuntze

Abwesenheitsart	von Tag (Uhrzeit)	bis Tag (Uhrzeit)	Anzahl Tage	Datum	Unterschrift Mitarbeiter	Unterschrift Vorgesetzter
910	26.5.	27.5. (Übern. Urlaub 4,5 gestrichen, 8h-Tag)	2	27.5.97	Cuntze	
GL	14.7.97	18.7.97 (ICCM7 conference)	5	11.7.97	Cuntze	

Hinweis zur Beachtung: Gem. § 7 Abs. 3 Satz 1 BUrlG muß der Urlaub im laufenden Kalenderjahr gewährt und genommen werden. Der Jahresurlaub ist deswegen im Grundsatz bis zum 31. 12. des laufenden Kalenderjahres abzuwickeln.

0100 = Urlaub, 0900 = Gleitzeitabbau, 0910 = Freizeitabbau

Form _B_URLAU

Blatt 2

Urlaubsantrag / Gleitzeitantrag

MAN TECHNOLOGIE | MAN Systemelektronik | MAN Dezentrale Energiesysteme

1754	Dr. Ralf Cuntze	2833	RA
Pers.-Nr.	Name	Kostenstelle	Abtg.

Urlaubsguthaben in Arbeitstagen: Stand 01.01.1998 — Resturlaub Vorjahr : ; Urlaubsanspruch lfd. : ; Insgesamt :

Bearbeitungsweg: Sekretariat/Vorgesetzter → Gleitzeitbeauftragte zum Verbleib

Abwesenheitsart	von	bis	Anzahl Tage	Rest-Tage	Datum	Mitarbeiter	Vorgesetzter
0300	22.4.98	24.4.98	5		15.4.98	Cuntze	
	(Reise Hamburg MCM'98, Umtag)						
	19.6.98		1		27.5.98	Cuntze	
	(Umtag auf dem Dresdner Luftfahrtagungsplatz 98)						
	7.7.98	8.7.98	2		28.5.98		
	(Umtag und Reisemöglichkeit auf die ICCM 15)						
	4.9.-9.10.98		5		28.7.98		
	(Urlaub privat inkl. 4 Arbeitstage für die Reise)						

Hinweis zur Beachtung: Gem. § 7 Abs. 3 Satz 1 BUrlG muß der Urlaub im laufenden Kalenderjahr gewährt und genommen werden. Der Jahresurlaub ist deswegen im Grundsatz bis zum 31. 12. des laufenden Kalenderjahres abzuwickeln.

0100 = Urlaub, 0900 = Gleitzeitabbau, 0910 = Freizeitabbau

Form _B_URLAU

Pflichtvorlesung Konstruktiver Ing.-bau
an der Hochschule der Bundeswehr, München.

1980-1983

EINFOHRUNG
IN DIE
BRUCHMECHANIK

GLIEDERUNG

EINFÜHRUNG
1. DEFINITION
2. KONTINUUMSMECHANISCHE GRUNDLAGEN
3. KLASSISCHE BRUCHMECHANIK IDEAL SPRÖDER KÖRPER
4. LINEAR ELASTISCHE BRUCHMECHANIK (LEBM)
5. FLIESSBRUCHMECHANIK
6. STABILES RISSWACHSTUM
7. EXPERIMENTELLE METHODEN
8. VERSCHIEDENES

1. DEFINITIONEN UND ZIELE DER BRUCHMECHANIK

1.1 WAS IST EIN BRUCH?
1.2 BRUCHTYPEN
1.3 EINTEILUNG DER BRÜCHE NACH AUSSEHEN DER BRUCHFLÄCHEN
1.4 ZUR RIßENTSTEHUNG UND -AUSBREITUNG
1.5 TECHNISCHE BRUCHMECHANIK

2. KONTINUUMSMECHANISCHE GRUNDLAGE

2.1 EINIGE ELASTIZITÄTSTHEORETISCHE BEGRIFFE
2.2 LÖSUNGSMETHODEN DES LINEAREN ELASTIZITÄTSPROBLEMS
2.3 ELLIPTISCH GELOCHTE, UNENDLICH AUSGEDEHNTE SCHEIBE UNTER ZUG
  2.3.1 EXAKTE LÖSUNG DES SPANNUNGSFELDES MIT HILFE DER KOMPLEXEN SPANNUNGSFUNKTIONEN
  2.3.2 SPANNUNGSERHÖHUNGEN AM LOCH UNTER EIN- UND ZWEIACHSIGER ZUGBELASTUNG
2.4 EINZELRIß IN EINER UNENDLICH AUSGEDEHNTEN SCHEIBE (GRIFFITH-RIß) UNTER ZUGBELASTUNG
  2.4.1 SPANNUNGSFELD IN DER UMGEBUNG DES EINZELRISSES
  2.4.2 VERSCHIEBUNG DER RIßRÄNDER UNTER EIN- U. ZWEIACHSIGER ZUGBELASTUNG
2.5 NÄHERUNGSWEISE LÖSUNG DES VOLLSTÄNDIGEN ELASTIZITÄTSPROBLEMS AN EINEM GRIFFITH-RIß
  2.5.1 HERLEITUNG DES SPANNUNGSFELDES UNTER EINACHSIGER ZUGBELASTUNG IN Y-RICHTUNG
  2.5.2 SPANNUNGS- UND VERSCHIEBUNGSFELD IN UNMITTELBARER UMGEBUNG DER SPITZE EINES GRIFFITH-RISSES ($r \ll a$)
2.6 EINFÜHRUNG DER SPANNUNGSINTENSITÄTSFAKTOREN FÜR DIE 3 GRUNDLEGENDEN RIßÖFFNUNGSARTEN
2.7 ZUSAMMENHANG SPANNUNGSINTENSITÄTSFAKTOREN K_i - SPANNUNGSKONZENTRATIONSFAKTOREN (KERBFAKTOREN) α_k

3. KLASSISCHE BRUCHMECHANIK IDEAL SPRÖDER KÖRPER

3.1 THEORIE VON GRIFFITH
3.2 OBERFLÄCHENENERGIE UND THEORETISCHE FESTIGKEIT FESTER KÖRPER
3.3 ELASTISCHE ENERGIE EINER SCHEIBE MIT RIß (GRIFFITH-RIß)
3.4 ANWENDUNG DES BRUCHKRITERIUMS VON GRIFFITH AUF EINE SCHEIBE MIT GRIFFITH-RIß UNTER EINACHSIGEM ZUG.
3.5 EXPERIMENTELLE BESTÄTIGUNG (GLASSCHEIBE)

4. LINEAR ELASTISCHE BRUCHMECHANIK (LEBM)

4.1 ÖRTLICHE BRUCHBEDINGUNG AN DER RIßSPITZE
4.2 RIßAUSBREITUNGSKRAFT (ENERGIEFREISETZUNGSRATE)
4.3 BRUCHKRITERIUM DER LEBM
4.4 EINFLUßGRÖßEN AUF DIE KRITISCHE SPANNUNGSINTENSITÄT (BRUCHZÄHIGKEIT)
4.5 BERÜCKSICHTIGUNG DER PLASTISCHEN ZONE
4.6 AUFGABEN DER LEBM

5. FLIESSBRUCHMECHANIK

5.1 GÜLTIGKEITSGRENZEN DER LEBM
5.2 DAS J-INTEGRAL
5.3 DAS COD-KONZEPT

6.1 ALLGEMEINES

6.2 SCHWINGBEANSPRUCHUNG (ERMÜDUNGSRISSAUSBREITUNG)
  6.2.1 RISSFORTSCHRITTSBEZIEHUNGEN
  6.2.2 EINFLUSSGRÖSSEN

6.3 MONOTON ANSTEIGENDE BEANSPRUCHUNG

6.4 ZEITABHÄNGIGE VORGÄNGE
  6.4.1 KORROSION
  6.4.2 KRIECHEN

6.5 ÜBERLAGERUNG VON MECHANISCHER ERMÜDUNGSRISSAUSBREITUNG UND ZEITABHÄNGIGEN VORGÄNGEN
  6.5.1 SCHWINGUNGSKORROSION
  6.5.2 ERMÜDUNGSRISSAUSBREITUNG MIT ÜBERLAGERTER SPANNUNGSRISSKORROSION
  6.5.3 KRIECHEN

7. EXPERIMENTELLE METHODEN

7.1 PRÜFMETHODEN UND PROBENFORMEN
7.2 ERMITTLUNG DER BRUCHMECHANIKKENNWERTE
7.2.1 K_{IC}-WERT
7.2.2 "R-KURVE"
7.2.3 KRITISCHES COD (δ)
7.2.4 KRITISCHES J-INTEGRAL
7.2.5 KORREKTURFUNKTION
7.2.6 RISSFORTSCHRITTSGESCHWINDIGKEIT
7.3 BESTIMMUNG DER ÄQUIVALENTEN FEHLERGRÖSSE
7.4 ÜBERTRAGBARKEIT DER PROBENERGEBNISSE AUF DAS BAUTEIL

Compulsory Lecture on Fracture Mechanics in Civil Engineering
at the German 'University of the Bundeswehr', München

M·A·N
NEUE TECHNOLOGIE

Protokoll der 1. Sitzung des FKV-Diskussionskreises am 6.12.83
bei der Fa. MAN-Neue Technlogie, München

1. Anwesende Diskussionskreis-Mitglieder

Herren Prof. Ahrendts
Dr. Bansemir
Bessler
Buchs
Dr. Cuntze
Prof. Einsfeld
Dr. Geier
Prof. Giencke
Lutz
Prof. Moser
Prof. Puck
Dr. Rother
Dr. D. Schütz
Dr. Schulte
Dr. Stellbrink
Dr. Würtinger

Die Anwesenden danken Herrn Krawinkel für die Einladung und das Nikolausgeschenk des VDI.

2. Kurzvorträge

Die Vorträge wurden bis auf den Beitrag Lutz/Moser "Sicherheitskonzept" gehalten. Der aus Zeitgründen entfallende Beitrag liegt als Anlage dem Protokoll bei.

3. Vorstellungen zum Thema Diskussionskreis

Die Nützlichkeit eines derartigen Diskussionspodiums wurde allgemein betont.

Als zeitlichen Abstand zwischen Zusammenkünften könnte ein Jahr vorgesehen werden.

Foreword

The scientific work is also widely *AI*-based,
but here with the meaning
***based on* hopefully some *A*stonishing *I*deas.**
Generative Deep Learning was always necessary.

Findings of the author during his long-lasting Private Research Activities

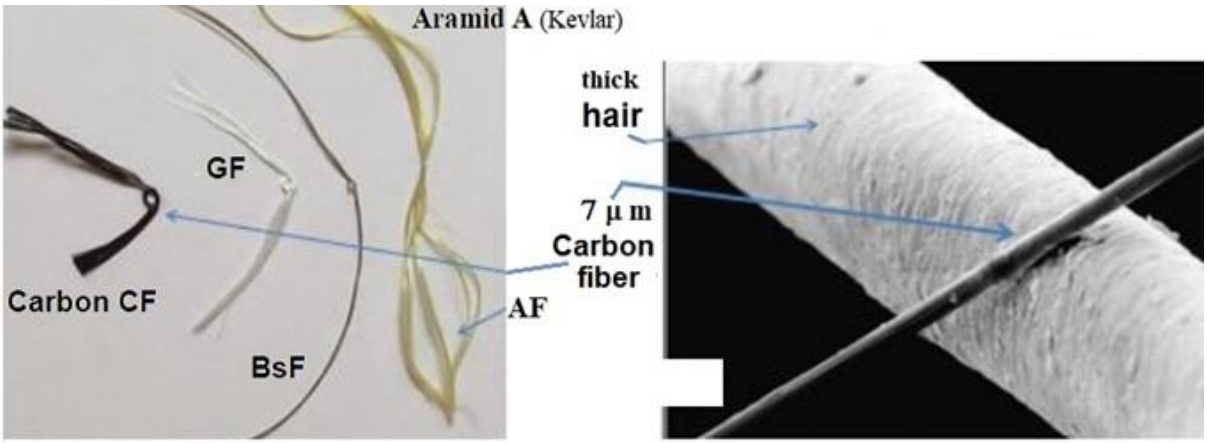
Novel simulation-driven product development shifts the role of physical testing to virtual testing, to simulation, respectively. This requires High Fidelity and therefore the use of reliable material models. *Simulation means: Imitation of the operation of a real-world process and model adaption due to test information by performing many analyses.*

Basic desire of the macro-scopically working structural engineer is a material model linked to an ideally homogeneous material which might be isotropic or anisotropic. Connecting desire is: Be provided with a clear Strength Mechanics Building in order to get a cost-saving basis due to only analyze and test what is really physically necessary.

For the 3D-Demonstration of Strength are required - *nowadays practically a must regarding the usual 3D FEA stress output* – validated 3D Strength Failure Criteria (SFC) rendered by 3D failure bodies to firstly perform Design Dimensioning and to finally achieve Design Verification. All this is targeted in the following elaboration.

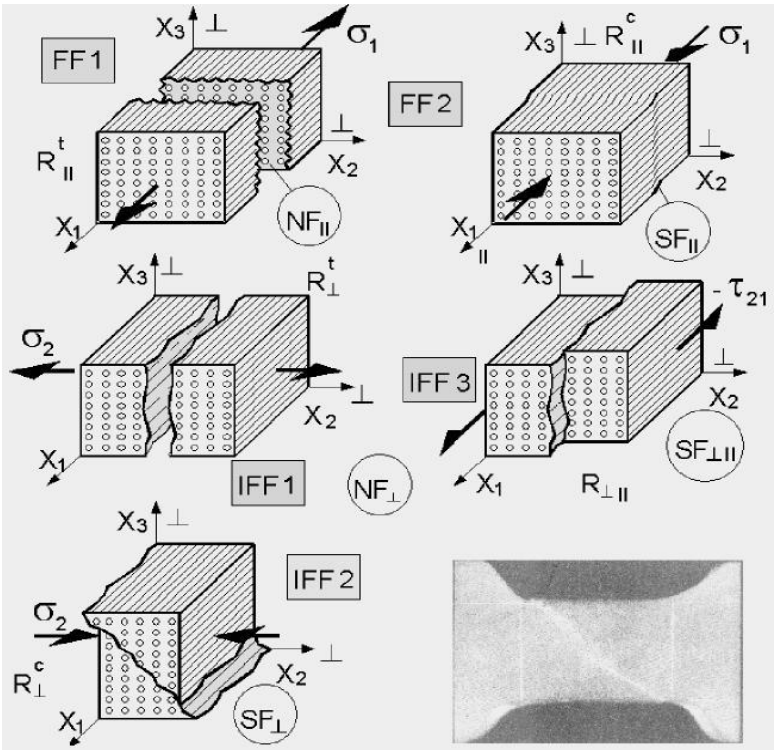
Pre-information on the basic focus here, UD material:

* The following figure displays some of the different strengthening fibers applied in construction, and a comparison of a standard Carbon Fiber with a human hair. Manufacturing Informative 'Knot test'.



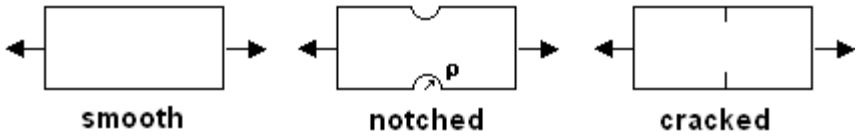
Glass GF (AR glass= alcali-resistant in concrete) **Basalt BsF** (alcali-resistant in concrete by ZrO_2)

* And the next figure shall provide for the applied stringent failure mode thinking the observed 5 failure modes faced with uni-directional fiber-reinforced materials.

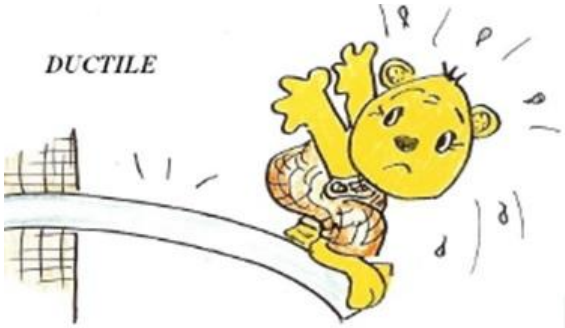


In the above context:

Two basic features are faced by the structure-designing engineers, three types of surfaces



and the behavior of the material, whether it is brittle (about $R^c > \approx 3 \cdot R^t$) or ductile.



Ductile Fracture = type of failure in a material or a structure generally preceded by a large amount of plastic deformation

One feels good until sudden fracture occurs

[Courtesy: Prof. C. Mattheck]



► Basic focus here: ***Smooth type structural parts***.

1 Creation of the 'Failure Mode Concept' (FMC, 1995)

***Aim**: Creation of a Static & Cyclic Strength Mechanics Building as basis for all material and of practical, physically-based SFCs.*

Being since 1970 in the industrial composite business the author tried to firstly sort out in regular discussions with Alfred Puck applicable SFCs for UD materials. Puck developed in 1990 his Hashin-based Action-plane Inter-Failure-Failure SFC which was included in 2006 into the VDI 2014 guideline, sheet 3 (editor *R. Cuntze*).

Working with practically all material types the author was encouraged to find a Concept for all the material families isotropic, UD and further orthotropic ones including dense with porous materials.

The finally developed so-called Failure-Mode-Concept (FMC) incorporates a rigorous thinking in failure modes and can be briefly described by the FMC features, derived about 1995, which were the basis for the development of Cuntze's macro-mechanical SFCs:

- Each failure mode represents 1 independent failure mechanism and thereby represents 1 piece of the complete failure surface.
- A failure mechanism at the lower micro-scopic mode level shall be considered in the applied desired macro-scopic SFC
- Each failure mechanism or mode is governed by 1 basic strength *R*, only (witnessed!)
- Each failure mode can be represented by 1 SFC

Of further interest is:

* Failure mode-wise mapping and Stress invariant's-based formulation,

* Equivalent stress generation,

* Each neat failure mode is governed by just one strength R^{mode}, witnessed for ductile and brittle materials, and

* All SFC model parameters are measurable entities! Each SFC represents a failure surface, therefore for the originator the FMC will be the foundation upon which he physically based SFCs generated.

* If the mode driving stress becomes zero then also the criterion must become zero, which is obvious for a friction-linked criterion.

As long as the damage mechanism remains unchanged, the corresponding failure condition can always be use. This applies to failure limits, specified as a strain or a deformation in the case of ductile behaviour (→ yield criterion), and to fracture failure in the case of brittle behaviour (→ fracture criteria).

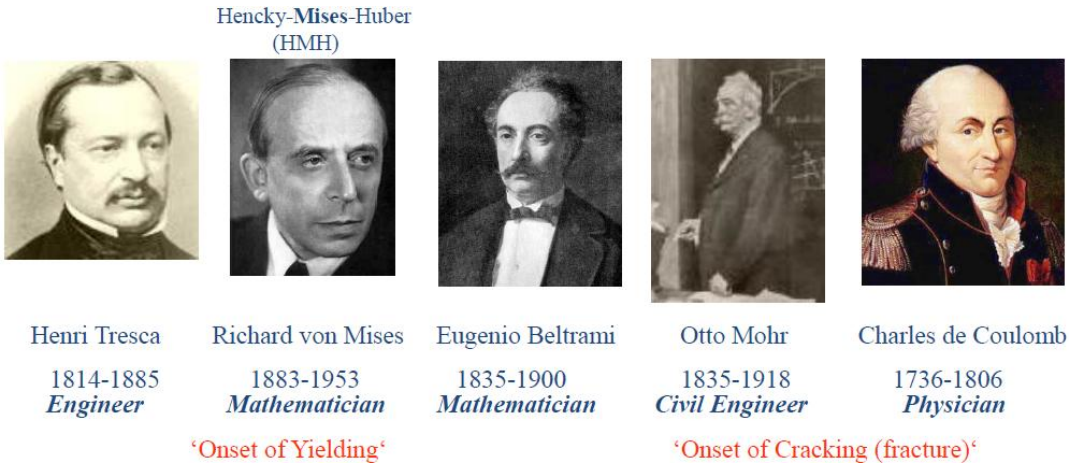


Fig.1-1: Some pioneers which set up strength failure hypotheses (ductile, brittle)

In the case of brittle materials the failure surface is the surface of a fracture failure body. Such a surface is determined by the peaks or ends of all failure stress vectors. The surface is mathematically defined by a Failure function *F,* which becomes 1 at 'Onset-of-Failure'. *F* = 1 is the formulation of the SFC (*mathematically, we write a condition*). <u>*Fig.1-1*</u> above presents the pioneers in the isotropic SFC field.

The author's idea was to create physically-based SFCs and to note his Lessons Learned *LL* during the elaboration. The FMC was originally derived for UD materials because there was the big demand at that time. The employed stress invariants shall be presented via isotropic knowledge:

Beltrami, Schleicher et al. assumed at initiation of yield that the strain energy (denoted by *W*) in a solid cubic element of a material will consist of two portions:

$$W = \int\{\sigma\}\{\varepsilon\}\,d\{\varepsilon\} = W_{Vol} + W_{shape} \quad \text{with} \quad \{\sigma\}=(\sigma_1,\sigma_2,\sigma_3,\tau_{23},\tau_{13},\tau_{12})^T .$$

Including Hooke's law in the case of a ***transversely-isotropic*** (UD solid) the expression will take the form, using s_{ik} := compliance coefficients, E:=elasticity modulus, ν:=Poisson's ratio,

$$W = [s_{11}\cdot\sigma_1^2 + s_{22}\cdot\sigma_2^2 + s_{33}\cdot\sigma_3^2 + s_{44}\cdot\tau_{23}^2 + s_{55}\cdot(\tau_{12}^2 + \tau_{13}^2)] / 2 + s_{12}\cdot(\sigma_1\sigma_2 + \sigma_1\sigma_3) + s_{23}\cdot\sigma_2$$

$$\sigma_3 = \underbrace{\frac{I_1^2}{2\cdot E_\parallel}}_{\text{volume}} + \underbrace{\frac{I_2^2\cdot(1-\nu_{\perp\perp})}{4\cdot E_\perp}}_{\text{volume}} - \underbrace{\frac{\nu_{\perp\parallel}\cdot I_1\cdot I_2}{E_\parallel}}_{\text{volume}} + \underbrace{\frac{I_3}{2\cdot G_{\parallel\perp}}}_{\text{shape}} + \underbrace{\frac{I_4\cdot(1+\nu_{\perp\perp})}{4\cdot E_\perp}}_{\text{shape}} .$$

with the invariants $I_1 = \sigma_1$, $I_2 = \sigma_2 + \sigma_3$; $I_3 = \tau_{31}^2 + \tau_{21}^2$; $I_4 = (\sigma_2-\sigma_3)^2 + 4\tau_{23}^2$;

$I_5 = (\sigma_2 - \sigma_3)(\tau_{31}^2 - \tau_{21}^2) - 4\tau_{23}\tau_{31}\tau_{21}$.

In the ***isotropic*** case analogously follows, however simpler,

$$W = \underbrace{\left[\frac{1-2\nu}{3} I_1^{iso\,2}\right]}_{\text{volume}} + \underbrace{\frac{2+2\nu}{3} 3J_2^{iso}}_{\text{shape}} \Big] / 2E$$

with $I_1^{iso} = \underline{f(\sigma)} = \sigma_I + \sigma_{II} + \sigma_{III}$, $6\cdot J_2^{iso} = \underline{f(\tau)} = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2$,

It is known, both portions in the bracket above are used to formulate a failure function

$$F = \underbrace{c_1\cdot\frac{(1-2\nu)\cdot I_1^{iso\,2}}{3\bar{R}^2}}_{\text{volume}} + \underbrace{c_2\cdot\frac{(2+2\nu)\cdot 3J_2^{iso}}{3\bar{R}^2}}_{\text{shape}} .$$

Cited, for us, for me especially :

"All things are difficult before they are *(becoming)* ***easy".*** *Tomas Fuller (1608-1661)*

<u>*Fig. 1-2*</u> below displays for the 2 material families a physically-based choice of invariants:

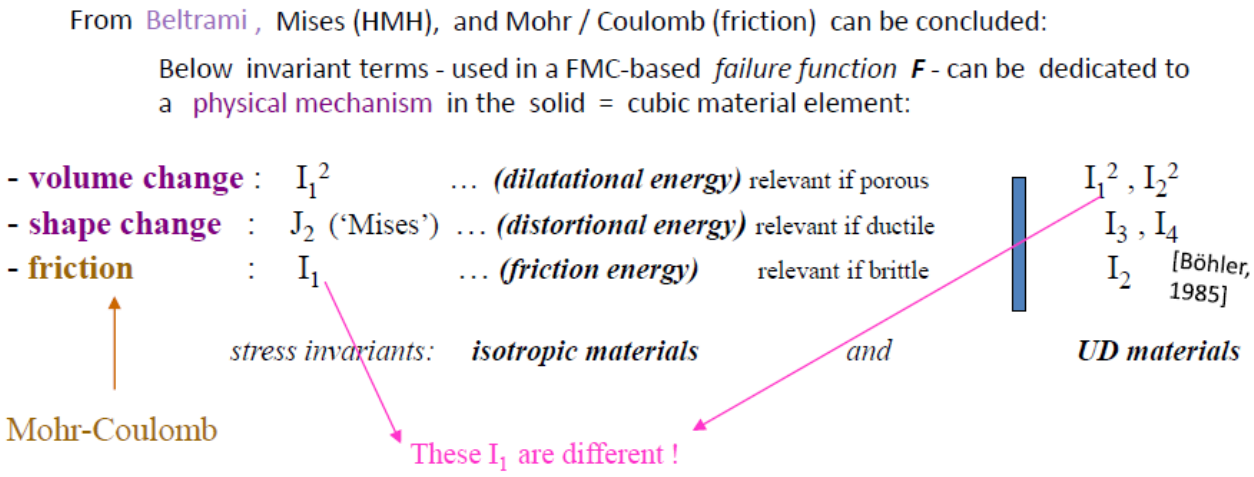


Fig.1-2: Reasons for choosing invariants when creating FMC-based SFCs

Exemplarily, the isotropic SFC model, spanning up the fracture body in the compression domain, shall be used for demonstration. The complete SFC reads:

$$\text{Shear Fracture SF, } I_1 < 0: \quad F^{SF} = F^{\tau} = c_1 \cdot \frac{6 \cdot J_2}{2 \cdot \bar{R}^{c2}} \cdot \Theta^{\tau} + c_2 \cdot \frac{I_1}{\bar{R}^{c}} + c_3 \cdot \left(\frac{I_1}{\bar{R}^{c}} \right)^2 .$$

Herein, the first part of the SFC represents the shape change, the second the friction effect, the third the volume change and the non-circularity parameter Θ^{τ} describing the inherent, nevertheless often not known 120°-symmetry of the failure bodies of isotropic brittle and ductile material, too (see a later chapter).

Above invariants can be formulated in 3D structural component stresses, in principal stresses and in Mohr stresses, which will become essential when deriving a stress state-caused fracture angle and the so-called cohesive strength.

Note, please: Strength notations

R means strength (resistance) in general and further Strength Design Allowable used for Design Verification.
$\bar{R}$ means average strength used for modelling, mapping of the course of test data.

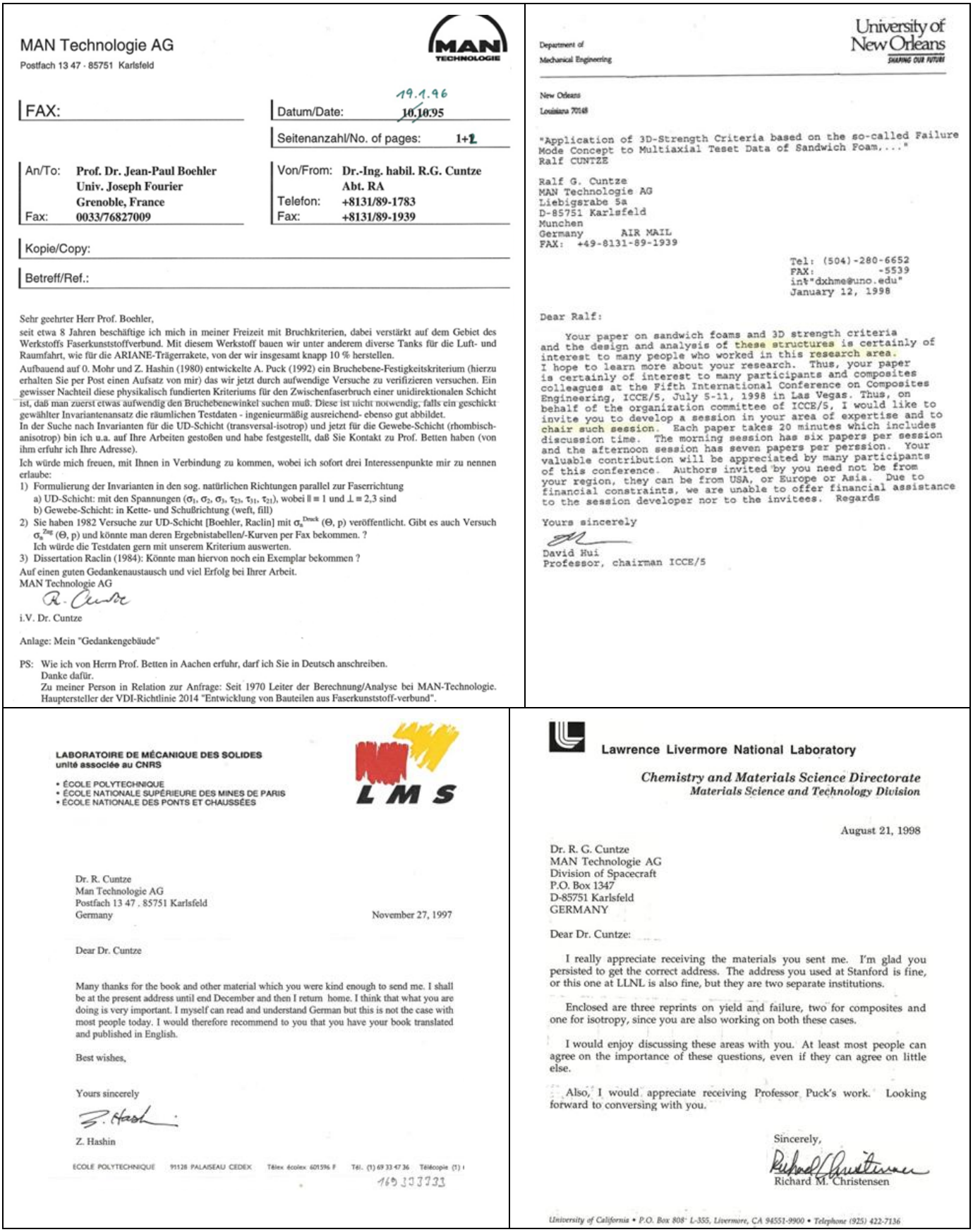
***LL**: Similarly behaving materials possess the same shape of a fracture body, when using the same SFC!*

Dr. Reinhart (Uni BW): zur FMC.-Idee am 16.8.1995:

„Besser als andere Kriterien, man muss den Invariantenweg nur richtig gehen".
"Better than other criteria, you just have to follow the invariant path correctly."

Someone said:

"Research = Transformation of Money to Knowledge and
Innovation =Transformation of Knowledge to Money".
This should be hopefully valid for non-founded research, too!



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MAN TECHNOLOGIE

FAX:

Datum/Date: ~~10.10.95~~ 19.1.96

Seitenanzahl/No. of pages: 1+1

An/To: **Prof. Dr. Jean-Paul Boehler**
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Grenoble, France
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Von/From: **Dr.-Ing. habil. R.G. Cuntze**
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Kopie/Copy:

Betreff/Ref.:

Sehr geehrter Herr Prof. Boehler,
seit etwa 8 Jahren beschäftige ich mich in meiner Freizeit mit Bruchkriterien, dabei verstärkt auf dem Gebiet des Werkstoffs Faserkunststoffverbund. Mit diesem Werkstoff bauen wir unter anderem diverse Tanks für die Luft- und Raumfahrt, wie für die ARIANE-Trägerrakete, von der wir insgesamt knapp 10 % herstellen.
Aufbauend auf 0. Mohr und Z. Hashin (1980) entwickelte A. Puck (1992) ein Bruchebene-Festigkeitskriterium (hierzu erhalten Sie per Post einen Aufsatz von mir) das wir jetzt durch aufwendige Versuche zu verifizieren versuchen. Ein gewisser Nachteil diese physikalisch fundierten Kriteriums für den Zwischenfaserbruch einer unidirektionalen Schicht ist, daß man zuerst etwas aufwendig den Bruchebenewinkel suchen muß. Diese ist nicht notwendig, falls ein geschickt gewählter Invariantenansatz die räumlichen Testdaten - ingenieurmäßig ausreichend- ebenso gut abbildet.
In der Suche nach Invarianten für die UD-Schicht (transversal-isotrop) und jetzt für die Gewebe-Schicht (rhombisch-anisotrop) bin ich u.a. auf Ihre Arbeiten gestoßen und habe festgestellt, daß Sie Kontakt zu Prof. Betten haben (von ihm erfuhr ich Ihre Adresse).
Ich würde mich freuen, mit Ihnen in Verbindung zu kommen, wobei ich sofort drei Interessenpunkte mir zu nennen erlaube:
1) Formulierung der Invarianten in den sog. natürlichen Richtungen parallel zur Faserrichtung
   a) UD-Schicht: mit den Spannungen (σ_1, σ_2, σ_3, τ_{23}, τ_{31}, τ_{21}), wobei $\| \equiv 1$ und $\perp \equiv 2,3$ sind
   b) Gewebe-Schicht: in Kette- und Schußrichtung (weft, fill)
2) Sie haben 1982 Versuche zur UD-Schicht [Boehler, Raclin] mit σ_n^{Druck} (Θ, p) veröffentlicht. Gibt es auch Versuch σ_n^{Zug} (Θ, p) und könnte man deren Ergebnistabellen/-Kurven per Fax bekommen. ?
   Ich würde die Testdaten gern mit unserem Kriterium auswerten.
3) Dissertation Raclin (1984): Könnte man hiervon noch ein Exemplar bekommen ?

Auf einen guten Gedankenaustausch und viel Erfolg bei Ihrer Arbeit.
MAN Technologie AG
R. Cuntze
i.V. Dr. Cuntze

Anlage: Mein "Gedankengebäude"

PS: Wie ich von Herrn Prof. Betten in Aachen erfuhr, darf ich Sie in Deutsch anschreiben.
Danke dafür.
Zu meiner Person in Relation zur Anfrage: Seit 1970 Leiter der Berechnung/Analyse bei MAN-Technologie. Hauptersteller der VDI-Richtlinie 2014 "Entwicklung von Bauteilen aus Faserkunststoff-verbund".

Department of
Mechanical Engineering

University of New Orleans
SHAPING OUR FUTURE

New Orleans
Louisiana 70148

"Application of 3D-Strength Criteria based on the so-called Failure Mode Concept to Multiaxial Teset Data of Sandwich Foam,..."
Ralf CUNTZE

Ralf G. Cuntze
MAN Technologie AG
Liebigsrabe 5a
D-85751 Karlsfeld
Munchen
Germany AIR MAIL
FAX: +49-8131-89-1939

Tel: (504)-280-6652
FAX: -5539
int"dxhme@uno.edu"
January 12, 1998

Dear Ralf:

Your paper on sandwich foams and 3D strength criteria and the design and analysis of these structures is certainly of interest to many people who worked in this research area. I hope to learn more about your research. Thus, your paper is certainly of interest to many participants and composites colleagues at the Fifth International Conference on Composites Engineering, ICCE/5, July 5-11, 1998 in Las Vegas. Thus, on behalf of the organization committee of ICCE/5, I would like to invite you to develop a session in your area of expertise and to chair such session. Each paper takes 20 minutes which includes discussion time. The morning session has six papers per session and the afternoon session has seven papers per perssion. Your valuable contribution will be appreciated by many participants of this conference. Authors invited by you need not be from your region, they can be from USA, or Europe or Asia. Due to financial constraints, we are unable to offer financial assistance to the session developer nor to the invitees. Regards

Yours sincerely
David Hui
Professor, chairman ICCE/5

LABORATOIRE DE MÉCANIQUE DES SOLIDES
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- ÉCOLE POLYTECHNIQUE
- ÉCOLE NATIONALE SUPÉRIEURE DES MINES DE PARIS
- ÉCOLE NATIONALE DES PONTS ET CHAUSSÉES

LMS

Dr. R. Cuntze
Man Technologie AG
Postfach 13 47 . 85751 Karlsfeld
Germany

November 27, 1997

Dear Dr. Cuntze

Many thanks for the book and other material which you were kind enough to send me. I shall be at the present address until end December and then I return home. I think that what you are doing is very important. I myself can read and understand German but this is not the case with most people today. I would therefore recommend to you that you have your book translated and published in English.

Best wishes,

Yours sincerely
Z. Hashin

ECOLE POLYTECHNIQUE 91128 PALAISEAU CEDEX Télex école 601596 F Tél. (1) 69 33 47 36 Télécopie (1)
169 333733

Lawrence Livermore National Laboratory

Chemistry and Materials Science Directorate
Materials Science and Technology Division

August 21, 1998

Dr. R. G. Cuntze
MAN Technologie AG
Division of Spacecraft
P.O. Box 1347
D-85751 Karlsfeld
GERMANY

Dear Dr. Cuntze:

I really appreciate receiving the materials you sent me. I'm glad you persisted to get the correct address. The address you used at Stanford is fine, or this one at LLNL is also fine, but they are two separate institutions.

Enclosed are three reprints on yield and failure, two for composites and one for isotropy, since you are also working on both these cases.

I would enjoy discussing these areas with you. At least most people can agree on the importance of these questions, even if they can agree on little else.

Also, I would appreciate receiving Professor Puck's work. Looking forward to conversing with you.

Sincerely,
Richard M. Christensen

University of California • P.O. Box 808 • L-355, Livermore, CA 94551-9900 • Telephone (925) 422-7136

Some valuable personal connections

2 *Interaction of Stresses* by the application of Strength Failure Criteria (SFC)

***Aim**: Provision of a failure mode-based stress-interaction ('Modal') and not a mathematical global one.*

The derivation of the FMC-based SFCs builds up on the hypotheses of Beltrami, Hencky-Mises-Huber (HMH) and Mohr-Coulomb. Therefore the depicted SFC approaches consider, that the solid material element may experience, generated from different energy portions, a shape change (HMH), a volume change and friction. FMC-based SFCs will be given for a large variety of isotropic brittle structural materials such as porous Concrete Stone, Normal Concrete, UHPC sandstone, monolithic ceramics and for the transversely-isotropic fiber-reinforced polymers Lamina (ply, lamella) and finally orthotropic fabrics inclusively fabric ceramics, see [*CUN22, Cun23a,24b*].

Since two decades the author believes in a macroscopically-phenomenological 'complete classification' system, where all strength failure types are included, see the figure below. In his assumed system several relationships may be recognized: (1) Shear stress yielding (SY), followed by Shear fracture (SF) considering 'dense' materials. For porous materials under compression, the SF for dense materials is replaced by Crushing Fracture (CrF). (2) In order to complete a mechanical system beside SY also NY should exist. This could be demonstrated by PMMA (plexiglass) with its chain-based texture showing NY due to crazing failure under tension and SY in the compression domain, [see *subsection 9.1 or CUN22,§4.1*]. The right side of the scheme outlines that a full similarity of the 'simpler' isotropic materials with the transversely-isotropic UD materials exists.

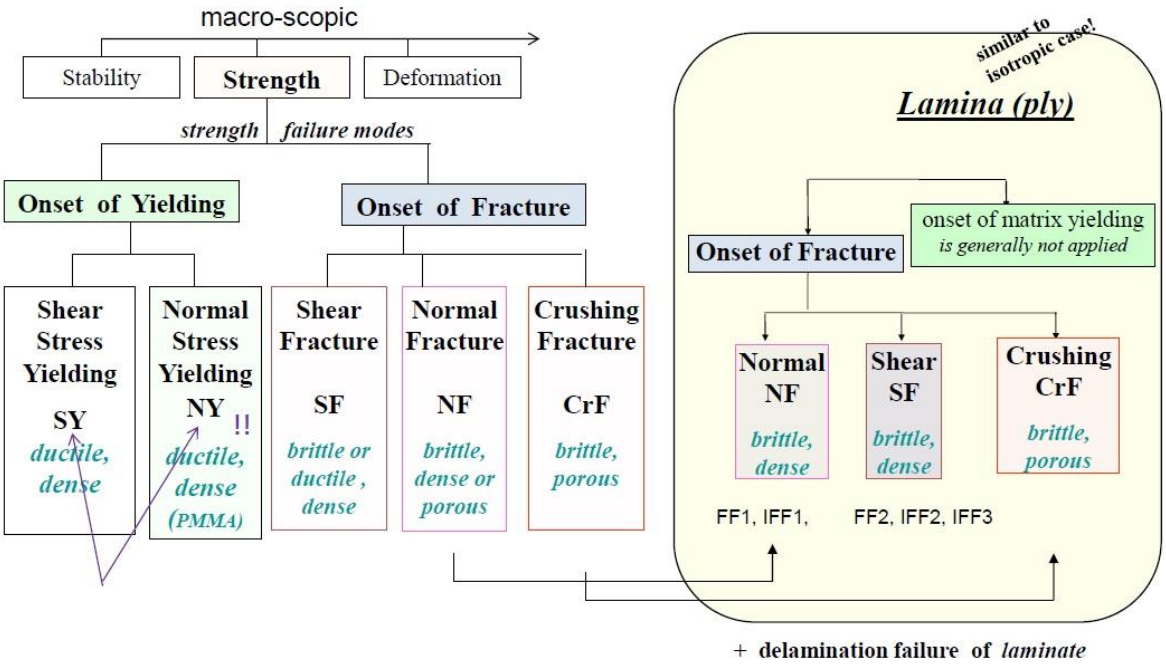

Fig.2-1.: Scheme of macro-scopic strength failure types and modes of isotropic materials and transversely-isotropic UD-materials (Cuntze1998)

LL:

** Failure behavior of Fiber-Reinforced materials is similar to isotropic ones*

** Principally, instead of stress-based SFC, strain-based SFC might be applied if the full stress-strain history is accurately considered. However, just limit strain conditions are used in pre-dimensioning (§22), because the certification process is stress-based.*

"The strain is not a quantity describing the material behavior". Prof. Gottstein, RWTH-Aachen.

In application to the interaction equation *"The whole is more than the sum of its single parts". Aristoteles*

3 Material Symmetry and 'Generic' Number *(material inherent?)*

***Aim**: Firm Consideration of the available material knowledge.with aiming at a real test amount basis.*

During the derivation of the FMC a closer look at material symmetry facts was taken whereby the question arose: "Does a material symmetry–linked Generic Number exist with a number 2 for isotropic and 5 for UD materials?

Under the design-simplifying presumption "Homogeneity is a permitted assessment for the material concerned" and regarding the respective material tensors, it follows from material symmetry that the number of strengths equals the number of elasticity properties!

Fracture morphology gives further evidence: Each strength property corresponds to a distinct strength failure mode and to a distinct strength failure type, to Normal Fracture (NF) or to Shear Fracture (SF). This seems to mean, that a characteristic number of quantities is fixed: 2 for isotropic material and 5 for the transversely-isotropic UD lamina (≡ lamellas in civil engineering). Hence, the applicability of material sym*metry involves that in general just a minimum number of properties needs to be measured* (benefits: test cost + time) which is helpful when setting up strength test programs. ⇒ Witnessed material symmetry knowledge seems to tell: "There might exist a 'generic' (*term was chosen by the author*) material inherent number for": see *Round Robin question, below.*

This looks to be proven by the investigation of Normal Yielding NY of plexiglass and (*theoretically*) by a compressive fracture toughness K_{IIcr}^{c} for a brittle material with an ideally homogeneous state at the crack tip [see *section 9 or CUN22§4*].

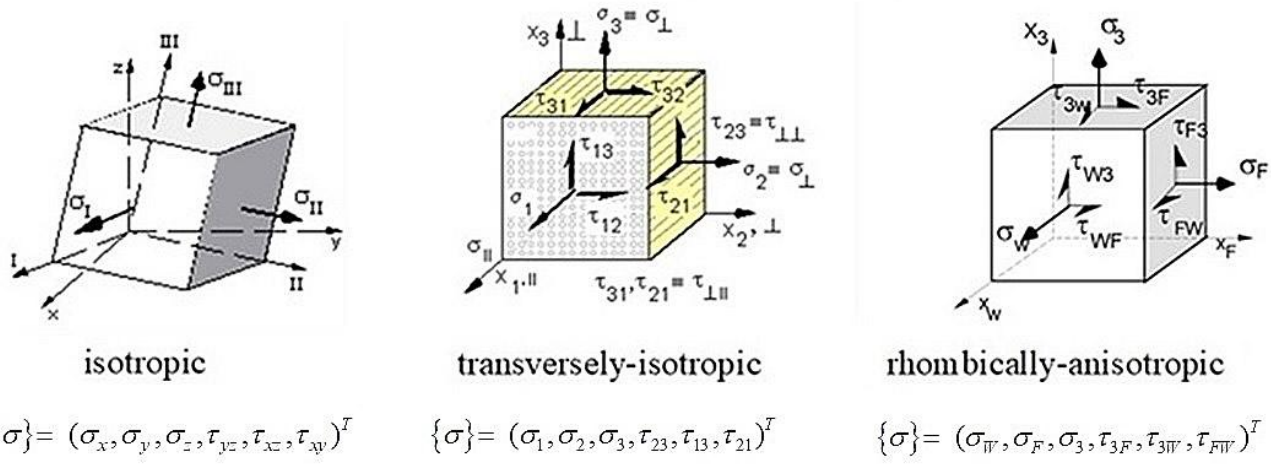

Fig.3-1: Presentation of the stresses faced with the envisaged three material families

***LL**: A 'generic' number seems to be inherent for the different material families, as the author found.*

Due to my age I see my 'Generic Number' as an item to be discussed in future.

The following *Round Robin question e-mail* for my mechanics friends

"*Is there perhaps a generic number***?"**

got not the desired response in the mechanics community. However, I'm grateful for the obtained responses.

Von: Ralf Cuntze <ralf_cuntze@t-online.de>
Gesendet: Mittwoch, 24. September 2025 19:04
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Betreff: Question for my Mechanics Friends**: Is there perhaps a 'Generic Number' in Structural Mechanics?**

Dear Steve, Eelco, Hans, Holger, Holm, Jürgen, Klemens, Lothar, Otto-Timme, Raimund, Pedro, Urs, Wilfried and Clemens.

After 3 decades of searching applicable test results I came to the conclusion that a material symmetry-based, material inherent Generic Number (*term, chosen by me*) might exist: 2 for Isotropic material, 5 for Transversely-Isotropic material and 9 (6) for Orthotropic material. (*This number is strictly linked to my Failure Mode Concept, the basis for generating my strength criteria.).* See first chapters of the Attachment, please.
'Generic Number' means that in general just a minimum number of properties needs to be measured which is helpful when setting up strength test programs, for instance. →Minimum test amount.

Under the design-simplifying presumption "Homogeneity is a permitted assessment for the material concerned" and regarding the respective material tensors, it follows from material symmetry knowledge that the number of strengths equals the number of elasticity properties!
Fracture morphology gives further evidence: Each strength property corresponds to a distinct strength failure mode and to a distinct strength failure type, to Normal Fracture (NF) or to Shear Fracture (SF).

Isotropic Material 2: detailed

- 2 elastic 'constants' E, ν *and* 2 strengths R^t (tension), R^c (compression); driving 2 strength failure modes: Normal Fracture NF with Shear Fracture SF if brittle, replaced by Crushing Fracture CrF if porous,
- 2 yield strengths $R0.2^t$, $R0.2^c$ = Rp0.2; driving 2 yield failure modes: Normal Yielding NY (*as I mapped it for the crazing plexiglass PMMA, §9. Non-convex failure body!)* with Shear Yielding SY
- 2 fracture mechanics modes (defined by me as modes, where the original crack planes do not turn in the undisturbed crack-tip ideal elastic homogeneous case) KIcr (critical, tension), $KIIcr^c$ (compression), a fracture toughness for a brittle material with an ideally homogeneous state at the crack tip. (Although not practically possible, this would theoretically be possible if the shear fracture angle 'plane' was continued under compressive stress). For me: the fracture mechanics terms KIIcr and KIIIcr are necessary valuable quantities to describe the process under a general far stress state of turning a crack into the KIcr – driven direction. According to the usual disturbances at the crack tip $KIIcr^c$ has just a holistic theoretical meaning for me.
- 1 for a so-called 'physical' parameter (such as the coefficient of thermal expansion CTE, the coefficient of moisture expansion CME, and the friction value μ, etc.)

Transversely-Isotropic Material 5 for these basically brittle structural materials

- 5 elastic 'constants', 5 strengths, 5 strength failure modes fracture (NFs with SFs) , 5 fracture toughness quantities
- 2 physical parameters (CTE, CME, friction $\mu_{\perp\perp}$, $\mu_{\perp\parallel}$, etc.).

I would be delighted to hear your opinion about *'my Generic Number'*. Many thanks in advance. ***Ralf***

Response for which I am very grateful

Dear Ralf,

Fantastic discovery.

Wonder if comparable trace can be found.

You can then rewrite history.

All the best.

Steve Tsai

Dear Ralf, that looks sensible.

Lieber Ralf, das sieht sinnvoll aus.

Viele Grüße, ich hoffe es geht Dir gut.

Wir hatten gerade unser Kolloquium 20 Jahre ISD.

Liebe Grüße sendet

Raimund Rolfes

Dear Ralf, thank you for your email.

Yes, I've agreed with you about the "generic number" for some time now and even incorporated it into my former lecture, "Structural Integrity and Fracture Mechanics."

I consider you a special contribution to the discovery of scientific truth. However, it obviously takes a lot of patience and time for something like this to become "common knowledge." But truths typically prevail at some point. Perhaps one day we'll be able to enjoy this from cloud 71.

Best regards, Wilfried

Lieber Ralf, vielen Dank für Deine Email. Ja, ich stimme Dir hinsichtlich der "Generic Number" schon seit längerer Zeit zu und habe dies auch in meiner ehemaligen Vorlesung "Strukturintegrität und Bruchmechanik" so eingebaut. Für mich hast Du da ein besonderes Verdienst auf dem Weg der wissenschaftlichen Wahrheitsfindung. Bis so etwas "Allgemeingut" wird, braucht es aber offensichtlich viel Geduld und Zeit. Typischerweise setzen sich aber Wahrheiten doch irgendwann einmal durch. Vielleicht freuen wir uns eines Tages von Wolke 71 zuschauend darüber.

Mit herzlichen Grüßen, Wilfried

4 Direct use of a Friction Value μ in the SFCs of Isotropic and UD materials

***Aim**: Novel, direct use of the measurable μ instead of applying a μ-hiding friction model parameter.*

Mohr-Coulomb acts. Therefore, in the case of compressed brittle materials the effect of friction is to capture, which usually is performed by 'fictitious' friction-linked model parameters. Such a model parameter for friction, here the *a* or the *b* in the SFC, can be replaced by the measured μ.
In order to achieve this, the very challenging task to transform an SFC in structural stresses into a SFC in Mohr stresses had to be successfully to be performed [*§23* here, *Cun23c, Annex2*]. Ultimately, an engineer prefers the application of a measurable and physically understandable value μ, especially, because it does not scatter that much which is essential in design.
For isotropic materials this direct use is depicted in *Table 4-1*.

Table 4-1, Isotropic materials: Simple 2D formulation

Assumption: Fracture failure body is rotationally symmetric like Mises yield failure body.

$$I_1 = (\sigma_I + \sigma_{II} + 0) \;=\; f(\sigma)\;, \quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - 0)^2 + (0 - \sigma_I)^2 \;=\; f(\tau)$$

* Normal Fracture NF, $I_1 > 0$ $\quad\leftrightarrow\quad$ * Shear Fracture SF, $I_1 < 0$

The Strength Failure Criteria (SFC), mode interaction exponent $m = 2.7$, $\mu = 0.2$, read:

$$Eff^{NF} = \frac{\sqrt{4J_2 - I_1^2/3} + I_1}{2 \cdot R^t} = \frac{\sigma_{eq}^{NF}}{\bar{R}^t} \leftrightarrow Eff^{SF} = \frac{c_2^{SF} \cdot I_1 + \sqrt{(c_2^{SF} \cdot I_1)^2 + 12 \cdot c_1^{SF} \cdot 3J_2}}{2 \cdot R^c} = \frac{\sigma_{eq}^{SF}}{\bar{R}^c}.$$

$$c_1^{SF} = 1 + c_2^{SF},\; c_2^{SF} = (1 + 3 \cdot \mu)/(1 - 3 \cdot \mu) \;\text{ from }\; \mu \;=\; cos\;(2 \cdot \theta_{fp}^c\,° \cdot \pi / 180\;).$$

Mode interaction equation and the always required Reserve Factor *RF* are determined from:

$$Eff \;= [(Eff^{NF})^m + (Eff^{SF})^m]^{m^{-1}} \;\rightarrow f_{RF} = 1/Eff\,.$$

For UD material, the process is executed within the full SFC set in the *Table 4-2*:

Table 4-2, UD materials: 3D SFC formulations for FF1, FF2, and for IFF1, IFF2, IFF3

FF1: $Eff^{\|\sigma} = \sigma_1^{\square} / \bar{R}_{\|}^t = \sigma_{eq}^{\|\sigma} / \bar{R}_{\|}^t$ with $\sigma_1^{\square} \cong \varepsilon_1^t \cdot E_{\|}$ (matrix neglected)

FF2: $Eff^{\|\tau} = -\sigma_1^{\square} / \bar{R}_{\|}^c = +\sigma_{eq}^{\|\tau} / \bar{R}_{\|}^c$ with $\sigma_1^{\square} \cong \varepsilon_1^c \cdot E_{\|}$

IFF1: $Eff^{\perp\sigma} = [(\sigma_2 + \sigma_3) + \sqrt{\sigma_2^2 - 2\sigma_2 \cdot \sigma_3 + \sigma_3^2 + 4\tau_{23}^2}\,]/2\bar{R}_{\perp}^t = \sigma_{eq}^{\perp\sigma} / \bar{R}_{\perp}^t$

IFF2: $Eff^{\perp\tau} = [a_{\perp\perp} \cdot (\sigma_2 + \sigma_3) + b_{\perp\perp}\sqrt{\sigma_2^2 - 2\sigma_2\sigma_3 + \sigma_3^2 + 4\tau_{23}^2}\,] / \bar{R}_{\perp}^c = \sigma_{eq}^{\perp\tau} / \bar{R}_{\perp}^c$

IFF3: $Eff^{\perp\|} = \{[b_{\perp\|} \cdot I_{23\text{–}5} + (\sqrt{b_{\perp\|}^2 \cdot I_{23\text{–}5}^2 + 4 \cdot \bar{R}_{\perp\|}^2 \cdot (\tau_{31}^2 + \tau_{21}^2)^2}\,]/(2 \cdot \bar{R}_{\perp\|}^3)\}^{0.5} = \sigma_{eq}^{\perp\square} / \bar{R}_{\perp\square}$

$$\left\{\sigma_{eq}^{mode}\right\} = \left(\sigma_{eq}^{\|\sigma},\; \sigma_{eq}^{\|\tau},\; \sigma_{eq}^{\perp\sigma},\; \sigma_{eq}^{\perp\tau},\; \sigma_{eq}^{\|\perp}\right)^T, \quad I_{23\text{–}5} = 2\sigma_2 \cdot \tau_{21}^2 + 2\sigma_3 \cdot \tau_{31}^2 + 4\tau_{23}\tau_{31}\tau_{21}$$

Inserting the compressive strength point $(0,\; -\bar{R}_{\perp}^c) \rightarrow a_{\perp\perp} \cong \mu_{\perp\perp} / (1 - \mu_{\perp\perp})$, $b_{\perp\perp} = a_{\perp\perp} + 1$

from a measured fracture angle $\rightarrow$ $\mu_{\perp\perp} = \cos\,(2 \cdot \theta_{fp}^c\,° \cdot \pi / 180\;)$, for $50° \rightarrow \mu = 0.174$.

$b_{\perp\|} = 2 \cdot \mu_{\perp\|}$. Typical friction value ranges: $0 < \mu_{\perp\|} < 0.25$, $0 < \mu_{\perp\perp} < 0.2$.

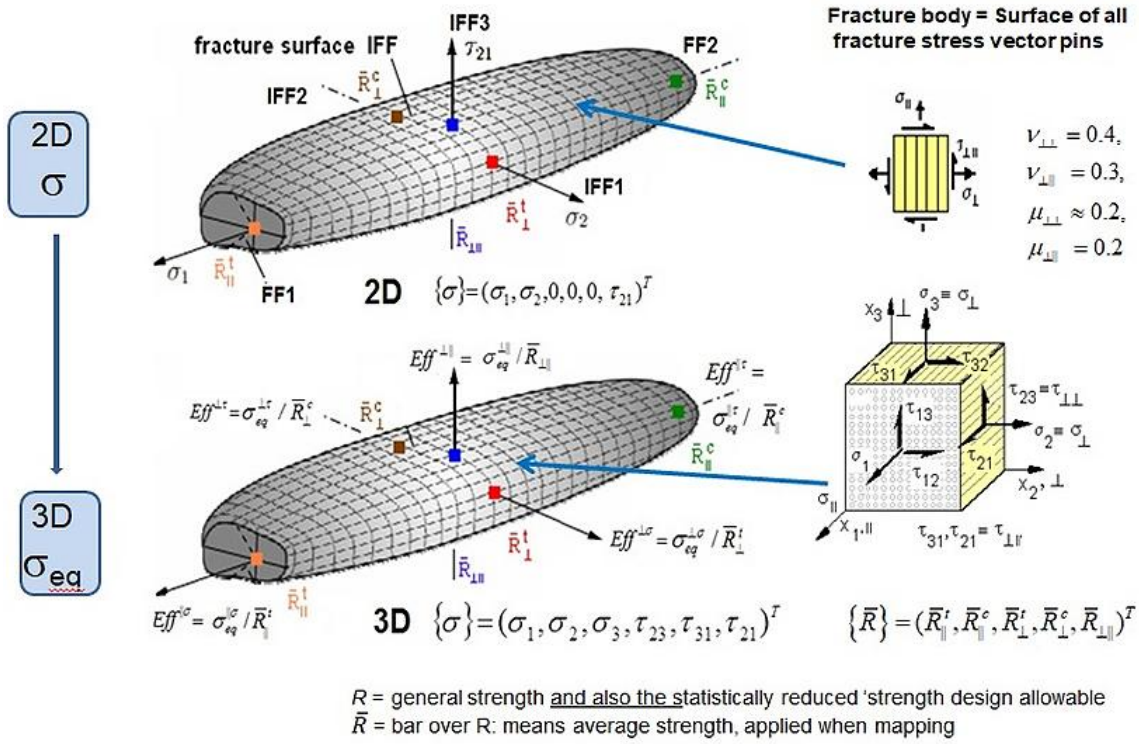


Fig.4-2: From a 2D failure body to a 3D failure body by replacing stresses by equivalent stresses

The upper figure displays the UD failure body as the visualization of the associated SFC set. The lower figure documents that if moving from the ply *stresses* to the mode-linked *equivalent ply stresses* one keeps the same UD failure body, usable now as 3D failure body!

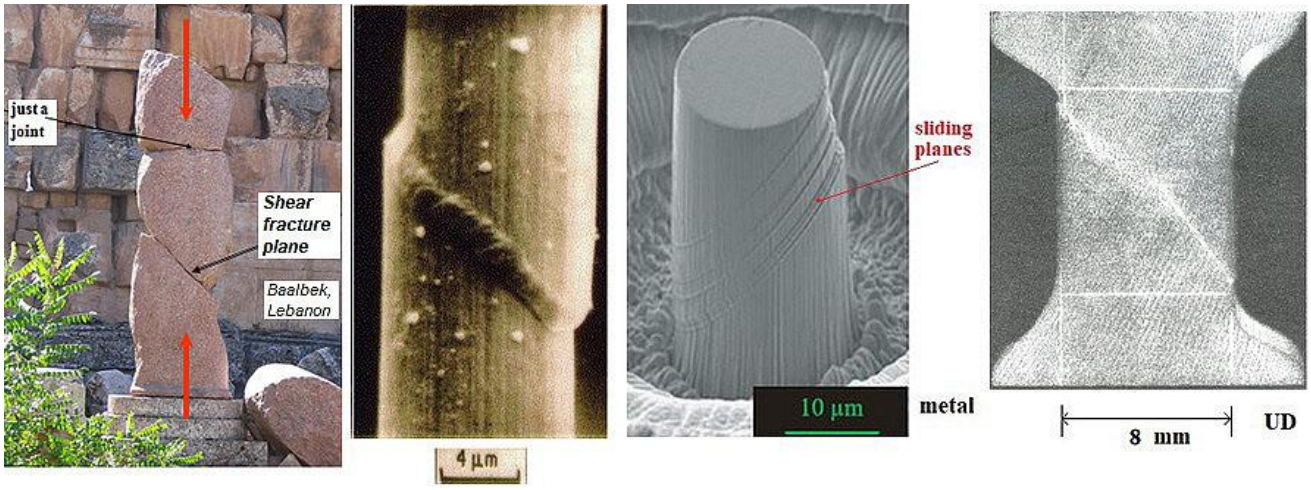


Fig.4-3,Friction driven shear fracture planes at extreme length scales.anes : Facture angles of the brittle materials Rock material, Carbon fiber [K. Schulte, TU Hamburg-Harburg], Ductile metal compression cut from a single crystal (deformed pillar after compression testing. Monnet, G. & Pouchon, M. A. (2013), Determination of the so-called critical resolved shear stress and the friction stress in austenitic stainless steels by compression of pillars extracted from single grains', Mater. Letters 98, 128-130) and laterally compressed UD-CFRP

LL:

- *Often SFCs employ just strengths and no friction value. This is physically not accurate and the undesired consequence in Design Verification is: The Reserve Factor may be not on the safe side..*
- *In contrast to the 'doing': Friction must and can now be directly considered by the measured µ*
- *Friction occurs similarly over the scales.*
- *With composites: friction is basically generated by micro-crack closure and opening, With ductile behaving materials by shear straining.*

5 Material stressing effort *Eff (Werkstoff-Anstrengung)*

***Aim**: Generation of a physical basis for the interaction of failure modes and for an excellent understanding of a failure body with multi-axial strength (capacity) values. (Eff = 100% describes the failure surface).*

If several failure modes are activated by the stress state then the application of the so-called *material stressing effort Eff* is very helpful (*in German termed Werkstoffanstrengung). The artificial name had to be created in the World Wide Failure Exercise (WWFE) on UD-SFCs, together with its UK-organizers, because an equivalent term to the excellent German term is not known in English*.

The full *Eff* consists of all mode portions Eff^{mode}. It works analogous to 'Mises'

$$Eff^{\text{yield mode}} = \sigma_{eq}^{\text{Mises}} / R_{0.2} \rightarrow Eff^{\text{fracture mode}} = \sigma_{eq}^{\text{fracture mode}} / R \ .$$

The contribution of each single Eff^{mode} informs the designing engineer about the importance of the single portions in the SFC and thereby about the critical failure driving mode and thereby outlining the design-driving mode.
Whereas the structural engineer is more familiar with the equivalent stress the material engineer prefers above 'material stressing effort' *Eff*. The terms are linked by $\sigma_{\text{eq}}^{\text{mode}} = Eff^{\text{mode}} \cdot R^{\text{mode}}$.

The use of *Eff* supports 'Understanding the multi-axial strength capacity of materials' (s. *Fig.13-4)*: For instance, 3D-compression stress states have a higher bearing capacity, but the value of *Eff* nevertheless stays at 100%. Consequently, this has nothing to do with an increase of a (*uniaxial*) technical strength *R* which is a fixed result of a Standard!

The following fracture test result of a brittle concrete impressively shows how a slight hydrostatic pressure of 6 MPa increases the strength capacity in the longitudinal axis from 160 MPa up to 230 MPa - 6 MPa = 224 MPa. Thereby, the benefit of 3D-SFCs–application could be proven as the fracture stress states below depict both the Effs are 100%:

$$\sigma_{\text{fr}} = (\sigma_I\,,\ \sigma_{II}\,,\ \sigma_{III}\,)_{\text{fr}}^{\text{T}} = (-160,\ 0,\ 0)^{\text{T}}\ \text{MPa} \Leftrightarrow (-224-6,\ -6,\ -6)^{\text{T}}\ \text{MPa}\,.$$

Because both the *Eff*s are 100%, namely for $(-160,\ 0,\ 0)^T$ and for $(-224-6,\ -6,\ -6)^T$ [*Cun22, §5.5*] ! This can be transferred to the quasi-isotropic plane of the transversely-isotropic UD-materials, $\sigma_2 - \sigma_3$, see [*Cun23c*], and to the orthotropic CMC fabric, when beside shear τ_{WF} the compressive stress σ_W^c acts together with σ_F^c and both activate friction on the sides [*Cun24b*].

LL:
The physically clear-based quantity Eff gives an impressive interpretation of what 100% strength capacity in 1D- 2D- and 3D stress states physically really means.

6 So-called 'Global' SFCs and (failure mode-linked) 'Modal' SFCs, *Mode-interaction*

***Aim**: Shortly explaining the difference of 'Global' and 'Modal' SFCs.*

There are a lot of possibilities to generate SFCs. *Fig.6-1* presents a survey:

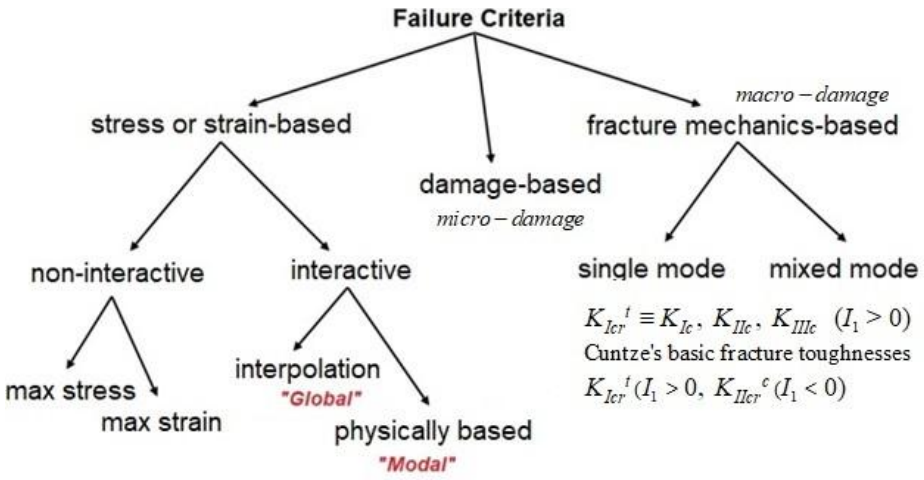


Fig.6-1: Possibilities to generate SFCs when following Klaus Rohwer [Rohwer K.: *Predicting Fiber Composite Damage and Failure*. Journal of Composite Materials, published online 26 Sept. 2014 (online version of this article can be found at: http://jcm.sagepub.com/content/early/2014/09/26/0021998314553885]

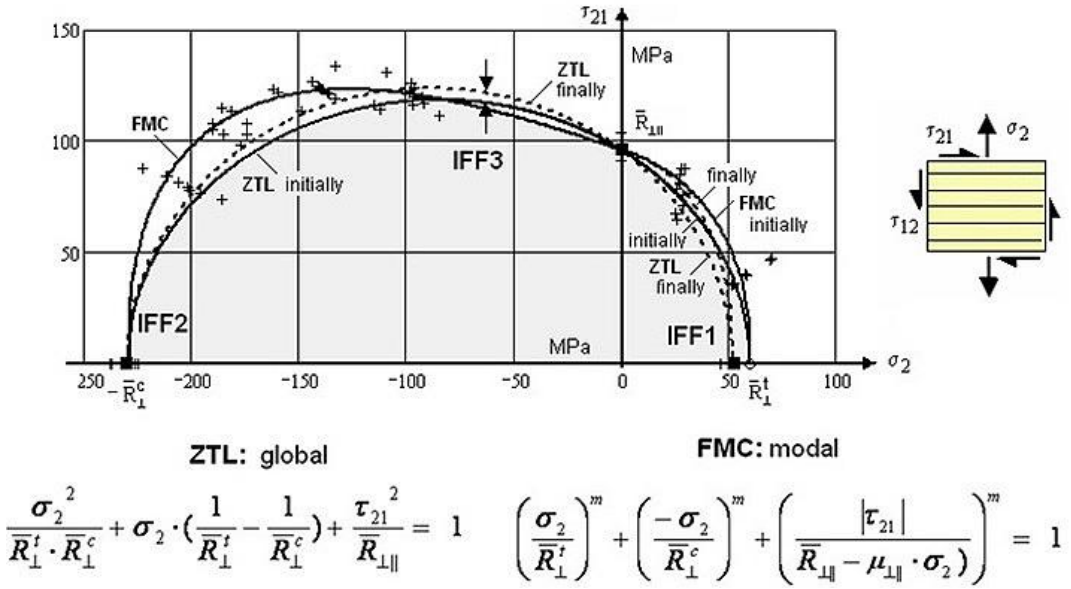
Present so-called interacting SFCs are a sub-part, which can be basically separated into two groups, 'global' and 'modal' ones. The HMH yield failure condition is a modal SFC that captures just one failure mode. The author choose the term global as "play on words" to modal and to being self-explaining. Global SFCs describe the full failure surface by one single mathematical equation. This means that for instance a change of the UD *tensile* strength $\bar{R}_{\perp}^{t}$ affects the failure curve in the *compression* domain, where no physical impact can be. Global SFCs couple physically different failure modes whereas modal SFCs describe each single failure mode and therefore will better map the course of test data and not lead to a wrong Reserve Factor in any mode domain:

1 Global SFC $F(\{\sigma\},\{R\}) = 1$ *mathematically 'married' modes*

Set of Modal SFCs $F(\{\sigma\},\{R^{\text{mode}}\}) = 1$ *single mode formulations.*

In the case of modal SFCs (*such as the FMC-based ones*) also equivalent stresses can be computed, like 'isotropic Mises', $\left\{\sigma_{\text{eq}}^{\text{mode}}\right\} = \left(\sigma_{eq}^{\|\sigma},\ \sigma_{eq}^{\|\tau},\ \sigma_{eq}^{\perp\sigma},\ \sigma_{eq}^{\perp\tau},\ \sigma_{eq}^{\|\perp}\right)^{T}$,

and this is advantageous for design decisions. Within a 'global' SFC formulation all modes are mathematically married. This has a very bad impact: Each change, coming from a new test information for any pure mode, has an effect on all other independent failure modes and might include some redesign, see the full change of the ZTL-curve in *Fig.6-2*. Such a bad impact is never faced using a 'modal' formulation, like the FMC one.



$$\frac{\sigma_2^{\,2}}{\overline{R}_{\perp}^{t}\cdot\overline{R}_{\perp}^{c}}+\sigma_2\cdot\left(\frac{1}{\overline{R}_{\perp}^{t}}-\frac{1}{\overline{R}_{\perp}^{c}}\right)+\frac{\tau_{21}^{\,2}}{\overline{R}_{\perp\parallel}}=1 \qquad \left(\frac{\sigma_2}{\overline{R}_{\perp}^{t}}\right)^{m}+\left(\frac{-\sigma_2}{\overline{R}_{\perp}^{c}}\right)^{m}+\left(\frac{|\tau_{21}|}{\overline{R}_{\perp\parallel}-\mu_{\perp\parallel}\cdot\sigma_2)}\right)^{m}=1$$

Fig.6-2: Modelling example, impact of a novel test information in the mode IFF1 considering a global (ZTL-SFC, still used in the HSB) and a modal SFC,

Considering the shortcomings of 'global' UD SFCs, my research friend John Hart-Smith cited two decades ago:

"It is scientifically incorrect to employ polynomial interaction failure models **(**the 'global' ones**),**
if the mechanism of failure changes"!

Of course, a modal FMC-approach requires an interaction in all the mode transition zones. This is performed by a probabilistic approach, using a 'series failure system' in the transition zone of the adjacent modes NF with SF, reading

$$Eff \;=\; \sqrt[m]{(Eff^{\,\text{mode }1})^m \;+\; (Eff^{\,\text{mode }2})^m \;+\; ....} = 1 = 100\% \qquad \textit{for} \quad \text{Onset-of-Failure},$$

and applying a 'mode interaction exponent' *m,* also termed rounding-off exponent, the size of which is high in case of low scatter and vice versa. The value of *m* is obtained by curve fitting of test data in the transition zone of the interacting modes. Experience delivered that *2.5 < m < 2.9.*

With the FMC-based SFCs for the three 'material families' available multi-axial fracture test data were mapped by the author to validate the SFCs being the mathematical descriptions of the envisaged fracture failure models. For a large variety of materials the associated fracture bodies were displayed in later chapters with distinct cross–sections of them, for instance for the isotropic applications: Principal stress plane, octahedral stress plane and tensile and meridian planes. Various links or interrelationships between the materials could be outlined.

LL:

* *So-called 'Global' SFCs couple physically different failure modes whereas the Modal SFCs describe each single failure mode and therefore will better map the course of test data and not lead to a wrong Reserve Factor*
* *Here, global and modal have a similar level of abstraction, as in the case of stability the terms 'global' and 'local' have*
* *Similarities between the materials could be found*
* *The surface of the failure body reads: F = 1 for a 'global' SFC-formulation and Eff = 1 = 100% for a 'modal' formulation.*

7 Collection of FMC-based SFCs, Interaction of Failure Modes and Multi-fold Modes

7.1 Presentation of the derived Failure Mode Concept-based Strength Failure Criteria

Aim: *Provision of SFCs which were derived on the same concept basis.*

For the mentioned three material families the associate SFCs are tabled on the following pages:

I a : ***3D-isotropic SFCs of dense Isotropic Materials*** *for* ***NF*** *and* ***SF****, 120°-rotational symmetry*

2 modes → 2 SFCs, which is in line with the 'generic' number according to the FMC.

Normal Fracture NF for $I_1 > 0$ ↔ Shear Fracture SF for $I_1 < 0$

$$F_\sigma^t = F^{NF} = c^{NF} \cdot \Theta^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = 1 \quad \leftrightarrow \quad F_\tau^c = F^{SF} = c_{1\Theta}^{SF} \cdot \frac{6J_2 \cdot \Theta^{SF}}{2\bar{R}^{c2}} + c_{2\Theta}^{SF} \cdot \frac{I_1}{\bar{R}^c} = 1$$

$$Eff^{NF} = c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = \frac{\sigma_{eq}^{NF}}{\bar{R}^t} \leftrightarrow Eff^{SF} = \frac{c_{2\Theta}^{SF} \cdot I_1 + \sqrt{(c_{2\Theta}^{SF} \cdot I_1)^2 + c_{1\Theta}^{SF} \cdot 12J_2 \cdot \Theta^{SF}}}{2 \cdot \bar{R}^c} = \frac{\sigma_{eq}^{SF}}{\bar{R}^c}.$$

If a failure body is rotationally symmetric, then $\Theta = 1$ like for the neutral or shear meridian.

A two-fold acting mode makes the rotationally symmetric fracture body 120°-symmetric and is modelled by $\Theta(J_3)$ using the invariant J_3 and Θ as non-circularity function with d as non-circularity parameter

$$\Theta^{NF} = \sqrt[3]{1 + d^{NF} \cdot \sin(3\vartheta)} = \sqrt[3]{1 + d^{NF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}, \Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$$

Lode angle ϑ, here set as $\sin(3 \cdot \vartheta)$ with 'neutral' shear meridian angle set $\vartheta = 0°$;

Tensile Meridian angle 30° $\rightarrow \Theta^{NF} = \sqrt[3]{1 + d^{SF} \cdot (+1)}$; Compr. Merid. angle -30° $\rightarrow \Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot (-1)}$.

Equation of the fracture failure body: $Eff = [(Eff^{NF})^m + (Eff^{SF})^m]^{m^{-1}} = 1 = 100\%$ total effort

$$Eff = \sqrt[m]{\left(c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t}\right)^m + \left(\frac{c_{2\Theta}^{SF} \cdot I_1 + \sqrt{(c_{2\Theta}^{SF} \cdot I_1)^2 + c_{1\Theta}^{SF} \cdot 12J_2 \cdot \Theta^{SF}}}{2 \cdot \bar{R}^c}\right)^m} = 1.$$

Curve parameter relationships obtained by inserting the compressive strength point (0, $-\bar{R}^c$, 0):

* Rotationally symmetric: $c_1^{SF} = 1 + c_2^{SF}$, $d^{SF} = 0$, friction parameters are equal $c_2^{SF} \equiv c_{2\Theta}^{SF}$

$c_2^{SF} = c_{2\Theta}^{SF} \approx (1 + 3 \cdot \mu)/(1 - 3 \cdot \mu)$ from $\mu = \cos(2 \cdot \theta_{fp}^c° \cdot \pi / 180)$ and for 50° → $\mu = 0.174$.

* 120°-rotationally symmetric: $c_{1\Theta}^{SF} = 1 + c_2^{SF} \cdot \sqrt[3]{1 + d^{SF} \cdot (-1)}$ with

c^{NF}, Θ^{NF} from the two points $(\bar{R}^t, 0, 0)$ and $(\bar{R}^{tt}, \bar{R}^{tt}, 0)$ or by a minimum error fit, if data,

c^{SF}, Θ^{SF} from the two points $(-\bar{R}^c, 0, 0)$ and $(-\bar{R}^{cc}, -\bar{R}^{cc}, 0)$ or by minimum error fit .

A paraboloid serves as closing cap $\frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{cap} \cdot \left(\frac{\sqrt{2J_2 \cdot \Theta^{NF}}}{\bar{R}^t}\right)^2 + \frac{\max I_1}{\sqrt{3} \cdot \bar{R}^t}$.

$$I_1 = (\sigma_I + \sigma_{II} + \sigma_{III}) = f(\sigma), \quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = f(\tau)$$

$$27J_3 = (2\sigma_I - \sigma_{II} - \sigma_{III}) \cdot (2\sigma_{II} - \sigma_I - \sigma_{III}) \cdot (2\sigma_{III} - \sigma_I - \sigma_{II}).$$

I b : *3D-isotropic SFCs of dense Isotropic Materials* for *NF* and *CrF*, 120°-rotational symmetry

Table I b collects all information necessary to design dimension a porous isotropic material like a foam or a concrete stone. These materials experience *120°-rotational symmetry*.

'Porous' isotropic material: SFC formulations for NF and CrF, 120°-rotational symmetry

Normal Fracture NF for $I_1 > 0$ $\leftrightarrow$ Crushing Fracture CrF for $I_1 < 0$

$$F^{NF} = c^{NF} \cdot \Theta^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = 1 \leftrightarrow F^{CrF} = c^{CrF} \cdot \Theta^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c} 1$$

$$Eff^{NF} = c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = \frac{\sigma_{eq}^{NF}}{\bar{R}^t} \leftrightarrow Eff^{CrF} = c^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c} = \frac{\sigma_{eq}^{CrF}}{\bar{R}^c}.$$

If a failure body is rotationally symmetric, then $\Theta = 1$ like for the neutral or shear meridian, respectively .

A 2-fold acting mode makes the rotationally symmetric fracture body 120°-symmetric and is modelled by using the invariant J_3 and Θ as non-circularity function with d as non-circularity parameter

$$\Theta^{NF} = \sqrt[3]{1 + d^{NF} \cdot \sin(3\vartheta)} = \sqrt[3]{1 + d^{NF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}} \quad \leftrightarrow \quad \Theta^{CrF} = \sqrt[3]{1 + d^{CrF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$$

Lode angle ϑ , here set as $\sin(3 \cdot \vartheta)$ with 'neutral' (shear meridian) angle $\vartheta = 0°$ ($\rightarrow \Theta = 1$) ;

tensile meridian angle 30° $\rightarrow \Theta^{NF} = \sqrt[3]{1 + d^{NF} \cdot (+1)}$; compr. mer. angle -30° $\rightarrow \Theta^{CrF} = \sqrt[3]{1 + d^{CrF} \cdot (-1)}$.

Mode interaction $\rightarrow$ Equation of the fracture body: $Eff = [(Eff^{NF})^m + (Eff^{SF})^m]^{m^{-1}} = 1 = 100\%$

$$Eff = \sqrt[m]{\left(c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t}\right)^m + \left(c^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c}\right)^m} = 1.$$

Curve parameter relationships obtained by inserting the compressive strength point (0, $-\bar{R}^c$, 0):

* Rotationally symmetric $\Theta = 1$: $d^{SF} = 0$, $c_{1\Theta}^{SF} = 1 + c_2^{SF}$

* 120°-rotat. symmetric $\Theta \neq 1$: $c_{1\Theta}^{SF} = 1 + c_2^{SF} \cdot \sqrt[3]{1 + d^{SF} \cdot (-1)}$, with

  c^{NF} , Θ^{NF} from the two points $(\bar{R}^t, 0, 0)$ and $(\bar{R}^{tt}, \bar{R}^{tt}, 0)$ or by minimum error fit, if data available,

  c^{CrF} , Θ^{CrF} from the two points $(-\bar{R}^c, 0, 0)$ and $(-\bar{R}^{cc}, -\bar{R}^{cc}, 0)$ or by minimum error fit.

The failure surface is closed at both the ends: A paraboloid serves as closing cap and bottom

$$\frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{cap} \cdot \left(\frac{\sqrt{2J_2 \cdot \Theta^{NF}}}{\bar{R}^t}\right)^2 + \frac{\max I_1}{\sqrt{3} \cdot \bar{R}^t} \quad , \quad \frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{bot} \cdot \left(\frac{\sqrt{2J_2 \cdot \Theta^{CrF}}}{\bar{R}^t}\right)^2 + \frac{\min I_1}{\sqrt{3} \cdot \bar{R}^t}$$

Slope parameters s are determined connecting the respective hydrostatic strength point with the associated point on the tensile and compressive meridian, $\max I_1$ must be assessed whereas $\min I_1$ can be measured. $\bar{R}^t$ is normalization strength.

II a : ***3D-SFCs of (quasi-)Brittle Dense UD Materials***

5 modes → 5 SFCs, which is in line with the 'generic' number according to the FMC. IFF1 generates a straight line in the stress plane!

FF1: $Eff^{\|\sigma} = \sigma_1^{\sqcup} / \bar{R}_{\|}^{t} = \sigma_{eq}^{\|\sigma} / \bar{R}_{\|}^{t}$ with $\sigma_1^{\sqcup} \cong \varepsilon_1^{t} \cdot E_{\|}$ (matrix neglected)

FF2: $Eff^{\|\tau} = -\sigma_1^{\square} / \bar{R}_{\|}^{c} = +\sigma_{eq}^{\|\tau} / \bar{R}_{\|}^{c}$ with $\sigma_1^{\square} \cong \varepsilon_1^{c} \cdot E_{\|}$

IFF1: $Eff^{\perp\sigma} = [(\sigma_2 + \sigma_3) + \sqrt{\sigma_2^{\,2} - 2\sigma_2 \cdot \sigma_3 + \sigma_3^{\,2} + 4\tau_{23}^{\,2}}] / 2\bar{R}_{\perp}^{t} = \sigma_{eq}^{\perp\sigma} / \bar{R}_{\perp}^{t}$

IFF2: $Eff^{\perp\tau} = [a_{\perp\perp} \cdot (\sigma_2 + \sigma_3) + b_{\perp\perp}\sqrt{\sigma_2^{\,2} - 2\sigma_2\sigma_3 + \sigma_3^{\,2} + 4\tau_{23}^{\,2}}] / \bar{R}_{\perp}^{c} = \sigma_{eq}^{\perp\tau} / \bar{R}_{\perp}^{c}$

IFF3: $Eff^{\perp\|} = \{[b_{\perp\|} \cdot I_{23-5} + (\sqrt{b_{\perp\|}^{\,2} \cdot I_{23-5}^{\,2} + 4 \cdot \bar{R}_{\perp\|}^{\,2} \cdot (\tau_{31}^2 + \tau_{21}^2)^2}] / (2 \cdot \bar{R}_{\perp\|}^{\,3})\}^{0.5} = \sigma_{eq}^{\perp\|} / \bar{R}_{\perp\|}$

$$\left\{\sigma_{eq}^{\text{mode}}\right\} = \left(\sigma_{eq}^{\|\sigma},\ \sigma_{eq}^{\|\tau},\ \sigma_{eq}^{\perp\sigma},\ \sigma_{eq}^{\perp\tau},\ \sigma_{eq}^{\|\perp}\right)^T, \quad I_{23-5} = 2\sigma_2 \cdot \tau_{21}^2 + 2\sigma_3 \cdot \tau_{31}^2 + 4\tau_{23}\tau_{31}\tau_{21}$$

Inserting the compressive strength point $(0,\ -\bar{R}_{\perp}^{c}) \rightarrow a_{\perp\perp} \cong \mu_{\perp\perp} / (1 - \mu_{\perp\perp})$, $b_{\perp\perp} = a_{\perp\perp} + 1$

from a measured fracture angle → $\mu_{\perp\perp} = \cos\ (2 \cdot \theta_{fp}^{c}\,° \cdot \pi / 180\ )$, for $50° \rightarrow \mu = 0.174$.

$b_{\perp\|} \cong 2 \cdot \mu_{\perp\|}$. Typical friction value ranges: $0 < \mu_{\perp\|} < 0.25$, $0 < \mu_{\perp\perp} < 0.2$.

Interaction Equation:

$$Eff^{m} = [(\sigma_{eq}^{\|\sigma} / \bar{R}_{\|}^{t})^m + (\sigma_{eq}^{\|\tau} / \bar{R}_{\|}^{c})^m + (\sigma_{eq}^{\perp\sigma} / \bar{R}_{\perp}^{t})^m + (\sigma_{eq}^{\perp\tau} / \bar{R}_{\perp}^{c})^m + (\sigma_{eq}^{\perp\|} / \bar{R}_{\perp\|})^m]$$

or $Eff = \sqrt[m]{(Eff^{\text{mode 1}})^m + (Eff^{\text{mode 2}})^m + \ldots} = 1 = 100\%$ *for* Onset-of-Failure .

As abbreviation, $I_2 \cdot I_3 - I_5 = I_{23-5}$ is used. In the equations above, $\bar{R}$ denotes an average = typical strength value that should be used for the stress-strain curves in stress and deformation analysis. In the design verification the statistically reduced strength values are applied. The superscripts ^{t}, ^{c} stand for tensile, compressive. The superscripts $^{\sigma}$ and $^{\tau}$ mark the type of fracture failure whether it is caused by a tensile stress (Normal Fracture, NF, 'cleavage') or a shear stress (Shear Fracture, SF), e.g. due to a compressive normal stress $\sigma_{\|}^{c}$ or a transverse normal stress $\sigma_{\perp}^{c}$.

Failure activated in two directions is considered by adding a multi-fold failure term, proposed in [*Awa78*] for isotropic materials. It can be applied to brittle UD material in the transversal (quasi-isotropic) plane as well.

For the 2D-case, a simplified friction modelling (IFF3) is possible:

$$Eff^{m} = [(Eff^{\|\sigma})^m + (Eff^{\|\tau})^m + (Eff^{\perp\sigma})^m + (Eff^{\perp\tau})^m + (Eff^{\perp\|})^m]$$

with the mode portions inserted, 2D,

$$Eff = [(\frac{(\sigma_1 + |\sigma_1|)}{2 \cdot \bar{R}_{\|}^{t}})^m + (\frac{(-\sigma_1 + |\sigma_1|)}{2 \cdot \bar{R}_{\|}^{c}})^m + (\frac{\sigma_2 + |\sigma_2|}{2 \cdot \bar{R}_{\perp}^{t}})^m + (\frac{-\sigma_2 + |\sigma_2|}{2 \cdot \bar{R}_{\perp}^{c}})^m + (\frac{|\tau_{21}|}{\bar{R}_{\perp\|} + 0.5 \cdot \mu_{\perp\|} \cdot (-\sigma_2 + |\sigma_2|)})^m]^{1/m}.$$

II b*: 3D-SFCs of (quasi-)Brittle Porous UD Materials*

This practically meets just IFF2. The table below shows the difference.

* IFF2 Failure Function for the dense UD material (for comparison)

$$F^{SF} = [a_{\perp\perp} \cdot I_2 + b_{\perp\perp} \cdot \sqrt{I_4}] \; / \bar{R}_{\perp}^{c} = 1 \quad \text{with} \quad a_{\perp\perp} = b_{\perp\perp} - 1 \quad \text{after inserting} \quad \bar{R}_{\perp}^{c}$$

$$= [a_{\perp\perp} \cdot (\sigma_2 + \sigma_3) + b_{\perp\perp} \cdot \sqrt{(\sigma_2 - \sigma_3)^2 + 4\tau_{23}^{\,2}}] \; / \bar{R}_{\perp}^{c} = 1$$

$$= [a_{\perp\perp} \cdot (\sigma_2^{\,pr} + \sigma_3^{\,pr}) + b_{\perp\perp} \cdot \sqrt{(\sigma_2^{\,pr} - \sigma_3^{\,pr})^2 + 0^2}] \; / \bar{R}_{\perp}^{c} = 1 \leftarrow \text{2 structural stresses}$$

* IFF2 Failure Function for the porous UD material (index por, *author's simple approach*)

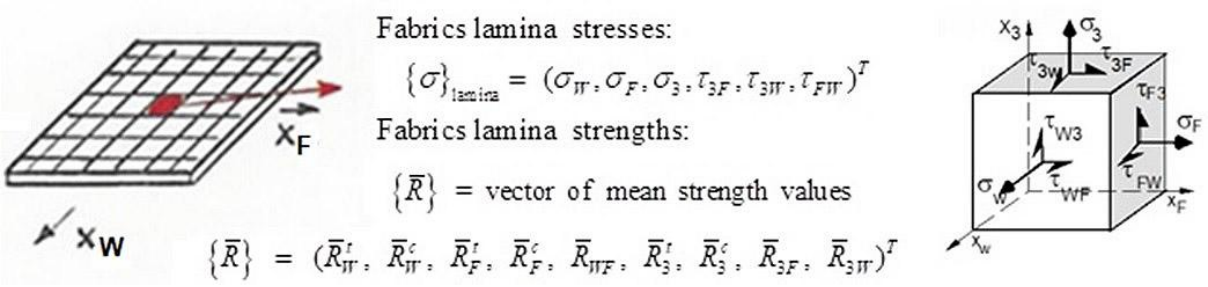
$$F_{porosity}^{SF} = \sqrt{a_{\perp\perp por}^{\;2} \cdot I_2^{\,2} + b_{\perp\perp por}^{\;2} \cdot I_4} - a_{\perp\perp por} \cdot I_2 \;] \; / 2\bar{R}_{\perp}^{c} = 1 \,.$$

The two curve parameters are determined - as before performed - from insertion of the compressive strength point and from the bi-axial fracture stress point.

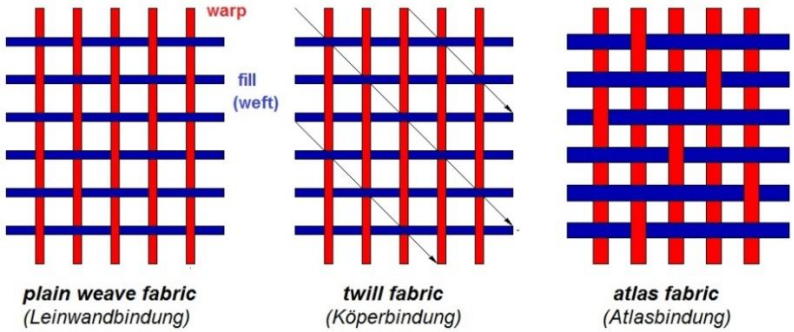
Mind: In contrast to an isotropic dense material the fracture body of a compressed dense UD-material has a closed bottom fracture surface, because the filaments may break under the tensile stress caused by biaxial compression due to the Poisson effect, when $\varepsilon^{t}_{axial} = \varepsilon_{\parallel}^{fr}$.

III*: 3D-SFCs of the Orthotropic Fabrics,* (see [*Cun*24*b*])

9 modes → 9 SFCs. This is in line with Cuntze's 'generic' number 9 according to the FMC.
In this context, my thanks to Roman (Prof. Dr. Keppeler, UniBW; formerly Siemens AG).



The following table includes the FMC-based SFCs for **porous orthotropic** (rhombic-anisotropic) **materials** composed for instance of 2D-woven fabrics**.** Three essential 2D-woven fabrics (Atlas or Satin) are depicted



$$Eff = \left(\frac{\sigma_W + |\sigma_W|}{2 \cdot \bar{R}_W^t}\right)^m + \left(-\frac{\sigma_W + |\sigma_W|}{2 \cdot \bar{R}_W^c}\right)^m + \left(\frac{\sigma_F + |\sigma_F|}{2 \cdot \bar{R}_F^t}\right)^m + \left(\frac{-\sigma_F + |\sigma_F|}{2 \cdot \bar{R}_F^c}\right)^m + \left(\frac{|\tau_{WF}|}{\bar{R}_{WF} - \mu_{WF} \cdot (\sigma_W + \sigma_F)}\right)^m$$

$$+ \left(\frac{\sigma_3 + |\sigma_3|}{2 \cdot \bar{R}_3^t}\right)^m + \left(\frac{-\sigma_3 + |\sigma_3|}{2 \cdot \bar{R}_3^c}\right)^m + \left(\frac{|\tau_{3W}|}{\bar{R}_{3W} - \mu_{3W}\sigma_3^c}\right)^m + \left(\frac{|\tau_{3F}|}{\bar{R}_{3F} - \mu_{3F}\sigma_3^c}\right)^m = 1 = 100\% .$$

For a cross-ply fabric with Warp = Fill $\rightarrow$ $\bar{R}_W^t = \bar{R}_F^t$, $\bar{R}_W^c = \bar{R}_F^c$, the inter-laminar *Eff*s, suffix $_3$, vanish and just the in-plane (intra-laminar) *Eff*s remain.

The range of parameters is for the interaction-exponent $2.5 < m < 2.9$, and since the strong porosity-dependency is very different $\rightarrow$ recommendation: $\mu_{WF} < 0.2$, $\mu_3 < 0.2$.

If σ_F is also active, this double mode contributes via $\left(\frac{|\tau_{WF}|}{\bar{R}_{WF} - \mu_{WF} \cdot (\sigma_W^c + \sigma_F^c)}\right)^m$.

Modelling of laminates may be lamina-based (basic layers are UD layers), sub-laminate-based (semi-finished non-crimp orthotropic fabrics) or even laminate-based. Thereby, modelling complexity grows from UD, via non-crimp fabrics (NCF) through plain weave and finally to the spatial 3D-textile materials. Model parameters are just the measurable technical strengths *R* and the friction values μ, and on top the Weibull statistics-based interaction exponent *m*. The value of μ comes from mapping the compression stress-shear stress domain and of *m* by mapping the transition zone between the modes. A good guess is $m = 2.6$ for all mode transition domains and all material families. Model parameters are just the measurable technical strengths *R* and the friction values μ, and on top the Weibull statistics-based interaction exponent *m*. The value of μ comes from mapping the compression stress-shear stress domain and of *m* by mapping the transition zone between the modes. A good guess is $m = 2.6$ for all mode transition domains and all material families.

Of course, there are Validity Limits of UD SFC Applications:

"Models cannot map all test (average) data course domains equally well, because they are basic physics-modelling models."

However, they are good enough to correctly re-design the hose blow!



Viewing the false angle:

I was sure that this hose had to be replaced!"

►One vital experience with boundary specifications, limits

The 4 m long caiman mother Maria strictly observed the Limit "**No trespassing** (No pase!)".

Maria stopped at the tape, marked with "No pase"!

Her behavior was very good for the **personal** health of my friend Eddi

(Eddi unfortunately fell down 1.5 m in front of her snout while running away).





We engineers should learn from this:

Engineers should always rationally observe the limits set by specifications etc.
*This is good for '**structural** health' or Structural Integrity, respectively.*
And: This fully meets application limits of the literature-offered SFCs.

►My present feeling considering the 3D-applications, especially of UD-materials:

(below left) Much is reached with plenty of effort!
(below right) However, much more effort is required for the 3D-Validation. Only when you get 'higher' the real '3D-peaks' do appear:

Linked to composites:
3D-applications are much more challenging, especially because data is missing.





8 Cracking at Notches using FM and Finite Fracture Mechanics (FFM)

Aim: *Giving the user some advices regarding the often used so-called 'Open Hole Panels'.*

Summary

Full Design Verification requires the verification of Strength and of Damage Tolerance in the case of potentially cracked (macro-damaged) statically-loaded structural components under sudden overloading. The Strength Analysis (SA) requires that the effective multi-axial stress state is not above the given Strength Design Allowable and the Damage Tolerance Analysis (DTA) the same for the so-called residual strength of the structural component containing a pre-crack.

Lying between Strength analysis and Fracture Mechanics (FM) analysis 'Onset-of-Cracking' (OoC) is experienced at stress concentration sites such as notches like open holes in a panel of a sufficiently brittle material. In this context, Leguillon's Hypothesis [1] says

"*A (*generating*) crack is (*becomes*) critical when and only when the released energy and the local stress reach critical values along an assumed finite crack".*

This novel hypothesis, 'Neuber-improving', shall be presented here. It captures the prediction of the instantaneous OoC. The name of the tool is Finite Fracture Mechanics (FFM), see *Fig.1*. It predicts for notched components that loading level where the Strength Failure Criterion (SFC) equals the FM criterion or it determines as a coupled (hybrid) stress-energy criterion the critical loading that causes the finite crack size Δa_c. Because FM is one part of the FFM as introduction and for better understanding at first the well-known FM analysis tool R-curve shall be presented.

smooth structure	**notched structure** "transition domain"		**cracked structure**
no steep stress decay SFC	stress concentration Neuber-method (up to now) K_t	'onset-of cracking' *assumed crack, FFM* (novel replacement)	stress intensity *real pre-cracks, FM* K_{Ic} *'no hole' and 'with hole'*

Fig. 1: Stress situations in a structural component

Fig.2 visualizes the task to be solved. For practical application the concept of a linear-elastic stress intensity factor *K* may be sufficient and is usually applied. Coordinates used are depicted.

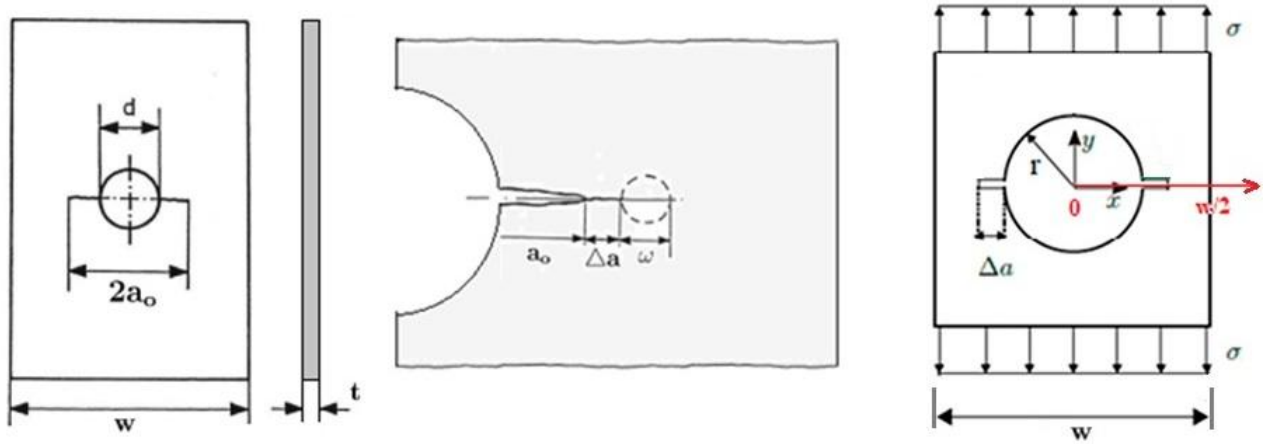


Fig.2: Plate strip with a central open hole and an existing through crack of the size $a = a_0 - r$.

(left) characterization of an open hole panel with existing crack , w= plate width, t = plate thickness, (center) crack growth details in the case of slight crack tip yielding ω of not fully brittle materials, (right) σ *= remote tensile stress, leading to cracking for* $\sigma = \sigma_{fail}$ *, Δa = assumed FFM crack , d = 2r*

Key Words: Residual strength, critical crack length, R-curve, Finite Fracture Mechanics, coupled criterion.

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(Being still a member of the IASB this document shall be structured here as a HSB design sheet.

Unfortunately, the usually test data-based Design Sheets with their advantages seem not to be enough well known in our modern numerical age)

1 General

There are three approaches available to perform Design Verification (DV) for occurring static stress situations: Strength Failure Criteria (SFC), Continuum (micro-)Damage Mechanics (CDM, *not yet DV-capable*) criteria and Fracture Mechanics (FM) criteria for cracked (macro-damaged) components. A novel approach is the hybrid tool Finite Fracture Mechanics (FFM) which captures the 'onset-of-cracking' (OoC) at stress concentration (SC) points and at higher stress singularities.

The FFM is a coupled (hybrid) criterion that fills a gap in FM by assuming an instantaneous formation of a crack of finite size [1, 2]. Intention is to initially show the classical application of FM, because FM provides one part tool of the FFM. *Fig.1* gave a survey on the situations faced.

Due to FFM, the Neuber method is now obsolete, but falls as a special case. What Neuber called "support length" is precisely the crack length supplied by the FFM, without the need for acceptance or experimental identification!

The provided analyses are restricted to the 2D-case, 3D-extension will be a future task.

A SFC is a necessary condition but might not be a sufficient condition for the prediction of 'Onset-of-cracking', seen here as onset of failure:
*This is known for the author for about 50 years from the so-called 'thin layer effect' of UD-layer-composed laminates: *Due to being strain-controlled, the material flaws in a thin lamina (*transversely-isotropic material*) cannot grow freely up to micro-crack size in the thickness direction, because the neighboring laminas act as micro-crack-stoppers*. Considering fracture mechanics, the strain energy release rate, responsible for the development of damage energy in the 90° plies - from flaws into micro-cracks and larger -, increases with increasing ply thickness. Therefore, the actual absolute thickness of a lamina in a laminate is a driving parameter for initiation or onset of micro-cracks, i.e. [*Fla82*].
*Further and generally more known in metallic applications is the case of discontinuities of the here focused isotropic materials such as notch singularities with steep stress decays: only a *toughness + characteristic length-based energy balance condition* may form a sufficient set of two fracture conditions.

When applying SFCs usually ideal solids are considered which are assumed to be free of essential micro-crack-like flaws, whereas applying Fracture Mechanics the solid is considered to contain macro-cracks, respectively.

Since about 20 years Finite Fracture Mechanics (FFM) tries to fill a gap between the continuum mechanical strength analysis and the classical FM analysis. FFM is an approach to offer a criterion to predict the crack onset in brittle isotropic and UD materials.
This is a bridge that had to be built from the strength failure to the fracture mechanics failure ground. Attempts to link SFC-described 'onset of fracture' prediction methods and FM prediction methods for structural components have been performed. Best known is the still cited Hypothesis of Leguillon, where he assumes cracks of finite length Δa. Thus using FFM one obtains one more unknown but also a further equation to solve the equation system together with the SFC.
This coupled criterion does not refer to microscopic mechanisms to predict crack-*nucleation*!

Considering FFM it is referred to the literature [1, 2, 3].

Note on short Cracks according to citations in literature:

- In polycrystalline materials if $a <$ grain diameter / 5
- Size of the cyclic plastic zone at the crack tip
- Different crack closure due to the small crack and its flanks
- Notch surface quality.

2 List of Symbols

Symbol	Unit	Description
a	mm	crack length
a_0	mm	initial crack length (open hole panel: crack a + hole radius r)
a_c	mm	*critical* crack length
a_e	mm	*effective crack length* $a_e = a_p + \omega/2$
a_p	mm	*physical crack length* $a_p = a_0 + \Delta a$
c_{ij}		abbreviating functions and abbreviations
$f(a)$		correction function of the stress intensity factor (SIF)
f_d		correction function concerning the hole diameter d
f_w		correction function concerning the specimen width w
t; w	mm	panel specimen thickness; width of panel, test specimen
Δa	mm	stable increase of a due to static loading
Δa_e	mm	effective crack elongation (R-curve abscissa) $\Delta a_e = a - a_0$
A	mm	parameter of the R-curve model, cross-section
B	-	parameter of the R-curve model
E	MPa	Young's modulus (MPa = N/mm^2)
F	N	force
$\mathcal{G}_{Ic}$	MPa · m	Cracking resistance: potential strain energy release rate at failure. Under plane strain conditions (most critical case) $\mathcal{G}_{Ic} = K_{Ic}^2 \cdot (1-\nu^2) / E$, $\sqrt{\text{m}} = 31.6 \cdot \sqrt{\text{mm}}$
$K(\sigma,a)$	MPa · $\sqrt{\text{m}}$	Cracking action: stress intensity factor, (SIF) $K = \sigma \cdot \sqrt{\pi \cdot a} \cdot f(a)$,
K_{as}	MPa · $\sqrt{\text{m}}$	parameter of the R-Curve model (asymptotic value of R-curve)
K_b	MPa · $\sqrt{\text{m}}$	parameter of the R-Curve model (value at beginning of R-curve)
K_{app}	MPa · $\sqrt{\text{m}}$	apparent fracture toughness (general) = critical SIF (not the often used K_c)
K_p	MPa · $\sqrt{\text{m}}$	physical value of the SIF K: $K_p = \sigma \cdot \sqrt{\pi \cdot a_p} \cdot \sqrt{\sec(\pi \cdot a_p / w)}$, sec =1/cos
K_e	MPa · $\sqrt{\text{m}}$	Effective SIF: $K_e = \sigma \cdot \sqrt{\pi \cdot a_e} \cdot \sqrt{\sec(\pi \cdot a_e / w)}$, often termed K_R
K_{Ic}	MPa · $\sqrt{\text{m}}$	Cracking resistance: critical SIF (fracture mechanics Mode I testing) at onset of unstable sharp crack propagation in the plane strain state = most brittle condition, otherwise called K_c; or = fracture toughness of uni-axially tensile-loaded, minimum ductile (*brittle*) material specimens = material resistance to crack propagation $K_{Ic} = \sigma \cdot \sqrt{\pi \cdot a_c} \cdot f(w,d) = \sigma_c \cdot \sqrt{\pi \cdot a} \cdot f$
K_R	MPa · $\sqrt{\text{m}}$	Cracking resistance, R-curve ordinate
R-curve	MPa · $\sqrt{\text{m}}$	material *Resistance* to fracture curve in case of slow, stable crack propagation from a sharp notch, accompanied by growth of the plastic zone at the crack-tip (*unfortunately also the letter R was taken*)
R; R_{p02}	MPa	failure stress ≡ strength (*Resistance to stress action*); tensile yield strength
W	N·mm	Energy = $\int_0^{\Delta\ell} F \cdot d(\Delta\ell) = \int_0^{\Delta\ell} \sigma \cdot A \cdot d(\varepsilon \cdot \ell) = A \cdot \ell \cdot \int_0^{e} \sigma \cdot d\varepsilon = A \cdot \ell \cdot \int_0^{\sigma} \frac{\sigma}{E} \cdot d\varepsilon = V \cdot \frac{\sigma^2}{2 \cdot E}$
ν	-	Poisson's ratio
ω	mm	full plastic zone at the crack-tip
σ	MPa	Action: remote (far field) uniform tensile stress
σ_c	MPa	critical value of σ = residual strength

(In structural mechanics x is usually the length coordinate, however in fracture mechanics the net section direction)

The following chapter represents an intended introduction for the focused Finite-Fracture-Mechanics.

3 *Analysis using the Crack Growth Resistance curve = 'R-curve'*

3.1 General on Fracture Mechanics quantities and R-curve Concept

Aim: *Chapter is helpful for better grasping the novel FFM, because FM is one part of the FFM.*

Basic assumption: Use of largest crack size that can be expected, following the 'weakest link' failure model and regarding quality assurance measurement limits.

In the Damage Tolerance procedure of cracked (macro-damaged) structural components two basic questions are posed in analysis:

1. What is the static strength if a crack is present (residual strength problem)?
2. How is the propagation behavior of the present crack (large crack growth problem)?

In order to perform this for isotropic materials some different quantities are used to predict the stress state at the crack tip caused by a far-field stress or remote stress, respectively.

*The stress intensity factor (SIF) *K*, applied to homogeneous linear elastic materials. Its measured size depends on test specimen width w, the crack size *a*, the location of the present crack and the material. It can be written as $K = \sigma \cdot \sqrt{\pi \cdot a_0} \cdot f(a/w)$, where the SIF K_I of the fracture mechanics mode I is applied here, (*Fig. 4*).

*The strain energy release rate $\mathcal{G}$, defined as the instantaneous loss of total differential potential energy dΠ per unit crack growth area (crack length Δa · plate thickness *t*) of the fresh surface S, by $\mathcal{G} = -d\Pi / dS$. In the case of brittle materials for its 'basic' Fracture Mode-I a relationship exists $\mathcal{G}_I = K_I^2$ /E' with E'= E/(1-ν^2) for plane strain.

*The J-integral *J* , characterizing the singular stress field at the crack tip in nonlinear elastic-plastic materials where the size of the plastic zone is small compared to the crack length. It is one way of determining the strain energy release rate $\mathcal{G}$. For brittle materials *J* corresponds to $\mathcal{G}$.

Macrocrack extension occurs when the stress intensity factor (SIF) *K* attains a critical value. Thereby the *Action-linked* SIF is entirely dependent on the structure geometry and loading condition, whilst the *Resistance-linked R*-curve is basically a material property dependent on temperature, environment, and loading rate as well the geometric test specimen range, etc.

Crack-growth resistance curves, the so-called *R*-Curves, are used here to predict:

- the residual strength of the structure for a given crack position and crack length,
- the critical length of an initial crack under given loadings.

These curves are conveniently plotted with crack extension Δa instead of crack size *a*, because the shape of the R-curve does not vary with the crack size.

* For very brittle materials with its flat *R*-curves, there is no stable crack extension and the initial crack size a_0 is the same as the critical crack size a_c. Then a single value of toughness characterizes the material, the cracking resistance K_{Ic}.

* For ductile materials (*such as low strength steels*) with a rising *R*-curve there is no single value of toughness that characterizes the material. Reason is that the plastic zone ω at the crack tip increases with crack growth and length, hence the energy dissipated to overcome plastic deformation will increase. In materials with a rising *R*-curve, stable crack growth occurs and the critical crack size will be larger than the initial crack size.

For 'fatiguers', mind:

*"These R-curves (italic R letter) shall not be mixed up with the '*R*-curves' in fatigue* R = minσ / maxσ".

Fracture mechanics regards small scale ductility (usually described by its diameter ω) at the crack tip and multi-axial stressing, *Fig 2*.

In the case of a mixed-mode loading and opening of a crack, the energy release rate consists of the three parts $\mathcal{G}_I$, $\mathcal{G}_{II}$, $\mathcal{G}_{III}$ that correspond to the respective three fracture modes. The fracture-effective formulation then is $\mathcal{G} = \mathcal{G}_I + \mathcal{G}_{II} + \mathcal{G}_{III}$.
Crack extension occurs when above strain energy release rate $\mathcal{G}$ attains a critical value $\mathcal{G}_c$. In the case of fracture it becomes $\mathcal{G} \geq \mathcal{G}c$. $\mathcal{G}$ is directly related to the stress intensity factor *K*. It is associated in two-dimensional fracture mechanics with the loading modes (Mode-I, Mode-II, or Mode-III) the so-called Mixed-Mode Problem, applicable to cracks under plane stress, plane strain and anti-plane shear, see *Fig.4*. For the Fracture Mode-I, the energy release rate $\mathcal{G}$ is related to the Mode-I stress SIF K_I for a linearly-elastic material.

The two questions at the beginning of this sub-chapter can be answered using the analytical methods of fracture mechanics. For practical application the concept of the linear-elastic *K* is usually applied:
"*A structural component will fail in the case of static loading if the stress intensity factor (SIF) K of a brittle material reaches its critical value at K = K_c, termed fracture toughness, which depends on the material behavior*".
The determination of the K_c -values requires in the so-called *K*-concept the fulfilment of a geometric bound in order to achieve the real minimum K_{Ic}-value by a test specimen thickness of

$$t \; > \; 2.5 \cdot (K_{Ic} \,/\, R_{p0.2})^2 \;\rightarrow\; \sigma_c = K_{Ic} \,/\, (\sqrt{\pi \cdot a_0} \cdot f(a_0)\,.$$

Instead of the "Plain Strain Fracture Toughness" K_{Ic} (which is a material property but subject to certain minimum geometric requirements), an "Apparent Fracture Toughness" is inevitably to apply, adapted to the current geometric conditions.

A plot of strain energy release rate $\mathcal{G}$ versus crack extension Δa for a particular loading situation is termed driving force curve $\mathcal{G}(\Delta a)$. The driving force for crack propagation can be quantified by above characterizing parameters K, $\mathcal{G}$, or J. A plot of *R* versus crack extension Δa is a resistance curve, as still cited termed *R*-curve $R(\Delta a)$.

3.2 Models for R-curve (resistance) and for Stress Intensity Factor (SIF)-curve

3.2.1 Resistance: *R*-curve, ordinate $K_{R\,(}$*using a test data mapping function*)

For well mapping the test data course of the *R*-curve J. Broede proposed the mapping function

$$K_e(a) = K_{as} - (K_{as} - K_b) \cdot \frac{1-B}{\exp\left(\dfrac{\Delta a_e}{A}\right) - B} \quad \text{with inverse} \quad \Delta a_e = A \cdot \ln\left(B + (1-B) \cdot \frac{K_{as} - K_b}{K_{as} - K_e}\right)$$

$$\Rightarrow \quad \text{new } a_0 = a_0 + \Delta a_e = a_0 - A \cdot \ln\left(B + (1-B) \cdot \frac{K_{as} - K_b}{K_{as} - K_e}\right)$$

in [2] including the effective quantities K_e and Δa_e. The plot $K_e(\Delta a_e)$ is termed effective *R*-curve. This mapping proposal addresses the usual structural materials which shall possess some ductility.

3.2.2 Action: *Stress Intensity Factor (SIF)-curve, K_{SIF}* (using a width correction function f_w)

With the so-called geometry correction functions *f - correcting the original infinite plate term* $\sqrt{\pi \cdot a}$ - concerning hole diameter (index d) and width (index w) of the centrally cracked panel ('plate strip') the SIF reads for the two cases:

Panel, version 'No hole' $_{nh}$ *:*

$$K_{nh} = \sigma \cdot \sqrt{\pi \cdot a} \cdot f_w(a) \quad \text{with} \quad f_w(a) = \sqrt{\sec \frac{\pi \cdot a}{w}} \quad \text{capturing the panel width}$$

$$K_{nh}(a) = \sigma \cdot \sqrt{\pi \cdot a} \cdot \sqrt{\sec \frac{\pi \cdot a}{w}} \quad , \qquad (\sec = 1/\cos).$$

Panel, version 'With hole' $_{wh}$ *:* (Tada delivered in [9] a hole considering correction function *f(a)*):

$$K = \sigma \cdot \sqrt{\pi \cdot a} \cdot f(a) \quad \text{with} \quad f(a) = f_d(a) \cdot f_w(a) \quad \text{in the case of an open hole panel}$$

$$f_d(a) = \sqrt{1 - \frac{r}{a}} \cdot \left(1 + 0.358 \cdot \frac{r}{a} + 1.425 \cdot \left(\frac{r}{a}\right)^2 - 1.578 \cdot \left(\frac{r}{a}\right)^3 + 2.156 \cdot \left(\frac{r}{a}\right)^4\right), \quad f_w(a) = \sqrt{\sec\left(\frac{\pi \cdot r}{w}\right) \cdot \sec\left(\frac{\pi \cdot a}{w}\right)}.$$

$$K_{wh}(a) = \sigma \cdot \sqrt{\pi \cdot a} \cdot \sqrt{1 - \frac{r}{a}} \cdot \left(1 + 0.358 \cdot \frac{r}{a} + 1.425 \cdot \left(\frac{r}{a}\right)^2 - 1.578 \cdot \left(\frac{r}{a}\right)^3 + 2.156 \cdot \left(\frac{r}{a}\right)^4 \cdot \sqrt{\sec \frac{\pi \cdot r}{w} \cdot \sec \frac{\pi \cdot a}{w}}.\right.$$

3.3 Conditions to Determine the Unknowns: critical quantities σ_c, a_{ce}

'*Crack growth will occur when dG/da > dR/da and G ≥ R'.*

This corresponds to '*The SIF driving force curve is tangent with the R-curve'* as depicted in *Fig.3*. It can be interpreted as the critical condition when the energy available in the component for crack growth exceeds the maximum amount that the material can dissipate.

For fully brittle materials the *R*-curve is a horizontal constant line, a tangent-condition is not of interest.

In order to solve this task the following conditions must be met:

3.3.1 $K_{SIF}(\sigma_c, a_{ce}) = K_e(a_{ce} - a_0)$ with $\Delta a_e = a - a_0$. This means, that:

firstly the coordinates of the touch point of SIF curve with R-curve are to determine.

$$K_e(a) = \sigma \cdot \sqrt{\pi \cdot a} \cdot f(a) = K_{as} - (K_{as} - K_b) \cdot \frac{1 - B}{\exp\left(\frac{\Delta a_e}{A}\right) - B} \quad \text{and}$$

3.3.2 $dK_{SIF}(\sigma_c, a_{ce})/da = dK_e(a_{ce} - a_0)/da$. This means, that:

secondly, the two slopes of both the curves must become the same at the touch point, task which requires a differentiation (*Mathcad 15 code* symbolic *application*), delivering

$$\frac{dK_e}{da} \Rightarrow \quad \sigma \cdot \frac{d}{da}\left(\sqrt{\pi \cdot a} \cdot f(a)\right) = K_{as} + \frac{(B-1)\cdot(K_b - K_{as})}{B - \exp(\frac{\Delta a_e}{A})} \quad \Leftarrow \quad \frac{dK_R}{da} \ .$$

For the SIF-curve holds for the two versions, SIF_{nh} no hole and SIF_{wh} with hole:

SIF 'no hole' : $$\frac{dK_{SIFnh}}{da} = \frac{d\left(\sigma \cdot \sqrt{\pi \cdot a} \cdot \sqrt{\cdot \sec\frac{\pi \cdot a}{w}}\right)}{da}$$

$$= \sigma \cdot \frac{\sqrt{\pi}/(2\sqrt{a}\cdot caw) + \pi^{1.5}\cdot\sqrt{a}\cdot saw/(w\cdot caw^2)}{2\cdot\sqrt{\sqrt{\pi\cdot a}/caw}}, \ saw = \sin\left(\frac{\pi\cdot a}{w}\right), caw = \cos\left(\frac{\pi\cdot a}{w}\right).$$

SIF 'with hole' : (copied, Mathcad typing)

$$\frac{dK_{SIFwh}}{da} = \frac{d\left(\sigma\cdot\sqrt{\pi\cdot a}\cdot\sqrt{1-\frac{r}{a}}\cdot\left(1+0.358\cdot\frac{r}{a}+1.425\cdot\left(\frac{r}{a}\right)^2-1.578\cdot\left(\frac{r}{a}\right)^3+2.156\cdot\left(\frac{r}{a}\right)^4\bullet\sqrt{\sec\frac{\pi\cdot r}{w}\cdot\sec\frac{\pi\cdot a}{w}}\right)\right)}{da}$$

$$= \sigma\cdot\sqrt{\pi\cdot a}\cdot\left[c3\cdot\sqrt{1-\frac{r}{a}}\cdot(c1) + \frac{c3\cdot\sqrt{1-\frac{r}{a}}\cdot(c2)}{2\cdot a} + \frac{r\cdot c3\cdot(c2)}{2\cdot a^2\cdot\sqrt{1-\frac{r}{a}}} + \frac{\sin\left(\frac{\pi\cdot a}{w}\right)\cdot\sqrt{1-\frac{r}{a}}\cdot(c2)}{\sqrt{a}\cdot 2\cdot w\cdot\cos\left(\frac{\pi\cdot a}{w}\right)^2\cdot\cos\left(\frac{\pi\cdot r}{w}\right)\cdot c3}\right]$$

and the abbreviation functions

$$c1 = \frac{4.734\cdot r^3}{a^4} - \frac{8.624\cdot r^4}{a^5} - \frac{0.358\cdot r}{a^2} - \frac{2.85\cdot r^2}{a^3}, \quad c2 = \frac{0.358\cdot r}{a} + \frac{2.156\cdot r^4}{a^4} + \frac{1.425\cdot r^2}{a^2} - \frac{1.578\cdot r^3}{a^3} + 1, \quad c3 = \sqrt{\frac{1}{\cos\left(\frac{\pi\cdot a}{w}\right)\cdot\cos\left(\frac{\pi\cdot r}{w}\right)}}$$

* In the HSB sheet 62232-3 *J. Broede* mapped the *R*-curve by an appropriate analytical model, model parameters were determined there and finally $\sigma_c = R_{res}$ was derived by iteratively increasing the crack size up to a_c. This provides the failure stress for the maximally sustainable loading of the pre-cracked component.

* In *Table 1*, bottom, Cuntze delivers a continuous implicit mathematical computation.

3.4 Solution of the equation set to predict the unknowns

The Mathcad computation delivers the searched quantities for the open hole panel. *Fig.3* provides the full data set. In the computation, the usually in $MPa\cdot\sqrt{m}$ given fracture toughness (= critical SIF) is taken, which however requires a final factorization of the obtained critical stress by $\sqrt{1000}$ to get into the MPa, mm system.

In *Fig.3*, for the envisaged panel, the *R*-curve is plotted together with two SIF-curves, one for an initially guessed reference stress of sig_{wh}=15 (thin) and one for the computed critical reference value sig_c =12.5 (**bold**).

*For the 'no hole-panel' the critical SIF reads $K_c = 180\ \text{MPa}\cdot\sqrt{\text{m}} = 180\cdot\sqrt{1000}\ \text{MPa}\sqrt{\text{mm}}$ and the results are: $a_{ce} = 55.4\ \text{mm}$, $\sigma_c = 12.5\cdot\sqrt{1000} = 396\ \text{MPa}$.

*For the 'hole panel', in order to check any influence of the hole the associated rising **SIF-curve** was plotted, too. The same tangent point is obtained for this SIF-curve.

The computation of the 'no hole-panel' delivers as critical stress = residual strength, the value σ_{res} = 396 MPa (Mathcad computation scheme in *Table 1*).

*Table 1: Determination of the touch point = instability tangent point (*w width effect, no hole*)*

Vorgabe sigw := 11 a := 33

$$\text{sigw}\cdot\sqrt{\pi\cdot a}\cdot\sqrt{\text{Sek}\left(\frac{\pi\cdot a}{w}\right)} = \text{Kas} - (\text{Kas} - \text{Kb})\cdot\frac{1 - B}{\exp\left(\frac{a - a0}{A}\right) - B} \quad \textbf{(point)}$$

$$\frac{\pi\cdot\text{sigw}\cdot\left(\frac{\cos\left(\frac{\pi\cdot a}{w}\right) + \frac{\pi\cdot a}{w}\cdot\sin\left(\frac{\pi\cdot a}{w}\right)}{\cos\left(\frac{\pi\cdot a}{w}\right)^2}\right)}{2\cdot\sqrt{\frac{a\,\pi}{\cos\left(\frac{\pi\cdot a}{w}\right)}}} = \frac{e^{\frac{a-a0}{A}}\cdot(B-1)\cdot(\text{Kb} - \text{Kas})}{A\cdot\left[B - e^{\frac{1}{A}\cdot(a-a0)}\right]^2} \quad \textbf{(slope)}$$

Aa := Suchen(sigw, a) $Aa = \begin{pmatrix} 12.5 \\ 55.4 \end{pmatrix}$ sigw := Aa_0 sigw = 12.5 awc := Aa_1 awc = 55.4

$\sigma wc := \text{sigw}\cdot\frac{\text{MPa}\cdot\sqrt{\text{m}}}{\sqrt{\text{mm}}}$ $\sigma wc := \text{sigw}\cdot\sqrt{1000}$

KSIFwc0 := $\text{sigwc}\cdot\sqrt{\pi\cdot\text{awc}}\cdot\sqrt{\text{Sek}\left(\frac{\pi\cdot\text{awc}}{w}\right)}$ w = 300 KSIFwc0 = 180 σwc = 396

For information, however – no practical effect in *Fig.3* comparing the blue curve KSIFwh – the associated (point) condition with considering the hole is added below:

$$\text{sig}\cdot\sqrt{\pi\cdot a}\cdot\left(c3\cdot\sqrt{1 - \frac{r}{a}}\cdot c1 + \frac{\sqrt{\pi}\cdot\text{sig}\cdot c3\cdot\sqrt{1 - \frac{r}{a}}\cdot c2}{2\cdot\sqrt{a}} + \frac{\sqrt{\pi}\cdot\text{sig}\cdot r\ c3\cdot c2}{2\cdot a^{1.5}\cdot\sqrt{1 - \frac{r}{a}}} + \frac{\pi^{1.5}\cdot\sqrt{a}\cdot\text{sig}\cdot\sin\left(\frac{\pi\cdot a}{w}\right)\cdot\sqrt{1 - \frac{r}{a}}\cdot c2}{2\cdot w\cdot\cos\left(\frac{\pi\cdot a}{w}\right)^2\cdot\cos\left(\frac{\pi\cdot r}{w}\right)\cdot c3}\right)$$

with the to be inserted abbreviation functions c1, c2, c3

$$= \text{Kas} + \frac{(B-1)\cdot(\text{Kb} - \text{Kas})}{B - e^{\frac{1}{A}\cdot(a-a0)}}$$

The computation of the critical crack length a_c at the end of static loading is determined by the application of the formula below and there inserting K_{ec} (see application later). As K-values are usually given in $\text{MPa}\cdot\sqrt{\text{m}}$ this is intentionally widely followed here!

$$\text{new } a_0 = a_0 + \Delta a_{ec} = a_0 - A \cdot \ln\left(B + (1-B) \cdot \frac{K_{as} - K_b}{K_{as} - K_{ec}} \right) \quad .$$

Results:

The R-test curve (resistance, marked KR) captures all physical effects such as small scale yielding at the crack tip, marked by the letter ω! It is effective, therefore K_e. *Therefore, in order to be compatible the SIF-curve (action, marked KSIF) has to incorporate this effect. It does not depend on* a_0, *w.*

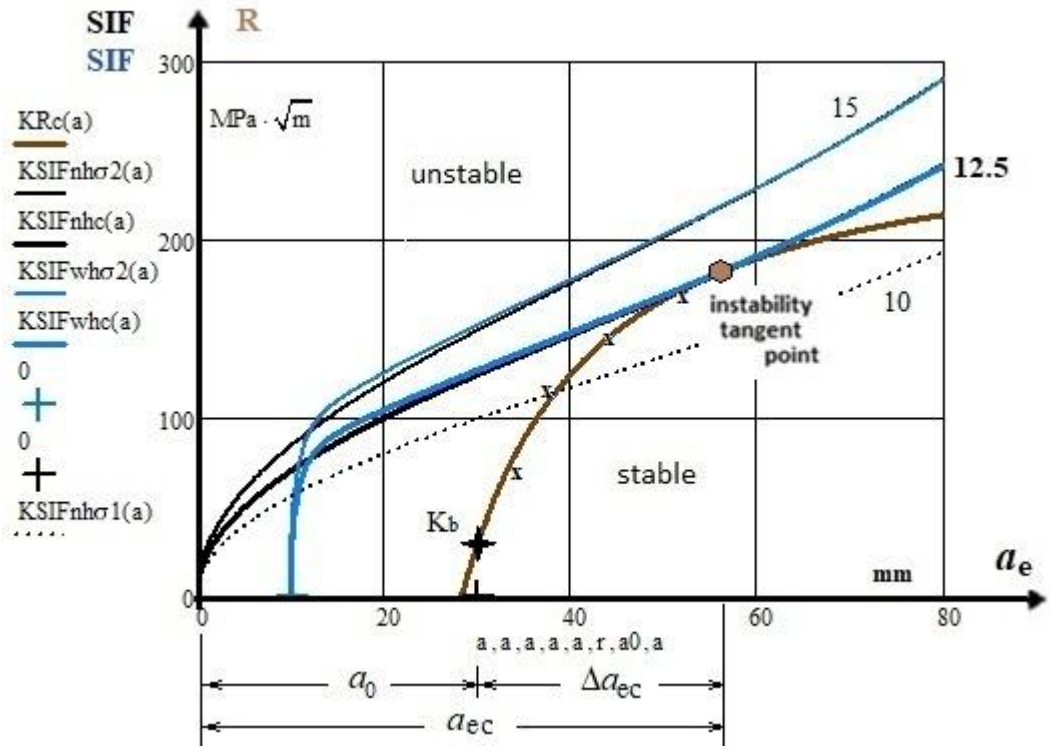


Fig.3: Wide panel example (HSB 62232-03) with w =300 mm, *t = 8*mm, a_0 *= 30* mm, *d =20* mm.
Aluminum Alloy 7475-T7351 in LT-direction: A =55.7 mm, *B = 0.75,* K_{as} *=246* MPa $\cdot \sqrt{\text{m}}$,
K_b *=29* MPa $\cdot \sqrt{\text{m}}$, R_{p02} *=425* MPa *(B-value for t = 6...38* mm) .
Instability point: K_e *= 180* MPa $\cdot \sqrt{\text{m}}$ = MPa $\cdot \sqrt{\text{mm}} \cdot \sqrt{1000}$, a_{ce} *= 55.4* mm.
SIF-curve: reference stresses in MPa, to factor by $\sqrt{1000} = 31.6$: σ_2 =15 > σ_c = 12.5 > σ_1 =10, *Table* 1 .
(For simplification the simple letter a was taken in the formulas instead of ae)

Notes:

*The R-curve does not run out from a_0. This is caused because just the test data domain has to be fitted best. In the HSB sheet the beginning is therefore not sketched. The model point Kb lies on the a_0-line.

*Very brittle materials possess a horizontal *R*-curve.

► The test-based *R*-curve is essential for FFM to determine in future a more correct fracture toughness value K_{app} instead of the previous K_{Ic} for the usually FFM-treated very brittle material.

4 Analysis using Finite Fracture Mechanics (FFM)

4.1 General

To prove Structural Integrity several design verifications (DVs) must be performed for components having the following features: Smooth, notched (stress concentrations) and cracked (stress singularities), see *Fig.4, left*. Thereby, static and cyclic loadings must be taken into account focusing uni-axial and multi-axial stress states.

FFM-focus here is static loading under uni-axial stresses, which means Mode I-linked.

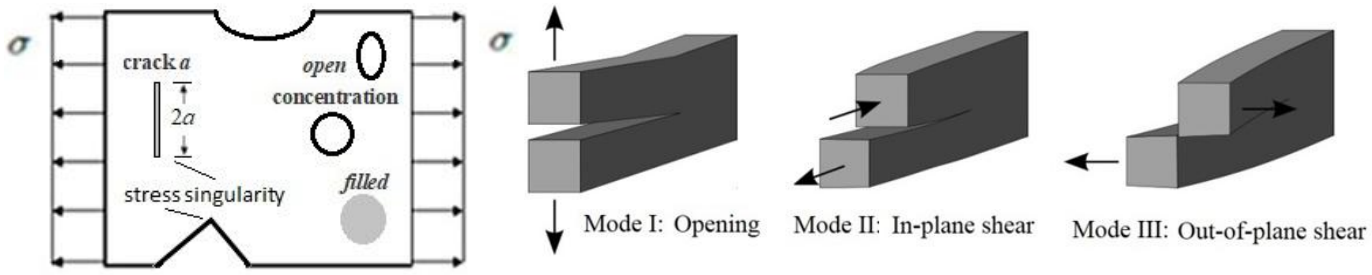


Fig. 4: (left) Stress concentrations and stress singularities under uni-axial stressing.
(right) The 3 FM-modes, crack length a

The following levels are relevant when generating stress-related DV tools:

1. Stresses: *Strength Failure Conditions (SFC), as local design verifications* to predict onset-of-cracking (*several strength fracture failure modes and one yield mode*, practically just one for tension loading,)
2. Stress concentration: *Application of (local) stress concentration factors* K_t to predict onset-of-cracking (fracture)
3. Stress intensity (singularity): (*non-local*) *Fracture mechanics methods using stress intensity factors* $K = \sigma \cdot \sqrt{\pi \cdot a}$ *(SIFs) and fracture toughness (*representing the resistance of brittle materials to the propagation of flaws under an activated stress, assuming: the longer the flaw, the lower the bearable fracture stress*) being a critical* K_c *which is needed for a crack to grow under monotonic loading. For the usually envisaged tension loading* (pressure-linked geo-mechanics is not the focus*) there are three fracture mechanics modes to consider as depicted in Fig.4 above.*

All design verifications are required in parallel in accordance with the applicable regulations.

Tackling above three structural cases, then it can be attributed:

1. Stresses: *In the strength* fracture *failure criterion (SFC) strength values R (isotropic: here* $R^t \equiv R_m$*) are to insert, which capture any flaws and micro-cracks in the material data set of the test specimen. All effects are considered.*
2. Stress concentrations: *Experience tells that the application of a SFC with the application of a factor* K_t *is not sufficient. Here, a non-local DV method is required, which combines a strength fracture criterion and fracture mechanics criterion. This is the focus of FFM.*
3. Stress intensity: The necessary *('large') crack size value is identified by Quality Assurance or fixed as the minimum measurable crack size. The crack situation at hand is to model and*

toughness values K_{Ic} are to insert. A large crack analysis does not need a coupled DV in order to predict onset-of- further cracking, because the SFC is fulfilled.

Note: There are stress-related and strain-related SFCs. Stress-related ones have the advantage, compared to strain-related ones that "*Residual stresses can be simply incorporated"*).

4.2 Introduction

Since about 20 years Finite Fracture Mechanics (FFM) intends to fill the gap between the continuum mechanical strength failure criteria (SFC) and the classical FM. FFM is an approach to offer a criterion to predict 'Onset-of-Cracking' in brittle isotropic and UD materials. This is a bridge that had to be built from strength failure to fracture mechanics failure.

Attempts to link SFC-described 'Onset-of-Cracking (OoC, fracture)' prediction methods and FM prediction methods for structural components have been performed. Best known is the still cited Hypothesis of Leguillon "*A crack is critical when and only when both the released energy and the local stress reach critical values along an assumed finite crack*". Within the FFM, Leguillon assumes instantaneous cracks of finite length Δa. Thus, using FFM one obtains one more unknown but also one more equation to solve together with the SFC the equation system.

Of the basic two previous FFM concept variants, the integral concept used here has proven to be the best. In this case, the stress curve is averaged over the fictitious, critical crack length for the SFC, i.e. converted into a locally evenly distributed stress curve averaged over this length.

As long as this is done over a comparatively small area, this is fine, but if it is a very large crack depth, where the crack extends far into an area of the stress profile where the stress peak has already been significantly reduced, the stress value averaged in this way becomes quite small. The question then is whether this procedure can still lead to a valid SFC application. In the future therefore, it would make sense to limit the range over which the stress curve is averaged appropriately in such cases?

This coupled criterion does not refer to microscopic mechanisms to predict micro-crack nucleation.

Reasons to develop the FFM were some facts from studying 'Onset-of-Cracking':

- Isotropic material

The minor failure behavior of absolutely small holes compared to large holes, although the stress concentration factor K_t takes the same value, namely 3. With large holes, more material volume is highly stressed and thus physically-based the probability of failure due to more activated, material-inherent flaws is increased.

Further known is in the case of discontinuities such as notch singularities with steep stress decays: only a *toughness + characteristic length-based energy balance condition* may form a sufficient set of fracture conditions. Hence, a SFC is a necessary condition but might not be a sufficient condition for the prediction of 'Onset-of-Cracking'.

When applying SFCs usually ideal solids are viewed which are assumed to be free of essential micro-voids or microcrack-like flaws, whereas applying Fracture Mechanics tools the solid is considered to contain macro-cracks.

- Transversely-isotropic material

It is also known for a long time from the so-called 'Thin layer effect' of UD-layer-composed laminate that the SFC-application is not sufficient to understand failure: *Due to being strain-controlled, the material flaws in a thin lamina cannot grow freely up to micro-crack size in the*

thickness direction, because the neighboring laminas act as micro-crack-stoppers. In other words: Thin plies, embedded in a laminate, fail at a higher loading level than thick ones.

Employing here fracture mechanics, the strain energy release rate, responsible for the development of damage energy in the 90° plies - *from flaws into micro-cracks and larger cracks* -, increases with increasing ply thickness. Therefore, the actual absolute thickness of a lamina in a laminate is a driving parameter for initiation of cracks, i.e. [*Fla82*].

For laminates - composed of different isotropic layers – such singularities occur, too and are effortfully treated!

4.3 FFM modelling, isotropic material focused here

The FFM concept is demonstrated here by the example "Uni-axially loaded symmetric open-hole plate strip". For this case, the coupled criterion can be simplified and can be analytically solved. Thereby no initial crack a_0 is to treat. Brittle fracture behavior is presumed.

The energy criterion postulates that the critical energy release rate $\mathcal{G}_{Ic} = K_{Ic}^{\ 2} \cdot (1-\nu^2) / E$, being proportional to the square of the fracture toughness, is met and that the stress criterion = SFC postulates that the concentrated stress within the net-section area, *averaged along the crack length Δa*, reaches a material strength value. This averaging is an assumption, which should to be checked.

From the differential FM strain energy release rate $\mathcal{G} = -d\Pi / dS \rightarrow$ the FFM incremental one $-\Pi / S$.

Whereas the FM is more concerned about the full net section width, in the FFM the concern is basically just the net section length *Δa,* a portion of the width!

The coupled FFM criterion

Goal of the coupled FFM criterion is to derive two fracture conditions, a strength *R*-related one and a fracture mechanical one assuming a crack of the size Δa. Finally the two conditions are combined and deliver an equation for the unknown critical crack Δa_c being the crack level at which OoC would occur under a critical stress and fracture mechanical condition, simultaneously.

The establishment of the coupled model is to perform on basis of average properties in order to obtain the optimally achievable reliability of 50 %. This means model validation, whereas in the DV statistically based Design Allowables are to apply.

The two parts of the coupled criterion can be expressed by equalities from a Fracture Mechanics (FM) criterion and a Strength Failure Criterion (SFC):

$$\text{FM:}\quad \frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a} K_1^2(x)\cdot dx = K_{1c}^{\ 2} \qquad \text{and} \qquad \text{SFC:}\quad \frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a} \sigma(x, y=0)\cdot dx = R_{\mathrm{m}}.$$

For a simpler comparison, for the SFC the square usually is taken, whereby – advantageously - the remote stress σ cancels out in the coupled equation. Fracture failure occurs if both these criteria are simultaneously fulfilled. This leads to the required equation for the determination of

the generated critical crack size Δa_c via

$$\frac{\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a} K_I^2(x)\cdot dx}{\left(\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a} \sigma_y(x)\cdot dx\right)^2} = \frac{K_{Ic}^{\ 2}}{R_m^{\ 2}} = c_{KR}\ , \quad \mathrm{r = d/2}$$

which is to be integrated in the Δa-process zone.

Later, the author will use the upper, two single versions, because this better displays the parallel working of FM-condition together with the SF-condition.

As the two required resistance quantities are not fully clear and not given, it is sufficient for the following first numerical application of the FFM to apply the available values '*Plain Strain Fracture Toughness'* K_{Ic} (*the inherent lowest material property, subject to certain minimum geometric test specimens requirements to achieve a plain strain condition*), and tensile strength R_m. This will mean the application to a brittle metal. In general, the real critical fracture toughness should be termed '*Apparent Fracture Toughness'* K_{app} (to be understood as a component property, adapted to the current geometrical conditions). For K_{app} seldom a value is available. Hence, K_{Ic} will be used for the FFM here, despite of the necessity to consider small scale yielding at the crack tip when using structural metal materials, like shown in the chapter R-curve.

Validation of the FFM model is effort-fully to be performed by running isotropic test series for different w/d-ratios of panels.

5 *Design Verification of a 'Through center cracked Open hole Panel'*

Presumptions and given data for geometry, loading from testing

Presumptions:

- Linear Structural Analysis permitted
- Not fully brittle materials which generate small scale yielding at the crack tip
- Worst case loading situation, no residual *stresses.*

Material resistance: Aluminum alloy 7475-T7351 in L(ength)-T(ransverse) direction,

example from [3]

- *R*-curve: A = 55.7 mm, B = 0.75, K_{as} = 246 MPa $\cdot\sqrt{\text{m}}$, K_b =29 MPa $\cdot\sqrt{\text{m}}$. R_m = 850 MPa
- Yield strength: R_{p02} = 425 MPa (B-value, for t = 6...38 mm), HSB 62232-03, concluding the 445 MPa, as used in HSB 62232-01, can be seen an average value.
- K_{Ic} = 48 MPa $\cdot\sqrt{\text{m}}$ = 1518 MPa $\cdot\sqrt{\text{mm}}$, $(K_{Ic} / R_\text{m})^2$ = 3.23 mm.

Panel dimensions

- Width w =300 mm, thickness t = 8 mm, open hole radius d = 25 mm
- Initial crack size a_0 = 30 mm.

Loading Action with Design Factor of Safety (FoS)

- j =1, Design Limit Load representative
- Uni-axial stress state $\{\sigma\}_\text{design} = \{\sigma_\text{L}\}\cdot j$ with $\{\sigma\}_\text{L} = (\sigma_x, \sigma_y, \tau_{xy})^T \cdot j = (0,\ 250,\ 0)^T$ MPa.

5.1 Application of FM, R-curve, concerning 'Open hole panel fracture', pre-crack a_0

See *Fig.3* with the procedure attached. a_0 = 30 mm, d = 25 mm, w = 300 mm.

Design case: Remote loading stress σ_design = 250 MPa $\equiv \sigma_\text{I}$.

5.1.1 Determination of the residual strength [HSB 62232-03] with the R-curve

The computation in *Table 1* delivers the following values in the instability point (touch point)

FM-resistance: $K_\text{ec} = 180$ MPa $\cdot\sqrt{\text{m}} = 180\cdot\sqrt{1000}$ MPa $\cdot\sqrt{\text{mm}}$, proof in *Fig.3*

and further residual strength σ_c = 396 MPa and critical crack length a_ec = 55 mm.

Above remote failure stress = structural residual strength of the panel (plate strip) reads

$$\sigma_\text{fail} = R_\text{res} = R_\text{struct} = \sigma_c\,.$$

For comparison, the following analyses deliver the satisfactory information:

* Stress concentration: $\sigma_\text{fail} = R_\text{m} / K_\text{t}(d = \infty) = 850 / 3 = 283$ MPa $> \sigma_I$ = 250 MPa.

* Fracture Mechanics: for a Quality Assurance-defined crack size such as $a_\text{defined} = 33$ mm,

$$\sigma_\text{fail}(33) > \sigma_\text{fail}(55)\,.$$

Results for σ_design = 250 MPa = *sig3:*

The crack grew under the design stress by $\Delta a_{\text{design loading}} = 3$ *mm.*

$\rightarrow$ *new* $a_0 = a_0 + \Delta a_{\text{design loading}} = 30 + 3 = 33$ *mm.*

► Computation of the *Reserve Factor* for Design Limit load level, Design Load case $j = 1$

Linear analysis is sufficient (presumption of FFM model at hand): then $\sigma \sim$ load.

$$RF = \frac{\text{Structural strength Design Allowable } R_{\text{struct}}}{\text{Stress } \sigma \text{ at } j \cdot \text{Design Limit Loading}} = \frac{R_{\text{struct}}}{\sigma_{\text{design}}} = \frac{396}{250} = 1.58 > 1.$$

According to the regulations, R_{struct} has to be a Design Allowable too, which is assumed here due to R_{m} being a strength Design Allowable and K_{Ic} being statistically–based, too.

Yielding Check in the net-section: as a limit-of-usage check. One obtains:

$$\sigma_{\text{fail}} = \sigma_{\text{netyield}} = R_{\text{p02}} \cdot \left(1 - \frac{2 \cdot a_{\text{ec}}}{w}\right) = 425 \cdot \left(1 - \frac{2 \cdot 55}{300}\right) = 267 \text{ MPa} \rightarrow RF = \frac{267}{250} = 1.14 > 1.$$

Result: Due to the requirement $\sigma_{\text{netyield}} < \sigma_{\text{c}}$ net section yielding limits the loading here.

5.1.2 Determination of the critical crack length, touch point, considering 'no hole, 'with hole'

In the effective curve (*index e is written*) defined by $K_{ec} = 180 \text{ MPa} \cdot \sqrt{\text{m}}$ the plastic zone ω and the hole diameter are included.

The computation of the critical data set had to be still performed for the establishment of *Fig.3*.

► Computation of the design stress-linked Touch Point + generated crack growth $\Delta a_{\text{design loading}}$

Employing both the SIF functions from *§ 3.3.1*

$$KSIF_{nh}(a) = \sigma \cdot \sqrt{\pi \cdot a} \cdot \sqrt{\sec \frac{\pi \cdot a}{w}} \quad , \qquad \text{and}$$

$$KSIF_{wh}(a) = \sigma \cdot \sqrt{\pi \cdot a} \cdot \sqrt{1 - \frac{r}{a}} \cdot \left(1 + 0.358 \cdot \frac{r}{a} + 1.425 \cdot \left(\frac{r}{a}\right)^2 - 1.578 \cdot \left(\frac{r}{a}\right)^3 + 2.156 \cdot \left(\frac{r}{a}\right)^4 \cdot \sqrt{\sec \frac{\pi \cdot r}{w} \cdot \sec \frac{\pi \cdot a}{w}}\right.$$

the Mathcad computation in Table 2 was executed. (See [3]).

Table 2 Derivation of a ductility-considering SIF K with improved associate crack a

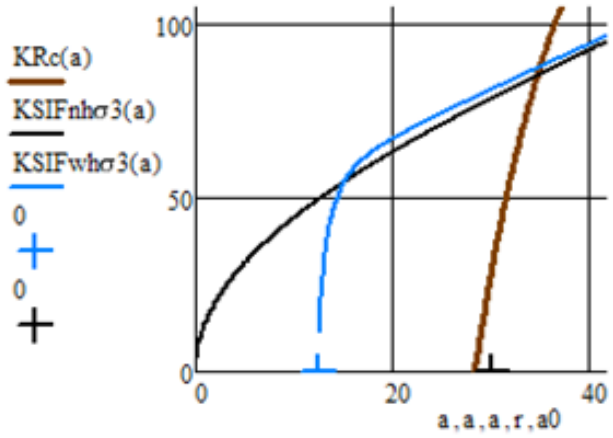
Kec = 180 Kas = 246 Kb = 29 A = 34.682 B = 0.75 a0 = 30 w = 300 Rp02 = 425

Vorgabe a := 33

Crack, no hole

$$sig3\cdot\sqrt{\pi\cdot a}\cdot\sqrt{Sek\left(\frac{\pi\cdot a}{w}\right)} = Kas - (Kas - Kb)\cdot\frac{1 - B}{\exp\left(\frac{a - a0}{A}\right) - B}$$

Aa := Suchen(a) Aa = 32.734 a := Aa a = 32.7



Additional information: Determination of the (physical) K_p from the effective values a_e

There are two methods to determine data of a R-curve The Potential method is used to determine physical data and the Compliance-Method (*applied here*) effective data for the given initial crack length a_0 and the loading stress σ [13, 12, 11].

If necessary, physical data can be derived from effective data by inserting

$$a_p = a_e - 0.5\cdot\omega,\quad \omega = \frac{1}{\pi}\cdot\left(\frac{K_p}{R_{p0.2}}\right)^2$$ into $$K_p = \sigma\cdot\sqrt{\pi\cdot a_p}\cdot\sqrt{\sec\left(\pi\cdot a_p / w\right)}$$ solving the generated implicit equation via

Vorgabe Kp := 180

$$Kp = \sigma\cdot\sqrt{\pi\cdot\left[ae - 0.5\left[\frac{1}{\pi}\cdot\left(\frac{Kp}{Rp02}\right)^2\right]\right]}\cdot\sqrt{\frac{1}{\cos\left[\pi\cdot\frac{ae - 0.5\left[\frac{1}{\pi}\cdot\left(\frac{Kp}{Rp02}\right)^2\right]}{w}\right]}}$$

D := Suchen(Kp)

.

Whether this might be important could be checked by inserting K_{pc} through K_{ec} calculating

$$\omega_{Kec} = \frac{1}{\pi}\cdot\left(\frac{K_{ec}}{R_{p0.2}}\right)^2.$$

In order to present a good feeling for the difference between K_p and K_e the respective values shall be computed in *Table 3* below for the critical case, indexed c :

Table 3:Difference of the critical values of physical K_p and effective K_e

$\sigma fail := 12.5 \quad \sigma := \sigma fail \cdot \sqrt{1000} \quad \sigma = 395 \quad Rp02 := 425 \quad w := 300 \quad a0 := 30 \quad Kec := 180 \cdot (\sqrt{1000})$

$aec := 55.4 \quad \Delta aec := aec - a0 \quad \Delta aec = 25.4 \ mm \quad Kec = 5692$

Vorgabe $\quad Kpc := 5555$

$$Kpc = \sigma \cdot \sqrt{\pi \cdot \left[aec - 0.5 \left[\frac{1}{\pi} \cdot \left(\frac{Kpc}{Rp02} \right)^2 \right] \right]} \cdot \sqrt{\frac{1}{\cos\left[\pi \cdot \frac{aec - 0.5 \left[\frac{1}{\pi} \cdot \left(\frac{Kpc}{Rp02} \right)^2 \right]}{w} \right]}}$$

$D := Suchen(Kpc) \quad D = 4479$

$$\omega ec := 0.5 \left[\frac{1}{\pi} \cdot \left(\frac{Kec}{Rp02} \right)^2 \right] \quad \omega pc := 0.5 \left[\frac{1}{\pi} \cdot \left(\frac{Kpc}{Rp02} \right)^2 \right] \quad apc := aec - 0.5 \cdot (\omega ec)$$

$\omega ec = 28.5 \quad \omega pc = 27.2 \ mm \quad apc = 41.1$

*5.2 **Application of FFM**, concerning 'Onset-of-Cracking' at a open hole edge, (no a_0)*

Determination of finite crack length *Δa* and failure stress of the panel: *Mathcad 15 application*

In this sub-chapter the 'classical' FFM-procedure with the square will be presented.

- The FM-linked failure portion: The equation reads:

$$\frac{1}{\Delta a} \cdot \int_r^{r+\Delta a} \left[K_I^2(x) \right] \cdot dx =$$

$$\frac{1}{\Delta a} \cdot \left[\int_r^{r+\Delta a} \left(\sigma \cdot \sqrt{\pi \cdot r} \cdot \sqrt{1 - \frac{r}{x}} \cdot \left(1 + 0.358 \cdot \frac{r}{x} + 1.425 \cdot \left(\frac{r}{x}\right)^2 - 1.578 \cdot \left(\frac{r}{x}\right)^3 + 2.156 \cdot \left(\frac{r}{x}\right)^4 \cdot \sqrt{\sec\frac{\pi \cdot r}{w} \cdot \sec\frac{\pi \cdot x}{w}} \right]^2 \cdot dx \right.$$

- The SFC-linked failure portion: For details see *Annex1*

For this portion a model for the stress distribution along the net section is to provide, namely,

$$\sigma_{netsec}(x) = \sigma \cdot c_{wd} \cdot [0.335 + 0.665 \cdot (1 + c_{11} \cdot \frac{x - r}{0.5 \cdot w - r})^{c_{12}} + c_{13} \cdot (\frac{x - r}{0.5 \cdot w - r})^4 \ , \ [8]$$

with the abbreviation functions $c_{wd} = 3.215 - (\frac{w}{d})^{-0.5} + 4.294 \cdot (\frac{w}{d})^{-1.5}$ and

$c_{11} = -3.765 + 2.148 \cdot (\frac{w}{d})^{0.879}$, $c_{12} = -2.552 - 42.894 \cdot (\frac{w}{d})^{-3.17}$, $c_{13} = -0.7497 \cdot (\frac{w}{d})^{-1.858}$.

The equilibrium equation of the SFC-portion reads

$$\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma(x,y=0)\cdot dx=\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma_{\text{netsec}}(x)\cdot dx=$$

$$\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma\cdot c_{\text{wd}}\cdot[0.335+0.665\cdot(1+c_{11}\cdot\frac{x-r}{0.5\cdot w-r})^{c_{12}}+c_{13}\cdot(\frac{x-r}{0.5\cdot w-r})^{4}\cdot dx$$

.

The implicit FFM-solution procedure of the Mathcad software in standard FFM-formulation is shown below in *Table 4* (Mathcad font):

Table 3:

Vorgabe

$\Delta a := 1 \qquad \sigma := 11$

$$\left[\frac{1}{\Delta a}\cdot\left[\int_{r}^{r+\Delta a}\left[\left[\sigma\cdot\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^{2}-1.578\cdot\left(\frac{r}{x}\right)^{3}+2.156\cdot\left(\frac{r}{x}\right)^{4}\right]\right]\cdot\sqrt{\text{Sek}\left(\frac{\pi\cdot r}{w}\right)\cdot\text{Sek}\left(\frac{\pi\cdot x}{w}\right)}\right]\right]^{2}dx\right]\right]=\frac{KIc^{2}}{Rm}$$

$$\frac{1}{\Delta a}\cdot\left[\int_{r}^{r+\Delta a}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^{4}\right]dx\right]$$

$$\frac{1}{\Delta a}\cdot\left[\int_{r}^{r+\Delta a}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^{4}\right]dx\right]=Rm$$

$A := \text{Suchen}(\Delta a,\sigma) \qquad A=\begin{pmatrix}1.77\\420.83\end{pmatrix} \qquad \Delta a := A_0 \qquad \Delta ac := \Delta a \qquad \sigma := A_1 \qquad \sigma fail := \sigma$

$\Delta ac = 1.77 \qquad \sigma fail = 421$

Results:

Within the FFM, two models from FM and from strength analysis are commonly employed to predict the failure event 'Onset-of-Cracking' at a non-cracked hole. In the case at hand, the instantaneously generated finite crack length reads $\Delta a_c = 1.77$ mm *and the associated remote average structural failure stress of the panel* σ_{struc} *reads* σ_{fail} *= 421 MPa.*

Fig.5 finally tries to illustrate the FFM hypothesis "*Both the conditions must be fulfilled*". It points out the failure-causing relationship and the dominated domains, where stress states may happen to be.

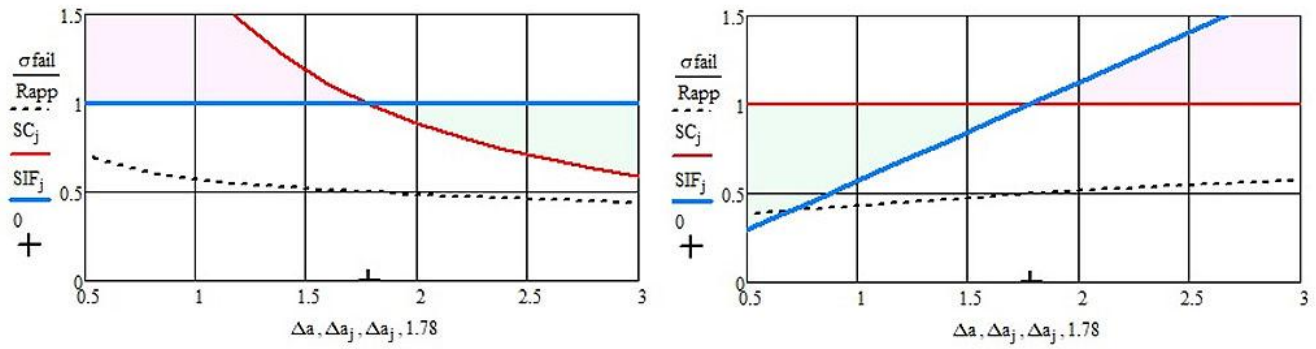


Fig. 5, w=36mm , a_0 = 30 mm, d =6 mm: $\Delta a_c = 1.77$ mm

(left) 'SIF' is assumed to be 100% with the question "When does the SC not show failure?

Vice versa: (right) SC assumed to be 100% with the question "When does the 'SIF' not show failure?

One basic interest is how a varying resistance ratio $c_{KR} = K_{Ic}^2/R_m^2$ affects critical **crack length** and **failure stress**. *Fig.6* shows the mapped numerical results for a number of ratios.

Result: With increasing resistance ratio both critical crack size and failure stress naturally grow.

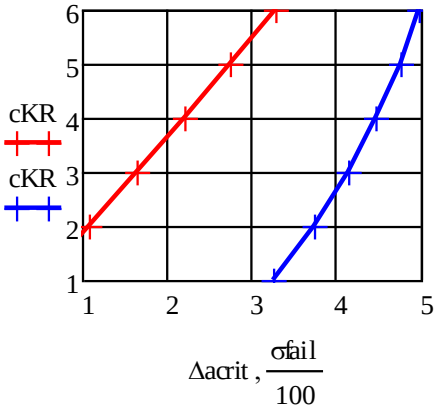


Fig.6, w=36mm , a_0 = 30 mm, d =6 mm:
Effect of varying resistance ratio c_{KR} , measured in mm,
on Δa_c (left) and σ_{fail} (on the abscissa)

AA 7475-T7351:
$c_{KR0} = (K_{Ic} / R_m)^2 = 3.23$ mm, $\Delta a_c = 1.77$ mm

Of further interest might be how the FM-linked and the SC-linked portions change with the crack length. *Fig.7* depicts these courses after employing the two integrals, termed 'SIF' and SC, below.

$$\frac{\frac{1}{\Delta a}\cdot\int_r^a K_I^2(x)\cdot dx}{\left(\frac{1}{\Delta a}\cdot\int_r^a \sigma_y(x)\cdot dx\right)^2} = \frac{K_{Ic}^2}{(R_m)^2} = c_{KR} \quad \Rightarrow \quad \frac{\frac{1}{\Delta a}\cdot\int_r^a K_1^2(x)\cdot dx / K_{1c}^2}{\left(\frac{1}{\Delta a}\cdot\int_r^a \sigma_y(x)\cdot dx\right)^2 / R_m^2} = \frac{'SIF'}{SC} \quad \text{with}$$

$$SIF_i := \frac{\frac{1}{\Delta a_i}\cdot\int_r^{r+\Delta a_i}\left[\sigma\cdot\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^2-1.578\cdot\left(\frac{r}{x}\right)^3+2.156\cdot\left(\frac{r}{x}\right)^4\right]\right]\cdot\sqrt{Sek\left(\frac{\pi\cdot r}{w}\right)\cdot Sek\left(\frac{\pi\cdot x}{w}\right)}\right]^2 dx}{KIc^2}$$

$$SC_i := \frac{\frac{1}{(\Delta a_i)^2}\cdot\left[\int_r^{r+\Delta a_i}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^4\right]dx\right]^2}{Rm^2}$$

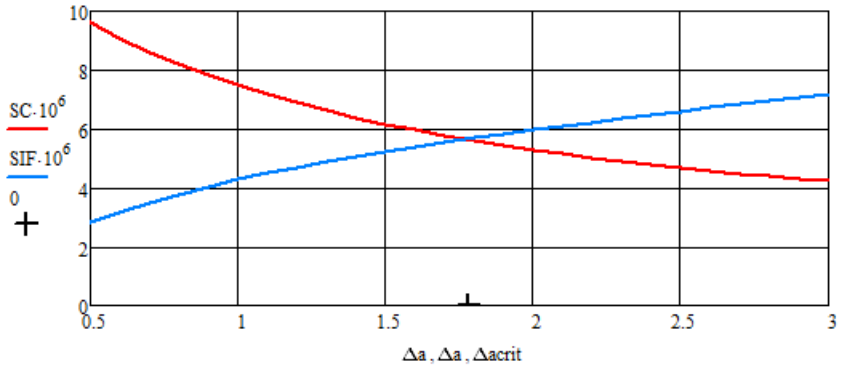


Fig.7, w =36mm, a_0 = 30 mm, d =6 mm: Course of growing FM-portion (SIF) and decaying Strength Mechanics portion (SC) over the finite crack size Δa

Result: The critical point at a_c = 1.78 mm is clearly marked at 'SIF' = SC.

After having depicted the influence of the resistance ratio $c_{KR} = K_{Ic}^2/R_m^2$ in *Fig.6* the effect of a fixed ratio 'panel width/hole diameter' w/d shall be displayed for two widths in *Fig.8* presenting how the remote failure stress σ_{fail} of the panel changes with Δa.

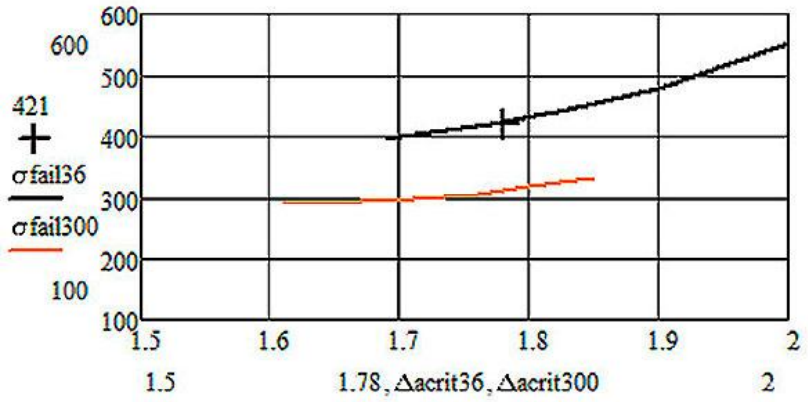


Fig.8, w=36mm, w = 300mm: Effect of different panel geometry, ratios w/d = 6.

Result:
For a given resistance ratio c_{KR}, for two panel widths, above stress failure curves are plotted as functions of the individually given critical crack size. The wider panel allows a lower stress only, because more volume is highly stressed.

► Computation of the *Reserve Factor* for Design Limit load level, *j* =1

Remote loading stress $\sigma = \sigma_I$ = 250 MPa, a_0 = 30 mm, d =25 mm.

Linear analysis is sufficient (presumption of FFM model): then $\sigma \sim$ load

Assumed σ_{fail}, to be a Design Allowable, the Reserve Factor against 'Onset-of-Cracking' at the hole edge is

$$RF = \frac{\sigma_{struct}}{\sigma_{design}} = \frac{421\ \text{MPa}}{250\ \text{MPa}} = 1.7\ .$$

According to the regulations, a Design Allowable has to be applied, too, which is assumed here, because R_m is a Strength Design Allowable and K_{Ic} is assumed to be statistically based.

Yielding Check in the net-section:, as a limit-of-usage check. One obtains:

$$\sigma_{fail} = \sigma_{netyield} = R_{p02} \cdot \left(1 - \frac{2 \cdot a_{ce}}{w}\right) = 425 \cdot \left(1 - \frac{2 \cdot 55.4}{300}\right) = 268 \text{ MPa}.$$

$$RF = \frac{268}{250} = 1.14 > 1.$$

Result: Due to the requirement $\sigma_{netyield} < \sigma_c$ *net section yielding limits the loading here.*

7 Application of the FFM to an HSB-example

Task: Mapping of the critical stress 'σ_c-curve' as function of the running crack size a.

The course of just 3 test points of a fixed open hole panel (from HSB 62232-01 on '*Width dependency of the Feddersen-parameter'*, [10], is to map. These fracture values are given for the original $a_0 = a + r$, also depicted in the plot.

Note, please, when assessing the test data set: The 3 test points with the different crack sizes are assumed average values. (1) In this context, in the HSB sheet the sample size number of tests belonging to one 'average' point was not given. (2) Further, an additional fitting process of the foreseen correction function was performed.

Fig.9, left, displays the geometry and the loading of the envisaged HSB-panel. The coordinate x has its origin in the hole center.
Fig.9 right, presents the course of the SIF K and of the net section stress along x together with the three average test points at the abscissa x with the coordinate points $r + a = a_0$.

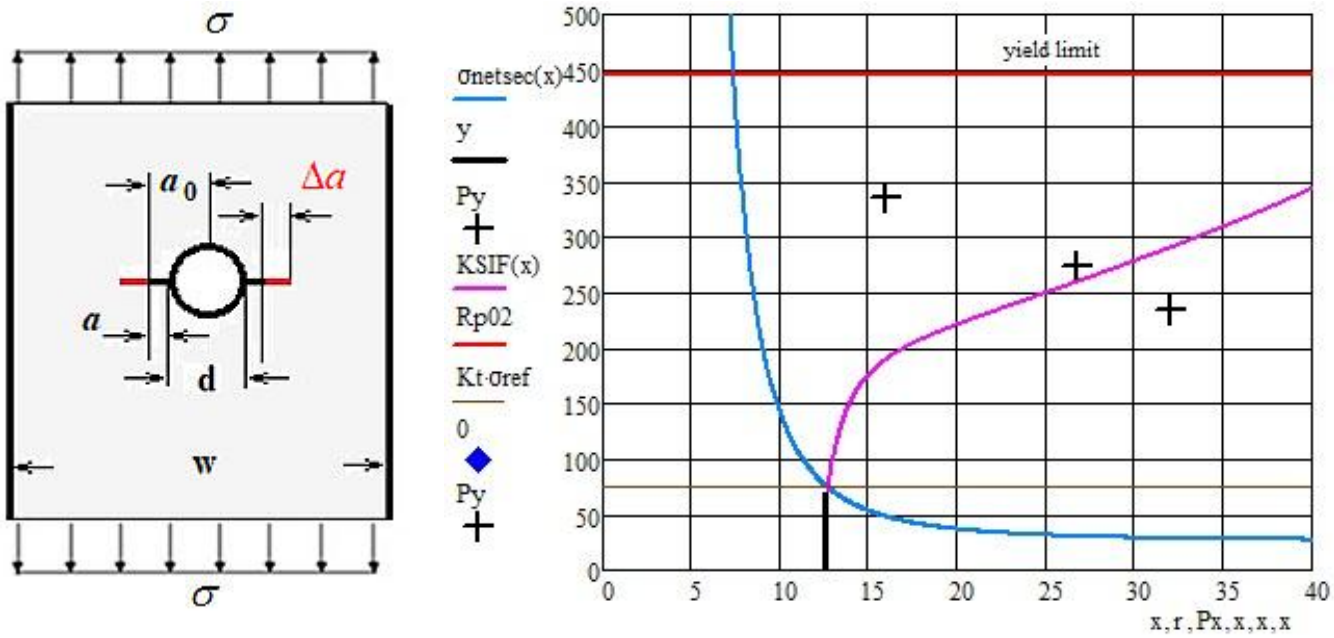


Fig.9: (left) Geometry of the fixed Open Hole Panel and its uniaxial loading.
(right) Test points with the courses of the 'SIF' and the net section stress in width x-direction
w =160 mm, *t* =2 mm, *d* =25 mm. *AA 7475-7761: R_{p02}= 445 MPa, $K_{c,\infty}$* = 2500 MPa $\cdot \sqrt{\text{m}}$ ·
Abscissa points in mm: x = r = 12.5; a_0 =16, 26.7, 32

Result:
Shifting the FFM failure stress point by Δa gives a point a little far from the derived FM-curve, This crack size Δa defines the a_0 when analyzing future loading and crack growth.

In *Fig.10* for the given hole, d = 2·r, the computed FFM-linked failure stress point σ_{fail} (bold) is depicted with the generated crack size Δa. The Mathcad computations are presented in *Table 3*, which presents a mixture of FFM and FM results. In order to map the FM-data course optimal two different K-

values have been applied with a physically logic higher value for the higher a_0-values of $K_{upper} = 2700\ \text{MPa} \cdot \sqrt{\text{m}}$ than the mean value 2500.

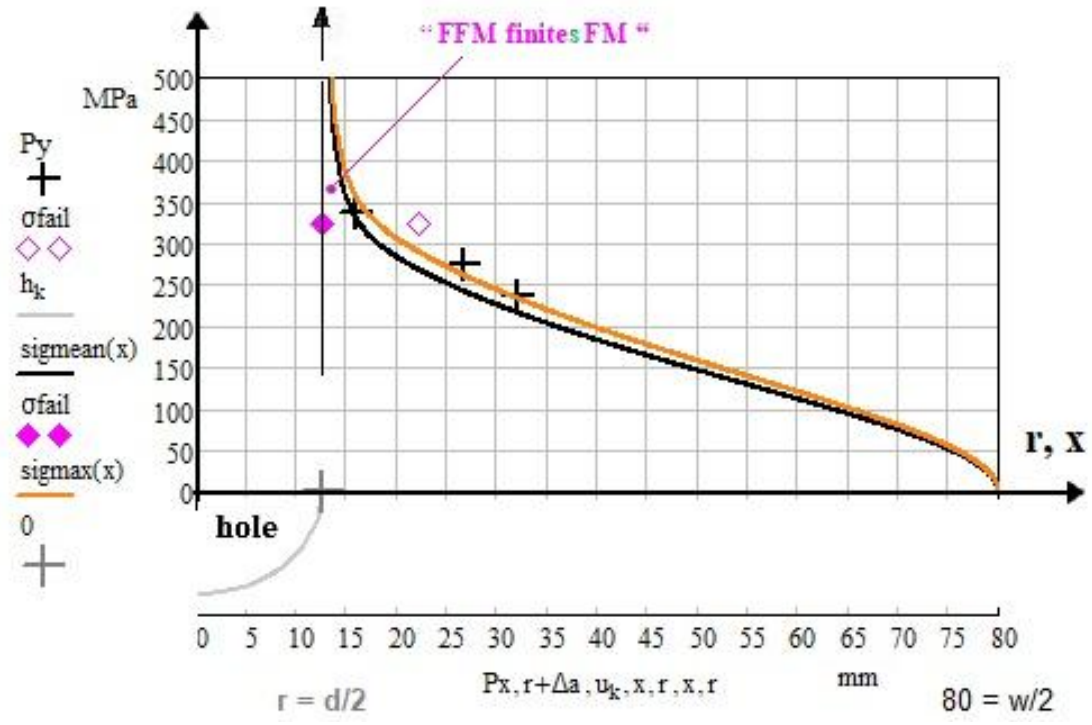


Fig.10, 80 mm= w/2, t =2 mm, r =25/2 = 12.5mm hole:

Depiction of the FFM-based failure stress at 'Onset-of-Cracking' for generating Δa = 9.6 mm and of the FM-based mapping of the course of the three test points with its associate initial different crack size a_0. For this mapping two different K-values are applied 2500 and 2700 (upper)

Result:

For the identical hole radius 12.5 mm the FFM-based failure stress (a_0 = 0) lies in the vicinity of the first FM-based failure stress (a = 16.0 - 12.5=3.5 mm) point +.

► ***In the frame of the scatter:***

the* FM-curve tendency of small initial cracks *a*→ 0 *matches well with the FFM!

The Mathcad computation is presented in *Table 4*.
The upper part depicts the classical FFM procedure and the center the Cuntze procedure with directly using the single equations.

Result: Both, the procedures end with the same numbers.

Also a FM-linked mapping of the three test point examples with its initial crack sizes a_0 was successfully performed, see the bottom of *Table 4*. Thereby the SIF *K* was varied, the above mentioned mean and the higher assumed value was applied.
This might be of interest for a rework of the 'Feddersen parameter sheet' HSB 63321-06.

Result:
Mapping was successful. The difference of the two K-values vanishes at both the ends.

Table 4, Mathcad computations:
*(up) Standard FFM procedure (*using the square*), however solved without necessary iterations, $a_0 = 0$*
(center) Cuntze's procedure: separate FFM- and SFC-equation, $a_0 = 0$
(down) FM-based mapping of the three test points with its individual initial cracks a_0

Vorgabe $\Delta a := 11$ $\boxed{\sigma := 111}$

$$\left[\frac{1}{\Delta a}\cdot\left[\int_r^{r+\Delta a}\left[\left[\sigma\cdot\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^2-1.578\cdot\left(\frac{r}{x}\right)^3+2.156\cdot\left(\frac{r}{x}\right)^4\right]\right]\cdot\sqrt{\mathrm{Sek}\left(\frac{\pi\cdot r}{w}\right)\cdot\mathrm{Sek}\left(\frac{\pi\cdot x}{w}\right)}\right]\right]^2 dx\right]\right] = \frac{Kc^2}{Rp02^2}$$

$$\left[\frac{1}{\Delta a}\cdot\int_r^{r+\Delta a}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^4\right]dx\right]^2$$

$$\frac{1}{\Delta a}\cdot\left[\int_r^{r+\Delta a}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^4\right]dx\right] = Rp02$$

$A := Suchen(\Delta a,\sigma)$ $A = \begin{pmatrix} 9.6 \\ 322.28 \end{pmatrix}$ $\Delta a := A_0$ $\sigma := A_1$ $\boxed{\Delta a = 9.6}$ $\boxed{\sigma = 322}$

Vorgabe $\Delta a := 11$ $\boxed{\sigma := 111}$

$$\left[\frac{1}{\Delta a}\cdot\left[\int_r^{r+\Delta a}\left[\left[\sigma\cdot\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^2-1.578\cdot\left(\frac{r}{x}\right)^3+2.156\cdot\left(\frac{r}{x}\right)^4\right]\right]\cdot\sqrt{\mathrm{Sek}\left(\frac{\pi\cdot r}{w}\right)\cdot\mathrm{Sek}\left(\frac{\pi\cdot x}{w}\right)}\right]\right]^2 dx\right]\right] = 1$$

$$Kc^2$$

$$\frac{\frac{1}{\Delta a}\cdot\int_r^{r+\Delta a}\sigma\cdot crw\cdot\left[0.335+0.665\cdot\left(1+c11\cdot\frac{x-r}{0.5\cdot w-r}\right)^{c12}+c13\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^4\right]dx}{Rp02} = 1$$

$A := Suchen(\Delta a,\sigma)$ $A = \begin{pmatrix} 9.6 \\ 322.3 \end{pmatrix}$ $\Delta a := A_0$ $\sigma := A_1$ $\boxed{\Delta a = 9.6}$ $\boxed{\sigma = 322}$

$$sigmean(x) := \frac{2500}{\left[\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^2-1.578\cdot\left(\frac{r}{x}\right)^3+2.156\cdot\left(\frac{r}{x}\right)^4\right]\right]\cdot\sqrt{\mathrm{Sek}\left(\frac{\pi\cdot r}{w}\right)\cdot\mathrm{Sek}\left(\frac{\pi\cdot x}{w}\right)}\right]}$$

Kc – Variants

$$sigmax(x) := \frac{2700}{\left[\sqrt{\pi\cdot x}\cdot\left[\sqrt{1-\frac{r}{x}}\cdot\left[1+0.358\cdot\frac{r}{x}+1.425\cdot\left(\frac{r}{x}\right)^2-1.578\cdot\left(\frac{r}{x}\right)^3+2.156\cdot\left(\frac{r}{x}\right)^4\right]\right]\cdot\sqrt{\mathrm{Sek}\left(\frac{\pi\cdot r}{w}\right)\cdot\mathrm{Sek}\left(\frac{\pi\cdot x}{w}\right)}\right]}$$

8 Conclusions, *concerningseveral aspects*

Strength criteria alone or energy-based fracture mechanical criteria alone cannot always lead to a reliable fracture failure prediction. Design Verification (DV) by using a coupled criterion will improve the situation and be an aid for understanding the stress state-depending Onset-of-Cracking. The so-called FFM concept should bring a solution to close the gap. It assumes the formation of cracks of finite size Δa at Onset-of-Cracking.

Fracture Mechanics

The crack-linked residual strength R_{res} is the gross-sectional tensile stress σ at failure of a structural component containing a crack. *(for fatiguers : R* of the last fatigue phase is to discriminate from R_{res} in the previous fatigue phase. Thereby, the crack length a_0 at the beginning of the static up-loading will increase to its critical value a_c in general).

A structural component will fail in the case of static loading if the SIF K of a brittle material reaches its critical value at $K = K_c$, termed fracture toughness, which depends on the material behavior. The determination of the K_c values requires in the so-called K-concept used above the fulfilment of a geometric bound in order to achieve a real minimum value by taking a minimum test specimen thickness of

$$t \; > \; 2.5 \cdot (K_{\mathrm{Ic}} / R^{t}_{0.2})^2 \; \rightarrow \; \sigma_c = K_{\mathrm{Ic}} / (\sqrt{\pi \cdot a_0} \cdot f(a_0)\,.$$

In the less brittle material case the limit reads $G = G_c$.

The influence of the geometry factor f decreases with the specimen thickness, resulting in fracture toughness independent of the specimen dimensions. For the same materials, the fracture toughness decreases with an increasing yield strength of 0.2 %.

Fig.11 shall illustrate how the failure stress is governed by the crack size. Plastic deformation plays a significant role.

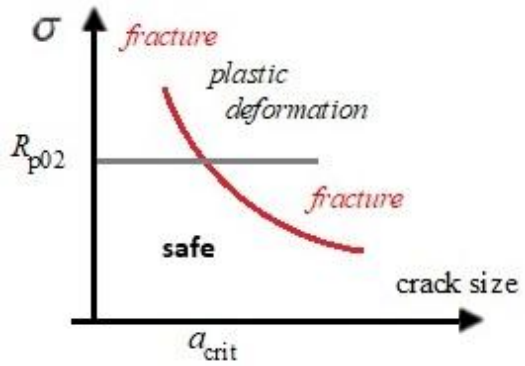


Fig.11: Illustration of the example with the concern plastic yielding

Strength

Dependent on the design requirements the average, the upper or a lower value of the property is used for the various physical properties.

In the case of the resistance property strength a statistically reduced value R is to apply and in order to achieve a reliable design a so-called Strength Design Allowable has to be applied. It is a value, beyond which at least 99% (“A”-value) or 90% (“B”-value) of the population of values is expected to fall, with a 95% confidence (*on test data achievement*) level, see MIL-HDBK 17.

In this context, note please: Measurement data sets are the result of a Test Agreement (norm or standard), that serve the desire to make a comparability of different test procedure results possible. The Test Agreement consists of test rig, test specification, test specimen, test procedure and the test data evaluation method. Therefore, one could only speak about '*exact test results and properties in the frame of the obtained test quality'*.

Test specimens shall be manufactured like the structure, 'as-built'.

Bearable load(ing)

The provision of bearable load(ing)s requires series tests of the distinctive structural component with statistical evaluation in order to determine a structural 'load-resistance design allowable'. This is valid for the FFM applications. See the 3 average open-hole dots in *Fig.10*.

Load-defined Reserve Factor *RF* and design Factor-of-Safety *FoS j*

* A *RF* is usually the result of worst case assumptions that does not take care of the joint actions of the stochastic design parameters and thereby cannot take care of their joint failure action and probability.
* The *RF* value does not outline a failure probability, and failure probability p_f does not dramatically increase if *RF* turns slightly below 1.
* A *FoS* is given and not to calculate such as a the Reserve Factor *RF* .

Application limits linked to FFM

In Design, as with each criterion, validity limits are faced, such as

- Application-extension of linear structural analysis and high brittleness
- Future task to capture small scale yielding at the crack tip which requires the provision of the associate statistically-based toughness K_c-values in order to master Design Verification
- The stress in the net-section of the panel should not exceed the tensile yield strength R_{p02}.
- 3D-application.

Many thanks to my friends, Prof. Dr.-Ing. habil. Wilfried Becker and Dr.-Ing. Jürgen Broede for the excellent exchange on this difficult novel topic FFM. " **FFM finites FM "!**

Annexes

a) course of net-section stress

In the context above and because it is necessary for understanding the FFM an illustration of the stress distribution along the net-section is to provide. In *Fig.12* the curves are depicted for the x- and an integration-simplifying normalized ξ-coordinate, proposed in HSB 34112-11. The relationship reads

$x = d/2$: $\quad \xi = \dfrac{2 \cdot x/d - 1}{w/d - 1} = \dfrac{x - r}{0.5 \cdot w - r} = 0$ (hole edge)

and $\quad x = a = d/2 + \Delta a$: $\quad \xi = \dfrac{2 \cdot x/d - 1}{w/d - 1} = \dfrac{2 \cdot \Delta a/d}{w/d - 1} = \Delta\alpha$, abbreviated .

In [10] was given $\quad \boxed{\sigma_y = \sigma_{\text{netsec}}(\xi) = \sigma \cdot K_{t,wd} \cdot [0.335 + 0.665 \cdot (1 + c_{11} \cdot \xi)^{c_{12}} + c_{13} \cdot \xi^4}$

with the geometry-dependent stress concentration factor K_t (w, d)

$$K_t(w,d) = 3.215 - \left(\frac{w}{d}\right)^{-0.5} + 4.294 \cdot \left(\frac{w}{d}\right)^{-1.5} \equiv \; c_{dw}$$

and the abbreviation functions

$$c_{11} = -3.765 + 2.148 \cdot (\frac{w}{d})^{0.879},\quad c_{12} = -2.552 - 42.894 \cdot (\frac{w}{d})^{-3.17},\quad c_{13} = -0.7497 \cdot (\frac{w}{d})^{-1.858}.$$

For the example w = 300 mm, d = 25 mm, c_{dw} = 3.03, c_{11} = 19.5, c_{12} = -2.56, c_{13} = -4.9· 10^{-3} follow

after normalization by $K_{t,\infty}(w=\infty)$=3, and setting a reference stress σ = 100 MPa the following plots:

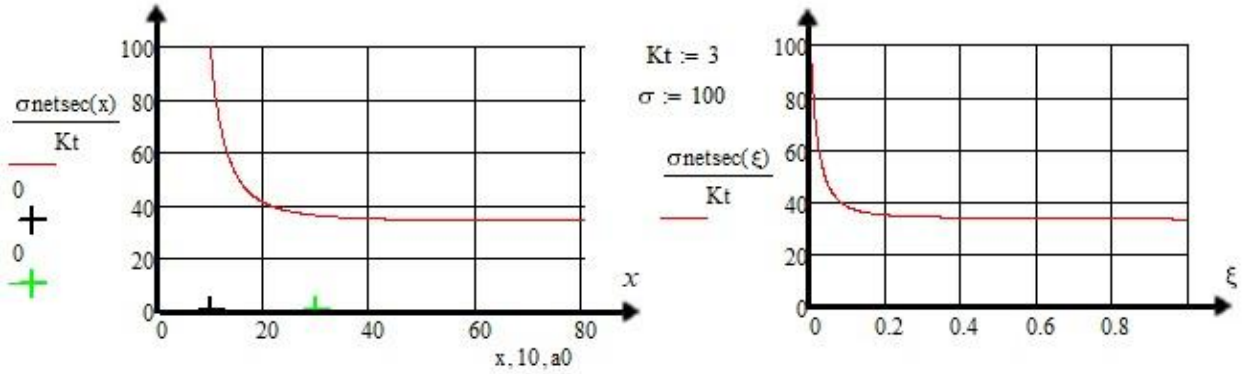


Fig.12: Contour of the stress along the net-section of the panel considering the coordinates x and ξ.

σ_{ref} = *100*MPa, *r =12.5* mm, *a0= 30*mm, $K_{t,\infty}$=3, *x width coordinate (ligament),* $\xi = (x-r)/(0.5\cdot w - r)$,

Results:

With increasing distance to the hole edge the stresses are monotonically descending whereas the incremental energy release rate $\mathcal{G}$ is monotonically ascending (see *Fig.12).*

b) Integration of net-section stress

HSB 34112-11 computation, retraced:

Applying the afore mentioned coordinate transformation x → ξ enables the following symbolic integration

$$\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma_y\cdot dx = \frac{\sigma\cdot c_{wd}}{\Delta\alpha}\cdot\int_{0}^{\Delta\alpha}[0.335+0.665\cdot(1+c_{11}\cdot\xi)^{c_{12}}+c_{13}\cdot\xi^4]\cdot d\xi$$

$$= \frac{\sigma\cdot c_{wd}}{\Delta\alpha}\cdot\left[0.335 + c_{14}\cdot\frac{(1+c_{11}\cdot\Delta\alpha)^{c15}-1}{\Delta\alpha} + c_{16}\cdot\Delta\alpha^4\right]$$

$$\text{with}\qquad c_{14} = \frac{0.665}{c_{11}\cdot(c_{12}+1)},\quad c_{15} = c_{12}+1,\quad c_{16} = \frac{c_{13}}{3}.$$

Variant Cuntze:

Despite of the more complicate integration limit $r + \Delta a$ instead of $\Delta\alpha$, the Mathcad solution process allows to stick to the x coordinate, avoiding a mixture of α with a within the solution process. Inserting into the equation above the relationship $\xi = (x-r)/(0.5\cdot w - r)$ leads to

$$\frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma_y\cdot dx = \frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma\cdot c_{wd}\cdot[0.335+0.665\cdot(1+c_{11}\cdot\xi)^{c_{12}}+c_{13}\cdot\xi^4]\cdot dx$$

$$= \frac{1}{\Delta a}\cdot\int_{r}^{r+\Delta a}\sigma\cdot c_{wd}\cdot[0.335+0.665\cdot(1+c_{11}\cdot\frac{x-r}{0.5\cdot w-r})^{c_{12}}+c_{13}\cdot\left(\frac{x-r}{0.5\cdot w-r}\right)^4\cdot dx.$$

Result:
The solution of the coupled equation delivers the remote failure stress with its associated crack length size Δa , see Table 3, too.

Of interest could be the effect of a varying panel width geometry. *Finally Fig.13 plots the influence of the resistance ratio* $c_{KR}= K_{app}^2/R_{app}^2$ *on the critical crack size* Δa_c *. The* c_{ik} *are the variables:*

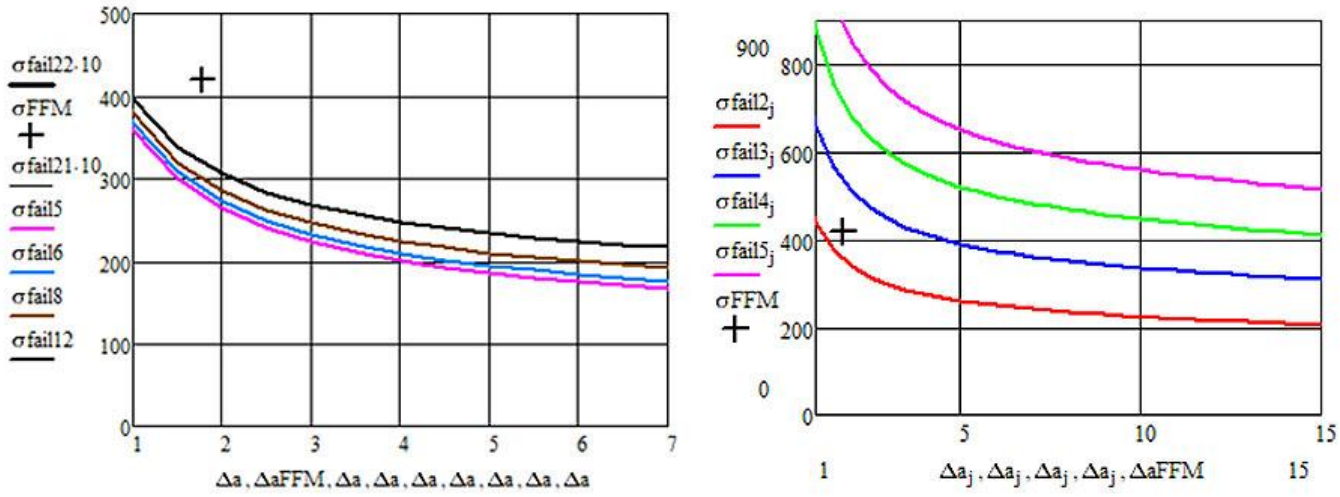


Fig.13 (l eft), general, w = 300mm: Effect of different panel geometry, ratios w/d=5, 6, 8, 12 as variables.
Fig.13 (right), general, w = 300mm: Effect of different resistance ratios KIc^2/Rm^2 *= 2, 3, 4, 5*

Lessons Learned on FFM and its two parts

FFM:

- *In the case of plain structural parts 'Onset-of-Cracking' in brittle and semi-brittle materials cannot be fully captured by the SFCs, because both a critical energy and a critical stress state must be fulfilled. Therefore, SFCs are 'just' necessary but not sufficient for the prediction of strength failure, onset of cracking. Also due to significant internal flaws an energy criterion is to apply*
- *The novel approach 'Finite Fracture Mechanics (FFM)' offers a 2D hybrid criterion to more realistically predict the stress-based 'Onset-of-Cracking' in brittle isotropic (the focus here) and UD materials.*
- *FFM enables to predict a hybrid (coupled) failure stress being assumed to be a resistance quantity on basis of the chosen statistically reduced resistances of the FFM-parts fracture mechanics (FM) and structural strength (SFC), the strength design allowables*
- *FFM is advantageous for the analysis of notched structural parts and captures applications usually treated by the well-known Neuber theory. The coupled FFM-criterion 'SFC-FM' can be used with some confidence to predict onset of cracking (failure) in brittle materials in design situations as never could be done before.*
- *Unfortunately there is still a lack of test data sets for the validation of FFM*
- *Multi-axial stress states are captured by the principal stress* σ_I
- *Using the chosen locally evenly distributed stress curve averaged over the finite length Δa is principally to check*
- *In the frame of the scatter the FM-curve tendency matches well with the FFM result. The FMC-application looks successful for the 'open hole panel' example, a realistic failure stress can be estimated, qualifying the Feddersen concept.*

► ***FFM finites FM!***

FM (R-curve):

- *It is to regard, when considering the formulations to be applied: Short Cracks behave differently to Large Cracks*
- *It is unbelievable (see the treated HSB example Feddersen concept) that no test results can be found in literature concerning panels with different ratios 'width/hole radius'. Such tests should have been performed when investigating the Neuber theory (Where are these?)*
- *Notch surface quality and the metal homogeneity faced naturally have its impacts on the results.*
- *The R-curve does not depend on a_0 and w.*
- *The fracture stress is to base on* $a_e = a + \Delta a + \omega$ (ductile notch tip yielding).
- *Principal stress-linked procedure.*

SFCs Cuntze:

- *Full 3D- stress state-capable and of processing equivalent stresses and principal stresses.*

9 Curiosities ‘Normal Yielding’ and ‘Compressive Fracture Toughness’

***Aim**: Filling two rooms in the Structural Material Mechanics Building by proving the assumed ’generic’ number.*

Regarding a material ‘generic’ number of 2 to be valid for isotropic materials there are two ‘empty rooms’ in the author-assumed ‘Mechanics Building’ of Isotropic Materials to be filled by ‘Normal Yielding (NY)’ and by a counterpart of the tensile fracture toughness $K_{\mathrm{Icr}}^{(\mathrm{t})}$ in the compressive domain.

9.1 Normal Yielding NY: [*CUN22, §4*]

Glassy, amorphous polymers like polystyrene (PS), polycarbonate (PC) and PolyMethylMethAcrylate (PMMA = plexiglass) are often used structural materials. They experience two different yield failure types, namely crazing under tension (*Fig.9-1*) and under compression a

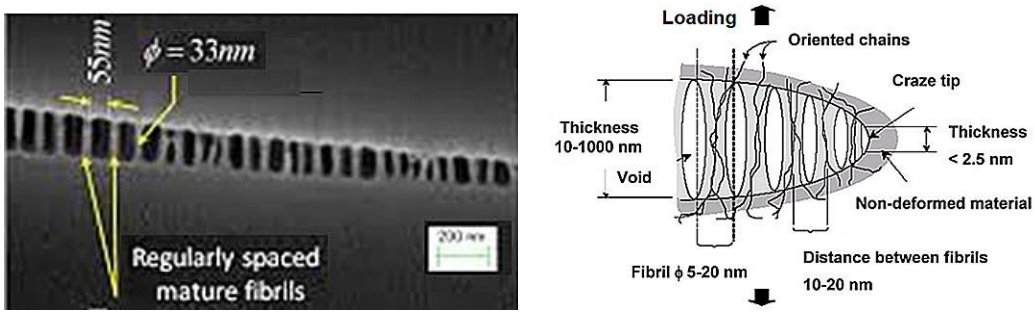


Fig. 9-1: PMMA, SEM image of a craze in Polystyrene Image (created by Y. Arunkumar)

shear stress yielding that is often termed by a material specialist ‘shear-banding’.

Crazing can be linked to Normal Yielding (NY) which precedes the crazing-following tensile fracture. Crazing occurs with an increase in volume through the formation of fibrils bridging built micro-cracks

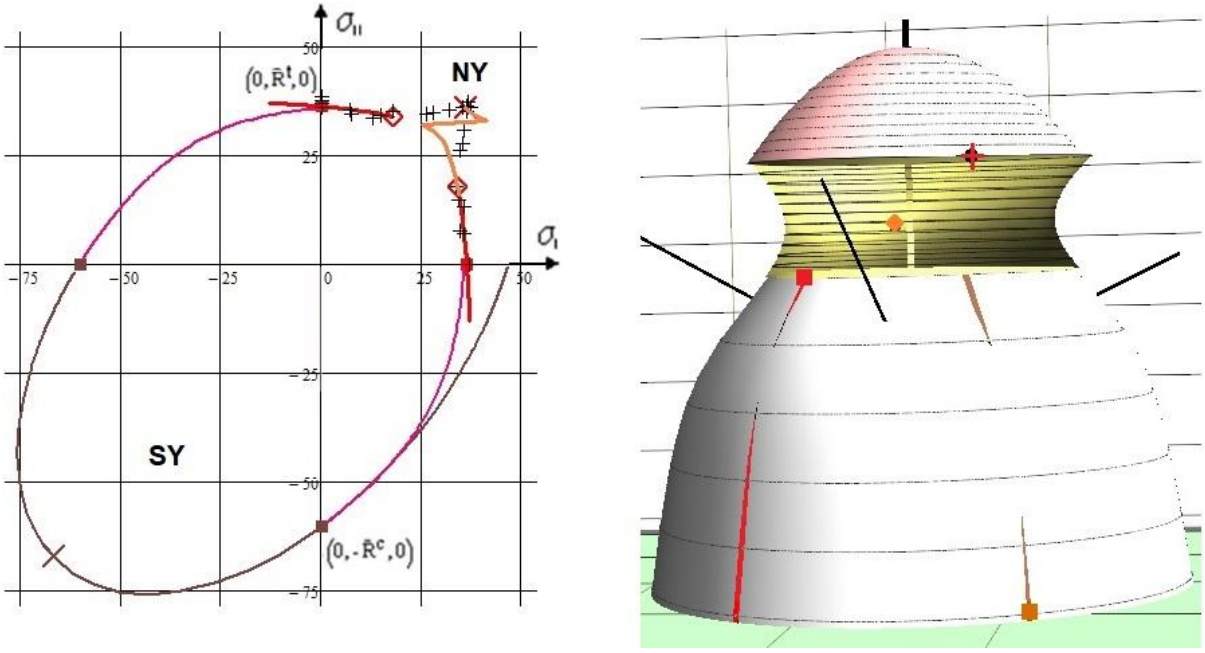


Fig. 9-2, PMMA: (left) Mapping of test data in tension and compression principal stress domain with and without interaction; (right) depiction of the fracture body shape with some representative points. For the validation of the FMC-based SFC for PMMA two data sets were available, one NY-2D-data set from Sternstein-Myers and a SY-3D-data set from Matsushige

Sternstein S S and Myers F A: *Yielding of glassy polymers in the second quadrant of principal stress space.* J. Macromol. Sci, Phys. B 8 (1973), 539-571. Matsushige K, Radcliffe S V and Baer E: *The mechanical behavior of polystyrene under pressure*. J. of Material Science 10 (1975), 833-845.

and shear banding keeps volume. Therefore, due to the FMC 'rules' the dilatational I_1^2 is to employ in the SFC-approach for tension $I_1 > 0$. Under compression, brittle amorphous polymers classically shear-band (SY) and experience friction. Therefore, I_1 must be employed in the approach for $I_1 < 0$ in order to consider material internal friction. 'Mises' means frictionless yielding and therefore it forms a cylinder.

For obtaining the complete yield failure body (*Fig.9-2*) its parts NY and SY are to interact in the transition zone. Doing this the used Mathcad 15 code had no problems to generate the **3D**-failure body, however the **2D**-cut visualization of the NY failure surface using Mathcad 15 code (*a 35 DIN A4-pages application*) was too challenging for the solver which had to face a concave 2D principal stress plane situation instead of the desired convex one.

LL: *The failure type crazing shows a 'curiosity' under tensile stress states: A non-convex shape exists for Onset-of-Crazing ($\bar{R}_{NY}^{t}$). This violates the 'convexity stability postulate' of Drucker,* meaning *"If the stress-strain curve has a negative slope then the material is not Drucker-stable".*
The inflection point of the hyperboloid results from the derivation dF/dI_1 of the NF criterion,

$$F^{NF} = \frac{\sqrt{4J_2 - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = 1$$ *neglecting 120°-symmetry (results, see a later chapter.)*

9.2 Compressive (shear) Fracture Toughness $K_{IIcr}^{(c)}$, *[CUN22,§4.2]*

Some reasons caused the author to search a compressive fracture toughness:

- An early citation of A. Carpinteri, that approximately reads: "*With homogeneous isotropic brittle materials there are 2 real energy release rates $\mathcal{G}_{Icr}$, $\mathcal{G}_{IIcr}$, one in tension and one in compression*"
- The number of the (basic) fracture toughness quantities may be *theoretically at least* also 2, namely $K_{Icr}^{t} \equiv K_{Ic}$ together with K_{IIcr}^{c} (*Fig.9-3*) and
- The novel approach Finite Fracture Mechanics (FFM) that offers a hybrid criterion to more realistically predict the crack initiation in brittle isotropic and UD materials.

A stringent postulate for the author was crack path stability which can be explained "*Only an angle-stable, self-similar crack growth plane-associated critical Stress Intensity Factor (fracture toughness) is a 'basic' property*". This requires as presumption an *ideally* homogeneous isotropic material in front of the crack-tip. Therefore, the investigation is only for an ideal structural mechanics building of importance, because in practice, there are usually no ideal homogeneous conditions at the crack-tip.

Practically, facture mechanics is presently only tensile driven performed using $K_{Ic} = K_{Icr}^{t}$ as a clear critical fracture intensity, where the crack plane does not change (the index cr is necessarily to be taken in this document in order to separate tension ^{t} from compression ^{c}). Why shouldn't there not be a quantity K_{IIcr}^{c} that fits as an opposite complement to K_{Icr}^{t} and where, in an ideal case of no flaws in front of the crack tip, the crack plane grows further along the generated shear fracture angle under a compressive fracture load?

The Fracture Mechanics Mode I delivers a real, 'basic' fracture resistance property generated under a tensile stress. Both the Modes II K_{IIc}, and III K_{IIIc} do not show a stable crack plane situation but are nevertheless essential FM model parameters to capture 'mixed mode loading' for performing a multi-axial assessment of the far-field stress state. $\rightarrow \bar{R}^{t}$ and $\bar{K}_{I\,cr}^{t}$ correspond! They are 'just' very helpful model parameters driving the crack plane in direction of a finally KIc-driven failure.

With the Mode-II compressive fracture toughness K_{IIcr}^{c} it is like with strength. One says compressive failure, but actually shear (stress) failure is meant, compressive stress is 'only' the descriptive term.

Therefore the shear index $_{II}$ is to apply with K_{IIcr}^{c} .

One has to keep in mind: In mechanical engineering the structural tasks are usually lie in the tension domain (*index ^{t} is skipped*), whereas oppositely in civil engineering the compression domain is faced (*index ^{c} is skipped*):

*Tension domain: One knows from K_{Icr}^{t} (tension), that – viewing the fracture angle - it corresponds to R^{t}.

*Compression domain: Above not generally known second basic SIF K_{IIcr}^{c} seems to exist under ideal conditions. It corresponds to shear fracture SF happening under compressive stress R^{c} and leading to the angle Θ_{fp}^{c}. The crack surfaces are closed for K_{IIcr}^{c}, friction sliding occurs.

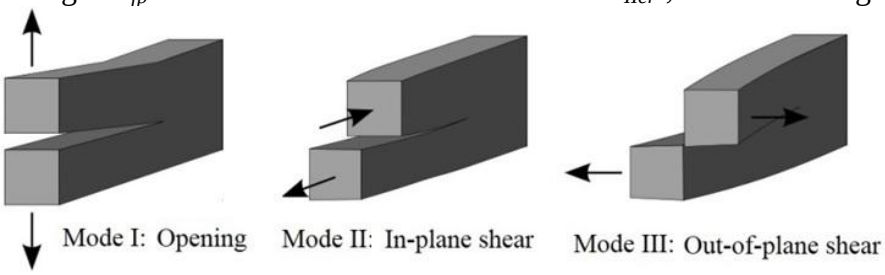


Fig.9-3: Classical Fracture Mechanics modes

Some proof of the author's postulate could be: There exists a minimum value of the compressive loading at a certain fracture angle. This means that the K_{IIcr}^{c} becomes a minimum, too. Liu et al performed in [*Liu14*] tests using a cement mortar material, (*Fig.9-4*). ► From Liu's measured results, by now, it seems to - theoretically at least - that the 'generic' number 2 is met.

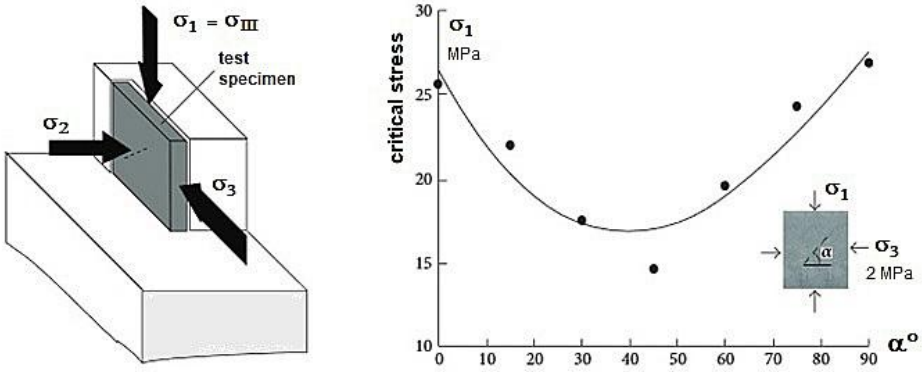


Fig.9-4: Scheme of the test set-up and of the test points obtained for cement mortar [Liu14], σ_1 represents the mathematical stress σ_{III} (largest compressive stress value).

[Liu J, Zhu Z and Wang B: *The fracture characteristic of three collinear cracks under true tri-axial compression.* The scientific World Journal, V 2014, article ID459025]

For the transversely-isotropic UD lamina materials it seems directly to match: ► 5 fracture toughness properties correspond to 5 strength properties, 'generic' number postulate is fulfilled.

LL:

**Fracture Mechanics seems to follow material symmetry 'rules' and seems to possess a 'generic' number, too.*

** Note on K_{IIcr}^{c} as a design entity: It is of theoretical, but not of practical value due to the usually faced not ideal homogeneous situation of 'isotropic materials' at crack tips.*

** The angle change of cracks under mixed-mode stress is a consequence of the singular stress field at the crack tip. Mode I drives the growth of the initial crack at the crack tip. The rotation of the propagating crack surface is caused by the non-singular stresses.*

10 Generation of Constant Fatigue Life curves considering Mean Stress Effect

***Aim**: Automated derivation of the Constant Life Curve with discussion of the Mean Stress Correction.*

Generally, in Design Verification (DV) it is to demonstrate that "No relevant limit failure state is met considering all Dimensioning Load Cases (DLCs)". This involves cyclic DLCs, focusing lifetime with non-cracked and cracked structural parts (*the latter would require Damage Tolerance tools*).
Methods for the prediction of durability, regarding the lifespan of the structural material and thereby of the structural part, involves long time static loading which is linked to 'static fatigue' and in particular to 'cyclic fatigue'. Fatigue failure requires a procedure for the Fatigue Life Estimation necessary to meet above cyclic DV.

Domains of Fatigue Scenarios and Analyses are:

LCF: high stressing and straining
HCF: intermediate stressing 10.000 < n < 2.000.000 cycles (*rotor tubes, bridges, towers, off-shore structures, planes, etc*.)
VHCF: low stress and low strain amplitudes (*see SPP1466 Very High Cycle Fatigue > 10^7 cycles (in centrifuges, wind energy rotor blades, etc*.).

Principally, in order to avoid either to be too conservative or too un-conservative, a separation of the always needed 'analysis of the average structural behaviour' in Design Dimensioning (*using average properties and average stress-strain curves*) in order to obtain the best structural information (*= 50% expectation value*) is required from the mandatory single DV-analysis of the final design, where statistically minimum values for strength and minimum, or mean and maximum values for other task-demanded properties are applied as Design Values.

10.1 Fatigue Micro-Damage Drivers of Ductile and Brittle behaving Materials, see [*Cun23b*]

There are strain-life (*plastic deformation decisive, plastic strain-based $\varepsilon_{pl}(N)$*) and stress-life models (*SN*) used. For ductile materials, strain-life models are applied because a single yield mechanism dominates and the alternating stress amplitude counts. For brittle materials, the elastic strain amplitude becomes dominant and stress-life models are applied. With brittle materials inelastic micro-damage mechanisms drive fatigue failure and several fracture mechanisms may come to act. This asks for a modal approach that captures all failure modes which are now fracture modes.

Above two models can be depicted in a Goodman diagram and in a Haigh diagram. The Haigh diagram (σ_a, σ_m) will be applied here because the often used Goodman employs just one quantity σ_a or $\Delta\sigma = 2 \cdot \sigma_a$ or σ_{max} which is not sufficient. A Haigh Diagram represents all available SN curve information by its 'Constant Fatigue Life (CFL) curves, being the focus here and using the two quantities σ_a, R .

Basic differences between ductile and brittle materials are the following ones:

- Ductile Material Behavior, isotropic materials: mild steel
  1 *micro-damage* mechanism acts ≡ *"slip band shear yielding"* and drives micro-damage under tensile, compressive, shear and torsional cyclic stresses: *This single mechanism is primarily described by* 1 *SFC, yield failure condition (HMH, 'Mises')!*
- Brittle Material Behavior, isotropic materials: concrete, grey cast iron, etc.
  2 *micro-damage* driving mechanisms act ≡ 2 *fracture failure modes Normal Fracture failure*

(NF) and Shear Fracture failure (SF) under compression described by 2 *fracture conditions, the 2 SFCs for NF and SF, where porosity is always to consider*

- Brittle Material Behavior, transversely-isotropic UD-materials:
  5 *micro-damage* driving fracture failure mechanisms act ≡ 5 fracture failure modes *described by 5 SFCs or strength fracture failure conditions*.

A very essential topic is the so-called 'Mean stress sensitivity': Within [*Cun23b*] the author attempts to redirect the *'Thinking, resulting from ductile material behavior using 'Mean stress influence correction factors', which in reality means 'Walking on crutches',* into a direct *'Thinking* with *fracture modes facing a realistic brittle material behavior*'.
Not fully ductile isotropic materials show an influence of the mean stress on the fatigue strength depending on the (static) strength ratio R^c/R^t and the material type. Mean stresses in the tensile range, $\sigma_m > 0$ MPa, lead to a lower permanently sustainable amplitude, whereas compressive mean stresses $\sigma_m < 0$ MPa increase the permanently sustainable amplitude or in other words.

LL:
** A tensile mean stress lowers the fatigue strength and a compressive mean stress increases the fatigue strength*
** If it is a pretty ductile material one has one mode 'yielding' and if the material is pretty brittle then many 'fracture modes' are to consider*
** Brittle materials like the transversely-isotropic UD material with its five fracture failure modes possess strong mean stress sensitivity, a brittle steel material just 2 modes*
** Whether a material has an endurance fatigue limit is usually open regarding the lack of VHCF tests. The strength at $2{\cdot}10^6$ cycles might be only termed apparent fatigue strength (*scheinbare Dauerfestigkeit*). However, e.g. CFRP could possess a high fatigue limit*
** Whether the material's micro-damage driver remains the same from LCF until VHCF is questionable and must be verified in each given design case (continuum micro-damage mechanics is asked here)*
** The 'ductile material behavior thinking' in 'Mean stress influence' is to redirect for brittle materials into 'thinking in fracture modes'.*

10.2 Mapping Challenge of the decisive Transition Zone in the Haigh diagram [Cun23b]

The course of the test data in the transition zone determines the grade of the mean stress sensitivity. In *Fig.10-1*, at first all essential quantities are illustrated. Further, two Constant Fatigue Life (**CFL**)-curves of a brittle material are displayed, for the envelopes N = 1 and N = 10^7. The pure mode domains are colored and the so-called transition zone is separated by R_{trans} into two influence parts. The course of the R-value in the Haigh diagram is represented by the bold dark blue lines. The CFL curve N = 1 is curved at top because 2 modes act in the case of brittle materials! This is in contrast to uniaxial static loading, depicted by the straight static envelopes, $N \neq N_f$: One micro-damage cycle results from the sum of 2 micro-damage portions, one comes from uploading and one from unloading! For fully ductile materials practically no transition zone between 2 modes exists, because just one single mode reigns, namely 'shear yielding'. Therefore, it is no mean stress effect to correct in this case!

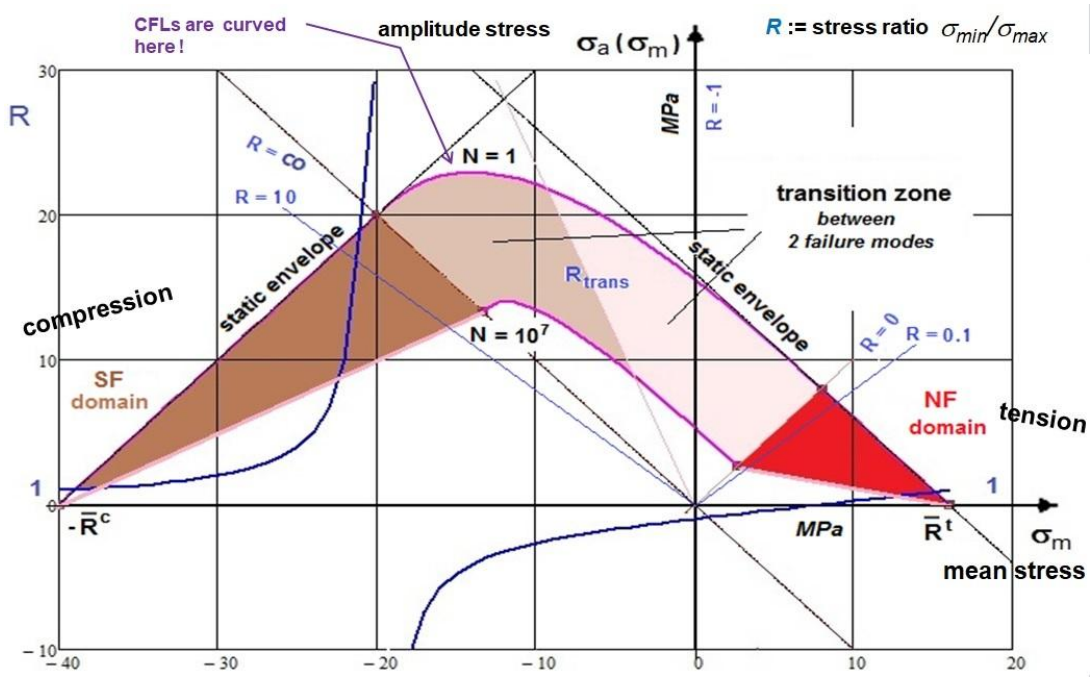


Fig.10-1, Haigh Diagrams: Scheme of pure mode domains, course of R *and transition zone parts .*
(a:= amplitude, m:= mean, N := number of fracture cycles, $\bar{R}$ *:= strength and* R *:=* $\sigma_{min}/\sigma_{max}$

The quality of mapping the course of data in the transition zone is practically checked by "*How good is the more or less steep course along the stress ratio* R_{trans}*-line mapped*?" This is performed by following the physical reality, that the pure SF-domain is fully decoupled from the NF-domain, and employing oppositely running decay functions f_d, see *Fig. 10-2*.

$$Eff = [(Eff^{NF})^m + (Eff^{SF})^m]^{m^{-1}} = 100\% \quad \text{or}$$

$$\left(\frac{-(\sigma_{2m}-\sigma_{2a})+|\sigma_{2m}-\sigma_{2a}|)}{2\cdot \bar{R}_{\perp}^{\,c}\cdot f_d}\right)^m + \left(\frac{\sigma_{2m}+\sigma_{2a}+|\sigma_{2m}+\sigma_{2a}|)}{2\cdot \bar{R}_{\perp}^{\,t}\cdot f_d}\right)^m = 1$$

$\rightarrow$ $f_d^{IFF2} = 1/[1+\exp(\frac{c_1+\sigma_m}{c_2})]$ with c_1, c_2 fixed at $(-\bar{R}_{\perp}^{c}, 0.995)$, (-0.01,+0.01).

and analogously $f_d^{IFF1} = ...$.

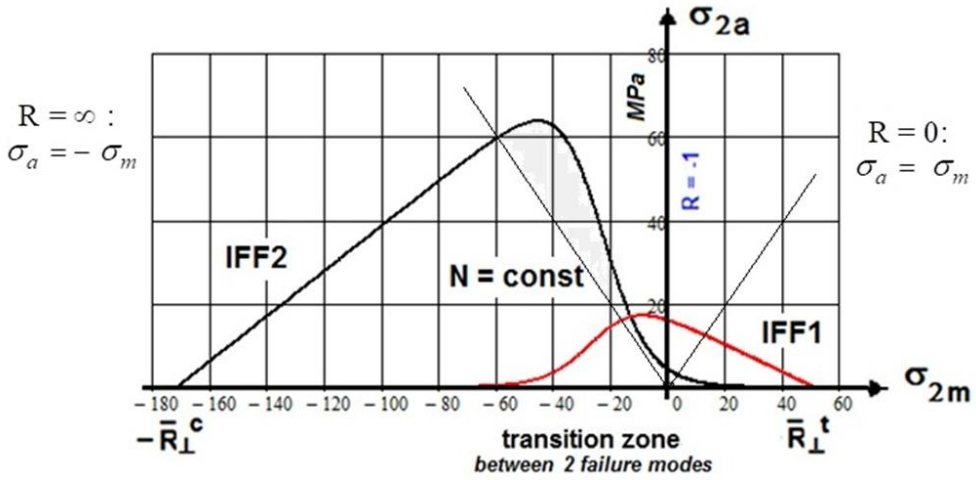


Fig.10-2, example UD material: Course of the decay functions in the transition zone $-\infty < R < 0$

Fig.10-2 illustrates the course of the mode decay functions f_d for the tension and the compression domain. The straight lines in the figure present the extreme SN curve beams, R = ∞ for the SF domain and R = 0 for the NF domain. In between, the envisaged slightly colored transition zone ($-\infty < R < 0$) is located. Mean stress sensitivity of brittle materials is demonstrated very impressively if the so-called 'strength ratio' = compressive strength / tensile strength R^c/R^t is high. The two plots in *Fig.10-3 will* clearly document this.

LL:

* *A large strength ratio R^c/R^t stands for a large mean stress sensitivity*
* *A steep decay cannot be captured by a 'mean stress correction factor' as can be still performed with not fully ductile materials*

10.3 Estimation of the cyclic Micro-damage Portions of Brittle Materials

A very essential question in the estimation of the lifetime of brittle materials is a means to assess the micro-damage portions occurring under cycling. Here, for brittle behavior the response from practice is: It is permitted to apply validated static SFCs due to the experienced fact:

> *"If the failure mechanism of a mode cyclically remains the same as in the static case, then the fatigue micro-damage-driving failure parameters are the same and the applicability of static SFCs is allowed for quantifying micro-damage portions". This is supported because FMC-based static SFCs apply equivalent stresses of a mode SF or NF. See again Fig.10-2 above.*

10.4 Automatic Establishment of Constant Fatigue Life Curves (for details , see [Cun23b]

For a decade the author's intensive concern was to automatically generate Constant Fatigue Life curves on basis of just a few tested Master SN curves coupled to an appropriate physically based model. Such a model the author obtained when M. Kawai gave a presentation during the author's conference on composite fatigue in 2010 at CU Augsburg. Kawai's so-called '*Modified fatigue strength ratio'* Ψ-model was the fruitful tool found. Kawai's presented procedure was a novelty and is applicable to brittle materials such like UD plies (*depicted later in Fig.10-4*) and isotropic concrete material as well.

Fig.10-3 (left) displays the differently-colored failure mode domains FF1-FF2 in a UD FF Haigh diagram and (*right*) IFF1-IFF2 in a UD IFF Haigh diagram. The available test data set along R_{trans} in the transition zone is represented by the crosses.
The decay model quality in *Fig.10-3(right)* proves the efficiency of the decay functions in the transition zone. For proving this the author is very thankful because this was only possible because he got access to the test results of C. Hahne, AUDI.

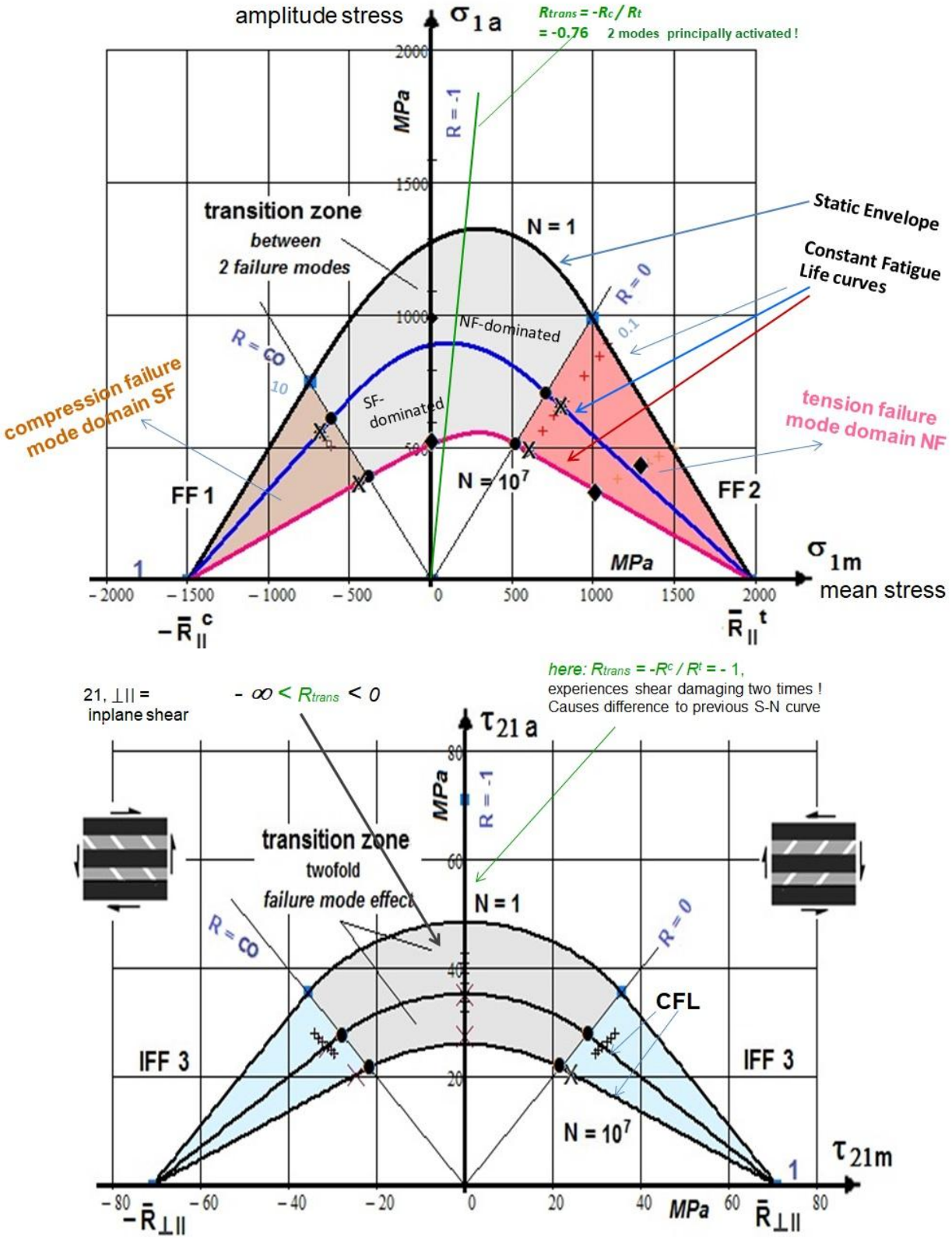


Fig.10-3, UD Haigh diagram: (up) FF with low strength ratio as with ductile materials. Rigorous Interpretation of the Haigh diagram for the UD-example FF1-FF2 displaying failure mode domains and transition zone [16], CFRP/EP, $\bar{R}_{||}^{t} = 1980,\ \bar{R}_{||}^{c} = 1500,\ \bar{R}_{\perp}^{t} = 51,\ \bar{R}_{\perp}^{c} = 172,\ \bar{R}_{\perp||} = 71$ [MPa].

(down) IFF with high strength ratio as with brittle materials Display of a two-fold mode effect (a:= amplitude, m:= mean, N := number of fracture cycles, $\bar{R}$:= strength and R := $\sigma_{min}/\sigma_{max}$). Test data CF/EP, courtesy Clemens Hahne, AUDI

In *Fig.10-4* the course of the cyclic failure test data can be well mapped by the 4-paramater Weibull formula R = constant : $\sigma_{max}(R, N) = c_1 + (c_2 - c_1) / \exp(\log N / c_3)^{c4}$.

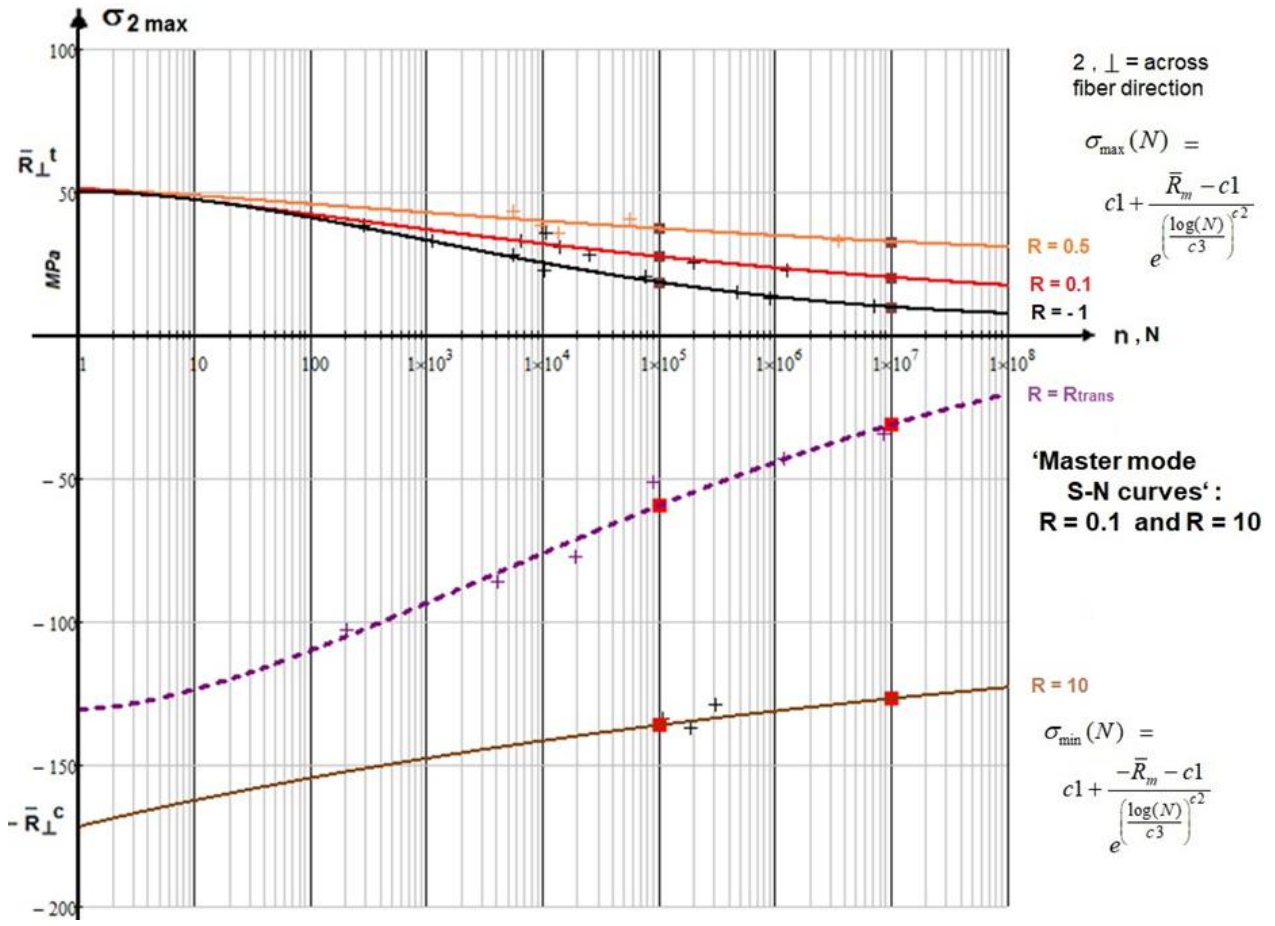


Fig.10-4: SN-curve, lin-log displayed IFF1-IFF2-linked SN curves [test data, courtesy C. Hahne, AUDI]
[Kawai M: A phenomenological model for off-axis fatigue behavior of uni-directional polymer matrix composites under different stress ratios. Composites Part A 35 (2004), 955-963]

10.5 Lifetime Estimation

The so-called Palmgren-Miner rule is applied for summing up the cyclic micro-damage portions. Statistical analyses in the German aeronautical handbook HSB have shown that the fatigue life estimation using the linear accumulation method of Palmgren-Miner tends to be too optimistic. However a satisfactory reason with correction could not yet found:

- One explanation is the 'Right use of the right SFC: Mises is not anymore fully applicable?'
- A more severe second explanation is the loss of the loading sequence, an effect which is different for ductile and brittle materials. This inaccuracy is practically considered in design by the application of the so-called Relative Miner with defining a $D_{feasible}$ and which must be < 100 %.

In the case of variable amplitude loading several SN curves are needed. An example for the computation of the lifetime estimation is displayed by *Fig.10-5*.

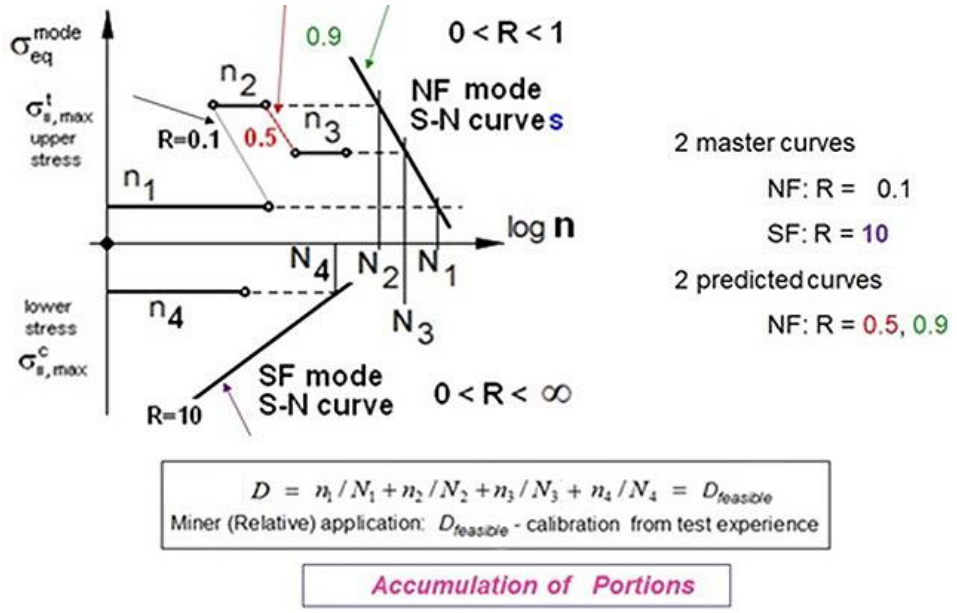


Fig.10-5: Lifetime Prediction (estimation) Method .Summing up of micro-damage portions by application of the Palmgren-Miner rule. Schematic application of a simple example, 4 blocks.
$D_{feasible}$ from test experience

LL:

** A 'closed CFL-procedure' - as a coupled method - could be found to generate mandatory test data-based Constant Life Fatigue curves by using a Master SN curve plus the supporting model to determine other required SN-curves employing Kawai's Ψ-model*

** The challenging decay along* $R_{trans} = -R^c / R^t$ *could be modelled (strength R has a bias letter)*

** Test data along* R_{trans} *are more helpful than for* $R = -1$*, which is standard with ductile behavior*

** Right use of the right SFC. One cannot blame 'Mises' if yielding is not anymore decisive for the creation of the micro-damage portions*

** The Palmgren-Miner rule cannot account for loading sequence effects, residual stresses, and for stresses below the fatigue limit (life → ∞ ?)*

** Ductile material: Degradation-driving is the shear stress yielding indepent of tension, compression and torsion*

** Viewing brittle materials, all the SN curves have their physical origin in the strength points.*

** The mean stress effect increases with decreasing ductility*

► *Hence, the author would like to recommend: Redirect the traditional* 'Thinking, resulting from ductile material behavior regarding Mean stress correction' *into a* 'Thinking with fracture modes' *in the case of the usually not fully ductile structural materials.*

11 Evidencing 120°-symmetrical Failure Bodies of Brittle and Ductile Isotropic Materials

***Aim**: Structural Materials Building, Proof that 'All isotropic materials possess 120° rotational symmetry' with presentation of 3D-SFCs for isotropic, transversely isotropic UD-materials and orthotropic ones.*

11.1 General

From experiments is known, that brittle isotropic materials possess a so-called 120°-axially symmetric fracture failure body in the compressive domain. The question arises: Should ductile materials in the tensile domain not also possess a 120°-axially symmetric yield loci envelope instead of having just the rotationally symmetric 'Mises cylinder'?

According to the French saying " *Les extrêmes se touchent* " and based on his FMC-thinking the author assumed that there is a large similarity in the description of the behavior of very ductile and very brittle materials. Also with ductile materials a 120°-rotational symmetry should be found. In order to prove a general 120°-rotational symmetry, test results from bi-axially measuring test specimens are necessary, such as a cruciform or a cylinder.

Searched is the description of a complete failure body. This requires that the SFC captures both the positive and the negative I_1-domain. Further, the 120°- rotational symmetry should be mapped by the SFC approach (*traditional use of J_3*), too.

Thereby, brittle and ductile material behaviors are to discriminate:

Brittle: In order to show the difference of brittle to ductile materials *Fig. 11-1* outlines the brittle material with its features $\bar{R}^{tt} < \bar{R}^{t}$ and $\bar{R}^{cc} > \bar{R}^{c}$. (*Probably not considering the natural flaws in concrete, in [Lem08] was published $\bar{R}^{tt} > \bar{R}^{t}$ which is physically not explainable and might be the consequence of the difficult measurement*).

Ductile: Deformation measurements prove that for the same strain value of the growing yield surface it holds that equi-biaxial stress $\bar{\sigma}^{tt}(2D) > \bar{\sigma}^{t}(1D)$. This is similar to brittle concrete in the compressive domain where $\bar{R}^{cc} > \bar{R}^{c}$ and demonstrates the validity of the 120°-axial symmetry.

Note:

Brittle: bi-axial tension = weakest link failure behavior
*Brittle: bi-axial compression = redundant (*benign*) failure behavior*
*Ductile: bi-axial compression = redundant (*benign*) failure behavior.*

11.2 Brittle Isotropic Materials (Metals, Glass, Ceramics, Concrete, Soil, ..)

2 modes → 2 SFCs, which is in line with the 'generic' number 2 according to the FMC.

3D-SFCs of Isotropic Dense Materials

* Normal Fracture NF for $I_1 > 0$ ⇐ SFCs ⇒ Shear Fracture SF for $I_1 < 0$

$$F^{NF} = c_{\Theta}^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^{t}} = 1 \quad \leftrightarrow \quad F^{SF} = c_{\Theta}^{SF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{SF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^{c}} = 1$$

after inserting $\sigma = R \cdot Eff$ and dissolving for Eff follows

$$Eff^{NF} = c_{\Theta}^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^{t}} = \frac{\sigma_{eq}^{NF}}{\bar{R}^{t}} \quad \leftrightarrow \quad Eff^{SF} = c_{\Theta}^{SF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{SF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^{c}} = \frac{\sigma_{eq}^{SF}}{\bar{R}^{c}}.$$

The formulation of F^{NF} generates a straight line in the principal stress plane! It is hyperbolic in the spatial domain, where Haigh-Lode-Westergaard coordinates are used.

3D-SFCs of Isotropic Porous Materials with model parameter determination

* Normal Fracture NF for $I_1 > 0$ $\Leftarrow$ SFCs $\Rightarrow$ Crushing Fracture CrF for $I_1 < 0$

$$F^{NF} = c_\Theta^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = 1 \quad \leftrightarrow \quad F^{CrF} = c_\Theta^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c} = 1$$

after inserting $\sigma = R \cdot Eff$ and dissolving for Eff follows

$$Eff^{NF} = c_\Theta^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} = \frac{\sigma_{eq}^{NF}}{\bar{R}^t} \leftrightarrow Eff^{CrF} = c_\Theta^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c} = \frac{\sigma_{eq}^{CrF}}{\bar{R}^c}.$$

with $I_1 = (\sigma_I + \sigma_{II} + \sigma_{III}) = f(\sigma)$, $6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = f(\tau)$

$$27J_3 = (2\sigma_I - \sigma_{II} - \sigma_{III}) \cdot (2\sigma_{II} - \sigma_I - \sigma_{III}) \cdot (2\sigma_{III} - \sigma_I - \sigma_{II}).$$

If a failure body is rotationally symmetric, then Θ = 1 like for the neutral or shear meridian, respectively . A 2-fold acting mode makes the rotationally symmetric fracture body 120°-symmetric and is modelled by using the invariant J_3 and Θ as non-circularity function with d as non-circularity parameter

$$\Theta^{NF} = \sqrt[3]{1 + d^{NF} \cdot \sin(3\vartheta)} = \sqrt[3]{1 + d^{NF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}} \quad \leftrightarrow \quad \Theta^{CrF} = \sqrt[3]{1 + d^{CrF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$$

Lode angle ϑ , here set as $\sin(3 \cdot \vartheta)$ with 'neutral' (shear meridian) angle $\vartheta = 0°$ ($\rightarrow \Theta = 1, d = 0$) ;

tensile meridian angle 30° $\rightarrow \Theta^{NF} = \sqrt[3]{1 + d^{NF} \cdot (+1)}$; compr. mer. angle -30° $\rightarrow \Theta^{CrF} = \sqrt[3]{1 + d^{CrF} \cdot (-1)}$.

Mode interaction $\rightarrow$ Equation of the fracture body: $Eff = [(Eff^{NF})^m + (Eff^{CrF})^m]^{m^{-1}} = 1 = 100\%$

$$Eff = \sqrt[m]{(c_{1\Theta}^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t})^m + (c_\Theta^{CrF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{CrF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^c})^m} = 1.$$

* 120°-rotat. symmetric $\Theta \neq 1$:

$c_\Theta^{NF} \rightarrow c^{NF} = 1$ ($\Theta^{NF} = 1$ in practice chosen).

c_Θ^{NF} , d^{NF} from the 2 points $(\bar{R}^t, 0, 0) \rightarrow c_\Theta^{NF}$ and $(\bar{R}^{tt}, \bar{R}^{tt}, 0) \rightarrow d^{NF}$ or min.error fit of data course

c_Θ^{CrF}, d^{CrF} from the 2 points $(-\bar{R}^c, 0, 0) \rightarrow c_\Theta^{CrF}$ and $(-\bar{R}^{cc}, -\bar{R}^{cc}, 0) \rightarrow d^{CrF}$. See also §26.

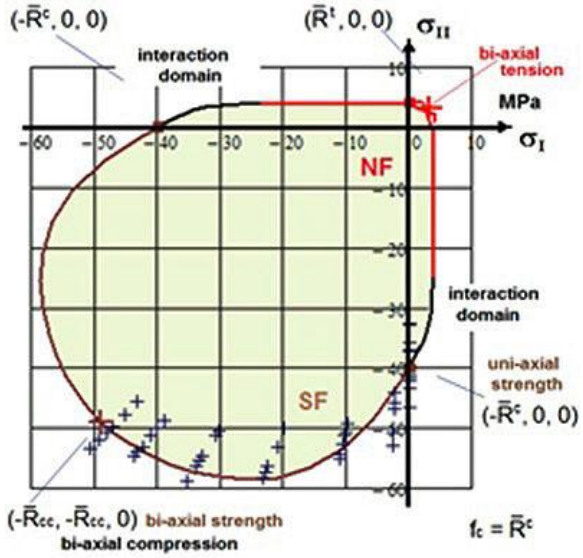
The failure surface is closed at both the ends! A paraboloid serves as closing cap and bottom

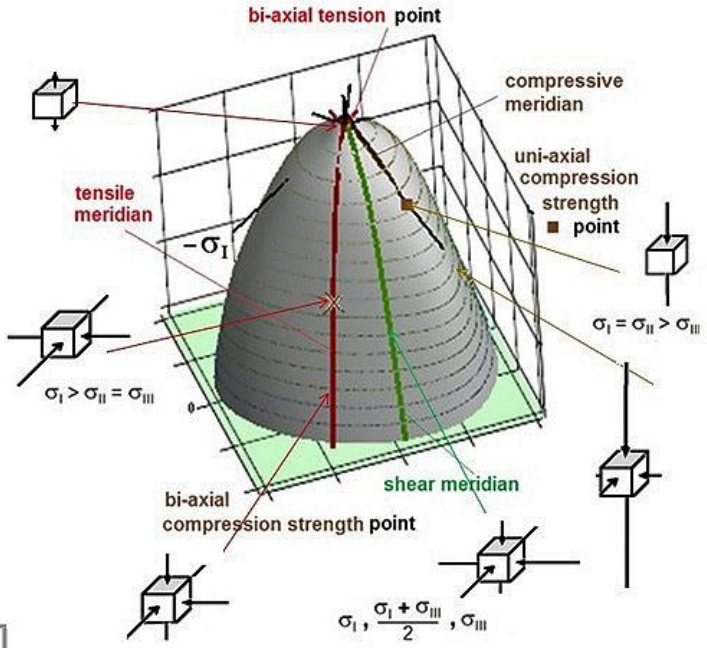
$$\frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{cap} \cdot (\frac{\sqrt{2J_2 \cdot \Theta^{NF}}}{\bar{R}^t})^2 + \frac{\max I_1}{\sqrt{3} \cdot \bar{R}^t} \quad , \quad \frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{bot} \cdot (\frac{\sqrt{2J_2 \cdot \Theta^{CrF}}}{\bar{R}^t})^2 + \frac{\min I_1}{\sqrt{3} \cdot \bar{R}^t}$$

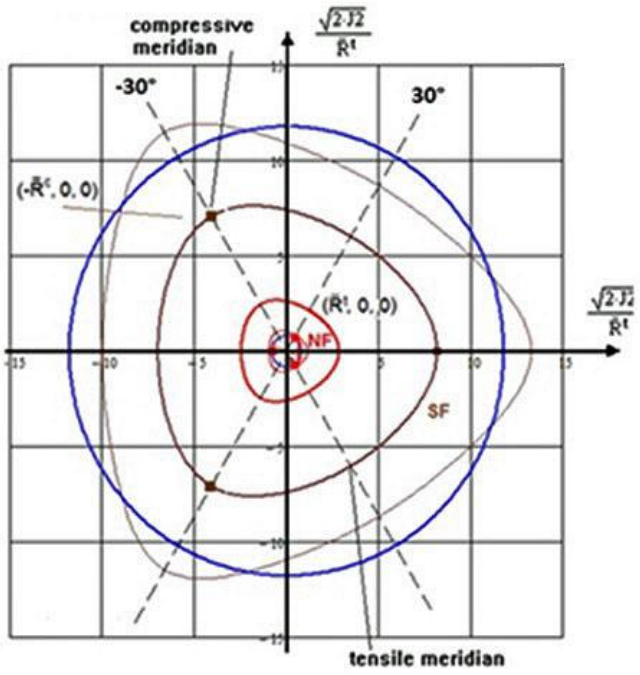
Slope parameters s are determined connecting the respective hydrostatic strength point with the associated point on the tensile and compressive meridian, $\max I_1$ must be assessed whereas $\min I_1$ can be measured. $\bar{R}^t$ works as normalization strength. [*CUN* 22, §5]).

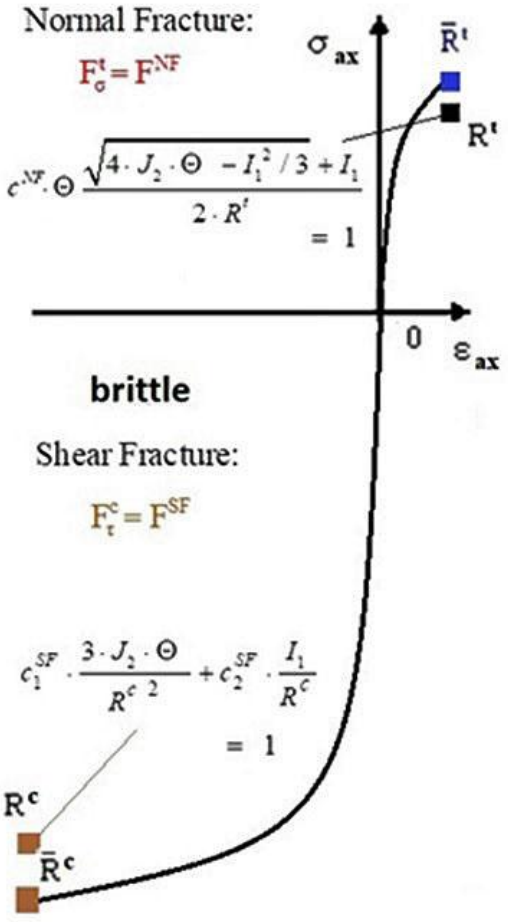
[Lem08] Lemnitzer L, Eckfeld L, Lindorf A and Curbach M (IfM TU Dresden): *Bi-axial tensile strength of concrete – Answers from statistics*. In: Walraven, J. C.; Stoelhorst, D. (Hrsg.): Tailor made concrete structures. New solutions for our society. Amsterdam, The Netherlands: CRC Press / Balkema, 2008, S. 1101-1102

In order to illustrate the two SFCs with their common interaction zone a full view with the 3D-concrete Fracture Body is presented:









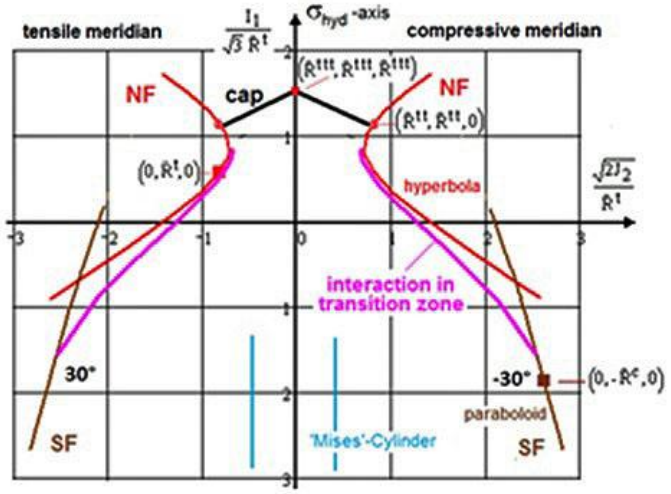


Fig.11-1: Visualization of the behavior of a brittle material (Normal Concrete) considering 1D stress-strain curve with 2D- and 3D-fracture failure curves and fracture body (surface). 120°-rotationally-symmetric

11.5 Ductile Materials, Metal

In *Fig.11-2(left)*, the failure body is presented with its meridians as axial lines. The center figure fully proves the general isotropic 120°-material rotational symmetry which is supported by the Mises **ellipse** being the *inclined cross-section of the Mises cylinder failure body* is added. The right octahedral figure shows the inner green curve with the Mises circle at the '**Onset**-of-yielding' and the outer one at tensile strength R^t.

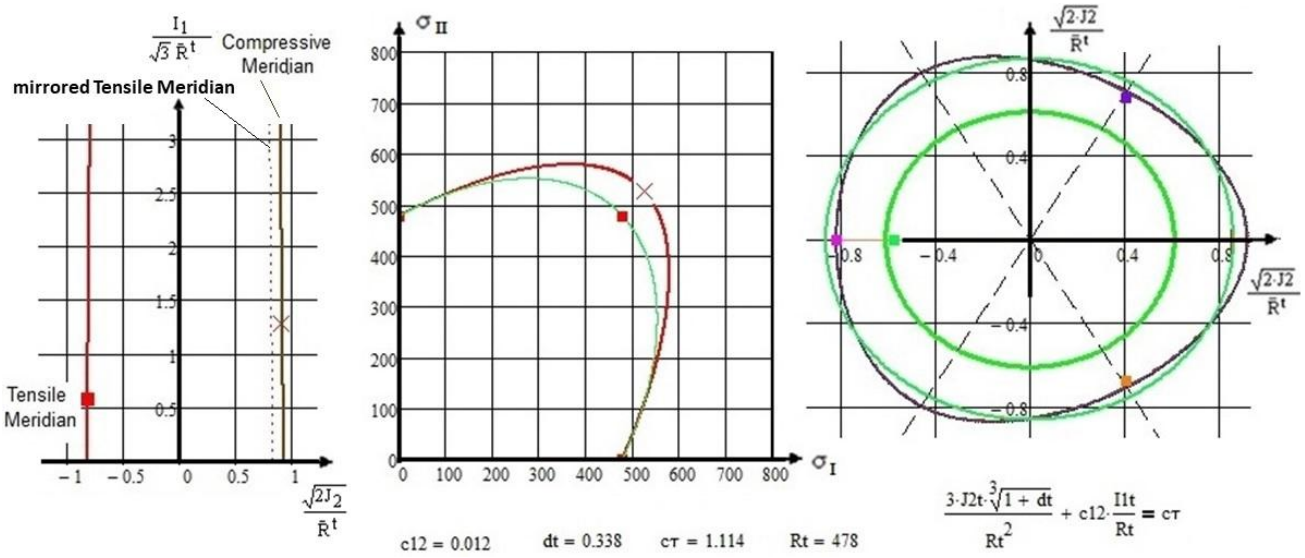


Fig.11-2, isotropic steel AA5182-0: Visualization of the behavior of a ductile material. (left) Yield body in Haigh-Lode-Westergaard coordinates; (center) 120°-symmetry, visualized in the principal stress plane; (right) 120°-symmetry, visualized in the octahedral stress plane

The 120°-rotational symmetry can be best displayed in the octahedral stress plane which is a 'horizontal' cross-section of the failure body at a distinct I_1, *Fig.11-2(right)*. The points and curves on the spatial body (*left figure*) are projected onto the octahedral plane (*right figure*). Since they depend on I_1, they have different cross-section heights I_1, such as the uniaxial tensile strength point which is located higher than the equi-biaxial strength point x.

In the center figure, Mises is the green curve; red square: the tensile strength point; cross: the equi-biaxial tensile strength point ductile (trueR^{tt}, trueR^{tt}, 0), i. e. the cross x. In the case of ductile metals it can be assumed $R^{tt} \cong 1.1 \cdot R^t$.

An elaboration of four materials with the Mathcad calculation program leads to the *Fig.11-3* below:

Fig.11-3(left) presents curves through the uniaxial tensile strength points and the equi-biaxial strength R^{tt}. The curves are inclined cross-sections of the failure body. *Fig.11-3(right)*, for completion, displays the Beltrami potential surface (egg shaped), the 'Mises' cylinder and the three principal axes.

The figure shows extreme curve examples at *true*R^t level in the positive principal stress range.

The red curve is occupied by the data of Kuwabara given below in the table, shown within *Fig.11-4*.

The metal test data AA 5182-0 are from *[Kuw98] T. Kuwabara et al: Journal of Materials Processing Technology 80–81 (1998) 517–523.*

Gotoh's biquadratic yield criterion (not given here) was used to map the test data of the cold-rolled low-carbon steel AA 5182-0 sheets.

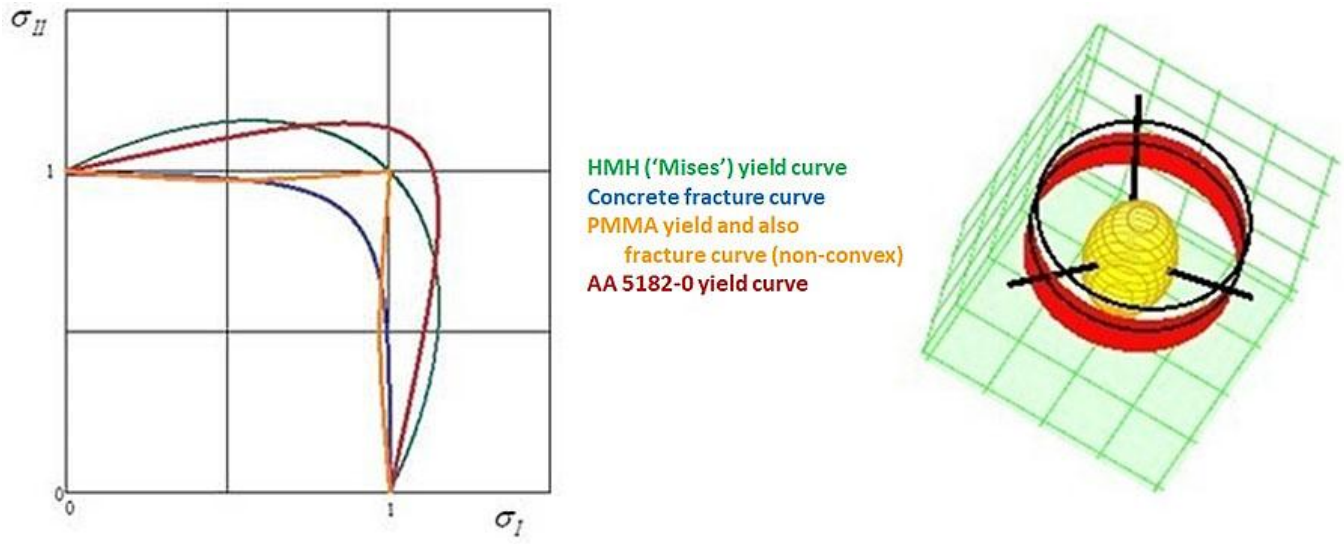
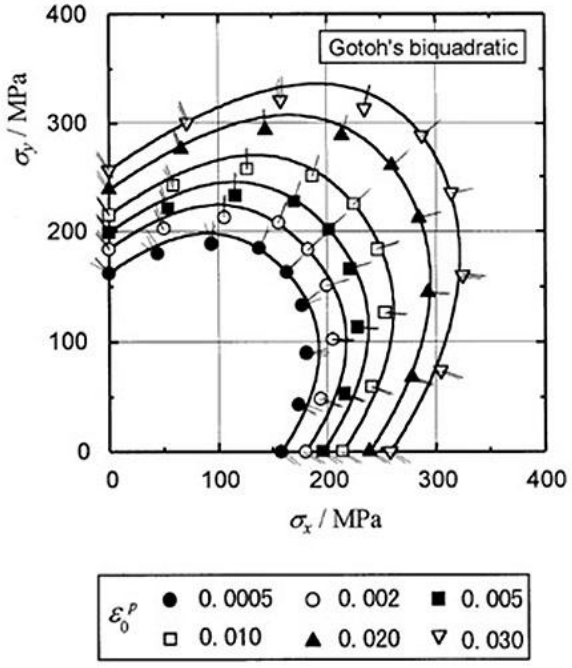
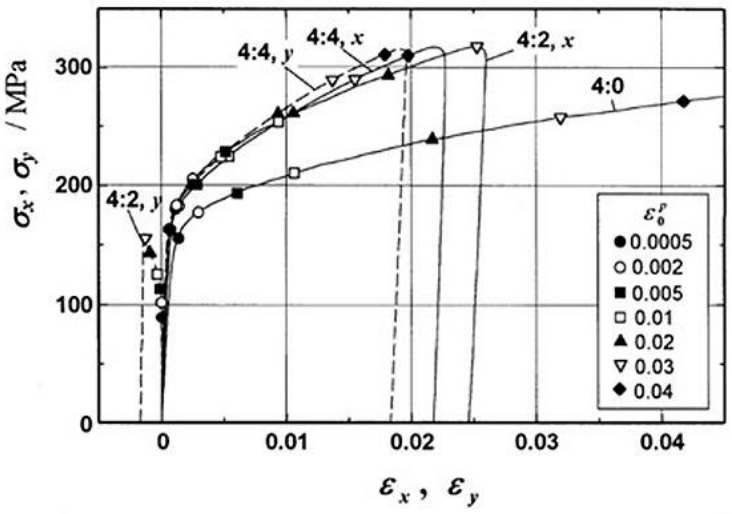


Fig.11-3: (left) Normalized principal stress plane failure curves of a set of fully different isotropic materials. (right) Failure body surface

<u>*Fig.11-4*</u> depicts several failure cross-sections of an isotropic ductile steel demonstrating 120°-rotational symmetry like the brittle isotropic materials such as concrete in the compression domain and other ductile ones in the tensile domain.

For the generation of *Fig.11-4* biaxial tensile tests of cold-rolled low-carbon steel sheet were carried out using flat cruciform specimens with the biaxial loads maintained in fixed proportion. Contours of plastic work (of flow potential) were determined in stress space under the shown strain range.





ε_0^p	0.0005	0.002	0.005	0.010	0.020	0.030	0.040
W (MPa)	0.07	0.33	0.89	1.92	4.19	6.68	9.33
σ_0 (MPa)	158	180	196	214	239	258	273
σ_{90} (MPa)	162	184	199	215	238	256	271
σ_{bi} (MPa)	163	184	202	225	260	288	310

Fig.11-4: (left) Test points as function of the experienced plastic straining ε_0^{pl}; mapping by using Gotoh's bi-quadratic criterion. (right) True stress–true strain curves for different biaxial loadings= different stress ratios. Measured values using r_0, r_{45}, r_{90}. T = 1mm, flat cruciform

LL:

** The author was able to map the course of all the corresponding courses of test data points with his isotropic SFC models.*

** Also for the ductile materials, the 120°-rotational symmetry was demonstrated, see further [CUN22, §5.8].*

** The 120°-rotational symmetry of isotropic materials is nothing else than a 'double mode effect, a two-fold danger'.*

** This effect is faced with all isotropic materials independent whether they are ductile or brittle.*

Reminder to illustrate elastic and plastic behavior:

* Elastic deformation of crystalline structures occurs on the atomic scale: The bonds of the atoms in the crystal lattice are stretched. When de-loading, the energy stored within these bonds can be reversed. The material behaves elastic.

* Plastic deformation or sliding occurs along gliding planes inter-crystalline or intra-crystalline and is permanent (plastic). No volumetric change is faced. 'Mises' applied.

In the context above *Fig.11.5* displays the strains when an axial stress comes out of the elastic state into the plastic state:

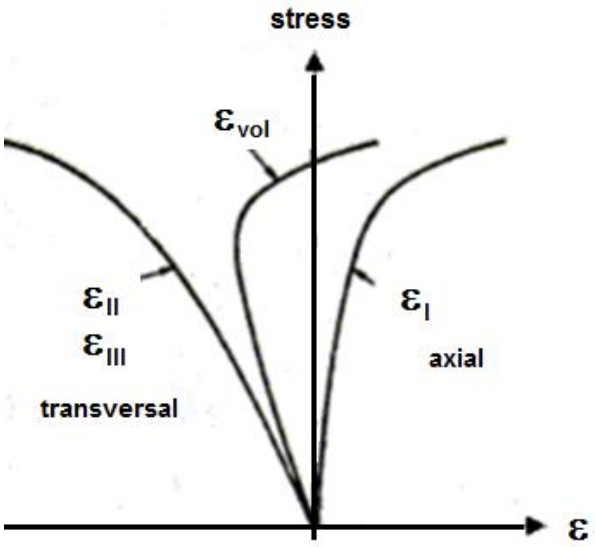


Fig.11.5:
Display of the volume change with increasing axial tensile stress

12 The Author's resulting Strength Mechanics Building

***Aim**: Completion of author's material-'generic' number- driven Strength Mechanics Building*

In the frame of his material symmetry-driven thoughts the author intended to test-proof some ideas that help to complete his envisaged Strength Mechanics Building by finding missing links and by providing engineering-practical strength criteria (SFCs), the parameters of which are directly measurable.

All this supports the assumption of a 'generic' number for a smeared-modelled material.

LL:

- ✓ *Beside the standard Shear (band) Yielding SY there also exists Normal Yielding NY analogous to the failure modes Shear Fracture SF and Normal Fracture NF* (author assumption proven)
- ✓ *120°-rotational symmetry is inherent to brittle and ductile isotropic materials* (author assumption proven)
- ✓ *Generic number 2, $K_{Icr}{}^{t}$ with $K_{IIcr}{}^{c} : K_{IIcr}{}^{c}$ was theoretically proven for the non-real, ideal case of no flaws in front of crack tip*
- ✓ *Also in consequence of above building: Different but similar behaving materials can be basically treated with the same SFC. Examples are: Concrete ↔ foam, different fabrics*
- ✓ *The obtained Strength Mechanics Building matured, became clearer and more complete.*

Material Symmetry seems to tell:

"In the case of ideally homogeneous materials a generic number is inherent. This is valid for elastic entities, yield modes and fracture modes, for yield strengths R_{02} and fracture strengths R, fracture toughness entities K_{cr} and for the invariants used to generate strength criteria".

This **generic number** would be

2 for isotropic and 5 for transversely–isotropic materials.

One might think:

"Mother Nature gives Strength Mechanics a mathematical order!"

13 Safety Concept in Structural Engineering Disciplines

***Aim**: Providing basic knowledge for design, in order to pace the required finally necessary design verification of a component.*

Exemplarily, the *designer* of a structure (e.g. aerospace) has to demonstrate to the *operator* (airline) and the *regulator* (airworthiness authority) compliance with the design requirements concerning Structural Integrity of flight hardware components such as: Stiffness, strength, vibration, fracture behaviour as well as to material selection, manufacturing process, hardware tests, inspection methods, quality assurance and documentation. This procedure is principally valid for other disciplines like civil engineering, too.

Structural Integrity of Hardware shall be proved by analyses and verified by tests under mission environmental conditions considering the complete life history of each item.

13.1 General with Remembering the Old safety Concept

A *Safety Concept* means to implement reliability into the structural component by 'capturing' the uncertainty of the design parameters! It can just provide an unknown safety distance between load ('stress' *S*) and load resistance ('strength' *R*). Factors of Safety (*FoS)* capture uncertainties, small inaccuracies, and simplifications in analyses w.r.t. manufacturing process, tolerances, loadings, material properties (strength, elasticity etc.), structural analysis, geometry, strength failure conditions. *FoS* do not capture missing accuracies in modeling, analysis, test data generation and test data evaluation!

In the *deterministic concepts* or *formats*, respectively, the worst case scenario is usually applied for loadings considering temperature, moisture, undetected damage. Further, a load is to increase by a 'Design *FoS*' and the resistances are to decrease. For the decrease of the strength, statistical distributions are used. If the loading is also based on a statistical distribution, then one speaks about a *semi-probabilistic format*.

Design Development was the basic work of the author in industry. This is why at first the Flow Chart below shall remind of the structural analysis tasks. There are basically four blocks, where – after the material Model Validations - the fulfillment of the Design Requirements has to be demonstrated for obtaining Design Verification as precondition of the final Certification Procedure.

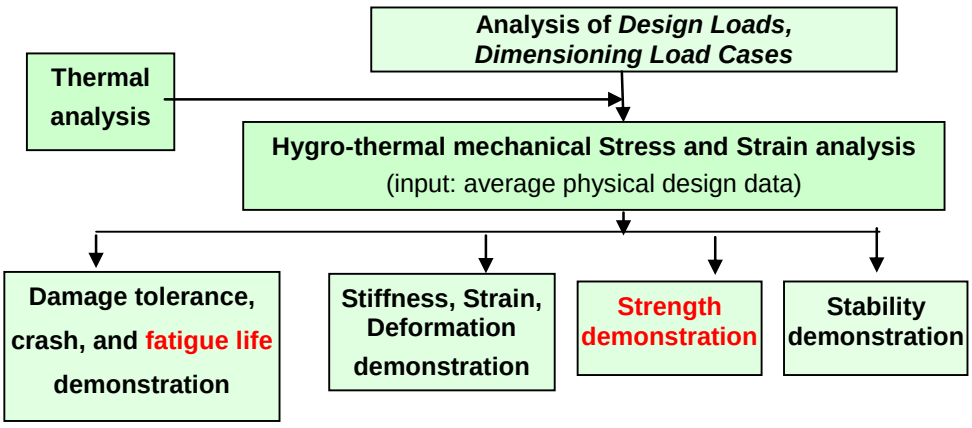


Fig13-1: Structural Design-Analysis Flow Chart

Essential question of engineers in mechanical and in civil engineering is:

"*How much could one further increase the loading. Which is the reserve*"?

Old Safety Concept of Allowable Stresses:

At least since 1926 the civil engineer M. Mayer questioned the old safety concept, which used allowable stresses, meaning: resistance was reduced by a design safety factor.
This gives no accurate results in the case of non-linear behavior. In construction this was replaced since some decades in DIN 1054 by the Partial Safety Factor concept, which applies design safety factors and combination factors for general service loads, live loads, snow, ice loads, and wind loads. Temperature effects are specified in DIN 1055-100.

Material resistance must be generally demonstrated by a positive Margin of Safety *MoS* or a Reserve Factor $RF = MoS - 1 > 1$ in order to achieve Structural Integrity for the envisaged Design Limit State! A *FoS* is given and not to calculate (***as it is too often to read even in FEA code manuals***) like the Margin of Safety *MoS* or the Reserve Factor $RF = MoS + 1$.

Fig.13-2 visualizes the stress-strength distribution which outlines that the crossing over will determine the probability of failure p_f. Its value is the area of the p_f-distribution within the overlapping (gusset) of the stress and the strength distribution tails, see for details [CUN22, §16]

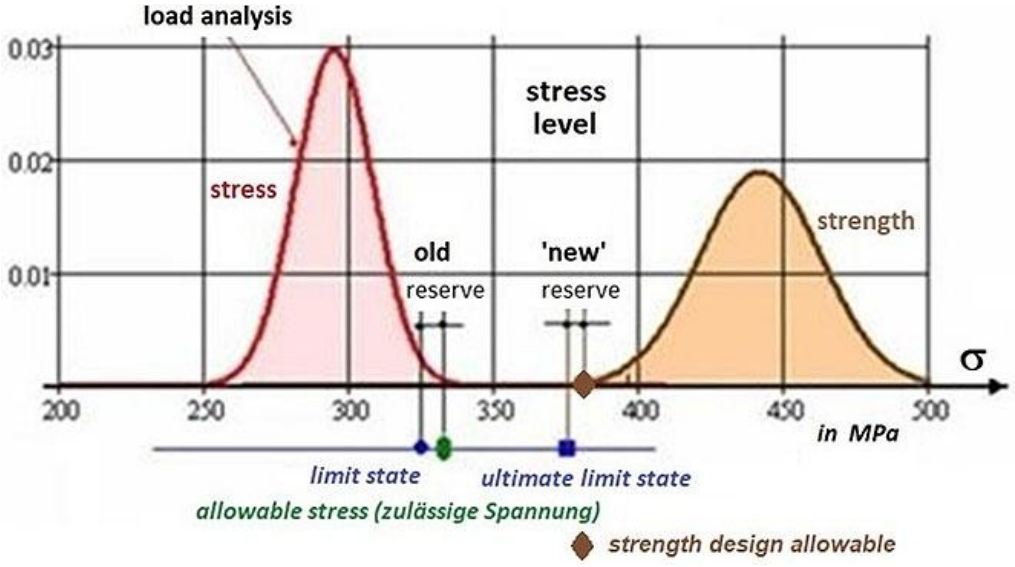


Fig.13-2: Visualization of the present ('new') and the old safety concept

LL:
The citation of the term 'allowable stress' is restricted to the former 'Concept of Allowable Stresses' and shall be not applied within present concepts anymore. Why? The usual application of the abbreviating term 'allowable' instead of 'strength design allowable' may not confuse, but 'allowable stress' is error-prone because the relation below is valid:

j · allowable stress = strength design allowable *!! (see again the figure above)* !

13.2 Global (lumped) Factor of Safety Concept ('deterministic format') on Loading

Concept, that deterministically accounts for design uncertainties in a lumped (global) manner by enlarging the 'design limit loads' through multiplication with a design Factor of Safety FoS j.

As still mentioned, FoS are applied to decrease the chance of failure by capturing the uncertainties of all the given variables outside the control of the designer. In the design process the scatter of individual

values and parameters is usually treated by using fixed deterministic *FoS*, which act as load increasing multiplying factors *FoS* and should be called, more correctly, *Design FoS*.



Personal Experience:

A safety distance pays off ".

Komodo waran ≈ 80 kg

Presently, in mechanical engineering the loading is increased by one lumped (global) FoS *j*, and in civil engineering the procedure was improved by using several partial Design FoS γ for the uncertain stochastic design variables. These *FoS* are based on long term minimum risk experience with structural testing. Depending on the risk consequences different classes of *FoS* are applied, e.g. for manned space-crafts higher *FoS* are used than for unmanned space-crafts.

Present spacecraft safety concept is an *improved global deterministic format (intention: semi-probabilistic)* = 'Simplest' Partial Safety Factor concept: It discriminates load model uncertainties considering factors (K_{Model} , $\boldsymbol{K_{Project}}$) from design uncertainties which are considered by one global FoS *j* !

The to be applied values *j* for the *FoS* are risk or task driven. Facts to consider are:

- As mentioned exemplarily: Different application in cases of manned, un-manned spacecraft
- Design verification by 'Analysis only' (*by the way this is the usual case in construction*)
- Different risk acceptance attitude of the various industries.

  Example: $DUL = j_{ult} \cdot \text{design limit load } DLL$

Mind: The virtual design value must be written DUL, because is the real test fracture load.

<u>Different loading (action) FoS in aircraft and space engineering:</u>

The first task in aerospace industry is load analysis. In any load analysis there are to establish all load events the structure is likely to experience in later application. This includes as well the estimation of loadings induced by the hygro-thermal, the mechanical *(static, cyclic and impact)* and the acoustical environment of the structure as further the corresponding lifetime requirements (*duration, number of cycles*), specified by an authority or a standard.

Then, the so-called Design Limit Load values are determined, usually derived from mission simulations utilizing the so-called mathematical models of the full structure (*dynamical analyses, at first on basis of the preliminary design*).

When preparing the HSB sheet [*Cun12*] the author sorted out, that there practically is no different risk view between air-craft and space-craft:

* Spacecraft: using a *d*ynamic *L*imit *L*oad model obtaining a basic load prediction d*LL* considering a load model uncertainty considering factor j_{LM} =1.2. This delivers a Design

Limit Load DLL= 1.2 ·d*LL*, and from this follows DUL = d*LL*· j_{LM} ·j_{ult} , with 1.2 ·1.25 = **1.5** ! In spacecraft, the DLL level is applied in fatigue life demonstration.

* Aircraft: Definition of a so-called (design) Limit Load *LL* delivering DUL = *LL*·**1.5.**

***LL**:*

****** *Hence, the author could conclude after comparing the ESA/ESTEC aerospace Standards* (the author had to work on them)*, that the DUL-value is practically the same value in aircraft and in spacecraft !*

****** *Loads are most often the parameters of highest uncertainty. Therefore checking the loads pays off. Otherwise a bad design with a money grave may be faced.*

**** Uncertainty quantification is a basic challenging task!***

The resistance strength and the bearable loads (at joints etc ...):

Dependent on the design requirements the average, the upper or a lower value of the property is used for the various properties. In the case of strength a statistically reduced value *R*. To achieve a reliable design the so-called Design Allowable has to be applied. It is a value, beyond which at least 99% ("A"-value) or 90% ("B"-value) of the population of values is expected to fall, with a 95% confidence (*on test data achievement*) level, see MIL-HDBK 17. A "B"-value is permitted to use for multi-layered, redundant laminates.

Bearable loads require series tests of the distinctive structural component with statistical evaluation in order to determine the 'load-resistance design allowables'.

Measurement data sets are the result of a Test Agreement (norm or standard), that serve the desire to make a comparability of different test procedure results possible. The Test Agreement consists of test rig, test specification, test specimen and test data evaluation method and the Test Procedure. Therefore, one can only speak about *'exact test results in the frame of the obtained test quality'*. Hence, there are no exact property values.

Test specimens shall be manufactured like the structure ('as-built').

Considering property input: When applying test data from 'isolated lamina' test specimens (*like tensile coupons*) to an embedded lamina of a laminate one should consider that coupon test deliver tests results of 'weakest link' type. An embedded or even an only one-sided constrained lamina, however, possesses redundant behavior → "B"-values permitted.

Reserve Factor *RF* and Margin of Safety *MoS*: Formulas:

Linear analysis is sufficient (presumption): $\sigma \equiv$ load $\Rightarrow RF \equiv f_{RF} = 1 / Eff$

Material Reserve Factor $$f_{RF,\,ult} = \frac{\text{Strength Design Allowable } R}{\text{Stress at } j_{ult} \cdot \text{Design Limit Load}} > 1,$$

Non-linear analysis required: σ not proportional to load

Reserve Factor (load-defined) $$RF_{ult} = \frac{\text{Predicted Failure Load at } Eff = 100\%}{j_{ult} \cdot \text{Design Limit Load}} > 1.$$

***LL**:*

* *A FoS is given and not to calculate such as a Margin of Safety MoS or the Reserve Factor RF = MoS + 1.*

* *A MoS is usually the result of worst case assumptions that does not take care of the joint actions of the stochastic design parameters and thereby cannot take care of their joint failure action and probability. This failure probability is a 'joint failure probability' because it considers the probability of joint acting*

* *A material with a high coefficient of variation CoV disqualifies itself, when computing the statistically-based 'strength design allowable' value. Therefore, one must not penalize it further as performed in some standards in the past in the case of new materials.*
* *Both, an increasing mean value and a decreasing standard deviation will lower* p_f
* *The MoS value does not outline a failure probability. Failure probability* p_f *does not dramatically increase if MoS turns slightly negative. Check as below, whether one may get more material and structural data to reduce scatter*
* *A local safety measure of MoS = -1 % is no problem in design development if a 'Think (about) Uncertainties' attitude is developed in order to recognize the main driving design parameters and to reduce the scatter (uncertainty) of them*
* *Nowadays, often non-linear analyses are performed, delivering true quantities, however Design Verification is executed with engineering strength values R. Why do we not use in such a case the true tensile strength, however calculate* f_{RF} *with four numbers 'accuracy'? 'True-in' requires 'True-out' and an assessment by* $true\bar{R}^t$. *Fig.13-3 (right) shows for an aluminum alloy a difference between the mean (material model) strength values* $eng\bar{R}^t \rightarrow true\bar{R}^t$ *of 8%.*
* *Uncertainty (fuzzyness, Ungewißheit, Unsicherheit): unclearniness in loadings, strengths, and other design parameters such as geometrical parameters, applied engineering models etc. (it must be discriminated (1) Epistemic uncertainty within technical measurements of geometry, material properties etc., which is improvable by better and more measurements, test data evaluation and additional information. (2) Aleatoric uncertainty due to usual measurement tolerances where 'nothing' can be improved concerning the given test situation)*
* *Fig.13-3 (left) visualizes strength distribution, Eff (micro-damage growth), material reserve factor* f_{RF}.

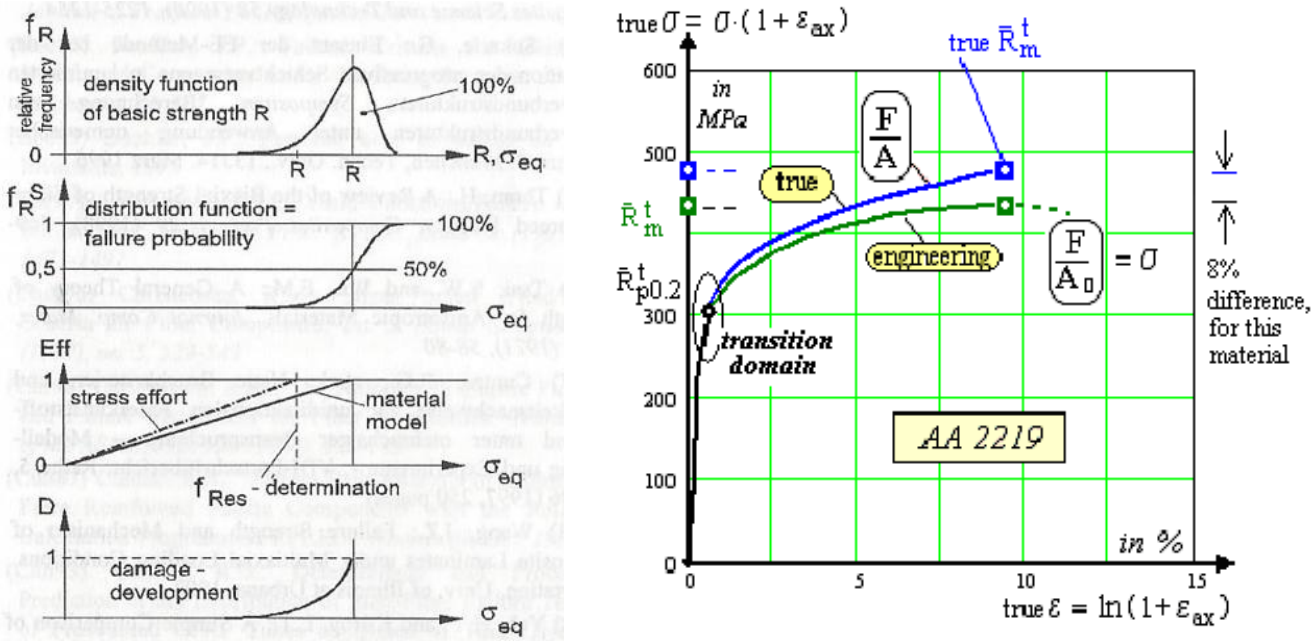


Fig.13-3: (left) Design quantities when approaching failure in Design Verification. (right) Difference engineering and true tensile strength of AA2219

Robust Design Requirements:

The goal of any design engineer should be to end up with a robust design. In order to achieve this, the main stochastic design parameters have to be used to outline the robustness of the design against the envisaged actual failure mode by firstly computing the sensitivity measures α and then investigating the

reduction of the design's sensitivity to changes of *Xj while* keeping p_f at the prescribed level. This is important for the production tolerances. Probabilistic design may be used as an assessment of the deterministic design or is necessary as design method if a *reliability* target $\mathfrak{R}$ is assigned instead of a *FoS*. or its complement, the probability of failure p_f .

A structural reliability analysis in a Hot Spot reveals the influence of each stochastic design parameter on the distinct failure mode by means of the sensitivity measures. Robust designs (*robust to later changes of the design parameters*) are required with identification of the most sensitive design parameters!

For better illustration of the Safety Concepts from *[CUN22, §12]* the <u>*Fig.13-4*</u> is included. It clearly depicts the definition of the failure probability in this two-parameter case.

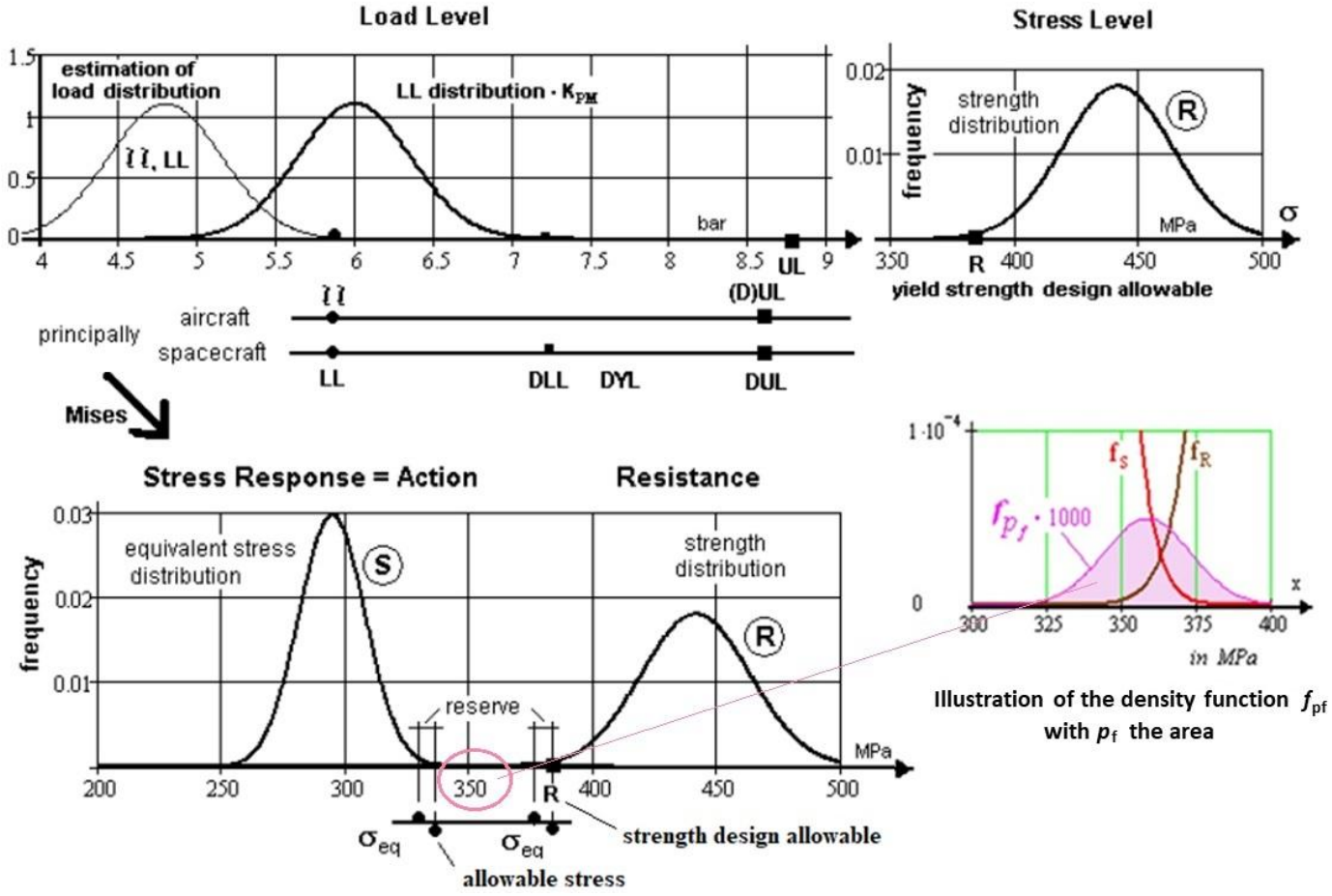


Fig.13-4: Visualization of the difference of the aerospace load terms used in the Strength Design Allowable Safety Concept and of the 'hopefully forgotten' Allowable Stress Safety Concept

<u>Design advantages found with the Ariane Booster design, when using a probabilistic tool:</u>

Two advantageous applications of the probabilistic tool shall be shortly demonstrated where probabilistic modelling and computation were successfully applied:

* A reduced production tolerance width leads to a reduced mass which sequentially reduced further fuel mass savings. Improved production reduced the wall thickness tolerance from 8.2 +- 0.20 mm to 8.2 +- 0.05 mm. Keeping the same given reliability value $\mathfrak{R} = 1 - p_f = 1 - 5 \cdot 10^{-6}$ the nominal wall thickness could be set → 8.1 +- 0.05 mm leading to mass and fuel savings.

(*As early as 1985 for our pre-design of the Ariane 5 launcher so-called target survival probabilities* $\Re$ *were fixed for the several structural parts*!)

* Probabilistic modelling of the geometrical tolerances of bore hole, pin, position (pitch) and strength minimum restrains with minimum residual stresses could be achieved, for the pin connection an optimum number of pins of 130 pins for a simpler assembly process and for reduced mounting stresses.

Fig.13-5 presents a numerical example how exemplarily a UD reserve factor *RF* is to compute.

Asssumption: Linear analysis permitted, design FoS $j_{ult} = 1.25$

* Design loading (*action*): $\{\sigma\}_{design} = \{\sigma\} \cdot j_{ult}$

* 2D-stress state: $\{\sigma\}_{design} = (\sigma_1, \sigma_2, \sigma_3, \tau_{23}, \tau_{31}, \tau_{21})^T \cdot j_{ult} = (0,\ -76,\ 0,\ 0,\ 0,\ 52)^T$ MPa

* Residual stresses: 0 $(effect\ vanishes\ with\ increasing\ micro-cracking)$

* Strengths $(resistance)$: $\{\bar{R}\} = (1378,\ 950,\ 40,\ 125,\ 97)^T$ MPa average from mesurement

statistically reduced $\{R\} = (R_{||}^t, R_{||}^c, R_{\perp}^t, R_{\perp}^c, R_{\perp||})^T = (1050,\ 725,\ 32,\ 112,\ 79)^T$ MPa

* Friction value(s) : $\mu_{\perp||} = 0.3,\ (\mu_{\perp\perp} = 0.35)$, Mode interaction exponent: $m = 2.7$

$$\left\{Eff^{\text{mode}}\right\} = \left(Eff^{||\sigma},\ Eff^{||\tau},\ Eff^{\perp\sigma},\ Eff^{\perp\tau},\ Eff^{\perp||}\right)^T = \left(0.88,\ 0,\ 0,\ 0.21,\ 0.20\right)^T$$

$$Eff^m = (Eff^{||\sigma})^m + (Eff^{||\tau})^m + (Eff^{\perp\sigma})^m + (Eff^{\perp\tau})^m + (Eff^{\perp||})^m = 100\% .$$

The results above deliver the following material reserve factor $f_{RF} = 1 / Eff$

* $Eff^{\perp\sigma} = \dfrac{\sigma_2 + |\sigma_2|}{2 \cdot \bar{R}_{\perp}^t} = 0,\quad Eff^{\perp\tau} = \dfrac{-\sigma_2 + |\sigma_2|}{2 \cdot \bar{R}_{\perp}^c} = 0.60,\quad Eff^{\perp||} = \dfrac{|\tau_{21}|}{\bar{R}_{\perp||} - \mu_{\perp||} \cdot \sigma_2} = 0.55$

$$Eff = [(Eff^{\perp\sigma})^m + (Eff^{\perp\tau})^m + (Eff^{\perp||})^m]^{1/m} = 0.80.$$

$\Rightarrow\quad f_{RF} = 1 / Eff = 1.25 \rightarrow RF = f_{RF}$ (if linearity permitted) $\rightarrow$ MoS $= RF - 1 = 0.25 > 0$!

Fig.13-5: Computation scheme of a UD Reserve Factor RF

LL:

- **Lightweight design becomes easier by reducing uncertainties!**
- We should focus robust products and fabrication processes. Optimum fulfilling of product liability: Secured, validated design procedures + reproducible manufacturing processes
- Robust Design: 1 / (uncertainty·complexity). Good design optimization must consider the scatter of the stochastic design variables
- Uncertainty quantification opens the door for a successful lightweight dimensioning
- Loadings are most often the design variables of highest scatter or uncertainty. Not to get a money grave: Careful checking of loadings, their possible combinations defined in the load cases
- The basis for determining reliability is the recording of uncertain parameters
- Uncertainty, citing *Freudenthal*: "The application of probabilistics makes me aware of my risk, since it provides numbers, whereas deterministics does not. You can buy certainty." However, concerning costs: How safe is safe enough?

- *Random variation (aleatory: dice rolling; physical in nature such as fluctuations in material properties, stress). *Uncertainties (epistemic: knowledge, inference from sample to population of a design parameter, weakness of used models)
- Design Limit Load (NASA: not just Limit Load !!)= Limit Load of load model ·uncertainty factor. DLL is a statistically evaluated value if a distribution is available or (b) value from an engineering judgement following a rationale

In a European Structural reliability working group we distinguished *Failure Rate* from *Failure State* people. Both work together in the reliability assessment of an overall system, as we had to do with the Ariane 5, below:

Reliability of an Ariane 5 sub-system

As early as 1985 for the pre-design of the Ariane 5 launcher target survival probabilities $\Re = 1 - p_f$ were fixed for the several structural parts! The following *Fig.13-6* presents an example of the Ariane launcher for a distinct mixed scenario:
The full system is divided into subsystems and these in turn are divided into elements. The individual elements are then assigned a required probability of failure so that the full system can meet the target value of the survival reliability $\Re = 1 - p_f$ of the launcher subsystem.

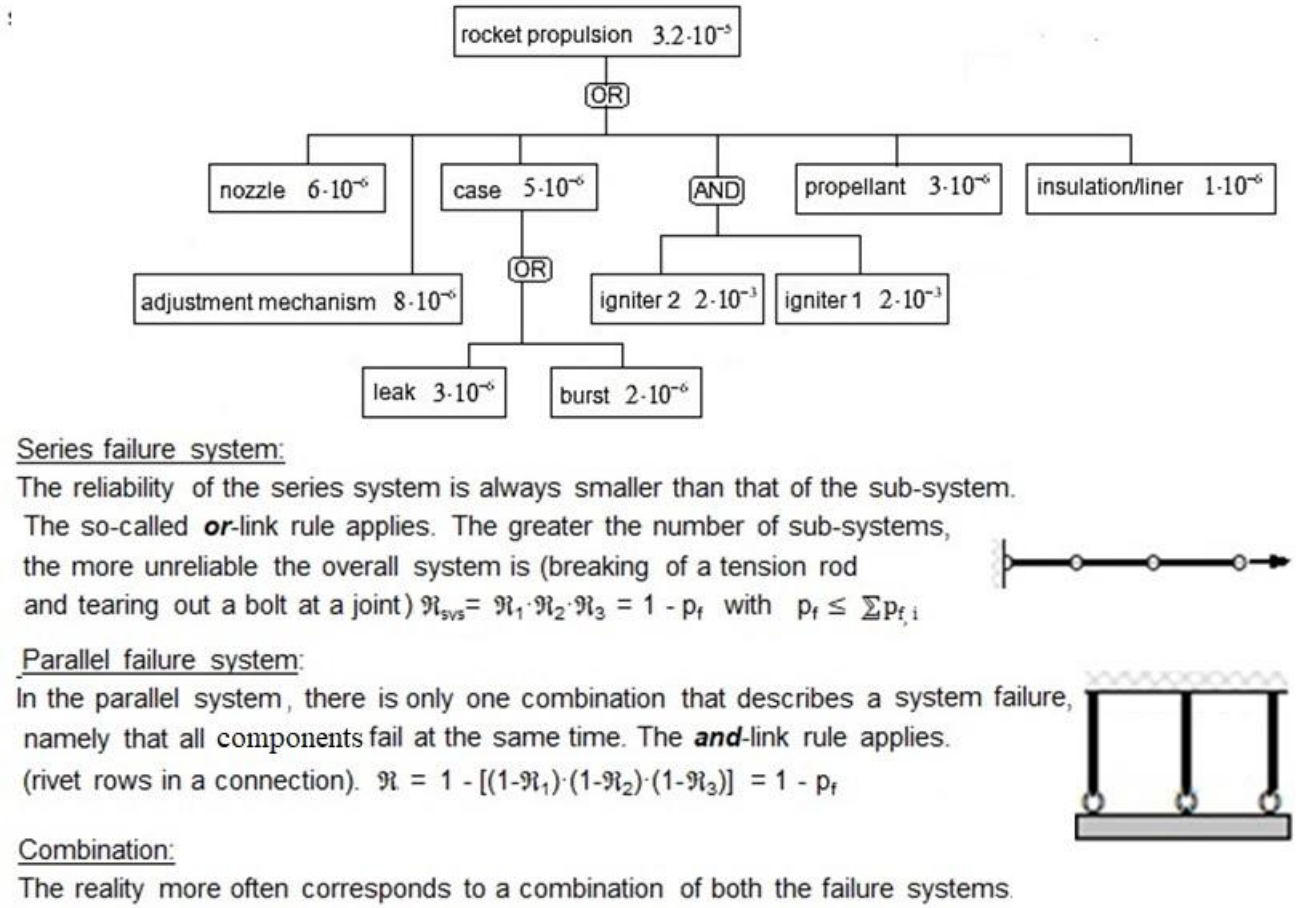


Fig.13-6: Procedure to estimate the reliability of a sub-system of the Ariane launcher

Validation**: (**from Latin, validus = strong). *Control whether the design requirements in the performance specification are met . *Modeller's objective to 'qualify' a created model by well mapping physical test results with the model

(design) Verification (from Latin, veritas facere): fulfillment of a set of design requirement data and numbers. (*Proof, that the product fulfils the product requirements data, defined in the performance requirements specification (= Pflichtenheft). Performed by a computation and/or a physical experiment such as a structural test like with a girder being below a given deformation limit under loading).*

14 Nonlinear Stress-Strain relation with Change of Poisson's Ratio ν

Aim: *Provision of a Basis to generate an 'Extended Mises' model to later replace a multi-parameter 'Gurson model', applying Beltrami Theory and the Change of Poisson's Ratio ν*

14.0 General on Stress-Strain curves σ(ε), Strengths R and Poisson's Ratio ν

There are two different stress-strain curves existing: the *monotonic* and the *cyclic stress-strain curve*. The first curve is derived by the static tests, whereas the second one is generated by fatigue tests. Strain-controlled cyclic hysteresis loops (*Fig.14-1, left down*) are performed on different strain levels with several test specimens. Dependent on hardening and softening behavior of the actual material these two curves may discriminate significantly. Monotonic stress-strain curves have long been used to obtain design parameters for limitation of the stresses in engineering structures subjected to static loading. Similarly, cyclic stress-strain curves are useful for assessing the durability of structures subjected to repeated loading.

Further, in the case of monotonic σ-ε-curves there are very different, material-specific stress-strain curves in the elastic-plastic transition domain, see *Fig.14-1, left up* and *right*. Some show an 'Onset-of-yield' at an upper yield stress level $\bar{R}_e^{upper}$ and others at a lower yield strength $\bar{R}_e^{upper}$. In this case usually the lower yield point is taken as the yield strength of the metal.

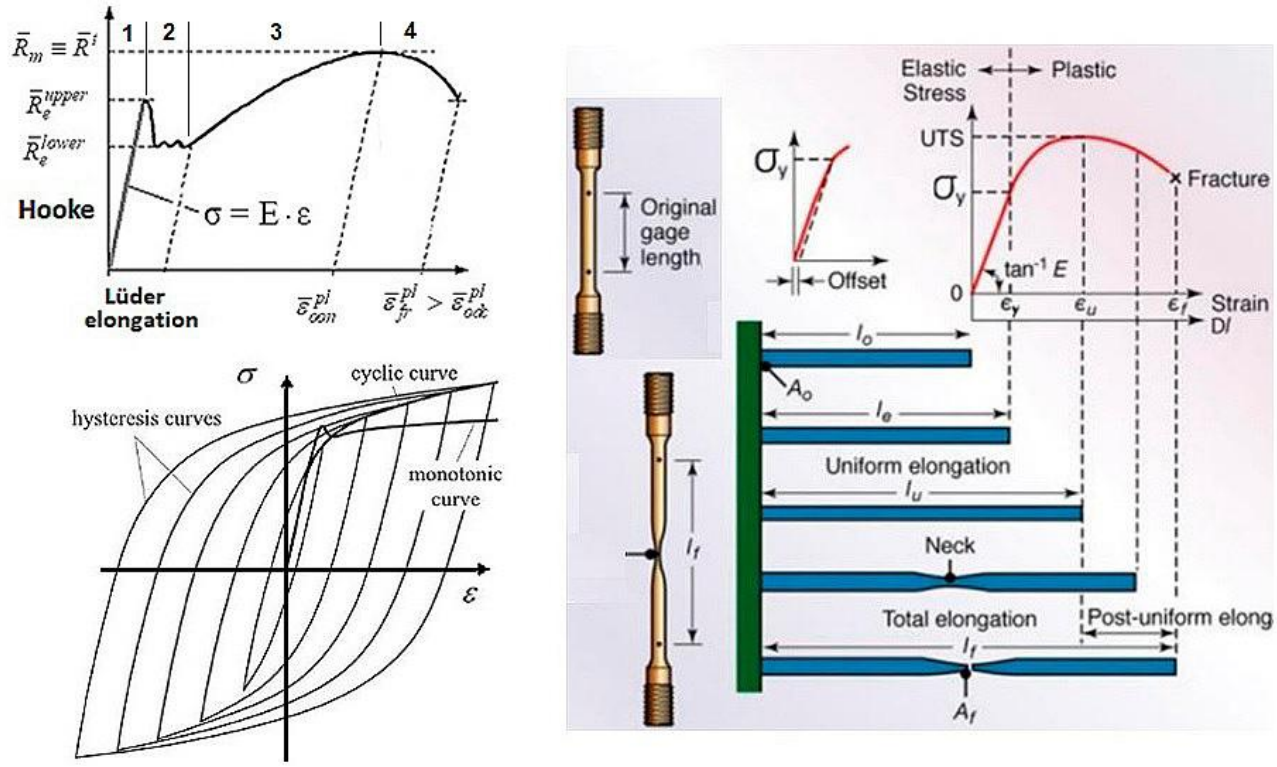


Fig.14-1, engineering quantities. modelling: (left, up) Discontinuous yielding, mean curve for mild steel showing the yield point phenomenon, termed Lüder's elongation effect. (left, down) Cyclic curves. (right) Tensile-test specimen with gage length, elongation before and after testing and finally after rupture (from Kalpakjian S and Schmid S: *Evaluation of the Possibility of Estimating Cyclic Stress-strain Para-meters and Curves from Monotonic Properties of Steels*. Manufacturing Engineering & Technology. 2013

For the 'left up'- metals in the paper of Hai Qiu and Tadanobu Inoue: *Evolution of Poisson's Ratio in the Tension Process of Low-Carbon Hot-Rolled Steel with Discontinuous Yielding*. *Metals* ***2023***, *13, 562. https://doi.org/10.3390/met13030562* four different regimes are distinguished: Phase 1: Uniform elastic

elongation, Phase 2: Discontinuous yielding, Phase 3 beyond R_{02}: Uniform elongation in the hardening regime, Phase 4 beyond $\overline{R}^t$: Macroscopic plastic-strain localization experiencing radial deformation. Low-alloy iron usually has such an upper yield limit R_e^{upper} (R_{eH}, *Streckgrenze*). If it is stretched during the tensile test, a spontaneous yielding in the crystals-compound takes place under loading. This so-called Lüder's elongation effect of mild metals as a part of plastic stretching disappears until all crystals are finally commonly stretched. Austenitic steels do not have a pronounced yield strength. Essential for an accurate analysis is a stress-strain curve which is derived from a set of test curves, delivering distributions for the *design parameters* $R_{p0.2}$, R_m, ε_{on}^{pl} *and* ε_{fr}^{pl}.

The yield strength is a material property defined as the stress at which a material begins to deform plastically. If it is not well-defined (*remind Lüder*) on the stress-strain curve, it is difficult to determine a precise onset-of-yield point. In general, discriminating the proportional tensile limit R_{prop} and $R_{p0.2}$ ($\equiv R_{0.2}^t$), the offset yield point is taken as the stress at which 0.2% plastic deformation remains (*in English literature* $R_{p0.2}$ *is termed proof stress).* The mean stress at Onset-of-Yielding, denoted $\bar{R}_{0.2}$ will be applied for ductile modeling. The stress $\sigma(\varepsilon_{pl})$, considering only the plastic deformation or plastic flow of the material, is termed Flow stress σ_F.

By the way, the actual 'Onset-of-yielding at $R_{prop} \equiv \sigma_{prop}$ *can be determined by a temperature measurement. If a metallic material is subjected to tensile stress, it first cools down in the area of elastic elongation analogous to an ideal gas , thermo-elastic effect. With onset of plasticization heat is released, which leads to an increase in temperature. This temperature is measurable with glued thermocouples.*

In other words: The ***proportionality stress*** σ_{prop} ***can be allocated to that applied stress level, where the test specimen experiences a temperature increase due to internal dislocations.***

Regarding not only metals - for a conflict-free understanding – it will be denoted $R_{p0.2}$ ($\rightarrow R_{0.2}^t$) and $R_{c0.2}$ ($\rightarrow R_{0.2}^c$) in the body text from now on. At the maximum of the curve, characterized by the so-called '*End–of–uniform elongation'* = '*Onset-of-(ductile) necking'* in the ductile material case, the tensile strength R_m ($\rightarrow R^t$) is given. For very ductile materials is valid $R_{0.2}^c \cong R_{0.2}^t$.

Beyond the tensile strength R^t a multiaxial state of stress follows in the tensioned ductile behaving test specimen. Therefore, the index $_{ax}$ holds up to the 'End–of–uniform elongation' (Gleichmaßdehnung) at R^t (*index* $_{pl}$ *for plastic strain,* $_{oon}$ *for Onset-of-(ductile) necking, and* $_{odc}$ *for Onset-of-ductile cracking located before rupture = plastic collapse*).
In this respect, any formulations in this domain afford equivalent quantities in order to perform an accurate non-linear analysis with a correct $\sigma(\varepsilon)$-input.

14.2 Engineering and True Stress and Strain Quantities

The larger the strains the more the engineering quantities lose their applicability in structural dimensioning. Therefore, logarithmic (*usually termed true*) strains have to be used in an accurate dimensioning process. The derivation of these quantities is collected in *Table 14-1*.
Fig.14-2 contains a true and an engineering stress-strain curve. The figure presents a general view and uses classical Ramberg-Osgood mapping. Mapping of the course of stress-strain data in the non-linear domain is well performed by taking the usually applied Ramberg-Osgood equation for the true stress-true strain curve (*maps the true curve better than the engineering curve*)

$$\text{eng}\varepsilon = \varepsilon = \varepsilon^{el} + \varepsilon^{pl} = \frac{\sigma}{E_0} + 0.002 \cdot \left(\frac{\sigma}{\bar{R}_{0.2}} \right)^{\bar{n}}, \quad \text{true}\varepsilon = \frac{\text{true}\sigma}{E_0} + 0.002 \cdot \left(\frac{\text{true}\sigma}{\text{true}\bar{R}_{0.2}} \right)^{\text{true}\bar{n}}, \quad \bar{n} = \frac{\ln\left(A_{gl} / 0{,}2\% \right)}{\ln\left(\bar{R}^t / \bar{R}_{p0.2} \right)}.$$

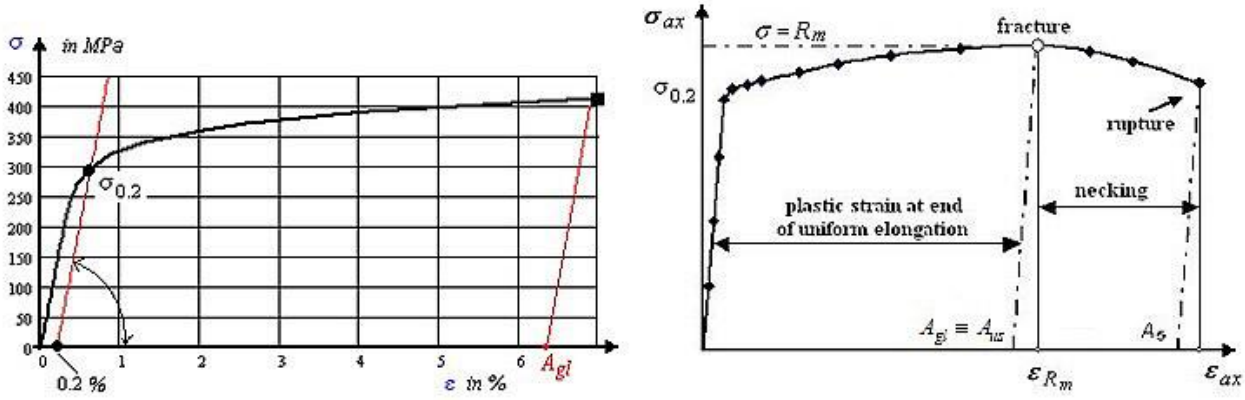


Fig.14-2: R-O mapping of a single engineering measurement test results, $A_{gl} = \min \varepsilon^{pl}_{oon}$.
Typical (mean) engineering stress-strain curve of a distinct ductile metal material. End of uniform elongation (Gleichmassdehnung A_{gl} *)*

Table 14-1 presents the derivation of true stresses and true strains in the 'Mises'-validity domain.
In *Fig.13-4* the difference between the mean strength values $\text{eng}\bar{R}^t \rightarrow \text{true}\bar{R}^t$ was shown to be 8% for *AA2219!* *Fig.14-3(left)* depicts the linear elastic proportional domain and the hardening domain. *Fig.14-3(right)* presents stress-strain measurement with Ramberg-Osgood mapping. The course of the area reduction would show a slight kink beginning at 'Onset-of-ductile cracking $_{odc}$' (= o*nset-of-localized necking*) according to the deteriorating effect of the void coalescence.

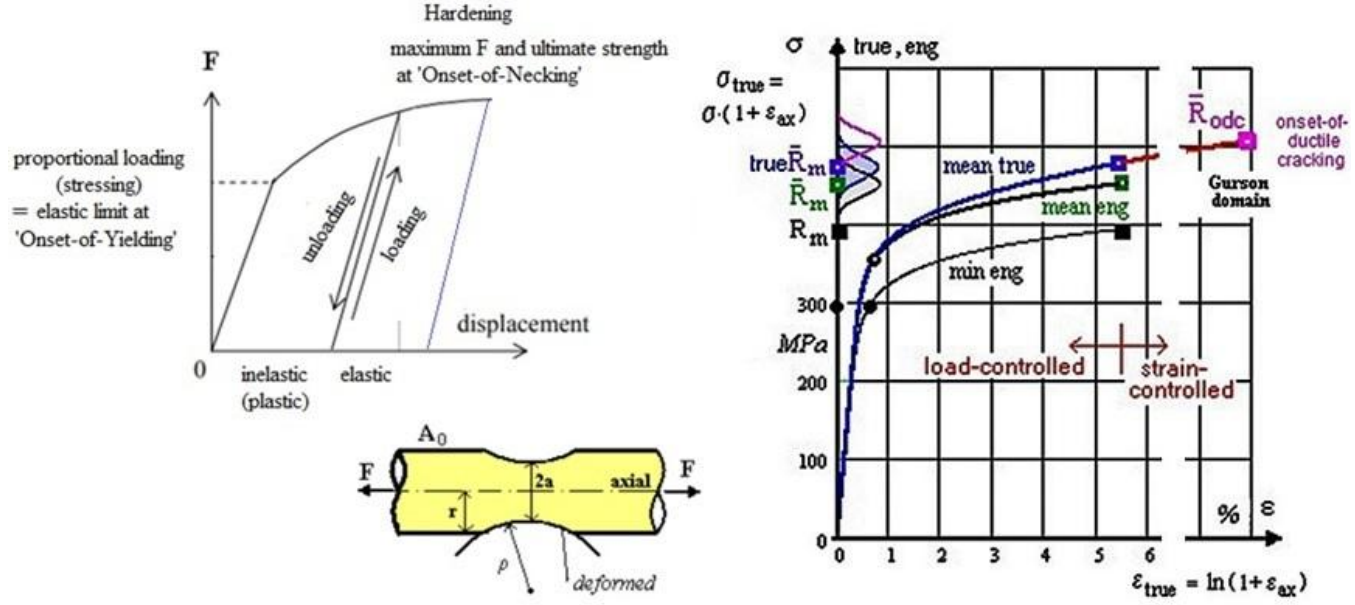


Fig. 14-3, modelling: (left) Display of proportional domain and hardening domain with the tensile rid test specimen. (right) Ramberg-Osgood-mapped true and engineering stress-strain curves of AA2219. F:= Force F_{ax}, A_0 *:= original cross-section, A:= actual cross section of the necked rod.* $\bar{R}^t = \max F / A_0$, $\varepsilon \le \bar{A}_{gl}$ *(permanent strain linked to load-controlled fracture at* $\bar{R}^t$*). Necking radius is* ρ. *A bar over* $\bar{R}$ *indicates a mean (average) value of a sufficiently large test data set, and no bar over R will generally mean strength and later indicate a 'strength design allowable'.*

Table 14-1: Derivation of true stresses and true strains in the 'Mises'-validity domain

True Strains (logarithmic strains):

The application of engineering strain cannot be correct for larger strains, since it is based on the original gage length ℓ_0, whereas the length is continuously growing. Ludwik [*Lud*09] therefore introduced the true strain (logarithmic strain), the increment of which for a given length is defined as $d(true\varepsilon) = d\ell / \ell$ and the total true strain, integrated from ℓ_0 to current length ℓ, is

$$true\varepsilon_{ax} = \int_{\ell_0}^{\ell} d\ell / \ell = ln(\ell / \ell_0) = ln(1 + eng\varepsilon_{ax}) .$$

Above equation delivers an accurate value up to 'onset-of-necking' or $\bar{R}^t$.

The replacement of the logarithmic function by a Taylor series

$$true\varepsilon_{ax} = eng\varepsilon_{ax} - eng\varepsilon_{ax}{}^2 / 2 + eng\varepsilon_{ax}{}^3 / 3 - .. +$$

clearly shows that identity is given for small strains, only. Applying the true strain has a physical and a numerical advantage: The incompressibility equation really becomes zero

$$\sum true\varepsilon_i = true\varepsilon_I + true\varepsilon_{II} + true\varepsilon_{III} = 0,$$

whereas in terms of engineering strains the correct equation from solid geometry reads

$$(1 + eng\varepsilon_I) \cdot (1 + eng\varepsilon_{II}) \cdot (1 + eng\varepsilon_{III}) \; - \; 1 \; = 0,$$

which reduces to 0 for negligible strains, only.

Once necking starts most of the deformation occurs in the smallest cross section. The longer the gage length used the smaller the percent elongation will be. Therefore, a better procedure is the measurement of the reduction of the cross-section. → Beyond $\bar{R}^t$, the true σ-ε curve can be more accurately obtained by measuring the radial strain

$$\text{eng}\varepsilon_{radial} = (r - r_0) / r_0 = r / r_0 - 1 \quad \text{and} \quad true\varepsilon_{radial} = -ln(1 + eng\varepsilon_{radial}) = -ln(r / r_0),$$

provided, the tensile test specimen has a circular cross-section, a rod. In this case $\varepsilon_{radial} = \varepsilon_{hoop}$

$$true\varepsilon_{ax} + true\varepsilon_{radial} + true\varepsilon_{hoop} = 0 \quad \text{and it holds} \quad true\varepsilon_{ax} = -2true\varepsilon_{radial} = 2\,ln(r / r_0),$$

which delivers an accurate value above 'onset-of-necking'. The equivalent strain in the center reads

$$true\varepsilon_{eq} = \frac{\sqrt{2}}{3} \cdot \sqrt{(true\ \varepsilon_{ax} - true\ \varepsilon_{hoop})^2 + 0 + (true\ \varepsilon_{hoop} - true\ \varepsilon_{ax})^2}$$

$$= \frac{\sqrt{2}}{3} \cdot \sqrt{2(2 - (-1))^2} \cdot true\varepsilon_{radial} \; = \; \frac{2}{3} \cdot \sqrt{3^2} \cdot true\varepsilon_{radial} = 2\,ln(r / r_0)$$

⇒ Transferring strain data: $true\varepsilon = ln(1 + eng\varepsilon)$, $eng\varepsilon = e^{true\ \varepsilon} - 1$.

True Stresses

Trueσ can be obtained from engσ, if the small changes in volume at the end of the transition domain are neglected. Then, incompressibility $\sum \varepsilon_i^{pl} = 0$ can be assumed and it follows:

$$\text{eng}\sigma = \text{F}/\ \text{A}_0, \ \text{true}\sigma = \text{F/A} \quad \text{with} \ A \cdot \ell = A_0 \cdot \ell_0 \ , \text{F: = load } F_{ax}$$

wherein ℓ_0 : = original gage length, and A, ℓ current values of the necking cross-section.

Introducing the equation $\varepsilon_{ax} = (\ell - \ell_0) / \ell_0$ derived above, the true stress is linked by

$$true\sigma_{ax} = F / A = (F / A_0) \cdot (\ell / \ell_0) = eng\sigma \cdot (1 + eng\varepsilon_{ax}) = \sigma_{ax} \cdot (1 + \varepsilon_{ax}) \ \text{usually written}$$

⇒ Transferring stress data: $true\sigma = eng\sigma \cdot (1 + eng\varepsilon)$ and $eng\sigma = true\sigma / exp(true\varepsilon)$.

Fig.14-4 (left) shows an experiment in the elastic-plastic transition region, carried out by O. Mahrenholtz /H. Ismar. The test was a flat compression test of a cube: One side constrained, one free, one compressed → Principal stress state ($\sigma_I = \sigma_{action}$, $\sigma_{II} = \sigma_{I\ (re\text{-}action)}$, $\sigma_{II} = 0$) → principal strain → ν . It turns out that R_{p01} is approximately ν = 0.4. The value at R_{p02} in H-L-W coordinates is $0.82 = \sqrt{2/3} = \sqrt{2J_2} / R_{02}$, with $J_2 = 2R_{02} / 6$ (left, down). Poisson's ratio, determined by a coupon measurement, reads $\nu = -\varepsilon_{lat}/\varepsilon_{ax}$ or $\nu = -(\Delta d/d)/(\Delta \ell / \ell$.
Concerning sheet test specimens the measurement problem increases because localized necking will occur at 'onset-of-ductile cracking and this depends on the thickness of the test specimen.

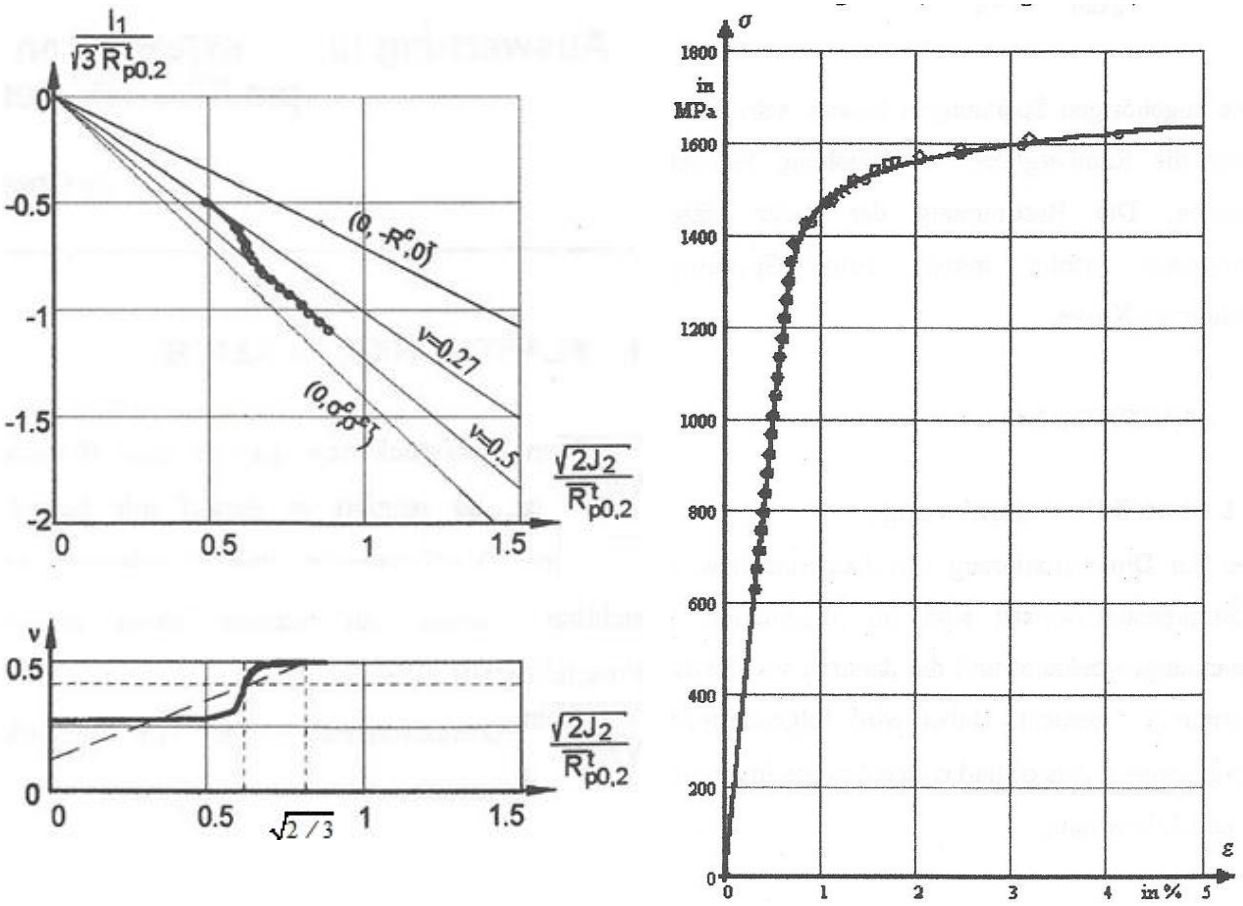


Fig. 14-4: (left) St37 Development of ν in Beltrami's elastic-plastic transition regime, a cube plane compression test. (right) D6AC, Ariane 5 Booster) Stress-strain measurement points with a Ramberg-Osgood engineering stress-strain data mapping curve under axial tension

14.4 Mapping of the measured stress-strain curve by the Ramberg-Osgood Model

In a contract of MAN-NT with the institute IWF at Freiburg all standard model-required properties have been determined. For completion, hopefully in a material-handbook given will be in addition the plastic strain A5 and also the final necking value Z, being usually a minimum and not an average value. $A_{fr} \equiv A_{rupture}$ comes from measurement of *A*5 (*type:* $L_0 = 5 \bullet d_0$, *original length* L_0 *and initial diameter* d_0) as plastic or permanent change in length, measured on the load-controlled broken test specimen and Z the radial plastic necking A-reduction ratio value, in % (*Unfortunately, material mechanics also uses the letter A for this strain property).*

Table 14-2 lists analysis-relevant quantities (in MPa and %) to be applied in a Ramberg-Osgood curve modelling.

Table 14-2: AA2219 material properties and Ramberg-Osgood parameters. Isotropic materials, in MPa and %), *d= 4.0 mm . Regarding* $\bar{R}_{odc}$ *, see the following Sub-chapter 14-6.*

$\bar{R}_{p0.2}$	$\bar{R}_m$	A_{gl}	true$\bar{R}_m$	trueA_{gl}	$\bar{R}_{odc}$	$A_{fr} = A_{rupt}$	trueA_{fr}	Z	$\bar{n}$	true$\bar{n}$	$R_{p0.2}$	R_m	R_{odc}
352	*453*	*4.9*	*478*	*4.8*	*535*	*7.7*	*7.5*	*20*	*12.7*	*10.6*	*297*	*417*	*492*
MPa	MPa	%	MPa	%	MPa	%	%	%	-	-	MPa	MPa	MPa
average *(mean, typical, characteristic)* values for best mapping											Design Allowables		

$$\text{true}\varepsilon = \frac{\text{true}\sigma}{E_0} + 0.002\cdot\left(\frac{\text{true}\sigma}{\text{true}\bar{R}_{0.2}}\right)^{\text{true}\bar{n}} = true\varepsilon_{ax}^{el} + true\varepsilon_{ax}^{pl},$$

$$E_{sec}^{hard} = \frac{\sigma}{\varepsilon} = \frac{\sigma}{\frac{\sigma}{E_0} + 0.002\cdot\left(\frac{\sigma}{\bar{R}_{0.2}}\right)^{\bar{n}}} = \frac{E_0}{1 + 0.002\cdot\frac{E_0}{\bar{R}_{0.2}}\cdot\left(\frac{\sigma}{\bar{R}_{0.2}}\right)^{\bar{n}-1}},\quad E_{tan}^{hard} = \frac{d\sigma}{d\varepsilon} = \frac{E_0}{1 + 0.002\cdot\bar{n}\cdot\frac{E_0}{\bar{R}_{0.2}}\cdot\left(\frac{\sigma}{\bar{R}_{0.2}}\right)^{\bar{n}-1}}.$$

14.5 Poisson's ratio

If analytically necessary the value of Poisson's ratio ν, which increases when stresses narrow the plastic regime, can be determined for stability analyses as a function of the stress. The formula, which uses quantities of the R-O-mapped true stress-true strain curve, is derived in *Table 14-3.*

Table 14-3: Derivation of a formula for Poisson's ratio

$true\varepsilon = true\varepsilon^{el} + true\varepsilon^{pl}$ with $true\varepsilon_{ax} = true\varepsilon_{ax}^{el} + true\varepsilon_{ax}^{pl}$, $true\varepsilon_{lat} = true\varepsilon_{lat}^{el} + true\varepsilon_{lat}^{pl}$, $\nu_0 = \frac{-true\varepsilon_{lat}^{el}}{true\varepsilon_{ax}^{el}}$

from incompressibilityin the plastic range (≡ volume conservation law) $\frac{V}{V_0} = \frac{\ell}{\ell_0}\cdot\frac{A}{A_0} = 1$

follows $true\varepsilon_{ax}^{pl} + 2\cdot true\varepsilon_{lat}^{pl} = 0$ and $true\varepsilon_{lat}^{el} = -\nu_0\cdot true\varepsilon_{ax}^{el}$, which gives after insertion of above relations

$$true\nu = -\frac{true\varepsilon_{lat}}{true\varepsilon_{ax}} = -\frac{true\varepsilon_{lat}^{el} + true\varepsilon_{lat}^{pl}}{true\varepsilon_{ax}} = -\frac{true\varepsilon_{lat}^{el} - 0.5\cdot true\varepsilon_{ax}^{pl}}{true\varepsilon_{ax}} = -\frac{true\varepsilon_{ax}^{el}}{true\varepsilon_{ax}}\cdot\left(-\nu_0 - 0.5\cdot\frac{true\varepsilon_{ax}^{pl}}{true\varepsilon_{ax}^{el}}\right)$$

$$= -\frac{true\varepsilon_{lat}^{el} - 0.5\cdot true\varepsilon_{ax}^{pl}}{true\varepsilon_{ax}} = -\frac{-\nu_0\cdot true\varepsilon_{ax}^{el} - 0.5\cdot true\varepsilon_{ax}^{pl}}{true\varepsilon_{ax}} = -\frac{-\nu_0\cdot true\varepsilon_{ax}^{el} - 0.5\cdot(-true\varepsilon_{ax}^{el} + true\varepsilon_{ax})}{true\varepsilon_{ax}}$$

$$= -\frac{-\nu_0\cdot true\varepsilon_{ax}^{el} - 0.5\cdot(-true\varepsilon_{ax}^{el} + true\varepsilon_{ax})}{true\varepsilon_{ax}} = 0.5 + \frac{-\nu_0\cdot true\varepsilon_{ax}^{el} - 0.5\cdot(-true\varepsilon_{ax}^{el})}{-true\varepsilon_{ax}}$$

$$= 0.5 - \frac{true\varepsilon_{ax}^{el}}{true\varepsilon_{ax}}\cdot(0.5 - \nu_0),\ \text{see. 14.5 .}$$

However, this formula does not fully lead to ν = 0.5 at R_{02} as can be seen in *Fig.14-5*. A better approximation $\nu = 0.5 - (E_{tan}^{hard}/E_0)\cdot(0.5 - \nu_0) \equiv true\nu$ is usually applied in the elastic-plastic domain in stability analysis employing the tangent modulus function above in order to approximately consider the changing *ν* in analysis.

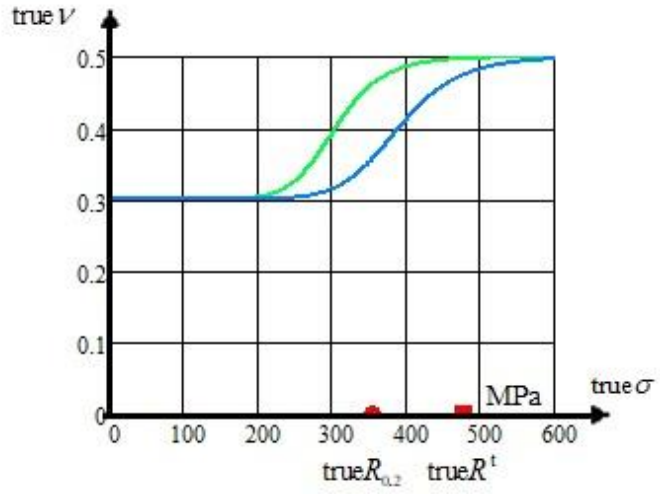


Fig.14-5: Course of Poisson's ratio in the elastic-plastic domain, determined with several formulas

***LL**:*

** The determination of the properties of a solid material requires a force-elongation curve which is then accurately to transfer into a stress-strain curve that is independent from the tested specimen type rod, sheet, coupon, cube.*

** Before any performance of a non-linear analysis is executed it is to check whether true or engineering curve quantities are to provide for numerical input. This then fixes the output*

** Beyond R^t necking occurs generating a hydrostatic stress σ_{hyd} in the tensile rod, which lowers the stress-strain curve (see Chapter 15) in the high plastic regime*

** Poisson's ratio can only approach the limiting points 0.5 > **ν** > (-1, principally.) So-called auxetic materials possess a negative ν. Being strained, the transverse strain in the material will also be positive*

** UD-materials have different ν-values in the directions of anisotropy*

** True strains can be added while engineering strains can not!*

In *Fig.14-6* the different growth of the engineering and the true stress-strain curve is displayed up to the tensile strength point at the 'End–of–uniform elongation'. Beyond R^t, in test data evaluation the axial stress has to be replaced by the equivalent stress because necking in the test specimen activates a hydrostatic residual stress state, dependent on the test specimen used.

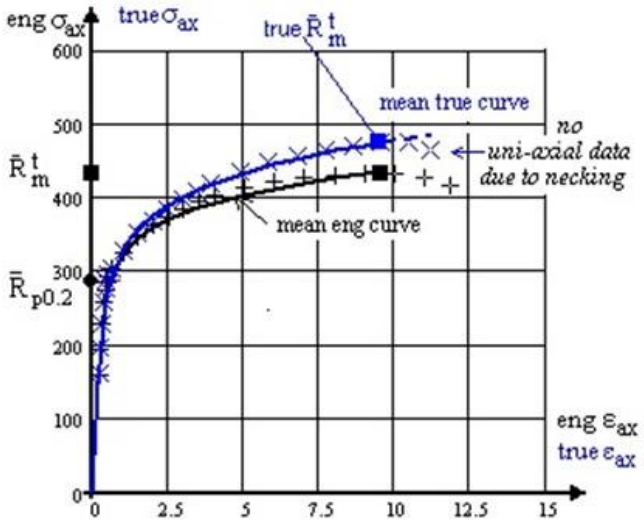


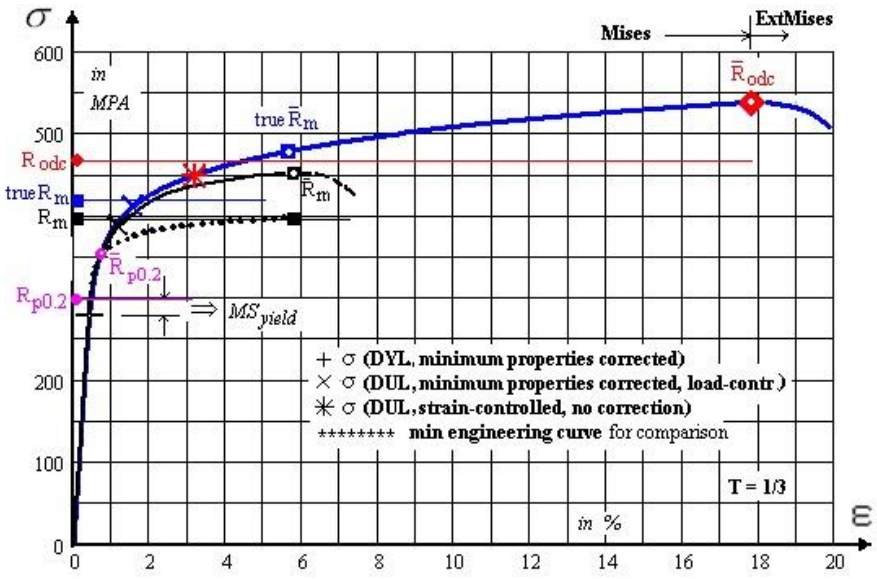
Fig.14-6, AA 2219:

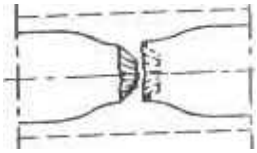
Differences in R-O-mapping of engineering and true stress-strain curve, single measurement.

Bar over R indicates a mean value.

F/A_0 at 'End of uniform elongation' = 'Onset-of-(diffuse) Necking'

In *Fig.14-7* the full stress-strain curve is presented and associated significant points including strength design allowables points are depicted. Additionally for 'Onset-of-yielding' the Margin of Safety is rendered in order to visualize the size of the fulfillment of the 'Design Yield' Limit State.





cup-cone picture
of the
failed rod

Fig. 14-7: Equivalent true stress-equivalent true strain curve. Proposed local strain-controlled extended stress-strain curve incl. mean fracture points and strength design allowables (no bar over)

The full curve ends with reaching the 'onset-of-ductile cracking' point at the associated strength R_{odc}.

LL:

** Opposite to some regulations it is to note "In general, it can be not correct to use a minimum engineering curve in order to obtain the desired realistic structural behavior because structures are usually statically indeterminate".*

** The elliptical shape of the 'Beltrami egg' and its surface potential description will be used in the 'Gurson domain' too, next chapter.*

14.6 Estimation of the Strength $\bar{R}_{odc}$

Beyond 'Onset-of-diffuse necking' the axial strain measurement becomes senseless, only representative is the rod radius-decrease measurement to investigate in this full plastic domain the influence of the hydrostatic stress. From the measured plastic cross-section reduction the plastic portion ε_{odc}^{pl} can be estimated and the 'plastic' curve point $\bar{R}_{odc}$ computed if the only counting associated plastic strain is known, fixed by the diameter reduction.

Because the R/O-model excellently maps the true strength course of test data, its plastic part is employed to estimate a value for the *plastic point* $\bar{R}_{odc}$ ≡ 'Onset-of-ductile-cracking', which is of interest for plastic structural design.

This can be executed by using volume constancy applying the measured reduction of the initial radius $a = d/2$ of the tensile rod. With $Z(\bar{R}_{rup})$ taken as $Z(\bar{R}_{odc})$ the estimation of $\bar{R}_{odc}$ at trueε_{odc} from the Ramberg-Osgood curve is performed as shown in *Table 14-4*.

Ductile collapse or *rupture* $\bar{R}_{rupt}$, respectively, is of theoretical interest, only.

Table 14-4: Derivation of an estimate value for the Strength $\bar{R}_{odc}$

At $\bar{R}^t$ 'Onset-of- (diffuse) necking' $d_{oon} = 3.89$ mm, at 'Onset-of-ductile cracking' $d_{odc} = 3.78$ mm.

$$\varepsilon^{pl} = 0.002\left(\frac{\sigma}{\bar{R}_{0.2}}\right)^n, \quad \varepsilon_{rad}{}^{pl} = \ln\left(\frac{r}{a}\right), \quad \frac{\Delta A}{A_0} = \frac{A_0 - A}{A_0} = 1 - \frac{A}{A_0} \rightarrow \frac{A_{rupt}}{A_0} = 1 - Z = \frac{r^2}{a^2}$$

$$\varepsilon_{ax,\,00n}{}^{pl} = -2 \cdot \varepsilon_{rad}{}^{pl} \text{ at } \bar{R}^t \quad \text{and delivers} \quad \text{true}\bar{n} = \frac{\ln\left(\varepsilon_{ax,\,00n}{}^{pl} / 0{,}2\%\right)^n}{\ln\left(\bar{R}^t / \bar{R}_{p0.2}\right)} .$$

With known $\varepsilon_{rad}{}^{pl} = \ln\left(\frac{r}{a}\right) = \ln\left(\sqrt{1-Z}\right) = \ln\left(\sqrt{1-0.20}\right) = -11.2\,\%$ and $\varepsilon_{ax}{}^{pl} = -2 \cdot \varepsilon_{rad}{}^{pl}$

follow for the non-corrected odc-point $\rightarrow true\varepsilon_{ax}^{pl} = 0.002 \cdot \left(\frac{\bar{R}_{odc}}{\bar{R}_{0.2}}\right)^{\text{true}\bar{n}}$

$$\Rightarrow \bar{R}_{odc} \cong \bar{R}_{0.2} \cdot \sqrt[true\bar{n}]{\varepsilon_{ax}{}^{pl}} / 0.002 = 542 \text{ MPa} \quad \text{and}$$

$$\text{true}\varepsilon\text{odc} = true\varepsilon_{ax}^{el} + true\varepsilon_{ax}^{pl} = \frac{\bar{R}_{odc}}{E} + 0.002\left(\frac{\bar{R}_{odc}}{\bar{R}_{0.2}}\right)^{\text{true}\bar{n}} .$$

14.7 Beltrami's Potential Surfaces in the Elastic-plastic Regime and as Idea for the Porous Regime

From previous investigations the author knows, that any volume change, due to the FMC 'rules', is to describe by the term $I_1{}^2$. If a shape change occurs then the invariant J_2 is required.

Elastic-plastic transition regime:

Beltrami cites: "*The deformation of a material consists of two parts, a shape* and *a volume change*". Based on this, one can formulate for the elastic-plastic transition regime

$$\frac{(2+2\nu)\cdot 3J_2}{\bar{R}^2} \text{ and } \frac{(1-2\nu)\cdot I_1{}^2}{\bar{R}^2} \rightarrow \frac{3J_2}{\bar{R}^2} + \kappa \cdot \frac{I_1{}^2}{\bar{R}^2} = c^{\text{Bel}} \text{ with } \kappa = \frac{1-2\nu}{2+2\nu} .$$

Into this formulation a normalizing strength is inserted: $I_1 = \bar{R}$, $J_2 = 2\bar{R}/6 \rightarrow c^{\text{Bel}} = 1+\kappa$ and

for the special yield potential surface (ν=0.5) yields $\frac{3J_2}{\bar{R}_{02}{}^2} + 0 \cdot \frac{I_1{}^2}{\bar{R}_{02}{}^2} = 1 + 0$ ('Mises' cylinder).

Beltrami bridges the elastic domain with the plastic domain ($3 \cdot J_2$ is Mises part). His formulation is not a failure function but a descriptive function to predict subsequent Beltrami surfaces $\nu(\bar{R})$, which are surfaces of equal potential. This means: A pair $(\nu, \bar{R})$ must be given for each desired ν-curve of the subsequent potential surfaces are obtained, *see* Fig.14-8 left. This part figure shows the change of the potential surface of the growing 'Yield' body with increasing ν in the elastic-plastic transition domain. The two center figures show the cross-section using the principal stresses and below the development of the yield body from the yellow egg ($\nu = \nu_0$) up to full yielding ($\nu = 0.5$) rendered by the 'Mises cylinder' → *Poisson's ratio ν drives the elliptic shaping!*

Plastic porosity affected regime: an anticipation, considering Chapter 15

Porosity causes a volume increase. This works oppositely as in the elastic-plastic transition regime, which can be described by Beltrami, too. Increasing porosity *f* means a decreasing Poisson's ratio *ν* and

a more elliptic shape. In the outer figures of *Fig.14-7* both the regimes of the changing Poisson's ratio are displayed. The right part figure, modelled by Beltrami, pre-informs (see *§15*) how the surface of the yield body changes its shape with decreasing *ν* according to the increasing porosity *f*.

Fig.14-7(right) displays the development of the subsequent failure surfaces whereby an increasing true stress is considered. This is relevant for the critical material location. After achieving the tensile strength a small further radial increase of the surface is obvious together with the initiation of an increasing elliptic failure surface. With increasing degradation the subsequent surfaces become more and more elliptical. This is the opposite process regarding Beltrami in the elastic-plastic transition regime. A growing *f* means higher true stress but less cross-section or load-carrying material in the strain-controlled 'hot spot'.

The Beltrami formulation delivers an *Idea for the ductile porous regime* and is intended to replace the 'Gurson' formulation by Cuntze's so-called 'Extended Mises', reading

$$\frac{3J_2}{\bar{R}^t_{0.2}} + \frac{1-2\nu}{2+2\nu}\cdot\frac{I_1^{\,2}}{\bar{R}^t_{0.2}} = c^{\mathrm{Bel}} \quad \Rightarrow \quad \frac{3J_2}{\bar{R}^t_{0.2}} + c_{12}\cdot\frac{I_1^{\,2}}{\bar{R}^t_{0.2}} = c^{\mathrm{ExtMises}} \quad .$$

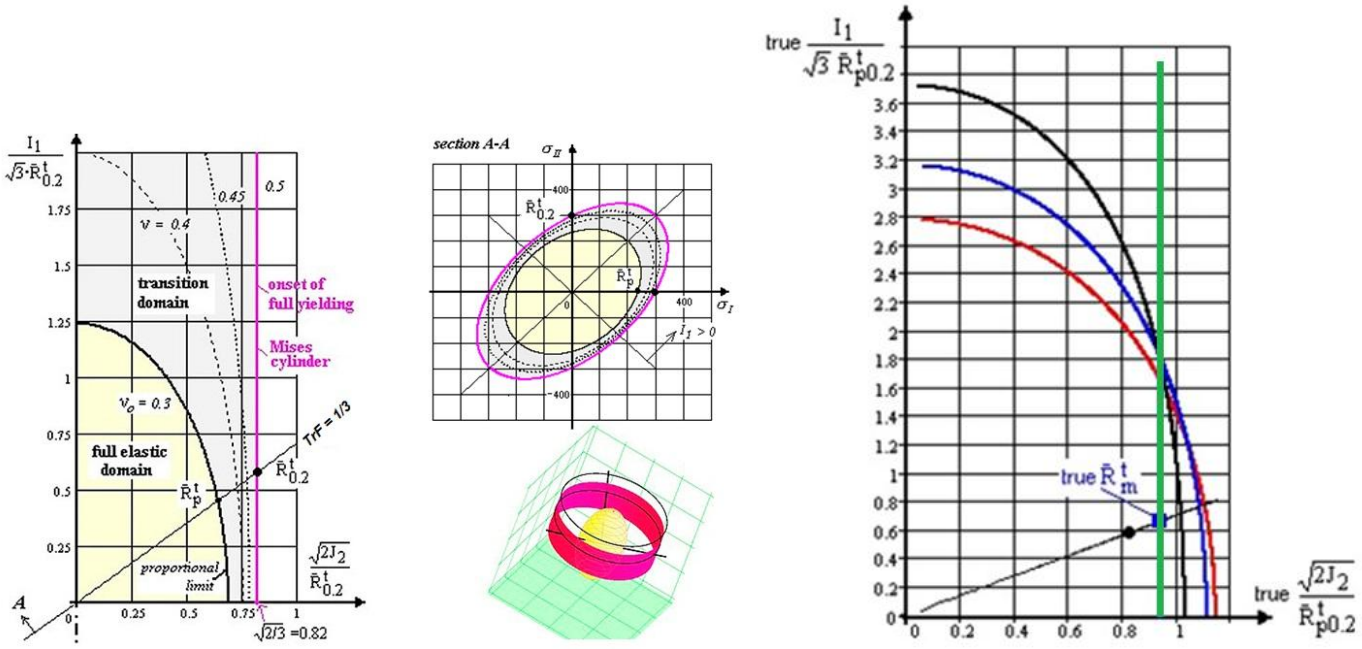


Fig.14-8: (left) Elastic-plastic transition domain, development of the Beltrami surfaces from egg shape (growing yield potential surface with ν_0 = 0.3 for metals (0 for foam = sphere) < ν < 0.5 ('Mises cylinder → J_2 = constant = incompressibility) depicted in Lode-Westergaard coordinates. (center) visualization of the Beltrami potential surfaces. (right) Change of potential surfaces in the porous domain computed with the Extended Mises formulation (see [CUN22, §17]), f = 0, 0.1, 0.2, 0.3

Also here, the yield strength can be used for normalization. The parameters c^{Bel}, c^{ExtMises} mark the size parameter of the changing potential surface (*see survey in Table 15-4*).

In order to understand the chosen Haigh-Lode-Westergaard coordinates *Fig.14-9* is provided below.

The vector $\{\sigma_{\text{prin}}\} = (\sigma_I, \sigma_{II}, \sigma_{III})^T$ is a vector-addition of the principal stresses. The cone angle between all principal axes and I_1 is 54.75°.

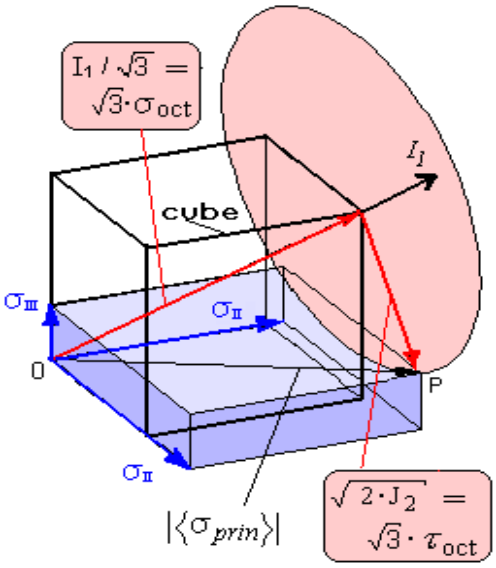


Fig.14-9:
Visualization of the used Haigh-Lode-Westergaard coordinates by the principal stresses acting at a material cube.

Octahedral stresses:

$$\sigma_{oct} = I_I / 3 \quad \text{with} \quad I_I = \sigma_I + \sigma_{II} + \sigma_{III}$$

$$\sigma_{eq}^{\text{Mises}} = \sqrt{3 \cdot J_2} = f(\tau), \text{ with}$$

$$6 \cdot J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2$$

$$\tau_{oct} = \sqrt{6 J_2}/3 -$$

To make more familiar with potential surfaces *Fig.14-10* presents two potential surfaces dedicated to different *Effs*, for fracture *Eff* = 100% and for a loading that generates *Eff* = 50 %.

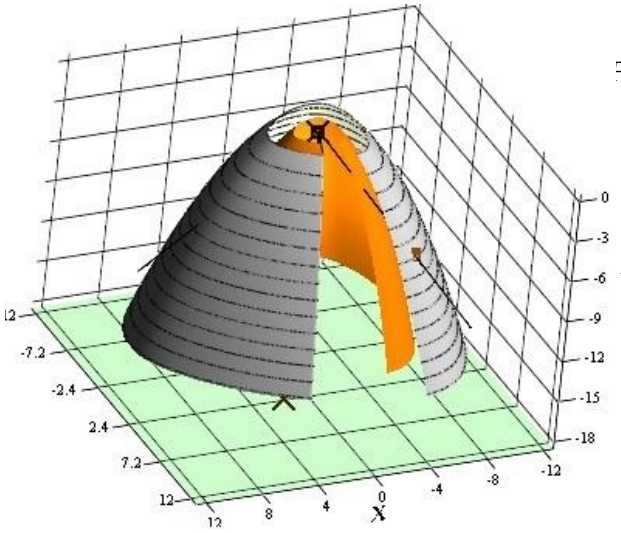


Fig.14-10: Two potential surfaces. Eff is the measure for the distinct potential surface with Eff=1=100% the fracture surface. The potential surfaces are Eff^{SF} *=50% and* Eff^{SF} *=100% = fracture.*

Indicated are the failure stress points

$\bar{R}^t = 4$ MPa, $\bar{R}^{tt} = 3$ MPa, $\bar{R}^c = 40$ MPa, $\bar{R}^{cc} = 49$ MPa

and the principle stress axes.

'Normal Concrete', 3D test data available

$$Eff^{SF} = c^{SF} \cdot \frac{\sqrt{4 J_2 \cdot \Theta^{SF} - I_1^2 / 3} + I_1}{2 \cdot \bar{R}^c}$$

LL:

** The shape of the potential surfaces in the plastic porosity regime changes oppositely to the shape in the elastic-plastic regime. Both the surface shapes one can dedicate to the change of the Poisson ratio v*

** In structural analysis the stresses are most-often .determined in the elastic-plastic regime. This is performed very accurately, sometimes over-precise. However in this domain the Poisson's ratio changes significantly, which should be considered.*

15 A measurable parameters'-based 'Extended-Mises' Model instead of a 'Gurson' Model?

Aim: *De-complication of highly non-linear plastic analyses by generation of a simplified model to perform Design Verification in a Ductile Metal's high Porous Regime*

15.1 Introduction

There is stress- and strain-controlled behavior. Strain-controlled locations in a structure will not break, when the stress level reaches tensile strength R^t. A fuel-outlet hole in the upper tank of the Ariane 5 central stage was such a strain-controlled case at MAN, where the vicinity of the 'overstrained' critical material location takes over the reduced loading capability, no direct fracture is to face.

Such a (seldom) task caused MAN-Technologie to let perform an analysis together with IWM Freiburg applying a multi-parameter 'Gurson' yield model. Its model parameters cannot be measured directly, but are usually determined by a FE analysis which best models the deformation of the test specimen, a classical simulation process. An example for such a multi-parameter set, determined for the aluminum alloy AA2219 and by using the tensile rod test specimen, is given in the table below [*IWM Freiburg*]:

f_0	f_n	f_c	f_F	q_1	q_2	ε_n	s_n
0.00	0.05	0.04	0.15	1.5	1.0	0.20	0.01

.

The applied 'Gurson'-model (such a model is a model of the *Continuum (micro-)Damage Mechanics theory in the ductile materials regime)* of the IWM was a refined one. Refinement means that more parameters are to determine than for a simpler 'Gurson' model. Therefore, the optimal model parameter set *of a 'Gurson' model* depends on the mesh fineness and has to be inversely determined by an excellent simulation of the test specimen's behavior, see <u>*Fig.15-1 left*</u> for the tensioned rod

(Gurson A L: *Continuum Theory of Ductile Rupture by Void Nucleation and Growth. Part 1:Yield criteria and flow rules for porous ductile media*. J. Eng. Mater. Techn.99 (1977), 2-15)

Using 'Gurson' model results, the responsible design engineer must ask:

What about the scatter of the simulation-won parameters which are to insert in the analysis?

Without knowledge of the scatter there is not a generally accepted design verification possible. Might it be not better to apply a simpler model with 2 or 3 parameters at dispense of the little gain of the last load carrying portion after coalescence at 'onset-of-ductile cracking' marked by the corresponding strength value R_{odc}? This is the 'technically relevant point', where the coalescence of voids begins. Only a reduced procedure with directly measurable model parameters has the chance to capture the statistical Design Verification requirements.

In the context above the question comes up:

"*How much Gurson material modelling is necessary to achieve a reliable prediction of the <u>local</u> design-deciding ductile fracture level of the structure?"*

This failure mode 'ductile fracture' is defined here to be met at 'onset-of-ductile cracking' and it shall correspond to Design Ultimate Load. Such an application is a seldom case, where the deformation-controlled strength value $R_{odc} > R^t$ is used to *save the final design* not anymore possible via the load-controlled strength value R^t. A simpler model is required. Two challenging parts tasks are thereby faced:

(1) Creation of a model simpler than a multiple-parameter 'Gurson' model, and

(2) to capture the porosity *f* in the equivalent σ-ε-curve**,** to be provided, whereby *f* is an additional but measurable model parameter transferring the 'Mises' model to the 'Extended Mises' model. For its derivation, the various micromechanical mechanisms during ductile fracture are of basic interest:

* Void nucleation in the test rod at so-called second phase particles by debonding

* Void growth, controlled by stress Triaxiality Factor TrF and growing plastic strain ε_{eq}^{pl}, and

* Coalescence of voids by internal shear stress-driven rod necking with final ductile rupture.

For the evaluation of the usual rod test results, the widely used correction formula of P.W. Bridgman is employed. *Fig.15-1(left)* presents the dependency of the rod's diameter reduction on the load F and further shows simulation curve and test curve. The measurement of the diameter reduction is mandatory beyond the 'end of uniform elongation' at the tensile strength point $\bar{R}^t = max\, F / A$, depicting the 'onset-of-diffuse necking $_{oon}$ point and experiencing full plasticity. Beyond $\bar{R}^t$ only true values represent the reality.

Mind: $F(\Delta d)$ is not completely of the same shape like $true\sigma(true\varepsilon)$.

In the load-controlled regime axial strain measurements are performed whereas in the transversal, plastic strain-controlled necking regime diameter reduction measurements are to execute. In the *Fig.15-1(right*) attention is drawn to the various stress-strain curves used and to the associated strengths. Displayed are the mean technical and mean true strengths together with the associated Design Allowables.

If materials do not fail when the tensile strength is reached, then this is accompanied by the fact (*Fig.15-1, left)* that max$F$ does not essentially change over a certain range of the strain because hardening still works until a slight kink will occur due to void coalescence and destruction of piled–up dislocations. Degradation wins over hardening at the 'onset of ductile cracking' strength point R_{odc}. R_{odc} and marks the coalescence-linked kink and is defined here as the critical strength.

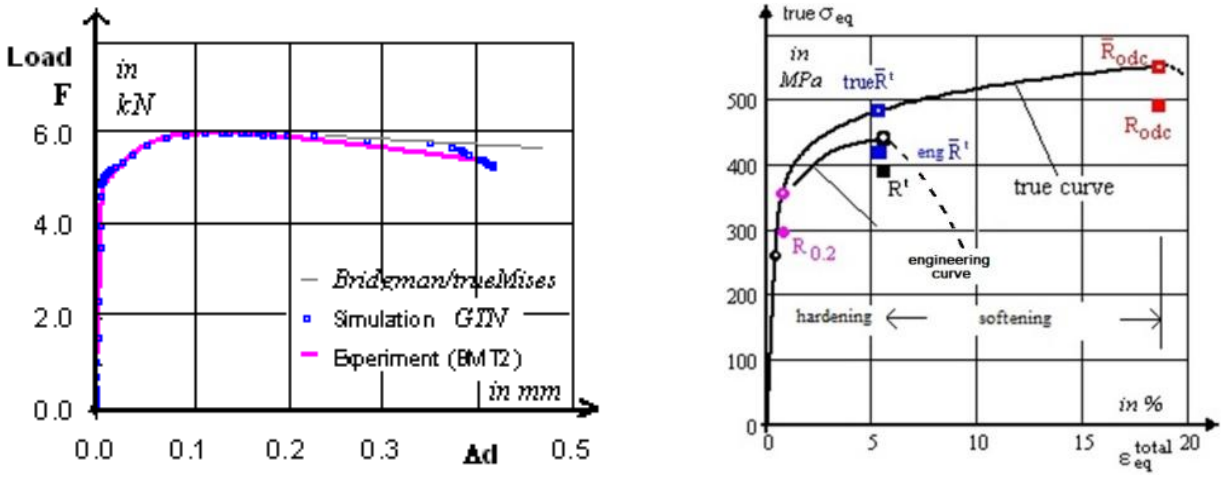


Fig.15-1: (left) Dependency of diameter reduction Δd on the applied load F. Comparison of global simulation and test results (IWM Freiburg, Dr. Sun). (right) Ramberg-Osgood-mapped true and engineering stress-strain curves of AA2219A bar over R indicates a mean value, no bar over R indicates a 'design allowable'

15.2 Bridgman-3D Correction of the true σ-ε-Curve, employing 'Mises'

Equivalent stress: $true\sigma_{ax} \rightarrow true\sigma_{eq}$

The validity of the uniaxial stress-strain curve measured in the smooth tensile rod test is terminated at the load-controlled strength point $_{max}\sigma_{true} = \bar{R}^t = max\, F / A$, which corresponds to the maximum load F and to the actual minimum cross section of the neck. However, beyond $\bar{R}^t$ ('end-of-uniform-elongation') at the 'onset-of-diffuse necking $_{odn}$' point the 1D-stress situation in the tensile rod becomes a 3D one and an equivalent stress σ_{eq}^{Mises} has to be considered in order to capture spatial stress tasks.

Under tensioning, in the plastic regime the lateral contraction of the material at the center of the neck is impeded by neighboring material leading to a 3D-stress state. Hence, a simple extrapolation of the F/A (σ-ε)-curve beyond $\bar{R}^t$ cannot provide a physically accurate curve, because the necking-generated 3D-residual stress state σ_{hyd} is to consider in the evaluation of the tensile rod test results in order to obtain a real σ_{eq}. The three stresses within σ_{eq} reach their maximum values at the center of the rod's cross-section with an approximately equal value $\sigma_{radial} = \sigma_{hoop}$, except close to the surface, as depicted in *Fig.15-2(left)* below. The values of σ_{radial}, σ_{hoop} and of the created necking radius ρ raise with σ_{ax}. The former F/A-quantified capacity becomes continuously reduced with increasing necking. Hence, the true stress-strain F/A curve is to correct to obtain a realistic equivalent stress. In the center of the rod an increasing stress Triaxiality Factor *TrF* is faced.

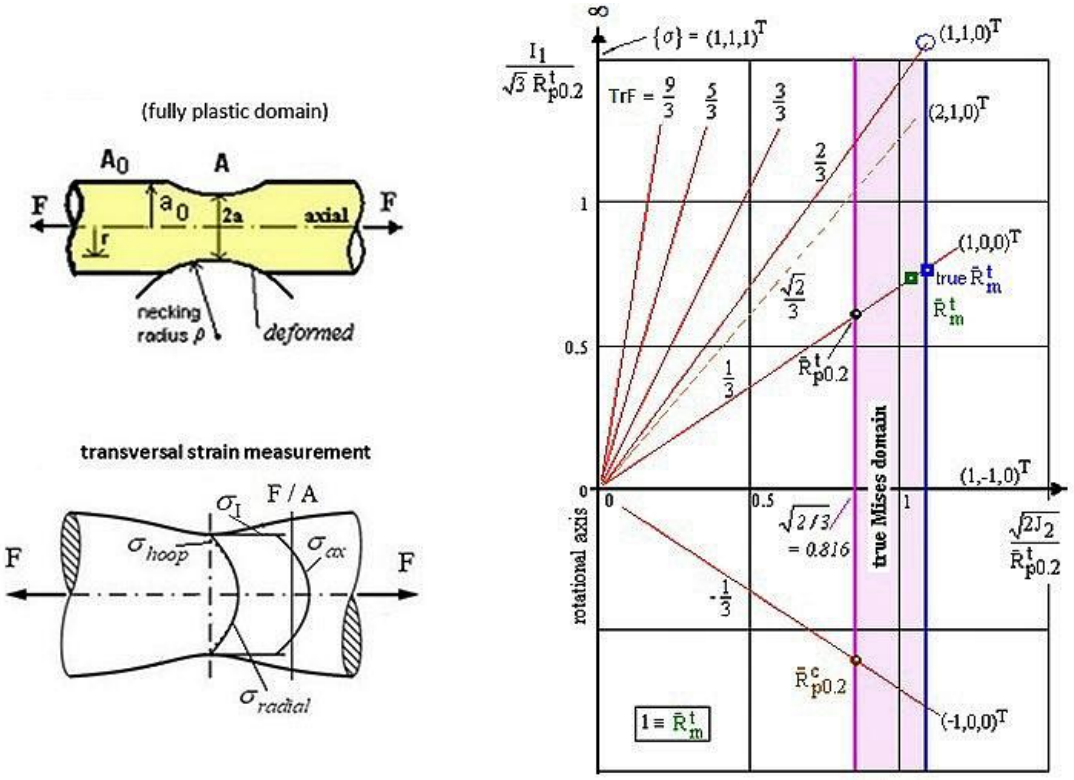


Fig.15-2: (left) Stresses and transversal (radial) strain measurement of the necked round tensile rod. F:=force, A:= minimum actual cross section of the neck. F:=Force F_{ax}, A_0 := original cross-section. $\bar{R}^t = \max F / A_0$, $\varepsilon \le \bar{A}_{gl}$ *(permanent strain linked to load-controlled fracture at* $\bar{R}^t$*). Necking radius is ρ. (right) Schematic visualization of the Triaxiality Factor TrF, responsible for failure in the rod center*

$$\{\sigma\} = \{\sigma_I, \sigma_{II}, \sigma_{III}\}^T,\ TrF\{\sigma_I, \sigma_{II} = \sigma_I, 0\}^T = 2/3.$$

Assuming a constant σ over the rod's cross-section, *Fig.15-2(right)* illustrates by a variety of *TrF*-beams that values higher than 2/3 (bi-axial stressing) are practically not possible. Assuming constancy is not anymore the case for a plastic rod neck, where the failure decisive location is the center of the cross-section with also there facing *maxTrF.* Notched test specimens are applied to capture higher multi-axial stress states, *TrF* = 1, values > 1/3.

Fig. 15-3 shows the void volume fraction in the necking region at failure. The highest values are reached in the center of the specimen (Element 20) as expected, *TrF* highest. From the central region micro-damage spreads out over the whole cross section.

Basic task now will be the necessary transfer from the uniaxial trueσ_{ax}(trueε_{ax}) → tri-axial trueσ_{eq} (trueε_{eq}) in the diffuse necking regime.

Bridgman provided a correction means how to adjust trueσ_{ax}, but had to make some essential assumptions:

(1) The cross section of the necked region remains angular *(like the 'Mises' cylinder, assuming a rotationally symmetric yield body*).

(2) The inner axial contour of the neck can be approximated by the arc of a circle with the radius ρ.

(3) 'Mises' can be applied (*effect of growing voids is therefore not considered*).

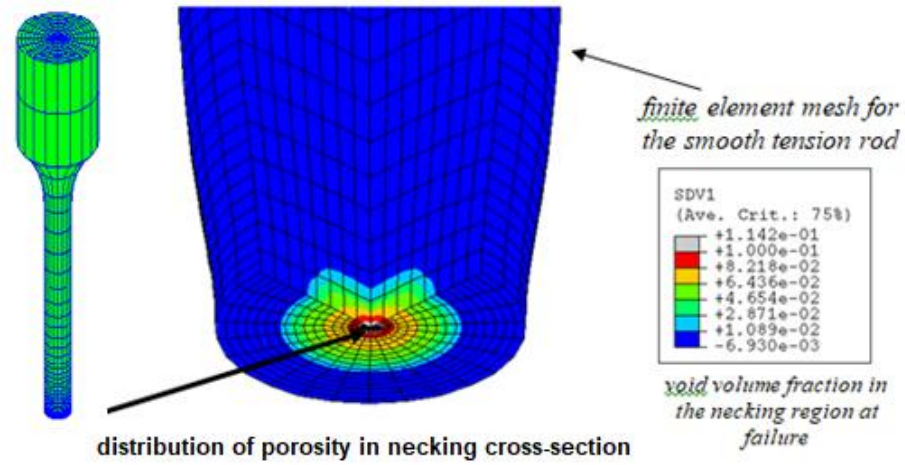


Fig.15.3: Tensile rod with porosity distribution in the 'Hot spot' center of the rod.). Finite element mesh of the rod. Void volume fraction f in the necking region at failure [Sun97, IWM 7] stresses in MPa, strains in %. Material *source, AA2219 variant, T2:* $\rho_{initial} = \infty$, *2 a = 4mm, elasticity properties are E =70000MPa, ν = 0.3, t = 6 mm plate. Sample size n = 179, A5 = 7.4 %, Z = 20 %*

Due to the diffuse necking, an axial load increase-caused internal hydrostatic *tensile* stress state σ_{hyd} is generated, representing a deformation-dependent residual stress state. Its radial distribution can be Mises-based estimated - under the axial loading $\{\sigma\} = (\sigma_I, \sigma_{II}, \sigma_{III})^T = (F/A, 0, 0)^T$ - after Bridgman by $\sigma_{hyd}(r) \approx \sigma_I \cdot ln\left(1 + \frac{a^2 - r^2}{2 \cdot a \cdot \rho}\right)$ with $\sigma_I < \frac{F}{A} = \frac{F}{\pi \cdot a^2}$, *Fig.15-2*

with *F*:= load, *a*:= radius of actual cross section of neck, ρ := radius of neck curvature and F/A an integral quantity capturing the external loading *F* . The full set of relevant relations then reads:

$\sigma_{ax}^{t}(r) = \sigma_I + \sigma_{hyd}(r)$ and $\sigma_{radial}(r) \approx \sigma_{hoop}(r) = \sigma_{hyd}(r)$ and as equivalent stress follows

for a single stress $\rightarrow \sigma_{eq}^{Mises} = \sqrt{3 \cdot J_2} = \sqrt{\frac{1}{2}} \cdot \sqrt{\left[(\sigma_I)^2 + (0)^2 + (-\sigma_I)^2\right]} = \sigma_I$ and also

for a superimposed $\sigma_{hyd} \rightarrow \sigma_{eq}^{Mises} = \sqrt{3 \cdot J_2} = \sqrt{\frac{1}{2}} \cdot \sqrt{\left[(\sigma_I - \sigma_{hyd})^2 + (\sigma_{hyd} - \sigma_{hyd})^2 + (\sigma_{hyd} - \sigma_I)^2\right]} = \sigma_I$

$I_1 = max\,\sigma_{ax}^{t} + max\,\sigma_{radial} + max\,\sigma_{hoop} = \sqrt{3 \cdot J_2} + 3 \cdot \sigma_{hyd}$, $\sqrt{3 \cdot J_2} = \sigma_I$ (← no σ_{hyd} effect).

$TrF(r) = true\sigma_{mean} / true\sigma_{eq}^{Mises} = (I_1 / 3) / \sqrt{3J_2} = \left[\sqrt{2} / 3\right] \cdot (I_1 / \sqrt{3}) / \sqrt{2J_2} = \frac{1}{3} + \frac{\sigma_{hyd}}{\sigma_I}$.

Decisive for failure in the rod is the still mentioned Triaxiality Factor *TrF*, which increases with the true axial loading. Its maximum is in the center, the 'hot spot' at $r = 0$. In this micro-damage critical cup-cone center the 3D-state of stresses reads

$$max\sigma_{hyd}\ (r=0) = \sigma_I \cdot ln\ (1+\frac{a}{2\cdot\rho}),\quad max\sigma_{ax}^{t}(r=0) = \sigma_I + max\sigma_{hyd}$$

with the stress state in the rod's center $\{\sigma\} = (\sigma_I + max\sigma_{hyd}, \max\sigma_{hyd}, \max\sigma_{hyd})^T$.

In the necessary adjusting process of the F/A-curve in the diffuse necking regime (Phase 3) the first step is to integrate the axial stress, which varies over the radius. From load balance the following relations are yielded in *Table 15-1*.

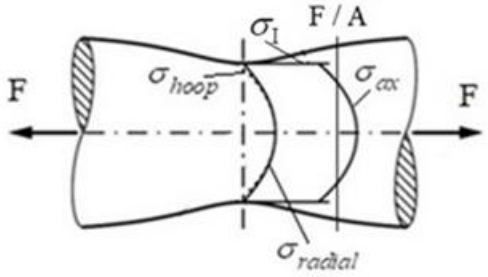
The last unknown is the neck radius ρ. It could be computed during testing by measuring the shape change of the neck via a real-time Digital Image Correlation (DIC) 3D full-field measurement optical technique of the surface strains and an associated surface geometry model.

Table 15-1: Bridgman-Derivation of the cross-section quantities of the tensioned rod

$$\frac{F}{A} = 2\cdot\int_0^a \sigma_{ax}^{t}\cdot\pi\cdot r\cdot dr\ /\ (\pi\cdot a^2)$$

$$= 2\cdot\int_0^a (\sigma_I + \sigma_I(r))\cdot\pi\cdot r\cdot dr\ /\ (\pi\cdot a^2)$$

$$= 2\cdot\int_0^a (\sigma_I + \sigma_I\cdot\ln(1+\frac{a^2-r^2}{2\cdot a\cdot\rho}))\cdot\frac{\pi\cdot r\cdot dr}{\pi\cdot a^2}$$



integrated follows $\frac{F}{A} = \sigma_I\cdot(1+\frac{2\rho}{a})\cdot\ln(1+\frac{a}{2\rho})$ with $\sigma_{eq}^{Mises} = \sqrt{3\cdot J_2} = \sigma_I$

$$\sigma_I = \sqrt{3\cdot J_2} = \sigma_{eq}^{MisBri} = \frac{F}{A}\ /\ (1+2\cdot\rho/a)\cdot\ln(1+a/2\cdot\rho),\quad \text{valid} > \bar{R}^t \text{ or } A < Aoon,$$

an equation, in which the ratio a/ρ is not known.

If no test result is available, then Lorrek-Hill's approach for rupture is applied at $\bar{R}_{rodc}$:

$$\text{maximum}\ \frac{a}{\rho} = \sqrt{\ln(\frac{A_0}{A_{rupt}}) - \ln(\frac{A_0}{A_{oon}})}\quad ,\ \frac{A_{rupt}}{A_0} = 1 - Z \quad \text{with a}$$

given cross section reduction Z in % at maximum necking at $\bar{R}_{rupt}$

and A_{oon} the cross section at $\bar{R}^t \equiv \bar{R}_m^t$, being 'Onset-of-(diffuse) necking'.

$$\frac{a}{\rho} = c_1 + c_2 + \text{true}\varepsilon_{ax}R_{odc}^{\ 2} + c_3\cdot\text{true}\varepsilon_{ax}R_{odc}^{\ 3}.$$

Equivalent strain: $\text{true}\varepsilon_{ax} \rightarrow \text{true}\varepsilon_{eq}$

For the Mises equivalent strain is valid in the plastic domain (elastic part is negligible):

$$\varepsilon_{eq}^{Mises} = \frac{\sqrt{2}}{3}\cdot\sqrt{(\varepsilon_I-\varepsilon_{II})^2+(\varepsilon_{II}-\varepsilon_{III})^2+(\varepsilon_{III}-\varepsilon_I)^2} = \frac{\sqrt{2}}{3}\cdot\sqrt{(\varepsilon_I^{\,pl}-\varepsilon_{II}^{\,pl})^2+(\varepsilon_{II}^{\,pl}-\varepsilon_{III}^{\,pl})^2+(\varepsilon_{III}^{\,pl}-\varepsilon_I^{\,pl})^2}$$

considers plastic volume constancy (incompressibility) $\Sigma\varepsilon_i^{pl} = 0$ during plastic deformation it becomes

$$\varepsilon_I^{\,pl}/2 = -\varepsilon_{rad}^{\,pl} = -\varepsilon_{tan}^{\,pl} \text{ and } \varepsilon_{rad}^{\,pl} = ln(r/a) = \varepsilon_{tan}^{\,pl} \Rightarrow \varepsilon_I^{\,pl} = -2\cdot ln(r/a) \text{ and it reads}$$

$$\text{true}\varepsilon_{eq}^{Mises} = \frac{\sqrt{2}}{3}\cdot\sqrt{((\varepsilon_I^{\,pl}+\varepsilon_{rad}^{\,pl})-\varepsilon_{rad}^{\,pl})^2+0+(\varepsilon_{rad}^{\,pl}-(\varepsilon_I^{\,pl}+\varepsilon_{rad}^{\,pl}))^2} = \frac{\sqrt{2}}{3}\cdot\sqrt{2\varepsilon_I^{\,pl2}} = \frac{2}{3}\cdot\varepsilon_I^{\,pl}.$$

LL: ** Bridgman correction = approach, which considers the varying stress over the rod's cross-section regarding that the center is the critical line*

** Lorrek-Hill = approach, which formulates a final value for the change of the curvature radius under loading. The increasing curvature triggers the increasing hydrostatic stress and this is to map*

** Measured ratio F/A = stress capacity smeared over the cross-section = load ability-quantity, which represents an effective (smeared) value, which decays with increasing axial strain*

** $\sigma_1 \equiv \sqrt{3J_2}$ = constant basic stress quantity of the Bridgman approach, see Table 15-1*

** The applicability of axial measurement ends with 'End-of-uniform elongation' at $\bar{R}^t$*

** Bridgman model application is limited to about 30% cross-section reduction, due to not considering the coalescence of the voids*

** The Bridgman-correction is applied by using the 'Mises' yield function and not a 'Gurson'-type void growth-capturing (porosity f) yield function. This led the author 20 years ago to propose his so-called 'Extended Mises' yield condition at the end of a joint Research program MAN with IWF-Freiburg.*

Idea:

The replacement of a 'Mises'-based Bridgman correction by a porosity-considering one should lead to a more realistic stress-strain curve and should offer the advantage to escape in the analysis from the high number of non-measurable 'Gurson' model parameters except from *f*. In order to consider the void growth, the author proposes to replace the Bridgman-corrected Mises-model by the mentioned ***'Gurson' model-linked Extended Mises****-model*'.

15.3 Porosity-improved Bridgman 3D-Correction of true σ-ε-Curve employing 'Extended Mises'

Porosity means volume change due to void coalescence. Such a volume change can be transferred to a decaying Poisson's ratio as it is known from Beltrami. The author experienced, that the usual 'Gurson'-analyses base on a 'Mises'-linked equivalent stress-equivalent strain curve. This should be improved when considering the porosity *f*. The author's hypothesis from 2002 reads:

* Formulation of an egg-shaped yield model, termed Extended Mises, with
* Simplification to 1 measurable 'Gurson' parameter *f* , only
* Improvement of this simpler model idea by applying a porosity-capturing equivalent $\sigma - \varepsilon$ curve
* Taking a simple 'Gurson' yield model to obtain via a 'comparison of coefficients' a relation to the porosity *f* in the simple 'Gurson' -model from Gurson-Tvergaard-Needleman, index ^{GTN}
* Probable 120°-material symmetry in the high porosity regime is not documented and therefore not

considered. It can be captured by replacing $\frac{3J_2}{\bar{R}^2}$ through $\frac{3J_2}{\bar{R}^2}\cdot\Theta$ (see *Chapter 11*).

LL:
** The 'Mises' cylinder is a simplification* (remember: §11, 120°-symmetry, $\Theta = 1$)
** Increasing porosity also means decreasing Poisson's ratio ν and an increasing elliptic shape.*

From knowledge in *Chapter 13* is known: Values for the increasing porosity *f* are strain-controlled detectable. The effect of a probably initially not pore-free material is captured in the initial property values.

14.1 Measurement of rod failure stresses and estimation of the vertex of the failure body

Even for a porous plastic failure body its vertex should be known from theoretical reasons. A vertex represents the equi-triaxial tensile strength capacity of a load-controlled strength situation, remind *Fig.15-2*. Because the vertex stress state $\{\sigma\} = (\text{true}\bar{R}^{ttt}, \text{true}\bar{R}^{ttt}, \text{true}\bar{R}^{ttt})$ with $TrF = \infty$ practically cannot be measured as best substitute a 3D-stress state - closest possible to the vertex - must be employed. Realistic is a stress state $(\text{true}\sigma_{ax} + \sigma_{hyd}, \sigma_{hyd}, \sigma_{hyd})$ by investigating the center of an un-notched tension rod test specimen, being the 'hot spot' in this test specimen.
In such un-notched rods a neck radius builds up and increases with further increasing axial tensile stress. Due to the diameter reduction a hydrostatic stress state is generated and can be determined from the zero volume strain regime faced in the minimum neck cross-section. Hereby, difference due to rolling of the sheet material and how the test specimen is cut out are neglected and full isotropy assumed.
From the test rig loading comes the subsequently effective stress 'true σ_{ax}', whereas the remaining neck cross-section experiences in the center the multi-axial stress state $(\text{true}\sigma_{ax} + \sigma_{hyd}, \sigma_{hyd}, \sigma_{hyd})$, estimated by the Bridgman model. In order to better understand the stress situation in the rod center the effect of increasing σ_{hyd} is of interest, depicted below. It is to conclude from mechanics, that a hydrostatic stress does not change Mises's representative invariant J_2 for shape deformation of the solid. However, σ_{hyd} affects the tri-axiality value *TrF* which might be interpreted to cause some quasi-embrittlement of the material:

$$I_1 = (\sigma_I + \sigma_{II} + \sigma_{III}) = f(\sigma)\ ,\quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = f(\tau)$$

$$(\text{true}\sigma_{ax} + \sigma_{hyd},\ \sigma_{hyd},\ \sigma_{hyd})\ ,\quad \sigma_{ax}^{t}(r) = \sigma_1 + \sigma_{hyd}\ (r)$$

$$\sigma_{eq}^{Mises} = \sqrt{3J_2} = \sqrt{3}\cdot\sqrt{(\sigma_1^{M.} - \sigma_{h.} - \sigma_{h.})^2 + 0 + (\sigma_{h.} - \sigma_1^{M.} - \sigma_{h.})^2} \quad\rightarrow\quad \sigma_{eq}^{Mises} = \sigma_1^{Mises}$$

$$TrF = \sigma_{mean} / \sigma_{eq}^{Mises} = (I_1 / 3) / \sqrt{3J_2} = \left[\sqrt{2} / 3\right]\cdot(I_1 / \sqrt{3}) / \sqrt{2J_2}$$

$$I_1 = (\text{true}\sigma_{ax} + 3\sigma_{hyd}) = f(\sigma)\ ,\quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (0)^2 + (\sigma_{III} - \sigma_I)^2 = f(\tau)$$

uni-axial σ_{ax}, multi-axial $(\sigma_{ax} + \sigma_{hyd}, \sigma_{hyd}, \sigma_{hyd})$ in the rod's minimum neck section $\Rightarrow \sigma_{eq}^{Mises}$.

Again: The use of notched rods is principally also possible but considering that the original notch radius ρ increases. Thereby the critical rod surface stress concentration reduces a little and the originally surface-located critical material location moves to the center. *Fig.15-9(left)* shall display different stress

states and the associated points on the respective *TrF*-beams. In the subpicture down left the indicated 2D stress-states and up left further the 3D stress states all collected in the table right down.
Of interest for the designing engineer is that the spatially formulated SFC F^{NF} = 1 dents the failure body at the pressure vesessel situation $\{\sigma\} = (2,1,0) \rightarrow TrF = \sqrt{2}/3$, *Fig.15-2* and *15-9*. Remember: In the 2D principal stress plane F^{NF} is a straight line and in the 3D failure body a hyperbolic curve!
Fig.15-9 (right) shall make the non-linear development of *TrF* more clear and further make familiar with the design failure surfaces in the very ductile regime. The figure schematically shows that the strain-controlled failure surface is outside and thereby larger than the load-controlled one.

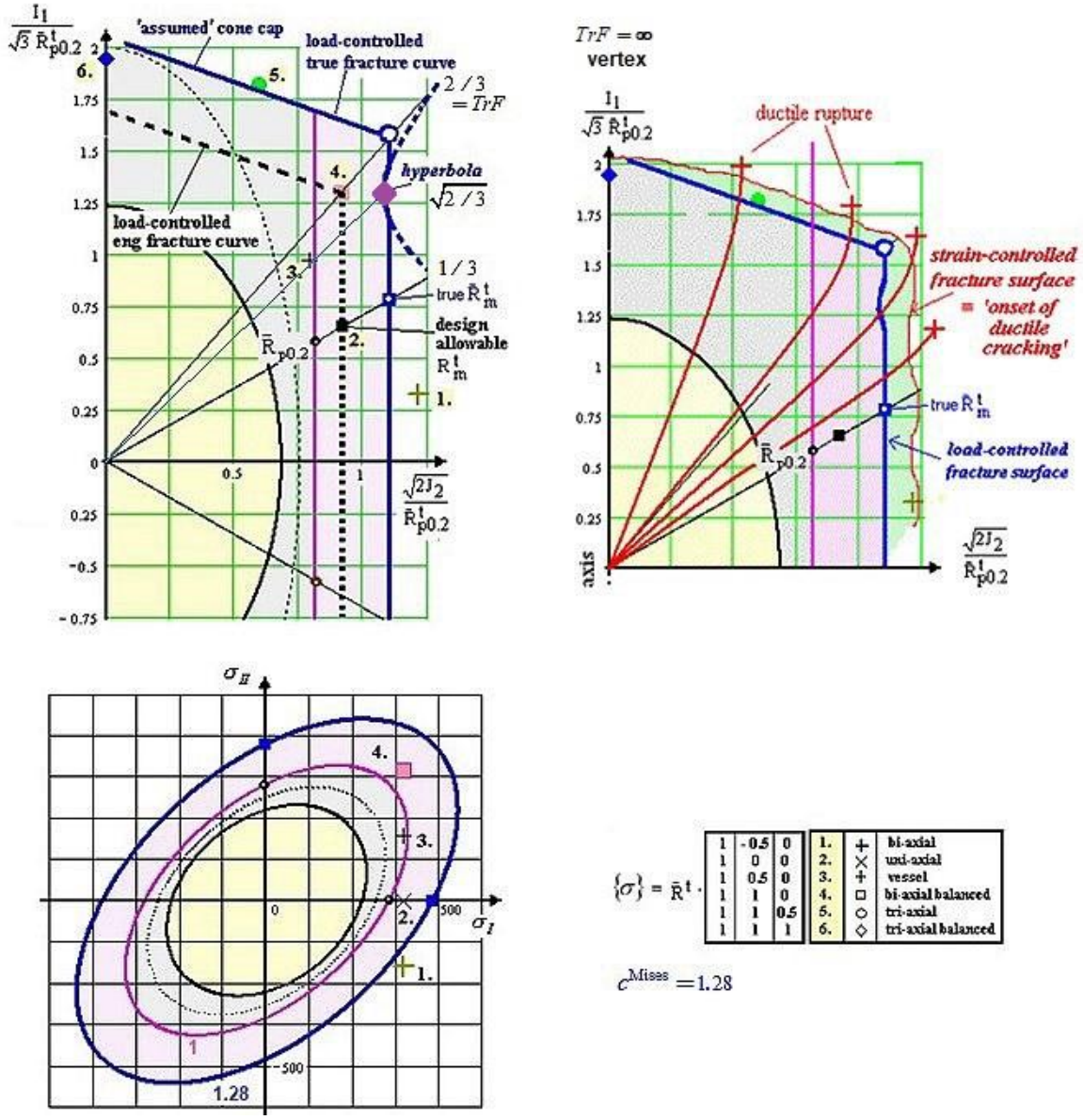


Fig. 15-9: Visualization of the effect of the TrF-beams and the related strengths, illustration of some stress state points and failure zones. 2D-potential surfaces on the inclined cross-section of the rot.-symmetric failure body

15.4 Proposal of the Two Parameter 'Extended Mises' Yield function in the porosity domain

Extended Mises yield potential function

Originally, Gurson proposed for a metal, containing well distributed voids, a yield condition-based solution for a single spherical void. The model was modified later by Tvergaard and Needleman,

including the porosity *f* and the increasing Flow stress σ_F of the 'matrix' material: The porous body, called bulk material (*smeared material*), consists of the matrix material and the voids or pores. The voids are nucleated in tension, only. The dense matrix phase follows the HMH ('Mises') model, and *f* represents the mean void volume fraction or porosity (*average value of a porous matrix*) as the so-called internal damage variable. For *f* = 0, fully dense material, the model reduces to that of von Mises, whereas a ultimate value f_{ult} implies that the material is ultimately voided that it has lost its stress carrying capacity due to local ductile rupture. Here, f_{ult} shall be replaced by the smaller $f_{odc} = f_{crit}$. Values for the increasing porosity *f* are strain-controlled detectable and therefore, the ratio is fixed. *Table 15-2* describes the procedure how a relationship

Table 15-2: 'Comparison of Coefficients' of the models 'Gurson' ↔ 'Extended Mises' with σ_F as increasing true Flow stress as running stress variable

$F^{GTN} = \frac{3J_2}{\sigma_F^{\,2}} + 2\cdot f\cdot q_1\cdot cosh\left(\frac{I_1\cdot q_2}{2\cdot\sigma_F}\right) + q_3\cdot f^2 = 1$ ductile micro-damage failure function

simplified to $\frac{3J_2}{\sigma_F^{\,2}} + 2\cdot f\cdot cosh\left(\frac{I_1\cdot q_2}{2\cdot\sigma_F}\right) + f^2 = 1$ appropriate for idea demonstration, $q_3 = q_3 = 1$

If the cosh-function is replaced by the first two terms of the associated Taylor row [*Cun*98,*Cun*01]

$cosh\,x = \pm(1 + x^2/2 + ...) \rightarrow \cosh(I_1\cdot q_2/2\cdot\sigma_F) = \pm\left(1 + (I_1^{\,2}\cdot q_2^{\,2}/8\cdot\sigma_F^{\,2}) + ..\right)$.

The negative sign is to chose because porosity reduces strength capacity

$$\frac{3J_2}{\sigma_F^{\,2}} - 2\cdot f\cdot\left(1 + \frac{I_1^{\,2}\cdot q_2^2}{8\cdot\sigma_F^{\,2}}\right) + f^2 = 1 \quad \Rightarrow \frac{3J_2}{\sigma_F^{\,2}} - 1\cdot f\cdot\left(\frac{I_1^{\,2}\cdot q_2^2}{4\cdot\sigma_F^{\,2}}\right) + 2f - f^2 = 1.$$

With $f^2 << f$ can be derived

$\frac{3J_2}{\sigma_F^{\,2}} - f\cdot\frac{q_2^2}{4}\cdot\frac{I_1^{\,2}}{\sigma_F^{\,2}} - 2f = 1$ with $q_2 = 1.5$ as guess for the plastic damage flow function

$\frac{3J_2}{\sigma_F^{\,2}} - f^*\cdot\frac{I_1^{\,2}}{\sigma_F^{\,2}} - 2f = 1$ with the elliptic shape parameter f^*

$$\kappa = \frac{1-2\nu}{2+2\nu} \equiv f\cdot\frac{q_2^2}{4} = f^* \quad \rightarrow \quad \nu = (4 - f^*)/(8 + 2f^*).$$

$\Rightarrow$ Failure state, normalized again with the shear strength, to insert is $\sigma = \bar{R}_{odc}$

$F = \frac{3J_2}{\bar{R}_{0.2}^2} + f_{ult}^*\cdot\frac{I_1^{\,2}}{\bar{R}_{0.2}^2} + 2f_{ult} = 1 = Eff = 100\%$ material stressing effort,

$F = 100\%$ = potential surface, which may be a fracture surface or a yield surface.

From 'Comparison of Coefficients' finally is obtained

ExtendedMises $F = \frac{3J_2}{\bar{R}_{0.2}^2} + c_{12}\cdot\frac{I_1^{\,2}}{\bar{R}_{0.2}^2} = c^{ExtMis}$, generally

Analogous to 'Mises' $Eff^{Mises} = \sigma_{eq}^{Mises}/\bar{R}_{0.2} = \sqrt{3J_2}/\bar{R}_{0.2} \Rightarrow Eff^{ExtMises} = \sigma_{eq}^{ExtMises}/\bar{R}_{0.2}$

follows $\sigma_{eq}^{ExtMises} = \sqrt{\frac{3J_2 - f^*\cdot I_1^{\,2}}{1+2f}}$.

between the subsequent 'Gurson' type yield model and the 'Extended Mises' model was developed. A further equation is needed to determine the size parameter, such as with c^{Mises} of the 'Mises cylinder'.

Void Porosity-linked reduction of Poisson's ratio $0.5 > \nu$

Porosity means volume change due to void coalescence and volume change may be transferred to a decaying Poisson's ratio, remind Beltrami. From the ExtM-model can be geometrically deduced $f^* = f \cdot q_2^2$ and $\nu = (4 - f^*) / (8 + 2 \cdot f^*)$.

Fig. 15-10 points out how the Poisson ratio is linked to the true strains (left), schematically to the true equivalent stress (center), and to the porosity f^*.

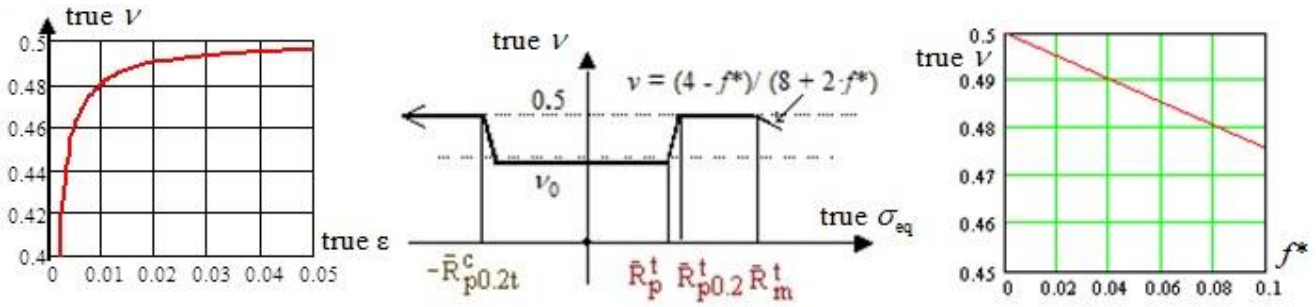


Fig. 15-10: Dependence of ν on the different parameters, the various regimes

Here, $f_{ult}(\bar{R}_{odc}) < f_{rup}$ is employed as that critical porosity which was dedicated by the author to 'Onset of ductile cracking', in order to 'remain on the safe side'. The evolution function of f is assumed to follow an exponential course with practically $f = 0$ at the tensile strength point up to the defined ultimate value f_{ult} located at $\bar{R}_{odc}$.

15.3 Visualization of a specific 'Gurson'-model versus 'Extended Mises'-model

Failure conditions enable the designer to assess multi-axial states of stress $\{\sigma\}$ by an equivalent stress σ_{eq} and to map multi-axial stress-strain behavior $\sigma_{eq}(\varepsilon_{eq})$ via a measured, smeared stress *F/A*.

For $f = 0$, fully dense material, the model reduces to that of HMH, whereas a maximum value f_{ult} implies that the material is ultimately voided that it loses its stress carrying capacity due to local ductile rupture.

The conventional visualization – as a parameter investigation - of the Gurson model is presented in *Fig.15-11 (left)* with f being the porosity parameter of the curves and q2 a Gurson parameter from the comparison. A growing f means higher true stress but less cross-section or load-carrying material in the strain-controlled 'hot spot'. This is displayed in the figure by the change of the cylinder shape versus an egg shape.

Another visualization, usually practiced in structural mechanics, is given by using the Lode-Haigh-Westergaard parameters. This leads to a change in the shape, *Fig.15-11 (center)*. For $f = 0$ the Mises cylinder is obtained.

Fig.15-11 (right) depicts the various strength values such as $true\bar{R}^t, \bar{R}_{odc}$ as increasing true strength points to be inserted into the Extended Mises function size parameter, finally visualized as flow potential surfaces for four strength-linked porosity levels.

The parameter comparison with 'Gurson' let to take a reduced value $q_2 = 1.13$, however, due to missing test data the author sticks to 1.5. In this context, the respective Extended Mises parameter c_{12} can be determined, decoupled from the 'Gurson' Comparison of Coefficients, if having a reliable test data set available

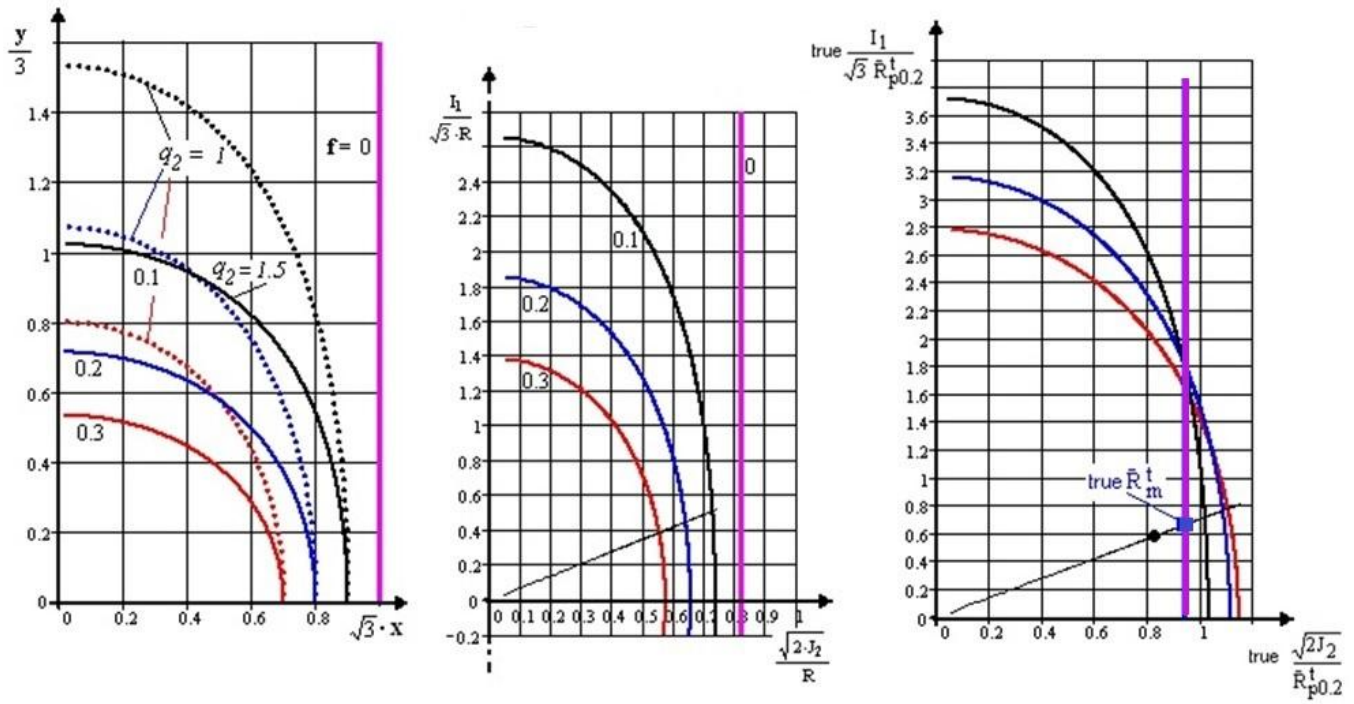


Fig. 15-11: Schematic comparison of the Gurson model (dots) and Extended Mises model Potential surfaces. (left) Display of curve parameter porosity f influence, using the 'Gurson' coordinates $x = (\sqrt{J_2}/\sigma_F)$, $y = (I_1/\sigma_F)$, $\sigma_F = \bar{R}^t_{p0.2}$; *(center) Display of the Gurson yield model in Lode-Haigh-Westergaard parameters* $\bar{R}^t_{p0.2}$ = *normalisation strength); (right) Potential surfaces of the ExtMises-model with four increasing true (graphs made about 2001) AA2219, (q2=1.5, q2ExrM=1.13)* $true\bar{R}^t$, $\bar{R}_{odc}$.

Table 15-3: Replacement of the Mises-based Bridgman curve $\sigma_{eq}(\varepsilon_{eq})$ *by an ExtMises one*

Table 25 - 1: $\sigma^t_{ax}(r) = \sigma_I + \sigma_{hyd}(r)$ and from Bridgman $\sigma_{hyd} \approx \sigma_I \cdot \boldsymbol{ln}\left(1 + \frac{a^2 - r^2}{2 \cdot a\rho}\right)$

$\sigma^{MisBri}_{eq} = \sqrt{3 \cdot J_2} = \sigma_I = \frac{F}{A} / (1 + 2 \cdot \rho / a) \cdot \ln(1 + 0.5 \cdot a / \rho)$, valid > $\bar{R}^t$ < ?,

$I_1 = \sigma_I + 3\sigma_{hyd} = \sigma_I \cdot \left(1 + 3 \cdot \boldsymbol{ln}\left(1 + 0.5 \cdot a / \rho\right)\right)$ for the critical central 'fiber' at r = 0

considering Bridgman (above) and the notch-curvature change by Lorrek-Hill's approach,

giving a maximum value for the unknown $\rightarrow$ $\max \frac{a}{\rho} = \sqrt{\ln\left(\frac{1}{1 - Z}\right) - \ln\left(\frac{A_0}{A_{oon}}\right)}$,

inserting $\sqrt{3 \cdot J_2} = \sigma_I$ and $\frac{F}{A} = true\sigma_{ax}$ the equivalent stress reads:

$$\sigma^{ExtMises}_{eq} = \sqrt{\frac{3J_2 - f^* \cdot I_1^{\,2}}{1 + 2f}} = \sigma_I \sqrt{\frac{1 - f^* \cdot \left(1 + 3 \cdot \boldsymbol{ln}\left(1 + 0.5 \cdot a / \rho\right)\right)^2}{1 + 2f}}$$

valid $\bar{R}^t < \bar{R}_{odc}$, (shape parameter) $f \cdot \frac{q_2^2}{4} \equiv f^*$, set $q_2 \cong 1.5 \rightarrow 1.13$.

Porosity parameter f and curvature parameter a/ρ increase from about 0 to the maximum at $\bar{R}_{odc}$.

The author's full idea consisted of the two parts: Above ExtMises model plus porosity-improved Bridgman evaluation, which was depicted in *Table 15-3*. The table displays all relations in order to establish the 'searched' equivalent stress $\sigma^{ExtMises}_{eq}$.

Reminder: To capture '120°-rotational symmetry' would require to replace J_2 by $J_2 \cdot \Theta$.

15.3 Visualization of the Bridgman–corrected true curve with consideration of porosity

In order to obtain a realistic equivalent stress curve it is physically mandatory to consider the increase of porosity *f* and the increase of the notch curvature by applying $a\ /\ \rho$. The mapping of the changing notch curvature and the changing porosity is shown below:

Mapping of the changing notch curvature: Data and determination procedure by Mathcad

$$\frac{a}{\rho} = \sqrt{\ln\left(\frac{A_0}{A_{rupt}}\right) - \ln\left(\frac{A_0}{A_{oon}}\right)} = 1.096 \quad \text{from} \quad \frac{A_{rupt}}{A_0} = 1 - Z = 1 - 0.20 = 0.80,$$

$$\frac{A_0}{A_{rupt}} = \frac{1}{0.80} = 1.25, \quad \frac{A_0}{A_{oon}} = \left(\frac{4.0}{3.89}\right)^2 = 1.057 \rightarrow \max\frac{a}{\rho} = 0.409 \ \text{ at } \ R_{rup}.$$

Applying Lorrek-Hill's value Bridgman's approach delivers $\max\left(1+\frac{2\rho}{a}\right)\cdot\ln\left(1+\frac{a}{2\rho}\right) = 1.096.$

Then, for the previously proposed formulation the curve parameters can be computed:

stressing $\frac{a}{\rho} = a\rho = c_1 + c_2 + \text{true}\varepsilon_{ax}R_{odc}{}^2 + c_3 \cdot \text{true}\varepsilon_{ax}R_{odc}{}^3$.

$a\rho = 1.096$ $\text{true}\varepsilon\text{axR02} = 0.0071$ $\text{true}\varepsilon\text{axRt} = 0.055$ $\text{true}\varepsilon\text{axRodc} = 0.231$

Vorgabe $c1 := 1$ $c2 := 100$ $c3 := 1$

$1 = c1 + c2 \cdot \text{true}\varepsilon\text{axR02}^2 + c3 \cdot \text{true}\varepsilon\text{axR02}^3$

$1.00005 = c1 + c2 \cdot \text{true}\varepsilon\text{axRt}^2 + c3 \cdot \text{true}\varepsilon\text{axRt}^3$

$a\rho = c1 + c2 \cdot \text{true}\varepsilon\text{axRodc}^2 + c3 \cdot \text{true}\varepsilon\text{axRodc}^3$

$A\rho := \text{Suchen}(c1, c2, c3)$

$$A\rho = \begin{pmatrix} 1 \\ -0.548 \\ 10.148 \end{pmatrix}$$

$c1 := A\rho_0$ $c1 = 1$ $c2 := A\rho_1$ $c2 = -0.5476$ $c3 := A\rho_2$ $c3 = 10.1478$

$A\rho_j := c1 + c2 \cdot \left(\text{true}\varepsilon\text{ax}_j\right)^2 + c3 \cdot \left(\text{true}\varepsilon\text{ax}_j\right)^3$

Mapping of the changing porosity *f*: Data set used and determination by Mathcad

The set points of the curve are the porosity values at the tensile strength point R^t and at R_{odc}.

Vorgabe $e1 := 0$ $e2 := 1$

$0.0002 = \left(e1 \cdot \exp\left(\frac{\text{true}\varepsilon\text{axRt}}{\text{true}\varepsilon\text{axRodc}} - 1\right)\right)^{e2}$ $\quad fodc = (e1 \cdot \exp(1-1))^{e2}$

$Af := \text{Suchen}(e1, e2)$

$$Af = \begin{pmatrix} 0.6292 \\ 6.9469 \end{pmatrix}$$

$e1 := Af_0$ $e1 = 0.6292$ $e2 := Af_1$ $e2 = 6.947$

$fexp_j := \left(e1 \cdot \exp\left(\frac{\text{true}\varepsilon\text{ax}_j}{\text{true}\varepsilon\text{axRodc}} - 1\right)\right)^{e2}$

Fig.15-12 displays the author's design verification idea, about 2000. The influence of the practically starts at R_{odc}.

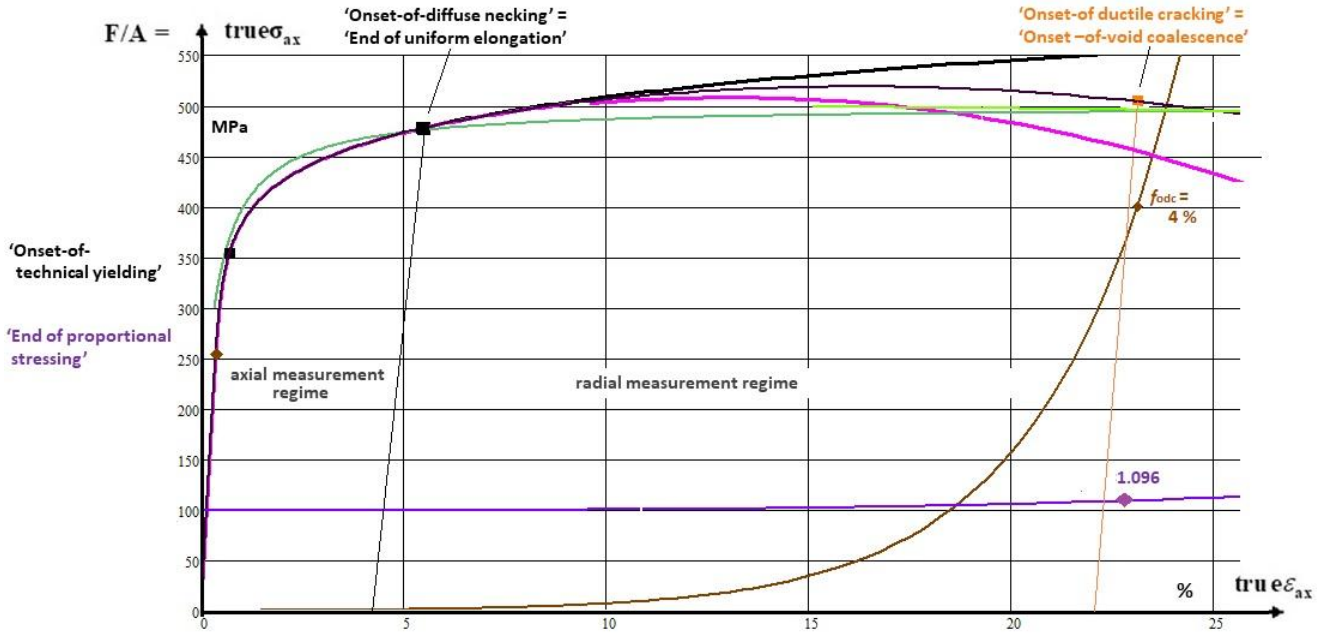


Fig. 15-12, AA2219, base material T2, 6 mm thick: Visualization of the equivalent stress curve $\sigma_{eq}^{ExtMises}$ *; Ramberg-Osgood-mapped measured cross-section smeared axial stress F/A; Increase of plastic porosity f with* f_{odc} *= 4% at* R_{odc} *; Increase of the notch curvature* a / ρ *with* $a / \rho = 0.409$ *at* R_{ult} (replacing the higher R_{odc}); *Increase of ν in the elastic-plastic transition domain approaching 0.5 and barely visible the decrease in the porous domain*

15.4 Specific Potential Surfaces being Strength Failure Criteria

Brittle 'porous' materials may still fracture in the elastic-plastic transition domain. For this fact, Ismar and Mahrenholtz [*Ism82*] developed a Beltrami-based SFC model describing the failure behavior of a material between the proportional limit and the 'onset of yielding'. In *Table 15-4* the SFC-formulations in all regimes shall be comparatively displayed. This includes potential surface descriptions and associate strength failure criteria SFCs.

LL:

- ✓ *Whereas with the elasticity formulation of Beltrami the Poisson ratio ν is growing this is opposite with the formulation of a porosity-linked plastic model due to the increasing porosity*
- ✓ *The hypotheses of Beltrami, Mises and Gurson describe an increase or decrease of surfaces of constant potential. The shape of the surface theoretically begins with* $\nu = 0$ *(sphere, found with foams) growing up from* $0 < \nu$ *to* $\nu = 0.5$ *via the growing Mises cylinder keeping* $\nu = 0.5$ *and ending with an ellipsoid, which shrinks into a spherical direction represented by 0.5 > ν.*
- ✓ *For two domain limits a clear value for the varying Poisson ratio is given:*

$$\text{proportional limit } \sigma \le \bar{R}^t_{prop} \Rightarrow \nu = \nu_0 \quad \text{and} \quad \text{yield limit } \sigma = \bar{R}^t_{p0.2} \Rightarrow \nu = 0.5$$

- ✓ *Designing requires to use limit state formulations, termed failure criteria (SFCs). These are fracture failure criteria for brittle materials namely for 'Onset-of-fracture' and yield failure criteria for ductile materials. In practice, for ductile materials these failures are 'Onset-of-yielding' and - for the author - 'Onset-of-void coagulation = Onset of ductile Cracking ' in the case where strain-softening applies*
- ✓ *A Strength Failure Criterion represents a defined Design Limit State and is therefore a special*
- ✓ *critical Potential Surface F.*

** *The novel Extended Mises model just requires the determination of one more parameter, the porosity value f . All model parameters are measurable quantities.*

** *With the novel porosity-capturing σ-ε curve, being a ductile porosity-improved Bridgman correction, a simplified plastic analysis procedure could be achieved.*

** *For engineering reasons* $true\bar{R}^t \Rightarrow \bar{R}_{odc}$ *will represent the load carrying capacity to be considered.*

Table 15-4, Isotropic materials: Determination of model parameters, single mode view.

* Modelling Functions F describing a subsequent potential surface

elastic-plastic	plastic	plastic porous
Beltrami	Hencky-'Mises'-Huber	'Gurson' type

$$\bar{R}^t_{prop} < \sigma_{\mathrm{Bel}} < \bar{R}^t_{0.2} \quad \leftrightarrow \quad \bar{R}^t_{0.2} < \sigma_{\mathrm{Mis}} < \bar{R}^t_{m} \quad \leftrightarrow \quad \bar{R}^t_{m} < \sigma_{eq} < \bar{R}^t_{\mathrm{odc}}$$

stress - controlled *strain – controlled*

σ : = running variable of the subsequent potential surfaces

$$\bar{R}^{t\,2}_{prop} / \bar{R}^{t\,2}_{0.2} < c^{\mathrm{Bel}} < 1 \quad \leftrightarrow \quad 1 < c^{\mathrm{Mis}} < \bar{R}^{t\,2}_{m} / \bar{R}^{t\,2}_{0.2}$$

ellipsoid → cylinder → ellipsoid

$$I_1 = (\sigma_I + \sigma_{II} + \sigma_{III}) = \mathrm{f}(\sigma), \quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = \mathrm{f}(\tau)$$

$$\frac{3J_2}{\bar{R}^{t\,2}_{0.2}} + \kappa \cdot \frac{I_1^{\,2}}{\bar{R}^{t\,2}_{0.2}} = c^{\mathrm{Bel}} \leftrightarrow \quad F^{Mis} = \frac{3J_2}{\bar{R}^{t\,2}_{0.2}} = c^{\mathrm{Mis}}, \ \kappa = \frac{1-2\nu}{2+2\nu}$$

Insertion of a (measurable) normalizing strength, yield strength point with $\nu = 0.5 \rightarrow \kappa = 0$

$$\mathrm{F}^{Bel} = \frac{3\bar{R}^{t\,2}_{02} / 3}{\bar{R}^{t\,2}_{02}} + \kappa \cdot \frac{\bar{R}^{t\,2}_{02}}{\bar{R}^{t\,2}_{02}} = c^{\mathrm{Bel}} * \rightarrow c^{\mathrm{Bel}} = 1 + \kappa = 1, \text{ and } \kappa \text{ an elliptic shape parameter}$$

* Strength FailureCriteria (SFC), $\bar{R} \rightarrow R$, (with $\Theta = 1$ for full rotational symmetry)

R : = strength design allowable, marking a special potential surface ≡ design limit state

elastic, very brittle	ductile	very ductile

$$Eff = \frac{\sigma_1}{\bar{R}^t_{\mathrm{m}}} = 1 * \quad \leftrightarrow \quad Eff = \frac{3J_2}{\bar{R}^{t\,2}_{m}} = 1 \quad \leftrightarrow \quad Eff = \frac{3J_2}{\bar{R}^{\,2}_{\mathrm{odc}}} + c_{12} \cdot \frac{I_1^{\,2}}{\bar{R}^{\,2}_{\mathrm{odc}}} - 2 f_{odc} = 100\%.$$

For similarity reasons: for the 2 modes Normal Fracture NF , Shear Fracture SF (brittle)

and after inserting $\sigma = R \cdot Eff$ and dissolving for Eff follows

$$I_1 > 0 : F^{NF} = 0.5 \cdot \frac{\sqrt{4J_2 - I_1^{\,2} / 3} + I_1}{2 \cdot \bar{R}^t} = 1 \ ; \ Eff^{NF} = 0.5 \cdot \frac{\sqrt{4J_2 - I_1^{\,2} / 3} + I_1}{2 \cdot \bar{R}^t}$$

$$I_1 < 0 : F^{SF} = c_1^{SF} \cdot \frac{3J_2}{\bar{R}^{c2}} + c_2^{SF} \cdot \frac{I_1}{\bar{R}^c} = 1; \ Eff^{SF} = \frac{c_2^{SF} \cdot I_1 + \sqrt{(c_2^{SF} \cdot I_1)^2 + 12 \cdot c_1^{SF} \cdot 3J_2}}{2 \cdot \bar{R}^c} = \frac{\sigma^{SF}_{eq}}{\bar{R}^c}$$

$c_1^{SF} = 1 + c_2^{SF}$ with direct consideration of the Poisson ratio $c_2^{SF} = (1 + 3 \cdot \mu) / (1 - 3 \cdot \mu)$

Last unknown to be searched is the elliptic shape linked parameters such as c_1^{SF} by insertation of a bi-axially compressive failure stress or a fracture angle $\mu = \cos(2 \cdot \theta^c_{fp} \circ \cdot \pi / 180)$.

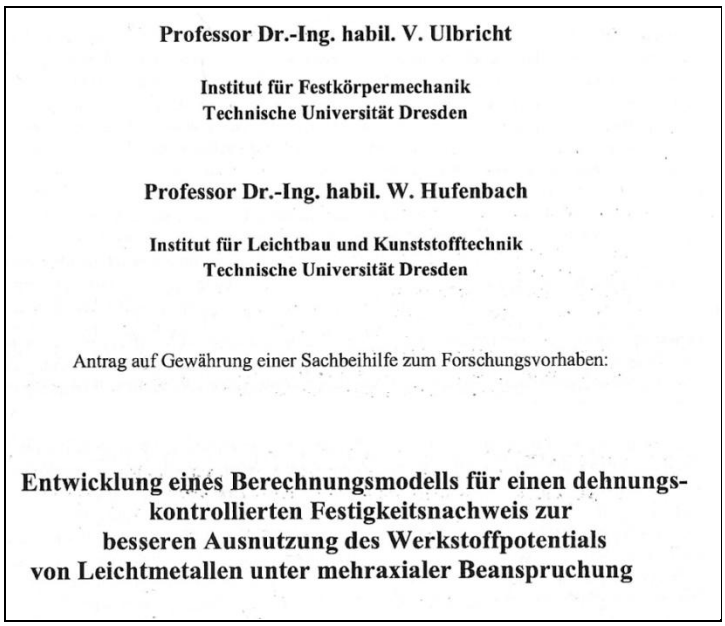
Note on Non-linear stress–strain analysis:

Usually Co-axiality, Prandtl-Reuss equations and an Associated Flow Rule is employed in order to predict strain rate $\dot{\varepsilon}_{ij}$ and the Lagrange multiplication (*proportionality*) factor $\dot{\lambda}$.

Research proposal experience in the context above:

(MAN-driven idea for a DFG project to create a verification procedure for critical boreholes of the Ariane 5 upper stage tanks concerning the design of rocket tanks, submitted by my friends Volker and Werner).

"Development of a calculation model 'Strain-controlled strength design verification' for a better utilization of the material potential of light metals under multiaxial loading".



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Antrag auf Gewährung einer Sachbeihilfe zum Forschungsvorhaben:

Entwicklung eines Berechnungsmodells für einen dehnungs-kontrollierten Festigkeitsnachweis zur besseren Ausnutzung des Werkstoffpotentials von Leichtmetallen unter mehraxialer Beanspruchung

In the case of strength verification of components made of ductile metals, design verification must be provided both with regard to 'Onset-of-yielding' and with regard to the ductile fracture (rupture) behavior. For the latter process, a distinction must be made between the load-controlled fall and the strain-controlled case. In the case of ductile material behavior 'Onset-of-yielding' is usually decisive for the dimensioning, but in many applications fracture design verification is also required. Essential for the detection of fracture are the true stresses and distortions which can be determined for the component to be detected by means of nonlinear numerical calculation methods.

For the evaluation of these true stresses, however, the corresponding true strengths may not be used in the currently valid verification procedure, even in the load-controlled case. In the strain-controlled case, there is still no accepted verification philosophy in the current regulations. These deficits are mainly due to the insufficient knowledge of the material-mechanical behavior in the range of high strains and the lack of suitable calculation models.

In the area of high tensile strains, the reduction in cross-section is determined by a uniform proportion and a constriction proportion from 'Onset-of-yielding' the beginning of the constriction of the test specimen.

While the stress-strain curve his is generally known at the beginning of necking, its further course can only be estimated, e.g. with the help of Bridgman's formula. Since the stress state in the test specimen becomes multiaxial above the constriction, a comparative stress-strain curve must be used for a realistic evaluation of the test results in order to be able to take into account the multiaxial stress state in the critical cross-section of the test body. See chapter 15 text before.

Previous simulation work shows that the curve can be suitably extended beyond the tensile strength value R_m, and that it falls off at the end due to pore growth with pores-agglomeration.

The computational approach to the problem has so far used a so-called 'Gurson model', which contains parameters that can be determined in simulation-manner and cannot be determined individually by test. In addition to the diameter parameter of the Mises model cylinder, now only one other measurable, porosity-related parameter will be determined in the project (see chapter). By the way 'Onset-of-yielding' of metals can be determined on the basis of the Jule-Thomson effect by temperature measurement for uniaxial and multiaxial states.

This research proposal was considered unworthy of funding by three DFG reviewers. The corresponding sparse response indicated that the proposal was not understood. I was ashamed of my DFG fellow reviewers and the poor DFG because I always gave a justification in my proposal reviews.

(*As a result, I ended my work as a sad permanent industry reviewer for the DFG).*

16 An Engineering Note on Continuum (micro-)Damage Mechanics (CDM)

***Aim**: Primarily checking CDM application whether it is mature for a reliable Static Design Verification.*

CDM is applied for ductile and brittle materials. The loading may be static and cyclic, with the latter requiring fatigue investigation. Regarding stress-strain curves, CDM principally captures the load-controlled hardening part and the deformation-controlled softening part. Softening part examples are the still mentioned embedded UD layer (*Fig.16-1*) and the ductile metal tensile rod described in the last Chapter by a porosity–capturing 'Gurson' model. Results of isotropic analyses, employing the softening curve branch, can be used to better design notches, openings in pressure vessels (fuel tank task in Ariane 5 upper stage) etc.

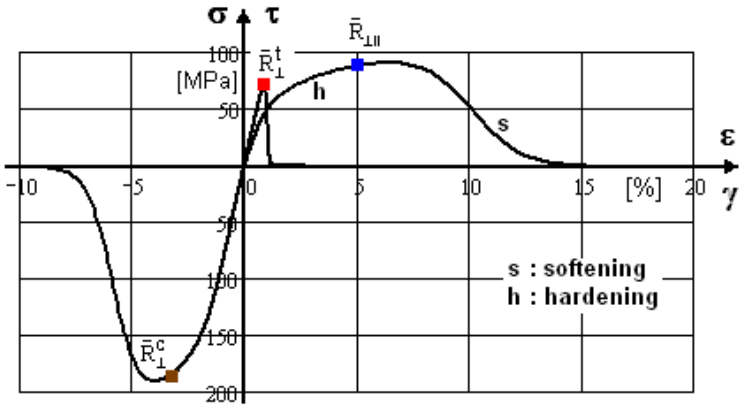


Fig.16-1, example UD ply: Full stress-strain curve with load-controlled hardening and deformation-controlled softening of the layer (ply) embedded in a laminate

CDM is pretty linked to multi-scale modelling, which will be looked at in the next Chapter.
All materials are generally composites. Applying CDM one goes down to the constituents of a composite to metallic grains or to fiber and matrix for instance. Moving down on the scales it is helpful to use the physical formulations gained on the macro-scale such as Mises yielding with ductile metals in the tension and compression loading domain and Mohr-coulomb friction behavior of brittle materials in the compression domain. Shear stress loading is composed of a tensile stress with a compressive stress. This activates two failure modes, which leads to normal fracture in the case of brittle materials. These physical effects stay valid at the lower scale and are to consider *adjusted*.

***LL**:*

It is always to check, whether a Mises yield criterion can be applied to quantify micro-damage portions or a fracture criterion in the case of very brittle behavior, i.e. Fiber Reinforced Plastics (FRP) experiencing matrix yielding:

16.1 Static Behavior

Micro-damage formulations:

CDM is basically used to capture the evolution of the micro-damage state from micro-damage $D = 0$ up to 'Onset-of-Failure' at *maxD*, which is for brittle materials at the end of hardening or at achieving the strength *R*.

In CDM, the formulation of the describing constitutive equation is based on one of the following two approaches (*Here the stress-strain curve is meant*):

(1) The strain equivalence principle approach or on
(2) The stress equivalence principle approach.

From engineering side, the latter is preferred because 3D stress states and residual stresses have to be considered in design dimensioning.

The constitutive relationships are formulated in the effective undamaged configuration $\sigma_{eff} = \sigma/(1-D)$ with a stress-strain relation linked by the stiffness elasticity matrix [C], which reduces due to growing micro-damage. *Fig.16-2* exemplarily depicts the relationship for a 2D-loaded transversely-isotropic UD material. By inversion of the effective compliance matrix S_{eff} the decaying stiffness matrix C_{eff} is obtained.

$$\{\sigma\} = [C]\cdot\{\varepsilon\} \rightarrow \{\varepsilon\} = [S]\cdot\{\sigma\} \quad \text{as practical test-data evaluation formulation}$$

$$S_{\text{eff}} = \begin{bmatrix} \frac{1}{E_1\cdot(1-D_{11})} & \frac{-\nu_{21}}{E_1} & 0 \\ \frac{-\nu_{12}}{E_2} & \frac{1}{E_2\cdot(1-D_{22})} & 0 \\ (\text{symm}) & 0 & \frac{1}{G_{12}\cdot(1-D_{66})} \end{bmatrix} \quad \text{with } D = \begin{bmatrix} D_{11} & D_{21} & 0 \\ D_{21} & D_{22} & 0 \\ (\text{symm}) & 0 & D_{66} \end{bmatrix}$$

usually not considering the off-diagonal D_{21}.

Fig.16-2, 2D-example UD material: Compliance matrix [S] and micro-damage matrix [D].

The D_{ij} represent the accumulation of the micro-damage process portions and are theoretically terminated by max$D$ at the tensile strength point in the case of brittle materials and at the rupture point for very ductile isotropic materials. These portions may occur during a monotonically increasing static loading. For brittle materials micro-damage starts at the 'elastic end' being a level where *Eff* has still reached a value, see *Fig.16-3*. Unfortunately, max$D$ in static CDM cannot become 100% due to its usual modelling basis! The center figure outlines how a stress-man views the 'onset

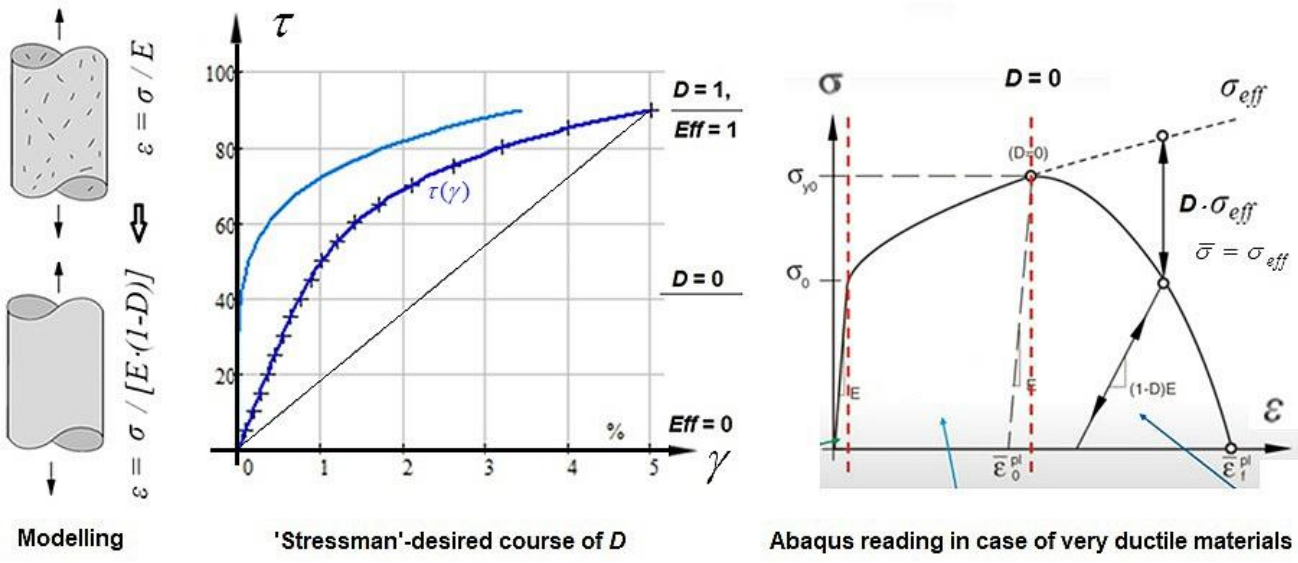


Fig.16-3: The various 'Onset- of- Failure' envelopes: (left) Smearing of the micro-damaged material, (center) shear of a slightly brittle material, (right) Ductile material (Ansys FEA code)

of micro-damage' of a slightly brittle material. In the elastic domain < $R_{prop} \equiv R_{e(lastic)}$ there is no D-contribution. The blue 'flow curve' then will contribute.
The right figure (from Abaqus) surprisingly outlines that there micro-damage first begins with void nucleation and coagulation which raises the Question:

Does really not any micro-damage happens below R^t ??

Micro-Damage-free (*in German schädigungsfrei, nicht schadensfrei*) and crack (= macro-damage, *in German Schaden*)-free does not mean free of flaws.

***LL**:*
** CDM is generally always good for understanding static & cyclic material behavior*
** Confusing is faced regarding 'onset of counting micro-damage' portions in the static case: once < R^t but also > R^t*

Material behavior-determined slip and failure angles:

The number of slip systems in ductile metals is usually high, and those that are active possess an orientation near to the planes with maximum shear stress. Under uniaxial loading the planes of micro-cracks are always inclined approximately 45° to the direction of the applied tensile stress, see (*Fig.16-4*). In single crystals, the lattice structure is spatially oriented in such a way that a sliding plane is obtained at an angle of 45°. In poly-crystalline metals with randomly distributed lattice sub-structures this will change a little.

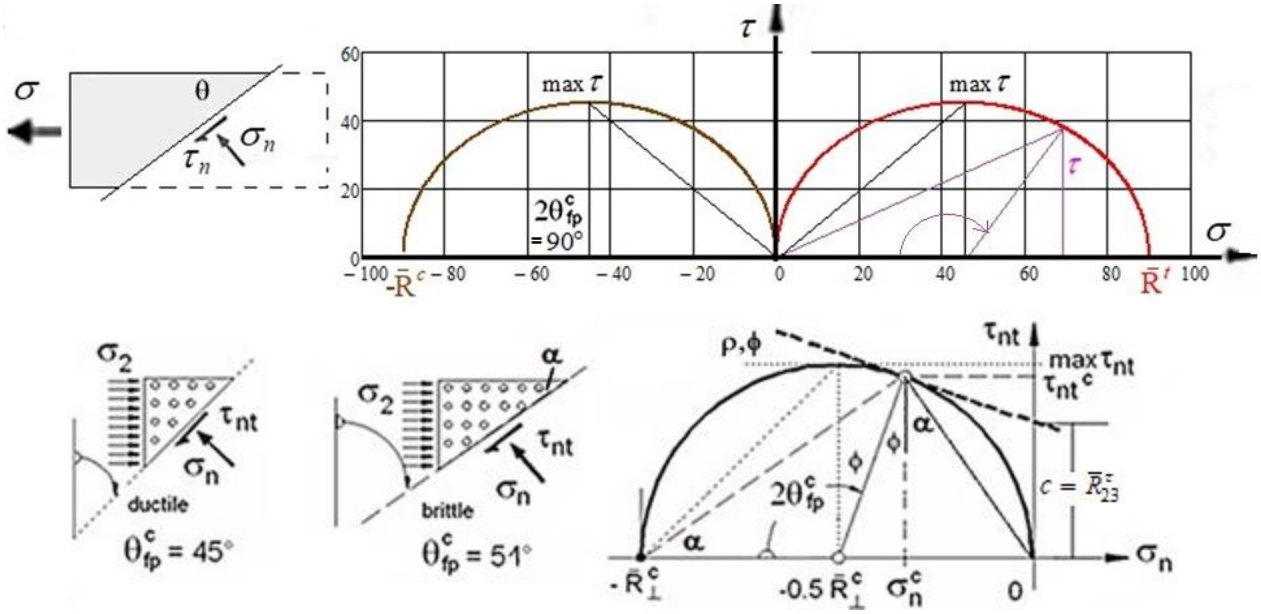


Fig. 16-4, very ductile metal material: (up) Mohr stresses and failure angles. (below) Mohr stress circle for a compressive and a tensile uniaxial external stress of a semi-brittle material

$\tau_n = \sigma \cdot \cos(\alpha) \cdot \sin(\alpha)$ with α the angle to σ direction, $2 \cdot \max \tau = \sigma$ for $\alpha = 45°$

Known from brittle material behavior under compression is: *The failure angle depends on the friction value μ*. After the formula, derived in [§22 later, *Cun23c*], the computation of the failure angle with the Mohr-Coulomb model delivers exemplarily for a material friction value μ = 0 (= *fully ductile)* the

expected value of 45° and for a friction value μ = 0.2 the angle 51°, see <u>Fig.16-5</u>. The author presents in this figure that the angle changes from the 51° at the compression strength point $\bar{R}_{\perp}^{c}$ up to 90° at the tensile strength point $\bar{R}_{\perp}^{t}$.

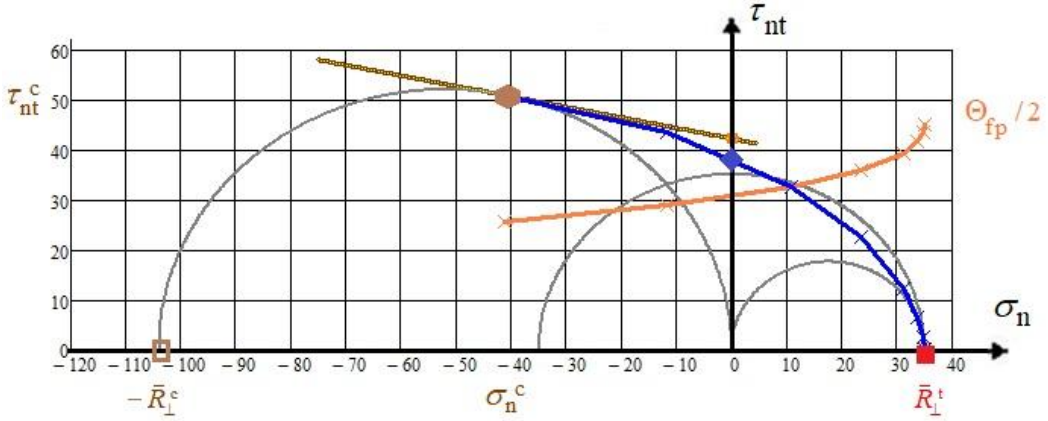


Fig.16-5, brittle UD-material: Joint display of the UD failure curve in Mohr stresses, indicating a fracture angle increase Θfp° when approaching $\bar{R}_{\perp}^{t}$. Shear fracture plane angle in the touch point 51° and linear Mohr-as well as a more realistic curved Mohr-Coulomb friction curve. Touch point is defined by $(\sigma_n^c, \tau_{nt}^c)$, linked to $\bar{R}_{\perp}^{c}$. (see §22)

16.2 Cyclic Behavior of Ductile Metals applying Micro-scale Material Modelling

Once micro-cracks have nucleated due to strain accumulation from cyclic slipping, they grow in the early stage typically in the order of the material's grain size (text from M. Mlikota - S. Schmauder: *Thanks to Siegfried*). In the course of further cyclic loading, micro-cracks, formed along these slip bands, will grow and link together. In metals and alloys they grow predominantly along the crystallographic planes because they are highly affected by microstructural barriers such as grain boundaries or other micro-structural features. The coalescence of trans-granular micro-cracks, namely, if two micro-cracks meet each other at the same grain boundary, is performed in the numerical simulation of the crack initiation after Tanaka-Mura. It occurs if the average stress in between their tips surpasses the elastic limit *Re* of the material's new micro-crack, created on this grain boundary line, uniting the two trans-granular micro-cracks into a single one (*example pure iron Re = 260 MPa).*

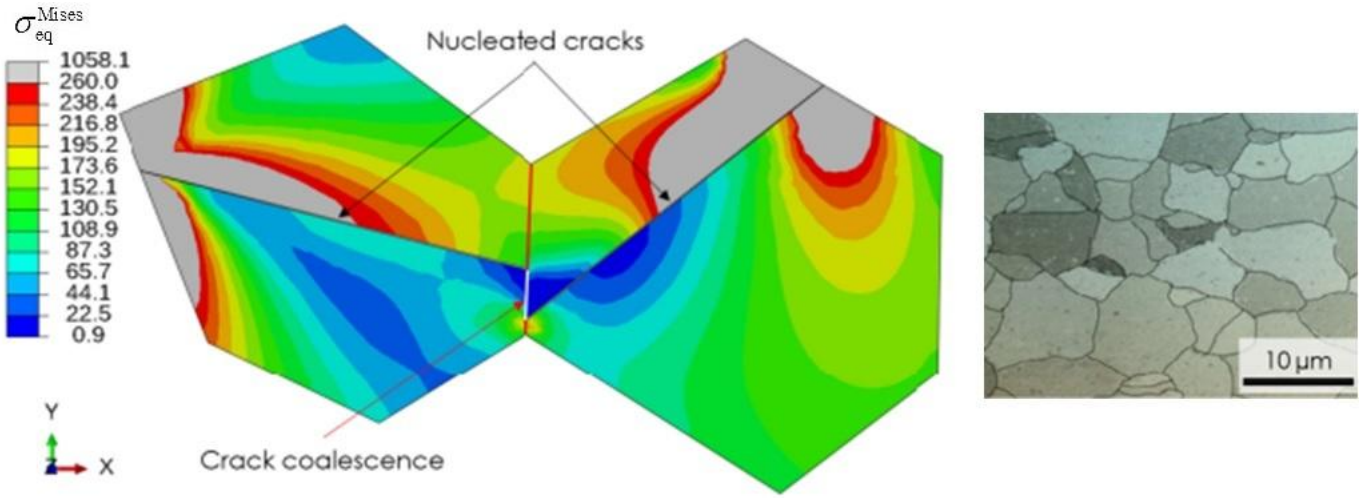


Fig.16-6: Simulation of AA micro-crack coalescence (Lorenzino, P., Navarro, A. & Krupp, U. (2013), 'Naked eye observations of microstructurally short fatigue cracks', Int. J. of Fatigue 56(0), 8-16.

Already nucleated crack segments tend to extend along the whole grain, causing local stress relaxation as well as concentrations at their tips and by that amplifying the likelihood for new crack formation in the vicinity. In the course, micro-cracks form along the slip bands, grow and join.
The change of the crack plane from the crystallographic plane to a non-crystallographic plane perpendicular to the external stress axis is called the transition from Stage I (*crystallographic growth*) to Stage II (*non-crystallographic growth*) or transition from the micro-crack initiation to a micro-crack growth stage resulting in a short crack, as depicted in *Fig.16-6*.
However, the dominant short crack does not always continue propagating. Namely, in the case of a lower stress level, the short crack may stop growing. Such a situation is typically known as run-out, which indicates that at very low stress levels an infinite life may be obtained. Run-out below the endurance limit means crack-retardation, *Fig.16-7*. In the long-crack regime the fatigue crack growth rate da/dn can be characterized by the stress intensity factor range *ΔK* as a dominant driving parameter.

The CDM-driven Region I in the figure below is here of interest, but should be illustrated as part of the full crack failure picture: A typical fatigue crack growth rate curve da/dn (ΔK) for the long crack is illustrated in *Fig.16-7*, too. If in a double logarithmic scale the long crack propagation rate follows a straight line in Region II, in sufficient distance from the threshold ΔK_{th}, then the long crack growth rate domain can be well described for most engineering alloys by the so-called Paris law:

$$\text{Paris:} \quad da/dn = C_{Paris} \cdot \Delta K^{n_{Paris}}, \quad \text{Forman:} \quad da/dn = \frac{C_{Forman} \cdot \Delta K^{n_{Forman}}}{(1\text{-R}) \cdot K_{Forman} - \Delta K} \quad [HSB\ 63205\text{-}01]$$

In the figure and in the formulas above *da/dn* is the crack growth increment per cycle, *ΔK = maxK – minK* is the range of stress intensity factor, and *C* (intercept with the y-axis) and n_{Forman} (slope) are material curve parameters that are deduced by fitting the course of experimental data. *KIc* is the so-called fracture toughness.

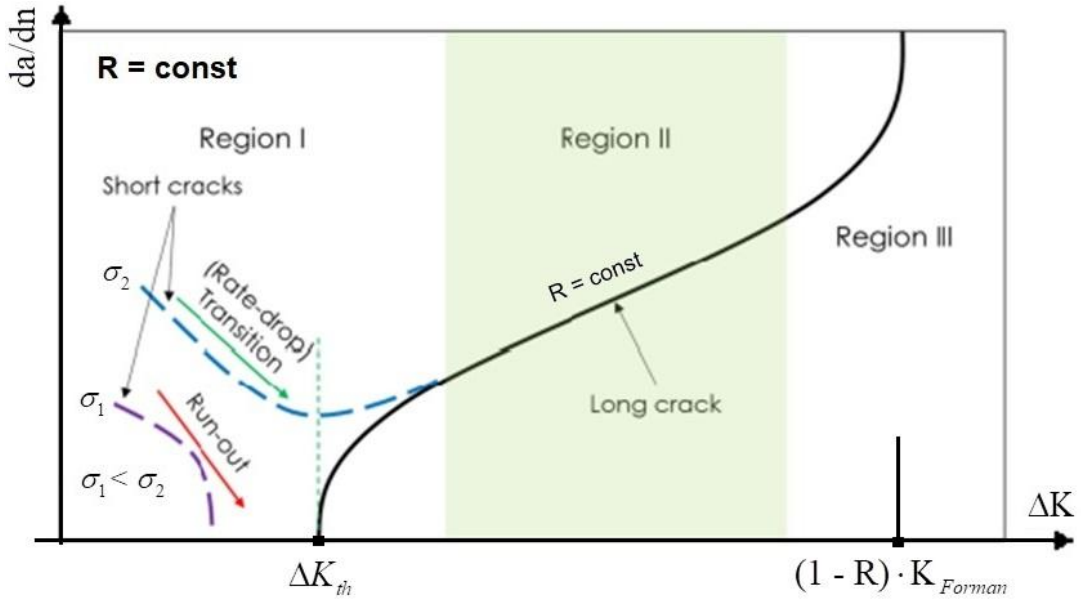


Fig.16-7: Fatigue growth rates of micro-cracks (short) and long cracks in dependence of Δ stress intensity factor. Schematic representation of the loading level- dependent transition from region I into region II.

n = number of cycles, a is crack size-

(Newman, J.; Phillips, E. & Swain, M. (1999), 'Fatigue-life prediction methodology using small-crack theory', Int. Journal of Fatigue 21(2), 109-119)

***LL**:*

** There is a hope, that in future for metals a basis will provided, that the estimation of an endurance limit will be possible.*

** A grain is usually polycrystalline with crystal planes in various spatial orientations. Hence, a metallic 'composite' material can be only termed homogeneous and isotropic if these orientations are randomly distributed in order to become quasi-homogeneous. By the way, this is the same for an isotropic short fiber-reinforced polymeric material, otherwise the so-called orientation tensor has to take care of the non-isotropy.*

16.3 Note on Application of Continuum (micro)-Damage Mechanics (CDM) in Static Strength

Note on Stressing effort *Eff* versus micro-damage development *D*:

For the designer of interest is how the material's stiffness decreases with increasing stress effort or load, respectively. Design allowable *R* and average strength $\overline{R}$ lead to different stress efforts in *design verification* and in *modelling of material damaging* (50% value = highest expectance probability), see *Fig.16-8.* The enlarging effect of the design FoS *j* on the value of *Eff*, when reaching failure, is considered in the design verification curve (*dashed line*) depicted below. The more reserve is, indicated by a positive Margin of Safety *MoS*, the lower *Eff* is. This has an effect on the actual strain in the non-linear analysis case. It becomes smaller and the strain is less plastic, which is of interest for the validity limit of an elastic analysis.

In the case of 3D modal SFCs (*for comparison*) the common micro-damage-caused degradation is considered by an interaction equation that reflects the micro-damage influence of all acting stress states and associated modes. The single mode efforts are interact via the experience-based interaction exponent *m* being about *m* = 2.6.

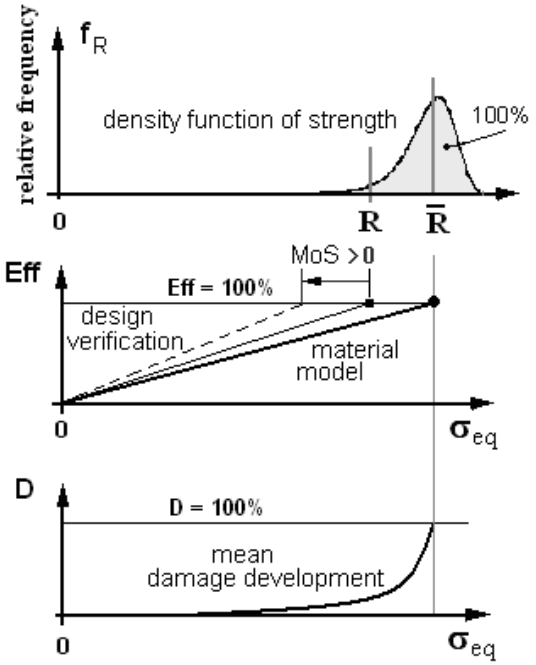


Fig.16-8:

Visualization of the development of stress effort, strength value, equivalent strength, and Micro-damage understanding of a 'stress man'.

MoS = RF - 1

'Stress man's' Assessment of CDM applications:

During his engineering life CDM was often propagated to make in future a Design Verification

possible. In literature, i.e. [*Jai20*], Continuum (micro-)Damage Mechanics (CDM) models are also used to determine a *RF*. However, this intention faces some obstacles.

Analogous to the standard procedure then statistically-based micro-damage model parameters would be required and a total maximum value *D* is to define according to $D < D_{admissible} < 100\%$ at failure and this must be statistically based. Defining such a *D*–value is a challenge for the application of (micro-)Damage Models in the Design Verification (DV) for serial production certification. This challenge is novel and higher than providing the classical strength design allowables *R*, necessary for computing *Eff*.

Further, in known standard procedures *Eff* runs $0 < Eff < 100\%$, whereas *D* begins at a distinct *Eff*-value but should principally also end at 100%, see [*CUN22, §15.3*]. Here, a very essential question comes up: "*How does the designer assess a stress level that is below the 'onset-of-micro-damage'?"* In this context another question arises: "*How are to consider low stresses in Low Cycle Fatigue*?"
The provision of a CDM-failure body would be mandatory for obtaining DV. Hence, up to now CDM seems not to meet the authority-demanded DV-requirements regarding the statistically reduced design strength *R* and regarding the relationship $\sigma \sim R \cdot Eff$, which is valid in the linear elastic and in the non-linear regime.

***LL**:*
** Stiffness decay CDM model parameters are difficult to apply*
** The 'stress-man' will not understand that at maximum load, which is at the strength point, the sum of micro-damage does not approach 100%.*
** The author could not sort out a consistent procedure that might be used in design verification. A clear derivation of the maximum micro-damage values seems to be missing.*
** How is the interaction of the damage portions in 3D-CDM solved?*
** Stiffness decay CDM model parameters are difficult to apply*
** Looking at 'well analyzing', which requires well-mapping of the stress-strain behavior in the hardening domain, one should always remember the scatter of the measured curves.*

Engineer's question, regarding the body text above**:**

"Is it possible in future to provide the engineer the necessary design verification data when using micro-damage quantities D_i?"

Fig.16.-9 left shows the scatter and distributions of some strain curves depicting strength and strain quantities.
Fig.16.-9 right up demonstrates that a compression test can, due to barreling, can just give a value for the yield strength $R^c_{0.2}$. This requires the determination of the increased hoop diameter, when aiming at realistic R_{02}- and *E*-values for tensile and compression. The figure also informs that for a static test specimen of a product the directions are marked by the subscripts L, LT and ST and that these are used for the description of sheet-type test specimens. These specimens are machined in the rolling direction (letter L), transversal direction (T) and thickness direction (S). In the case of thick structural parts smooth tension bar test specimens are cut out, in the case of thin plates flat test specimens are investigated, which better represent 2D-structural shapes.
This is similarly performed for the radial and axial direction of a cylindrical test specimen.

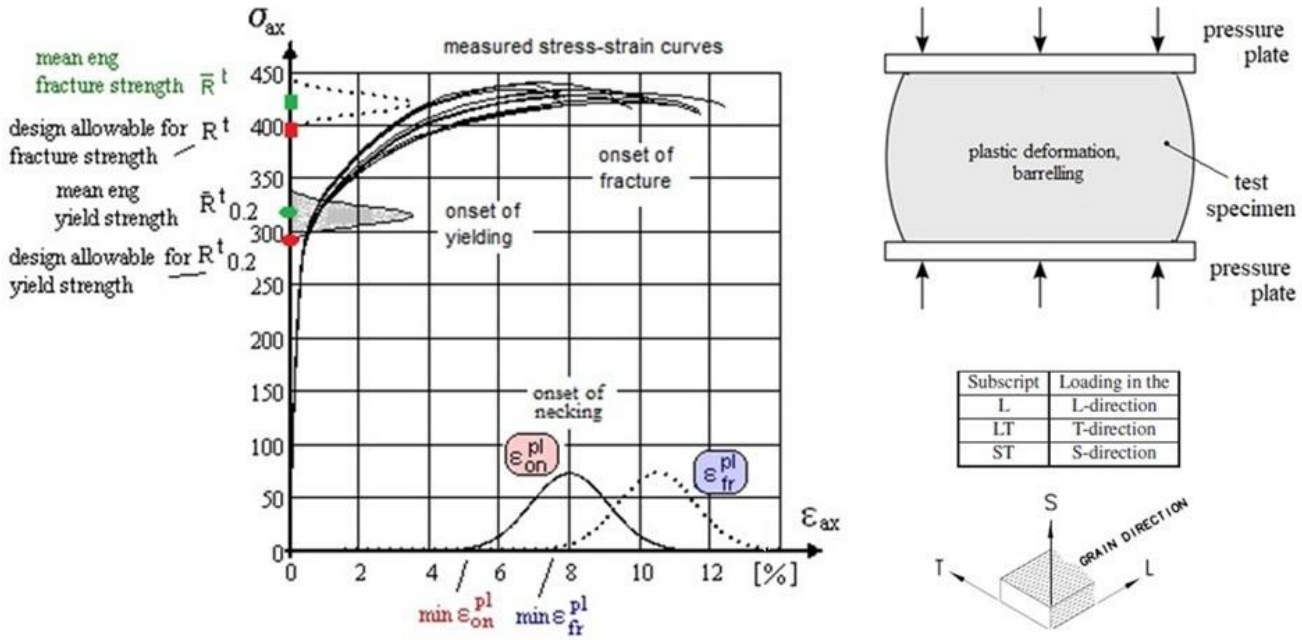


Fig.16-9: AA2219 engineering quantities and curves, deformation of a compressed ductile test specimen. (right down) Marking of sheet-type test specimens

Eventually *Fig.16.10* shall show the shape of the tensile rod test specimen and a picture of the porous fracture surface of the ductile material used

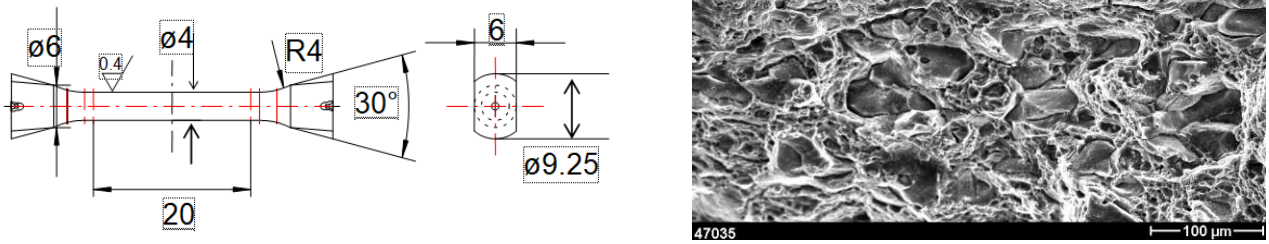


Fig.16-10: (left) Geometry of the tensile rod; (right) Voids on the fracture surface [IWM]

LL:

** Before executing any analysis with a distinct code the designer has to check whether the actual stress-strain curve fits to the shape of the implemented curve*

** For the best possible estimation of the component behavior, the average stress-strain curve $\overline{\sigma\varepsilon}$ must be taken*

** The average stress-strain curve $\overline{\sigma\varepsilon}$ does not inescapably run through the means of yield $(\bar{\sigma}-\bar{\varepsilon})_{yield}$ and of fracture $(\bar{\sigma}-\bar{\varepsilon})_{fr.}$*

17 Multi-scale Structural modelling with the concern Material Modelling and some Analysis

Aim: *Making aware of limits when applying validated macro-scale formulations at lower scales.*

17.1 Structural Analyses over the Scales

Structural modelling with associate analyses is performed at many scales, see *Fig.17-1*, from the macro-scale up to the Burj Khalifa building size.
Thereby, the challenging task is the input of the right material properties: Which values are to insert when analyzing at the lower scale? What about the stress-strain curve, and which for instance for the anisotropic UD material remains always bound to the macro-scale?

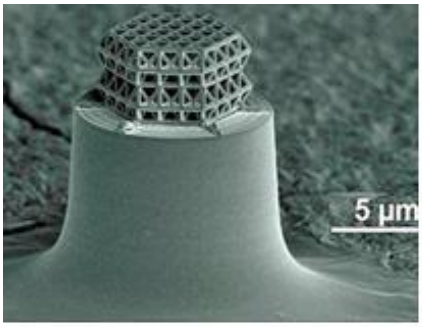


Fig.17-1: *Size variety of structures.*

(left) Truss structure, created by J. Bauer and O. Kraft with laser lithography.

Glass-like carbon nano-framework R^c = 3000 MPa. Advanced Materials, Progress Report, 'Nanolattices: An Emerging Class of Mechanical Metamaterials'. JensBauer, Lucas R. Meza, Tobias A. Schaedler, Ruth Schwaiger, Xiaoyu Zheng, Lorenzo Valdevit. 2017,Wiley Online Library



Burj Khalifa, 828 m

All this requires investigating the applicability of the usual macro-scale formulations especially concerning static strength, fatigue and fracture mechanics. For the assessment of a stress state, when viewing Design Verification (DV), it is to know the 'Onset-of-micro-damage' and the later following 'Onset-of-micro-cracking'.

Multi-scale modelling is executed for static and cyclic problems. In the cyclic case, there are three key 'points' that separate the regions in *Fig.17-2*:

- Ultimate strength $R_m{}^t$: Stress level required to fail with one cycle, n = 1
- Onset of Yield, R_e: Stress value at onset of plastic behavior with being $R_e < R_{0.2}$
- Endurance limit $S_{e(ndurance)}$: Stress corresponding to the horizontal asymptote of the SN-curve.

The course of the cyclic failure test data, termed SN-curve, is again mapped by the 4-parameter Weibull formula $R = constant: \quad \sigma_{max}(R, N) = c_1 + (c_2 - c_1) / \exp(\log N / c_3)^{c4}$.

As the average SN-curve cannot be applied in fatigue life DV, a statistically reduced curve is to determine as design curve. This design curve defines a full D_{design} = 100% -SN-curve from the tensile strength as original point and ends in the running-out defining an endurance limit stress.

17.2 Macroscopic SN-curve with Relation Material Stressing Effort Eff ↔ Micro-damage D

There are practically two possibilities to present SN curves:

(1) Ductile: Applying the stress amplitude $\sigma_a(R,N)$, also termed alternating stress

(2) Brittle: Applying the upper stress $\sigma_{max}(R,N)$

The maximum stress is physically simpler to understand by the 'stress-man' than the

amplitude, according to smooth transfer from the static to the cyclic behavior, *Fig.17-2*. Namely, a decaying SN curve is interpretable like a decaying 'static' strength after a micro-damage process with *n* cycles.

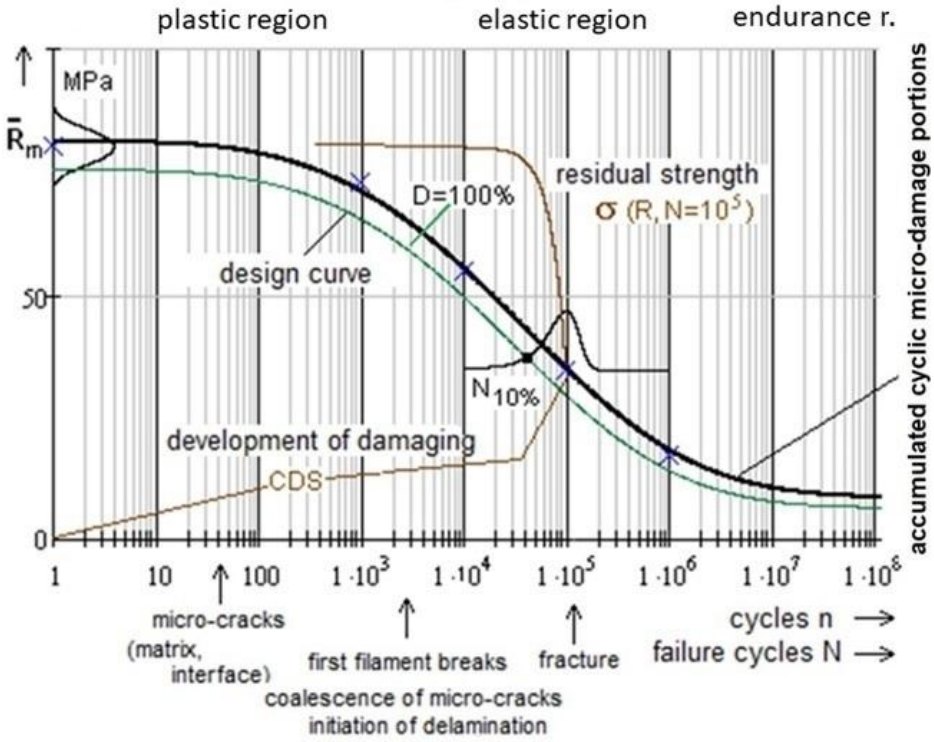


Fig.17-2, Design Verification: Fatigue average curve and ***design curve*** **R = 0.1.** *D = D_{design} for a survival probability P with a confidence level C. CDS is 'characteristic damage state' of a lamina*

[Hiatt, J. (2016), 'What is a SN-Curve?', Technical report, Siemens PLM Community). $N_f = N_{initial} + N_{crackgrowth.}$ Run-out below the endurance limit means crack-retardation]

Thereby, the static material stressing effort *Eff* (Werkstoffanstrengung, N_f = 1) is replaced by the accumulated cyclic micro-damage sum *D(N)*. Applied here is the classical 4-parameter Weibull curve with one parameter still fixed as strength point origin, because for brittle materials the strength value $\bar{R}^t = \sigma_{max}$ (n = N = 1) is preferably used as origin in the tension domain and anchor point of the SN curve and in the compression domain - $\bar{R}^c = \sigma_{min}$ (n = N = 1).

In detail, *Fig.17-3* visualizes the transfer from the static load-driven increase of the material stressing effort (n = N = 1) *Eff* = 100% (expectance value 50%) at the strength point to the cycle-driven micro-damage sum $D_{mapping}$ = 100% (expectance value 50%) of the SN curve. The evolution of *Eff* is not linked to the accumulation of the micro-damage. At onset-of-micro-cracking *Eff* is still > 0.

$$\text{If static failure} \rightarrow \max\sigma = \bar{R}_{static} \text{ at } Eff = 1 \text{ and if cyclic failure } \max\sigma = \bar{R}_{cyclic}, \text{ at } D = 1.$$

LL:

** It is always necessary to check whether the material at the lower level behaves in such a way that physically-based macro-mechanical formulations can be used*

** The material data input should satisfy physical model demands, which includes measurable parameters*

** DV demands for a statistically reduced SN-curve.*

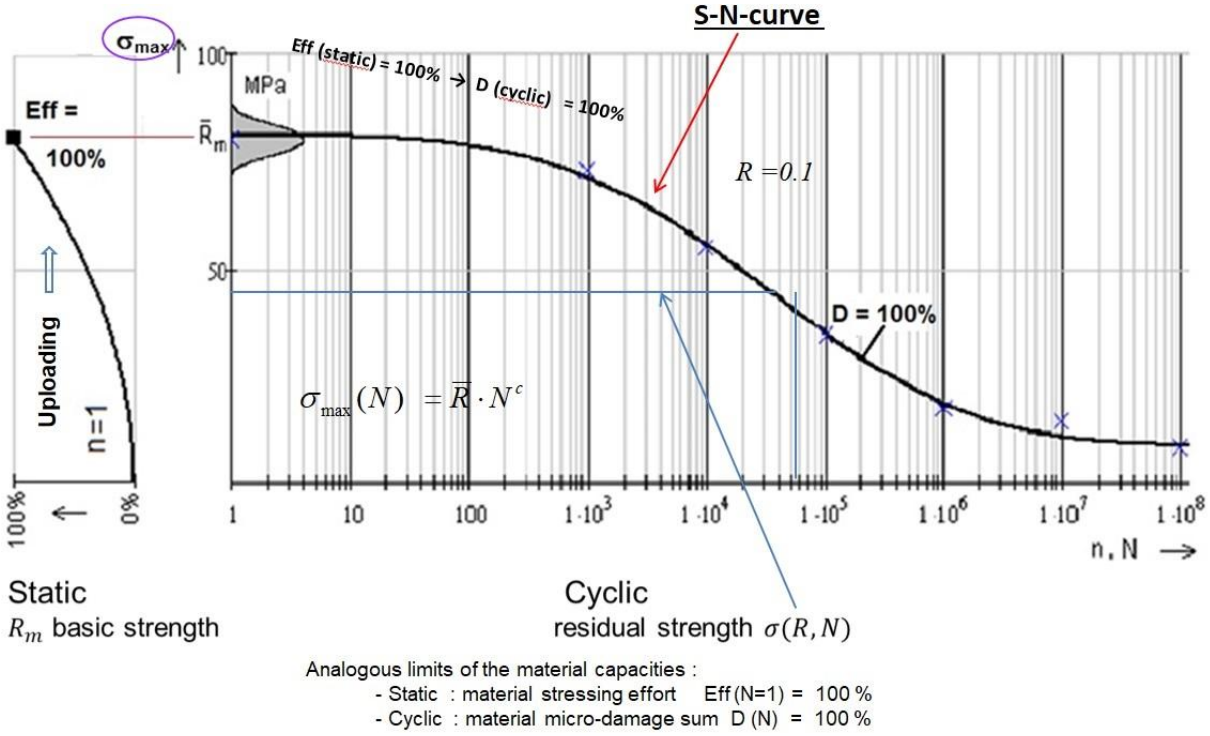


Fig.17-3, Mapping: Eff versus D. Mapping deals with averages ≡ 50% expectance value

17.3 Multi-scale Material Modelling regarding Infinite Life (endurance limit) of Metals

Infinite life or, in other words, the endurance limit is an ever-lasting topic of highest interest in structural design and concerns all materials.
Nowadays, valuable investigations on the micro-mechanics level seem to bring a significant progress for isotropic metals by using Continuum Damage Mechanics (CDM).

Mlikota and Schmauder found that the so-called 'Critical Resolved Shear Stress' CRSS is the relevant fatigue-responsible quantity, (*Fig.17-4*), regarding the behavior of ductile metals in the micro-scale regime. Multi-scale Material modelling (MMM), based on enough computer power will probably allow in future 'Computational material mechanics' from < micro-scale models (*Molecular Dynamics-treated and test results-supported from statically and cyclically loaded 10 µm thick pillars for instance*) via micro-scale to bridge with the necessary properties (*hopefully statistically based)* to the classical macro-scale models in structural design.

Multiscale materials modelling could grow and become a significant tool for understanding complex material micro-damage processes for many homogeneous isotropic materials, a benefit for macroscale investigations.

The conclusions of Mlikota are:

- The CRSS is the resistance for the dislocations to move through the crystal. It is governed by the present strengthening mechanisms in the crystal. The CRSS is - according to critical stress strength - a micro-shear strength.
- The fatigue crack growth modeling procedure in the High Cycle Fatigue regime should include the following steps: Micro-crack nucleation within a grain → Coalescence of already existing flaws and/or arrest at grain boundaries → Short crack or Stage I growth → Transition from Stage I to Long crack or Stage II growth

- The discovered relation between endurance limit and the CRSS allows the virtual selection of those types of materials, which are more fatigue resistant! The physically-based MMM approach represents a breakthrough in the field of fatigue research
- The higher the CRSS magnitude of the metal of interest, the higher the loading stress level σ will be necessary to accomplish the transition from infinite to finite life
- The multiscale fatigue simulation approach is capable of properly taking into account the mean stress $\sigma_m = max\sigma \cdot (1+R) / 2$ with the stress ratio R = minσ/maxσ and capturing the stress concentration factor K_t, which are influencing factors when designing structural components.
- Experimental tests demonstrate, that there is a drop in resistance to fatigue fracture with the increase of the grain size.

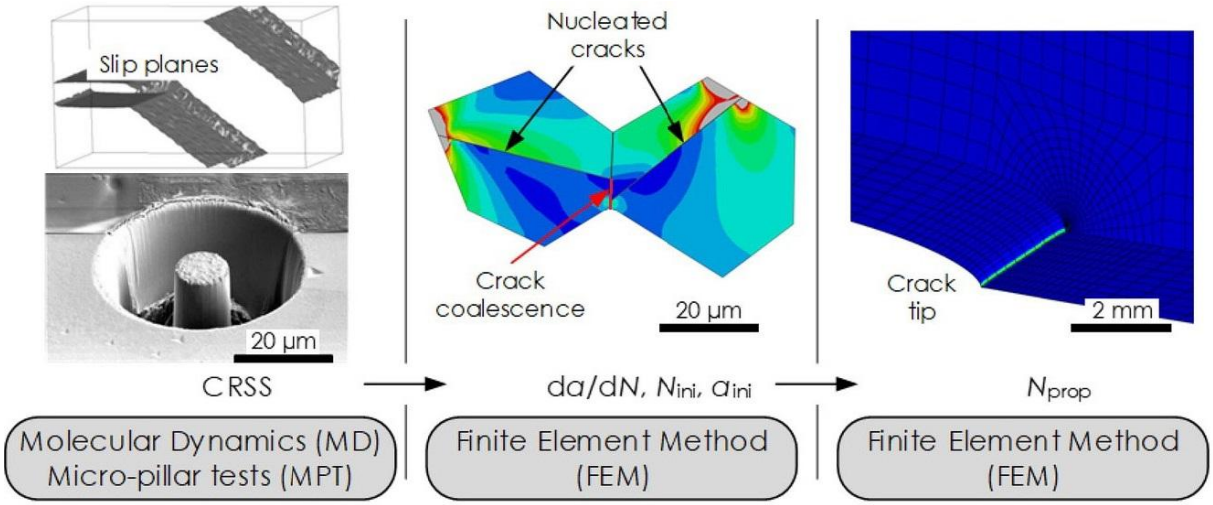


Fig.17-4: Full modelling approach. CRSS critical resolved shear stress, da/dn crack growth rate, N_{in} number of stress cycles until short-crack initiation, a_{ini} initiation short-crack length, N_{pro} number of stress cycles until short-crack propagation.

[Mlikota M. & Schmauder S. (2018), 'On the critical resolved shear stress and its importance in the fatigue performance of steels and other metals with different crystallographic structures', Metals 8(11), 883]

LL:

** There is a hope for some ductile materials in future to estimate the endurance limits of various metallic materials in the Ultra HCF regime just by knowing their CRSS values !*
Available CDM models seem to be neither to be clear-defined nor classified to be used for Design Verification (DV). A DV-procedure is searched

** A grain is usually polycrystalline with crystal planes in various spatial orientations. Hence, a metallic material can be only termed homogeneous and isotropic if these orientations are randomly distributed in order to become quasi-homogeneous. (*By the way, this is the same for an isotropic short fiber-reinforced polymeric material. Otherwise, the so-called orientation tensor has to take care of the non-isotropy*).*

** For the analysis the Mises SFC was employed in order to localize the peaks of shear banding (yielding) of the investigated steel material*

$$\sigma_{eq}^{Mises} = \sqrt{3 \cdot J_2} \quad \text{with} \quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = \; f(\tau), \; \tau_{oct} = \sqrt{J_2 / 3}$$

** Clearly to be defined is the quantification of the D-portions for ductile and brittle behavior with a maximum value of total D = 100%:*
- static case: the achieved micro-damage value at a distinct (equivalent) stress level
- cyclic case: the cycle-associated micro-damage portions with its derivation formula.

17.4 'Meso'–Modelling of the Example UD material

Fig.17-5 exemplarily gives a look at the present multi-scale modelling performed with Fiber-Reinforced-Polymers (FRP). Two scales are linked together, the micro-scale with the macro-scale by a meso-model. What is meso? Meso is no scale, per definitionem!

* Micro-scale > μ *m*, macro-scale > *mm*.
* The author experienced (1999) in a BMFT R&D discussion round on three MaTech Competence centers of institutes working from the polymer-scale to the structural macro-scale - after one day - that the term meso-scale is used in polymer mechanics by the research colleagues at the nano-level. This level is one thousand times smaller than the solid mechanics people apply meso.
* A further classification is available for porous materials, according to pore size: 'microporous' pores < 2 nm, 'mesoporous' pores between 2 nm and 50 nm, 'macro-porous' pores > 50 nm. [*International Union of Pure and Applied Chemistry*].

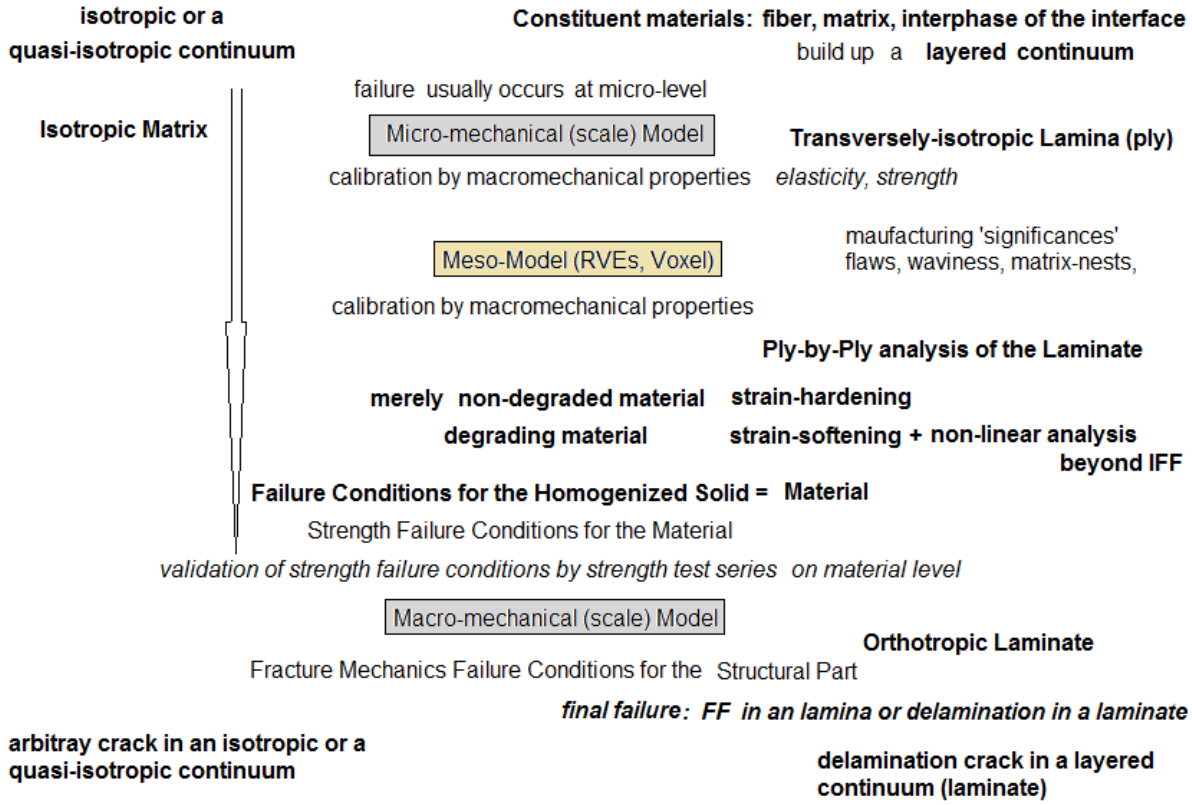


Fig.17-5:Multi-scale modelling, example FRP, brittle. 2 scales. RVE: Representative Volume Element, Voxel: volumetric pixel

LL:

The term meso is a task-linked chosen size level. Apply the term meso-model, not meso-scale, and define it.

Meso is no scale.

In structural engineering meso is used at about 0.1 mm.

17.5 Note on Micro-mechanical Formulas (mixture rules) for Example UD lamina (ply)

***Aim**: Guideline how to use micro-mechanical models and properties with giving some warning.*

Mixture rules are employed in many technical disciplines (polymer and mineral composites like concrete). Exemplarily, here at the so-called micro-mechanical formulas of UD-materials will be looked at, only.

Creep investigations and pressure-related effects on the matrix and in consequence on the UD material of composite materials i.e. usually require a micro-mechanical input.

Examples of the author, a centrifuge and a WWFE Test Case: The non-creeping constituent fiber is to separate from the creeping/relaxing constituent matrix. In order to capture these features the use of 'micro-mechanical mixture rules' in structural engineering is common practice. It requires properties of the constituents and the so-called mixture rule, how these constituent properties are linked, to be able to predict properties of the envisaged ('smeared') material on the macro-scale.
Not all micro-mechanical properties applied can be measured. A solution will be obtained by setting up mixture rules and calibrate them via macro-mechanical test results on the lamina macro-level. This makes an inverse parameter-identification necessary.

Hence, the application of a micro-mechanical formula underlies the constraint that the given micro-mechanical properties can be only used together with the formulas they are based on. Otherwise the results might be pretty wrong. For example within the WWFE, Test Case 1, the organizer QinetiQ just provided micro-mechanical material properties but not the associated micro-mechanical formula. Therefore, the author had to apply micro-mechanical UD formulas from [VDI 2014, sheet 3] and found a discrepancy of a factor 2 for the data to be predicted! This is not acceptable for the WWFE-task model validation.

LL: Micro-mechanical properties can be used only together with the formulas they have been generated with! ⇐ Significant *Warning due to painful time-wasting experience in the WWFEs !!*

18 Lessons Learned from Testing and from Evaluation of Test Results

***Aim**: Forwarding Lessons Learned.*

In structural design one basically faces 3 types of testing**:**

- Structural Testing (destructive, non-destructive)
- Materials Testing (destructive, non-destructive) and
- Non-Destructive Testing of structure and material (NDT, NDI, NDE).
  Other tasks here are: Failure detection, localization, size + shape, Failure assessment (risk-based).

All structural tests to be performed aim to uncover a deficiency: Workmanship, design mistake, oversight of a failure mode, tightness, shock resistance etc.

Fig.18-1 presents the test strategy of the MIL handbook 17, a forerunner guideline for the development of composite structures which are more challenging than developing isotropic structures.

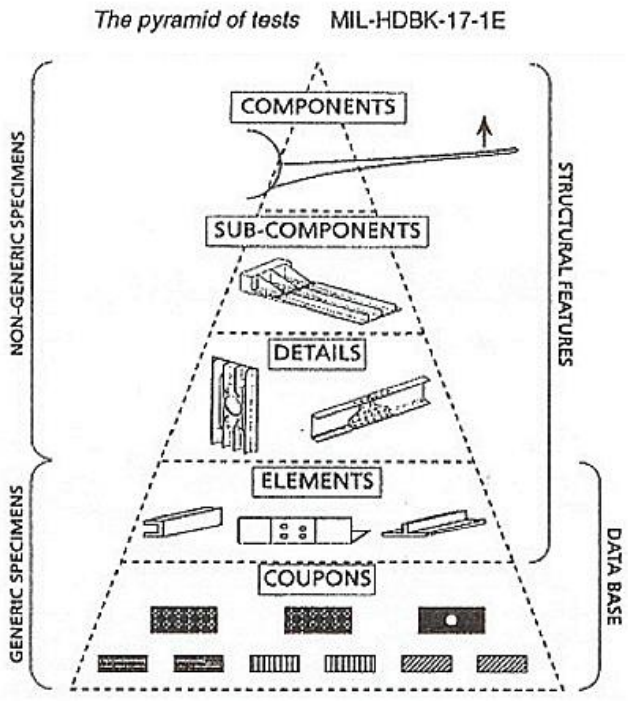


Fig18-1: Test strategy of MIL-HDBK 17 (original edition about 1970). MIL-HDBK-17/1F (VOL. 1 OF 5), DEPARTMENT OF DEFENSE HANDBOOK: COMPOSITE MATERIALS HANDBOOK - POLYMER MATRIX COMPOSITES GUIDELINES FOR CHARACTERIZATION

In this Chapter some personal experience is presented, beginning with structural testing.

18.1 Structural Testing primarily based on the Ariane launcher development

At first, a Test Agreement is to provide. It consists of test rig, test specification, test specimen and test data evaluation method and the Test Procedure. Therefore, one can only speak about 'exact' test results in the frame of the obtained test quality.

Fig.18-2 presents the so-called sub-structuring (*affecting shares between the participating Ariane partners)* an example for violating mechanics: MAN was not permitted to include the neighboring structural part despite of the fact that it was also a MAN contract part. We could not implement the FE model of this neighboring part in order to optimally represent the real boundary stiffness conditions in the model of the 'studied structural part' but had to implement the given boundary

conditions of the contract. This caused a wrong behavior of the 'studied structure' and was a real mess regarding the evaluation of the test results and comparison with analysis results. The first test article has been allegedly strengthened, which was senseless.

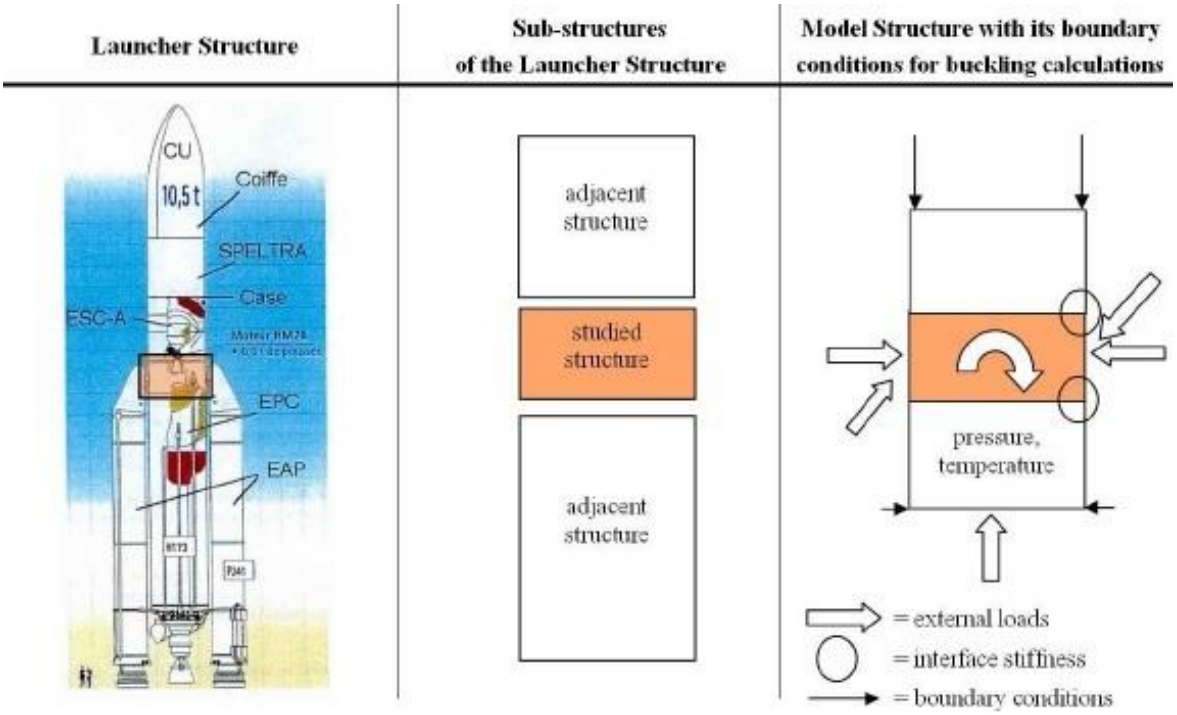


Fig.18-2: Sub-structuring of the Ariane 5 launcher, Front Skirt test

LL

** Test article analysis is mandatory to interpret the test results and simulation-based improve the design. Only well-understood experiments can verify the design assumptions made!*

** Splitting of a large structure (Ariane experience) is dangerous: The first buckling mode can appear on an adjacent structure and not on the studied one*

** Mandatory for a realistic qualification of a sub-structure is a realistic set of cross-section loadings and pressure loading with an accurate structural designing of the interface stiffness of the adjacent structural parts. If the interface is too stiff in the test assembly this will attract loading and lead to a non- realistic failure site (experience from Ariane 5 tests). The total system determines the behavior*

** Not all critical locations of a structural component can be tested, because an 'over-testing' of some parts may happen to be. 'Verification By-Analysis-Only' is to be considered if the structure is too big or if the test model shall e.g. be applied later as flight model*

** Put strain gauges there where a clear stress situation is in order to avoid useless discussions about the interpretation. Check locally by strain measurements and then rely globally on FEA-test result comparison*

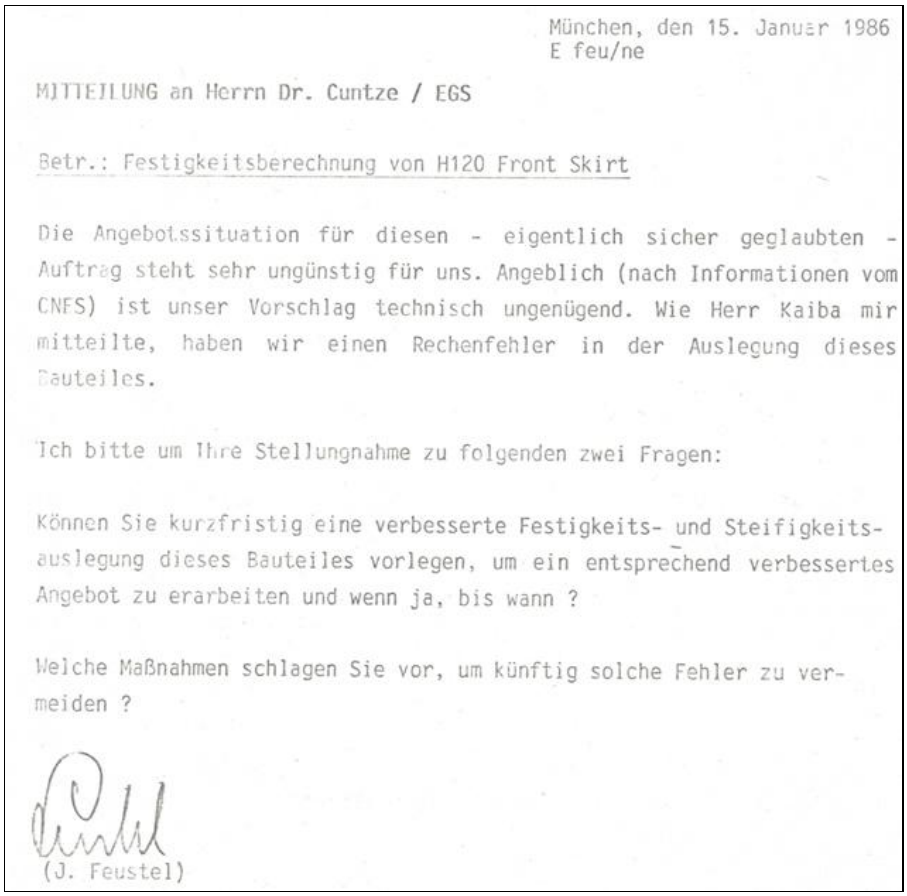
** Specific design requirements drive testing*

** Requiring different so-called system margins MoS_{sys}* (suffered nonsense in a Ariane Technical Specification) *for the various structural parts, then not all critical locations can be tested without overloading other integrated parts. Components of such a structural assembly cannot be verified by a qualification test, because system margins cannot be used locally like a 'fitting factor'. They should have been considered directly in the Ariane 5 as a usual design FoS, applying $j_{sys} = (MoS_{sys} +1)\cdot j$. Otherwise, the design process is obscured and is prevented from applying the most economic measure in order to take risk out of the structure*

** Requirement to put a design FoS j on a design temperature violates physics and structure behavior*

** So-called test correction factors are applied to adjust the design verifications by accurately evaluated structural test results linked to the test article analysis results.*

This is a good place to remind that Sub-structuring is risky, if the boundary stiffness between the structural partners is not provided by the structural architect.
My personal experience is my inhouse response to Mr. Feustel's mail, below:



München, den 15. Januar 1986
E feu/ne

MITTEILUNG an Herrn Dr. Cuntze / EGS

Betr.: Festigkeitsberechnung von H120 Front Skirt

Die Angebotssituation für diesen - eigentlich sicher geglaubten - Auftrag steht sehr ungünstig für uns. Angeblich (nach Informationen vom CNES) ist unser Vorschlag technisch ungenügend. Wie Herr Kaiba mir mitteilte, haben wir einen Rechenfehler in der Auslegung dieses Bauteiles.

Ich bitte um Ihre Stellungnahme zu folgenden zwei Fragen:

Können Sie kurzfristig eine verbesserte Festigkeits- und Steifigkeits-auslegung dieses Bauteiles vorlegen, um ein entsprechend verbessertes Angebot zu erarbeiten und wenn ja, bis wann ?

Welche Maßnahmen schlagen Sie vor, um künftig solche Fehler zu vermeiden ?

(J. Feustel)

Yes, we had a calculation error that we should have discovered through a load-balance check, not executed unfortunately. All performed checks failed to identify the error because the substructure specifications were too rigid, and design changes didn't provide a solution. In other words: the calculations led to the requirements being met within the stiffness specifications.
Substructuring is particularly problematic in statically indeterminate systems regarding loading, different boundary-linked frequencies. The total system determines the behavior. We could solve the problem!

*18.2 **Material Testing** primarily based on the UD-material World-Wide-Failure-Exercises-I and -II*

The author succeeded with test-validation of 3D-strength criteria models for isotropic concrete, transversely-isotropic UD-material, orthotropic ceramic (fabrics) with visualization of the derived 3D failure surfaces if reliable test data sets were given.

This was only partly given in the *the World-Wide-Failure-Exercises-I, concerning2D-mapping, and –II, concerning 3D-mapping of UD materials.*The author's WWFE-I and -II contributions had to be based on an intensive assessment of provided test results. In this sub-chapter the Lessons Learned during the examination of several WWFE-Test Cases (TC) will be collected.

Validation of the lamina-material SFCs models can be only achieved by 2D- together with 3D-lamina test results. Since SFC-model validation is focused just lamina-TCs are now investigated in detail. The normal user is just interested to well map his course of failure test data by a UD-SFC and not on the laminate analysis tools.

The laminate test cases serve for the verification of the laminate design. There the full WWFE failure theory is required. This makes a comparison between the contributions very challenging because different FE codes were applied by the contributing competing institutes. These better tools further had to be equally compared to the retired author's tools. He could just use his handmade non-linear CLT-code upgraded by experience and using his sensibleness for the problem and the delivered input.

***LL**, more general ones*

** Measurement data is the result of a Test Agreement (norm or standard), that serves the desire to make a comparability of different test procedure results possible. Hence, there are no exact property values. Material properties are the result of the material model applied inclusively mapping process.*

** Stresses, strength, strains and elasticity properties cannot be directly measured*

** Check of assumptions is necessary before designing (example: WWFE on UD-material). Pore-free material, specimen surfaces polished, well-sealed, fiber volume is constant, tube specimens show no warping and do not bulge, perfect bonding, no layer waviness, edge effects do not exist*

** Sometimes one must live with a substitute test situation in order to get some approximate properties (Example: UD-Tension/Compression-Torsion test device → Arcan test device)*

** Before thinking about test data evaluation the associated underlying micro-damage processes must be sorted out in order to get a better understanding of failure*

** Test specimens shall be manufactured like the structure ('as-built')*

** Comparisons between theoretical predictions and test data help to identify the major discrepancies, limitations, and areas which require further theoretical and experimental work. There is always a lot to be done and following Moslik Saadi: **"All is difficult prior to becoming simple**"! This begins with the provision of appropriate test specimens for the various material families being extreme ductile or brittle and ends with appropriate test procedures and an appropriate test data evaluation*

** Considering FE-results: We must more and more 3D-design! However the situation of properties, especially for composites is: „3D-property data test sets are seldom sufficiently available".*

* Achievement of a correlation test ⟺ analysis not just a comparison of numbers !

Of high interest for future scientists and engineers might be the following assessment results of the provided properties during the author's many WWFE-designated years. They are results which stem from a very careful and effortful test data evaluation lasting about *one man year*. Otherwise, a successful WWFE-contribution could not have been made possible.

Thereby, some essential WWFE TestCase-examples for lamina-input shortcomings were found:

* WWFE-I, TC1: the provided strengths have been changed from Part A to B and two test points are doubtful regarding own test results (*Reason is known: non-accurate raw test data evaluation of the test engineer at DLR Stuttgart. Organizers did not question the test data but required mapping of the false ones*!).

* WWFE-I TC2: the author informed the organizers that apples and oranges have been put here together in a diagram. One cannot fill into the same diagram 90°-wound tube test specimen data together with 0°-wound tube data. The 0°-stresses have to be transformed in the 2D-plane due to the fact that shearing under torsion loading turns the fiber direction (see *Fig.18-3*) and the lamina coordinate system CoS is not anymore identical with the structure coordinate system of the tube. In order to also use these test data the author exemplarily transformed magenta-colored two fracture test points by the occurring twisting angle γ using a non-linear CLT-analysis. Then

he could achieve a good mapping showing, that the two transformed fracture points accurately lie in the lamina CoS on the 90°-tube curve.

* WWFE-II, TC3: the same mistake happened again! However, here the much more complicated 3D-stress situation was to face, so that the 3D-transformation of the 0°-data set could be simply performed.

* WWFE-II, TC2 an average stress-strain curve should have been provided because otherwise no realistic treatment is possible. Therefore the Part A results could be only inaccurate. From the Part B information the author could derive an average curve and then all 3 TC test data courses could be mapped and the mutual check points in the fully connected TC2-TC3-TC4 matched. Incomprehensively, there was no response of the organizers to the author's idea, which made 3 TCs to successful test cases.

* Viewing the final papers of the WWFE-organizers "*A comparison of the predictive capabilities of current failure theories for composite (UD-composed) laminates, judged against experimental evidence*" and "*Maturity of 3D failure criteria for fiber-reinforced composites, comparison between theories and experiments*", there is not any doubt to find - concerning the quality of the only available, provided test data sets -

One third of the provided TC test data was at least questionable
till not applicable for a reliable model validation !!!

Mind, please:

**** Test results can be far away from the reality like an inaccurate theoretical model.***
**** Theory creates a model of the reality, one experiment shows one realization of the reality.***

$\tau_{21}{}^{fr}(\sigma_2)$ basic cross-section of the fracture failure body: (right) WWFE-I, TC2, UD lamina, CFRP, T300/BSL914C Ep ; (left) Tube test specimen picture: [Courtesy IKV Aachen] The normal user is just interested to well map his course of failure test data by a SFC

(More WWFE etc test evaluations are found in [Cun13, 25])



MAN thread winding machine
(pin winding)
with CNC control and
heatable multi-thread guide.
Thread placement from 0° to 90° possible.
See Fig. 18-3

"Theory is the Quintessence of all Practical Experience" *(A. Föppl)*

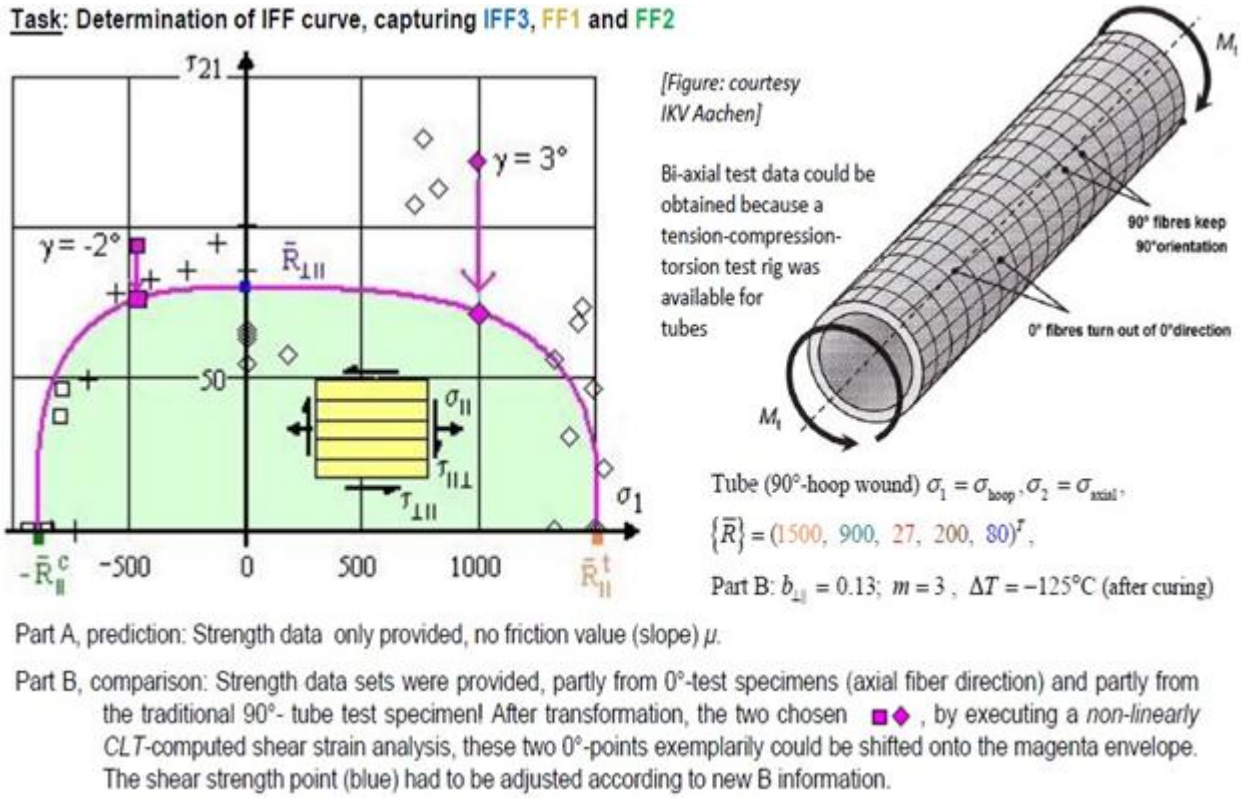


Fig.18-3: Example WWFE-I TC2, WWFE-II, TC3

Finally, *Fig. 18-4* presents details of the high-qualified tension-compression-torsion test rig.

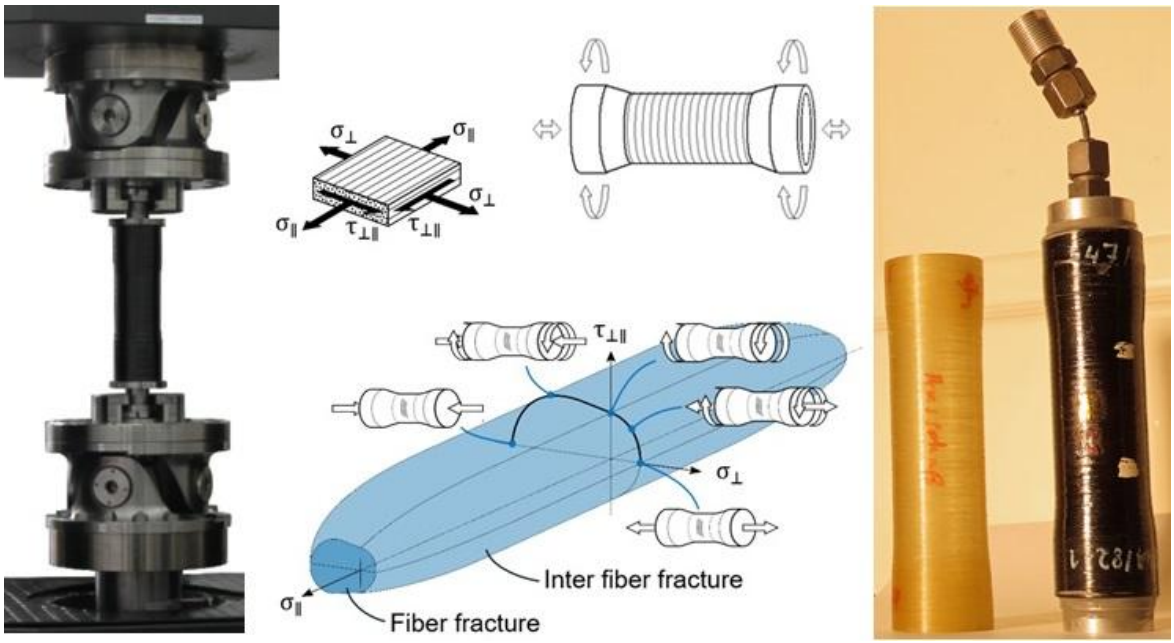


Fig.18.5: The tension-compression-torsion test: Test set-up of Leibniz-Institut für Verbundwerkstoffe GmbH Kaiserslautern and (right) GFRP and CFRP test specimens of MAN Technologie

18.4 Derivation of an accurate average strain-stress curve, example UD

The use of accurate stress-strain curves of materials builds the basis of structural fidelity.

These curves may show a vast scatter. Therefore, a practical method of handling, analyzing and averaging theses curves has to be found for the nonlinear, statistically scattering stress-strain behavior of materials. The measured stress-strain curves are approximated by a mapping function. That makes it possible to extract, store and update the complete nonlinear behavior of above metals or of composite materials in form of a distinct number of real parameters.

Three different evaluation methods are presented for the statistical analysis of a sample (bunch) of test curves. (The derivation is found in [*Evaluation of Stress-strain Test Results for effective use in Computational Analysis and Adequate Statistical Quantities curves*. Ralf Cuntze, M.A.N.-Advanced Technology Division München, and Gustav Löbel (Institute of Technical Mechanics, Erlangen. Germany). ICOSSAR 85 4th Int. Conference on Structural Safety and Reliability, III-664→668]).

Test data recording: The material properties, usually extracted from recorded stress-strain curves are E_0, R and ε_{fr}. However, the amount of information contained in a nonlinear stress-strain curve is much larger. A complete storage of all curves is quite an effort. For numerical analyses, it would therefore be very advantageous to be able to work with only a few parameter values describing a substitute curve. So, for effective storing and processing of a large number of complete curves on a digital computer it is inevitable to substitute the test curves by analytical functions. In addition this leads to a representation, which is very suitable for computational analysis. The industry most often applies the well-known 3-parameter R-O function (*see Mil Hdbk 5, now MMPDS*), still used for aluminum before, that proved to be very suitable for composites (*the envisaged example*), too. The R-O function can be applied as mapping function (*Mind: In material data sheets like in the HSB R-O-parameters for strain-hardening are provided for metals*). For shear inter fiber failure IFF3 (torsion tests) it reads

$$\varepsilon_{hard} = \sigma / E_0^{\text{mode}} + 0.002\,(\sigma / \bar{R}_{0.2}^{\text{mode}})^n \rightarrow \text{example} \quad \gamma_{21} = \tau_{21} / G_{||\perp} + 0.002 \cdot (\tau_{21} / \bar{R}_{0.2\,\perp||})^n ,$$

and one can accept the excellent mapping quality of the R-O-function in the inelastic regime (hardening curve part. The four values E_0, R, ε_{fr} and n represent in compacted form the complete nonlinear behavior of the test specimen. The curve, or at least a good approximation, can easily be retrieved from them by the R-O formulas. By the way, the values E_0, R, ε_{fr} and R_{02} are also acceptance test values needed for quality assurance.

Statistical evaluation of a bundle of test curves: In *Fig.18-6* nine single stress-strain curves from identical tube torsional experiments made of the same CFRP-material are reproduced. For design analyses this vastly scattering bundle of curves has to be averaged. For the visualization: If we imagine all the curves being written by purling sand onto a surface, the result would be a hill shape, *Fig.18-? right*. The height of the sand hill at each point is a measure of the probability with which a single curve passes through exactly this place. And the ridge of the resulting hill defines a meaningful average curve $\bar{\varepsilon}\bar{\sigma}$ not to be mixed up with a mapping through the mean points, indicated by $\bar{\varepsilon}(\bar{\sigma})$ and described in Method I.

Method I: As a first naive trial it looks plausible simply to take the arithmetic averages of the curve parameters $\bar{E}_0$, $\bar{R}$, $\bar{\varepsilon}_{fr}$, $\bar{R}_{02}$ or $\bar{n}$, respectively. This method, described by $\bar{\varepsilon}(\bar{\sigma})$, fails due to the strong non-linearity.

Method II: not detailed here, because to being extremely complicate. *See ICOSSAR 85*.

Method III: To avoid the horrendous calculations necessary, within method II, a third procedure was developed with the following steps:

- harmonic averages for $\bar{E}_0$ from values $E_{0,i}$,
- harmonic averages for $\bar{R}_{02}$ from values $R_{02,i}$,
- arithmetic averages for R_i, $\varepsilon_{fr,i}$ with computing *n* using the averages above.

(*The harmonic average is a numerical average. It is calculated by dividing the number of observations by the reciprocal of each number in the series. Thus, the harmonic mean is the reciprocal of the arithmetic mean of the reciprocals. Steps to calculate the arithmetic average: Count the number of values in the set. Add all the values together. Divide the sum by the number of values in the set to obtain the arithmetic average.)*

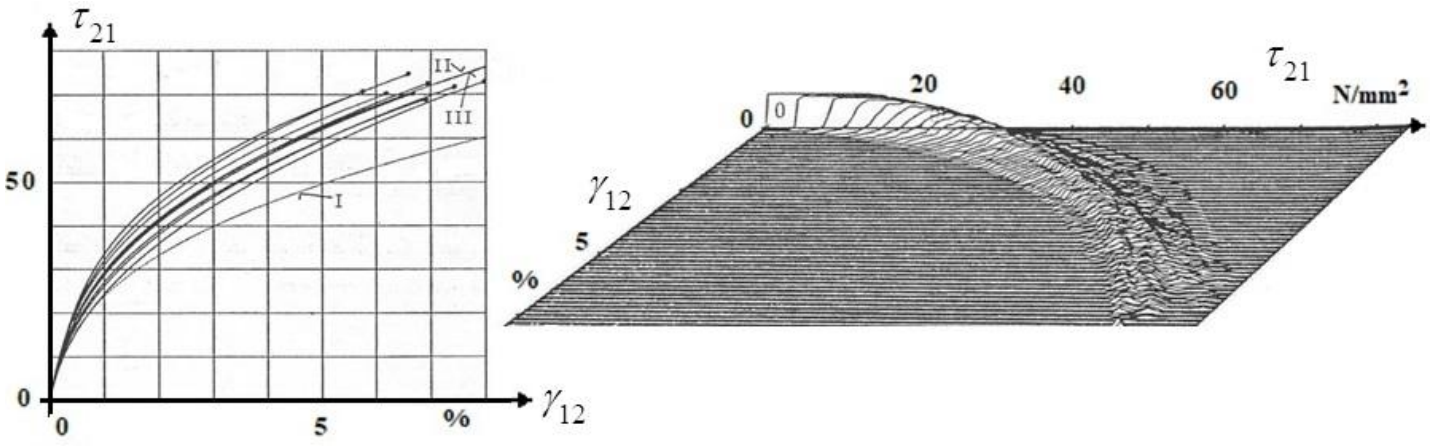


Fig.18-6: (left) R-O- 'reconstructed' curves from a torsion tube test specimen sample test. (right) Probability 'density hill' (fiber T300/ matrix EP)

Fig.18-6 (left) shows the results graphically.

*As can be seen, Method I leads to a curve, which is not acceptable.

*The curve defined by the parameters according to Method II gives accurately what is wanted but this is not engineering-like.

*Method III renders the same, but with less effort and is therefore recommended for usual practice.

Is this really considered in all FEA design codes?

19 2D-Laminate Design with Tsai's 'Omni principal FPF strain failure envelopes

Aim: *Replacing the ply-by-ply proof of multiple-ply laminates by a much simpler method*

Steve Tsai's idea was to by-pass the effortful ply-by-ply analysis of multiple-ply laminates by using a so-called 'Omni-(principal FPF strain) failure envelope'. This envelope surrounds an intact Non-FirstPlyFailure (FPF) area whereby FPF includes Fiber Failure FF and Inter-Fiber-Failure (IFF).

Such an 'Omni failure envelope' is to determine for each composite material, applying a FPF-Strength Failure Criterion (SFC), and will capture all possible laminate stacks. Naturally, the used SFC significantly determines the shape of the envelope, see *Fig.19-1*.

Dimensioning is performed by showing that the design loading-caused principal strains are lying within the Non-FPF area. Thisidea can serve as a very practical Pre-design tool!

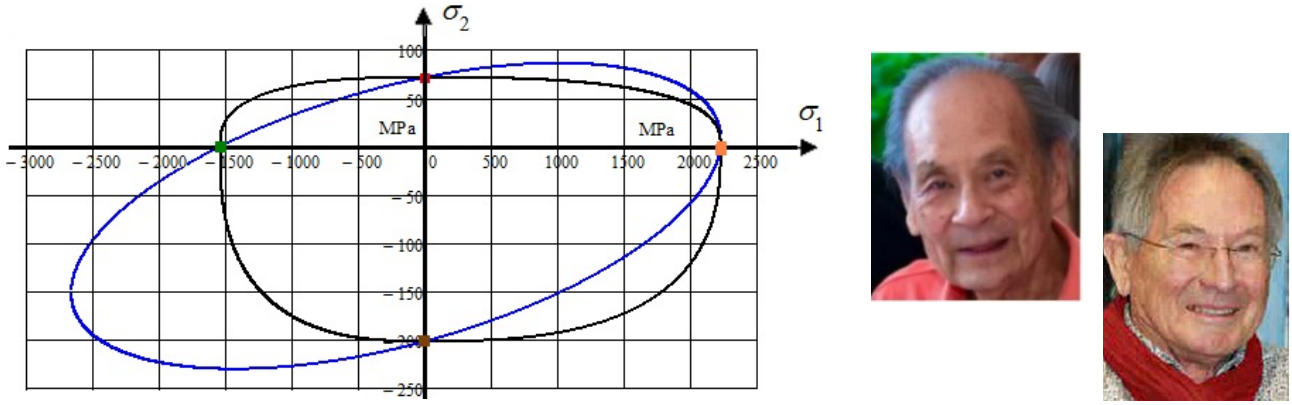


Fig.19-1: Cross-section $\sigma_2(\sigma_1)$ of the failure body, Tsai-Wu versus Cuntze . (Steve and me)

19.1 Tsai's indirect Determination of the 2D 'Omni envelope'

Fig.19-2 displays different 'butterflies' (*name, how the author Cuntze termed the bundle of **i** FPF-curves),* derived using the SFCs of Tsai-Wu and Cuntze). These numerical results of the FPF-linked

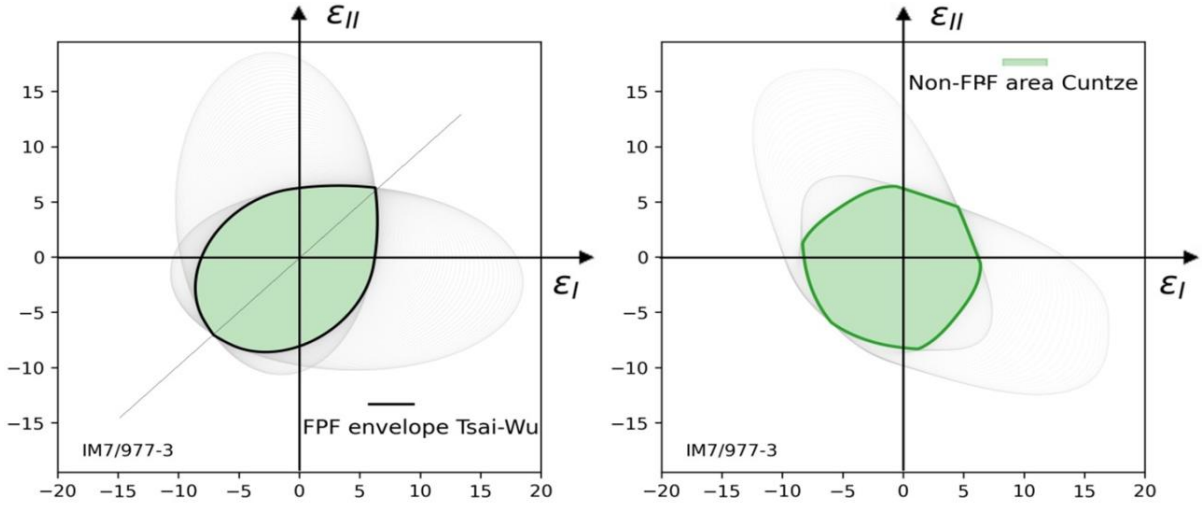


Fig.19-2, bundle of all FPF envelopes = 'butterflies veins': All ply FPF-envelopes enclosing a non-FPF failure area; 0°< α < 90° (91 ply angles). Principal strain in ‰, suffix FPF is skipped. CFRP IM7/977-3. In all pictures: (left) Tsai-Wu with $\mu_{\perp\|} = 0$, $F_{12} = -0.5$ and (right) Cuntze with $\mu_{\perp\|} = 0.2$, $m = 2.7$

principal strain curves clearly depict the significant effect of the chosen SFC, see above figure.
The different lateral properties determine the shape (wing edge) of the obtained symmetric 'butterfly' with its single, grey-marked principal strain curves provided by E. Kappel.

19.2 Cuntze's Determination of the 2D 'Omni Envelope'

The derivation of such an 'Omni failure envelope' is pretty effortful and no direct formulation could be found in the past. Recently, this bottleneck could be by-passed by an idea of the author, who examined various horizontal cross–sections τ_{21} = constant of the UD-FPF fracture body in *Fig.19-3* below. He found that τ_{21}=0 delivers the smallest Non-FPF area. ► Pre-Dimensioning can now be performed by showing that the design loading-caused principal strains are located within the Non-FPF area, a simpler pre-design of arbitrary laminates is possible.

.

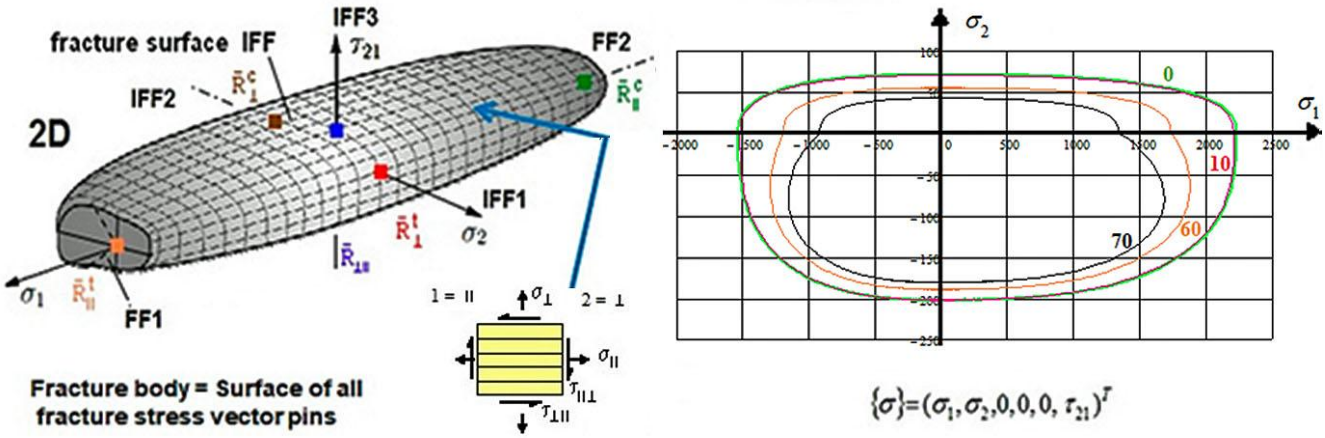


Fig.19-3: (left) 3D UD Failure body. (right) FPF-envelopes for 3 planes τ_{21}= const. CFRP IM7/977-3

Fig.19-4 (left) presents the resulting Omni principal strain FPF curves $\varepsilon_{II}(\varepsilon_I)$ with a not unambiguously solution $\varepsilon_{II}(\varepsilon_I)$ for each parameter level τ_{21} = const. → The failure curve $\sigma_2(\sigma_1, \tau_{21} = 0)$ describes the 'Omni envelope'.

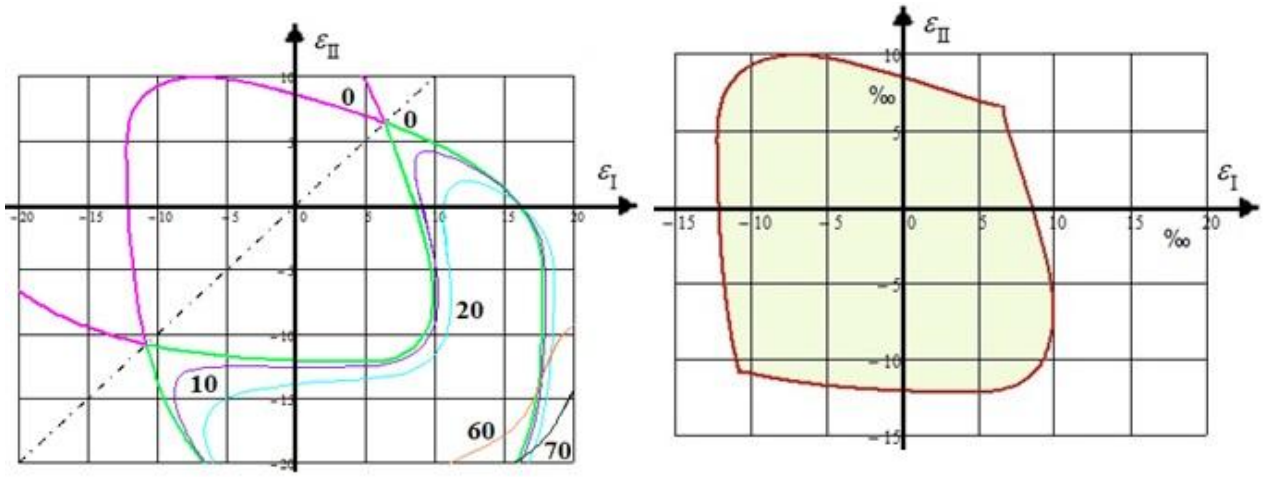


Fig.19-4: Mirrored envelope of the Non-FPF area (Cuntze procedure), CFRP IM7/977-3

Originally, the 'second' solution-linked additional outer curve parts were excluded in the graph and the right figure eventually shows the 'cleaned-up' envelope, representing the limit *Eff* = 100%, enveloping

the Non-FPF area. The cleaned-up graph is identical to the Non-FPF area obtained by the standard Tsai 'butterfly'-determination procedure.
Domains of the envelope could be dedicated to the locally faced failure mode types FF and IFF.

In a novel investigation, detailed in *Table 19-1*, Cuntze could give a complete look of the different envelopes in *Fig.19-4* (*left*). Depicted are the 'butterfly' wings (outside) and internally the green shadowed Non-FPF area. For optical comparison reasons E. Kappel 'traditionally' provided the 'butterfly' procedure plots for *Fig.19-4* (*right*) and *Fig.19-5*.

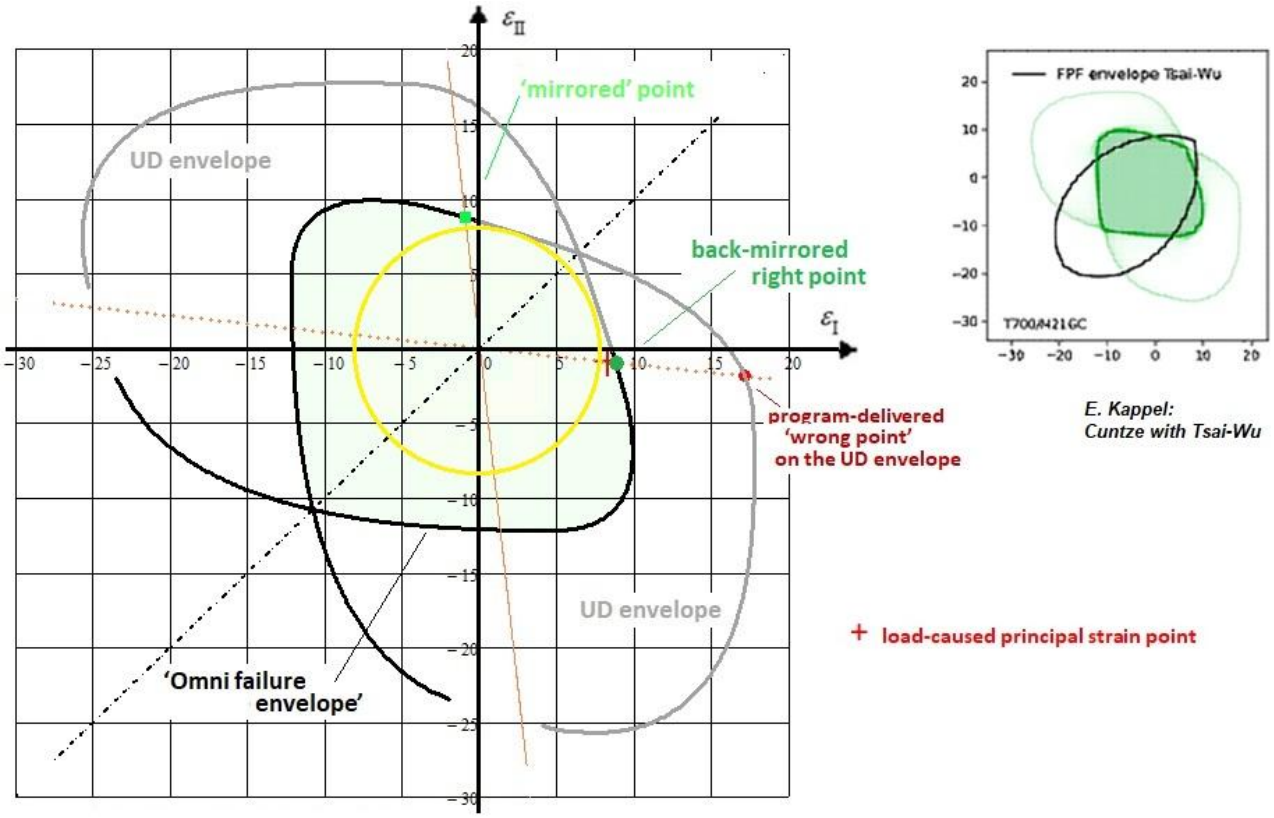


Fig.19-5: (left) Various envelopes of the Non-FPF area (Cuntze procedure following Principal Strain Procedure Cuntze in Table 19-1)..(right) 'Butterfly' and Non-FPF area applying the SFCs of Tsai-Wu and Cuntze

19.3 Pre-design Example using the 'Omni Non-FPF area' and Determination of Reserve Factor

Of highest interest is the reserve factor which must be smaller for a simplified design method than obtained by the classical 'Ply-by-ply procedure', thus remaining on the Safe Side. Laminate Design Verification is traditionally performed by above 'ply-by-ply' analysis, assessing the obtained ply (lamina) stresses $\{\sigma\}$ in the critical location of the most critical plies. Now, a simpler more global assessment is possible (*Table 19-2*) by using the in-plane principal strains of the laminate, strains

Table19-2: Procedure of checking a probably critical design stress state

A Non-FPF area within an 'Omni failure envelope' is given for the chosen laminate material
➢ FEA delivers the maximum state of the 3 strains of the laminate stack
➢ Transformation into the 2 principal strains as coordinates of the Non-FPF area
➢ Check, whether the strain point $(\varepsilon_I, \varepsilon_{II})$ lies within the envelope or Non-FPF area
➢ Determine material reserve factor f_{RF} = vector length ratio of *failure strain/design strain.*

which represent the loading. Such principal strains are a standard output of modern FE software. They are mathematical and not material symmetry-linked quantities.

Remember, please that the execution of the Design Check runs under the Presumption:
"*Linear Analysis, 'proportional stressing concept' $\sigma \sim \varepsilon$ is permitted*".

Table 19-1: Procedures, how to obtain the material reserve factor f_{RF}

SFC Cuntze: Failure Function $F\left(\{\sigma\},\{\bar{R}\},\mu \text{ directly}\right)=1$

$$Eff_{FPF} = [(Eff^{||\sigma})^m + (Eff^{||\tau})^m + (Eff^{\perp\sigma})^m + (Eff^{\perp||})^m + (0)^m]^{m^{-1}} = 1,\ m = 2.7$$

Input

$$\{\sigma\} = (\sigma_1,\sigma_2,\sigma_3,\tau_{23},\tau_{31},\tau_{21})^T \rightarrow (\sigma_1 = 900\ ,\sigma_2 = 20\ ,0,\ 0\ ,0\ ,\tau_{21} = 25)^{\mathrm{T}}\text{MPa},$$

$$\{\bar{R}\} = (\bar{R}^t_{||},\bar{R}^c_{||},\bar{R}^t_{\perp},\bar{R}^c_{\perp},\bar{R}_{\perp||})^{\mathrm{T}} \rightarrow (2230,537,71,202,78)^{\mathrm{T}}\ \text{MPa},\ \mu_{\perp||} = 0.2.$$

$\{\sigma\}$-loading-caused ply strains and loading-reperesenting principal strains

$$\varepsilon_1 = s_{11}\cdot\sigma_1 + s_{21}\cdot\sigma_2,\ \varepsilon_2 = s_{21}\cdot\sigma_1 + s_{22}\cdot\sigma_2,\ \gamma_{21} = s_{66}\cdot\tau_{21}$$

$$\varepsilon_I = 0.5\cdot\left[(\varepsilon_1+\varepsilon_2) + \sqrt{(\varepsilon_1-\varepsilon_2)^2+\gamma_{21}^2}\right],\ \varepsilon_I = 0.5\cdot\left[(\varepsilon_1+\varepsilon_2) - \sqrt{(\varepsilon_1-\varepsilon_2)^2+\gamma_{21}^2}\right]$$

$$\varepsilon_I = 0.0083 \equiv \text{UD}\varepsilon\text{I},\ \varepsilon_{II} = f_\varepsilon\cdot\varepsilon_I = 0.0009,\ f_\varepsilon = \varepsilon_{II}/\varepsilon_I = -0.109.$$

*Stress Procedure Cuntze: Lamina task, solved by ply-by-ply failure analysis

$$Eff^m = [(Eff^{||\sigma})^m + (Eff^{||\tau})^m + (Eff^{\perp\sigma})^m + (Eff^{\perp\tau})^m + (Eff^{\perp||})^m] \text{ with the mode portions inserted,}$$

$$Eff = \left[\left(\frac{(\sigma_1+|\sigma_1|)}{2\cdot\bar{R}^t_{||}}\right)^m + \left(\frac{(-\sigma_1+|\sigma_1|)}{2\cdot\bar{R}^c_{||}}\right)^m + \left(\frac{\sigma_2+|\sigma_2|}{2\cdot\bar{R}^t_{\perp}}\right)^m + \left(\frac{-\sigma_2+|\sigma_2|}{2\cdot\bar{R}^c_{\perp}}\right)^m + \left(\frac{|\tau_{21}|}{\bar{R}_{\perp||}+0.5\cdot\mu_{\perp||}\cdot(-\sigma_2+|\sigma_2|)}\right)^m\right]^{1/m}$$

$\rightarrow\ Eff = 0.513\ \Rightarrow$ material reserve factor $f_{RF} = 1/Eff = 1.95.$

*Principal Strain Procedure Cuntze: classical laminate task, solved by a laminate failure analysis; $\tau_{12} = 0$

Due to $\varepsilon_1 = \varepsilon_I$, $\varepsilon_2 = \varepsilon_{II}$ for the 2 failure determining stresses follows, $\gamma_{21} = 0$

$\sigma_1 = (s_{21}\cdot\varepsilon_2 - s_{22}\cdot\varepsilon_1)/(s_{21}^2 - s_{11}\cdot s_{22})$ and $\sigma_2 = (\varepsilon_2 - s_{21}\cdot\sigma_1)/s_{22}$ which is to insert into the FPF-criterion-based 'Omni principal strain failure envelope' formula

$$\left(\frac{(\sigma_1+|\sigma_1|)}{2\bar{R}^t_{||}}\right)^m + \left(\frac{(-\sigma_1+|\sigma_1|)}{2\bar{R}^c_{||}}\right)^m + \left(\frac{\sigma_2+|\sigma_2|}{2\bar{R}^t_{\perp}}\right)^m + \left(\frac{-\sigma_2+|\sigma_2|}{2\bar{R}^c_{\perp}}\right)^m + (0)^m = 1 = 100\%\ .$$

With the chosen SFC the $\rightarrow$ Non-FPF area $\varepsilon(\sigma_{FPF})$ is to derive .

On the strain beam $f_\varepsilon = \dfrac{\varepsilon_{II}}{\varepsilon_I} = \dfrac{\varepsilon_{II,\mathrm{FPF}}}{\varepsilon_{I,\mathrm{FPF}}}$ it will be finally obtained

$$f_{RF} = \sqrt{\left(\varepsilon_{I,\mathrm{FPF}}^2 + \varepsilon_{II,\mathrm{FPF}}^2\right)} \Big/ \sqrt{\left(\varepsilon_I^2 + \varepsilon_{II}^2\right)} = \varepsilon_{I,\mathrm{FPF}}/\varepsilon_I = 1.06\ .$$

Cuntze's direct determination of the 'Omni failure envelope' enables to determine the reserve factor straightforward instead of using the *Non-FPF smaller* internal circle in *Fig.19-5*, how it was usually performed up to now, see [*Cun 24a, c*].
However, there was a solver computational problem:

Mathcad unfortunately delivers a principal failure strain value ε_{FPF} outside of the Non-FPF area as result of its solution process. The other solution seems to be received, if a shear strength is involved. This wrong point value can be localized on the UD 'butterfly wing' edge in *Fig 19-4* and this enabled to successfully use the symmetry of the envelope as it is executed in *Fig-19-5*.

Now, Design Verification can be performed as described below:

$$f\varepsilon = \frac{\varepsilon II}{\varepsilon I} \qquad f\varepsilon = -0.109 \qquad UD\varepsilon I = 0.0083$$

Vorgabe $\qquad \varepsilon IFPF := 0.01 \qquad \sigma 1 := 100 \qquad \sigma 2 := 10$

$$\boxed{\varepsilon IFPF = s11\cdot\sigma 1 + s21\cdot\sigma 2} \qquad \boxed{f\varepsilon\cdot\varepsilon IFPF = s21\cdot\sigma 1 + s22\cdot\sigma 2}$$

$$\left(\frac{\sigma 1 + |\sigma 1|}{2R1t}\right)^{mint} + \left(\frac{\sigma 2 + |\sigma 2|}{2R2t}\right)^{mint} + \left(\frac{-\sigma 1 + |\sigma 1|}{2R1c}\right)^{mint} + \left(\frac{-\sigma 2 + |\sigma 2|}{2R2c}\right)^{mint} = 1$$

$A\varepsilon := Suchen(\varepsilon IFPF, \sigma 1, \sigma 2) \qquad \varepsilon IFPF := A\varepsilon_0 \qquad \varepsilon IFPF = 0.01712$

$$f\varepsilon = -0.109 \qquad fRF\varepsilon := \frac{\varepsilon IFPF}{UD\varepsilon I} \qquad \boxed{fRF\varepsilon = 2.07}$$

This result of the Mathcad program leads to a value which belongs to another solution brunch (see the figure). Using the plot's symmetry the real value can be found after the replacement of fε by fεr = 1/ fε

$$f\varepsilon r := \frac{1}{f\varepsilon} \qquad f\varepsilon r = -9.214 \qquad fRF\varepsilon r := \frac{\varepsilon IIFPFr}{UD\varepsilon I} \qquad \boxed{fRF\varepsilon r = 1.06}$$

$$< \boxed{fRF\sigma = 1.95}$$

Fig.19-6 Successful computation of f_{RF} after utilizing the plot's symmetry (code Mathcad 15). $\varepsilon_I \equiv UD\varepsilon_I$

LL:

** The method is more or less a linear method.*

** The investigation of various cross–sections τ_{21}=constant, proved, that τ_{21}=0 delivers the smallest Non-FPF area, thus making a simpler pre-design of arbitrary laminates possible*

** Basic result:*

The principal strain approach delivers the required smaller reserve factor compared to the conventional ply-by-ply stress-based procedure. → *The approach is 'on the safe side' !*

(My successful idea was a welcomed Christmas gift for Steve, 2023).

Note, once again please:

Tsai's 'Omni principal strain envelope' principally surrounds a Non-FPF or even a Non-LPF area.

*FPF is required if the design requirement asks to fulfill a First-Ply-Failure in the critical locations of the plies of the laminate.

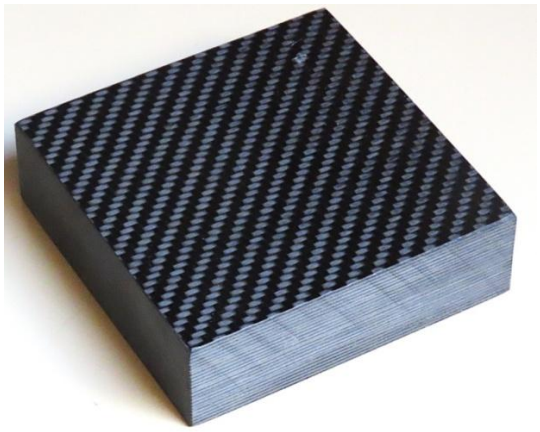
*LPF, if to apply, is required to fulfill a Last-Ply-Failure limit. However, this usually involves a non-linear analysis up to the ultimate failure load of the structural part.

In order to cope with the reserve factor definition these shall be sketched again below:

About 'linear' FPF, then a stress-defined $f_{RF} = \dfrac{\text{Strength Design Allowable } R}{\text{Stress at } j \cdot \text{Design Limit Load}} > 1$

For completion of §19,

a to be designed not unusual thick multi-ply laminate is displayed below:



Many thanks to Steve for the remark below:

Von: Stephen W. Tsai [mailto:steve.tsai@mac.com]
Gesendet: Samstag, 17. Mai 2025 19:04
An: Ralf Cuntze
Cc: Chiara Bisagni; Dransfeld Clemens; Urs.Meier@empa.ch; Erik.Kappel@dlr.de; w.wagner@kit.edu; Michael Windisch; Meinhard Kuna; klaus.rohwer@dlr.de; permanni@ethz.ch; christian.huehne@dlr.de; joachim.hausmann@iww.uni-kl.de; ingo.ehrlich@oth-regensburg.de; michael.magin@iww.uni-kl.de; t.weber@fh-aachen.de; GABO05@libero.it
Betreff: Re: My private scientific papers: Excerpt from my overall CV

Dear Ralf,

I have never seen a master piece of work that you have shown to be possible. An incredible contribution treatise of the failure of composite materials.. You have set a standard that others have to learn to meet.

Congratulations for your achievement.

Steve

ICCM V, San Diego

San Diego 1985
Tuesday, July 30, PM
Mechanical Properties of Composites I
ROOM: Council/Chamber

Chairman: Dr. Steven Tsai, Chief, Mechanics & Surface Interactions Br., AFWAL, Wright-Patterson AFB, OH 45433
Vice Chairman: Dr. R. Cuntze, MAN - Nene Technologie, AbC, EGS, Dachaner Str. 667, Post fach 500620, D-8000 Munich 50, West Germany

40 years now

Below an associated Abstract for the annual "Munich Symposium on Lightweight Design 2025"

Engineering Strength Assessment of UD-multiply-composed Elastic Laminates

Ralf Cuntze, Prof. Dr.-Ing. habil., supported by Erik Kappel, Dr.-Ing.***
* *Retired from industry, MAN-Technologie, Augsburg, Germany*, Ralf_Cuntze@t-online.de
** *Institute for Lightweight Systems (SY), German Aerospace Center (DLR), Braunschweig*

In practical multiply-laminate development there are to capture so-called 'Quad-stacked' laminates of the (0 / 45/90/-45)-family and Tsai's novel 'Double-Double-stacked' laminates of the $\{\varphi/-\psi/-\varphi/\psi\}$-family (*NCF, stitched layers product).* Due to the fact, that these laminates are just in-plane loaded it is very helpful for a structural engineer to have 2D Design Sheets, at least for checking Finite-Element-Analysis results of arbitrarily-stacked multi-ply laminates. Since strength failure envelopes significantly depend on the applied Strength Failure Criterion (SFC) exemplarily two SFCs, those of Tsai-Wu and Cuntze are examined, which requires a challenging transformation of the Tsai-Wu SFC into the more often used notation of the *VDI 2014 guideline*.

An idea of Stephen Tsai is followed on 'Designing Laminates to First-Ply Failure (*FPF*)', which includes Fiber Failure (FF) and Inter-Fiber-Failure (IFF) and thereby marks the 'Onset-of-fracture'. When realizing this, failure stress-based 'Omni-(principal strain) failure envelopes' (*term from S.Tsai*) are to derive. These envelopes surround the intact 'Non-FPF area'. The process requires that combinations of each ply orientation angle with principal strain ratio (here 361, chosen 1°-increment) are to evaluate. Thereby the smallest reserve factor determines the FPF limit and thereby generates one point on the bias-symmetric envelope. Each computation represents a faint 'vein' in *Fig.1*, ($^{0}/_{00}$). The principal strain approach delivers the required smaller *laminate* reserve factor compared to the conventional ply-by-ply stress-based procedure with its minimum *ply* reserve factor. The approach is 'on the safe side' if $f_{RF}^{lam} < \min f_{RF}^{ply}$!

The determined Non-FPF areas are further reduced to an internal circle in order to find a FPF-limit-defining envelope-function for the computation of the laminate reserve factor. The circle's radius depends on the principal strain magnitude $r = min\sqrt{\varepsilon_I^2 + \varepsilon_{II}^2}$. Cuntze sorted out a function for the envelope, because he found that $(\sigma_{\parallel} = \sigma_1, \sigma_{\perp} = \sigma_2, \tau_{\perp\parallel} = \tau_{21} = 0)$ defines it. This means that the full area can be exploited for f_{RF}^{lam}, not just the internal circle area, *Fig.2*.

A thereon based design sheet would enable to reduce the effort for Design Dimensioning.

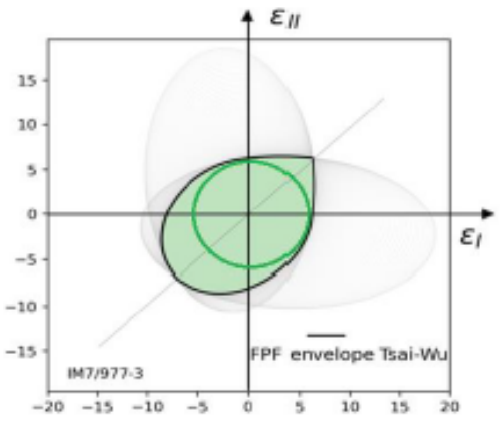


Fig.1:Faint 'Veins' of all computations for IM7/977-3 forming the merely visible veins of a butterfly's wing

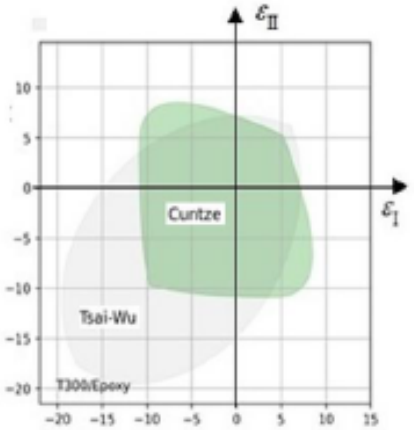


Fig.2: SFC-dependent Non-FPF areas for T300/Cytec (Tsai-Wu bottleneck in negative domain)

20 Note on Criticality of Fiber Micro-Fragments and Dusts of CFR-Plastic/CFR-Concrete

Matter of my heart:

Supporting the application of sustainable carbon concrete with low-risk PAN-CFs in Production and my special concern regarding Recycling.

Carbon Fibers (CFs) usually are produced using the precursors PolyAcryloNitrile (PAN) and Pitch. Problem and question: Machined Pitch CFs generated many toxic split-up fiber fragments. What about the PAN-based CFs? They can be classified into the types: intermediate-modulus (IM), high-modulus (HM) and ultrahigh-modulus (UHM), whereby UHM-CFs seem to show some and the lower modulus Standard PAN no hazard. These facts ask for an investigation of the UHM-CF with the objective to finally sort out that the use of the less '*risky*' Standard PAN CF causes no threat.

Inhaled particles with its size, geometric shape and contaminants adhering to the surface are relevant for a health effect. Of course, targeted workplace prescriptions always have to counteract the occurrence of excessive stress on the lungs from inhaling too large amounts. Respirable bio-persistant particles accumulate in the alveoli of the lungs. These so-called 'WHO fibers' pierce the macrophages in the lungs and can migrate into the abdomen and pleural tissues and cause cancer.

CF application in Construction

As structural engineer, who has founded and led two working groups in the carbon concrete sector for 10 years: "*It is my deep wish to use more fatigue-resistant [VDI2014] PAN-CF in the construction industry in order to increase the life of bridges and to save concrete, a composite material, which has a negative CO_2 footprint due to the necessary clinker (cement constituent) production*."
The next figure displays a CFRP application by a fiber grid (*mat*) as a slack reinforcement (*no pretension*) of a bridge.



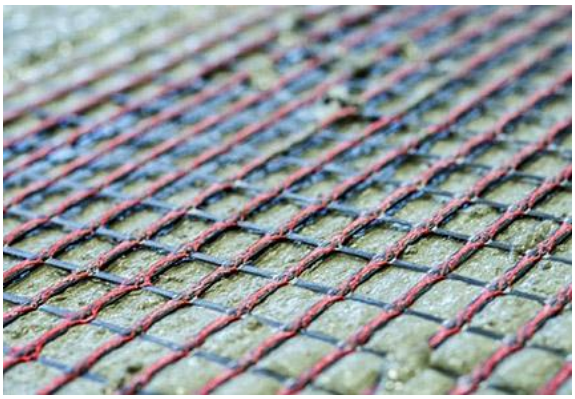


Fig.20-1: Bridge Wurschen, 2022: (left) Superstructure made exclusively of carbon concrete, shell construction. (right) Textile FRP mats in the super-structure) (Foto: Stefan Gröschel, IMB,TU Dresden)

Note: Full exploitation of the Carbon Fiber (CF) is only to achieve by pre-tensioning, which will advantageously compress the usual low tensile strength of the matrices concrete and plastic. Just pre-tensioning of plates is still series production.

Carbon Fiber Production

CF-properties strongly depend on the production process and above precursors which need different conditions but the essential processes are similar. A CF requires a heating and stretching treatment to get the high strength products. A thermoset treatment is first applied in the temperature range from 200 to 400 °C in air under stretching to get the stabilized fiber, followed by a carbonization process in the temperature range from 800 to 1500 °C in oxygen-free condition to remove impurities and to improve

the crystallinity of carbon. To further improve the performance of CFs, a graphitization process is required to graphitize carbonized fibers with temperature up to 3000 °C. During these processes, stretching is required to get preferred orientated carbon crystals, because the crystal alignment makes the fiber incredibly strong and stiff. The graphitization process leads to differences between PAN and Pitch and within the PAN-CFs. This will be later of interest.

The very expensive Pitch CF is mainly used in spacecraft and antennas. The market is dominated by the PAN-CF. With regard to possible toxic fragments, PAN-CF (Ø 7 µm, usually) is therefore of interest, especially the 'highly' graphitized UHM-PANCF such as Torayca's M60J, which comes next to the Pitch-CF considering the tensile modulus (stiffness). CF tensile modulus and fracture toughness naturally depend on the fabrication regarding precursor, on carbonization and graphitization. Furthermore, Pitch-CFs are more layer-like in their crystal structure in contrast to the more granular PAN-CF. This probably further explains the higher tensile modulus compared to the PAN-CF. Knowing the different crystal structure is therefore important for explaining the splintering process, originator of possible toxic fragments.

‘WHO-Fiber’ criticality

WHO criterion for respirable fibers: ‘WHO-Fiber‘ ≡ tiny fragment of a filament with a diameter Ø of less than 3 µm, a length L of greater than 5 µm and a length-to-diameter ratio of L/Ø > 3:1.

Naming Fiber: (1) Does not address a long CF, which of course never meets the WHO criterion. (2) Asbestos fiber, for example, is just a fiber-like looking particle, which may break into above tiny WHO-size fragments).

Too many dust-related particles, smaller than the WHO 'fiber' size, can also cause a hazard. A so-called Particulate Matter of the µm-size PM2.5 can penetrate into the alveoli and ultrafine particles with a diameter of less than 0.1 µm (*Corona virus size level*) can even penetrate into the lung tissue. Aerosol particles from the environment have diameters ranging from about 1 nanometer (nm) to several 100 micrometers (µm). Larger particles quickly sink to the ground, particles smaller than 10 µm can remain in the air for days.

The figure below summarizes the topics faced when considering the criticality.

The macrophage lifespan of a few weeks is one of the decisive factors for the success of disposal or 'cleaning'. ‘WHO-fiber’-pierced macrophages usually die.

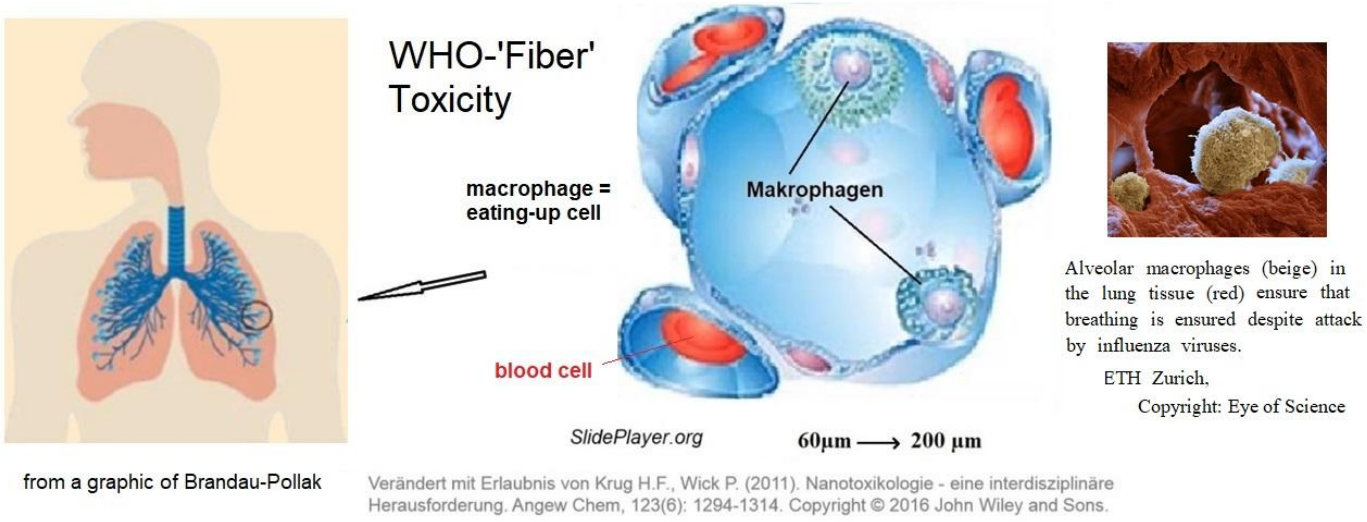


Fig.20-2: Effect of WHO-‘Fibers'

A distinction must be made between long fibers, micro-fragments of fibers such as the ‘WHO-fiber' size, as well as the micro-fragments of composite constituents, i.e. fiber-reinforced polymers FRP or fiber-reinforced concrete FRC. In addition to the fiber, the matrix with the interphase material in the fiber-matrix interface must be considered, too.

Criticality-relevant variables are geometry and bio-resistance:

Geometry: Critical are the already defined ‘WHO-'fiber', as well as dusts and fiber fragments with Ø < 3µm, which penetrate directly into the alveoli and the lung tissue. Since the ‘WHO-fiber’ size is smaller than the diameter of common CFs, the fiber fragment must experience a reduction of the diameter. This can happen by splintering or by burning. CF is not toxic per se!

Bio-persistance: High bio-persistance causes high toxicity, a low bio-solubility in living organisms already speaks as an indication of possible carcinogenicity. Fragments with short residence times that are quickly dissolved or removed are less risky.

Only if a sufficiently high amount of CF-‘WHO-'fibers' is produced and inhaled there is a potential for danger, whereby the following applies:

Risk = hazard potential (severity) • probability of occurrence.

Hazard potential = exposure to CF-WHO (size) particles combined with toxicity.

The duration of the exposure in terms of quantity and the possible frequency of occurrence of the event per unit of time are therefore decisive.

Generation and Counting of WHO ’fibers’

A quantity for the risk assessment delivers the counting of the fragments which are generated in machining processes. Question: *Which machining processes seems to be the worst for the generation of ‘WHO-fiber' shaped CF particles, faced in production and recycling*?

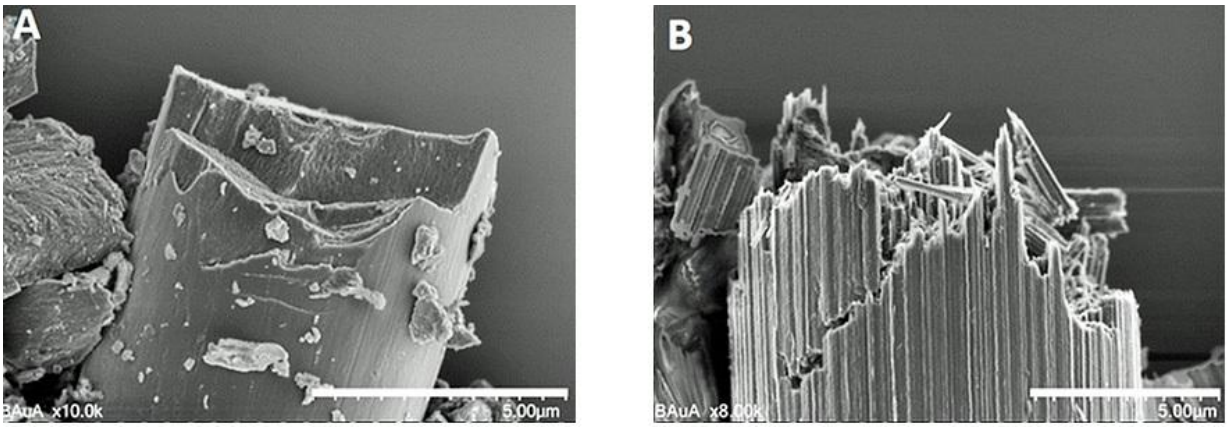


Fig. 20-3:(left) PAN-based, (right) Pitch-based. (Courtesy BAuA, Berlin)

Some answer is given in the BMBF research project *CarboBreak* (*headed by BAuA: the Federal Institute for Occupational Safety and Health conducts research for a safe, healthy and humane working environment*): Investigation of the release behaviour of respirable fragments made of pure fibres and fibre composites (*consisting of CF, sizing, matrix etc.*) under mechanical stress. Basically here, rovings were subjected to an extreme mechanical stress in a so-called ball vibrating mill (*an assumed 'worst case' machining process*), the resulting CF fragments were evaluated with regard to their morphology and then the WHO 'fibers' counted, namely the ‘WHO-Fiber’ quantity / unit volume. The CF portion is considered to be the critical part of the full composite. One significant finding was the different splintering process between PAN (left) and Pitch CF (right).

Fact & idea:

(1) Pitch fibers are obviously more dangerous because they do extremely splinter. Since the UHM-CF comes closest to the pitch fiber in terms of stiffness of all PAN-CFs, the PAN-UHM represents the more critical PAN CF in terms of risk of splintering.

(2) A CF-parameter is being sought that could be a parameter for explaining the fiber splintering hazard and finding a characteristic.

The sought-after, splinter hazard-descriptive parameter could be the fracture toughness. This property is likely to show some difference in relatively similarly stiff (Young's modulus) brittle materials. *The author lectured fracture mechanics, which he also had to apply at MAN*. His test proposal was a micro-fracture mechanics investigation of a laser-notched single fiber to determine the different brittleness based on the fracture toughness values of K_{Ic} to be measured. In fracture mechanics, fracture toughness describes the resistance of a material to unstable crack progression. An ultra-high graphitized UHM PAN CF such as Torayca's M60J is to be basically investigated, because it is to place narrowest to the behavior of the critical Pitch-Fiber.

Asssumption: *Different fracture toughness values indicate different risk of splintering*.

*The proposed test specimens, together with the difficult notching of a single CF by a laser beam, have already been realized in Kaiserslautern by the institutes IVW with PZKL!

*The search for a fracture mechanics model that allows us to estimate the fracture toughness of a CF is essential for the qualitative differentiation of the envisaged fibers. A formula will provide a not realistic ‘exact’, but a quantified relationship which is fully sufficient.

The searched characteristic for the tensioned notched test specimen is the so-called critical stress intensity factor (SIF) K_{Icr} (= fracture toughness), at which unstable crack progression begins. Its formula reads $K_{Icr} = \sigma_{fracture} \cdot \sqrt{\pi \cdot a_{cr}} \cdot Y$, with the so-called geometry factor Y taking the fact into account that the SIF value is theoretically independent of the dimensions of the test specimen only for infinitely large plates. Therefore, the corresponding function Y must be sought for the intended test specimen 'Notched Single Fiber'. This was made possible by the author-available Manual "*NASGRO Reference Manual Version 9.01 Final; December 2018. Fracture Mechanics and Fatigue Crack Growth Analysis Software*".

The application of the full model requires several assumptions:

- CF is a very brittle material
- The crack instability, expressed by the formula, can be applied at the µm-level (micromechanics) for these brittle materials!
- The cross-section, cut by the laser beam, is just a circle section but can be transferred to the elliptical shape of a typical crack
- The 'model for a full cylinder' given as SC07 in the NASGRO document is applicable. Experience has shown that the impact is small, the model can be used also in the µm range
- The crack depth a is given by the laser notch depth.
- Diameter D = Ø = 0.007 mm, UHM 60J.
- The applied stress $\sigma_{fracture}$ at the fiber ends = breaking tensile force F / area A
- The cross-section cut by the laser beam can be transferred to the elliptical shape of a typical SC07 crack. The difference in surface area is neglected because it is the same for all tested fibers. In the SC07 associated Table C15: For R/t = 0, i.e. a solid cylinder with R = 0 (*t = wall thickness = R),* approximately to be expected a/t = 0.3, gives c/t = 0.35 and thus Y = 1.6.

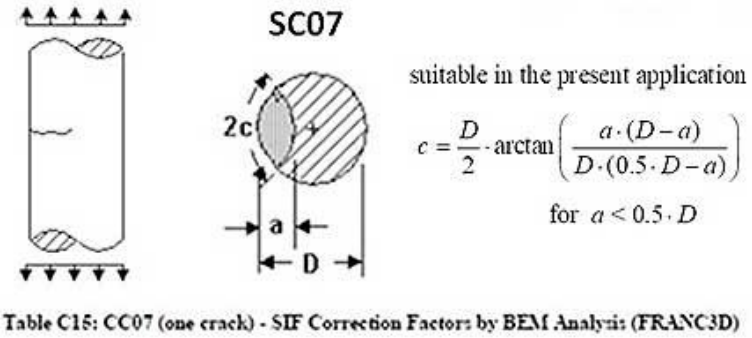


Fig. 20-4: Thumbnail crack in a solid cylinder. Surface crack case SC07
*Manual NASGRO Reference Manual Version 9.01 Final; December 2018***.**
Fracture Mechanics and Fatigue Crack Growth Analysis Software

The author's big **wish**, driven as a GROWIAN wind turbine co-responsible (*about 1980*), in view of future fear-spreading media about a wind turbine fractures with blades made of standard CFs, i.e. not UHM-CFs:

Submission of an 'official recommendation' by the BAuA, together with Composites United (CU), including adapted recycling safety requirements. on working with CFRP in general and specially on PAN-CF carbon reinforced concrete.

.

LL:

*** The test idea could be fully realized, which is a seldom experienced luck when testing.*
Unfortunately there is no deeper research ongoing, which would give the basis for the realization of the author's desire to open the CF-market in construction by providing an answer to the 'fears of contact', published in media, concerning new carbon fiber-reinforced products.



2011, read in Sikkim !!

2025: Rethink, Reduce, Repair, Reuse and Recycle: The new bachelor's program "Resource-Efficient Product Development / Circular Engineering" at Deggendorf University of Applied Sciences imparts cutting-edge engineering knowledge.

Personal Note on Oil consumption in CF-production

Fig.20-5 shall give a survey about the portions of the structural materials in the market, dated 2016. It shows how insignificant the carbon fiber content presently is in relation to its origin oil and to the material competitor steel. A yearly CF output of 50000 t equals 4 min steel production (2018). The yearly concrete production equals oil production. This is of basic interest and helpful for many discussions. CF is not yet a real market in construction, basically due to the present regulations of the authorities which does not permit a faster gain of knowledge which is always the result of widespread application, only.

Of course, if the concrete mass saving Carbon Concrete market will become significant (*presently about 100.000 t / year*), then the CF-production has to be multiplied.

In the context of this chapter's focus and considering recycling: (1) *Why is this marginal crude oil consumption very often considered to be very harmful to the environment. (2) Why must Carbon Concrete be recycled by separating the CF and thereby downgrading it to rCF! T*he author does not consider it reasonable for ecological and economic reasons to extract CF – as required by the current regulations – from shredded carbon concrete parts instead of bringing the recycled CF material parts together with the multifold concrete content into the superstructure of a bridge or street. For safety reasons one can provide measurements of the traffic-generated abraded dust if no further cover is foreseen and the official recommendation above is not yet available.
If basalt fibers BsF will reach a general approval from sustainability reasons they would be much better ecologically and economically due to the fact that enough base material is available. Added ZrO_2 is foreseen to provide alkali resistance. Unfortunately, the available reliable property knowledge is not made public. Of course, the production of carbon fibers still requires energy. However, this will also be the case if carbon fibers are produced from natural fibers in the future.

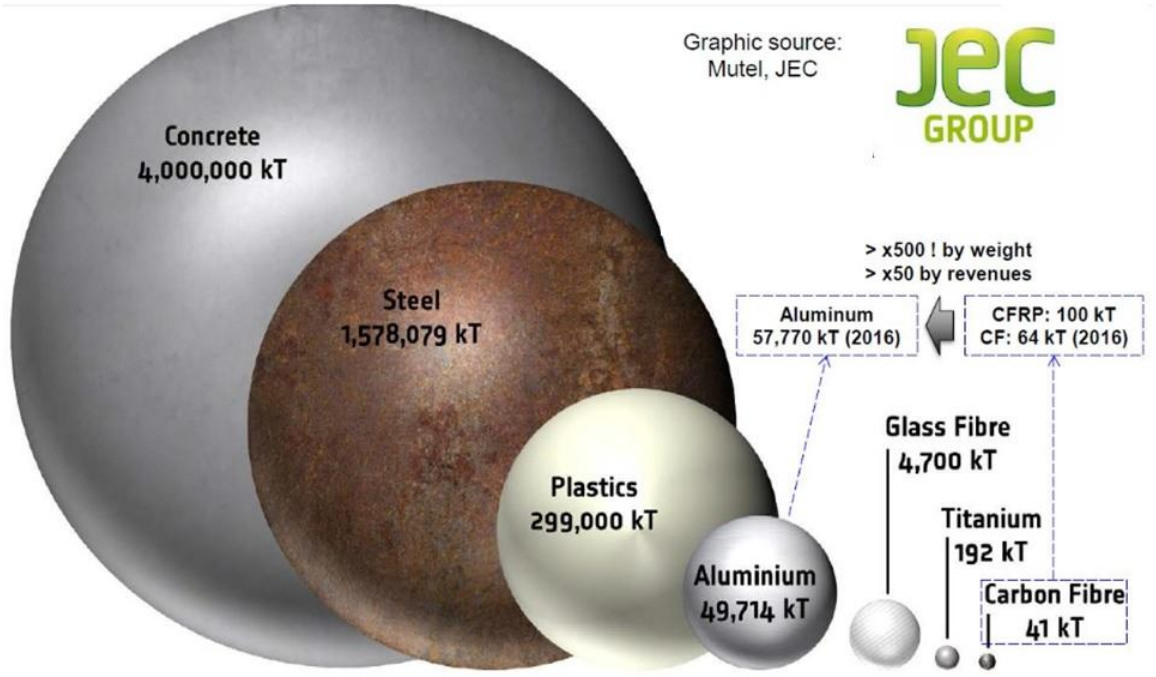


*Fig.20-5: Weight ratios of structural materials, year **2016***

Please keep in mind:
40000 tons carbon fibers would require just about 40 /4,000,000 = 0.001 % crude oil.

CF total / Steel = 1/10000.
In Germany it is CF total / concrete reinforcing steel ≈ 0.1%.
Concrete / crude oil = 1 , GF / CF = 100.
Single car consumes about *1 t oil / year,*
usual.house heating 2 t oil / year.

CF :=continuous endless fiber.

rCF := maintaining a fiber length distribution such that a loss of strength compared to long fibers results, i.e., degradation has occurred. Furthermore, fatigue and creep strength losses due to the necessary matrix transfer -as a result of short rCF - must not be overlooked in the design. rCF extraction costs are high due to high energy consumption and sorting, and are relatively comparable in price to virgin CF.

What's very important to me is a

Future circular and resource-based economy for fiber composites.

The new research project WIReFa of C³ in Dresden is working in this direction. It recycles CF of CarbonConcrete products, collects and sorts fiber-containing 'waste' with the goal of achieving ecological and economic sustainability for future circular value creation and, ultimately, attracting customers for the residual materials by creating a real market for rCF-products etc.

However, mind:

The static and cyclic loading level of original, continuous fibers cannot be reached.

21 A novel Determination of the Residual Strength *R*res, non-cracked (fatigue Phase 2)

Aim: *Derivation of a procedure to determine and rendering the design-significant residual strength value R*res

21.1 General for a Proof of Structural Integrity in Projects

Residual strength *Rres* is the fracture stress after pre-damage and re-loading. Not only in mechanical engineering design but also in civil engineering residual strength values are required such as in soil mechanics or for UD-hangers of a railway bridge at Stuttgart, below a hanger or for tension rods of cranes.



Fig.21-2 Stuttgart Stadtbahn bridge. World's first network arch railway bridge (127 m) that hangs entirely on tension elements made of carbon fiber-reinforced plastic (CFRP). The 72 hangers are produced by Carbo-Link AG

The value is of basic interest, because – due to authority demands - Design Ultimate Load is to sustain even after a distinct fatigue life. The residual strength task is one task to demonstrate structural integrity. This subject is linked to cyclically micro-damaged structural components (*Phase 2 of fatigue life, strength tools applied*) and macro-damaged ones (*Phase 3 of fatigue life, fracture mechanics problem, damage tolerance mechanics tools applied*), as displayed in *Fig.21-2*. The cyclic loading may range from constant amplitude-loading up to spectrum-loading and has to capture proportional and non-proportional loading scenarios.

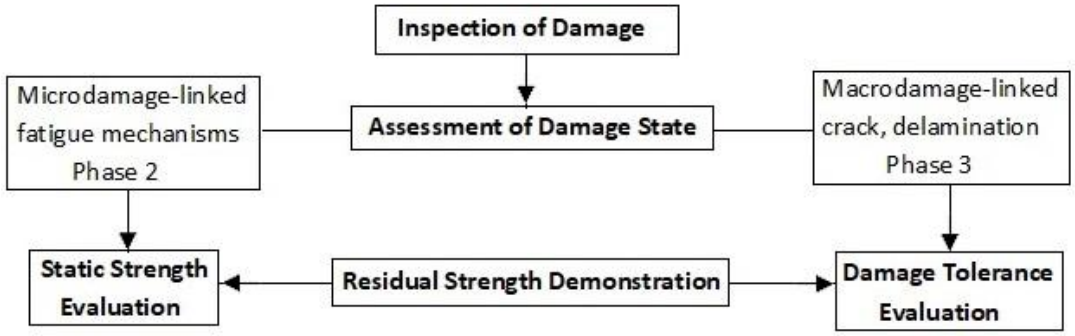


Fig.21-2: Ways of residual strength determination

This task especially comes up in cases such as: A multiple site damage phenomenon is faced with aerospace components such as fabrication-induced flaw clouds (fatigue strength problem, Ariane 5 Booster wall) or real short-crack 'clouds' from e.g. multiple rivet holes in stringer-stiffened panels of aging aircraft components (fracture mechanics problem). Here, the focus is on the Phase 2 residual strength *Rres*. Mind: R_{res} should not be confused with *residual stress* σ_{res}).

In some projects a number for the residual strength at a certain operation cycle value is required. This is well known from impact cases of laminated panels. There, a Compression-After-Impact (CAI) test is to execute after the impact event because the impact may result in a barely visible external damage and

it may generate a dramatic reduction of compressive strength due to separation of layers resulting in a large bending stiffness loss. Regarding crack-linked fatigue life Phase 3 residual strength problems the reader is referred to fracture mechanics.
Residual strength tests are long-lasting and expensive. Therefore, procedures are searched that help to reduce the test effort if enough physical knowledge is available.

First step is to map the relevant SN-curve (Wöhlerkurve) by taking the widely used 4-parameter Weibull function

$$\text{stress ratio } R = \sigma_{min} / \sigma_{max} = \text{constant}: \quad \sigma_{max}(R,N) = c1 + (c2 - c1) / \exp(\log N / c3)^{c4}.$$

(stress ratio → straight letter R, strength→ bias letter *R*).

A SN-curve describes the relation between the cyclic loading and the number of cycles to failure *N*. On the horizontal axis in <u>*Fig.21-3*</u> the number of cycles to failure is given on logarithmic scale. On the vertical axis (*either linear or logarithmic*) the stress amplitude $\sigma_{amplitude}$ of the cycle is often given. In the case of brittle materials *sometimes the maximum stress* σ_{max}.. The provided mean SN-curves 'R = constant' base on the fatigue test measurement types 'pearl-chain testing' or 'horizontal load level testing'. Fatigue curves are given for un-notched test specimens (K_t = 1) and for notched ones, the loading can be uniaxial or multi-axial. Considering residual strengths, measurements on the vertical axis at *n* = constant are required.

In design verification very often as fractile (quantile) numbers, representing the failure probability p_f, 5% or 10% are taken in order to capture some uncertainty compared to the average of 50%. For the loading side the design FoS *j*, in construction *γ*, capture the uncertainty of the loading. The residual strength design verification has to meet Design Ultimate Load. Following HSB 62200-01 the determination of the static residual strength for single load paths must be made with statistically significant A-values; for possible multiple load path structural parts B-values may be used.

Moving to the required statistical properties some notions are to depict. Capturing the uncertainty of the resistance quantities, the following is performed: Denoting P the survival probability and C the confidence level applied, when estimating a basic population value from test samples, partly enriched by some knowledge of the basic population. Regarding C a one-sided tolerance level it reads:

Static → Statistical reduction of average strength from (P= 50%, C= 50%) to e.g. (B-value: P = 90%, C = **95**%).

Cyclic→ Statistical reduction of average SN curve from (P=50%, C= 50%) to e.g. (P= 90%, C= **50**%).

All this is executed to keep a generally accepted survival reliability of about $\Re = 1 - p_f > 1 - 10^{-7}$.

21.2 Classical way to determine Rres

Determination via the interpretation "*The course of the residual strength is the difference of the static strength* and *the maximum strength* $\sigma_{max}(N)$ *of an SN curve* R", see <u>*Fig.21-3*</u>. This leads to the formulation $R_{res} = \sigma_{max}(N) + [R^t - \sigma_{max}(N)] \cdot \rho(n)$ with $\rho(n) = 1 - (n/N)^p \equiv 1 - D^p$,

where the exponent *p* describes the decay of the residual strength capacity and *D* the micro-damage quantity, (see Hahne C: *Zur Festigkeitsbewertung von Strukturbauteilen aus Kohlenstofffaser-Kunststoff-Verbunden unter PKW-Betriebslasten*. Shaker Verlag, Dissertation 2015, TU-Darmstadt).

<u>*Fig.21-3*</u> depicts for R = 0.1 the mean (average) 50% SN-curve and the 90% SN-curve. The residual strength curve *Rres* is given for the point (10^5 cycles, σ = 34 MPa). The stress σ belongs to a so-called

'one stage test' or constant amplitude test. Regarding the residual strength value at the 90% SN-curve the question arises: "*Where does the necessary statistical basis for a reduced SN-curve come from, if not sufficient test series on vertical and horizontal levels were run*"?
Due to missing test data a test data-based work case cannot be presented. Therefore, the author tried to figure out a procedure which gives an understanding of the subject.

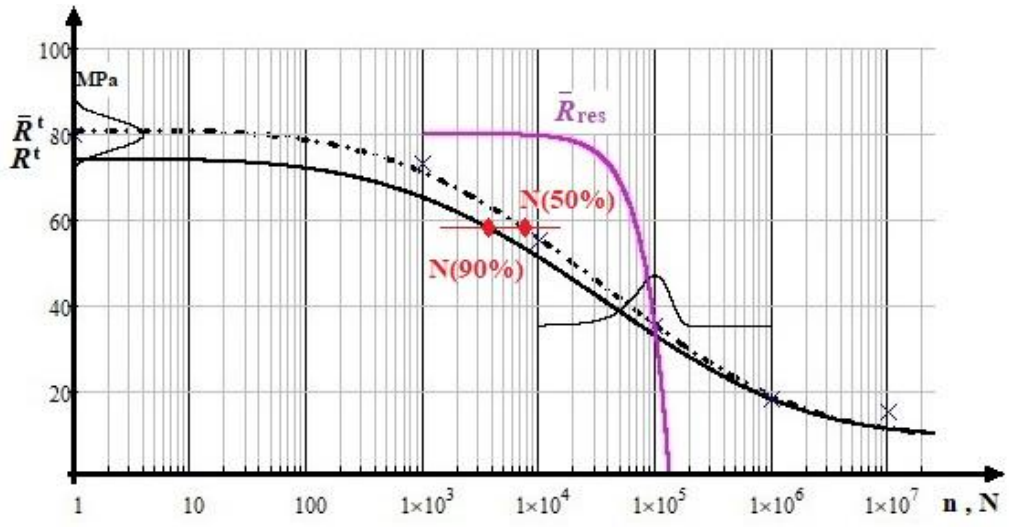


Fig.21-3, Schematic example, uniaxial loading: R= 0.1. $\bar{R}_{res}$ *is mean tensile residual strength*

21.3 Probabilistic way of Cuntze to determine a 90% value by using the convolution integral

A possibility to determine a 90%-value is given by the application of the so-called convolution integral, using density distributions of R_{res} and of N with just a little hope to find the distribution measured, Fig.21-3. The output of the mathematical expression convolution integral represents the probability of failure $p_{f.}$ The numerical analysis is based here on the assumption: 'The density distributions on x- (f_N) and y-axis (f_{Res}) are approximately basic populations and of Normal Distribution-type' f_{ND} (for the density distributions also a logarithmic, a Weibull density function or a truncated function could be employed). The convolution integral, solved by Mathcad 15, reads

$$(1-p_f) = \Re = p_{ü} = \int_{-\infty}^{\infty} \left(\int_{Rres}^{\infty} f_{Res}(R)\cdot dR \cdot f_N(N)\, dN \right) = 90\% \text{ fractile} \quad \text{for ND density distributions}$$

$$\text{with} \quad f_{ND}(x) = \frac{1}{\sigma \cdot \sqrt{2\cdot\pi}} \cdot exp\ \left[-\frac{1}{2} \left(\frac{x-\mu}{\sigma} \right)^2 \right] \quad \text{for abscissa } N \text{ and ordinate } R^t \ .$$

Data base of the numerical probabilistic example (statistical: μ = mean, σ = standard deviation) is:

* Static strength distribution μ = 80 MPa, σ = 3.2 MPa
* R_{res} distribution in computation point, y-axis, μ = 43.5 MPa, σ = 2.9 MPa
* Cycle distribution in computation point, x-axis, μ = 3431 cycles, σ = 446 cycles and the Coordinates of the chosen computation point * (38 MPa, n = 2000 cycles in Fig.21-4).

(Note, please: The presented application outlines a limit of the Mathcad 15 code application. Mathcad has

(Note, please: The presented application outlines a limit of the Mathcad 15 code application. Mathcad has no computation problem with the computation of the required so-called convolution integral. However, when visualizing the probability hill in Fig.21-5, it was only partly able to manage the 'big data' problem and runs into

endless loops. Therefore the author had to sort out a work case with reduced stress and cycle regimes. The original SN data set was for fiber fracture (FF) of CFRP considering the hanger. This reduction to a relatively simple numerical example does not matter because the procedure is of interest and will explain the posed task.)

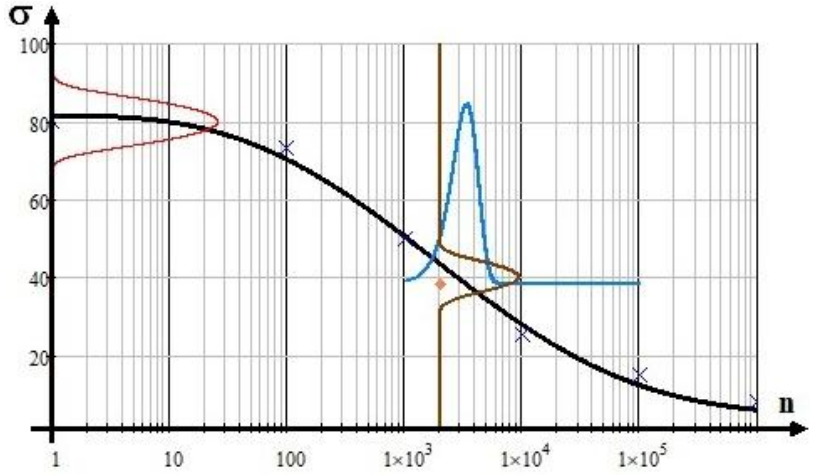


Fig.21-4, Simplified Mathcad calculable example: Assumed distributions of residual strength and cycles linked to R_{res} (38 MPa, 2000 cycles). SN-curve, R = 0.1: *c1= 20 MPa, c2= 80 MPa , c3= 3.77, c4= 2.92*

Fig.21-4 depicts the SN-curve, the chosen computation point, static strength distribution with an assumed residual strength distribution and cycle distribution, all through the computation point *. It is a semi-logarithmic graph. As it is a brittle example material, the use of σ_{max} (*involves R^t as origin*!) as ordinate is of advantage for the 'strength-oriented' design engineer compared to using a stress amplitude σ_a .

The probabilistic treatment delivers the 'joint' probability hill of both the distribution functions in *Fig.21-5*, (right). The hill's average center coordinates are 43.5 MPa, 3430 cycles. The figure further depicts the density distributions of the residual strength $R_{res}(\sigma)$ and of the fracture cycle N .

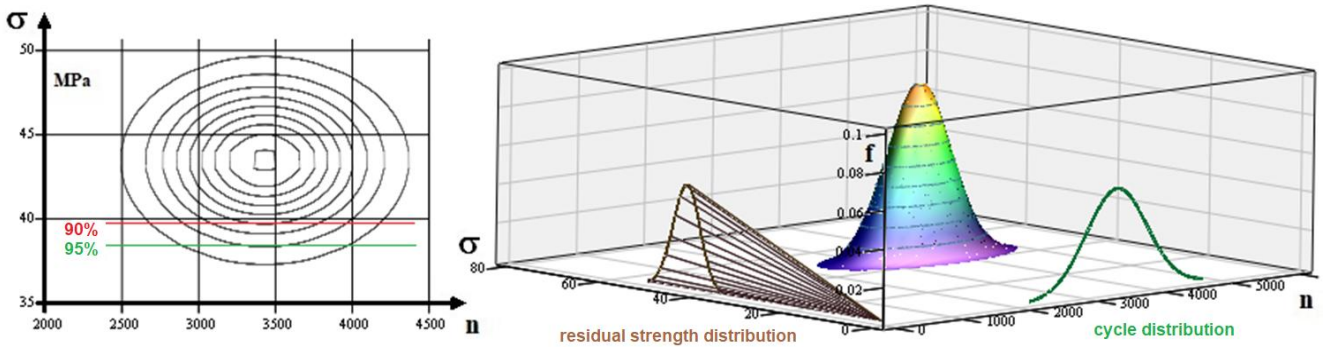


Fig.21-5: (right) Cyclic distributions and assumed residual strength distribution with survival probability hill applying the convolution integral. (left) Projection of lines of equal probability with two chosen residual strength cut-offs , M is the hill designation

In the right part figure, the residual strength distribution is not clearly visible due to additional Mathcad-drawn beams running out from the origin, which are to neglect. The task seems to be an overloading of the Mathcad code which could not anymore handle the numerically effortful task for too large cycle numbers. The left figure shows the projection of the probability hill with lines of equal probability belonging to the chosen computation point *. Below, the computation parameter input set is depicted.

Design Safety considering the scatter of the design parameters is tackled as follows:

The scatter of loading is considered in the residual strength design verification because DUL with its design safety factor j_{ult} has to be verified. The scatter of the residual strength R_{res} and of the fracture cycle N is captured by a joint probability calculation indicated below. This procedure is effortful, however of high fidelity if test data is available.

Under above assumptions an estimation of a required 90%-linked residual (tensile) strength value can be determined according to the formula below representing the probability hill volume truncated by R_{res}

$$\mu NR = 3431 \quad \sigma NR = 446 \quad \mu\sigma R = 43.5 \quad \sigma\sigma R = 2.9 \qquad n := 2000..6000 \quad \sigma := 0..80$$

$$x_n := dnorm(n, \mu NR, \sigma NR) \qquad y_\sigma := dnorm(\sigma, \mu\sigma R, \sigma\sigma R) \qquad F(x,y) := x \cdot y \qquad M_{n,\sigma} := F\left(x_n, y_\sigma\right) \cdot 750$$

$$p\ddot{u} := \int_{\sigma res}^{Rt+\sigma Rt} \int_{2500}^{5500} \frac{1}{\sigma\sigma R \cdot \sqrt{2\pi}} \cdot e^{\left[\frac{-1}{2} \cdot \left(\frac{y-\mu\sigma R}{\sigma\sigma R}\right)^2\right]} \cdot \left[\frac{1}{\sigma NR \cdot \sqrt{2\pi}} \cdot e^{\left[\frac{-1}{2} \cdot \left(\frac{x-\mu NR}{\sigma NR}\right)^2\right]}\right] dx\, dy$$

The computation delivers for the point ($\sigma_{res} \equiv R_{res}$ = 38.0 MPa, 2000 cycles) the value pü = P = 95% = ℜ.

Setting the value 39.5 MPa, the demanded survival probability pü = 90% = (1- p_f) is obtained for R_{res} .

LL:

- *The proposed procedure clearly shows how to statistically understand a residual strength value*
- *It could be proven that the proposed model leads to an acceptable value for the residual strength of fatigued, non-cracked structural parts.*

21.4 Residual Strength R_{res}, pre-cracked, Fatigue phase 3, Fracture Mechanics (for completion)

To estimate the residual strength of a pre-cracked structural part or the critical length of an initial macro-crack is essential regarding the questions:

(1) Is the crack-length at the end of static loading critical?

(2) Is the crack-length at the end of cyclic loading critical for further static loading, considering a SN-curve? Here, the certification of cracked components in aircraft structures requires a damage tolerance assessment.

22 Full UD-Mohr Envelope $\tau_{nt}(\sigma_n)$, Derivation of $\Theta_{fp}(\sigma_n)$ and of Cohesive shear Strength

Aim: *Unlocking the 'mystery' behind the shear quantities* R_{23}, R_{23}^{τ} and R_{23}^{A} *faced in UD analyses.*

22.1 Shear Strength Quantities in Analysis, Survey

Fig.22-1 collects all figures which are necessary to understand the difference of applied shear quantities (*upper part figure*): Shear fracture stress (Tsai-Wu, Hashin) and so-called cohesive strength R_{23}^{τ}(construction, rock mechanics) and the Action plane shear strength R_{23}^{A} (Puck).

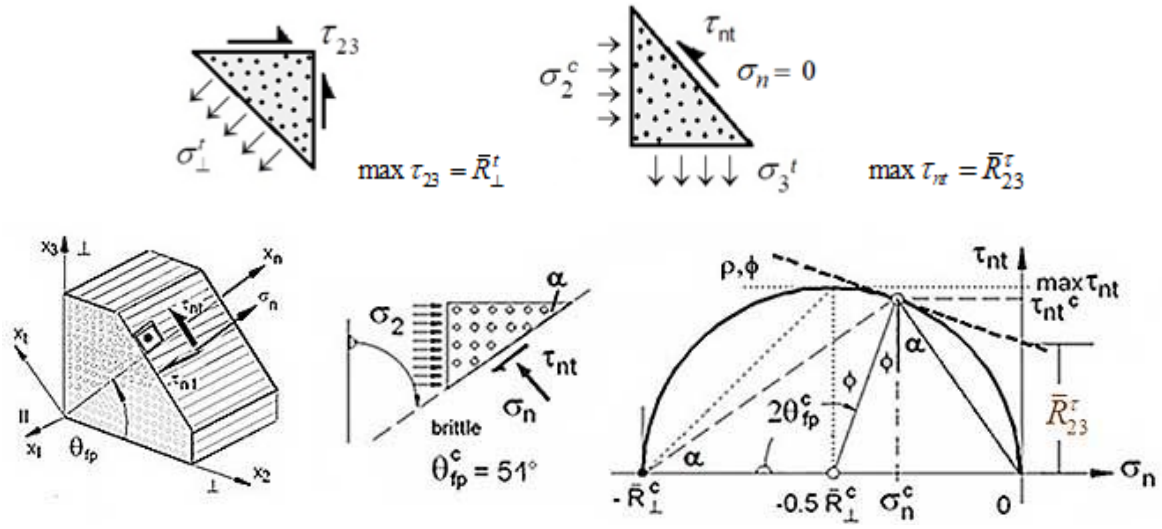


Fig. 22-1: Difference of transversal shear fracture stress and cohesive strength.

The brown curve in *Fig.22-1* is the Linear Mohr-Coulomb (M-C) curve. This approach is a simple IFF2-extrapolation from the compressive strength point, keeping the fracture angle measure $C = C_{fp}^{c}$ constant, when estimating the so-called cohesive strength by $R_{23}^{\tau} = \tau_{nt}{}^{c} + \mu \cdot \sigma_n{}^{c}$ at $\sigma_n = 0$. The letters $\rho = \phi$ address the so-called friction angle. The 3 sketches above the bottom figure demonstrate that the cohesive strength point $\bar{R}_{23}^{\tau}$ is located in the mode's transition zone and cannot be reliably estimated just by an IFF2-Extrapolation, employing just SF! The parallel acting normal fracture part NF, namely IFF1, was neglected. But IFF1 usually causes much more failure danger than the compression-linked shear mode IFF2 from the transition zone beginning on.

The analytical determination of the M-C failure curve and of a value for the cohesive strength depends on the quality of the used IFF2-model and the interaction of both in the transition zone.
Therefore, in order to accurately determine $\tau_{nt}(\sigma_n)$ both the modes are to include in the derivation process of a realistic M-C curve, the determination of the fracture angle $\Theta_{fp}°$ and of the cohesive strength $\bar{R}_{23}^{\tau}$ at $(\tau_{nt}^{\text{fracture}}, \sigma_n = 0)$. An improved treatment by a correction f_{corr} of the M-C curve has been effortful executed by the author in [*Cun23b*]. This became necessary because any SFC has to be as simple as possible. Of course, this means that all presently applied SFCs have a deficiency in the mode transition zones. The author has compensated for this with a correction. The bottom figure in *Fig.22-1* displays, how the fracture angle increases, when approaching $\bar{R}_{\perp}^{t}$. Thereby the **bold** curve represents the optimum corrected mapping of the M-C curve in the transition zone around $\sigma_n = 0$.
Now the steps of the tedious way to obtain *Fig.22-1* shall be presented.

22.2 Relations for a Transformation from a Test Fracture Curve $\sigma_3(\sigma_2)$ to Mohr's $\tau_{nt}(\sigma_n)$

The general stress state $\{\sigma\}$ in the material point of the lamina has to be transformed around the 1-axis to the arbitrary Mohr stress state $\{\sigma^\theta\} = [T_\sigma(\theta)]\cdot\{\sigma\}$, a fiber-parallel plane, by applying <u>*Fig.22-1*</u>, wherein *c*: = cos θ, *s* = sin θ and *n* is normal to the 'action plane' [*Cun22*]. Values of the parameters depend on the approach, whether it is a linear or a parabolic one.

$$\begin{matrix}\\ \rightarrow\\ \rightarrow\\ \\ \rightarrow\end{matrix}\begin{bmatrix}\sigma_1\\ \sigma_n\\ \sigma_t\\ \tau_{nt}\\ \tau_{t1}\\ \tau_{n1}\end{bmatrix} = \left\{\sigma^\theta\right\} = \left[T_\sigma(\theta)\right]\{\sigma\} = \begin{bmatrix}1 & 0 & 0 & 0 & 0 & 0\\ 0 & c^2 & s^2 & 2sc & 0 & 0\\ 0 & s^2 & c^2 & -2sc & 0 & 0\\ 0 & -sc & +sc & c^2-s^2 & 0 & 0\\ 0 & 0 & 0 & 0 & c & -s\\ 0 & 0 & 0 & 0 & +s & c\end{bmatrix}\begin{bmatrix}\sigma_1\\ \sigma_2\\ \sigma_3\\ \tau_{23}\\ \tau_{31}\\ \tau_{21}\end{bmatrix}$$

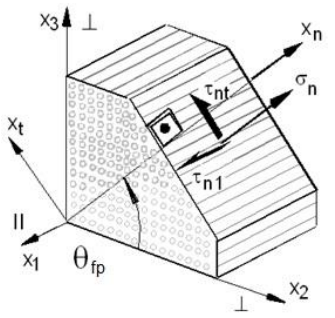


Fig. 22-2: Visualization of the transformation of lamina stresses into associated Mohr stresses. $\theta = \Theta_{fp}$ denotes the angle of the anti-clockwise transformation from the (1, 2, 3)-CoS to the (1, n, t)-CoS

According to

$\sigma_n^A(\theta) = c^2\cdot\sigma_2 + s^2\cdot\sigma_3 + 2\cdot s\cdot c\cdot\tau_{23}$, $\tau_{n1}^A(\theta) = c\cdot\tau_{21} + s\cdot\tau_{31}$, $\tau_{nt}^A(\theta) = -s\cdot c\cdot(\sigma_2-\sigma_3) + (c^2-s^2)\cdot\tau_{23}$ the transformed stresses $\sigma_n(\theta)$, $\sigma_t(\theta)$, $\tau_{nt}(\theta)$, which Puck termed 'Action Plane' Stresses, *Fig.22-1, <u>right</u>,* in the turned CoS depend on (σ_2, σ_3, τ_{23}) only, whereas τ_{t1}, τ_{n1} is linked to (τ_{31}, τ_{21}). They are acting in the potentially physical (fracture) failure 'plane' and are decisive for fracture. In case of normal stress-induced fracture (NF) σ_n will be responsible for fracture and in case of shear stress-induced fracture τ_{nt} will be the fracture dominating Mohr stress. The Mohr stress τ_{t1} has no impact but has to be considered in the derivations of the *Eff*-functions until it vanishes during the later transformation process.
Fracture plane will become that 'action plane' where the material stressing effort *Eff*($\sigma(\theta)$) will reach the value 1 = 100% at (maximum) failure loading and by that, where the theoretical material reserve factor f_{RF} will become a minimum.

*22.2 Accuracy Problem of the IFF2-model in the transition zone IFF2 (*SF*) - IFF1 (*NF*)*

In this subchapter the cohesion strength R_{23}^{τ}, activated by τ_{nt} in the quasi-isotropic plane of the UD material is envisaged. This quantity is located in the transition zone of the two modes IFF1 and IFF2. With isotropic materials the author learned that a transformation from UD lamina stresses into the desired Mohr stresses τ_{nt}, σ_n must be also possible. Thereby a closer look at R_{23}^{τ} and at the Mohr envelope $\tau_{nt}(\sigma_n)$ or M-C curve will be possible.

Here addressed is the <u>quasi-isotropic</u> UD plane (*works <u>similar</u> to isotropic concrete materials, using **available** multi-axially compression test-based data [Cun22]*). The compromise is on the 'safe Reserve Factor side'. This means: The engineering approach of above $Eff^{\perp\tau}$ (SF) is not problematic for Design Verification, because *Eff* = 1 delivers conservative *RF*-values in the transition zone, since the curve runs more internally due to the generally *minimum value choice* of the interaction exponent *m*.

Focus here is the derivation of $\tau_{nt}(\sigma_n)$, $\theta_{fp}(\sigma_n)$ and R_{23}^{τ} from a measured fracture curve $\sigma_3(\sigma_2)$ and its course in the 2nd quadrant of $\sigma_3(\sigma_2)$. In <u>*Table 22-1*</u> all relations necessary for the transformation are compiled and formulas for the searched entities τ_{nt}, σ_n, $\theta_{fp}°$ are presented. After transformation of the

UD lamina (layer) stresses σ_2, σ_3, τ_{23} in the quasi-isotropic plane into the principal stresses σ^{pr} (*index pr means principal*), the shear stress τ_{23} vanishes. Therefore, with no loss of generality σ^{pr} can be simpler written in the further text, back again as plain letter σ, but thinking they might be principal stresses acting in the quasi-isotropic plane. In the addressed quasi-isotropic plane this transformation of the lamina stresses into Mohr stresses practically works via addition theorems and using $C(\Theta_{fp}°) = cos\Theta^2 - sin\Theta^2$, which is termed here 'fracture angle measure'.

As the author still found with isotropic materials, the interaction considering magenta curve (thinly-marked) in *Fig.22-3* cannot accurately map the course of test data. The improved **bold-**marked curve is physically more accurate and this local mapping shortcoming is to model more detailed as follows. *Fig 22-1* shows that with the IFF2-function the shear effort $Eff^{\perp\tau}$ cannot become zero in the M-C domain at $\sigma_2 = 0$. This numerical behavior is a shortcoming in the transition zone of the 'simple' engineering FMC-based IFF2 approach. An accurate alteration of the fracture angle $\Theta_{fp}°$ and of the associated Mohr stresses τ_{nt}, σ_n is not to achieve with the mathematical course of the given 'engineering' IFF2 function. The mapping quality of the given IFF2 is not fully sufficient if the alteration of the fracture angle Θ_{fp} in the transition zone is to determine. This bi-axially stressed transition zone between the normal fracture mode domain NF and the shear fracture mode domain SF is ruled by interaction and therefore requires both the Eff-modes to be inserted into the interaction equation $Eff = 1$. Specific points of the investigated M-C domain are: $(\sigma_2 = -\bar{R}_\perp{}^c, 0) \rightarrow (\sigma_2, \sigma_3 = -\sigma_2) \rightarrow (0, \sigma_3 = \bar{R}_\perp{}^t)$. In order to sort out a better mapping description it is essential to know how the pure mode efforts of the activated modes IFF1 and IFF2 change its influence along the σ_2-axis, which is depicted in *Fig.22-2*. $Eff^{\perp\tau}$ firstly becomes zero at the equi-biaxial tensile 'strength' point $(\bar{R}_\perp{}^{tt}, \bar{R}_\perp{}^{tt}) < \bar{R}_\perp{}^t$. This zero point lies physically 'too late' for a more accurate revised local mode description. An improvement is to achieve.

22.3 Improvement of the IFF2 Criterion in the Transition Zone

The required entities $\tau_{nt}, \sigma_n, \Theta_{fp}°$ and $\bar{R}_{23}^{\tau}$ only become accurate if a physically necessary correction of $Eff^{\perp\tau}$ is considered by using a correctively acting decay function f_{corr}. In order to implement f_{corr} one just has to replace $a_{\perp\perp}$ by $f_{corr} \cdot a_{\perp\perp}$ and $b_{\perp\perp}$ by $f_{corr} \cdot b_{\perp\perp}$. For a realistic transformation of the test curve, formulated in lamina stresses into a Mohr stress formulation, it is considered that $Eff^{\perp\tau}$ (SF) physically must become zero when reaching the pure NF domain at the point ($\sigma_3 = \bar{R}_\perp^t, \sigma_3 = 0$), see the course in *Fig.22-3*):

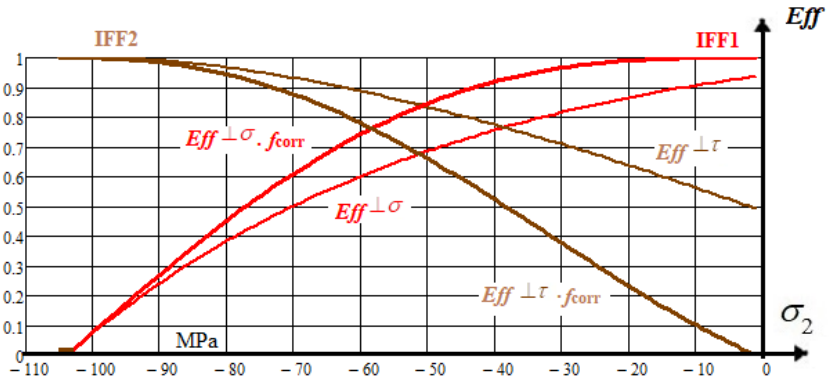


Fig.22.3: Course of the two efforts $Eff^{\perp\sigma}$, $Eff^{\perp\tau}$ composing the fracture stress curve Eff =1= 100%.

Table 22-1: IFF2-IFF1-interacted Derivation of $\tau_{nt}(\sigma_n), R_{23}^{\tau}, \theta_{fp}$ from a measured curve $\sigma_3^{fr}(\sigma_2)$

$SF: Eff^{\perp\tau} = [a_{\perp\perp}\cdot(I_2) + b_{\perp\perp}\cdot\sqrt{I_4}] / \bar{R}_{\perp}^{c} = 1$

$= [a_{\perp\perp}\cdot(\sigma_2^{pr}+\sigma_3^{pr}) + b_{\perp\perp}\cdot\sqrt{(\sigma_2^{pr}-\sigma_3^{pr})^2+0^2}] / \bar{R}_{\perp}^{c} = 1$ (lamina stresses)

$\equiv [a_{\perp\perp}\cdot(\sigma_n+\sigma_t) + b_{\perp\perp}\cdot\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}^2}] / \bar{R}_{\perp}^{c} = 1$ (in Mohr stresses)

$NF: Eff^{\perp\sigma} = (\sigma_2^{pr}+\sigma_3^{pr}) + \sqrt{(\sigma_2^{pr}-\sigma_3^{pr})^2+0^2}] / 2\cdot\bar{R}_{\perp}^{t} = 1$

$\equiv [(\sigma_n+\sigma_t) + \sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}^2}] / 2\cdot\bar{R}_{\perp}^{t} = 1.$

Known: σ_2^{pr}, σ_3^{pr}. Searched is: σ_n, τ_{nt}, Θ_{fp} with $C = \cos(2\cdot\Theta_{fp}\,^{\circ}\cdot\pi/180°)$.

Use of addition theorems, $\sigma_{\lambda} = 0$. For lamina stresses ^{pr} now dropped for simplification

$\sigma_n - \sigma_t = c^2\cdot(\sigma_2-\sigma_3) - s^2\cdot(\sigma_2-\sigma_3) = C\cdot(\sigma_2-\sigma_3)$, $S = \sqrt{1-C^2}$

$\sigma_t = \sigma_n - C\cdot(\sigma_2-\sigma_3)$, $C = c^2 - s^2 = 2c^2 - 1 = 1 - 2s^2$, $\sigma_n + \sigma_t = \sigma_2 + \sigma_3$,

$\tau_{nt} = -0.5\cdot S\cdot(\sigma_2-\sigma_3) = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma_2-\sigma_3)$, $\sigma_n = (C+1)\cdot 0.5\cdot\sigma_2 + (1-C)\cdot 0.5\cdot\sigma_3$.

Differentiation of structural stresses-linked Mohr stresses delivers (minus due to implicit derivation)

$\frac{d\tau_{nt}}{d\sigma_n} = \frac{(s^2-c^2)\cdot(\sigma_2-\sigma_3)}{-2\cdot s\cdot c\cdot(\sigma_2-\sigma_3)} = \frac{C}{S}$, valid *uni* - and *bi* - *axia*l (like isotropic!).

Fracture (interaction) equation ≡ mathematical equation of the fracture body

$Eff = [(Eff^{NF})^m + (Eff^{SF})^m]^{m^{-1}}$ *or* computationally simpler

$(Eff^{NF})^m + (Eff^{SF})^m = 1 = 100\%$ total effort fracture curve

From differentiation of the interaction equation (σ_t goes away)

$\{[(\sigma_n+\sigma_n - C\cdot(\sigma_2-\sigma_3)) + \sqrt{(\sigma_n-\sigma_n-C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / 2\cdot\bar{R}_{\perp}^{t}\}^m +$

$+\{[a_{\perp\perp}\cdot(\sigma_n+\sigma_n-C\cdot(\sigma_2-\sigma_3)) +$

$+ b_{\perp\perp}\cdot\sqrt{(\sigma_n-\sigma_n-C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / \bar{R}_{\perp}^{c}\}^m = 1.$

are obtained the two equations

$d[(Eff^{NF})^m + (Eff^{SF})^m] / d\sigma_n =$

$m\cdot\{2\sigma_n - C\cdot(\sigma_2-\sigma_3) + \sqrt{(C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / 2\bar{R}_{\perp}^{t}\}^{m-1} / \bar{R}_{\perp}^{t} +$

$+2a_{\perp\perp}\cdot m\cdot\{a_{\perp\perp}(2\sigma_n - C\cdot(\sigma_2-\sigma_3)) + b_{\perp\perp}\sqrt{(C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / \bar{R}_{\perp}^{c}\}^{m-1} / \bar{R}_{\perp}^{c}$,

$d[(Eff^{NF})^m + (Eff^{SF})^m] / d\tau_{nt} =$

$\frac{2m\cdot\tau_{nt}\cdot\{2\sigma_n - C\cdot(\sigma_2-\sigma_3) + \sqrt{(C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / 2\bar{R}_{\perp}^{t}\}^{m-1}}{\bar{R}_{\perp}^{t}\cdot\sqrt{(C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}} +$

$+4b_{\perp\perp}\cdot m\cdot\{a_{\perp\perp}(2\sigma_n - C\cdot(\sigma_2-\sigma_3)) + b_{\perp\perp}\sqrt{(C\cdot(\sigma_2-\sigma_3))^2+4\tau_{nt}^2}] / \bar{R}_{\perp}^{c}\}^{m-1} / \bar{R}_{\perp}^{c}$.

Equating above two equations and replacing Mohr stresses by ply stresses

via $\sigma_n = (C+1)\cdot 0.5\cdot\sigma_2 + (1-C)\cdot 0.5\cdot\sigma_3$, $\tau_{nt} = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma_2-\sigma_3)$

yields an implicitely to solve equation for the fracture angle measure C

$\frac{C(\sigma_2,\sigma_3)}{\sqrt{1-C^2}} = -[\frac{A}{\bar{R}_{\perp}^{t}} + \frac{2\cdot a_{\perp\perp}\cdot B}{\bar{R}_{\perp}^{c}}] / [\frac{2\cdot A}{\bar{R}_{\perp}^{t}\sqrt{(\cdot\sigma_2-\sigma_3)^2}} + \frac{4\cdot b_{\perp\perp}\cdot\tau_{nt}(C)}{\bar{R}_{\perp}^{c}\sqrt{(\cdot\sigma_2-\sigma_3)^2}}]$ with

$A = [\frac{\sigma_2+\sigma_3+\sqrt{(\sigma_2-\sigma_3)^2}}{2\cdot\bar{R}_{\perp}^{t}}]^{m-1}$, $B = [\frac{a_{\perp\perp}\cdot(\sigma_2+\sigma_3)+b_{\perp\perp}\cdot\sqrt{(\sigma_2-\sigma_3)^2}}{\bar{R}_{\perp}^{c}}]^{m-1}$

and finally via $C = \cos(2\cdot\theta_{fp}) \rightarrow \theta_{fp} = 0.5\cdot\arccos C$, $\theta_{fp}\,^{\circ} = \theta_{fp}\cdot 180°/\pi$.

By insertion of any stress state the associated 'running' C can be computed.

Cohesion strength $\bar{R}_{23}^{\tau}$ is determinable for $\tau_{nt}^{fail}(\sigma_n) = 0$

Similar to the isotropic case the bi-axial stress-ruled quasi-isotropic M-C curve, located in the quasi-isotropic plane, is oppositely dominated by two modes, IFF2 (SF) with IFF1 (NF). Therefore, attention was paid to the interaction of both these modes in the transition zone in order to finally obtain an 'accurate' fracture angle $\Theta_{fp}°$, being the pre-condition to determine the envisaged two Mohr stresses τ_{nt}, σ_n. the shear material stressing effort $Eff^{\tau} = Eff^{SF}$ must physically become zero at the tensile strength point (0, R^t). This specific shortcoming is brought about by a correction function that defines the decay of Eff^{τ} and is practically performed by setting $Eff^{\tau} = 0$ at $\sigma_{II} = 0$. As decay function the author often took (§10) an exponential one: $f_d = 1/(1+\exp(\frac{c_{1d}+\sigma_{II}}{c_{2d}})$, with c_{1d}, c_{2d} fixed at ($-\bar{R}^c$, 0.995) , (-0.01,+0.01).

Here it is sufficient to apply for the decay of $Eff^{\perp\tau}$: $f_{corr} = 1 + c_0 \cdot (\bar{R}_{\perp}^{c} + \sigma_2)^2$.

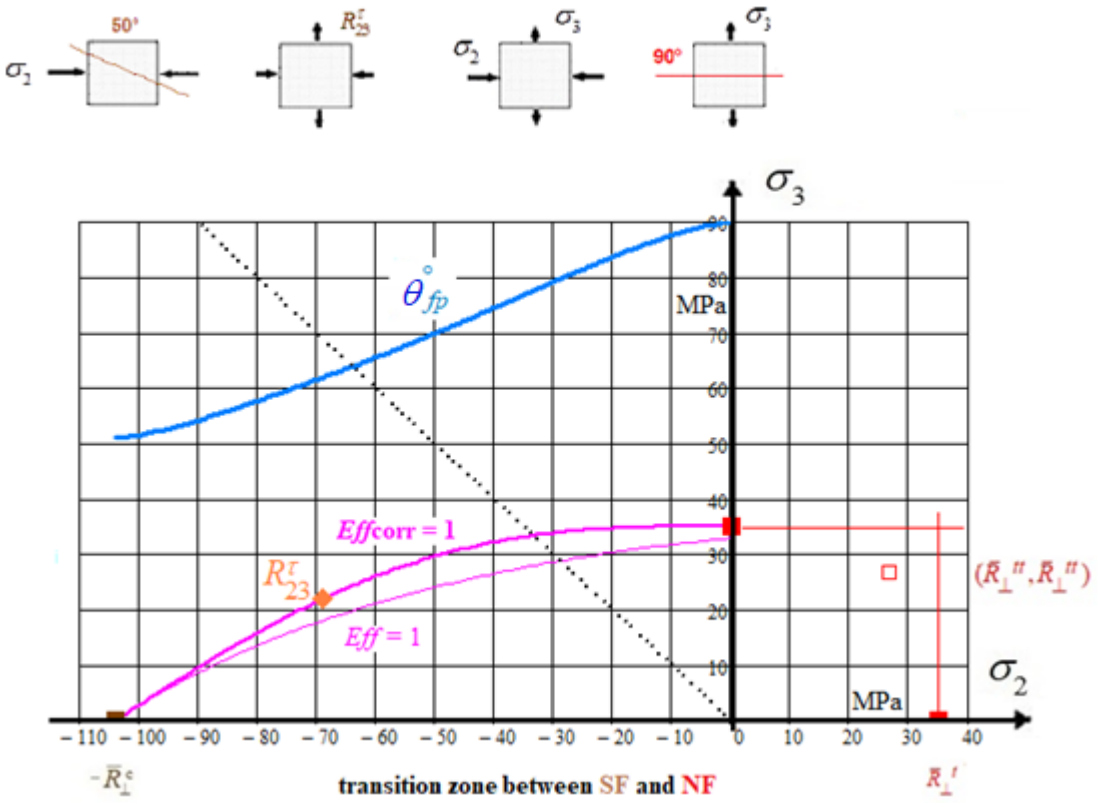


Fig. 22-4: Interaction curve $\sigma_3^{fracture}(\sigma_2)$ with Eff = 1Failure stress curve $\sigma_2(\sigma_3)$ with alteration of fracture angle $\theta_{fp}°$ in the transition zone. (Numerical example stems from a measurement of the fracture plane angle $\theta_{fp}°$ in [VDI97, bi-axial failure stress $\bar{R}_{\perp}^{tt}$). Marked R_{23}^{τ}-point.

- IFF2-IFF1- interacted fracture curve (*thin, original IFF2. With this 'simple' approach, the curve cannot run through* $\bar{R}_{\perp}^{t}$ = 35 MPa)
- IFF2-IFF1- interacted fracture curve *(bold, IFF2 decay function corrected, which better maps the course of measured fracture stress data)* and
- Course of the fracture plane angle $\theta_{fp}°$ (*bold, corrected*)

Data set:

$\bar{R}_{\perp}^{c} = 104 MPa,\ \bar{R}_{\perp}^{t}$ =35 MPa, $\Theta_{fp}° = 51°, C^{c} = -0.21 \leftrightarrow a_{\perp\perp} = 0.26,\ \mu_{\perp\perp} = 0.21.$

$f_{corr} = 1 + c_0 \cdot (\bar{R}_{\perp}^{c} + \sigma_2)^2$ with c_0 from inserting $(\sigma_2 = 0,\ \sigma_3 = \bar{R}_{\perp}^{t})$, $c_0 = 8.9 \cdot 10^{-5}$.

IFF1: $Eff^{\perp\sigma} = [(\sigma_2 + \sigma_3) + \sqrt{\sigma_2^2 - 2\sigma_2 \cdot \sigma_3 + \sigma_3^2}\,] / 2\bar{R}_{\perp}^{t}$,

IFF2: $Eff^{\perp\tau} = [a_{\perp\perp} \cdot f_{corr} \cdot (\sigma_2 + \sigma_3) + b_{\perp\perp} \cdot f_{corr} \sqrt{\sigma_2^2 - 2\sigma_2\sigma_3 + \sigma_3^2}\,] / \bar{R}_{\perp}^{c}$.

This correction changes the formula for the determination of the fracture angle measure *C* in *Table 22-1.*

Therewith, after effortful MathCad programming and implicit numerical computations the desired accurate bi-axial fracture stress M-C-curve τ_{nt} (σ_n) could be derived by the refined IFF2 model and by re-transformation also ply stresses could be obtained. The fracture angle becomes now the realistic value of 90° instead 71°.

$$\frac{C}{\sqrt{1-C^2}} = -m \cdot \left[\frac{A}{\bar{R}_{\perp}^{t}} + \frac{2 \cdot a_{\perp\perp} \cdot f_{corr} \cdot B}{\bar{R}_{\perp}^{c}}\right] / \left[\frac{2 \cdot A}{\bar{R}_{\perp}^{t} \sqrt{(\cdot\sigma_2 - \sigma_3)^2}} + \frac{4 \cdot b_{\perp\perp} \cdot f_{corr} \cdot B \cdot \tau_{nt}}{\bar{R}_{\perp}^{c} \sqrt{(\cdot\sigma_2 - \sigma_3)^2}}\right],$$

$$B_{corr} = \left[\frac{a_{\perp\perp} \cdot (\sigma_2 + \sigma_3) + b_{\perp\perp} \cdot \sqrt{(\sigma_2 - \sigma_3)^2}}{\bar{R}_{\perp}^{c}} \cdot f_{corr}\right]^{m-1} \quad \text{with} \quad f_{corr} = 1 + c_0 \cdot (\bar{R}_{\perp}^{c} + \sigma_2)^2 .$$

*22.4: **Determination of Cohesive** shear **Strength** R_{23}^{τ}*

The interaction curve can be dedicated to the basic Mohr-Coulomb curve which runs from the compression strength point till the tensile strength point $\sigma_3 = \bar{R}_{\perp}^{t}$. In order to find all relationships in one diagram the Mohr stresses are also inserted as functions of the lamina stresses σ_2 (σ_3) and not of σ_n alone, which is the usual diagram form. *Fig.22-4* includes the development of the fracture plane angle as function of the lamina stress σ_2. *Fig.22-1* still presented all MathCad-computed Mohr entities providing:

* Extrapolation from compressive strength point (IFF2-determined Mohr-Coulomb fracture curve)
  - A straight Linear Mohr-Coulomb curve, considering σ_2 (*linear Mohr*), *Cohesive Strength*
  - A straight Linear Mohr-Coulomb curve, considering σ_2 and σ_3; *Cohesive Strength* $\bar{R}_{23}^{\tau}$
* Full IFF2-IFF1-interacted Mohr-Coulomb fracture curve *(bold, decay function- corrected)*
* Course of the fracture plane angle $\theta_{fp}°/2$ (thin, not decay function corrected) and (bold).

The definition of the cohesive (shear) strength is $(\tau_{nt}^{fail} = \bar{R}_{23}^{\tau},\ \sigma_n = 0)$. Searching $\bar{R}_{23}^{\tau}$(C), the derived formulation permits to continuously MathCad-compute the alternating fracture plane measure C with the associate fracture angle $\theta_{fp}°$. The interpretation of the figures leads to the following conclusions:

- The general macro-mechanical IFF2 approach cannot offer a full accuracy of the realistically predicted Mohr-Coulomb curve. Just the *physically-based* decay function correction delivers the desired fidelity
- A SFC in lamina stresses can be transferred into a Mohr-Coulomb version
- The course of the fracture plane angle $\theta_{fp}°$ can be determined, too
- The idea of the FMC that IFF1 and IFF2 commonly add its *Eff* portions, which leads to the result that $\theta_{fp}°$ is in the sixty degrees ° at the cohesive strength point $\bar{R}_{23}^{\tau}$, with a degree value being the higher the higher the strength ratio $\bar{R}_{\perp}^{c} / \bar{R}_{\perp}^{t}$ is.

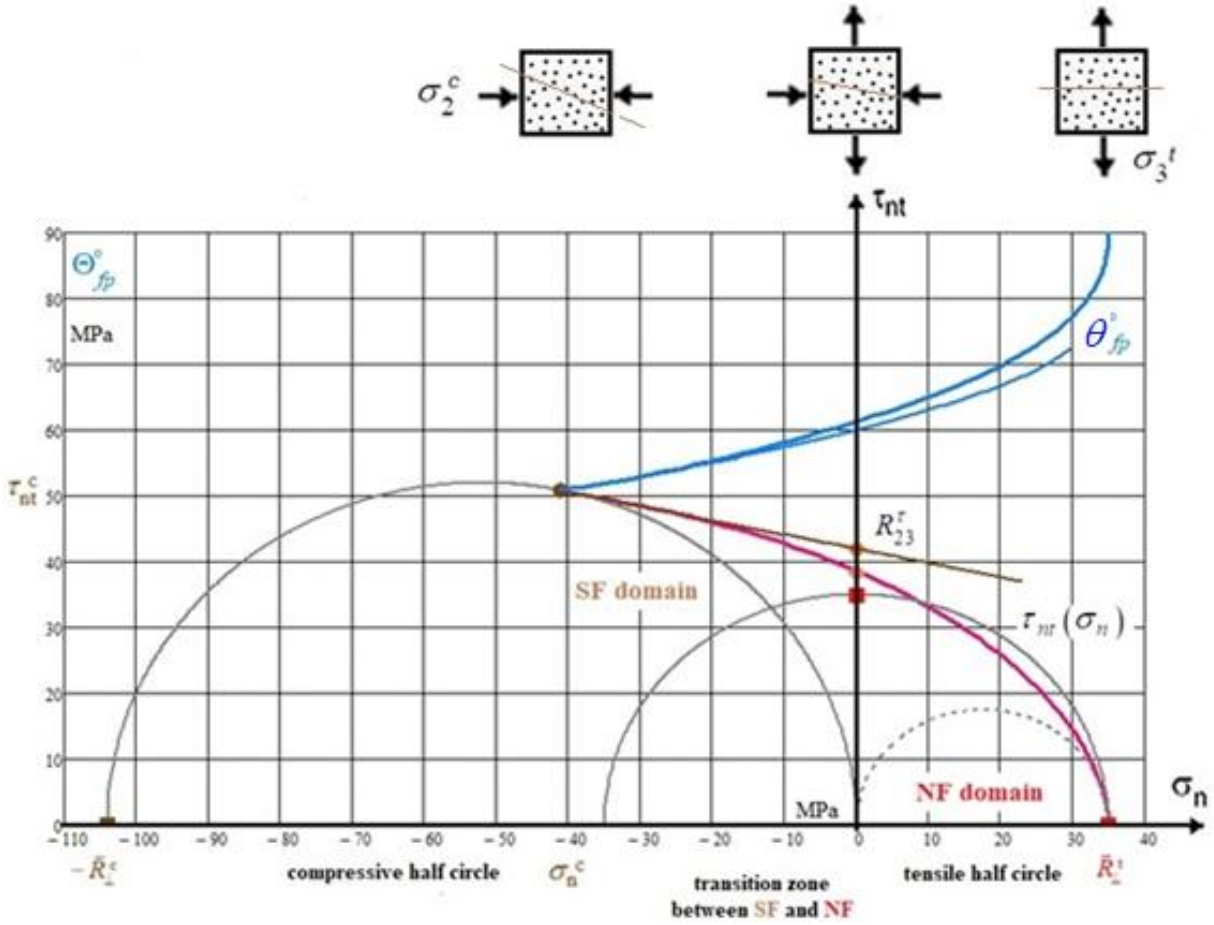


Fig. 22-1: Mohr-Coulomb curve characteristics, Mohr shear curves τ_{nt} (σ_n) with its special points and the 3 Mohr half-circles

LL:

- *Failure stress under pure shear* $\tau_{23}^{\text{fracture}} = max\,\tau_{23} \le R_\perp^t$ *, an in literature often applied approach-formalistically termed quantity*
- *Mohr-based approach linked so-called cohesive strength* $R_{23}^\tau = \tau_{nt}(\sigma_n = 0)$
- *Puck's Action plane shear resistance* R_{23}^A*: Puck formulated a full IFF-SFC and could model-associated dedicate his action plane resistance a relation with the inclination model parameters p and the other strengths reading* $\bar{R}_{23}^A = \left[\bar{R}_{\perp\parallel} \cdot \sqrt{1 + 2 \cdot p_{\perp\parallel}^c \cdot \bar{R}_\perp^c / \bar{R}_{\perp\parallel}} - 1\right] / 2 \cdot p_{\perp\parallel}^c$*. Above quantities are not measurable ones*
- *Generally, assuming a transverse shear failure stress , which would be a sixth strength, will contradict material symmetry demands, which seem to require for UD materials a 'generic' number of 5, meaning 5 measurable strengths and 5 elasticity properties*
- *The ability for mobilizing friction processes depends on active compression stresses that cause via the friction value μ the necessary shear stress.*

Analogous to the saying
" *If something becomes a fact it is no science anymore*",

Here, transferred to the input R_{23} in analysis:

"The cohesive shear strength $R_{23}{}^\tau$ ***should be no mystery anymore".***

23 Replacing fictitious UD Model Parameters $a_{\perp\perp}, a_{\perp\parallel}$ by measurable Friction Values μ

Aim: *Engineers prefer measurable friction values instead of fictitious friction parameters.*

23.1: Relation of Friction parameter $a_{\perp\perp}$ to Fracture angle $\theta_{fp}{}^{c}$ and Friction value $\mu_{\perp\perp}$

The measurement of a realistic fracture angle is practically not possible, just the determination of the friction curve parameter $a_{\perp\perp}(\mu_{\perp\perp})$ by mapping the course of test data points is a practical approach. Then, from the mapped test curve the relation of the curve parameter $a_{\perp\perp}$ to the friction value $\mu_{\perp\perp}$ and to the fracture angle $\theta_{fp}°$ can be derived according to the formulas in *Table 23-1*. This is to perform in the compressive strength point $\bar{R}_{\perp}{}^{c}$, see also the chapter before.

Basic assumption is the *brittle-fracture hypothesis* which goes back to O. Mohr's "*The strength of a material is determined by the Mohr stresses on the fracture plane".* This means for the Linear Mohr-Coulomb (M-C) formulation $\tau_{nt} = \bar{R}^{\tau}_{23} - \mu_{\perp\perp}\cdot\sigma_n$ including the friction value $\mu_{\perp\perp}$ being an intrinsic property of the UD material.

Table 23-1: Determination of the friction curve parameter $a_{\perp\perp}(\mu_{\perp\perp})$

IFF2: $F^{\tau}_{\perp} = [a_{\perp\perp}\cdot(\sigma_2+\sigma_3) + b_{\perp\perp}\cdot\sqrt{(\sigma_2-\sigma_3)^2+4\tau_{23}{}^2}\,] / \bar{R}^{c}_{\perp} = 1$, in Mohr stresses, after inserting $\bar{R}_{\perp}{}^{c}$

$= [a_{\perp\perp}\cdot(\sigma_n+\sigma_t) + b_{\perp\perp}\cdot\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}{}^2}\,] / \bar{R}^{c}_{\perp} = 1$ and $a_{\perp\perp} = b_{\perp\perp} - 1$ is friction parameter

$$\frac{dF}{d\sigma_n}\cdot\bar{R}^{c}_{\perp} = a_{\perp\perp} + b_{\perp\perp}\cdot(\sigma_n-\sigma_t)/\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}{}^2},\quad \frac{dF}{d\tau_{nt}}\cdot\bar{R}^{c}_{\perp} = 4\cdot b_{\perp\perp}\cdot\tau_{nt}/\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}{}^2}$$

$$\frac{d\tau_{nt}}{d\sigma_n} = -\frac{dF}{d\sigma_n}/\frac{dF}{d\tau_{nt}} = -\left[\frac{b_{\perp\perp}\cdot(\sigma_n-\sigma_t) + (b_{\perp\perp}-1)\cdot\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}{}^2}}{4\cdot b_{\perp\perp}\cdot\tau_{nt}}\right],$$ minus due to implicit derivation

Use of addition theorems ($\sigma_{\lambda} = 0$), gives the relationships $c = \cos(\theta_{fp}°\cdot\pi/180°)$

$$\sigma_n-\sigma_t = c^2\cdot(\sigma_2-\sigma_3) - s^2\cdot(\sigma_2-\sigma_3) = C\cdot(\sigma_2-\sigma_3),\quad S = \sqrt{1-C^2},\ C = \cos(2\cdot\theta_{fp}°\cdot\pi/180°)$$

$$\sigma_t = \sigma_n - C\cdot(\sigma_2-\sigma_3),\ C = c^2-s^2 = 2c^2-1 = 1-2s^2,\quad \sigma_n+\sigma_t = \sigma_2+\sigma_3 \quad \text{and}$$

$$\tau_{nt} = -0.5\cdot S\cdot(\sigma_2-\sigma_3) = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma_2-\sigma_3),\ \sigma_n = (C+1)\cdot0.5\cdot\sigma_2 + (1-C)\cdot0.5\cdot\sigma_3.$$

Stress σ_t has no influence, as Mohr assumed! Failure responsible due to Mohr are just τ_{nt} with σ_n !

$$\frac{d\tau_{nt}}{d\sigma_n} = -\,\mu_{\perp\perp} = \frac{C}{S} = -\left[\frac{b_{\perp\perp}\cdot(\sigma_n-\sigma_t) + (b_{\perp\perp}-1)\cdot\sqrt{(\sigma_n-\sigma_t)^2+4\tau_{nt}{}^2}}{4\cdot b_{\perp\perp}\cdot\tau_{nt}}\right] =$$

$$= -\left[\frac{b_{\perp\perp}\cdot(C\cdot\sigma_2) + (b_{\perp\perp}-1)\cdot\sqrt{(C\cdot\sigma_2)^2+4\cdot(-0.5\cdot S\cdot\sigma_2)^2}}{4\cdot b_{\perp\perp}\cdot(-0.5\cdot S\cdot\sigma_2)}\right]$$

$$C = -\left[\frac{b_{\perp\perp}\cdot(C\cdot\sigma_2) + (b_{\perp\perp}-1)\cdot\sqrt{(C\cdot\sigma_2)^2+4\cdot(-0.5\cdot\sigma_2)^2\cdot(1-C^2)}}{4\cdot b_{\perp\perp}\cdot(-0.5\cdot\sigma_2)}\right]\ ;\ C\to C_{\mathrm{fp}}{}^{c}$$ inserting strength $\bar{R}_{\perp}{}^{c}$

$$\to C_{\mathrm{fp}}{}^{c} = -\left[\frac{b_{\perp\perp}\cdot C_{\mathrm{fp}}{}^{c}\cdot(-\bar{R}_{\perp}{}^{c}) + (b_{\perp\perp}-1)\cdot\sqrt{C_{\mathrm{fp}}{}^{c2}\cdot(-\bar{R}_{\perp}{}^{c})^2+4\cdot(-0.5\cdot(-\bar{R}_{\perp}{}^{c}))^2\cdot(1-C_{\mathrm{fp}}{}^{c2})}}{4\cdot b_{\perp\perp}\cdot(-0.5\cdot(-\bar{R}_{\perp}{}^{c}))}\right]$$

Resolving: $b_{\perp\perp} = \frac{1}{C_{\mathrm{fp}}{}^{c}+1} \cong \frac{1}{1-\mu_{\perp\perp}}$, $a_{\perp\perp} \cong \frac{\mu_{\perp\perp}}{1-\mu_{\perp\perp}}$, $\mu_{\perp\perp} = -\frac{C}{S} = -\frac{C_{\mathrm{fp}}{}^{c}}{S_{\mathrm{fp}}{}^{c}} \cong -C_{\mathrm{fp}}{}^{c}$ (being a small value).

Assuming $\theta^{c}_{fp}° = 51°$: *Example* $C^{c}_{fp} = \cos(\frac{2\cdot\theta^{c}_{fp}°}{180°}\cdot\pi) = -0.21$, $\mu_{\perp\perp} = 0.21 \cong -C^{c}_{fp}$, $a_{\perp\perp} = 0.26$.

If IFF occurs in a parallel-to-fiber plane of the UD lamina, the components of the failure stress vector are the normal Mohr stress σ_n and the two Mohr shear stresses σ_{nt} and σ_{n1}. The shear stress σ_{tl} and the normal stress σ_t will have no influence and this was proven in the derivation. Further, the Mohr stress σ_{n1} belongs to IFF3 and is not of interest, here.

The transformation of the IFF2 SFC in lamina stresses into Mohr stresses-based formulation works via above addition theorems.

During this transformation procedure there are a lot of Lessons to Learn**:**

- *The Linear Mohr-Coulomb model can be employed to obtain a sufficiently good relationship for the determination of the friction value μ in the compressive strength point* $\sigma_2 = -\bar{R}_{\perp}^{c}$.
- *Establishing the relationship* $a_{\perp\perp}(\mu_{\perp\perp})$ *it is assumed that the tangent of the FMC-curve has the same value as that of the straight Linear Mohr envelope curve* $\tau_{nt}(\sigma_n)$ *in the touch point of Mohr's circle, see Fig.23-1*
- σ_1 *is not relevant. The shear stress* τ_{23} *can be assumed zero because it would anyway vanish after a principal stress transformation. No reduction of generality is caused*
- *The stress* σ_t *has no influence! It is not representative such as Mohr supposes. Failure responsible are* τ_{nt} *and* σ_n *, only. But mind in the differentiation process: the Mohr stress* σ_t *cannot be simply set zero at the beginning of the derivations, it must be considered due to its relation to* σ_n *,*
- *Above derivation demonstrates that, if really desired, the fracture plane angle* $\theta_{fp}{}^{c}$ *of an UD-material could be also determined from an invariant-based SFC and not only from Mohr-based formulations*
- *Viewing Fig.23-1, it is obvious that the cohesive strength* $\bar{R}_{23}^{\tau}$ (Civil engineers take the letter c) *belongs to the transition zone of the normal fracture mode domain IFF1 and therefore not alone to the shear fracture mode domain IFF2. Hence, one cannot simply extrapolate from the compressive strength point.*
- *Reminder Mohr's Concept*:

$F^{\tau} = \tau_n / (R^{\tau} - \mu \cdot \sigma_n) = 1$, shear stress hypothesis. $F^{\sigma} = \sigma_n / R^{\sigma} = 1$, normal stress hypothesis

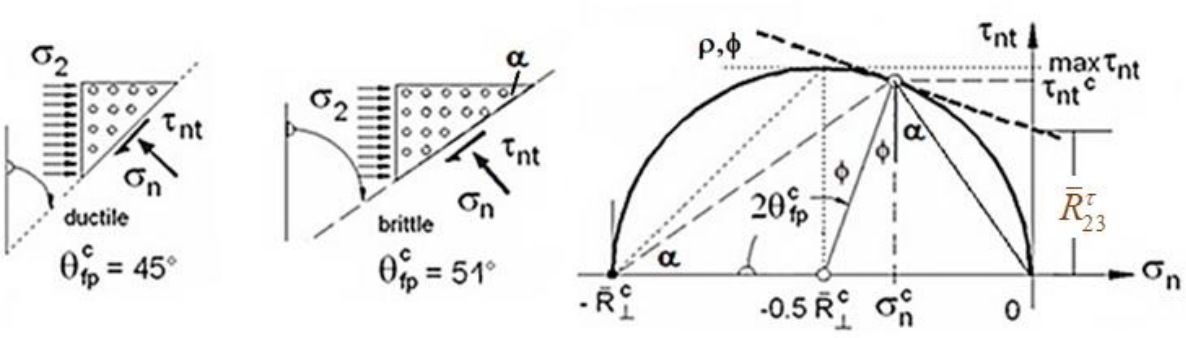


Fig.23-1, Shear stressing situation: Shear fracture plane angle in the touch point and 'linear' Mohr-Coulomb friction curve. The touch point is defined by $(\sigma_n^c, \tau_{nt}^c)$ *and linked to* $\bar{R}_{\perp}{}^{c}$. $90° = 2\theta_{fp}° - \phi°$

23.2: Relation of Friction parameter $a_{\perp\parallel}$ to *Friction value* $\mu_{\perp\parallel}$

The same procedure is analogously to perform for the mode IFF3, see *Table 23-2*.

Table 23-2: Relationships for the determination of friction curve parameter $a_{\perp\parallel}(\mu_{\perp\parallel})$

$F_{\perp\square} = \frac{I_3^2}{\bar{R}_{\perp\parallel}^{\ 4}} + b_{\perp\parallel} \cdot \frac{I_2 \cdot I_3 - I_5}{\bar{R}_{\perp\parallel}^{\ 3}} = 1$ with $I_{23-5} = 2 \cdot \sigma_2 \cdot \tau_{21}^2 + 2 \cdot \sigma_3 \cdot \tau_{31}^2 + 4 \cdot \tau_{23}\tau_{31}\tau_{21}$ from

$I_2 = \sigma_2 + \sigma_3$, $I_3 = \tau_{21}^2 + \tau_{31}^2$, $I_5 = (\sigma_2 - \sigma_3) \cdot (\tau_{31}^2 - \tau_{21}^2) - 4 \cdot \tau_{23} \cdot \tau_{31} \cdot \tau_{21}$.

The transfer to a Mohr-shaped SFC is directly possible, because the fracture plane is already known (parallel to the fibre direction) , via $(\tau_{n1},\ \sigma_n) \equiv (\tau_{21},\ \sigma_2)$, $|\tau_{21}| = \bar{R}_{\perp\parallel} - \mu_{\perp\parallel} \cdot \sigma_2$

* FMC: $\frac{\tau_{21}^4}{\bar{R}_{\perp\parallel}^{\ 4}} + a_{\perp\parallel} \cdot \frac{2 \cdot \sigma_2 \cdot \tau_{21}^2}{\bar{R}_{\perp\parallel}^{\ 3}} = \frac{\tau_{nt}^2}{\bar{R}_{\perp\parallel}^{\ 4}} + a_{\perp\parallel} \cdot \frac{2 \cdot \sigma_n \cdot \tau_{nt}^2}{\bar{R}_{\perp\parallel}^{\ 3}} = 1 \rightarrow \sigma_n = \frac{\bar{R}_{\perp\parallel}^{\ 3} \cdot (\tau_{21}^4 / \bar{R}_{\perp\parallel}^{\ 4} - 1)}{2 \cdot \tau_{nt}^2 \cdot a_{\perp\parallel}}$

$\frac{d\tau_{n1}}{d\sigma_n} \rightarrow$ simpler to perform is $\frac{d\sigma_n}{d\tau_{n1}} = \frac{2 \cdot \tau_{21}}{\bar{R}_{\perp\parallel}^{\ 3} \cdot a_{\perp\parallel}} - \frac{\bar{R}_{\perp\parallel}^{\ 3} \cdot (\tau_{21}^4 / \bar{R}_{\perp\parallel}^{\ 4} - 1)}{\tau_{21}^3 \cdot a_{\perp\parallel}}$

* Simple linear Mohr: $\tau_{n1} = \bar{R}_{\perp\parallel} - \mu_{\perp\parallel} \cdot \sigma_n \rightarrow \sigma_n = \frac{\bar{R}_{\perp\parallel} - \tau_{21}}{\mu_{\perp\parallel}}$ and $\frac{d\sigma_n}{d\tau_{nt}} = \frac{-1}{\mu_{\perp\parallel}}$.

In the strength point $\tau_{n1} = \bar{R}_{\perp\parallel}$ an equal slope exists, then equating delivers

$\frac{2 \cdot \tau_{21}}{\bar{R}_{\perp\parallel} \cdot b_{\perp\parallel}} - \frac{\bar{R}_{\perp\parallel}^{\ 3} \cdot (\tau_{21}^4 / \bar{R}_{\perp\parallel}^{\ 4} - 1)}{\tau_{21}^3 \cdot a_{\perp\parallel}} = \frac{-1}{\mu_{\perp\parallel}} \rightarrow a_{\perp\parallel} = \frac{\mu_{\perp\parallel} \cdot (\bar{R}_{\perp\parallel}^{\ 4} + \tau_{21}^4)}{\tau_{21}^3 \cdot a_{\perp\parallel}} \Rightarrow a_{\perp\parallel} = 2 \cdot \mu_{\perp\parallel}$,

being a good guess for $\mu_{\perp\parallel}$ and sufficient for application.

23.3: Evaluation of friction values $\mu_{\perp\perp}$, $\mu_{\perp\parallel}$ from test results

The determination of curve parameters *a(μ)* and thereby also of μ can be performed differently:

1. One strength value with one multi-axial failure stress point on the respective pure mode curves, usually applying a linear Mohr friction envelope (*sufficient, see Figs. 23-2 and -3 below, it requires some fitting to optimally map the course*)
2. A more sophisticated fitting optimization process of the test data course in the respective pure domain (*min error square*) in 'pure' failure mode domains
3. The so-called Tension/Compression-Torsion test machine delivered the test points in *Fig.23-2 left*. If such a test rig is not available, then, one point on the pure mode Iff2-curve plus one in the transition zone IFF2-IFF1, see *Fig.23-3*, become an approximation basis, see *Fig. 23-3 right*
4. For $\mu_{\perp\perp}$, in addition: Derivation from fracture angle measurements θ_{fp}^{c}°, see experience in the associate figure in [*VDI 97, p. 138*], facing a pretty high scatter.

The formulas for the friction values read:

- Linear Mohr envelope: $\mu_{\perp\parallel} \cong (\tau_{21}{}^{fr} - \bar{R}_{\perp\parallel}) / \sigma_2{}^{fr}$ from tension-compression/torsion test machine with tube test specimens, evaluating at least two curve points or if sufficient tests from curve fitting .
- From bi-axial compression test in order to compute the friction value from evaluating $\mu_{\perp\perp} = (\bar{R}_{\perp}^{c} + \sigma_3^{fr}) / \sigma_2^{fr}$. However, the danger to buckle is to face

- If the test machine only allows a $\mu_{\perp\perp}$ -test in the transition zone of the modes, *Fig.23-3*, then, the estimation from strength point $(\sigma_3^{c\,fr}, \sigma_2^{t\,fr})$ demands for a qualified stress interaction-mapping SFC. For the evaluation the interaction equation has to be employed, shown by the following MathCad procedure below:

Mathcad implicite calculation: *Vorgabe* $\mu_{\perp\perp} := 0.1$ (estimation)

$$\left(\left[(\sigma_2+\sigma_3) + \sqrt{(\sigma_2-\sigma_3)^2+0}\,\right] / 2\bar{R}_{\perp}^{t}\right)^m + \left(\left[\left(\frac{\mu_{\perp\perp}}{1-\mu_{\perp\perp}}\right)\cdot(\sigma_2+\sigma_3) + \right.\right.$$

$$\left.\left. + \frac{1}{1-\mu_{\perp\perp}}\sqrt{(\sigma_2-\sigma_3)^2+4\tau_{23}^{\,2}}\,\right] / \bar{R}_{\perp}^{c}\right)^m = 1 = \mathit{Eff} = 100\% \ .$$

Search *Suchen* $(\mu_{\perp\perp})$.

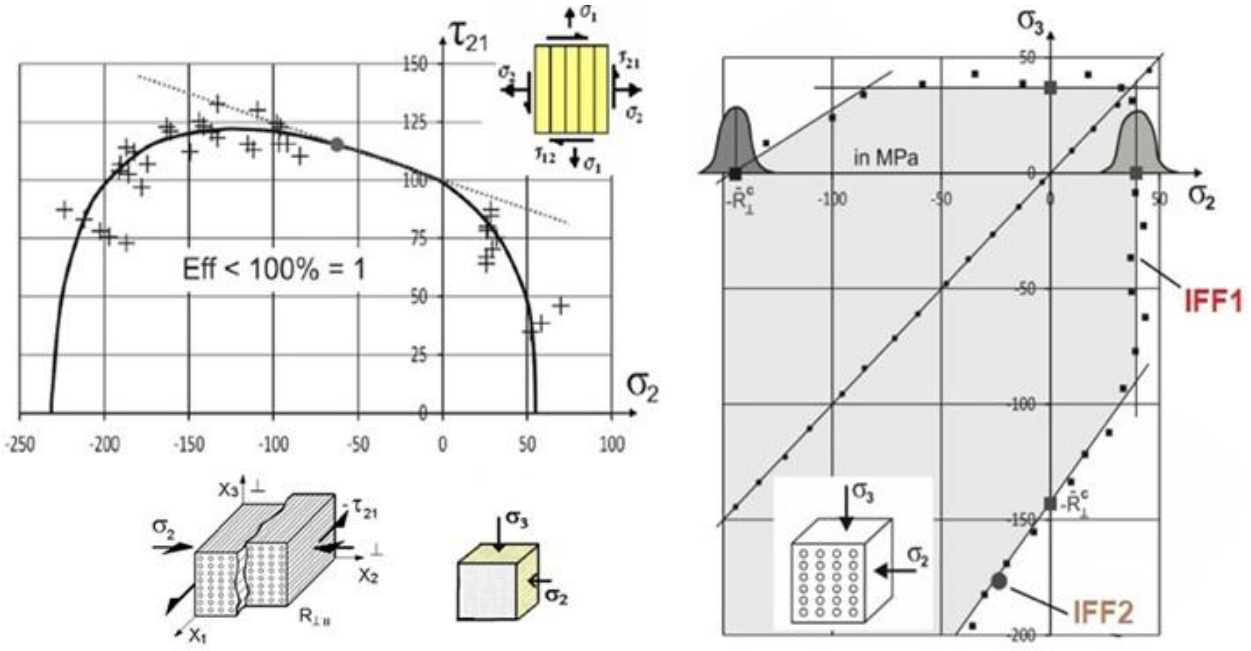


Fig.23-2: Determination of the friction values $\mu_{\perp\perp}$, $\mu_{\perp\parallel}$ (own results)

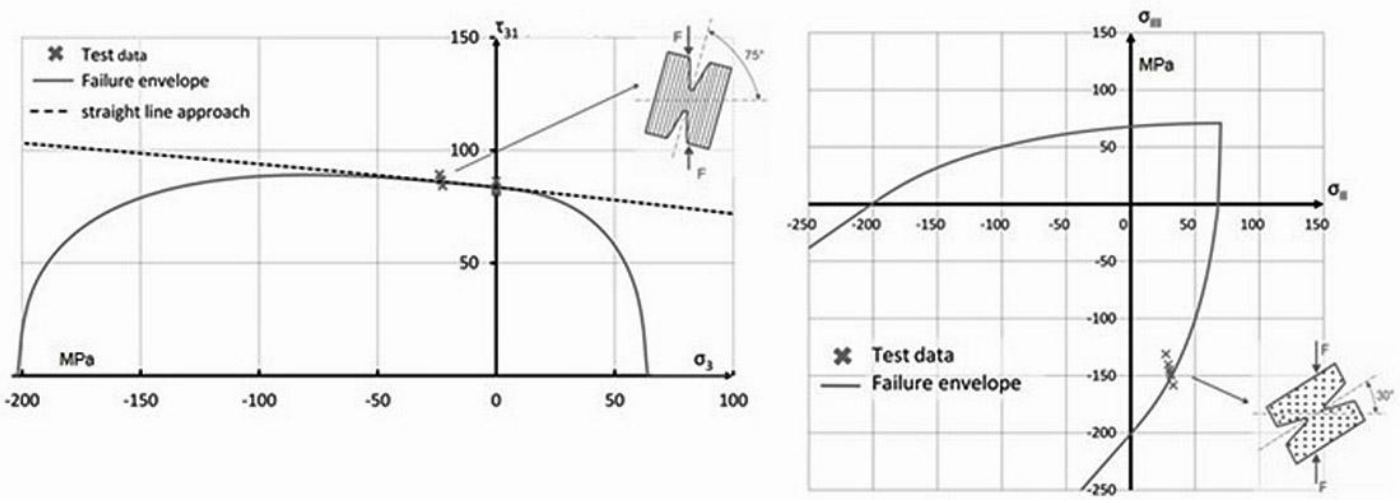


Fig.23-3: ARCAN tests performed on distinct stress paths. UD prepreg [*Pet15*]

LL:

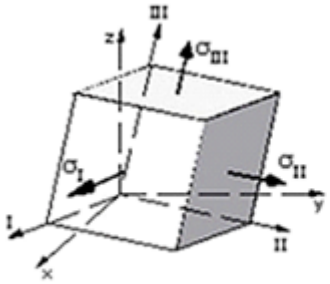
- *A relationship of the measurable friction value and the fictitious friction parameter could be derived*
- *The application of the tension-compression-torsion test machine is recommended.*

24 Fracture Envelopes, Bodies of Grey Cast Iron, Glass C90, Normal Concrete, UHPC, Foam

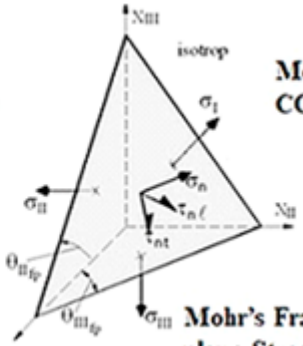
Aim: *Making together with §26 'optically' familiar with multiaxial fracture stress states of isotropic materials.*

24.1 Introduction

Used Stresses and Invariants



The stress states in the various COS can be transferred into each other



Mohr's COS

Mohr's Fracture plane Stresses

Principal Stresses Structural (component) Stresses

$$\{\sigma_{\text{principal}}\}=(\sigma_I,\sigma_{II},\sigma_{III})^T,\quad \{\sigma_{\text{struct}}\}=(\sigma_x,\sigma_y,\sigma_z,\tau_{yz},\tau_{xz},\tau_{xy})^T,\quad \{\sigma_{\text{Mohr}}\}=(\sigma_\lambda,\sigma_n,\sigma_t,\tau_{nt},\tau_{\lambda t},\tau_{n\lambda})^T$$

In the transformation of structural stresses into Mohr stresses the advantage of invariants fully comes out: *They do not depend on the coordinate system, one can simply switch between the systems.*

Structural Stresses and Invariants, 3D and 2D:

$$I_1=(\sigma_I+\sigma_{II}+\sigma_{III}) \;=\; f(\sigma)\;,\quad 6J_2=(\sigma_I-\sigma_{II})^2+(\sigma_{II}-\sigma_{III})^2+(\sigma_{III}-\sigma_I)^2 \;=\; f(\tau)\quad\text{'Mises invariant'}$$

$$27J_3=\;(2\sigma_I-\sigma_{II}-\sigma_{III})\cdot(2\sigma_{II}-\sigma_I-\sigma_{III})\cdot(2\sigma_{III}-\sigma_I-\sigma_{II}),$$

$$3\cdot\sigma_{oct}=\sigma_I+\sigma_{II}+\sigma_{III}=\sigma_\ell+\sigma_n+\sigma_t\;;\quad 9\cdot\tau_{oct}{}^2=6J_2=4\cdot(\tau_{III}{}^2+\tau_I{}^2+\tau_{II}{}^2),\quad \tau_{II}=\max\tau(\textit{mathem.})$$

$\sigma_I,\sigma_{II},\sigma_{III}$ are principal stresses, $\sigma_I>\sigma_{II}>\sigma_{III}$ are mathematical stresses (> *means more positive*).

Mohr Stresses and Invariants, 3D and 2D:

$$I_1=(\sigma_n+\sigma_t+\sigma_\lambda)\;,\quad 6J_2=(\sigma_n-\sigma_t)^2+(\sigma_t-\sigma_\lambda)^2+(\sigma_\lambda-\sigma_n)^2+6\cdot\left(\tau_{nt}{}^2+\tau_{n\lambda}{}^2+\tau_{t\lambda}{}^2\right),\text{isotropic}\,\tau_{nt}\to\tau_n$$

Strength Failure Criteria (SFC), *Eff*-linked

At first the 'basic' formulations are displayed. Then, according to the 'proportional (stressing) concept' the relationships *Eff* (*F*) are performed. And finally, how the two shear mode parameters depend on another after having inserted R^c into F^τ. Some basic relationships are:

$$\text{FNF}=\text{F}\sigma=\frac{\sqrt{4\cdot J2-\frac{I1^2}{3}}+I1}{2\cdot Rt}=\text{Eff}\sigma=1$$

$$\text{FSF}=\text{F}\tau=c2\cdot\frac{I1}{Rc}+\frac{c1\cdot 6J2}{2\cdot Rc^2}=1$$

$$\text{Eff}\sigma=\frac{\sqrt{4\cdot J2-\frac{I1^2}{3}}+I1}{2\cdot Rt}$$

due to homogeneous F

$$c2\cdot\frac{I1}{Rc\cdot\text{Eff}\tau}+\frac{c1\cdot 6J2}{2\cdot Rc^2\cdot\text{Eff}\tau^2}=1$$

$$\text{Eff}\tau=\frac{\sqrt{I1^2\cdot c2^2+12\cdot J2\cdot c1}+I1\cdot c2}{2\cdot Rc}$$

Insertion of the compressive strength delivers a parameter -relation :

$$c2\cdot\frac{-Rc}{Rc}+\frac{c1\cdot 2\cdot Rc^2}{2\cdot Rc^2}=1$$

$$c1=c2+1$$

Monotonic stressing of all stresses

Interaction requires to go from *F* to *Eff*, linked due to the 'proportional stressing concept'

for instance $$c_2^{SF}\cdot\frac{I_1/Eff}{\bar{R}^c}+c_1^{SF}\cdot\frac{6\cdot J_2/Eff^2}{2\cdot\bar{R}^{c2}}=1.$$

Table 24-1 summarizes the Eff^{mode} formulations for the usually as rotationally-symmetric *assumed* fracture failure body, and further the realistic isotropic 120°-rotational symmetry relations.

Fig.24-1: Procedure how to determine the Fracture Body

(1) Fracture failure body is rotationally symmetric (like the Mises yield body)

* Normal Fracture NF, $I_1 > 0$ ↔ * Shear Fracture SF, $I_1 < 0$

$$F^{NF} = F^{\sigma} = \frac{\sqrt{4J_2 - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} \qquad F^{SF} = F^{\tau} = c_2^{SF} \cdot \frac{I_1}{\bar{R}^c} + c_1^{SF} \cdot \frac{6 \cdot J_2}{2 \cdot \bar{R}^{c2}}$$

with σ and τ as failure driving stresses. Resistances $\bar{R}$ are average values (We model !).

Strength Failure Criterion (SFC), mode interaction exponent m, friction μ

$$Eff^{NF} = \frac{\sqrt{4J_2 - I_1^2/3} + I_1}{2 \cdot R^t} = \frac{\sigma_{eq}^{NF}}{\bar{R}^t} \leftrightarrow Eff^{SF} = \frac{c_2^{SF} \cdot I_1 + \sqrt{(c_2^{SF} \cdot I_1)^2 + 12 \cdot c_1^{SF} \cdot 3J_2}}{2 \cdot R^c} = \frac{\sigma_{eq}^{SF}}{\bar{R}^c}.$$

with $c_1^{SF} = 1 + c_2^{SF}$, $c_2^{SF} = (1 + 3 \cdot \mu)/(1 - 3 \cdot \mu)$ from $\mu = -cos\ (2 \cdot \theta_{fp}^c\,° \cdot \pi / 180)$

or from fitting of the test data course.

(2) Fracture failure body is 120°-rotationally symmetric = Reality !

In a chapter before we had to learn: Each isotropic material is "120° – rot. symmetric",

which leads to the little more complicate *Eff*s below

$$Eff_{\Theta}^{NF} = c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot R^t} \leftrightarrow Eff_{\Theta}^{SF} = \frac{c_2^{SF} \cdot I_1 + \sqrt{(c_2^{SF} \cdot I_1)^2 \cdot \Theta^{SF} + 12 \cdot c_{1\Theta}^{SF} \cdot 3J_2}}{2 \cdot R^c}$$

$c_{1\Theta}^{SF} \cdot \Theta^{SF} = 1 + c_2^{SF}$, and above friction parameter c_2^{SF} (later denoted c_2)

Modelling of the cap is performed by the function $y_{cap} = \frac{I_1}{\sqrt{3} \cdot \bar{R}^t} = s^{cap} \cdot (\frac{\sqrt{2J_2 \cdot \Theta^{NF}}}{\bar{R}^t})^2 + \frac{max\, I_1}{\sqrt{3} \cdot \bar{R}^t}$.

For $R^c >> R^t$ can be set : $\Theta^{NF} \rightarrow \Theta^{TM} = \sqrt[3]{1 + d^{NF} \cdot (+1)}$, $c^{NF} = \Theta^{NF} = 1$.

Θ as non-circularity function with d as non-circularity parameter, (d^{SF} later d^{τ})

$\Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot sin(3\vartheta)} = \sqrt[3]{1 + d^{SF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$, compr. angle -30° $\rightarrow \Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot (-1)}$.

3D-tests are performed by adding an axial load, generating a stress σ_{ax}, upon a hydrostatic loading $p_{hyd.}$ The associated 3D-concrete test data sets have been forwarded by Dr.-Ing. Silke Scheerer and Dr.-Ing. Kerstin Speck (*IfM, TU-Dresden, Prof. Dr. M. Curbach).* From their provided raw data sets as sub-sets the meridian data sets, the constant Lode angles for the envisaged meridians had to be extracted by the author. The usual tests are run along the tensile meridian (TM) and the compressive meridian (CM). This situation causes to apply the realistic isotropic 120°-rotationally-symmetric model in order to account for the Lode angle ϑ.

Determination of the model parameters in the mode domain of F^{τ} : The measurement of Θ_{fp} –based on the usually small-scale test level - is practically not possible. The determination of the curve parameters c_i by mapping the course of test data points is the better and practical procedure. Then, the relationship of the curve parameter c_2 to the friction value μ and to the fracture angle Θ_{fp} can be derived. These relations are obtained in the *touch point*, still pointed out in *Fig.22-1* for UD-materials.

Circularization of the fracture body

From mechanics is known that the fracture body possesses a circle-shape for I_1 =0 and from testing is known, that the body becomes circular with increasing negative I_1.
At least for the Ultra-High-Performance-Concrete (UHPC) this must be considered when mapping, because the SFC F^{τ} cannot capture this effect. In the next box are collected all relationships and further the determination of the two additional parameters ατ, βτ :

Maximum Θτcc in the bi-axial reference point (-Rcc, -Rcc.0) on the TM

$$\Theta\tau CM = \sqrt[3]{1 - d\tau ex} \qquad \Theta\tau TM = \sqrt[3]{1 + d\tau ex} \qquad x = \frac{\sqrt{2J2}}{Rc} \qquad I1 = \sqrt{3}\cdot Rc\cdot y$$

Model : $d\tau ex(y) = \alpha\cdot\beta\cdot(-y)^{\beta-1}\cdot\exp\left[-\alpha\cdot(-y)^{\beta}\right]\cdot d\tau cc$ Two unknowns require two equations

* Differentiation, in order to obtain a formula for the horizontal tangent in (-Rcc, -Rcc.0)

$$\frac{d}{dy}\left[\alpha\cdot\beta\cdot(-y)^{\beta-1}\cdot\exp\left[-\alpha\cdot(-y)^{\beta}\right]\cdot d\tau cc\right] \rightarrow \beta^2\cdot\alpha^2\cdot d\tau cc\cdot(-y)^{2\cdot\beta-2}\cdot e^{-\alpha\cdot(-y)^{\beta}} - \beta\cdot\alpha\cdot d\tau cc\cdot(-y)^{\beta-2}\cdot e^{-\alpha\cdot(-y)^{\beta}}\cdot(\beta-1)$$

$$\left[\alpha\cdot\beta\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta-1}\cdot\frac{\beta-1}{\frac{I1cc}{\sqrt{3}\cdot Rt}}\cdot e^{(-\alpha)\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta}} - \alpha^2\cdot\beta^2\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta-1}\cdot\frac{\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta}}{\frac{I1cc}{\sqrt{3}\cdot Rt}}\cdot e^{(-\alpha)\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta}}\right]\cdot d\tau cc = 0$$

dτcc vanishes

Dissolved for αT = α (NF, ασ not of interest here)
delivers an equation for the first curve parameter

$$\alpha T = \frac{\beta T - 1}{\beta T\cdot\left(\frac{-1}{3}\cdot I1cc\cdot\frac{3^{0.5}}{Rz}\right)^{\beta T}}$$

* Second curve parameter is determined by assuming that the non-circularity reduction is 50% at 2 x I1cc

Vorgabe $\beta T := 1.5$ Material data insertion now !

$$0.5 = \frac{\frac{\beta T - 1}{\beta T\cdot\left(\frac{-1}{3}\cdot I1cc\cdot\frac{3^{0.5}}{Rt}\right)^{\beta T}}\cdot\beta T\cdot\left(-\frac{I1cc\cdot 2}{\sqrt{3}\cdot Rt}\right)^{\beta T-1}\cdot\exp\left[-\frac{\beta T - 1}{\beta T\cdot\left(\frac{-1}{3}\cdot I1cc\cdot\frac{3^{0.5}}{Rt}\right)^{\beta T}}\cdot\left(-\frac{I1cc\cdot 2}{\sqrt{3}\cdot Rt}\right)^{\beta T}\right]\cdot 1}{\frac{\beta T - 1}{\beta T\cdot\left(\frac{-1}{3}\cdot I1cc\cdot\frac{3^{0.5}}{Rt}\right)^{\beta T}}\cdot\beta T\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta T-1}\cdot\exp\left[-\frac{\beta T - 1}{\beta T\cdot\left(\frac{-1}{3}\cdot I1cc\cdot\frac{3^{0.5}}{Rt}\right)^{\beta T}}\cdot\left(-\frac{I1cc}{\sqrt{3}\cdot Rt}\right)^{\beta T}\right]\cdot 1}$$

AT := Suchen(βT) $\beta T := AT$ βT = ▮ αT =

$$\Theta T(y) = \sqrt[3]{1 + dT(y)\cdot\sin(3\theta)} \qquad \text{with} \qquad dT(y) = \alpha T\cdot\beta T\cdot(-y)^{\beta T-1}\cdot\exp\left[-\alpha T\cdot(-y)^{\beta T}\right]\cdot dT$$

$$\Theta Tcc = \sqrt[3]{1 + \alpha T\cdot\beta T\cdot(-ycc)^{\beta T-1}\cdot\exp\left[-\alpha T\cdot(-ycc)^{\beta T}\right]\cdot dT\cdot(1)} \qquad \Theta Tc = \sqrt[3]{1 + \alpha T\cdot\beta T\cdot(-yc)^{\beta T-1}\cdot\exp\left[-\alpha T\cdot(-yc)^{\beta T}\right]\cdot dT\cdot(-1)}$$

$$\Theta TM_j = \sqrt[3]{1 + \alpha T\cdot\beta T\cdot\left(-y_j\right)^{\beta T-1}\cdot\exp\left[-\alpha T\cdot\left(-y_j\right)^{\beta T}\right]\cdot dT} \qquad \Theta TCM_j = \sqrt[3]{1 + \alpha T\cdot\beta T\cdot\left(-y_j\right)^{\beta T-1}\cdot\exp\left[-\alpha T\cdot\left(-y_j\right)^{\beta T}\right]\cdot dT\cdot(-1)}$$

Some 2D-test data are provided in literature for Grey Cast Iron and Glass C 90, the latter used as window pane of the ISS. For completion the author's accompanying evaluations shall be presented at the end of chapter 24.

(The generation of the following §24-figures has been performed about 2015/2016, whereas §25 is a present complement elaboration).

24.2 Visualization of 3D compression test data: Normal Concrete

In *Fig. 24-1,left*, the course of test data is mapped. As coordinates, the Lode-Haigh-Westergaard coordinates are used which equally count in all directions of the 3D stress space (*for understanding see Fig.14-9*). The tensile strength is used for normalization in the case of brittle materials.

The right part figure displays the fracture failure body, on which the 3 main meridians are depicted. For the tensile meridian a Lode angle ϑ = +30° is valid and for the compressive meridian ϑ = -30°. The shear meridian was chosen by the author as neutral meridian with the Lode angle ϑ = 0. For each mode, the SFC model parameters must be determined in each associated 'pure'failure mode domain. In this context physics of slightly porous isotropic materials is to remember: **bi-axial tension = weakest link failure behavior ($R^{tt}<R^{t}$, which partly seems to be not accepted in civil engineering) and * bi-axial compression = redundant (benign) failure behavior ($R^{cc}>R^{c}$).*

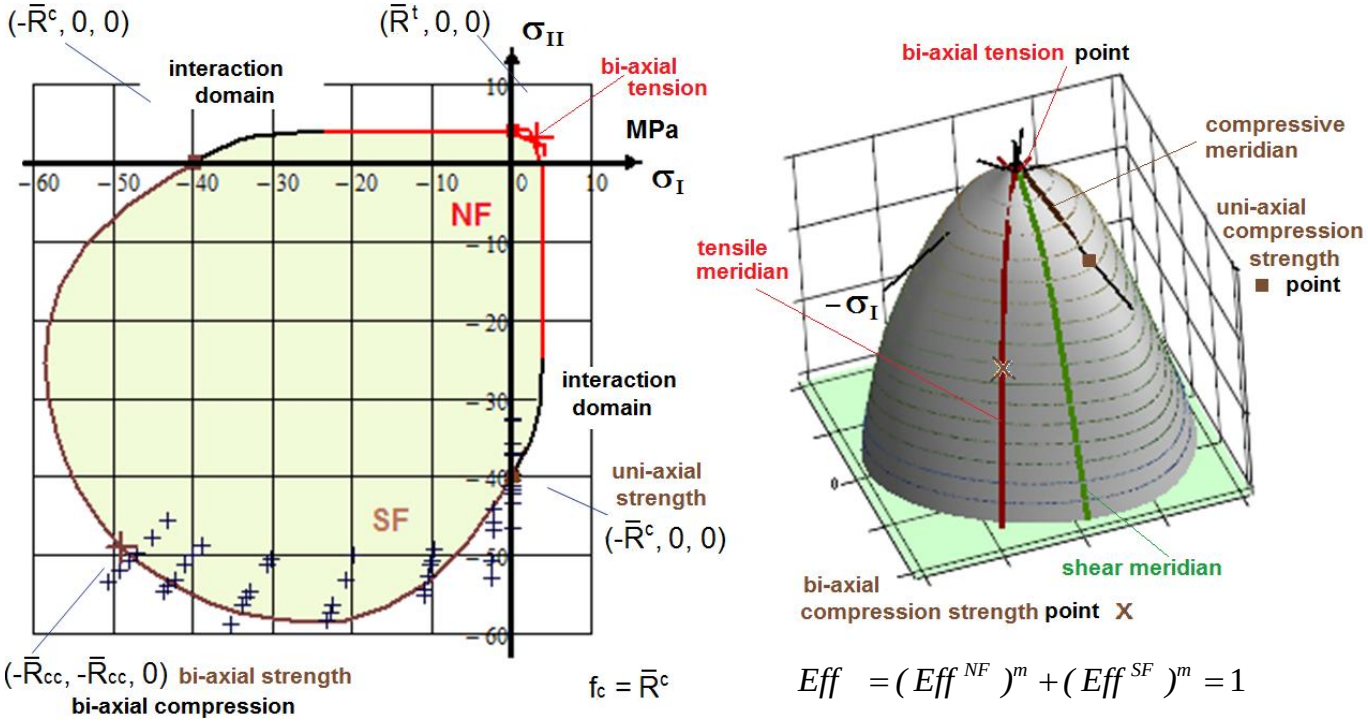


Fig.24-1, Normal Concrete: mapping of 2D-test data in the Principal Stress Plane as the bias cross-section of the fracture body. R= strength, t=tensile, c=compressive; bar over means average (mean) value. μ ≅ 0.2. (test data, courtesy: IfM Dresden)

Fig.24-2 through *24-4* present a hoop cross–section (*octahedral stress plane or so-called π-plane*), two axial cross-sections, the meridians of the failure body, and two views of the failure body.

The interaction to be performed has to capture both the modes. Hence for a common display, a normalization strength is to employ, generally the tensile strength.

Table 24-2, Normal Concrete: Data set

$$F^{NF} = F^{\sigma} = c^{NF} \cdot \frac{\sqrt{4J_2 - I_1^{\,2}/3} + I_1}{2 \cdot \bar{R}^t} \;,\; F^{SF} = F^{\tau} = c_{1\Theta}^{SF} \cdot \frac{6J_2 \cdot \Theta^{SF}}{2 \cdot \bar{R}^{c2}} + c_2(\mu) \cdot \frac{I_1}{\bar{R}^c} = 1$$

Normalizing here with $\bar{R}^t$ and $\bar{R}^c$. Tension dent too small to be practically of interest $\rightarrow c^{NF} = 1$.

2 remaining unknowns require 2 fix stress fracture points on the surface of the fracture body:

$$\{\sigma_{fr}\}: \left(-\bar{R}^c, 0, 0\right)^T, \left(-\bar{R}^{cc}, -\bar{R}^{cc}\, 0,\ 0\right)^T, \quad m = 2.9,$$

with the values in MPa = N/mm^2: $\bar{R}^t = 4$, $\bar{R}^c = 40$, $\bar{R}^{cc} = 49$, $\Theta_{f\,p}{}^{c} = 51° \rightarrow \mu = 0.21$,

$c_{1\Theta}^{SF} \cdot \Theta^{CM} = 1 + c_2$ with $c_2 = 4.3$ as friction parameter, $\vartheta = -30°$ for CM, +30° for TM

$c_{1\Theta}^{SF} = 6.8$, $d^{SF} = 0.51$, $\Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot \sin(3\vartheta)} \rightarrow \Theta^{TM} = 1.15$, $\Theta^{CM} = 0.79 \equiv \Theta^{\tau}$.

For the determination of the closing cap and the open bottom of the fracture body:

$\bar{R}^{ttt} = 3.6 \rightarrow$ closing cap point $\max I_1 = 3 \cdot \bar{R}^{ttt}$, $\bar{R}^{ccc} = 1000$ MPa (set for computation).

With Awaji-Sato the non measurable $\bar{R}^{ttt}$ is estimated: $\bar{R}^{ttt} = \bar{R}^t / 3^{1/M}$, $M = \ln(2) / \ln(\bar{R}^t / \bar{R}^{tt})$.

$\bar{R}^{tt} = 0.9 \cdot \bar{R}^t$ (assumed), $s^{cap} = -0.57$. Further $\alpha_\tau = 0.0037$, $\beta_\tau = 1.92$.

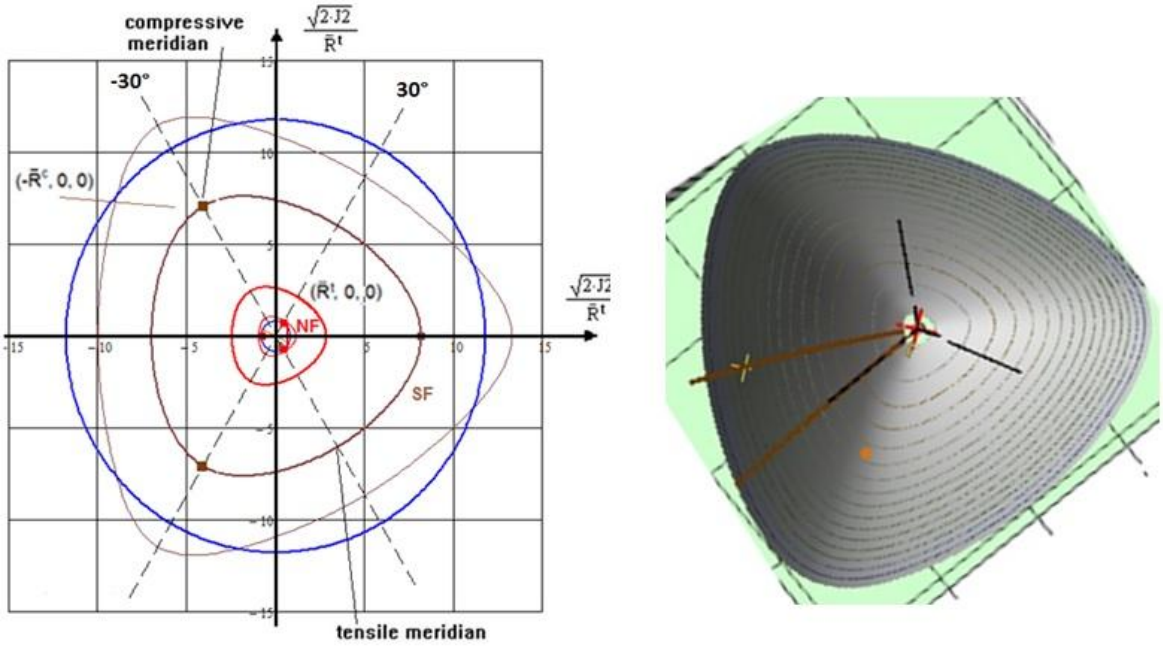


*Fig.24-2, Normal Concrete: Top view: Octahedral stress plane (π-plane) exhibiting the constant Eff- lines on the body (the **blue** line refers to $I_1 = 0$). Right: X R^{cc}, ● R^c.*

In *Fig.24-3* the modeling of cap, NF domain (marginal) and of the SF fracture domain is depicted. Modelling of a cap is shown in the sub-chapter foam.

Fig.24-4 shows the three basic meridians and two strength points, compressive strength (dot) and bi-axial compressive strength (cross).

Fig.24-5 informs about the test data scatter of the 3D fracture states experienced under hydrostatic pressure when running test on the tensile meridian and on the compressive meridian (-30°), selection of test data performed.

The Neutral Meridian represents the shear meridian.

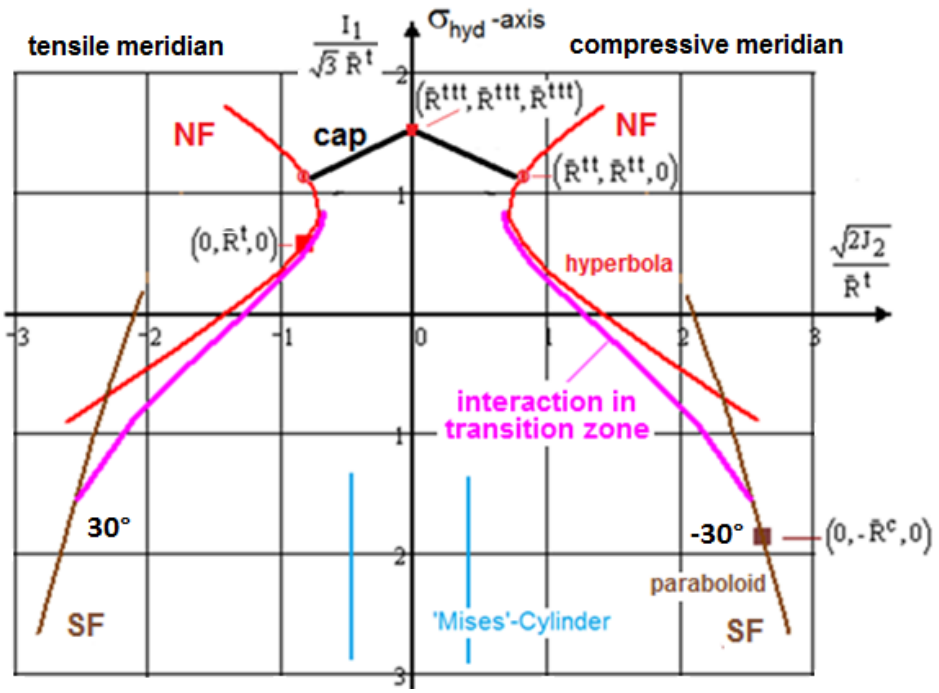


*Fig. 24-3, axial cut: Visualization of the courses of the 2 mode mapping functions for NF and SF along the meridian cross sections of the fracture body (180° cut of the 120°-body) and after **interaction***

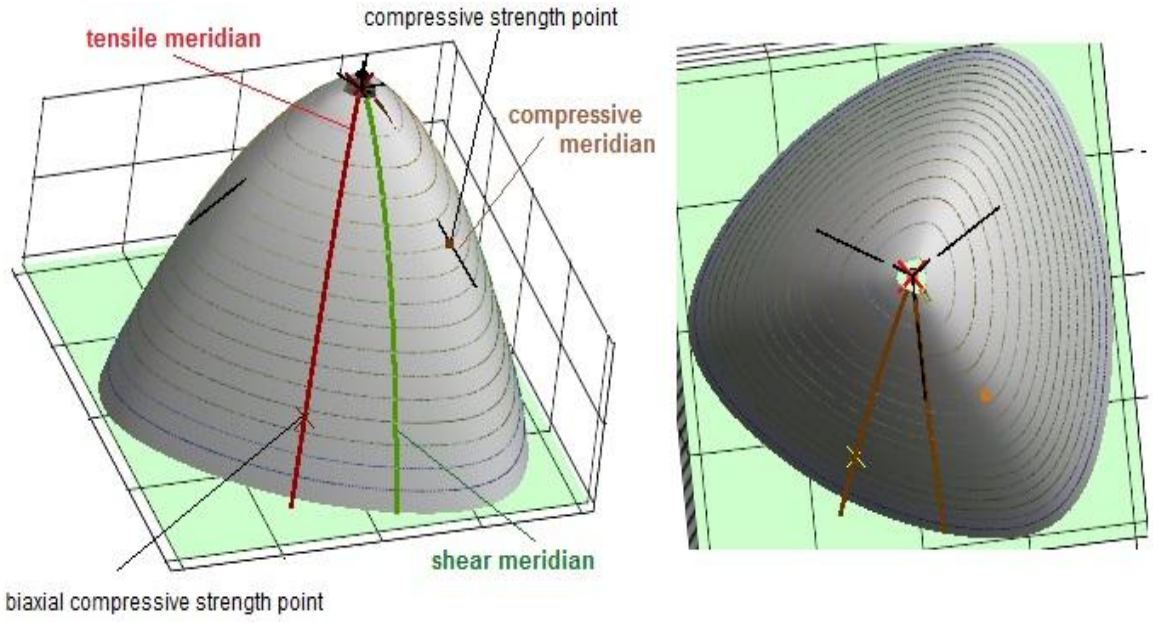


Fig.24-4: Two views of the 120°-rotationally-symmetric fracture body (hoop cross-section) of Normal Concrete with the basic three meridians and the strength points [Cun17]

In *Fig.24-6* the meridian failure curves are depicted and CM test points are inserted indicating where the determination of the Mohr quantities τ_n , σ_n , θ_{fp} has been performed. As coordinates, the Haigh-Lode-Westergaard coordinates are used which equally count in all directions of the space.

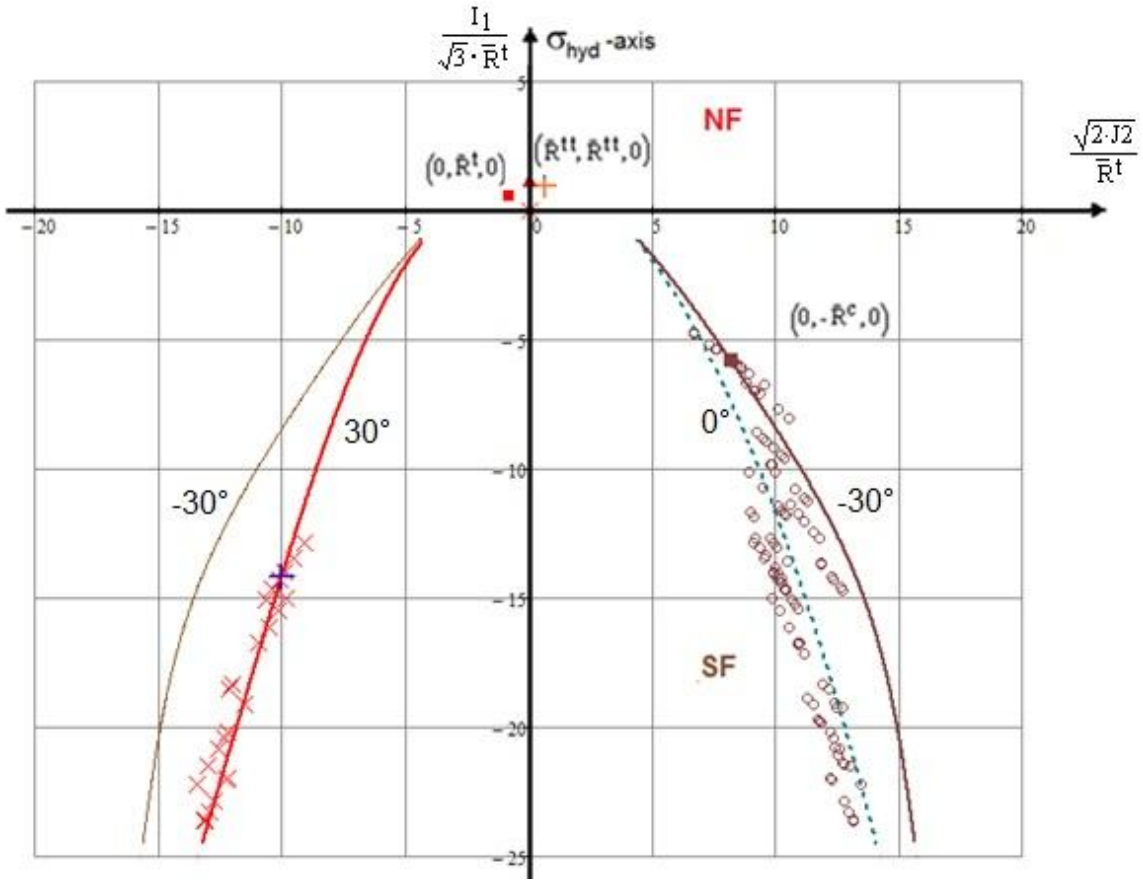


Fig.24-5: (left) Tensile meridian curve (TM) and associated test data (x, 30°), (right) compressive meridian (-30°) curve (CM) and test data on the respective hoop ring o (these circles o are located at different meridian angles ϑ), courtesy IfM Dresden

Extrapolated guess of the CM-curve on basis of mapped TM test data and vice versa:

Just replace the Lode angle part for 30°, sin (3ϑ) = 1, by that for -30°, sin (3ϑ) = -1.

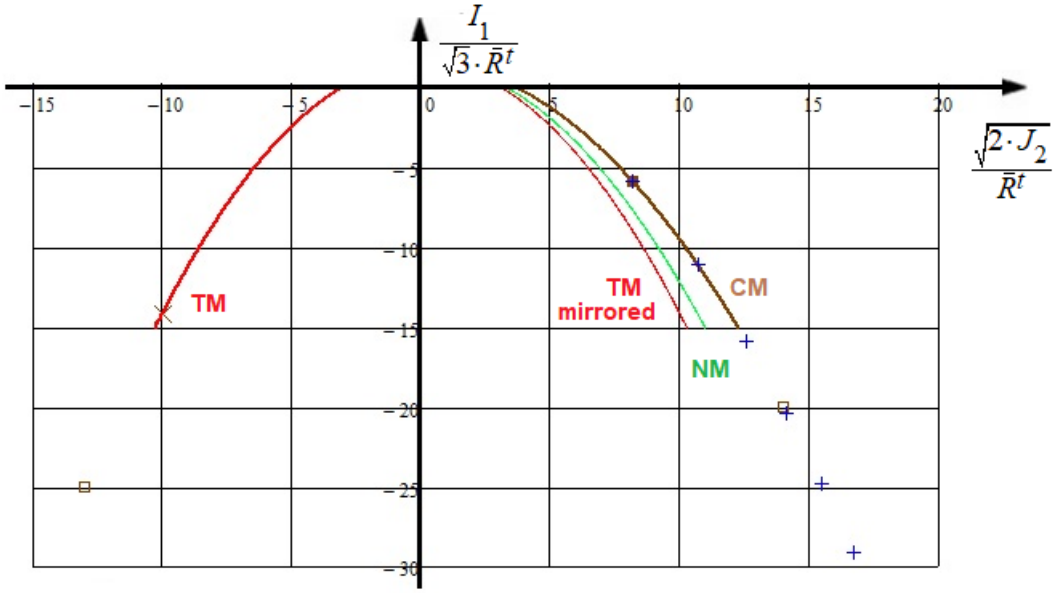


Fig.24-6: Display of all basic meridians of Normal Concrete. The + are the points where the evaluation of τ_{nt}, σ_n, θ_{fp} was performed. p = p_{hyd}. TM Tensile Meridian, CM Compressive Meridian, NM Normal Meridian.

(Mathcad unfortunately did not draw below y = -15, an often faced Mathcad problem)

The above depicted basic three meridians are: Tensile Meridian TM (ϑ = +30°) inside, Neutral Meridian NM (0°) and Compressive Meridian CM (ϑ = -30°), outside. Test points lie on the respective meridian, determined by ϑ, which means on different distances from the axis for a specific $x = I_1 / \sqrt{3 \cdot \bar{R}^t}$ value.

For Normal Concrete, *Fig.24-6* significantly supports the existence of the 120°-rotational symmetry of brittle isotropic materials.

24.3 Visualization of 3D compression test data: UltraHighPerformanceConcrete (UHPC)

Fig.24-7, left depicts the separated and later intensively investigated TM and CM test data points.

Fig.24-7, right presents all 3D test points located at different Lode angles.

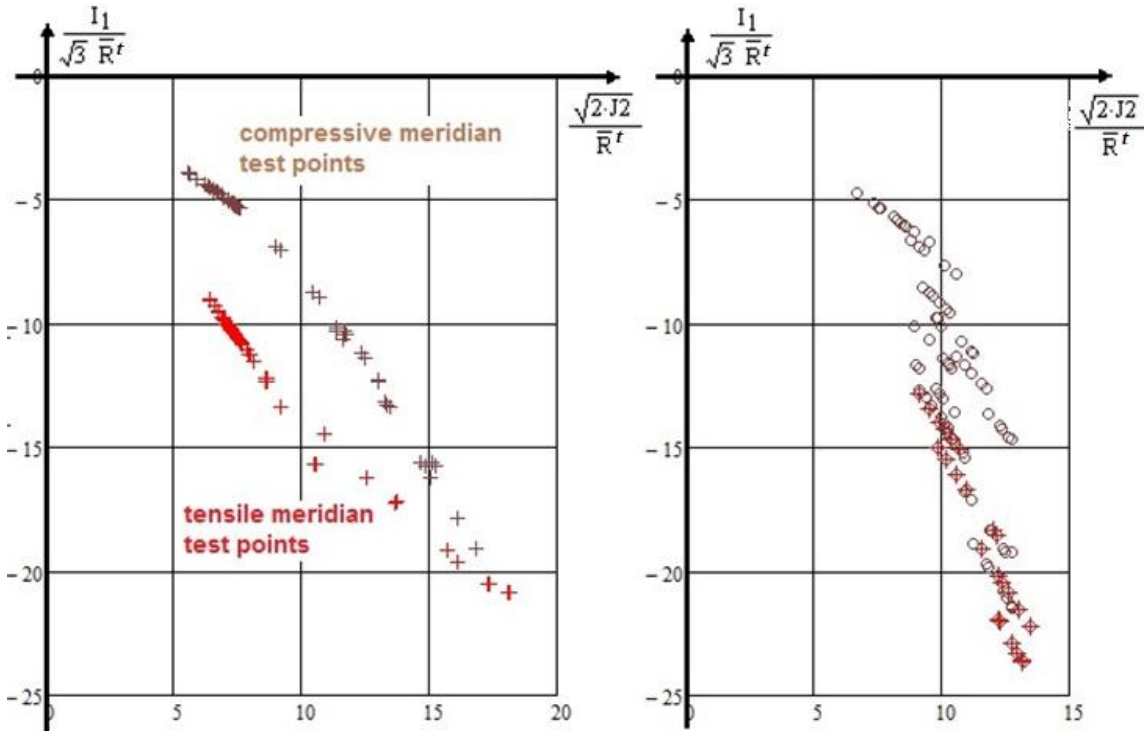


Fig.24-7 UHPC: Compressive and tensile meridian points
UHPC, separated test points: (left) tensile meridian + (ϑ = +30°) and compressive meridian + (ϑ = -30°) ; (right) all 3D test points are marked by **o** *(hoop ring, ($\vartheta \neq$,+, - 30°)), visualizing to be located at different meridians*

Fig.24-8 outlines modelling ideas for UHPC.

As could be still recognized for Normal Concrete, the failure body possesses inward dents for $I_1 > 0$ and outward dents for $I_1 < 0$ in contrast to porous concrete stone, where it is also inward, see *Fig.24-9.* Due to *Fig, 24-7*, the dents become smaller with increasing negative I_1. This is to consider by the envisaged correction function.

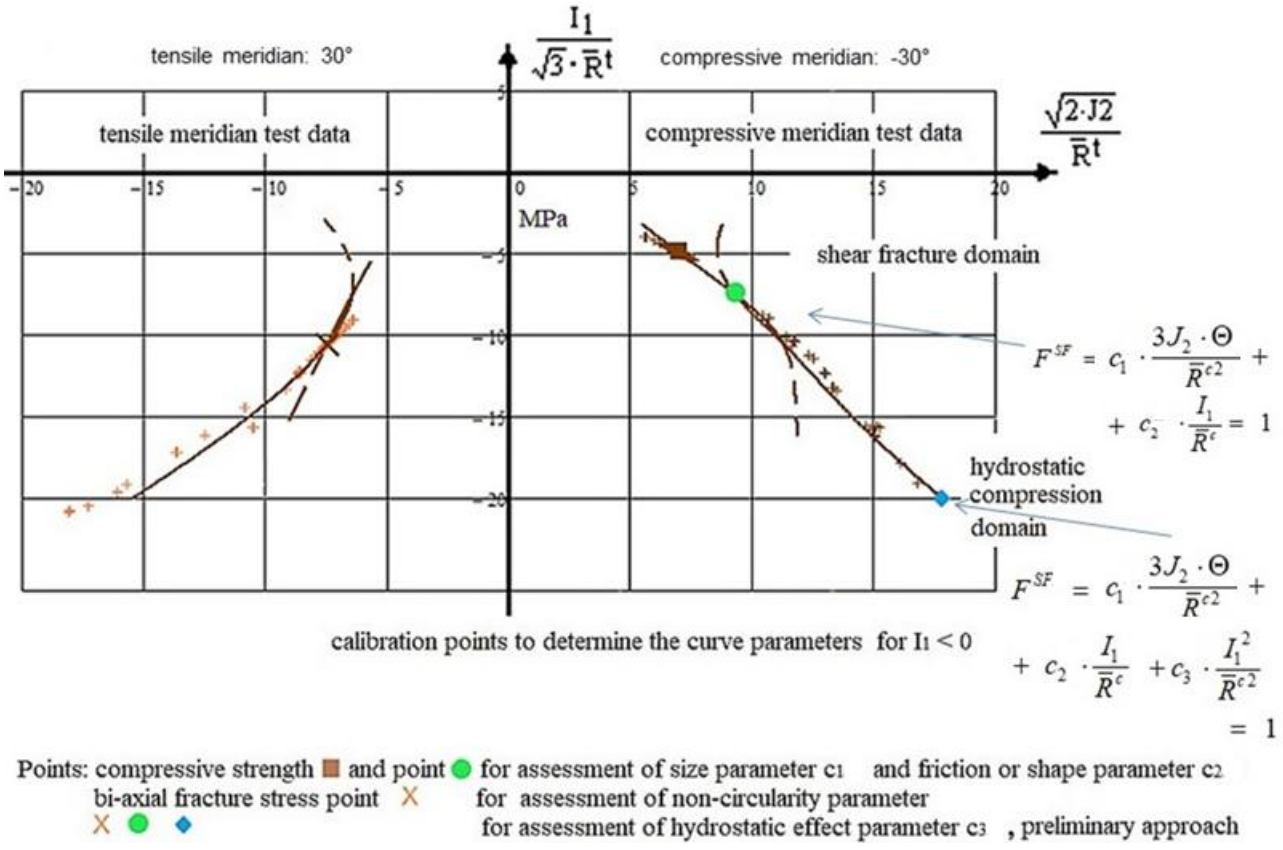


Fig.24-8 Ultra-High-Performance-Concrete (UHPC):
[Test data: Dr. Speck, IfM, TU-Dresden]. From this general data set as sub-sets the meridian data sets (constant Lode angles) have been extracted by the author

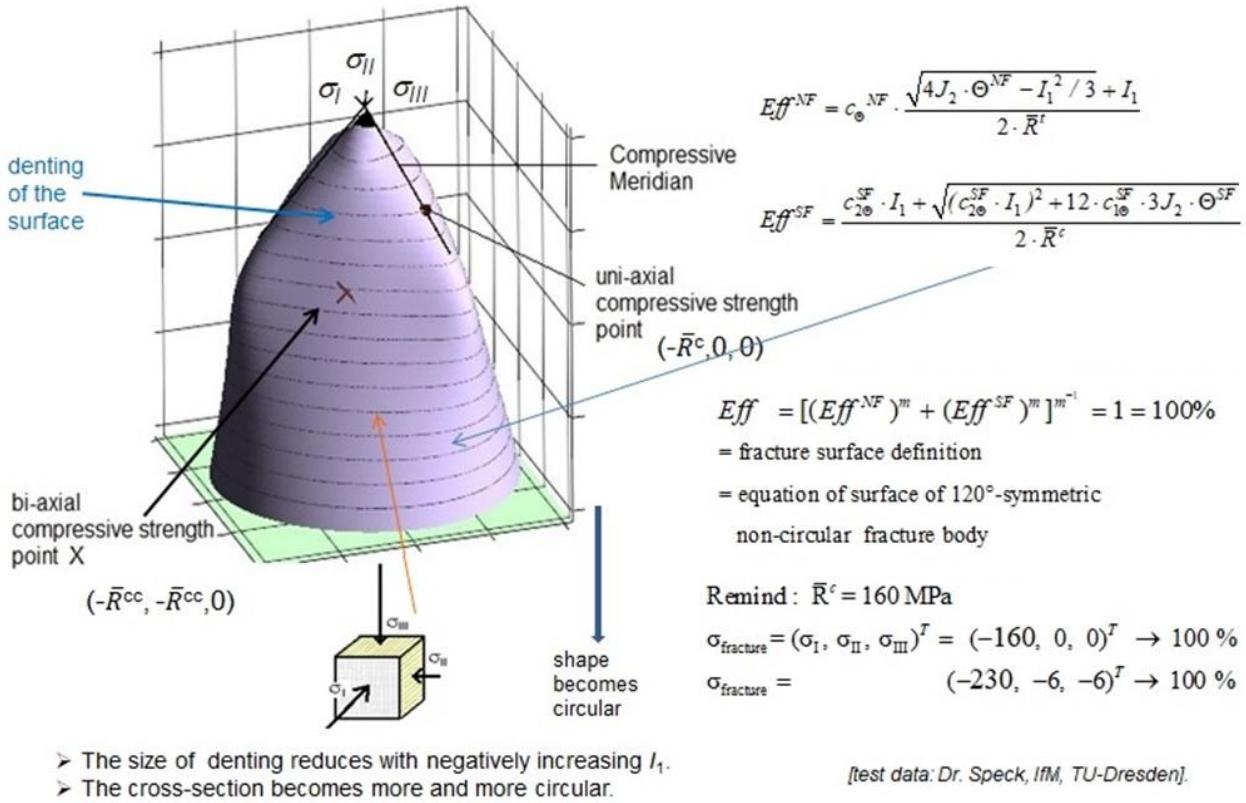


Fig.24-9, UHPC: Fracture body showing decay of denting with a negative I_1

Fig.24-10 shows a graph the bi-axial compressive strength over the uniaxial compressive strength. It turns out that with increasing uniaxial strength the bi-axial strength approximates the uniaxial strength. The author tries to explain this: The effect of redundancy under hydrostatic loading can be interpreted as an out-smoothing of stress concentrations. In the case of Normal Concrete this effect becomes more chances according to being more roughly grained than UHPC. This explains why the bi-axial strength capacity increase of a roughly grained Normal Concrete is higher than for UHPC.

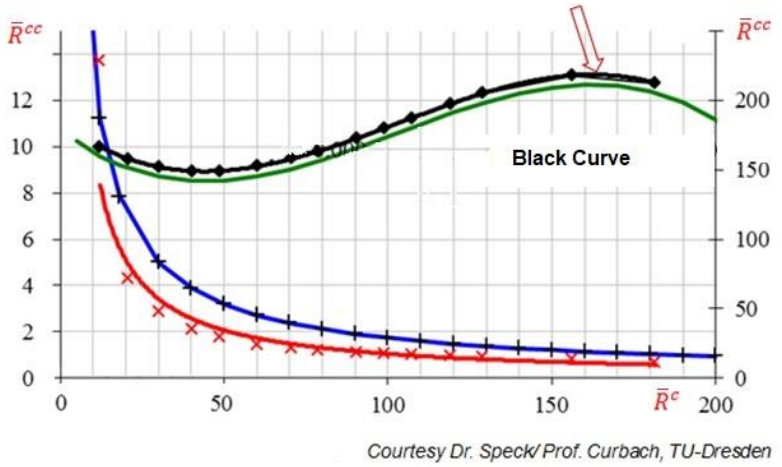


Fig.24-10: compressive strength capacity ratio of concrete $\bar{R}^{cc} / \bar{R}^{c}$ *(R = f),*

$\bar{R}^{cc} / \bar{R}^{c}$ (Normal Concrete) > $\bar{R}^{cc} / \bar{R}^{c}$ (UHPC)

In *Fig.24-11* are depicted the 2 mode domains and its transition zone obtained with the interaction formula. This task concentrated about performing an interaction in the principal plane $I_1 > -2R^{cc}$.

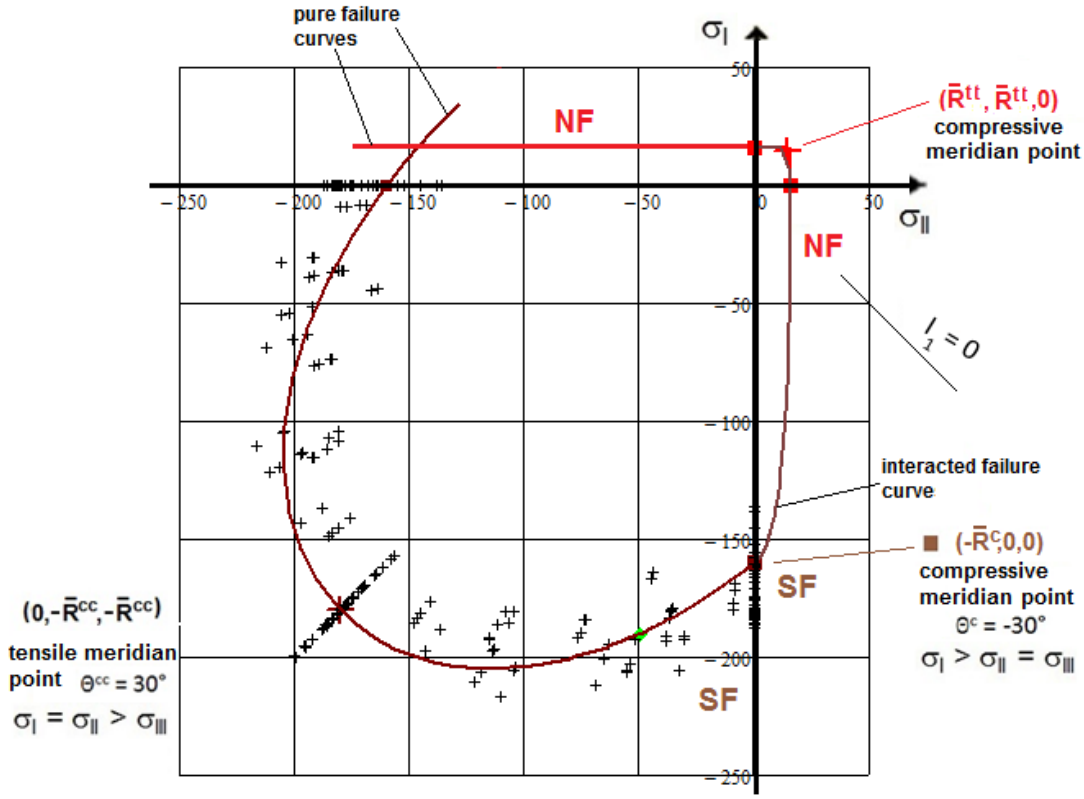


Fig.24-11, UHPC: Principal stress plane with measured test data and evaluated strength points

24.4 3D-Visualization of 2D compression test data: Porous Foam Rohacell 71 IG

With the Rohacell Hero (Evonik) a PMI (Poly-Methacryl-Imide) structural foam of an increased tensile fracture strain a light material is available which may replace the expensive honeycombs. Given is 'only' a 2D-Test Data Set and therefore just a realistic mapping in the Principal Stress Plane is possible data set used (*thanks to Dr. Kolupaev for the test data set*) reads:

$$\bar{R}^{t} = 1.8;\ \bar{R}^{tt} = 1.25;\ \bar{R}^{ttt} = 1.01;\ \bar{R}^{c} = 1.65;\ \bar{R}^{cc} = 1.4;\ \bar{R}^{ccc} = 1.53,\ \max I_1 = 3.03;$$
$$\min I_1 = -4.58,\ d^{NF} = -0.71;\ d^{CrF} = 0.21;\ c^{CrF} = 1.03, s^{cap} = -0.27;\ s^{bot} = 0.87,$$
$$\vartheta^{NF} = -0.57;\ \vartheta^{CrF} = 0.52;\ \Theta^{NF} = 1.2;\ \Theta^{CrF} = 1.07, m = 2.5.$$

The *Figs.* *24-12* and *24-13* show the application of the respective SFC for the given Rohacell.

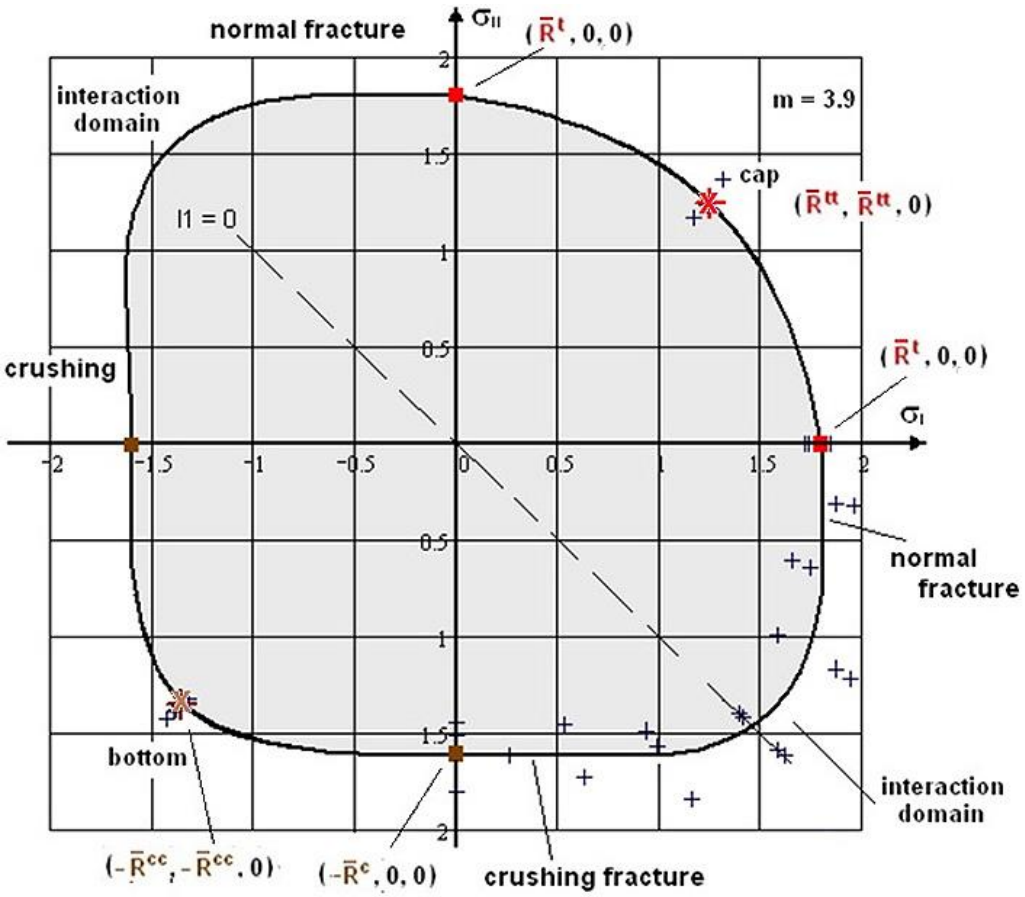


Fig.24-12, Foam Rohacell 71 IG: Mapping of 2D-test data in the Principal Stress Plane. MathCad plot [test data: courtesy V. Kolupaev, LBF Darmstadt]

The SFC-model for porous Foam Rohacell including the cap model is applicable for Concrete Stone material, too. On top a bottom is now to model.

Usually, for structural parts of high stiffness, honeycombs are used. With the new Rohacell Hero (Evonik) a PMI (Poly-Methacryl-Imide) structural foam of an increased tensile fracture strain is available which may replace the expensive honeycombs. In order to apply this material in structural parts Structural Integrity must be proven. This requires reliable multi-axial strength test data as well as reliable Strength Failure Conditions SFCs (criteria) for an optimal Design Development process. Given is 'only' a 2D-Test Data Set and therefore just a realistic mapping in the Principal Stress Plane is possible. To apply is the 2D subversion of the 3D SFC.

→ From this follows: Validation of the 3D SFC is ‘just’ 2D-based.

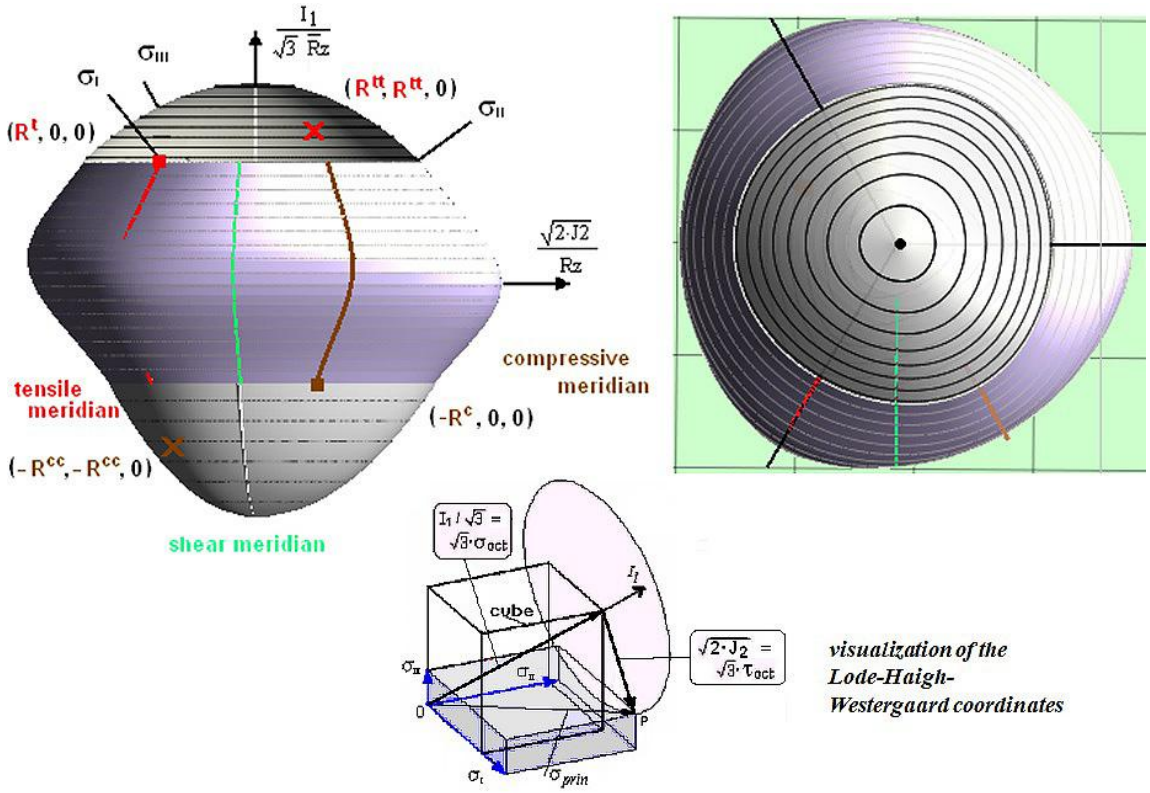


Fig.24-13, Rohacell 71 IG: Fracture body with its different meridians (left) and view from top (right).

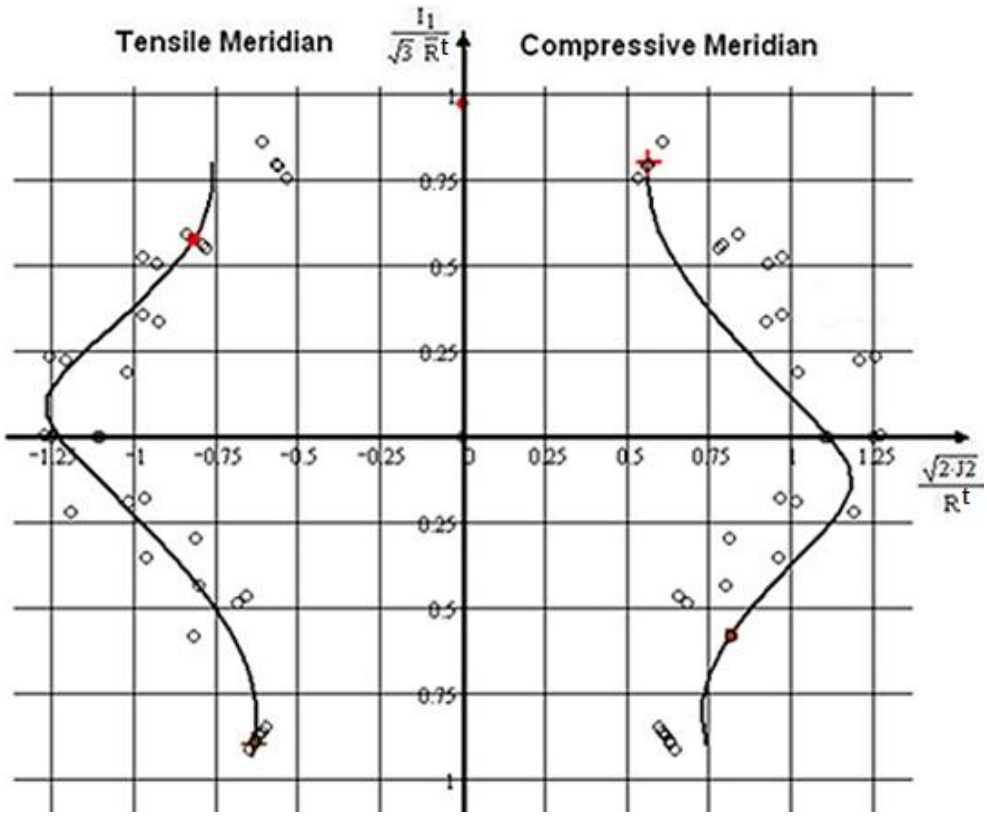


Fig24.14, Rohacell 71 IG: Meridional cross-section of the fracture body.

The test points in *Fig.24-14* are located at a distinct Lode angle of its associated ring o, 120°-symmetry. Cap and bottom are closed by a conical shape, a shape being on the conservative side, + bi-axial.

*Table 24-3: Derivation of model parameters (*θcr should read ϑ_{cr})

$Rc = 1.36 \quad Rcc = 1.35 \quad maxI1 = 3.03 \quad \frac{I1c}{\sqrt{3}\cdot Rt} = -0.57 \quad \frac{I1cc}{\sqrt{3}\cdot Rt} = -0.962 \quad \theta crc := -0.52 \quad \theta crcc := 0.52 \quad \theta\sigma ccc := 0$

$Rt = 1.62 \quad Rtt = 1.25 \quad minI1 = -3.67 \quad \frac{I1t}{\sqrt{3}\cdot Rt} = 0.642 \quad \frac{I1tt}{\sqrt{3}\cdot Rt} = 0.891 \quad \theta\sigma t := 0.52 \quad \theta\sigma tt := -0.52 \quad \theta\sigma ttt := 0$

$$x = \frac{\sqrt{2J2}}{Rt} \qquad ycap = \frac{maxI1}{\sqrt{3}\cdot Rt} + scap\cdot\left(\frac{\sqrt{2J2}}{Rt}\cdot\sqrt[3]{1 + d\sigma\cdot\sin(3\theta\sigma)}\right)^2 \qquad y = \frac{I1}{\sqrt{3}\cdot Rt}$$

Vorgabe $scap := 1 \quad d\sigma := -0.4$ **Cap: maxI1 > I1t**

$$\frac{I1t}{\sqrt{3}\cdot Rt} = \frac{maxI1}{\sqrt{3}\cdot Rt} + scap\cdot\left(\frac{\sqrt{2J2t}}{Rt}\cdot\sqrt[3]{1 + d\sigma\cdot\sin(3\theta\sigma t)}\right)^2 \qquad \frac{I1tt}{\sqrt{3}\cdot Rt} = \frac{maxI1}{\sqrt{3}\cdot Rt} + scap\cdot\left(\frac{\sqrt{2J2tt}}{Rt}\cdot\sqrt[3]{1 + d\sigma\cdot\sin(3\theta\sigma tt)}\right)^2$$

$Acap := Suchen(scap, d\sigma) \quad Acap = \begin{pmatrix} -0.506 \\ 0.168 \end{pmatrix} \quad scap := Acap_0 \quad d\sigma := Acap_1$ $scap = -0.51$ $d\sigma = 0.17$

$$F\sigma = c1\Theta\sigma\cdot\frac{\sqrt{4\cdot J2\cdot\Theta\sigma - \frac{1}{3}\cdot I1^2} + I1}{2Rt} = 1$$

Vorgabe $c1\Theta\sigma := 0.5$ **NF: I1t > I1**

$$c1\Theta\sigma\cdot\frac{\sqrt{4\cdot J2t\cdot\sqrt[3]{1 + d\sigma\cdot\sin(3\theta\sigma t)} - \frac{1}{3}\cdot I1t^2} + I1t}{2\cdot Rz} = 1$$

$A\sigma := Suchen(c1\Theta\sigma) \quad A\sigma = 0.885 \quad c1\Theta\sigma := A\sigma$ $c1\Theta\sigma = 0.88$

$$ybot = \frac{minI1}{\sqrt{3}\cdot Rt} + sbot\cdot\left(x\cdot\sqrt[3]{1 + dcr\cdot\sin(3\theta cr)}\right)^2$$

Vorgabe $sbot := 1 \quad dcr := -1$ **SF: 0 > I1c**

$$\frac{I1c}{\sqrt{3}\cdot Rt} = \frac{minI1}{\sqrt{3}\cdot Rt} + sbot\cdot\left(\frac{\sqrt{2J2c}}{Rt}\cdot\sqrt[3]{1 + dcr\cdot\sin(3\theta crc)}\right)^2 \qquad \frac{I1cc}{\sqrt{3}\cdot Rt} = \frac{minI1}{\sqrt{3}\cdot Rt} + sbot\cdot\left(\frac{\sqrt{2J2cc}}{Rz}\cdot\sqrt[3]{1 + dcr\cdot\sin(3\theta crcc)}\right)^2$$

$Abot := Suchen(sbot, dcr) \quad Abot = \begin{pmatrix} 0.977 \\ -0.558 \end{pmatrix} \quad sbot := Abot_0 \quad dcr := Abot_1$ $sbot = 0.98$ $dcr = -0.56$

$$Fcr = c1\Theta cr\cdot\frac{\sqrt{4\cdot J2\cdot\Theta cr - \frac{1}{3}\cdot I1^2} - I1}{2Rc} = 1$$

Vorgabe $c1\Theta cr := 1$

$$c1\Theta cr\cdot\frac{\sqrt{4\cdot J2c\cdot\sqrt[3]{1 + dcr\cdot\sin(3\theta crc)} - \frac{1}{3}\cdot I1c^2} - I1c}{2\cdot Rc} = 1$$ **Bottom: I1c > minI1**

$Acr := Suchen(c1\Theta cr) \quad Acr = 0.809 \quad c1\Theta c := Acr$ $c1\Theta c = 0.81$

Since there 3D test data and three-axis tensile fracture data are practically impossible to measure, the cap value can only be estimated probabilistically. According to Awaji-Sato [Awa73], a Weibull-based estimation of the 3-axis breaking stress value R^{ttt} results from measured values for R^{t} and R^{tt}. This type of estimation is also applied for the bottom. *For* R^{ccc}, a surcharge of 10% is applied because of the supporting pressure effect.

Table 24-4: Estimation of hydrostatic points

$Rt = 1.8 \quad Rtt = 1.25 \quad Rc = 1.6 \quad Rcc = 1.35$

$Mt := \frac{\ln(2)}{\ln\left(\frac{Rt}{Rtt}\right)} \quad Rttt := \frac{Rt}{\frac{1}{3}Mt} \quad Mc := \frac{\ln(2)}{\ln\left(\frac{Rc}{Rcc}\right)} \quad Rccc0 := \frac{Rc}{\frac{1}{3}Mc} \quad Rccc = Rccc0 \cdot 1.1$

$maxI1 := 3 \cdot Rttt \quad maxI1 = 3.03 \quad \frac{maxI1}{\sqrt{3} \cdot Rt} = 0.97 \quad minI1 := -3 \cdot Rccc0 \quad minI1 = -3.67 \quad \frac{minI1}{\sqrt{3} \cdot Rt} = -1.18$

Table 24-5: Determination of the turning point of F_σ

$$F\sigma = \frac{\sqrt{4 \cdot J2 - \frac{1}{3} \cdot I1^2} + I1}{2Rt} = 1$$

Turning point of Fσ (index w)

$$J2 = \frac{1}{3} \cdot I1^2 - I1 \cdot Rt + Rt^2 \quad \text{derivation} \quad \frac{d}{dI1}\left(\frac{1}{3} \cdot I1^2 - I1 \cdot Rt + Rt^2\right) \quad \frac{2}{3} \cdot I1W - Rt = 0 \quad I1W := 1.5 \cdot Rt$$

$$J2W = \frac{1}{3} \cdot (1.5Rt)^2 - 1.5Rt \cdot Rt + Rt^2 \quad J2W := .25 \cdot Rt^2 \quad minJ2 := 0.25 \cdot Rt^2$$

$$x1W := \frac{\sqrt{2J2W}}{Rt} \quad x1W = 0.707 \quad x2W := \frac{I1W}{\sqrt{3} \cdot Rt} \quad x2W = 0.866$$

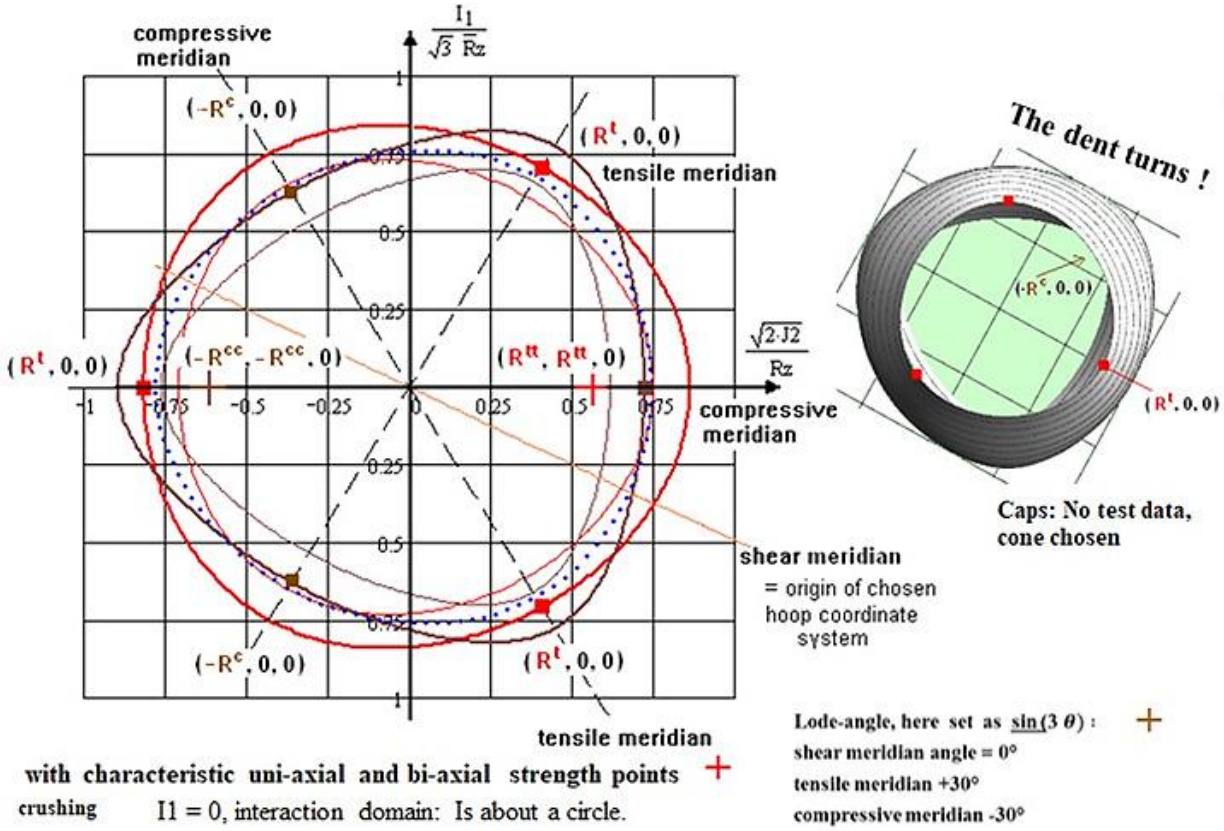


Fig.24-15: 2D Test Data and Mapping in the Orthogonal Stress Plane (brittle, porous)
Caps were taken away to better visualize that the dent turns for this material along the hydrostatic axis.

The following figure in *Table 24-5* proves that in the performed modelling no gap exists between Cap- and Fσ-domain at the axial coordinate x including the tensile strength point and between Fτ-domain and Bottom at the compressive point including coordinate x.

Cap and Bottom equations have to be resolved for xcap and xbot.

Table 24-5: Proof, that no gap exists between the differently modelled fracture body domains

$$\Theta\sigma_m = \sqrt[3]{1 + d\sigma \cdot \sin(3\delta_m)}$$

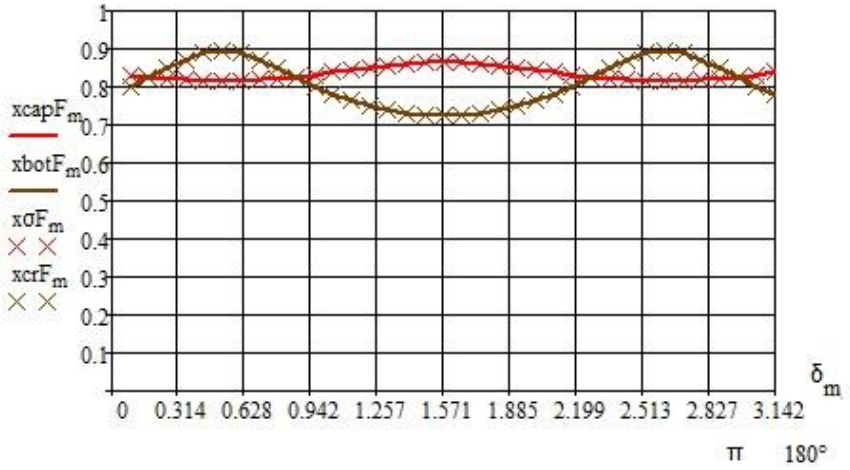
$$ycap = \frac{maxI1}{\sqrt{3}\cdot Rz} + scap\cdot\left(xcap\cdot\sqrt[3]{\sqrt{1 + d\sigma\cdot\sin(3\delta_m)}}\right)^2$$

$$x\sigma F_m = \frac{\sqrt{2\,\frac{I1t^2\cdot c1\Theta\sigma^2 - 3\cdot c1\Theta\sigma\cdot I1t\cdot Rt + 3\cdot Rt^2}{3\cdot\Theta\sigma_m\cdot c1\Theta\sigma^2}}}{Rt}$$

$$xcrF_m = \frac{\sqrt{2\,\frac{I1c^2\cdot c1\Theta cr^2 + 3\cdot c1\Theta cr\cdot I1c\cdot Rc + 3\cdot Rc^2}{3\,\Theta cr_m\cdot c1\Theta cr^2}}}{Rt}$$

$$\Theta cr_m = \sqrt[3]{1 + dcr\cdot\sin(3\delta_m)}$$

$$ybot = \frac{minI1}{\sqrt{3}\cdot Rt} + sbot\cdot\left(xbot\cdot\sqrt[3]{\sqrt{1 + dcr\cdot\sin(3\delta_m)}}\right)^2$$



24. 5 Grey-cast Iron

Fig.24-16 presents an old evaluation (about 1995) of a data set for Grey-cast iron.
Of interest is the meridional cross section, which depicts a curvature change in the tensile domain, before the intended cut-off. Drucker 'Stability postulate' problem, like for PMMA in §9.

24. 6 Isotropic Glass C 90 (window pane of ISS, Mathcad 13, 2014)

A glass fiber SiO_2 (E, S, R, AR) is made by blending raw materials, melting them at 1720°C in a three-stage furnace, extruding the molten glass through a bushing in the bottom of the fore-hearth (Vorherd), cooling the filaments with water (*to prevent the crystallization to quartz and obtain an amorphous, randomly ordered atomic structure we know as glass*) and then applying a chemical sizing. The filaments then are gathered to rovings and wound on spools. Commercial glass fiber can be made from silica alone, other ingredients are added to reduce the working temperature and impart other properties that are useful in specific applications such as making alkali-resistant (by ZrO_2) for use in concrete. [*Source OCV*].

Fig.24-17 presents a 2D-SFC-visualization in the principal stress plane and a 3D-Visualization in the meridional cross-section.

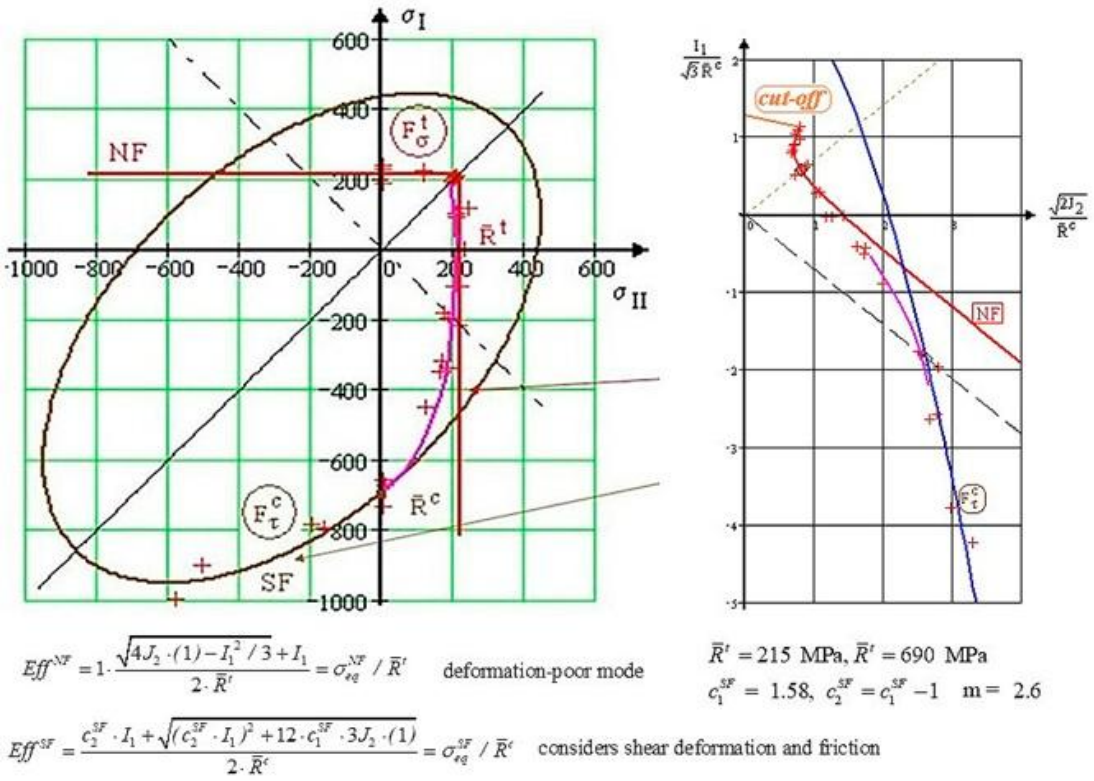


Fig.24-16: 2D-application to Grey-cast Iron [Coffin]. Principal stress plane and meridional cross section

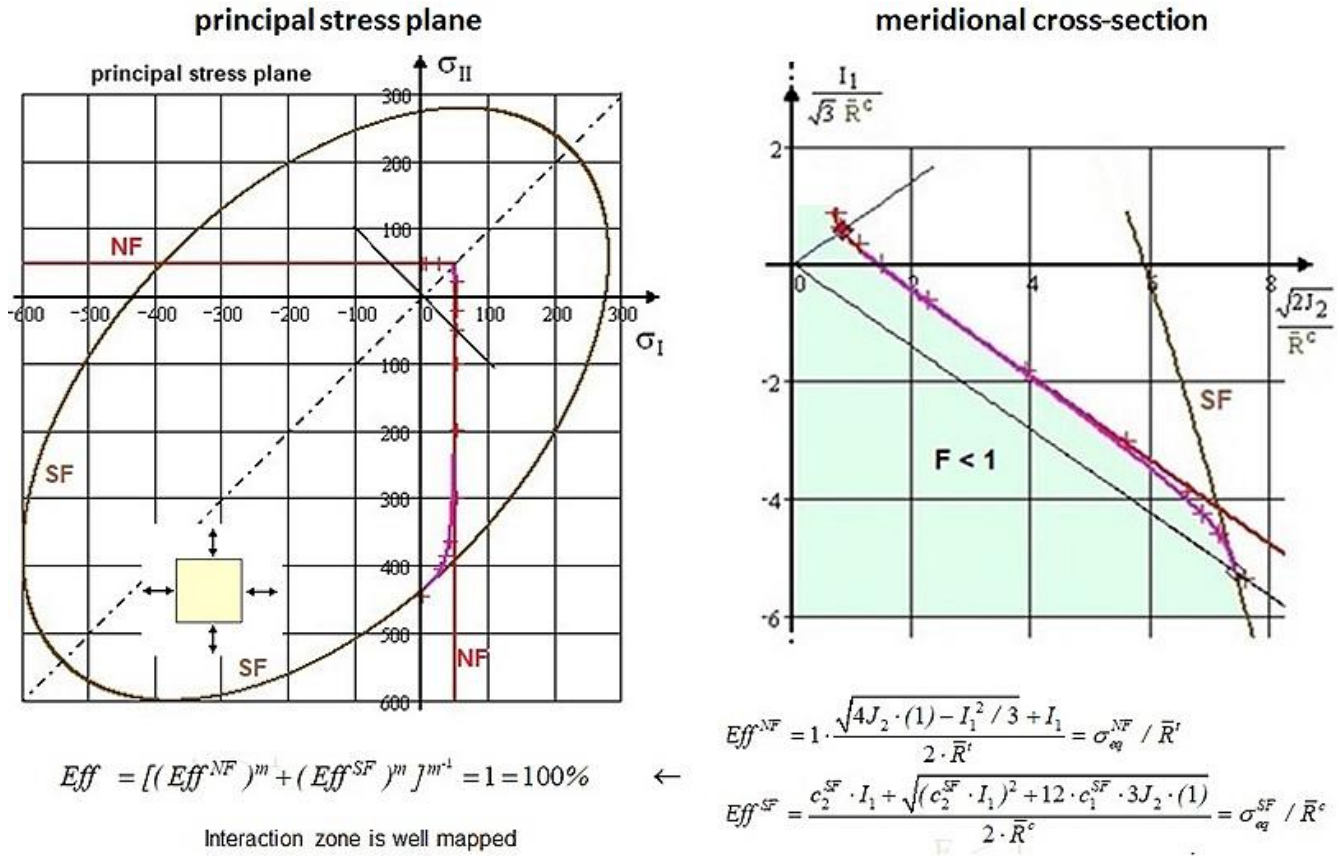


Fig.24-17, Glass C 90: [Kow83], 2D and 3D-visualizations

As still mentioned, $F = 1$ or $Eff = 100\%$ mathematically defines the surface of the fracture failure body. Such a body is rendered here using the Haigh-Lode-Westergaard coordinates with $I_1/\sqrt{3}$ as y-coordinate and $\sqrt{2 \cdot J_2}$ as x-coordinate. *Fig.5-4* depicts the stress states belonging to a tensile meridian and to a compressive meridian. These are those axial cross–sections of the failure body (right) along most of the compression tests are run.

Mechanical strength behavior shows up: Different structural materials

- can possess similar material behavior
- can belong to the same class of material symmetry.

Welcomed Consequence is:

The same strength failure function SFC can be used for different materials. The Foam SFC is exemplarily applicable to Concrete Stone offering the advantage:

→ For a concrete stone material more information is available for pre-dimensioning and modelling in the case of a newly applied material from available foam experiments as a still being tested similarly behaving material.

LL:

** 120°-rotational symmetry is inherent for isotropic materials*

** R^c lies on the CM, R^t on the TM and R^τ in the transition zone between the two modes F^σ and F^τ. This indicates, that an estimation of R^τ, obtained by just an extrapolation from R^c, will be questionable*

** The failure body possesses inward dents for $I_1 > 0$ and outward dents for $I_1 < 0$ in contrast to porous concrete stone, where it is also inward. These dents become smaller with increasing $|I_1|$.*

** There is a pretty large scatter of the compressive strength data in the 2D-figure*

** Mapping of the course of test data with the SFCs worked very well*

** Fracture body shows a decay of denting with increasing negative I_1*

** The higher the strength ratio $SR = R^c/R^t$ becomes, the more the Cohesive Strength value narrows R^t !*

** The strong influence of IFF1 is fully demonstrated.*

An extrapolation from the compression strength - just applying F^τ - cannot be accurate !

** A smaller μ value is more conservative.*

25 Improved Mohr-Coulomb Curve and Cohesive shear Strength R^{τ} of Isotropic materials

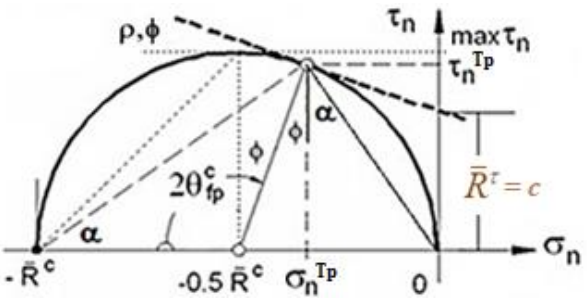
Aim: *Enabling a correct understanding of the cohesive strength value* $\bar{R}^{\tau}$ *as a bi-axial fracture quantity.*

25.1 General (work in 2025)

As the author had to design with all three basic material families isotropic, transversely-isotropic and orthotropic for him a conflict comes up, if the used index-letters are not material-dedicated, not self-explaining and not generally used in mechanics. This caused him as civil engineer to publish a Glossar.
In order to not disturb the co-working engineering family in construction the practiced fiber-reinforced polymer matrix-linked terminology (*world-wide applying the suffixes* $_{1,\,2}$) should be also used with fiber-reinforced mineral matrix-linked Carbon Concrete (*another field of the author*). Further, the following analogous letters will be intentionally proposed to use $c \rightarrow R^{\tau}$, $\sigma_1 \rightarrow \sigma_{II}$.

As some researchers in construction still began, when investigating Mohr-Coulomb friction, according to general mechanics they attribute usually positive marked compressive stresses a negative sign. Hence, the positive direction is to display rightward, *Fig. 25-1 (left)*. (Historically, civil engineers basically were more faced by compression and mechanical engineers by tension. This explains the different sign choice).

Fig.25-1 outlines at the left the Mohr entities and right the transformation matrix for transforming principal structural stresses into Mohr stresses.



$$\begin{Bmatrix}\sigma_{\lambda}\\ \sigma_{n}\\ \sigma_{t}\\ \tau_{n}\\ \tau_{t\lambda}\\ \tau_{t\lambda}\end{Bmatrix} = \begin{bmatrix}1 & 0 & 0 & 0 & 0 & 0\\ 0 & c^2 & s^2 & 2sc & 0 & 0\\ 0 & s^2 & c^2 & -2sc & 0 & 0\\ 0 & -sc & sc & (c^2-s^2) & 0 & 0\\ 0 & 0 & 0 & 0 & c & -s\\ 0 & 0 & 0 & 0 & s & c\end{bmatrix} = \begin{Bmatrix}\sigma_{I}\\ \sigma_{II}\\ \sigma_{III}\\ 0\\ 0\\ 0\end{Bmatrix}$$

With $\eta = \sigma_{II} - \sigma_{III}$ and $\sigma_{\lambda},\ \tau_{t\lambda},\ \tau_{n\lambda} = 0$, the used addition theorems read: $\tau_{nt} \equiv \tau_n$

$$\sigma_n - \sigma_t = c^2 \cdot \eta - s^2 \cdot \eta = C \cdot \eta \ , \quad S = \sqrt{1-C^2}, \quad C = c^2 - s^2 = 2c^2 - 1 = 1 - 2s^2,$$

$$\sigma_n + \sigma_t = \sigma_{II} + \sigma_{III} = I_1, \quad \sigma_t = \sigma_n - C \cdot (\sigma_{II} - \sigma_{III}), \quad \eta = \sigma_{II} - \sigma_{III},$$

$$\tau_n = -s \cdot c \cdot \sigma_{II} + s \cdot c \cdot \sigma_{III} = -0.5 \cdot \sqrt{1-C^2} \cdot (\sigma_{II} - \sigma_{III}) \quad \text{with} \quad c = \cos\theta, \quad s = \sin\theta,$$

$$\sigma_n = c^2 \cdot \sigma_{II} + s^2 \cdot \sigma_{III} = \frac{(C+1) \cdot \sigma_{II} + (1-C) \cdot \sigma_{III}}{2}. \qquad 2 \cdot \theta_{fp}\,^{\circ} = 90^{\circ} + \phi^{\circ}.$$

Fig. 25-1: Transformation of Principal Structural Stresses into Mohr Stresses and helpful Addition Theorems outlining the fracture plane angle measure C(θ_{fp}). (bar over due to model mapping)

History of the Mohr-Coulomb (M-C) curve = 'Mohr Envelope': Otto Mohr did not commit himself to the intersection of the envelope with the σn-axis. A. Leon was probably the first to use an envelope, taking a parabolic one.

Assumption of Otto Mohr:

Mohr's basic assumption was: *"The strength of a material is determined by the (Mohr) stresses on the fracture plane".* This means for the linear Mohr-Coulomb (M-C) formulation $\tau_n = \bar{R}^{\tau} - \mu \cdot \sigma_n$.

Herein, the value μ is the intrinsic friction value of the material and $\bar{R}^{\tau}$ the so-called cohesion strength.

The other two shear stresses $\tau_{t\lambda}$, $\tau_{n\lambda}$ in *Fig.25-1* are zero. The normal stress σ_t must be accounted for in the transformation process but will finally have no influence, which has to be proven when following Mohr and this must be proven. According to Mohr, the stresses σ_n and τ_n are the only fracture-responsible stresses, the normal stress σ_λ can be set zero.

A stress analysis with Mohr stresses is principally simpler than with structural stresses, however the fracture plane angle θ_{fp} must be known and this makes it difficult. Let's begin classically:

Linear M-C approach delivering a relationship C(μ) to friction value μ and Touch point coordinates

$$F_{\text{linM-C}} = \frac{\tau_n}{R^\tau - \mu\cdot\sigma_n} = 1. \qquad \text{Implicit differentiation (minus sign) of the SFC } F_{\text{linM-C}}$$

$$\frac{d\left(\frac{\tau_n}{R^\tau - \mu\cdot\sigma_n}\right)}{d\sigma_n} = \frac{\mu\cdot\tau_n}{\left(R^\tau - \mu\cdot\sigma_n\right)^2} \quad \text{and} \quad \frac{d\left(\frac{\tau_n}{R^\tau - \mu\cdot\sigma_n}\right)}{d\tau_n} = \frac{1}{R^\tau - \mu\cdot\sigma_n}$$

finally gives a friction relation $$\frac{d\tau_n}{d\sigma_n} = -\frac{dF\tau/d\sigma_n}{dF\tau/d\tau_n} = -\frac{\frac{\mu\cdot\tau_n}{\left(R^\tau - \mu\cdot\sigma_n\right)^2}}{\frac{1}{R^\tau - \mu\cdot\sigma_n}} = \frac{-\mu\cdot\tau_n}{R^\tau - \mu\cdot\sigma_n} = -\mu\ .$$

The Touch point coordinates from a given fracture angle θ_{fp}^c or the related friction value μ: bar skipped

$$(\tau_n^{Tp},\sigma_n^{Tp}) \rightarrow (\tau_n = R^\tau, \sigma_n = 0) \quad \text{applying} \quad c = \cos\theta_{fp}^c,\ \ s = \sin\theta_{fp}^c,$$

$$\sigma_n^{Tp} = c^2\cdot\left(-R^c\right)\ ,\ \ \tau_n^{Tp} = -s\cdot c\cdot\left(-R^c\right) \qquad \text{leading to} \qquad \tau_n = \tau_n^{Tp} + \mu\cdot\sigma_n^{Tp}.$$

Note on the Mohr-Coulomb (M-C) criterion (also see § 26.1):

In a paper, recently published in *Scientific Reports (2024) nature portfolio [Stress-dependent Mohr–Coulomb shear strength parameters for intact rock* [*Li24*], a critical assessment of the M-C criterion is performed. This report shall be not scientifically reworked here. However, my summarizing private elaboration at hand shall give some discussion points. It just tries to inform about my procedure to derive an accurate Mohr-Coulomb Envelope including Cohesive Strength.

Basis of my procedure is the knowledge, that the M-C Envelope, practically spanning from the Touch point $(\tau_n^{Tp},\sigma_n^{Tp}) \rightarrow (\tau_n = R^\tau, \sigma_n = 0)$, is affected (*Fig.25-1*) by the shear failure mode together with the tensile failure mode and thus belonging to a transition zone, as a mode interaction domain.

SFCs regarding the material-inherent 120°-rotational symmetry of the isotropic fracture body $\Theta^{SF} \equiv \Theta^\tau$

When using for the determination of the cohesive strength - for an extrapolation from the compressive strength point - just the SFC $F^{SF}\rightarrow F^\tau$, then the isotropic material-inherent 120°-rotational symmetry of the fracture body is to consider, as shown below, where both the SFCs $F^{NF}\rightarrow F^\sigma$ and F^τ are displayed in the next box together with the required invariants and non-circularity parameter Θ^τ.

The cohesive strength point lies in the interaction zone of the mode regimes, see *Fig.25-2*. Therefore, a generation of a realistic, decaying Mohr-Coulomb curve $\tau_n(\sigma_n)$ requires the determination of the slope *along* the realistic curved M-C curve up to $\sigma_n = 0$ at least, not a constant value $C = C^c$ in the compressive strength-linked Touch *point* only, being sufficient for the determination of the friction value

μ. This means, instead of the single F^{SF}-formulation the SF-NF-interaction managing *Eff*-formulation is to apply when moving from the structural stress formulation to a Mohr stress-based one.

To search is an equation for the unknown fracture angle measure $C(\theta_{fp})$, linked to the growing fracture angle θ_{fp}. This is performed by equating the slopes in the so-called Touch point:

$$F^{\sigma} = \frac{\sqrt{4J_2 - I_1^2/3} + I_1}{2 \cdot \bar{R}^t} \quad (\Theta^{NF}=1) \quad \text{and} \quad F^{\tau} = c_2^{SF} \cdot \frac{I_1}{\bar{R}^c} + c_1^{SF} \cdot \frac{6 \cdot J_2}{2 \cdot \bar{R}^{c2}} \cdot \Theta^{SF}$$

$I_1 = (\sigma_I + \sigma_{II} + \sigma_{III})$, considering Mohr-Coulomb skip σ_I

$6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2$

$\rightarrow 6J_2 = \sigma_{II}^2 + (\sigma_{II} - \sigma_{III})^2 + \sigma_{III}^2)$,

$27J_3 = (2\sigma_I - \sigma_{II} - \sigma_{III}) \cdot (2\sigma_{II} - \sigma_I - \sigma_{III}) \cdot (2\sigma_{III} - \sigma_I - \sigma_{II})$

$\rightarrow 27J_3 = (-\sigma_{II} - \sigma_{III}) \cdot (2\sigma_{II} - \sigma_{III}) \cdot (2\sigma_{III} - \sigma_{II})$

$I_1 = (\sigma_n + \sigma_t + \sigma_\lambda)$, considering Mohr-Coulomb skip $\sigma_\lambda, \tau_{n\lambda}, \tau_{t\lambda}$

$I_2 = \sigma_n \cdot \sigma_t + \sigma_t \cdot \sigma_\lambda + \sigma_n \cdot \sigma_\lambda - \tau_{nt}^2 - \tau_{n\lambda}^2 - \tau_{t\lambda}^2 \quad \rightarrow \quad \sigma_n \cdot \sigma_t - \tau_n^2$

$I_3 = \sigma_n \cdot \sigma_t \cdot \sigma_\lambda - \sigma_n \cdot \tau_{t\lambda}^2 - \sigma_t \cdot \tau_{n\lambda}^2 - \sigma_\lambda \cdot \tau_{nt}^2 + 2 \cdot \tau_{nt} \cdot \tau_{n\lambda} \cdot \tau_{t\lambda} \quad \rightarrow \quad 0$

$6J_2 = (\sigma_n - \sigma_t)^2 + (\sigma_t - \sigma_\lambda)^2 + (\sigma_\lambda - \sigma_n)^2 + 6 \cdot (\tau_{nt}^2 + \tau_{n\lambda}^2 + \tau_{t\lambda}^2)$

$\rightarrow 6J_2 = (\sigma_n - \sigma_t)^2 + \sigma_t^2 + \sigma_n^2 + 6 \cdot \tau_{nt}^2$

$27J_3 = 2 \cdot I_1^3 - 9 \cdot I_1 \cdot I_2 + 27 \cdot I_3$

$\rightarrow 27J_3 = 2(\sigma_n + \sigma_t)^3 - 9 \cdot (\sigma_n + \sigma_t) \cdot (\sigma_n \cdot \sigma_t - \tau_n^2)$

$\Theta^{\tau} = \sqrt[3]{1 + d^{SF} \cdot sin(3\vartheta)} = \sqrt[3]{1 + d^{SF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$, $\sigma_t = \sigma_n - C \cdot (\sigma_{II} - \sigma_{III})$.

A first slope equation $d\tau_n / d\sigma_n$ is given by the transformation of structural stresses into Mohr stresses. The fracture angle differentiation of the Mohr stresses in the Touch point delivers:

$\tau_n = -s \cdot c \cdot \sigma_{II} + s \cdot c \cdot \sigma_{III}$, $\sigma_n = c^2 \cdot \sigma_{II} + s^2 \cdot \sigma_{III}$ with $c = \cos\theta$, $s = \sin\theta$,

$$\frac{d(-s \cdot c \cdot \sigma_{II} + s \cdot c \cdot \sigma_{III})}{d\theta} = (-c^2 + s^2) \cdot \sigma_{II} - (-c^2 + s^2) \cdot \sigma_{III} \quad \text{and}$$

$$\frac{d(c^2 \cdot \sigma_{II} + s^2 \cdot \sigma_{III})}{d\theta} = -2sc \cdot (\sigma_{II} - \sigma_{III})$$

$$\frac{d\tau_n}{d\sigma_n} = \frac{(-c^2 + s^2) \cdot \sigma_{II} - (-c^2 + s^2) \cdot \sigma_{III}}{-2sc \cdot (\sigma_{II} - \sigma_{III})} = \frac{c^2 - s^2}{2sc} = \frac{C}{S} \quad \Rightarrow \quad \frac{d\tau_n}{d\sigma_n} = \frac{C}{\sqrt{1 - C^2}},$$

and $\text{cotan}(2\theta_{fp}) = \frac{\cos(2 \cdot \theta_{fp})}{\sin(2 \cdot \theta_{fp})} = \frac{C}{S}$, $C^c = \cos(2 \cdot \theta_{fp}° \cdot \frac{\pi}{180°})$; $\tan(\rho) = -\text{cotan}(2 \cdot \theta_{fp}° \cdot \frac{\pi}{180°})$.

Secondly, one has to find a further tangent equation by the differentiation of F^{τ} or physically accurate F^{τ} with F^{σ}. *Table 25-1* depicts both the SFCs.

On the classical way 'Extrapolation from the compression strength point', represented by the touchpoint in the Mohr diagram, *Fig 25-1*, just the SFC F^{τ} is required. *Table 25-2* will later show the full procedure $C(\theta_{fp})$ of the different ways of an extrapolation.

Table 25-1: Formulation of Mohr stress-based Effs.

$$F^{NF} = F^{\sigma} = Eff^{NF} = c^{NF} \cdot \frac{\sqrt{4J_2 \cdot \Theta^{NF} - I_1^2/3} + I_1}{2 \cdot \bar{R}^t}, \quad \text{for Normal Concrete can be set} \quad c^{NF}, \Theta^{NF} = 1,$$

$$Eff^{NF} = 1 \cdot \frac{\sqrt{4 \cdot [(\sigma_n - \sigma_t)^2 + \sigma_t^2 + (-\sigma_n)^2 + 6 \cdot \tau_n^2] \cdot 1/6 - (\sigma_n + \sigma_t)/3} + (\sigma_n + \sigma_t)}{2 \cdot \bar{R}^t}.$$

Using the concept of 'proportional loading':

$$F^{SF} = F^{\tau} = c_2^{SF} \cdot \frac{I_1}{\bar{R}^c} + c_1^{SF} \cdot \frac{6 \cdot J_2}{2 \cdot \bar{R}^{c2}} \cdot \Theta^{SF} \quad \Rightarrow \quad c_2^{SF} \cdot \frac{I_1 / Eff}{\bar{R}^c} + c_1^{SF} \cdot \frac{6 \cdot J_2 / Eff^2}{2 \cdot \bar{R}^{c2}} \cdot \Theta^{SF}$$

$$Eff^{SF} = \frac{\sqrt{(c_2^{SF} \cdot I_1)^2 + 12 \cdot c_{1\Theta}^{SF} \cdot J_2 \cdot \Theta^{SF}}}{2 \cdot \bar{R}^c} + \frac{c_2 \cdot I_1}{2 \cdot \bar{R}^c} \quad \text{with} \quad \Theta^{SF} \rightarrow \Theta^{CM} = \sqrt[3]{1 + d^{SF} \cdot (-1)},$$

$$Eff^{SF} = \frac{\sqrt{c_2^{SF\,2} \cdot (\sigma_n + \sigma_t)^2 + c_{1\Theta}^{SF} \cdot \Theta^{SF} \cdot 2 \cdot [(\sigma_n - \sigma_t)^2 + \sigma_t^2 + (-\sigma_n)^2 + 6 \cdot \tau_n^2]}}{2\bar{R}^c} + c_2 \cdot \frac{\sigma_n + \sigma_t}{2\bar{R}^c}.$$

with $c_{1\Theta}^{SF} \cdot \Theta^{CM} = 1 + c_2$, $\Theta^{CM} = \Theta^{SF} = \sqrt[3]{1 + d^{SF} \cdot \sin(3\vartheta)} = \sqrt[3]{1 - d^{SF}}$ and

Θ non-circularity function, d non-circularity parameter, ϑ Lode angle.

Fig.25-2 displays the 2nd quadrant of the bi-axial failure curve in structural stresses. This fully represents the Mohr-Coulomb curve domain. The joint mode situation of the Mohr-Coulomb curve - capturing the transition zone between the pure mode domains NF and SF - requires the application of the interaction equation $Eff^m = (Eff^{NF})^m + (Eff^{SF})^m = 1$ (material stressing effort 100%) and it spans over the ordinate regime $0 < \sigma_{III} < \bar{R}^t$, the *transition zone* of the modes, and covers Lode angles $-30° < \vartheta < +30°$.

If the full M-C curve and the associated fracture angle are of interest up to $\sigma_{III} = R^t$, then both the modes are to employ with their *Effs*.

- Improved Mapping of Failure Stress data to obtain a more realistic $\theta_{fp}°(\vartheta)$, *Fig.25.2*

As still experienced with the UD-materials in a chapter before, also here it is to face that a SFC is 'just' a practical approach and therefore cannot sufficiently well map all domain parts in detail. Therefore, when searching a local fracture angle $\Theta_{fp}°$ in the transition zone a correction is to be material-dependently applied to numerically determine a better value for $\Theta_{fp}°$, if really desired.

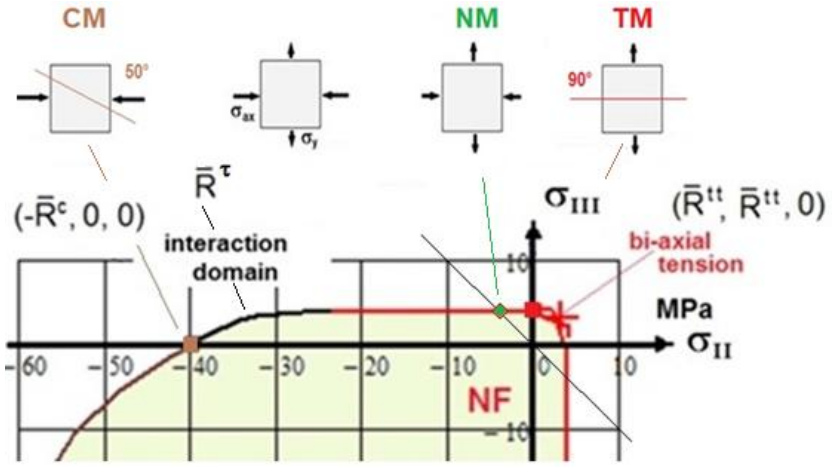


Fig.25-2: Second quadrant and associated stress states, transition zone between the 2 mode domains SF, NF. Tensile Meridian (TM), Compressive Meridian (CM)

According to the fact that the compression strength point is located on the compressive meridian and the tensile strength point on the tensile meridian the different Lode angle ϑ is to consider in order to achieve a locally necessary more accurate SFC-model. This requires to consider inherent '*120°-rotationally-symmetry'*.

The pure shear point in *Fig.25-3* is a point on the Neutral Meridian ($\delta = 0$, $\Theta = 1$, $I_1 = 0$) and also a characteristic point of the transition zone between the tensile domain and the compressive domain is when the first invariant becomes zero (*see the bias grey line in Fig.25-2*), meaning pure shear:

$$I_1 = \sigma_I + \sigma_{II} + \sigma_{III} = 0 \quad \rightarrow \quad \sigma_{II}^{\,c} = -\,\sigma_{III}^{\,t} \,.$$

A physical demands is given with θ_{fp} °= 90° at $\sigma_{III} = R^t$ (is σ_{III} coordinate) and $Eff^{\tau} = 0$ for $\sigma_{II} = 0$.

The shear material stressing effort Eff^{τ} must physically become zero at the tensile strength point (0, R^t).

Fig.25-3 outlines the local shortcoming of the FMC-based choice of the SF-formula.

As simple correcting function f_σ , being just a crutch of-course,

$$f\sigma = 1 - \left(\frac{\sigma nTp + Rt - \sigma n0}{|\sigma nTp|}\right)^6 = 1 - \left[\frac{\sigma nTp + Rt - \frac{(Cc+1)\cdot\sigma II + (1-Cc)\cdot Rt}{2}}{|\sigma nTp|}\right]^6$$

was taken. This correction function is decisive in the low negative σ_{II} and σ_n-domain.

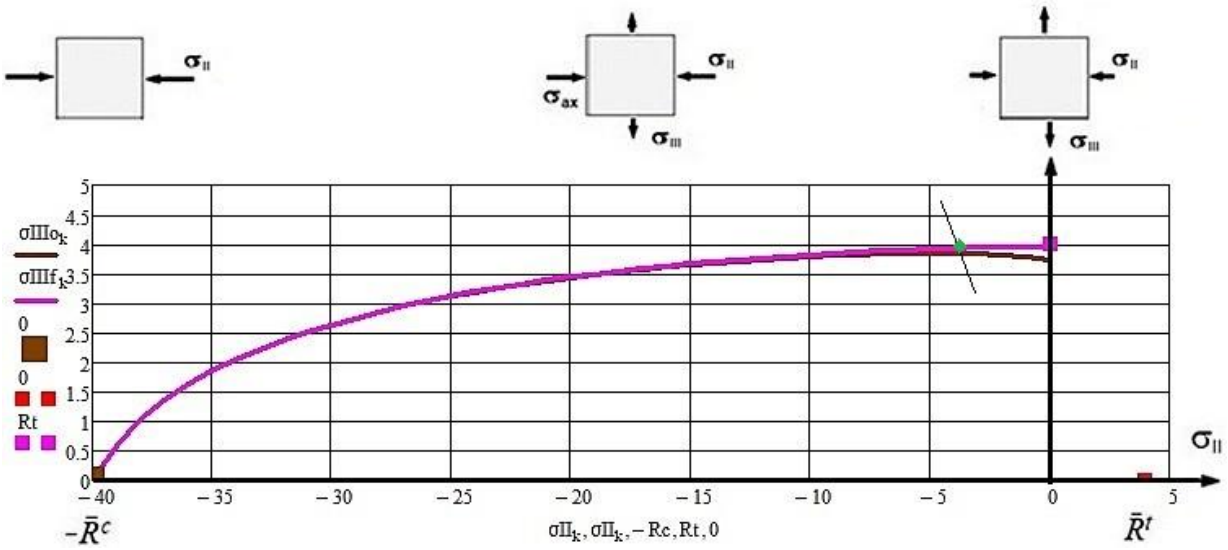


Fig.25-3, Θ-considered: Visualization of the course of the original and the corrected $\sigma_{III}(\sigma_{II})$.

Note, please:

In any case, the given SFC F^{τ} calculates a conservative Reserve Factor, based on both the modes. The SFC is on the safe side and Design-Verification as well.

The next sub-chapters will outline:

- extrapolation approaches
- a trial on the physically accurate, much more complicated two modes approach and finally
- a guess of the cohesive strength R^{τ}.

At first the simplest way: There are three ways gone, each one an approximation.

25.2 R^c-extrapolation-based estimation of cohesive strength R^τ, M-C curve $\tau_n(\sigma_n)$ and angle $\theta_{fp}°$

1 Linear Mohr-Coulomb, C = C^c constant, $\theta_{fp}°$ =constant, classical path

$$F_{\text{linM-C}} = \frac{\tau_n}{R^\tau - \mu\cdot\sigma_n} = 1 \;\Rightarrow\; (\text{M-C curve})\;\; \tau_n = \tau_n^{Tp} - \mu\cdot\sigma_n \quad \text{and} \;\; R^\tau = \tau_n^{Tp} + \mu\cdot\sigma_n^{Tp}$$

*This basic approach delivers the highest cohesion strength value and a straight M-C line.

2 Use of Shear Mode F^τ *only*, $\theta_{fp}°$ grows with *C*, $c_{1\Theta}^{SF} \rightarrow \; c_1 = c_2 + 1, \;\; C^c = \cos(2\cdot\theta_{fp}^c° \cdot \frac{\pi}{180°})$

Two variants are possible to obtain an alternating fracture angle measure $C(\theta_{fp}°)$ and thereby R^τ.

If just performing an extrapolation from compression strength point no interaction of modes is needed: The simpler F^τ can be used instead of *Eff*$^\tau$. *Table 25-2* summarizes the relations for the derivation of

Table 25-2: Estimation of R^τ, $\tau_n(\sigma_n)$ and fracture plane angle $\theta_{fp}°$ considering the F^τ only

$$F^\tau = c_2\cdot\frac{I_1}{\bar{R}^c} + c_1\cdot\frac{6\cdot J_2}{2\cdot\bar{R}^{c2}}\cdot c_2\cdot\frac{\sigma_n+\sigma_t}{\bar{R}^c} + c_1\cdot\frac{(\sigma_n-\sigma_t)^2+\sigma_t^{\,2}+\sigma_n^{\,2}+6\cdot\tau_n^{\,2}}{2\cdot\bar{R}^{c2}} = 1$$

inserted $I_1 = \sigma_n + \sigma_t$, $6J_2 = (\sigma_n-\sigma_t)^2 + \sigma_t^{\,2} + \sigma_n^{\,2} + 6\cdot\tau_n^{\,2}$ and resolved for

$$\tau_n = \sqrt{-\frac{c_2\cdot Rc\cdot(\sigma_n+\sigma_t) - Rc^2 + c_1\cdot(\sigma_n^{\,2} - \sigma_n\cdot\sigma_t + \sigma_t^{\,2})}{3\cdot c_1}},$$

$$\frac{C}{\sqrt{1-C^2}} = \frac{d\tau_n}{d\sigma_n} \quad \text{with} \quad \tau_n(\sigma_n) \quad \text{and/or} \quad \frac{C}{\sqrt{1-C^2}} = \frac{d\tau_n}{d\sigma_n} = -\frac{dF\tau/d\sigma_n}{dF\tau/d\tau_n}$$

The latter will be taken: $\Theta^\tau = 1$

$$\frac{C}{\sqrt{1-C^2}} = \frac{-c_2\cdot\bar{R}^c + c_1\cdot(\sigma_t - 2\sigma_n)}{6\cdot\tau_n\cdot c_1} = \frac{-c_2\cdot\bar{R}^c + c_1\cdot(\sigma_t - 2\sigma_n)}{6\cdot\tau_n\cdot c_1}$$

$$\sigma_n = (C+1)\cdot 0.5\cdot\sigma_{II} + (1-C)\cdot 0.5\cdot\sigma_{III}, \;\; \tau_n = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma_{II}-\sigma_{III}),$$

$$(\sigma_t - 2\sigma_n) = -0.5\cdot[(\sigma_{II}+\sigma_{III}) + 3\cdot C\cdot(\sigma_{II}-\sigma_{III})].$$

Guess $\bar{R}^\tau = \sqrt{\frac{-\bar{R}^{c2} + c_2\cdot\bar{R}^c\cdot\sigma_{t0} + c_1\cdot\sigma_{t0}^{\,2}}{3\cdot c_1}}$ with $\sigma_{t0} = -C^c\cdot(-\bar{R}^c)$.

$\tau_{nt}(\sigma_n)$ and $\theta_{fp}°$ from σ_{II} (σ_{III}). It is to consider the change of the fracture plane angle $\theta_{fp}°$ with the Lode angle ϑ from $\theta_{fp}°$ at ϑ = -30° on up to a value < 90° (maximum at $\sigma_{III} = R^t$), which the model permits. The table shows the M-C formula $\tau_n(\sigma_n)$, the C-equation and the transformation of the Mohr stresses into principal structural stresses for determining C.

*This approach delivers an intermediate and lower value for the cohesive strength and the M-C curve.

3 Improved Estimation with F^{τ} and correction function f_{σ}

In the M-C-calculations the mode-linked Θ^{τ} and correction function f_{σ} ('crutch') principally should have been differentiated within the SFC F^{τ}. However, this makes no sense if F^{τ} is employed only. Therefore, in order to take their influence into account at all, the respective quantity is treated as being fixed, being a constant. Hence, this variant just applies the correction $\tau_n \cdot f_{\sigma}$.

*This approach delivers the lowest value for the cohesive strength but more accurate $\bar{R}^{\tau} > \bar{R}^{t}$.

25.3 Accurate Mode-interactive determination of R^{τ}, M-C curve, fracture angle $\theta_{fp}{}^{\circ} > \theta_{fpc}{}^{\circ}$

A physically accurate determination of above quantities may be possible by applying the jointly acting SFCs, F_{τ} with F_{σ}. *Table 25-3* collects all relevant relationships. It displays the final differentiation-

Table 25-3: Determination of R^{τ}, $\tau_n(\sigma_n)$, considering modes, Θ^{τ}

* Task: Known $\sigma_{II}, \sigma_{III}; \bar{R}^{t}, \bar{R}^{c}$; searched σ_n, τ_n, $\theta_{fp}{}^{\circ}(C)$, $C = \cos(2 \cdot \theta_{fp}{}^{\circ} \cdot \pi / 180^{\circ})$

* Interaction equation, 2 modes are activated: $(Eff^{\sigma})^m + (Eff^{\tau})^m = 100\%$

$$Eff^{\sigma} = \frac{\sqrt{4 \cdot [(\sigma_n - \sigma_t)^2 + \sigma_t^2 + \sigma_n^2 + 6 \cdot \tau_n^2] / 6 - (\sigma_n + \sigma_t)^2 / 3} + (\sigma_n + \sigma_t)}{2 \cdot \bar{R}^{t}},$$

$$Eff^{\tau} = \frac{c_2 \cdot (\sigma_n + \sigma_t)}{2 \cdot \bar{R}^{c}} + \frac{\sqrt{(c_2 \cdot (\sigma_n + \sigma_t))^2 + 2 \cdot c_{1\Theta} \cdot \Theta^{\tau} [(\sigma_n - \sigma_t)^2 + \sigma_t^2 + \sigma_n^2 + 6 \cdot \tau_n^2]}}{2 \cdot \bar{R}^{c}}$$

* Solution of the task means: Equalizing the 2 slopes at each stress state $\sigma_{II}(\sigma_{III})$

- Slope 1: Differentiation of the structural stresses-linked Mohr stresses delivered before

$$\frac{d\tau_{nt}}{d\sigma_n} = \frac{(s^2 - c^2) \cdot \eta}{-2 \cdot s \cdot c \cdot \eta} = \frac{C}{S} = \frac{C}{\sqrt{1 - C^2}},$$ valid uni-axially and bi-axially, $\eta = \sigma_{II} - \sigma_{III}$

- Slope 2: Differentiation of the interaction equation, abbreviation $\eta_m = 2\sigma_n - C \cdot \eta$

$$Eff^{\sigma} = \left\{\sqrt{4 \cdot [(C \cdot \eta)^2 + (\sigma_n - C \cdot \eta)^2 + \sigma_n^2 + 6 \cdot \tau_n^2] / 6 - \eta_m^2 / 3} + \eta_m\right\} / 2 \cdot \bar{R}^{t}, \quad \Theta^{NF} = 1$$

$$Eff^{\tau} = \left\{c_{1\Theta} \cdot \eta_m + \sqrt{(c_2^2 \cdot \eta_m^2 + 2 \cdot c_{1\Theta} \cdot \Theta^{\tau} \cdot [(C \cdot \eta)^2 + (\sigma_n - C \cdot \eta)^2 + \sigma_n^2 + 6 \cdot \tau_n^2]}\right\} / 2 \cdot \bar{R}^{c}$$

$$\Theta^{\tau}(\vartheta) = \sqrt[3]{1 + d^{\tau} \cdot \sin(3\vartheta)} = \sqrt[3]{1 + d^{\tau} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$$

$$Eff^{m} = (Eff^{\sigma})^m + (Eff^{\tau})^m \quad \text{with} \quad dEff / d\sigma_n \quad \text{and} \quad dEff / d\tau_n.$$

Equating the 2 equations, considering the implicit differentiation by a negative sign,

with $\frac{C}{\sqrt{1 - C^2}} = -\frac{dEff / d\sigma_n}{dEff / d\tau_{nt}}$, a huge formula for determining C is obtained.

This formula is to be re-transformed from Mohr stresses into structural stresses

$$\sigma_n = (C + 1) \cdot 0.5 \cdot \sigma_{II} + (1 - C) \cdot 0.5 \cdot \sigma_{III}, \quad \tau_n = -0.5 \cdot \sqrt{1 - C^2} \cdot (\sigma_{II} - \sigma_{III}).$$

The altering C depends on the bi-axial fracture stress states $\sigma_{III}{}^{fr}(\sigma_{II})$, achieved, when inserting σ_{II} into the failure criterion $Eff = 1$ along the span between Mohr's Touch point and Cohesive Strength point, providing. the fracture angle measure $C(\theta_{fp}{}^{\circ})$ and $R^{\tau}(C)$

$$C = C(\sigma_{II}, \sigma_{III}{}^{fr}) = \cos(2 \cdot \theta_{fp}), \quad \theta_{fp} = 0.5 \cdot \arccos C, \quad \theta_{fp}{}^{\circ} = \theta_{fp} \cdot 180^{\circ} / \pi.$$

equations and solution procedure. Naturally this huge 'improved' solution procedure is very challenging for a mathematical code concerning the necessary symbolic differentiation.

25.4 Application on Normal Concrete - computation data input

* Basic Data set

$\theta_{fp}^{c\,\circ} = 51°$ or friction value $\mu = 0.208.$, $C^c = \cos(2 \cdot \theta_{fp}\,° \cdot \frac{\pi}{180°}) = -\mu$

$c_2 = (3 \cdot C^c - 1)/(3 \cdot C^c + 1) = (1 + 3 \cdot \mu)/(1 - 3 \cdot \mu) = 4.32.$

Inserting the compressive strength point into $F^\tau = c_2 \cdot \frac{I_1}{\bar{R}^c} + c_{1\Theta} \cdot \frac{6 \cdot J_2}{2 \cdot \bar{R}^{c2}} \cdot \Theta^\tau = 1$

gives $c_2 \cdot \frac{-\bar{R}^c}{\bar{R}^c} + c_{1\Theta} \cdot \frac{2 \cdot \bar{R}^{c2}}{2 \cdot \bar{R}^{c2}} \cdot \Theta^\tau \rightarrow c_{1\Theta} = \frac{c_2 + 1}{\Theta^\tau}$ (c_2 is not dependent on C).

* Determination of the missing parameters $c_{1\Theta}$, d^τ

In order to capture the 120°-symmetry requirement a 2-parameter approach is to employ. Its two missing model parameters are calculated in *Table.25-4*.

Table 25-4: Determination of SF-model parameters $c_{1\Theta}$, d_τ

$I1c := -Rc \quad J2c := \frac{Rc^2}{3} \quad I1cc := -2 \cdot Rcc \quad J2cc := \frac{Rcc^2}{3}$

Vorgabe $\quad c1\Theta := 2 \quad d\tau := 0.6 \quad c2 = 4.32$

$\frac{\sqrt{I1c^2 \cdot c2^2 + 12 \cdot J2c \cdot c1\Theta \cdot \sqrt[3]{1 - 1 \cdot d\tau}} + I1c \cdot c2}{2 \cdot Rc} = 1$ strength point on CM

$\frac{\sqrt{I1cc^2 \cdot c2^2 + 12 \cdot J2cc \cdot c1\Theta \cdot \sqrt[3]{1 + 1 \cdot d\tau}} + I1cc \cdot c2}{2 \cdot Rc} = 1$ bi-axial compressive failure stress point on TM

$A\tau := Suchen(c1\Theta, d\tau) \quad A\tau = \begin{pmatrix} 6.727 \\ 0.507 \end{pmatrix} \quad c1\Theta := A\tau_0 \quad d\tau := A\tau_1$

$c1\Theta = 6.7 \quad d\tau = 0.51$

$\Theta^\tau = 1 : c_{1\Theta} \rightarrow c_1 = c_2 + 1 = 5.32$ and $\Theta^\tau \neq 1 : c_{1\Theta} = \frac{c_2 + 1}{0.79} = 6.73.$

$\Theta^t = \sqrt[3]{1 + d_\tau}$ (tensile meridian TM) =1.15, $\vartheta = +30°$;

$\Theta^c = \sqrt[3]{1 - d_\tau}$ (compressive meridian CM) = 0.79, $\vartheta = -30°$.

Touch point: $\tau_n^{Tp} = 19.6$ MPa, $\sigma_n^{Tp} = -15.8$ MPa.

Final task is equalizing the two slope angles along the full domain, generated by the joint action of the two modes and considering the correction function *fσ*. Focused are the uni-axial classical procedure and a realistic 'bi-directional mode' procedure.

25.5 Results: Extrapolation Solution Path Variants $\Theta_{fp}°(F^{\tau})$

Fig.25-4a ,b display several M-C failure curves and the course of the altering fracture plane angle $\Theta_{fp}°(F^{\tau})$. The angle changes from 51° up to 90°. Figure (*a*) presents the entities in Mohr stresses and (b) in structural stresses. This involves the classical Linear Mohr-Coulomb fracture curve an F^{τ}-based M-C curve $\tau_{nt}(\sigma_n)$ and an assumed, *fσ*-corrected one. The 3 Mohr half-circles are incorporated.

Fig.25-5 presents model-dependent cohesive strength values R^{τ}, the interaction-based $\tau_n(\sigma_n)$-curve, topped by the course of the increasing fracture angle, factored by 10.

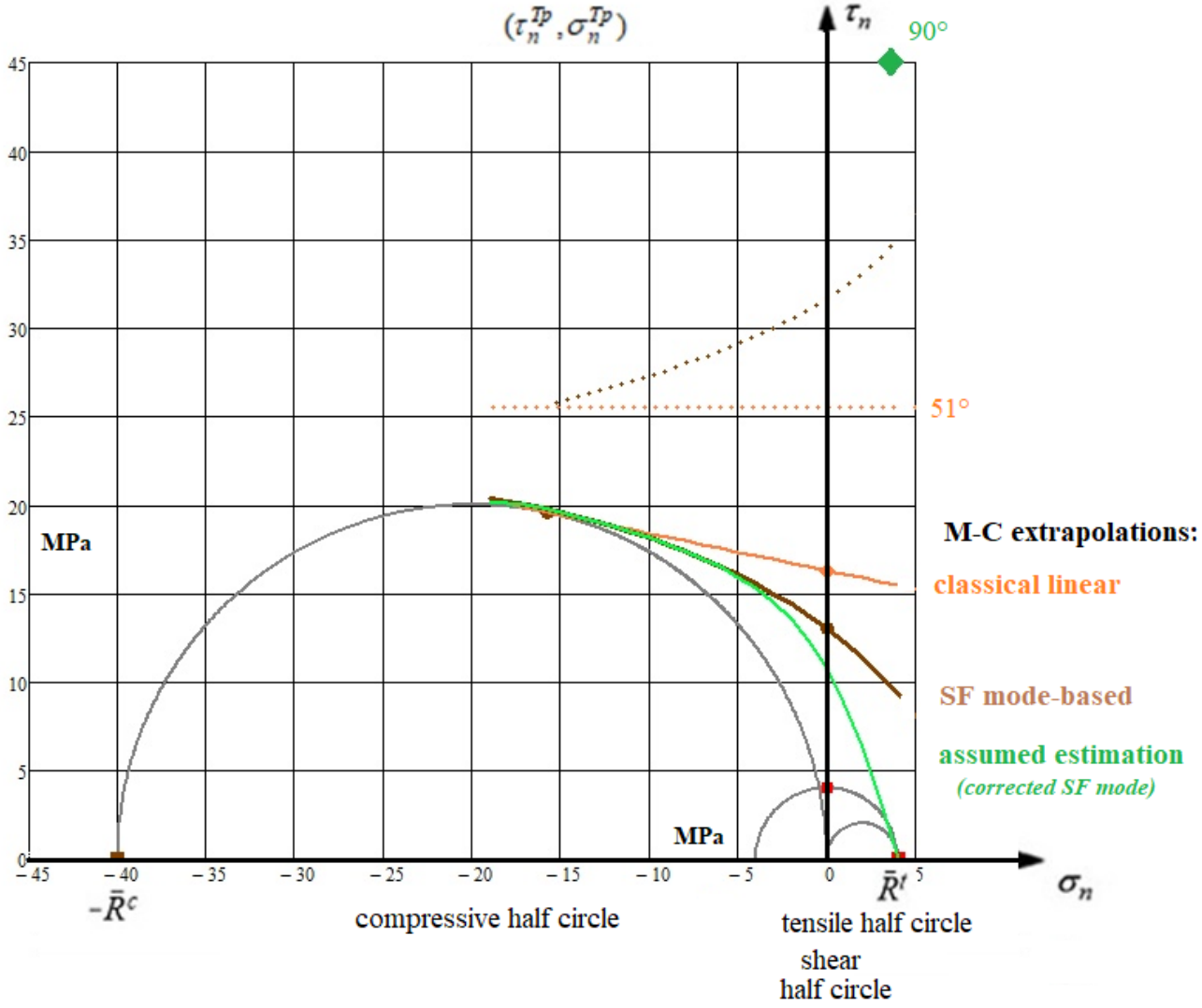


Fig.25-4a, Normal Concrete: $\bar{R}^{\tau}$, $\tau_n(\sigma_n)$.
Mohr-Coulomb extrapolations with fracture angle increase $\theta_{fp}°$, scaled by two.

First Lessons Learned from Fig.25-4a and viewing Fig.25-5:

**Classically, employing Fτ only, the angle θ_{fp} is linked to the slope of the plane M-C-curve.*
**Realistically, employing Fτ with Fσ, the angle θfp is linked to the slope of the fracture body surface. This makes the task still much more difficult.*

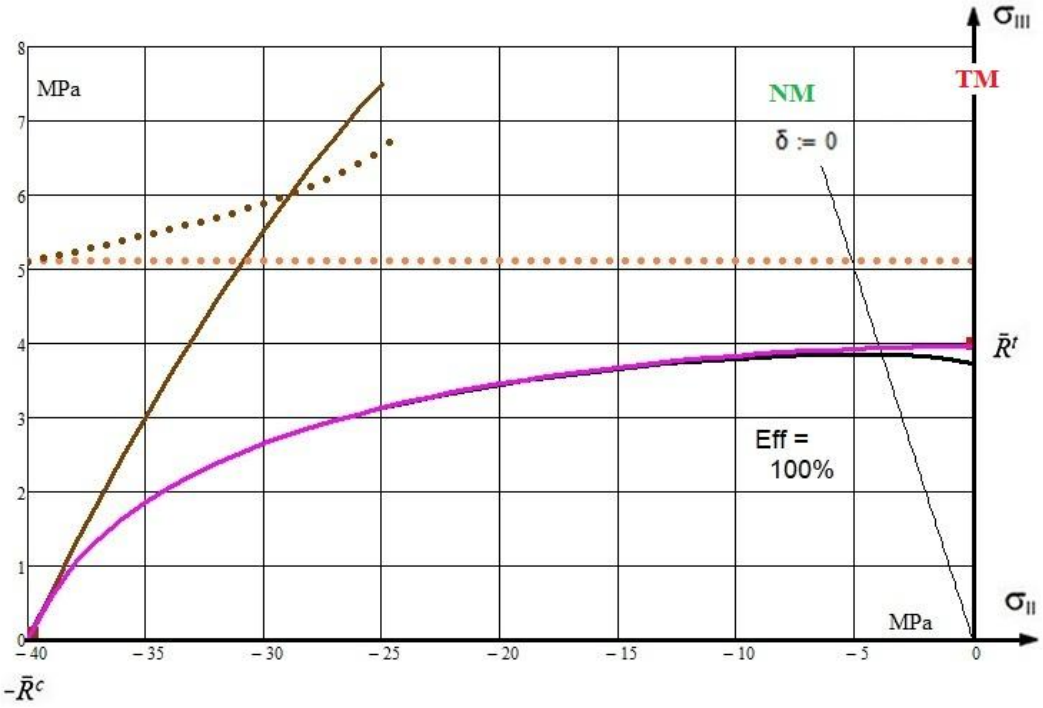


Fig.25-4b, Normal Concrete: $\bar{R}^{\tau}$, $\sigma_{III}(\sigma_{II})$

Joint display of the (fσ-corrected) failure curve in principal stresses, 120°-rotational-symmetric model.

Above figure leads to the result "*With decreasing* σ_{II} *an extrapolation of* $\theta_{fp}°(F^{\tau})$ *soon comes to its end. An estimation of values in the lower* σ_{II}*-domain is not possible. Both the modes have to be applied".*

In this context, <u>*Fig.25-5*</u> presents the span of the M-C curve on the 120°-rotationally-symmetric isotropic fracture body, outlining that it belongs to two modes the Shear Fracture mode (SF) F^{τ} and Normal Fracture mode (NF) F^{σ}. The envisaged accurate way consists of the following two paths.

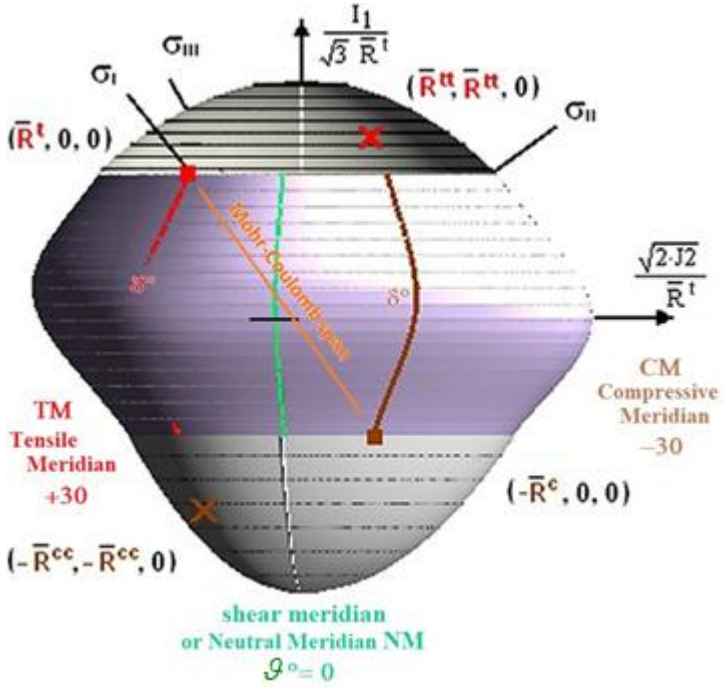


Fig.25-5, Normal Concrete: Visualization of all M-C-linked quantities

25.6 Results: Accurate Mode interaction Solution Path $\Theta_{fp}°(F^{\tau}, F^{\sigma})$.

25.6.1 Θ^{τ} and $f\sigma$ simply applied as constants, not differentiated in *Eff* = 1

Values for $\Theta_{fp}°(F^{\tau})$ are fictitious information values if just F^{τ} is applied, thereby the 120°-rotational symmetry of the fracture body not considering. This will be now executed beginning with a mathematically and mechanically simpler version by not considering Θ^{τ} and f_{σ} in the differentiation process. Its results are collected in *Table 26*.

The final formulation for C can be found after using the abbreviations below in the necessary re-transformation process of the Mohr stresses back to structural stresses. This is supported by using addition theorems and by inserting the well-known structural stress invariants I_1, J_2, J_3.

Re-transformation

$$2\sigma n = (C+1)\cdot\sigma II + (1-C)\cdot\sigma III \qquad \sigma t = \sigma n - C\cdot(\sigma II - \sigma III) \qquad 2\sigma n - \sigma t = 0.5\cdot(\sigma II + \sigma III) + 1.5\cdot C\cdot(\sigma II - \sigma III)$$

$$\sigma n = \frac{1}{2}\cdot[(C+1)\cdot\sigma II + (1-C)\cdot\sigma III] \quad \sigma t = \frac{1}{2}\cdot[\sigma II\cdot(1-C) + \sigma III\cdot(1+C)] \quad \tau n = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)$$

$$a1 = \sigma II + \sigma III$$

$$a2 = \left[\frac{2\cdot\sigma t}{3} - 2\cdot\sigma n + \frac{4\cdot\sigma t}{3} = \frac{1}{3}\cdot(2\cdot\sigma t - 6\cdot\sigma n + 4\cdot\sigma t) = \frac{1}{3}\cdot(2\cdot\sigma t - 6\cdot\sigma n + 4\cdot\sigma t) = \frac{6}{3}\cdot(\sigma t - \sigma n) = -2C\cdot(\sigma II - \sigma III)\right]$$

$$a2 = -2C\cdot(\sigma II - \sigma III)$$

$$a3 = \left[\frac{2\cdot\sigma n^2}{3} - \frac{(\sigma t + \sigma n)^2}{3} + 4\cdot\tau n^2 + \frac{2\cdot\sigma t^2}{3} + \frac{2\cdot(\sigma n - \sigma t)^2}{3} = \frac{1}{3}\cdot\left[2\cdot\sigma n^2 - (\sigma t + \sigma n)^2 + 12\cdot\tau n^2 + 2\cdot\sigma t^2 + 2\cdot(\sigma n - \sigma t)^2\right]\right]$$

$$a3 = \frac{1}{3}\cdot\left[2\cdot\sigma n^2 - (\sigma t + \sigma n)^2 + 12\cdot\tau n^2 + 2\cdot\sigma t^2 + 2\cdot(\sigma n - \sigma t)^2\right] = \frac{1}{3}\cdot 3\cdot C^2\cdot(\sigma II - \sigma III)^2$$

$$a3 = C^2\cdot(\sigma II - \sigma III)^2$$

$$a4 = 12\cdot\tau n^2 + 2\cdot\sigma t^2 + 2\cdot\sigma n^2 + 2\cdot(\sigma n - \sigma t)^2 = 12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 + \left(3\cdot C^2\cdot\sigma II^2 - 6\cdot C^2\cdot\sigma II\cdot\sigma III + 3\cdot C^2\cdot\sigma III^2 + \sigma II^2 + 2\cdot\sigma II\cdot\sigma III + \sigma III^2\right)$$

$$= 12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 + \left(3\cdot C^2\cdot\sigma II^2 - 6\cdot C^2\cdot\sigma II\cdot\sigma III + 3\cdot C^2\cdot\sigma III^2 + \sigma II^2 + 2\cdot\sigma II\cdot\sigma III + \sigma III^2\right)$$

$$a4 = 12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 + \left[3\cdot C^2\cdot(\sigma II - \sigma III)^2 + a1^2\right]$$

$$a4 = 4\cdot\left(\sigma II^2 - \sigma II\cdot\sigma III + \sigma III^2\right)$$

$$a5 = [8\cdot\sigma n - 4\cdot\sigma t = 4\cdot(2\sigma n - \sigma t) = 4\cdot[0.5\cdot(\sigma II + \sigma III) + 1.5\cdot C\cdot(\sigma II - \sigma III)]$$

$$a5 = 4\cdot[0.5\cdot(\sigma II + \sigma III) + 1.5\cdot C\cdot(\sigma II - \sigma III)]$$

Applying 'Mathcad 15 Symbolic Differentiation' on the interaction equation *Eff* = 1 results for $d(Eff)/d\sigma_n$ (*numerator of the formula for C*) and for $d(Eff)/d\tau_n$ (de-numerator) are obtained in Mohr stresses. Then, in order to achieve a practical equation for the final computation of *C*, an effortful manual evaluation by the determined re-transformation formulas above had to be performed.

However, this improved solution path, requiring the consideration of the 120°- rotational symmetry by capturing Θ^{τ} for the determination of cohesive strength R^{τ} and for the changing fracture angle θ_{fp} could not be gone to its end: The solver Mathcad found no solution. So the author had to 'suffer' that an elaborate, physically more accurate mathematical solution is not passable. The question came up, whether the fully accurate path below may change this unpleasant situation. Despite of the fact, that this path is even more risky, it is almost always worthwhile to present it viewing Lessons Learned (*LL*).

25.6.2 Physically and mathematically improved Θ^{τ} and $f\sigma$, *now also differentiated*

Applying Mathcad Symbolic Differentiation on $d(Eff)/d\sigma_n$, the numerator in Mohr stresses, leads to the extremely long equation in *Table 27*. And, for the more complicated differentiation $d(Eff)/d\tau_n$, the

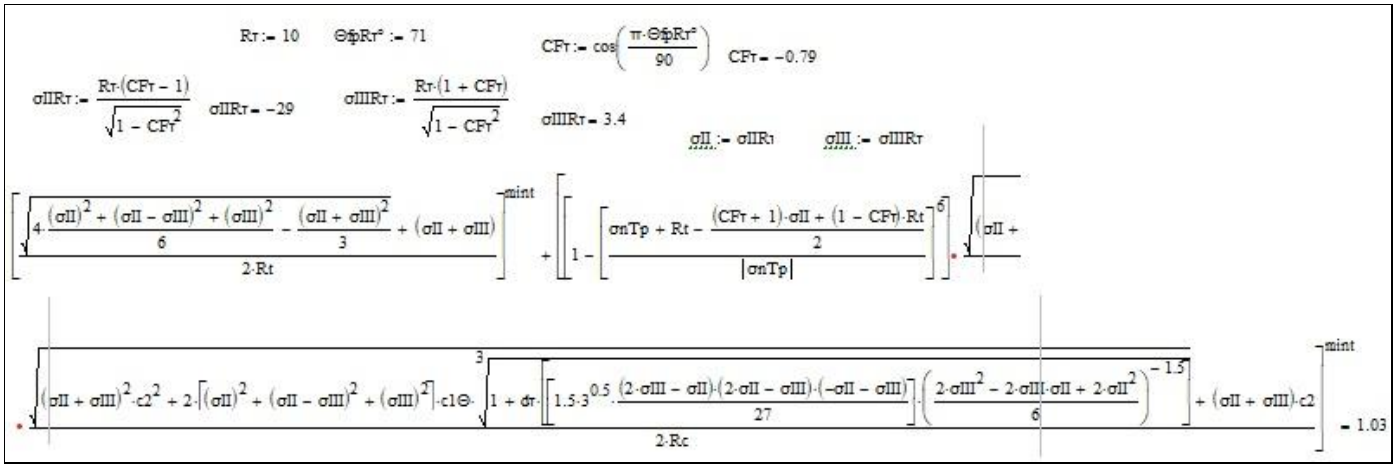
de-numerator, no applicable result was presented, only the citation "*The returned result is too large to* display". Trying to be physically and mathematically fully accurate this was a frustrating result.

However, due to the mountain experiences, one does not actually give up,
but only gives in to the unsolvable problem.

25.7 Results: Guessing a Cohesive Strength value R^{τ} considering *fσ*

After the failure to follow the above accurate path, the task remains to offer a practical estimate. Formulas, see Table 25-2. This approach consists of the following steps: $Eff^{m} = (Eff^{NF})^{m} + (Eff^{SF})^{m} = 1$

- Guess of a value for R^{τ}, employing *Fig.25-4a* and see *Table 25-6*
- Guess of a value for $\theta_{fp}°$, using the knowledge that it must lie much below the 90° but significantly higher than $\theta_{fpc}° = 51°$ → taking 71° = (51° + 90°) / 2 here
- Insertion into the relationships for the structural stresses
- Checking, whether the material stressing effort meets *Eff* =100%, considering *fσ*-correction.



*The guess looks very satisfying. R^{τ} = 10 MPa is a good guess !

LL *from interpretation of the results including the Summary Table 25-6:*

- ✓ *The modes* F^{τ}, F^{σ} *and the interaction equation Eff - representing the surface of the fracture body in structural stresses - can be transferred into Mohr stresses and 'Addition Theorems-based' re-transformed in order to make a solution possible*
- ✓ *With the extrapolation approaches it was not possible to determine the full alteration of the nonlinear M-C curve (envelope), of the fracture plane angle* $\theta_{fp}°$ *and of* R^{τ}. *Just employing the SF mode* F^{τ} *cannot lead to a full course of the M-C curve and its quantities* $\theta_{fp}°$, R^{τ}
- ✓ *Due to the not locally full representing the course of the* $\sigma_{III}(\sigma_{II})$ *test data the mode* F^{τ} *is to correct by* $f\sigma$ *in order to simply obtain an approximation for a more realistic ('uni-axial') M-C curve*
- ✓ Θ^{τ} *must be considered, if the material is not ductile under compression. And ('bi-axially'), complete failure danger is the result of both the portions* Eff^{NF} *and* Eff^{SF}, *interaction is to consider*
- ✓ *For Normal Concrete it is the conclusion* that R^{τ} *is about 11 MPa and* $\theta_{fp}°$ *is approximately 70° at the cohesive strength point, compared to* $\theta_{fp}° = 51°$ *at the Touch point, representing* R^{C} .

✓ *Keep in mind: The presented results are averaged quantities and remind scatter!*

Applying - instead of the present Modal SFC - a so-called Global SFC, which globally maps by one single mathematical equation all test data with its two different modes, the same bottlenecks for the execution of this specific task would be found, too!

Note, please:

In the context of the chapters 24 and 25, before going into further investigations on isotropic concrete and later rock material, this is a good place to remind physics by stressing again the author's FMC-based failure mode thinking. This meets the action 'confining pressure' and the action 'bi-axial compressive stress':

Designing to hydraulic borehole fracturing 'Jaeger et al.' are still writing in 2007 (cited in [You15]) "Tensile strengths predicted by both the Coulomb criterion (onset-of cracking, solid mechanics) and the Griffith criterion (cracked, fracture mechanics) are much higher than the measured magnitudes of almost all rocks, although the two criteria have clear physical backgrounds".

This facts-neglecting citation is unbelievable for the author:

Each mode NF and SF is dominated by one technical strength R. And, it is also known that the cohesive (shear) strength is the result of two acting modes, namely SF with NF. Both these facts lead to the mechanics-based conclusion:

"*A Shear Failure-based criterion cannot give a prediction for a tensile strength* R^t".

Table 25-6: Summary of all cohesive strength–linked calculation results.
Lode angle ϑ, *fracture plane angle measure C, fracture plane angle* $\theta_{fp}°$, *normalizing strength* $\bar{R}^t$,
(right) Haigh-Lode-Westergaard coordinates of the fracture body $\{\sigma\}$

	points	c_1, $c_{1\Theta}$	c_2	ϑ^o	C^t, C^c C^τ	$\theta_{fp}°$	Θ, Θ^τ	σ_{II}^τ, σ_{III}^τ	σn, τn	$\frac{I_1}{\sqrt{3}\cdot\bar{R}^t}$	$\frac{\sqrt{2\cdot J_2}}{\bar{R}^t}$
	$(\bar{R}^t, 0)$	-	-	+30	-1	90	1.15	-	-	0.6	0.8
linM-C	$\bar{R}^\tau$	5.32	4.32	-6.9	-0.21	51	1.06	-20.2 , 13.2	0, 16.3	-1.0	5.9
Fτ	$\bar{R}^\tau$	5.32	4.32	-11.6	-0.356	55	1.09	-18.7, 8.9	0, 12.9	-1.15	5.0
Fτ, fσ	$\bar{R}^\tau$	5.32	4.32	-11	-0.77	(70)	1.14	-30, 4	0, 11	-	-
I_1*=0*								-3.8, 3.8		0	1.34
Fτ + Fσ, Θ, *fσ*	$\bar{R}^\tau$	6.75	4.32	Accurate solution was mathematically not possible							
Fτ + Fσ, Θ, *fσ (guess)*	$\bar{R}^\tau$ =10	6.75	4.32		-0.79	71		-29, 3.4	0, 10	-2.3	5.3
	$(-\bar{R}^c, 0)$	5.32	4.32	-30	0.21	51	0.79	-40, 0	-15.8, 19.6	-5.8	8.2
ductile μ*=0*	$\bar{R}^t_{0.2}$	2	1	0	0	45	1	$\sigma_{II}^\tau = -\sigma_{III}^\tau$	horizontal M-C curve	Mises cylinder: I_1 varies, J_2 constant	

$$F\sigma = \frac{\sqrt{4\cdot J2 - \frac{I1^2}{3}} + I1}{2\cdot Rt} = Eff\sigma = 1\ ;\quad Fr = c2\cdot\frac{I1}{Rc} + \frac{c1\Theta\cdot\Theta r\cdot 6J2}{2\cdot Rc^2} = 1\ ,\quad Eff\tau = \frac{\sqrt{I1^2\cdot c2^2 + 12\cdot J2\cdot c1\Theta\cdot\Theta r} + I1\cdot c1}{2\cdot Rc}$$

extrapolation: $\frac{d}{d\sigma n}\tau n = \frac{C}{\sqrt{1-C^2}} = -1\cdot\frac{\frac{dFr}{0n}}{\frac{dFr}{d\tau n}}$ accurate: $\frac{d}{d\sigma n}\tau n = \frac{C}{\sqrt{1-C^2}} = -1\cdot\frac{\frac{dEfft}{0n}}{\frac{dEfft}{d\tau n}}$

$$Eff = \left[\frac{\sqrt{4\cdot\frac{\sigma n^2 + (\sigma n - \sigma t)^2 + \sigma t^2 + 6\cdot m^2}{6} - \frac{(\sigma n + \sigma t)^2}{3}} + (\sigma n + \sigma t)}{2\cdot Rt}\right]^{mint} + fr\cdot\left[\frac{\sqrt{(\sigma n + \sigma t)^2\cdot c2^2 + 12\cdot\frac{\sigma n^2 + (\sigma n - \sigma t)^2 + \sigma t^2 + 6\cdot m^2}{6}\cdot c1\Theta\cdot\Theta r} + (\sigma n + \sigma t)\cdot c2}{2\cdot Rc}\right]^{mint}$$

to insert $\Theta r = \sqrt[3]{1 + dr\cdot\sin(3\delta)} = \sqrt[3]{1 + dr\cdot 1.5\cdot 3^{0.5}\cdot J3\cdot J2^{-1.5}}$

with $3\delta = \left[1.5\cdot 3^{0.5}\cdot\frac{2\cdot(\sigma n + \sigma t)^3 - 9\cdot(\sigma n + \sigma t)\cdot(\sigma n\cdot\sigma t - m^2)}{27}\right]\cdot\left[\frac{\sigma n^2 + (\sigma n - \sigma t)^2 + \sigma t^2 + 6\cdot m^2}{6}\right]^{-1.5}$

fσ is set constant for mathematical simpification $f\sigma = 1 - \left(\frac{\sigma nTp + Rt - \sigma n}{|\sigma nTp|}\right)^6$ and

$$f\sigma = 1 - \left[\frac{\sigma nTp + Rt - \frac{(Cc+1)\cdot\sigma II + (1-Cc)\cdot Rt}{2}}{|\sigma nTp|}\right]^6$$

Simplified Solution Procedure: Θ = 1, fσ = 1

Vorgabe $\sigma III := 2$ $\Theta := 1$ $f\sigma := 1$

$$1 = \left[\frac{\sqrt{4\cdot\frac{(\sigma II)^2 + (\sigma II - \sigma III)^2 + (\sigma III)^2}{6} - \frac{(\sigma II + \sigma III)^2}{3}} + (\sigma II + \sigma III)}{2\cdot Rt}\right]^{mint} + f\sigma\cdot\left[\frac{\sqrt{(\sigma II + \sigma III)^2\cdot c2^2 + 2\cdot\left[(\sigma II)^2 + (\sigma II - \sigma III)^2 + (\sigma III)^2\right]\cdot c1\Theta\cdot\Theta} + (\sigma II + \sigma III)\cdot c2}{2\cdot Rc}\right]^{mint}$$

$X(\sigma II) := Suchen(\sigma III)$ $j := 0,1..Rc$ $\sigma II_j := -Rc + j$ $\sigma III_j := V(\sigma II_j)$

accurate: $\frac{d}{d\sigma n}\tau n = \frac{C}{\sqrt{1-C^2}} = -1\cdot\frac{\frac{dEfft}{0n}}{\frac{dEfft}{d\tau n}}$ to be re-transformed, using

$$\sigma n = \frac{1}{2}\cdot\left[(C+1)\cdot\sigma II + (1-C)\cdot\sigma III\right] \quad m = -0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)$$

$$\sigma t = \frac{1}{2}\cdot\left[\sigma II\cdot(1-C) + \sigma III\cdot(1+C)\right]$$

Final solution equation for the fracture angle measure C: Θ = 1, fσ = 1 $a := \sigma II + \sigma III$ $b := 4\cdot\left[(\sigma II)^2 - \sigma II\cdot\sigma III + (\sigma III)^2\right]$

Vorgabe $C_j := -0.3$

$$-C = \frac{\left[mint\cdot\left[c2 + \frac{c2^2\cdot(2a)}{2\cdot\sqrt{c2^2\cdot a^2 + c1\Theta\cdot\Theta\cdot\left[12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2\right]}}\right]\cdot\left[\frac{c2\cdot(a) + \sqrt{c2^2\cdot a^2 + c1\Theta\cdot\Theta\cdot\left[12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2\right]}}{2\cdot Rc}\right]^{mint-1}}{2\cdot Rc} - \frac{mint\cdot\left[\frac{\frac{2a}{3}}{2\cdot\left[\frac{1}{\sqrt{3}}\cdot\sqrt{12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2}\right]} - 1\right]\cdot\left[\frac{a + \frac{1}{\sqrt{3}}\cdot\sqrt{12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2}}{2\cdot Rt}\right]^{mint-1}}{2\cdot Rt}}{\frac{2\cdot mint\cdot\left[-0.5\cdot(\sigma II - \sigma III)\right]\cdot\left[\frac{a + \frac{1}{\sqrt{3}}\cdot\sqrt{12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2}}{2\cdot Rt}\right]^{mint-1}}{Rt\cdot\left[\frac{1}{\sqrt{3}}\cdot\sqrt{12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2}\right]} + \frac{6\cdot mint\cdot\left[-0.5\cdot(\sigma II - \sigma III)\right]\cdot(c1\Theta\cdot\Theta)\cdot\left[\frac{c2\cdot(a) + \sqrt{c2^2\cdot a^2 + c1\Theta\cdot\Theta\cdot\left[12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2\right]}}{2\cdot Rc}\right]^{mint-1}}{Rc\cdot\sqrt{c2^2\cdot a^2 + c1\Theta\cdot\Theta\cdot\left[12\cdot\left[-0.5\cdot\sqrt{1-C^2}\cdot(\sigma II - \sigma III)\right]^2 - a^2 + b^2\right]}}}$$

$X(\sigma II, \sigma III) := Suchen(C)$ $C_j := V(\sigma II_j, \sigma III_j)$ $\theta fp\Theta_j := 0.5\cdot acos(C_j)$ $\theta fp\Theta^\circ_j := \frac{180}{\pi}\cdot\theta fp\Theta_j$

General : $\tau n_j \square -0.5\cdot\sqrt{1-(C_j)^2}\cdot(\sigma II_j - \sigma III_j)$ $\sigma n_j \square \frac{(C_j+1)\cdot\sigma II_j + (1-C_j)\cdot\sigma III_j}{2}$

Table 26: Θ^τ and $f\sigma$ simply applied as constants, not differentiated

final lines here added $Rt := 12.9$ $CFr = -0.356$

General : $\tau n_j \square -0.5\cdot\sqrt{1-(C_j)^2}\cdot(\sigma II_j - \sigma III_j)$ $\sigma n_j \square \frac{(C_j+1)\cdot\sigma II_j + (1-C_j)\cdot\sigma III_j}{2}$

For the cohesive strength point C becomes Cτ: Numerical Example of 'just Fr' in Table 25-6

$\theta fpRt^\circ := \frac{90\cdot acos(Ct)}{\pi}$ $\theta fpRt^\circ = 54.9$ $\sigma IIIRt := \frac{Rt\cdot(Ct-1)}{\sqrt{1-Ct^2}}$ $\sigma IIIRt := \frac{Rt\cdot(1+Ct)}{\sqrt{1-Ct^2}}$ $\sigma IIIRt = -18.7$ $\sigma IIIRt = 8.9$

$$\delta Ft := \frac{asin\left[1.5\cdot 3^{0.5}\cdot\frac{(2\cdot\sigma IIIRt - \sigma IIRt)\cdot(2\cdot\sigma IIRt - \sigma IIIRt)\cdot(-\sigma IIRt - \sigma IIIRt)}{27}\right]\cdot\left[\frac{2\cdot(\sigma IIIRt)^2 - 2\cdot\sigma IIIRt\cdot\sigma IIRt + 2\cdot(\sigma IIRt)^2}{6}\right]^{-1.5}}{3}$$

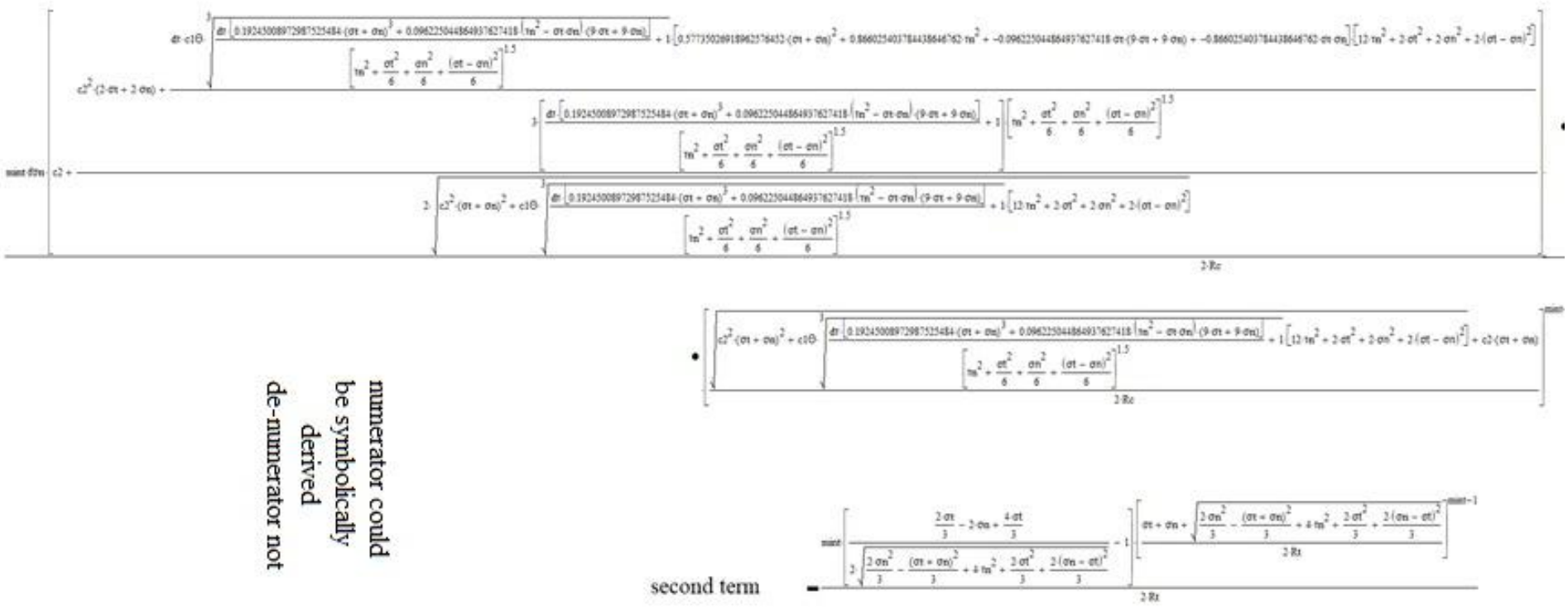
$\delta Ft = -0.194$ $\delta Ft^\circ := \frac{180}{\pi}\cdot\delta Ft$ $\Theta Ft := \sqrt[3]{1 - dr\cdot\sin(3\cdot\delta Ft)}$ $\delta Ft^\circ = -11.1$ $\Theta rFt = 1.09$

$I1Rt := \sigma IIRt + \sigma IIIRt$ $J2Rt := \frac{1}{6}\cdot\left[(\sigma IIRt)^2 + (\sigma IIRt - \sigma IIIRt)^2 + (\sigma IIIRt)^2\right]$

$\frac{I1Rt}{\sqrt{3}\cdot Rt} = -1.15$ $\frac{\sqrt{2\cdot J2Rt}}{Rt} = 4.98$

$\delta Ft^\circ = -11.62$

Table 27: Fully general $\Theta^{=}$ and $f\sigma$ also differentiated



numerator could
be symbolically
derived
de-numerator not

second term

26 Mapping 3D Test Results of Concrete and Rocks obtained on the Meridians TM and CM

Aim: *Provision of a test data evaluation formula for the test meridian, being a cross-section of a physically to be defined fracture body surface. Optimum mapping both in 2D- principal stress plane and in3D-stress space.*

A value for R^{τ} was the aim of § 25, here it is aimed at a good mapping in 2D-plane and 3D-space.

26.1 General

Sufficient strength of tunnels and dam slopes are vital Design Verification requirements in geo-engineering. In order to achieve this, the course of the measured fracture data on Tensile (TM) and Compressive Meridian (CM) is to map. For this design task several SFC approaches are applied:

" Classical, linear Mohr-Coulomb shear curve"

Shear stresses below the curve mean 'No fracture', or 'Stress states' below the τ^n- curve are not dangerous. In civil engineering this well-known simple SFC reads: $\tau^n(\sigma_I, \sigma_{III}) = \sigma \cdot tan\phi + c$.

→ values for cohesive shear strength c and friction angle $\phi(\mu)$ are required.
This is an extrapolation from the compressive strength point.

"Linear Mohr-Coulomb criterion in geo-mechanics"

In order to achieve Design Verification in several numerical Rock mechanics Codes the use of the widely applied 'Mohr-Coulomb (M-C) Criterion' is recommended in order to map the course on that meridian where the tests have been run, on TM or CM. The criterion below says that a stress below the M-C curve is conservative.

$\sigma_1 = \sigma_3 \cdot tan^2(\Phi) + 2 \cdot c \cdot tan(\Phi)$, applying $\Phi = \pi / 4 + \phi / 2$

where c = cohesive shear strength $\equiv R^{\tau}$, ϕ = internal friction angle, and

σ_1 = most negative principal stress $\rightarrow \sigma_{III}$, σ_3 = most positive principal stress $\rightarrow \sigma_I$,

which are transferred due to the mathematical principal stress convention $\sigma_I > \sigma_{II} > \sigma_{III}$.

The final formulation reads: $\sigma_{III} = \sigma_I \cdot tan^2(\Phi) + 2 \cdot c \cdot tan(\Phi)$.

However in application, a difficult to be answered question arises: Which parameters are to insert? This concerns the fracture angle ϕ and the cohesive strength R^{τ}.

→ values for cohesive shear strength c and friction angle are required.
This also is usually done as an extrapolation from the compressive strength point.

In *Fig.26-1* the derivation of the associated input data set is provided. Concerning R^{τ} it is referred to a previous chapter where the cohesive strength has been investigated.

"Cuntze's FMC-based SFCs regarding the common acting of SF and NF"

The SFC model, spanning up the isotropic fracture body, is shown in *Table 26-1*, too.

As still described before, the first part of the SFC in *Table 26-1* represents the shape change, the second the friction effect, the third the volume change and Θ^{τ} the 120°-symmetry of isotropic materials. Mapping the test data in the very high negative compression domain of UHPC could require a fifth part, which may be dedicated to a further effect: discontinuous densification including at first a failure body hoop reduction and later widening.

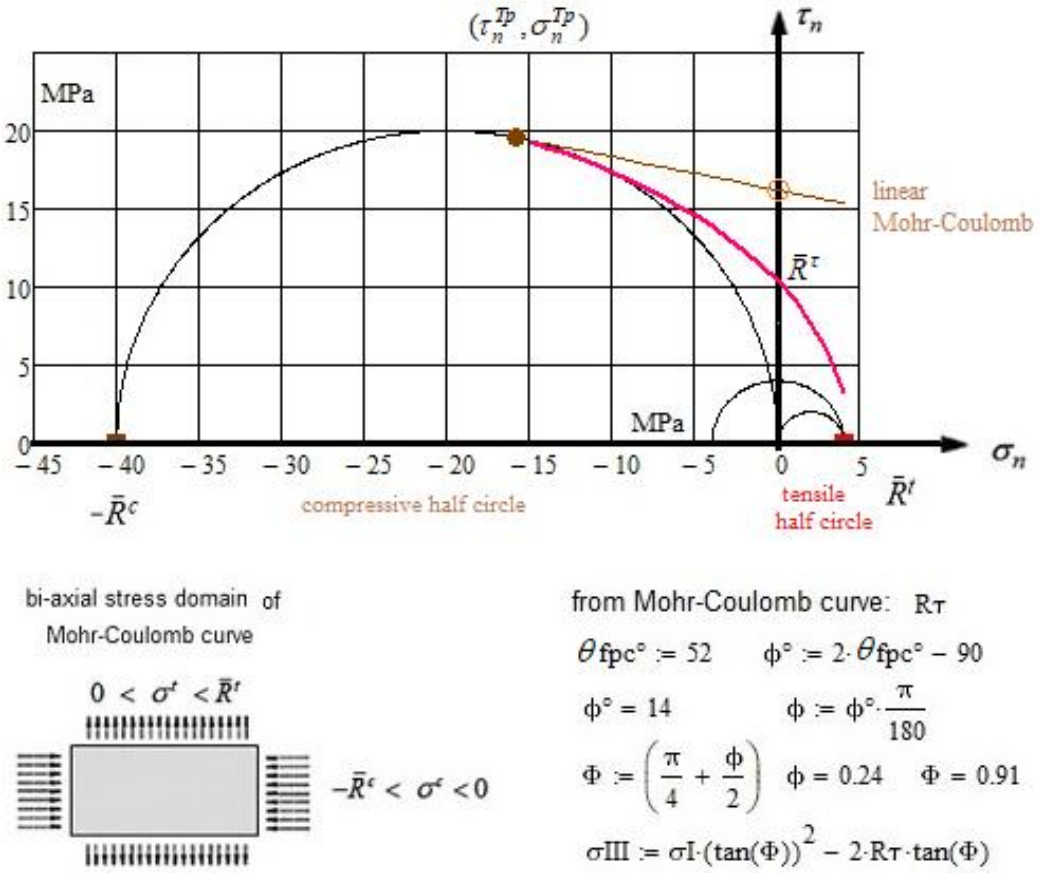


Fig.26-1, example Normal Concrete, 52°: Basics

The SFC contains five un-known parameters. For their determination, mathematically at minimum, five reliable test points on the surface of the fracture body are to provide by tests along the TM and CM. Better fitting procedures could be applied, of course.
Good Mapping requires to capture physics and to apply SFCs being as simple as possible.

Cuntze's approach includes a multifold mapping task, which can be a compromise, only:

(1) Mapping the 2D test data in the principal stress plane, considering here the friction effect.

(2) Mapping the 3D test data along tensile test meridian (TM) and compressive test meridian (CM) along these two axial (180°-opposite) cross-sections of the fracture body with
$(\sigma_I, \sigma_{II} = \sigma_{III}) \rightarrow \sigma_I (2\sigma_{III})$ and CM $(\sigma_I = \sigma_{II}, \sigma_{III}) \rightarrow 2\sigma_I (\sigma_{III})$.

All subfigures, principal stress plane and meridian cross-sections must be able to be derived from the well mapped fracture body and this with sufficient precision.

→ cohesive shear strength $c = R^\tau$ and friction angle ϕ are not required.
Points on the fracture body surface are used to fix the model parameters.

Reminder: All isotropic materials possess a more or less significant 120°-rotational symmetry of the fracture body most often depicted in Haigh-Lode-Westergaard coordinates, see *Fig.26-2*. Thereby, the well-known invariant J_3 is an excellent function to map this type of rotational symmetry (caused by $R^{cc} \neq R^c$ or $R^{tt} < R^t$) and to determine the Lode angle ϑ. Well-known is that the tests are run on the CM and on the TM, meaning that data sets are given for CM with $\vartheta = -30°$ and for TM with $\vartheta = 30°$.

For the chosen Model, depicted in *Table 26-1*, the tricky procedure how to obtain the required model parameters c_i is shown in *Table 26-2* by three steps. For the cohesive strength, required by the extrapolation approaches, numerical values are determined in the third step. Different models deliver different values improved models deliver a lower value, because these consider both damaging modes SF and NF.

Table 26-1: UHPC-SFC model

shape change friction volume change

$$I_1 < 0: \; F^{SF} = F^{\tau} = \underbrace{c_1^{SF} \cdot \frac{6J_2 \cdot \Theta^{SF}}{2 \cdot \bar{R}^{c2}}}_{\text{'Mises Cylinder' formula}} + c_2^{SF}(\mu) \cdot \frac{I_1}{\bar{R}^c} + c_3 \cdot \left(\frac{I_1}{\bar{R}^c}\right)^2 + c_4 \cdot \left(\frac{I_1}{\bar{R}^c}\right)^3 = 1$$

Above SFC is here normalized by the compressive strength $\bar{R}^c$. J_2 is the 'Mises' invariant.

$$I_1 = (\sigma_I + \sigma_{II} + \sigma_{III}) = f(\sigma), \quad 6J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2 = f(\tau)$$

$$27J_3 = (2\sigma_I - \sigma_{II} - \sigma_{III}) \cdot (2\sigma_{II} - \sigma_I - \sigma_{III}) \cdot (2\sigma_{III} - \sigma_I - \sigma_{II}),$$

$$3 \cdot \sigma_{oct} = \sigma_I + \sigma_{II} + \sigma_{III} \; ; \; 9 \cdot \tau_{oct}^2 = 6J_2 = 4 \cdot (\tau_{III}^2 + \tau_I^2 + \tau_{II}^2), \; \tau_{II} = max\,\tau(mathem.)$$

$\sigma_I, \sigma_{II}, \sigma_{III}$ are principal stresses, $\sigma_I > \sigma_{II} > \sigma_{III}$ are mathematical stresses (> more positive)

with $I_1 = (\sigma_I + \sigma_{II} + \sigma_{III})$, $6 \cdot J_2 = (\sigma_I - \sigma_{II})^2 + (\sigma_{II} - \sigma_{III})^2 + (\sigma_{III} - \sigma_I)^2$

Consideration: 120°-rotational symmetry of isotropic materials: $d^{SF} \equiv d_\tau$ *later*

$$\Theta^{SF}(J_3, J_2) = \sqrt[3]{1 + d^{SF} \cdot sin(3\vartheta)} = \sqrt[3]{1 + d^{SF} \cdot 1.5 \cdot \sqrt{3} \cdot J_3 \cdot J_2^{-1.5}}$$

with the non-circularity function Θ^{SF} including d^{SF} as non-circularity parameter.

Compr. Meridian: $\Theta^{SF} = \sqrt[3]{1 - d^{SF}}$, Tensile Meridian: $\Theta^{SF} = \sqrt[3]{1 + d^{SF}}$, Neutral Meridian: $\Theta^{SF} = 1$.

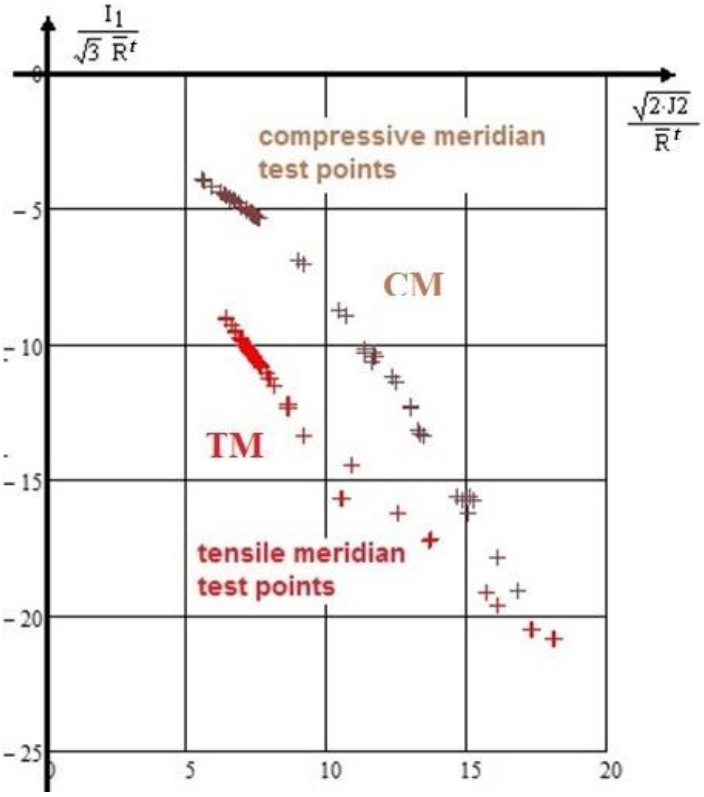


Fig.26-2, example UHPC:
Compressive + and
tensile meridian +test points.

Intentionally depicted on the positive abscissa to outlne the difference
stemming from the brittle isotropic material's inherent 120°-rotational symmetry of the fracture failure body

Table 26- 2, example Normal Concrete: Procedure to obtain the model parameters.

1 ***Relationship of friction parameter and value considering the simple Two Parameter Model***

$F^{\tau} = c_2 \cdot \frac{I_1}{\bar{R}^c} + c_{1\Theta} \cdot \frac{6 \cdot J_2 \cdot \Theta^{SF}}{2 \cdot \bar{R}^{c2}} = 1$ ← insertion of the compression point $c_2 \cdot \frac{-\bar{R}^c}{\bar{R}^c} + c_{1\Theta} \cdot \frac{6 \cdot \bar{R}^{c2} / 3 \cdot \Theta^{SF}}{2 \cdot \bar{R}^{c2}} = 1$

($c_{2\Theta} = c_2$, because the friction parameter does not depend on 120°-rotational symmetry)

$\Rightarrow c_{1\Theta} = \frac{1 + c_2}{\Theta^{CM}}$ with non-circularity function $\Theta^{CM} = \sqrt[3]{1 - d_{\tau}}$ (if rotationally-symmetric, $d^{\tau} = 0$, $\Theta^{SF} = 1$),

Estimation of c_2, by a guess of the friction value μ, from $c_2 = (1 + 3 \cdot \mu) / (1 - 3 \cdot \mu)$.

With a guess $\theta_{fp}^{c\,\circ} = 51°$ ≡ friction value $\mu = 0.208$ and $C^c = \cos(2 \cdot \theta_{fp}\,° \cdot \frac{\pi}{180°}) = -\mu$ follows

$c_2 = (3 \cdot C^c - 1) / (3 \cdot C^c + 1) = (1 + 3 \cdot \mu) / (1 - 3 \cdot \mu) = 4.32.$

2 ***Combined Determination of non-circularity parameter d^{τ} and $c_{1\Theta}$*** (Mathcad Coding)

If no test value is available, this would require an estimate for $\bar{R}^{cc} > \bar{R}^c$ (lies on the TM).

$I1c := -Rc \qquad J2c := \frac{Rc^2}{3} \qquad I1cc := -2 \cdot Rcc \qquad J2cc := \frac{Rcc^2}{3}$

Vorgabe $\qquad c1\Theta := 2 \qquad d\tau := 0.6 \qquad c2 = 4.32$

$$\frac{\sqrt{I1c^2 \cdot c2^2 + 12 \cdot J2c \cdot c1\Theta \cdot \sqrt[3]{1 - 1 \cdot d\tau}} + I1c \cdot c2}{2 \cdot Rc} = 1$$

strength point on CM

$$\frac{\sqrt{I1cc^2 \cdot c2^2 + 12 \cdot J2cc \cdot c1\Theta \cdot \sqrt[3]{1 + 1 \cdot d\tau}} + I1cc \cdot c2}{2 \cdot Rc} = 1$$

bi-axial compressive failure stress point on TM

$A\tau := Suchen(c1\Theta, d\tau) \qquad A\tau = \begin{pmatrix} 6.727 \\ 0.507 \end{pmatrix} \qquad c1\Theta := A\tau_0 \qquad d\tau := A\tau_1$

$c1\Theta = 6.7 \qquad d\tau = 0.51$

3 ***Estimation of the Touch point and Cohesive Strength*** for application of the Mohr-Coulomb Criterion

From §25:

Touch point: $\tau_n^{Tp} = 19.6$ MPa, $\sigma_n^{Tp} = -15.8$ MPa.

Cohesive strength: $\bar{R}^{\tau} = \sqrt{\frac{-\bar{R}^{c2} + c_2 \cdot \bar{R}^c \cdot \sigma_{t0} + c_1 \cdot \sigma_{t0}^2}{3 \cdot c_1}}$ with $\sigma_{t0} = -C^c \cdot (-\bar{R}^c). = 12.9$ MPa

26.2 Ultra-High-Performance-Concrete UHPC **(**relatively dense**)**

UHPC principally behaves similarly to Normal Concrete unless the normalized hydrostatic compression does not become larger than $I_1 / R^t \cdot \sqrt{3} \approx -10$ (> -300 MPa), see *Fig.26-2*.

Then however, in contrast to Normal Concrete with usually relatively low hydrostatic pressure loadings the UHPC experiences a hydrostatically activated effect, 'densification with volume shrinkage'. Therefore, the volume change must be considered by I_1^2. This explains why for the less 'dense' Normal Concrete R^{cc}/R^c is higher than with UHPC according to the possible higher densification. Combined with this a 'healing' of the flaw effects is principally faced.

The fracture body of a theoretically dense concrete matrix possesses in the high hydrostatic compressive domain ($I_1 < 0$) an open fracture surface due to the densification. Practically however, the fracture body does only exist once according to the final spatial micro-crack state and cannot be loaded a second time after deloading.

Further, the bi-axial compressive strength R^{cc} ($\equiv f^{cc}$, internationally used letter in construction, stems from the German term Festigkeit) may be not only linked to SF but also to NF due to the Poisson's ratio activated tensile strain in the axial direction despite $\sigma_{ax} = 0$.

An SFC-model validation requires reliable test results. These have been provided as original data sets by the IMb Dresden (*many thanks to Prof. Curbach and his co-workers*). Hence, the author had to search out of the huge test data package which test points belong to TM and which to CM. Therefore, the full bunch of obtained 3D test data had to be processed. Such a separation bases on the use of the Lode angle (meridian angle) ϑ values: Which test point belongs more to the tensile meridian $\sin(3\vartheta) = 1$

or to the compressive meridian sin(3ϑ) = -1, see *Table 26-3* and *Fig.26-4*. For the shear meridian (neutral meridian NM) angle is valid sin(3ϑ) = ϑ = 0.

Considering all physical aspects, cited before in *Table 26-1*, the basic F^{τ} -SFC reads (in MPa):

$$F^{\tau} = c_1 \cdot \frac{6J_2 \cdot \Theta^{SF}}{2 \cdot \bar{R}^{c2}} + c_2(\mu) \cdot \frac{I_1}{\bar{R}^c} + c_3 \cdot \left(\frac{I_1}{\bar{R}^c}\right)^2 + c_4 \cdot \left(\frac{I_1}{\bar{R}^c}\right)^3 = 1 \quad \text{with}$$

5 unknowns, which at least require 5 fix stress state failure points on the failure surface

$$\{\sigma\} = (,\ ,\ ,)^T : \left(-\bar{R}^c,0,0\right),\ \left(-\bar{R}^{cc},-\bar{R}^{cc}0,0\right),\ \left(\sigma_I^{frict},\sigma_I^{frict},0\right),\ \left(\bar{R}^c,0,0\right),\ \left(\bar{R}^c,0,0\right).$$

The values in MPa = N/mm² are: $\bar{R}^c = 175$, $\bar{R}^{cc} = 183$, $\sigma_{II}^{frict} = -195$, $\sigma_{II}^{frict} = -50$ (*Fig*.26 - 5),

Points: $\sigma_I^{TM} = -40$, $\sigma_{II}^{TM} = \sigma_{III}^{TM}$, $\sigma_{III}^{TM} = -375$; $\sigma_I^{CM} = -61$, $\sigma_{II}^{CM} = \sigma_I^{CM}$, $\sigma_{III}^{CM} = -420$.

As proven mode interaction coefficient is taken again *m* = 2.7.

Note, please: In order to meet the aim of optimum 2D-3D-mapping the parameter c_2 is also determined in the complete parameter computation process of Table 26-4 and not computed due to Table 26-2.

Table 26-3 presents the essential numbers of some measured failure stress states. The table indicates the Lode angle ϑ°, too. On basis of redundancy effects it may be concluded that with increasing hydrostatic pressure both the meridians run into a common scatter band, ending with a circle shape of the hoop. Then, the effect of flaws generating micro-damaging in this heterogeneous material reduces. Thereby, the fracture failure body becomes more and more cylindrical.

Fig. 26-4 links multi-axial stress states to the Lode angles ϑ = -30° (CM) and +30° (TM). Only stress states on the two meridians can be really depicted in the cross-sections. All other test points lie on the fixed hoop radius on a Lode angle different to ϑ = +30° and -30°. These points are marked by o.

Table 26-3: Characteristic material data from evaluated UHPC fracture tests.

E = 20000 MPa, ν = 0.2, $\tau_{max} = \sigma_I - \sigma_{III}$

$\bar{R}^t = 16$ MPa, $\bar{R}^c = 160$ MPa, $\bar{R}^{tt} = 14$ MPa (assumed), $\bar{R}^{cc} = 175$ MPa

	Stress state *in MPa*	$I_1/\sqrt{3}$ $/\bar{R}^t$	$\sqrt{2 \cdot J2}$ $/\bar{R}^t$	τ_{max} *in MPa*	(σ_{hyd} ; σ_{ax}) *in MPa*	ϑ°	$\varepsilon_{ax\ el}$ *in* 10^{-3}	*remarks*
R^{tt}	(14, 14, 0)	1	0.7	-	-	-30	0.6	*two-fold NF*
R^c	(0 , 0, -160)	-5.8	8.2	80	(-0; -160)	-30	-8	Eff_{SF}
	(-6, -6,-230)	-8.7	11.4	111	(-6; -224)	-30	-11	
Compressive	(-16,-16,-272)	-11.0	13.1	128	(-16; -256)	-30	-13	
	(-35,-35,-350)	-15.2	16.1	157	(-35; -315)	-30	-17	
comput.	(-83,-83, -490)	-23.7	20.8	204	(-83; -407)	-30	-23	
	(-23,-23,-305)	-12.6	14.4	141	(-23; -282)	-30	-15	
R^{cc}	(0,-175,-175)	-12.6	8.9	88	(0;-)	+30	3.5	*two-fold SF*
Tensile	(-2,-210,-210)	-15.2	10.6	104	(-2; -)	+30	4.1	
	(-24,-310,-310)	-23.2	14.6	143	(-24; -)	+30	5.0	
R^t	(-54,-388,-388)	-30	17	167	(-54; -)	+30	5.1	
	(16, 0, 0)	0.6	0.8	-	-	+30	0.8	Eff_{NF}
shear	(9, -9, 0)	0	0.8	9	-	0	0.5	$Eff_{NF} > Eff_{SF}$
change	(0,-52,-193)	-8.8	8.8	97	-	-15	-9.1	

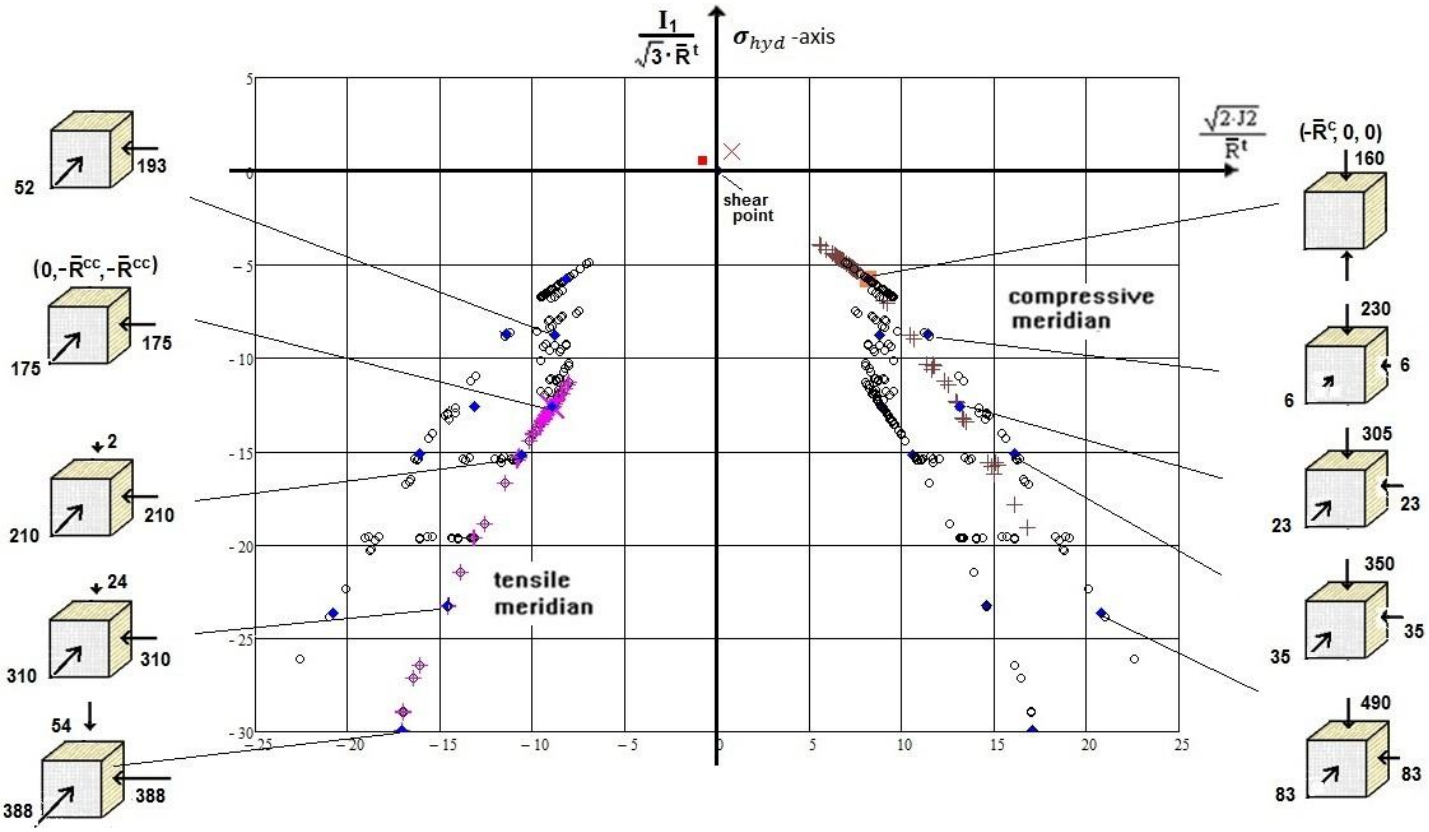


Fig.26-4, UHPC: Compressive and tensile meridian of the fracture body with associated stress states. (left) mirrored TM test points + with CM ones +; (right) all 3D test points are marked by **o** *(hoop ring), visualizing to be located at different meridians ϑ.*

Fig.26-5 displays the mapping quality in the principal stress plane. For comparison the elliptical curve, as the bias cross-section of a cylinder is included. The figure indicates that there is no Mises cylinder given, 120°- rotational symmetry acts.

Fig.26-6 (left) displays the mapping of the TM and the CM data course on the cross section of the fracture body in the traditional Haigh-Lode-Westergaard coordinates.
Fig.26-6 (right) depicts the mapping of the TM data set in a diagram using the 'rock mechanics coordinates' (σ_I, σ_{III}) for TM and $(2\sigma_I, \sigma_{III})$ for CM. How the effortful programming has been performed is compiled in *Table 26-4*. Unfortunately Mathcad did not compute the CM curve. The 'Mohr-Coulomb (M-C) Criterion', using the calculated UHPC-parameters, produces a straight line.
The author could not find any explanation for this unacceptable mapping.
According to the 180°-material symmetry the TM curve could be mirrored from the CM curve by switching from ϑ^{CM} to ϑ^{TM}.

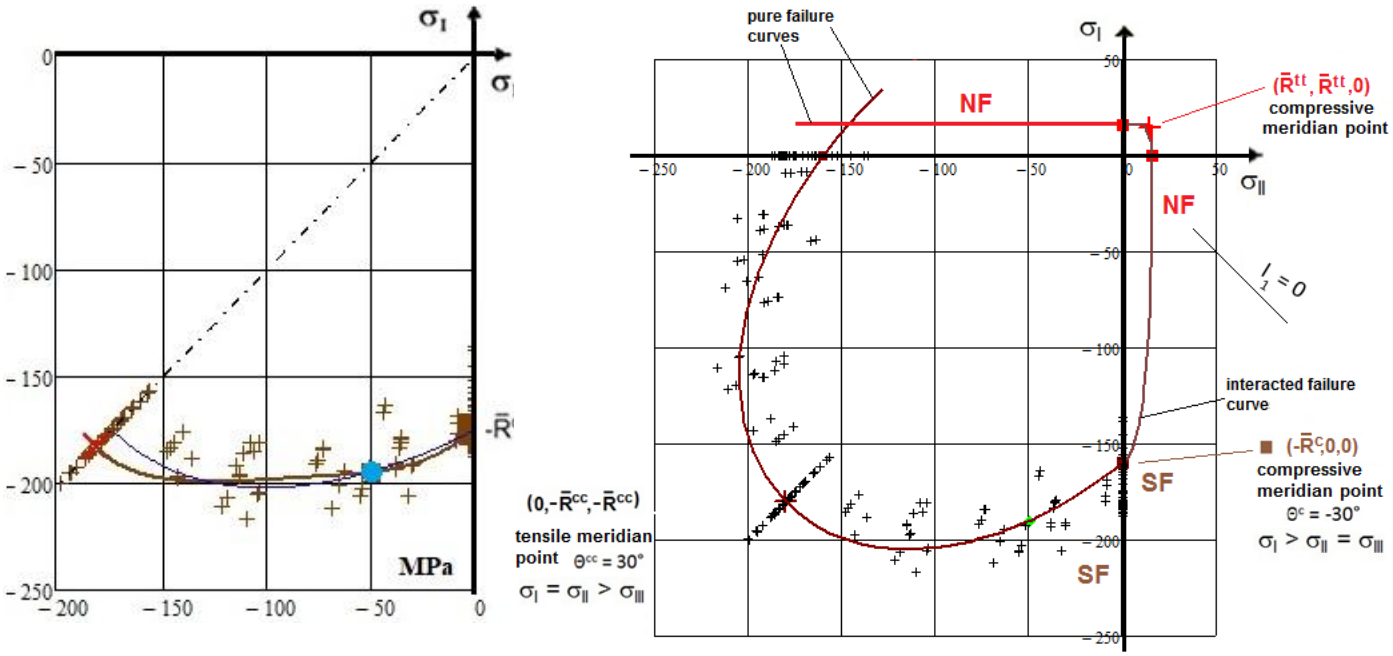


Fig.26-5, UHPC:
(left) Mapping the course of 2D test data in the principal stress plane. The blue fix point serves for friction quantification, mapping course of test data in the SF-domain only (normalization by R^c) *considering the alternating Lode angle* ϑ
(right) Full principal stress plane view, mapping interaction NF with SF in their transition zone (normalization by R^t).

***LL**:*

** Reliable mapping requires an approach which shall be physically-based and 'practical'. Such an approach should equally well map (1) the course of test data fixing the 3D fracture body, (2) the course of test data in the Principal Stress plane (bias 2D cross-section of the 3D fracture body), and (3) of the test data course along the two 3D-test meridians TM and CM.*
In this context: Engineering mapping has basically to capture physics, must be simple and understandable and shall use measurable parameters. Therefore, concerning all part figures 2D and 3D, these show that SFC-models applied for mapping can be good compromises, only. All theoretical approaches have their applicability limits and the very difficult 3D-testing as well

** Fracture initiation in solid mechanics is given, if the multi-stress state vector touches the surface of the fracture body which represents the surface of all failure 1D-, 2D- and 3D-failure stress vectors. The fracture body surface is defined by a material stressing effort Eff = 100% = 1.*

** A display using a confining stress (TM: $\sigma_{II} = \sigma_{III}$, CM: $\sigma_I = \sigma_{II}$) as coordinate leads to another mapping figure than the Haigh-Lode-Westergaard coordinates give.*

** Using just TM or just CM test data cannot result in a reliable physical fracture body.*

** Of course, general 3D-failure stress states may not lie on TM (30°) or CM (-30°) but on another Lode angle around the hoop.*

** The fracture planes of TM and CM are different.*

** Both, the different course of the test data points compared to the also incorporated ellipse in the principal stress plane and the difference of the TM and the CM-curve document the inherent 120°-rotational symmetry of isotropic materials.(360°/3= 120° is given, because all 3 principal stresses are of equal mechanical importance, see Fig.14-9.*

** The fracture body of a dense isotropic material has an <u>open</u> bottom fracture surface!*

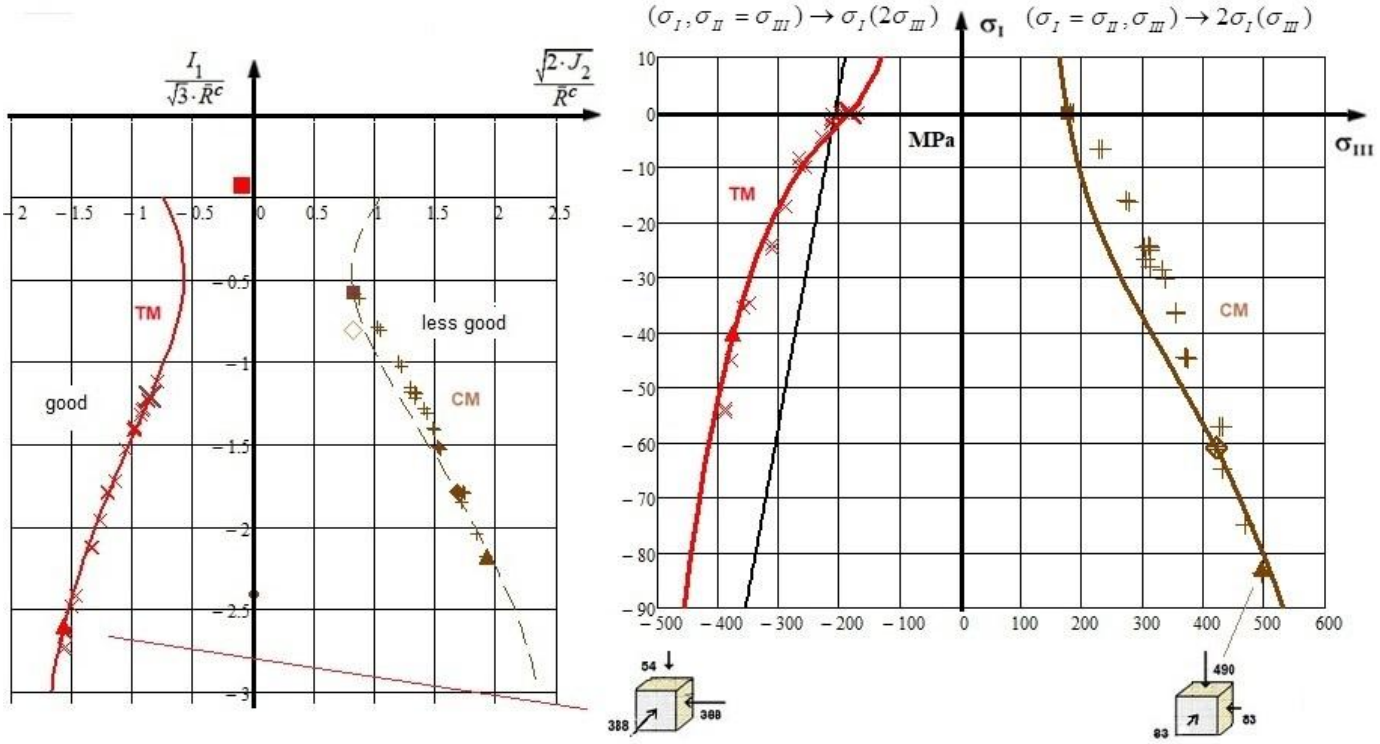


Fig. 26-6, UHPC: (left) mapping display of the two test data sets in Haigh-Lode-Westergaard coordinates. (right) Display using confining stress coordinates.

Eventually, *Table 26-4* presents the determination of the 5 UHPC model parameters.

Table 26-4, UHPC: Determination of the SFC model parameters

$$F\tau = \frac{c1 \cdot 6J2 \cdot \Theta\tau}{2Rc^2} + c2 \cdot \frac{I1}{Rc} + c3 \cdot \left(\frac{I1}{Rc}\right)^2 + c4 \cdot \left(\frac{I1}{Rc}\right)^3 = 1$$

$$I1 = \sigma I + \sigma II + \sigma III \qquad J2 = \frac{(\sigma I - \sigma II)^2 + (\sigma II - \sigma III)^2 + (\sigma III - \sigma I)^2}{6}$$

$$J3 = \frac{(2 \cdot \sigma I - \sigma II - \sigma III) \cdot (2 \cdot \sigma II - \sigma I - \sigma III) \cdot (2\sigma III - \sigma I - \sigma II)}{27}$$

$$\Theta\tau = \sqrt[3]{1 + d\tau \cdot 1.5 \cdot 3^{0.5} \cdot J3 \cdot J2^{-1.5}} = \sqrt[3]{1 + d\tau \cdot \sin(3\theta)}$$

$$\Theta\tau TM = \sqrt[3]{1 + d\tau \cdot \sin(3\theta t)} = \sqrt[3]{1 + d\tau} \qquad \Theta\tau CM = \sqrt[3]{1 + d\tau \cdot \sin(3\theta c)} = \sqrt[3]{1 - d\tau}$$

$$\theta = \frac{1}{3} \cdot \operatorname{asin}\left[1.5 \cdot 3^{0.5} \cdot \frac{(2 \cdot \sigma I - \sigma II) \cdot (2 \cdot \sigma II - \sigma I) \cdot (-\sigma II - \sigma I)}{27} \cdot \left(\frac{2 \cdot \sigma I^2 - 2 \cdot \sigma I \cdot \sigma II + 2 \cdot \sigma II^2}{6}\right)^{-1.5}\right]$$

Vorgabe $c1 := 2$

$$c1 \cdot \frac{3 \cdot J2c \cdot \sqrt[3]{1 - 1 \cdot d\tau}}{Rc^2} + c2 \cdot \frac{I1c}{Rc} + c3 \cdot \left(\frac{I1c}{Rc}\right)^2 + c4 \cdot \left(\frac{I1c}{Rc}\right)^3 = 1$$

$$c1 \cdot \frac{3 \cdot J2cc \cdot \sqrt[3]{1 + 1 \cdot d\tau}}{Rc^2} + c2 \cdot \frac{I1cc}{Rc} + c3 \cdot \left(\frac{I1cc}{Rc}\right)^2 + c4 \cdot \left(\frac{I1cc}{Rc}\right)^3 = 1$$

$$c1 \cdot \frac{3 \cdot J2f \cdot \sqrt[3]{1 + 1 \cdot d\tau \cdot \sin(3\theta f)}}{Rc^2} + c2 \cdot \frac{I1f}{Rc} + c3 \cdot \left(\frac{I1f}{Rc}\right)^2 + c4 \cdot \left(\frac{I1f}{Rc}\right)^3 = 1$$

$$c1 \cdot 3 \frac{J2vc1}{Rc^2} \cdot \sqrt[3]{1 - 1 \cdot d\tau} + c2 \cdot \frac{I1vc1}{Rc} + c3 \cdot \left(\frac{I1vc1}{Rc}\right)^2 + c4 \cdot \left(\frac{I1vc1}{Rc}\right)^3 = 1$$

$$c1 \cdot 3 \frac{J2v}{Rc^2} \cdot \sqrt[3]{1 + 1 \cdot d\tau} + c2 \cdot \frac{I1v}{Rc} + c3 \cdot \left(\frac{I1v}{Rc}\right)^2 + c4 \cdot \left(\frac{I1v}{Rc}\right)^3 = 1$$

$A\tau := \text{Suchen}(c1, d\tau, c2, c3, c4)$

Table 26-5 follows with the derivation of the mapping curves in confining stress coordinates from the model parameters for the full UHPV fracture body.

Table 26-5: Relationships to derive mapping with the confining stress coordinates

TM **Transfer to confing stress coordinates** **CM**

$\sigma II = \sigma III$ $\quad J2 = \frac{(\sigma I - \sigma II)^2 + (\sigma II - \sigma III)^2 + (\sigma III - \sigma I)^2}{6}$ $\quad \sigma II = \sigma I$

$(\sigma It - \sigma IIt)^2 + (0)^2 + (\sigma IIIt - \sigma It)^2$ same function $0^2 + (\sigma IIc - \sigma IIIc)^2 + (\sigma IIIc - \sigma Ic)^2$

$J2 = \frac{Rc^2 \cdot x^2}{2}$ $\quad J2 := \frac{\left[(\sigma I - \sigma III)^2 + (\sigma III - \sigma I)^2\right]}{6}$ for TM and CM equal !

$x^2 = \frac{\left[(\sigma I - \sigma III)^2 + (\sigma III - \sigma I)^2\right]}{3 \cdot Rc^2}$

$I1t = \sqrt{3} \cdot Rc \cdot yt$

$I1 = \sigma I + \sigma II + \sigma III$ $\quad yt = \frac{I1t}{\sqrt{3} \cdot Rc} = \frac{\sigma It + 2\sigma IIIt}{\sqrt{3} \cdot Rc}$ $\quad \sigma IIIt = \frac{\sqrt{3} \cdot Rc \cdot yt}{2} - \frac{\sigma It}{2}$ $\quad yc = \frac{\sigma Ic + 2\sigma IIIc}{\sqrt{3} \cdot Rc}$

$$xTM = \sqrt{\frac{\left[\sigma It - \left(\frac{\sqrt{3} \cdot Rc \cdot y}{2} - \frac{\sigma It}{2}\right)\right]^2 + \left(\frac{\sqrt{3} \cdot Rc \cdot y}{2} - \frac{\sigma It}{2} - \sigma It\right)^2}{3 \cdot Rc^2}} = \sqrt{\frac{\frac{1}{2} \cdot \left(3 \cdot \sigma It - \sqrt{3} \cdot Rc \cdot y\right)^2}{3 \cdot Rc^2}}$$

$$xCM = \sqrt{\frac{\left[\sigma Ic - \left(\sqrt{3} \cdot Rc \cdot y - 2 \cdot \sigma Ic\right)\right]^2 + \left(\sqrt{3} \cdot Rc \cdot y - 2 \cdot \sigma Ic - \frac{\sigma Ic}{2} - \sigma Ic\right)^2}{3 \cdot Rc^2}} = \sqrt{\frac{2 \cdot \left(3 \cdot \sigma Ic - \sqrt{3} \cdot Rc \cdot y\right)^2}{3 \cdot Rc^2}}$$

Values for x are given by inserting the y-coordinate into the SFC

$j := 0, 1 .. 40$ $\quad y_j := \frac{-j}{10} - 1$ y runs negative

$$xTM_j = \sqrt{\left[-\frac{2 \cdot \left[c2 \cdot Rc^2 \cdot I1_j - Rc^3 + c3 \cdot Rc \cdot \left(I1_j\right)^2 + c4 \cdot \left(I1_j\right)^3\right]}{3 \cdot Rc^3 \cdot c1 \cdot \Theta\tau TM}\right]} \quad xCM_j = \sqrt{\left[-\frac{2 \cdot \left[c2 \cdot Rc^2 \cdot I1_j - Rc^3 + c3 \cdot Rc \cdot \left(I1_j\right)^2 + c4 \cdot \left(I1_j\right)^3\right]}{3 \cdot Rc^3 \cdot c1 \cdot \Theta\tau CM}\right]}$$

Finally the y-value is inserted into the confing stress version of x xTM, xCM are known

Vorgabe $\sigma It := -100$

$$xTM = \sqrt{\frac{\left[\sigma It - \left(\frac{\sqrt{3} \cdot Rc \cdot y}{2} - \frac{\sigma It}{2}\right)\right]^2 + \left(\frac{\sqrt{3} \cdot Rc \cdot y}{2} - \frac{\sigma It}{2} - \sigma It\right)^2}{3 \cdot Rc^2}}$$

$V(xTM, y) := Suchen(\sigma It)$ $\quad \sigma It_j := V\left(xTM_j, y_j\right)$ $\quad \sigma IIIt_j := \frac{\sqrt{3} \cdot Rc \cdot y_j}{2} - \frac{\sigma It_j}{2}$

Mathcad did not compute σIc_j however the formula can be simplified and σI extracted

$\sigma It_j := \frac{\sqrt{6} \cdot Rc \cdot xTM_j}{3} + \frac{\sqrt{3} \cdot Rc \cdot y_j}{3}$ $\quad \sigma Ic_j := \frac{\sqrt{3} \cdot Rc \cdot y_j}{3} + \frac{\sqrt{2} \cdot \sqrt{3} \cdot Rc \cdot xCM_j}{6}$

$\sigma IIIt_j := \frac{\sqrt{3} \cdot Rc \cdot y_j}{2} - \frac{\sigma It_j}{2}$ $\quad \sigma IIIc_j := \sqrt{3} \cdot Rc \cdot y_j - 2 \cdot \sigma Ic_j$

*25.3 **Rock Material***, example Sandstone

As for concrete the properties for Underground Rock Failure Stress Analysis are also provided by tests on the tensile and the compressive meridian.

Tensile domain:

Also in rock materials in the vicinity of excavations and boreholes tensile stresses will occur. Further, an undesirable brittle sudden failure is to prevent when a bore-hole is drilled. Therefore, a tensile strength proof requires a tensile strength $\bar{R}^t$ for the distinct rock material.

An estimation for the tensile strength value delivers the Brazilian splitting test (*indirect* tensile strength test) because a classical tensile test specimen is merely to obtain. A solid cylinder or disk (short cylinder) test specimens is used for the initially crack-free (intact) material, see *Fig.26-7.* The evaluation is performed via the formula $f_{sp} = \bar{R}^t = 2 \cdot q / (\pi \cdot d \cdot \ell)$, from [*The constructor.org*].

Note: This 'indirect' measurement caused researchers to predict a value by using a Mohr-Coulomb-based SFC but the determined value must be wrong. In this context the author fully supports Mingqing You [*You15*] that a tensile strength R^t is a separate parameter and cannot be estimated by models working in the tensile-compressive transition zone. A real value for $\bar{R}^t$ is only to obtain by a uniaxial tensile stress test $\{\sigma\} = (\sigma^t_{ax} = F^t/A,\ 0,\ 0)^T$

Compressive domain:

Usual test series for concrete material (*see the concrete applications before)* are most often performed along CM and not so often along TM. For the general demonstration of the strength capacity, however, the full fracture failure body is required because all mixed 3D-compressive stress states are principally possible and their failure stress vectors determine the surface of the fracture body.

In rock mechanics the stress situation seems to be normally just linked to stress states along the compressive meridian. This explains why no bi-axial strength $\bar{R}^{cc}$ is provided in rock literature an entity that enables to describe the 120°-symmetry. Mapping just the course of test data along a meridian simplifies the task: Just the functional description of the test meridian remains of interest.

A stress state in a material, formulated in Mohr's *mathematical* stresses, reads

$\{\sigma\} = (\sigma_I,\ \sigma_{II},\ \sigma_{III})^T$ with σ_I becoming the smallest failure stress (most positive)

$\sigma_I > \sigma_{II} > \sigma_{III}$ mathematically and σ_{III} the largest compressive failure stress (most negative).

Tensile stresses must be signed positive in this context, otherwise confusion becomes extreme!

For the tensile meridian follows $\{\sigma\} = (\sigma_I,\ \sigma_{II},\ \sigma_{III} = \sigma_{II})^T$ with $\sigma_I = \sigma^t_{ax} - p_{hyd}$

and the compressive meridian $\{\sigma\} = (\sigma_I = \sigma_{II},\ \sigma_{II},\ \sigma_{III})^T$ with $\sigma_{III} = \sigma^c_{ax} - p_{hyd}$.

TM captures $\bar{R}^{cc}$ (and $\bar{R}^t$, in the domain of the Normal Fracture mode) and CM captures $\bar{R}^c$ (and principally also $\bar{R}^{tt}$ in the domain of the Normal Fracture mode).

In rock mechanics, being one part of civil engineering, hydrostatic pressure is used, when testing concrete and UD material, but is to replace by the term Confining Pressure CP. This makes to introduce some definitions of rock mechanics terms: In construction, tensile stress is usually still negative, but not always. This makes literature interpretations difficult!

- Multi-axial rock compressive strength capacity [*You15*]

(the stress-sketch in Figure 1 of [Lan19] must be corrected. It does not fit to the provided failure stress states. In Fig.26-7 this is corrected)

$\sigma_{III} \equiv \sigma_S \equiv \sigma_1$ termed here min or principal stress

- 1D uniaxial strengths: UTS = $\bar{R}^t$, UCS = $\bar{R}^c$

  Unfortunately the author found different meanings: In engineering design dimensioning UTS means Ultimate Tensile Strength and not Uniaxial Tensile Strength and UCS ultimate compressive strength *(still also applied in 'geo engineer'! Why is it not generally used in rock mechanics?)* and not for instance Unconfirmed Compressive Strength [*Wikipedia*]. UCS stands for the maximum axial compressive stress that a specimen can bear under zero Confining Pressure (*compressive stress*), which means it is nothing else than the usual simple standardized technical compression strength $\bar{R}^c$ in engineering.

- ✓ Confining pressure CP: maximum level of hydrostatic compression applied in a tri-axial compression test of a concrete, a rock material or a neat resin test specimen defined by

  $\{\sigma\}$ = ($\sigma_{ax}{}^t$ - CP , -CP, -CP) or with $\sigma_{ax}{}^c$ (tensile meridian)

  $\{\sigma\}$ = ($\sigma_{ax}{}^c$ - CP , -CP,, -CP) (*induced by test rig brushes in case of concrete*)

- ✓ Confining lithostatic pressure: CP = p_{hyd} + overlying weight.

The author would like to conclude: *Using usual mathematical stresses it reads*

- Sealed, polished dog-bone test specimens deliver the failure stress points ($-\bar{R}^{ccc}$,$-\bar{R}^{ccc}$,$-\bar{R}^{ccc}$) no pore pressure, ($-\bar{R}^c$, 0, 0) , ($\bar{R}^t$, 0, 0) and further multi-axial compressive failure stresses on the compressive meridian.
- A bi-axial compressive failure stress ($-\bar{R}^{cc}$,-, 0) is obtainable by the dog-bone test specimen for $\sigma_1 = 0$ or $\sigma_{ax}{}^t = -CP$. However, the author did not find one single bi-axial strength value $\bar{R}^{cc}$ in the papers he examined! However, the UHPC fracture stress data set, thankfully left by IFM Dresden, brought a statistically good base which should have a similar tendency as rock material
- A bi-axial tensile failure stress ($\bar{R}^{tt}$, $\bar{R}^{tt}$, 0) can be obtained by cube test specimens prepared by a good gluing in order to load the needed bi-axial tensile stresses.

Test procedure: The confining pressure CP is achieved and then kept constant during the test. The axial stress σ_1 is increased at a certain rate until the test specimen fails at $_{max}\sigma_1$. It is to consider whether the porosity of the rock or the soil material and the moisture saturation plays a role.
Fig.26-7 presents fracture pictures of the investigated Berea sandstone. Essential is that the fracture angle increases with CP.

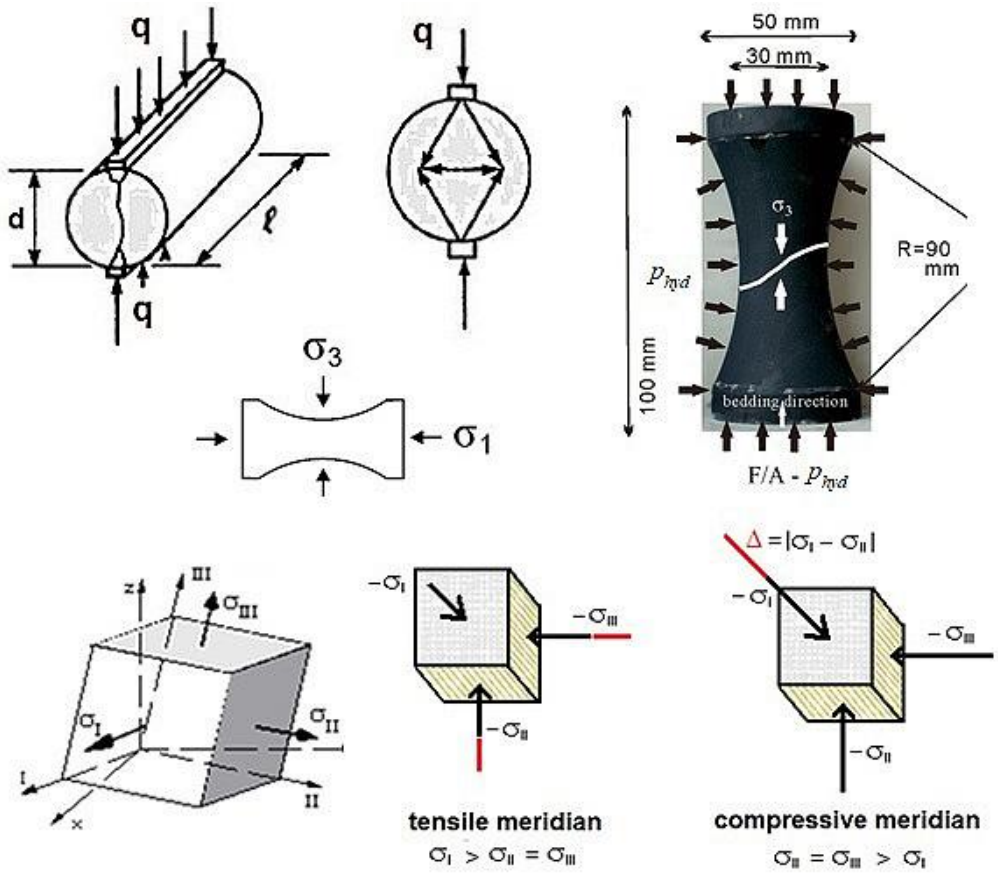


Fig. 26-7: Brazilian cylinder or disk (short length) for an indirect estimation of $\bar{R}^t$ *and dog-bone (sealed, highest preparation effort, grinding from solid block with axial bedding layers) test specimen for direct measurement of tri-axial fracture stress states along compressive meridian including the tension-compression domain.*
(Δ *depicts the differential stress entity causing shear stress with shear deformation)*

Similarly to other brittle materials the task always is the full (onset-of-fracture) body surface capturing NF and SF and not by SF just $I_1 < 0$ and thereby not regarding the intrinsic 120°-rotational symmetry. The TM and CM test data points are two oppositely located cross-sections of the body. The classical type of visualization is to use the Haigh-Lode-Westergaard coordinates count equally in all directions. Visualization by using a confining stress cannot lead to the same mapping curve (see Fig. 26.6).

LL:

The interpretation of the concrete-diagrams above leads to the following results for rock materials:

- *Using just TM or just CM test data incorporates a bottleneck concerning the achievement of a reliable physical fracture body*
- *The use of the geo-Mohr-Coulomb Criterion leads to a straight mapping of the course of test data along the tensile meridian. The model of the author captures the curved course*
- *Engineers in other disciplines become pretty stressed because we civil engineers unfortunately use construction design tools which still call tensile stresses negative stresses. This completely disturbs the logic of the well-known 'civil engineer' A. Mohr in context with his use of mathematical stresses!*



Fig.26-8, Sandstone: Fracture pictures of Berea sandstone from [Lan19].

Asociated Personal Experience

A dangerous cohesive shear strength with an associated critical sliding angle lead to a land slide at the West-East Main road of Bhutan.
A video clip taken by me would show how huge rocks were 'travelling' down.



This dramatic situation, depicted in the figure above, led to my most dangerous car trip, on gravel roads, along gorges up to 1000 m deep, from the Central Himalaya down to the plain and back up into the high mountains. AND, there was the same driver who had to drive from 7 until 23 o'clock on these roads, unbelievable.

27 UD-Strength Failure criteria: Which one should I take?

***Aim**: Assisting the user not to follow the FE Manual recommendation "Take the worst result of all".*

In the future, we will be forced to compute 3D-based reserve factors in static component Design Verification. The 2D-based Classical Laminate Theory for unidirectional fiber-reinforced matrices is not sufficient for this. For these reasons, the author has tried to compare those SFCs that were 'contributing' to the World Wide Failure Exercises (WWFE) for UD materials, namely Tsai-Wu, Hashin, Puck and Cuntze. The comparison carried out (*generally too little test data is available*) looks at the necessary input, shows the received failure envelopes for three 2D stress combinations and tries to evaluate the results, so that FE Manual recommendations "*Take the worst result of all*" is not to be followed anymore!

Regarding the chapters before, the SFCs of Hashin and Tsai-Wu will be presented, only, and some missing things of Puck's SFC.

27.1 SFC Hashin

* Hypothesis 2, valid for Cuntze's FMC-bases SFC-formulations:

"*For UD-material the SFCs should be invariant under any rotation around the fiber direction*."

Hashin with the Hypothesis 2 also proposed an invariant-based global quadratic approach with two different stress invariants:

$$I_1=\sigma_1,\ I_2=\sigma_2+\sigma_3,\ I_3=\tau_{31}{}^2+\tau_{21}{}^2,\ I_4=\tau_{23}{}^2-\sigma_2\cdot\sigma_3,\ I_5=4\tau_{23}\tau_{31}\tau_{21}-\sigma_2\cdot\tau_{31}{}^2-\sigma_3\cdot\tau_{21}{}^2).$$

Table 27-1 compiles the four SFCs of Zvi Hashin.

Table 27-1: Four SFCs, for FF1, FF2, IFF1 and IFF2

$\{\sigma\}=(\sigma_1,\sigma_2,\sigma_3,\tau_{23},\tau_{31},\tau_{21})^{\mathrm{T}}$, $\{\bar{R}\}=(\bar{R}_{\parallel}^{t},\bar{R}_{\parallel}^{c},\bar{R}_{\perp}^{t},\bar{R}_{\perp}^{c},\bar{R}_{\perp\parallel};\ \bar{R}_{23})^{\mathrm{T}}$; 6 strengths, principally Interaction of the 4 modes necessary.

Hypothesis 1: $F\left(\{\sigma^A\},\{\bar{R}^A\},\theta_{\mathrm{fp}}\right)=1$, Puck's way

Hypothesis 2: $F\left(\{\sigma\},\{\bar{R}\}\right)=1$, Cuntze's way, *below*

FF1, $\sigma_1>0$: $\left(\frac{\sigma_1}{\bar{R}_{\mathrm{II}}^{t}}\right)^2+\frac{\tau_{31}^2+\tau_{21}^2}{\bar{R}_{\perp\parallel}{}^2}$; FF2, $\sigma_1<0$: $\left(\frac{-\sigma_1}{\bar{R}_{\mathrm{II}}^{c}}\right)^2=1,$

IFF1, $\sigma_2+\sigma_3>0$: $\frac{(\sigma_2+\sigma_3)^2}{\bar{R}_{\perp}^{t}}+\frac{\left(\tau_{23}{}^2-\sigma_2\cdot\sigma_3\right)}{\bar{R}_{23}{}^2}+\frac{\left(\tau_{31}^2+\tau_{21}^2\right)}{\bar{R}_{\perp\parallel}{}^2}=1,$

IFF2, $\sigma_2+\sigma_3<0$: $\left(\frac{\bar{R}_{\perp}^{c\,2}}{4\cdot\bar{R}_{23}{}^2}-1\right)\cdot\frac{(\sigma_2+\sigma_3)}{\bar{R}_{\perp}^{c}}+\frac{(\sigma_2+\sigma_3)^2}{4\cdot\bar{R}_{23}{}^2}+\frac{\left(\tau_{23}{}^2-\sigma_2\cdot\sigma_3\right)}{\bar{R}_{23}{}^2}+\frac{\left(\tau_{31}^2+\tau_{21}^2\right)}{\bar{R}_{\perp\parallel}{}^2}=1,$

Interlaminar failure: $\sigma_3>0$: $\left(\frac{\sigma_3}{R_3^t}\right)^2=1;$ $\sigma_3<0$: $\left(\frac{-\sigma_3}{R_3^c}\right)^2=1$.

* Hypothesis 1, valid for Puck's Action Plane IFF formulation:

"In the event that a failure plane under a distinct fracture angle can be identified, the failure is produced by the normal and shear stresses on that plane".

Hashin proposed this modified Mohr-Coulomb IFF approach but did not pursue this idea due to numerical difficulties (*A. Puck succeeded on this way*).

Question: What about the determination of $\bar{R}_{23} \neq \bar{R}^{\tau}_{23}$? *See my Technical Terms, please, in the Glossar.*

27.2 SFC Tsai-Wu, global SFC

A general anisotropic tensor polynomial expression of Zakharov and Goldenblat-Kopnov with the parameters F_i, F_{ij} as strength model parameters was the basis of the Tsai-Wu SFC $\sum_{i=1}^{6}(F_i \cdot \sigma_i)+\sum_{j=1}^{6}\sum_{i=1}^{6}\left(F_{ij} \cdot \sigma_i \cdot \sigma_j\right)=1$. From this tensor formulation, Tsai-Wu used the linear and quadratic terms, see <u>*Table 27-2*</u>:

Table 27-2: 3D SFCs of Tsai-Wu

$\{\sigma\} = (\sigma_1, \sigma_2, \sigma_3, \tau_{23}, \tau_{31}, \tau_{21})^T$, $\{\bar{R}\} = (\bar{R}^t_{\parallel}, \bar{R}^c_{\parallel}, \bar{R}^t_{\perp}, \bar{R}^c_{\perp}, \bar{R}_{\perp\parallel}; \bar{R}_{23})^T$, 6 strengths

$F\left(\{\sigma\}, \{\bar{R}\}\right) = 1$. *The* interaction *is global SFC – inert*

$F_i \cdot \sigma_i + F_{ij} \cdot \sigma_i \cdot \sigma_j = 1$ with (i,j = 1,2..6) or executed

$$F_{11} \cdot \sigma_1^2 + F_1 \cdot \sigma_1 + 2F_{12} \cdot \sigma_1 \cdot \sigma_2 + 2F_{13} \cdot \sigma_1 \cdot \sigma_3 + F_{22} \cdot \sigma_2^2 + F_2 \cdot \sigma_2 +$$
$$+ 2F_{23} \cdot \sigma_2 \cdot \sigma_3 + F_{33} \cdot \sigma_3^2 + F_{33} \cdot \sigma_3^2 + F_3 \cdot \sigma_3 + F_{44} \cdot \tau_{23}^2 + F_{55} \cdot \tau_{13}^2 + F_{66} \cdot \tau_{12}^2 = 1$$

with the strength model parameters

$$F_1 = 1/\bar{R}^t_{\parallel} - 1/\bar{R}^c_{\parallel},\ F_{11} = 1/(\bar{R}^t_{\parallel} \cdot \bar{R}^c_{\parallel}),\ F_2 = 1/\bar{R}^t_{\perp} - 1/\bar{R}^c_{\perp},\ F_{22} = 1/(\bar{R}_{\perp} \cdot \bar{R}^c_{\perp}) = F_{33},$$
$$F_{13} = F_{12},\ F_{55} = F_{66} = 1/\bar{R}^2_{\perp\parallel},\ 2F_{23} = 2F_{22} - 1/\bar{R}^2_{23},\ F_{44} = 2 \cdot (F_{22} + F_{23})$$

and - *in order to avoid an open failure surface* - the so-called interaction term

$F_{12} = \bar{F}_{12} \cdot \sqrt{F_{11} \cdot F_{22}}$ with $-1 \le \bar{F}_{12} \le 1$; usually applied $F_{12} = -0.5$.

Question, again: What about the determination of $\bar{R}_{23}$ and the value for F_{12} for 3D applications?

27.3 SFC Puck

<u>Some history</u>:

**As early as 1969 A. Puck recognized to separate FF from IFF (not Hashin as is sometimes said). Since the mid-eighties Puck from Uni Kassel, Cuntze from MAN and colleagues of the DLR-Braunschweig looked together for an improved IFF-SFC.*

** H. Schuermann, Uni Darmstadt, found the article [Has80] with the Hashin Hypothesis 1 which Puck could successfully execute. Cuntze recommended to use the matrix formulation to mathematically simpler convince the reader, which was more successful than his excellently written model description.*

** Beside several dissertation works, Puck's IFF model was further developed in a founded research project 1994. Results were published in VDI Progress Reports Series 5 Vol.506, VDI-Verlag, Düsseldorf, 1997, [VDI97]. The investigations for this book gave valuable results for Puck's book, 1996.*

** Due to the still highly established Puck IFF model Cuntze invited Puck to put his SFC into the [VDI 2014] German Guideline, Sheet 3, Development of Fibre-Reinforced Plastic Components, Analysis.*

Puck's so-called Action Plane IFF Conditions (1991) base on Mohr-Coulomb and Hashin.

In his interaction approach for the 3 IFF modes Puck interacted the 3 Mohr stresses σ_n , τ_{nt} , τ_{n1} on the IFF fracture plane, see *Fig.27-4*. He uses parabolic or elliptic polynomials to formulate a so-called master fracture body in the (σ_n , τ_{nt} , τ_{n1}) space. Thereby he assumes that a compressive σ_n cannot cause fracture on its action plane and that the stress σ_1 does not have any influence on the angle of the IFF fracture plane. The stresses on the fracture plane are decisive for fracture: A tensile stress σ_n supports the fracture, while in contrast a compressive stress makes the material 'stronger'. In other words: A compressive σ_n impedes IFF which is caused by the action plane shear stresses τ_{nt} and τ_{n1}, or – in other words - cannot cause fracture on its action plane. Fracture-responsible are only those stresses which act on a common action plane.

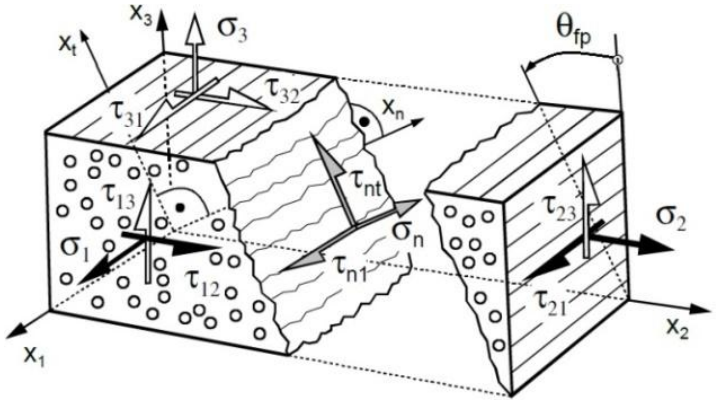


Fig.27-4, UD-composite element: Lamina and action plane stresses at an inclined failure angle θ_{fp} (from [Lut05, SAMPE])

Fig.27-5 presents Puck's 3 IFF modes: mode A (= IFF1), mode B (≡ IFF3), mode C (≡ IFF2. The modes A and B lead to transversal fracture planes with $\theta_{fp} = 0$, whereas in mode C inclined planes occur $0° < \theta_{fp} < 55°$ (for CFRP). The determination of the unknown IFF action plane angle θ_{fp} is

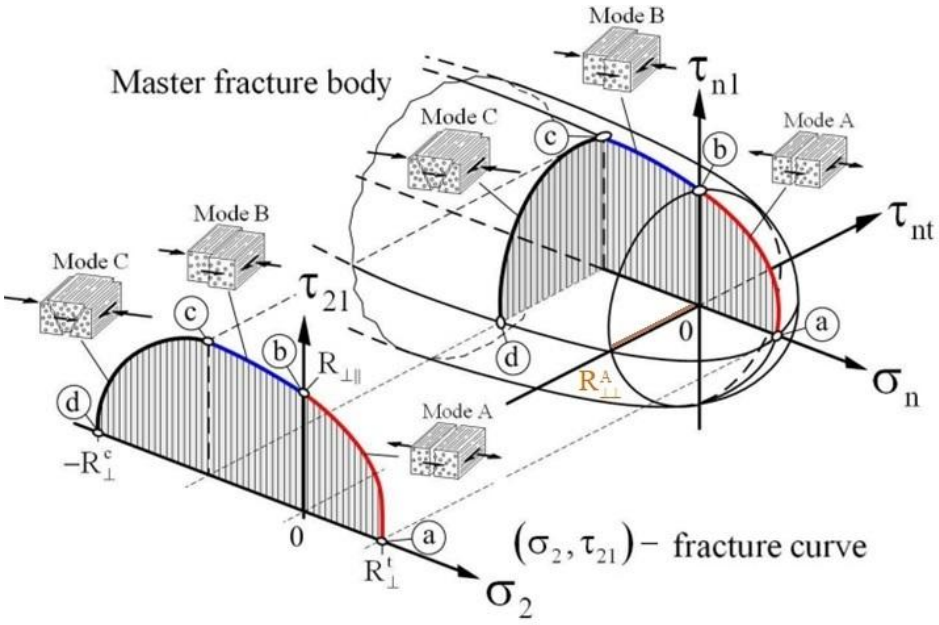


Fig.27-5: Master fracture body with Puck's IFF modes and action plane stresses (σn, τnt, τn1). *(left) Lamina stresses and main IFF cross section of the fracture body in lamina stresses* (σ_2, τ_{21}) *[courtesy H. Schürmann]*

performed by a search process in the domain -90° < θ_{fp} < 90. For the in-plane stress state $\tau_{21}(\sigma_2)$ which is dominant in many structural components, Puck found an analytic solution for the angle of the fracture plane [*Puc02*]: $\cos\theta_{\text{fp}} = \sqrt{\frac{1}{2+2\cdot p^{c}_{\perp\perp}}\cdot\left[\left(\frac{\bar{R}^{A}_{23}}{\bar{R}_{\perp\parallel}}\right)^{2}\cdot\left(\frac{\tau_{21}}{\sigma_2}\right)^{2}+1\right]}$.

In *Table 27-3* Puck's Action Plane Mohr-Coulomb-linked (global) IFF SFCs discriminate 3 IFF domains and are completed by the simple maximum stress modes FF1 and FF2. Two IFF fracture plane resistances (superscript ^{A}) directly are technical strengths.

Table 27-3: SFCs for FF1, FF2, IFF1, IFF2 and IFF3

$\{\sigma\} = (\sigma_1, \sigma_2, \sigma_3, \tau_{23}, \tau_{31}, \tau_{21})^{\mathrm{T}}$, $\{\bar{R}\} = (\bar{R}^{t}_{\parallel}, \bar{R}^{c}_{\parallel}, \bar{R}^{t}_{\perp}, \bar{R}^{c}_{\perp}, \bar{R}_{\perp\parallel};\ \bar{R}^{A}_{23})^{\mathrm{T}}$, 6 strengths, principally

In Mohr's action plane stresses the IFF-SFC reads $F\left(\sigma_n, \tau_n, \bar{R}_{\sigma}, \bar{R}_{\tau}, \theta_{\text{fp}}\right) = 1$,

$F\left(\{\sigma^{A}\}, \{\bar{R}^{A}\}, \theta_{\text{fp}}\right) = 1$ with $\{\bar{R}\} = (\bar{R}^{t}_{\parallel}, \bar{R}^{c}_{\parallel}, \bar{R}^{A}_{\perp} = \bar{R}^{t}_{\perp}, \bar{R}^{A}_{23} = \bar{R}^{c}_{\perp}, \bar{R}^{A}_{\perp\parallel} = \bar{R}_{\perp\parallel})^{\mathrm{T}}$; *Puck* : $\bar{R}^{A}_{23} \neq \bar{R}_{23}$!

FF1, $\sigma_1 > 0$: $\left(\frac{\sigma_1}{\bar{R}^{\mathrm{t}}_{\mathrm{II}}}\right)^{2}$; FF2, $\sigma_1 < 0$: $\left(\frac{-\sigma_1}{\bar{R}^{\mathrm{c}}_{\parallel}}\right)^{2} = 1$, (maximum stress criteria)

and due to the IFF hypotheses, two different eqations are provided [*Puc* 96, *p.*118]

IFF: $\sigma_n > 0$: $\varepsilon = \left(\frac{\tau_{nt}}{\bar{R}^{A}_{23}}\right)^{2} + \left(\frac{\tau_{n\ell}}{\bar{R}^{A}_{\perp\parallel}}\right)^{2} + \left(\frac{\sigma_n}{\bar{R}^{A}_{\perp}}\right)^{2} = 1$, $\tau_n = \sqrt{\tau_{nt}{}^{2} + \tau_{n1}{}^{2}}$

IFF: $\sigma_n < 0$: $\varepsilon = \left(\frac{\tau_{nt}}{\bar{R}^{A}_{23} - p_{\perp\perp}{}^{\mathrm{c}}\cdot\sigma_n}\right)^{2} + \left(\frac{\tau_{n\ell}}{\bar{R}^{A}_{\perp\parallel} - p_{\perp\parallel}{}^{\mathrm{c}}\cdot\sigma_n}\right)^{2} = 1$, [*Puc*96, *p.*143]

$\Rightarrow$ from originally assumed 6 material strengths down to 5 action plane resistancies which capture all 3 sub-modes IFF1, IFF2 and IFF3.

The following transfer relationship is to apply above ($_{fp}$ = failure plane)

$$\begin{Bmatrix}\sigma_n(\theta_{fp})\\ \tau_n(\theta_{fp})\\ \tau_{n\ell}(\theta_{fp})\end{Bmatrix} = \begin{bmatrix} c^2 & s^2 & 2sc & 0 & 0\\ -sc & sc & c^2-s^2 & 0 & 0\\ 0 & 0 & 0 & s & c\end{bmatrix}\cdot\begin{Bmatrix}\sigma_2\\ \sigma_3\\ \tau_{23}\\ \tau_{31}\\ \tau_{21}\end{Bmatrix},\quad c = \cos\theta_{fp} \text{ and } s = \sin\theta_{fp}\ .$$

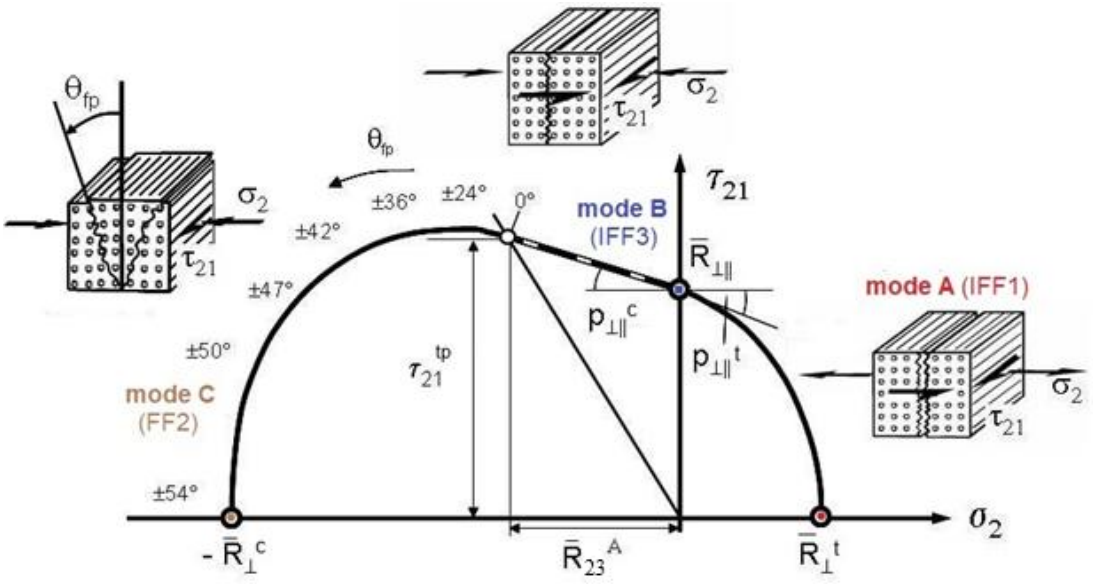


Fig. 27-6: Fracture modes of the (σ_2,τ_{21})-failure envelope; index ^{tp} *marks the touchpoint between mode B and C, [Lut13, Puc96]*

*Table 27-4: 2D-IFF [VDI2014***]**

Mode A (= IFF1) : $\varepsilon = \frac{1}{\bar{R}_{\perp\mathrm{II}}} \cdot \sqrt{\left(\frac{\bar{R}_{\perp\|}}{\bar{R}_{\perp}^{t}} - p_{\perp\|}^{t}\right)^2 \cdot \sigma_2^{\,2} + \tau_{21}^2} + p_{\perp\|}^{t} \cdot \sigma_2;$

Mode B (≅ IFF3) : $\varepsilon = \frac{1}{\bar{R}_{\perp\mathrm{II}}} \cdot \sqrt{p_{\perp\|}^{c\,2} \cdot \sigma_2^{\,2} + \tau_{21}^2} + p_{\perp\|}^{c} \cdot \sigma_2;$

Mode C (≅ IFF2) : $\varepsilon = \frac{\tau_{21}^2}{4 \cdot \left(\bar{R}_{\perp\|} + p_{\perp\|}^{c} \cdot \bar{R}_{23}^{A}\right)^2} \cdot \frac{\bar{R}_{\perp}^{c}}{-\sigma_2} + \frac{-\sigma_2}{\bar{R}_{\perp}^{c}}$

ε is also termed f_E [*Lut*05, *VDI* 2014]

$\tau_{21}^{tp} = \bar{R}_{\perp\mathrm{II}} \cdot \sqrt{1 + 2 \cdot p_{23}^{c}}, \quad \sigma_2^{tp} = -\bar{R}_{23}^{A}, \quad \bar{R}_{23}^{A} = \left[\bar{R}_{\perp\mathrm{II}} \cdot \sqrt{1 + 2 \cdot p_{\perp\mathrm{II}}^{c} \cdot \bar{R}_{\perp}^{c} / \bar{R}_{\perp\mathrm{II}}} - 1\right] / 2 \cdot p_{\perp\|}^{c},$

* The action plane resistance $\bar{R}_{23}^{A}$ depends on the chosen fracture body model such as the parabolic Mohr envelope and not just the linear Mohr approach.

* Assumption on coupling the inclination parameters: $p_{23}^{c} = p_{\perp\|}^{c} \cdot \bar{R}_{23}^{A} / \bar{R}_{\perp\|}.$

R_{23}^{A} is found in the horizontal cross-section of Puck's Master failure body. It is a IFF-Mohr model-linked quantity and consequently a given model strength parameter and not a technical strength. It finally did vanish therefore as a measurable technical strength. Puck's R_{23}^{A} is a model parameter and defined by Puck's Mohr-Model using two strength and the so-called inclination parameters *p*, depicted in Fig.6.

Practically, 5 independent failure activing stresses are left, which would support Cuntze's material symmetry-based 'generic' number of 5 he elaborated for UD materials.

Of course, an interaction of IFF with the two FF modes is also with Puck mandatory in order to capture the combined (joint) failure danger. This procedure is documented in detail in the VDI 2014, sheet 3. One reason to do that is that experiments demonstrate micro-damage activation at the ends of broken filaments. Puck terms this 'weakening of the matrix' and uses a so-called weakening factor. Applying Cuntze's interaction equation *Eff* = 1 this is automatically performed in the foreseen comparison.

27.4 Comparison of the obtained different SFC Failure Envelopes

In consequence of the rare test data sets just **2D**-models of Tsai-Wu, Hashin, Puck and Cuntze could be numerically investigated.

A comparison is only possible if the interaction can be equally performed for each model and the same interaction. This could be realized for the 4 models by a transfer to the single 2D-*Eff*-formulation, example Tsai-Wu:

$$\frac{{\sigma_1}^2/Eff^2}{\bar{R}_{||}{}^t \cdot \bar{R}_{||}{}^c} + \frac{\sigma_1}{Eff}\cdot\left(\frac{1}{\bar{R}_{||}{}^t} - \frac{1}{\bar{R}_{||}{}^c}\right) + \frac{2F_{12}\cdot\sigma_1\cdot\sigma_2/Eff^2}{\sqrt{\bar{R}_{||}{}^t \cdot \bar{R}_{||}{}^c \cdot \bar{R}_{\perp}{}^t \cdot \bar{R}_{\perp}{}^c}} + \frac{{\sigma_2}^2/Eff^2}{\bar{R}_{\perp}{}^t \cdot \bar{R}_{\perp}{}^c} + \frac{\sigma_2}{Eff}\cdot\left(\frac{1}{\bar{R}_{\perp}{}^t} - \frac{1}{\bar{R}_{\perp}{}^c}\right) + \frac{\tau_{12}^2/Eff^2}{\bar{R}_{\perp||}} = 1$$

The investigation focuses mapping of the curves of test data by SFCs. In these formulations each single strength is an average strength consequently indicated by a bar over.

The following figures present the failure envelopes of investigated three plane stress combinations.

SFC Failure Envelopes

Fig.27-6 visualizes, how the four models map the most interesting cross-section of the UD fracture body, namely $\tau_{21}(\sigma_2)$.

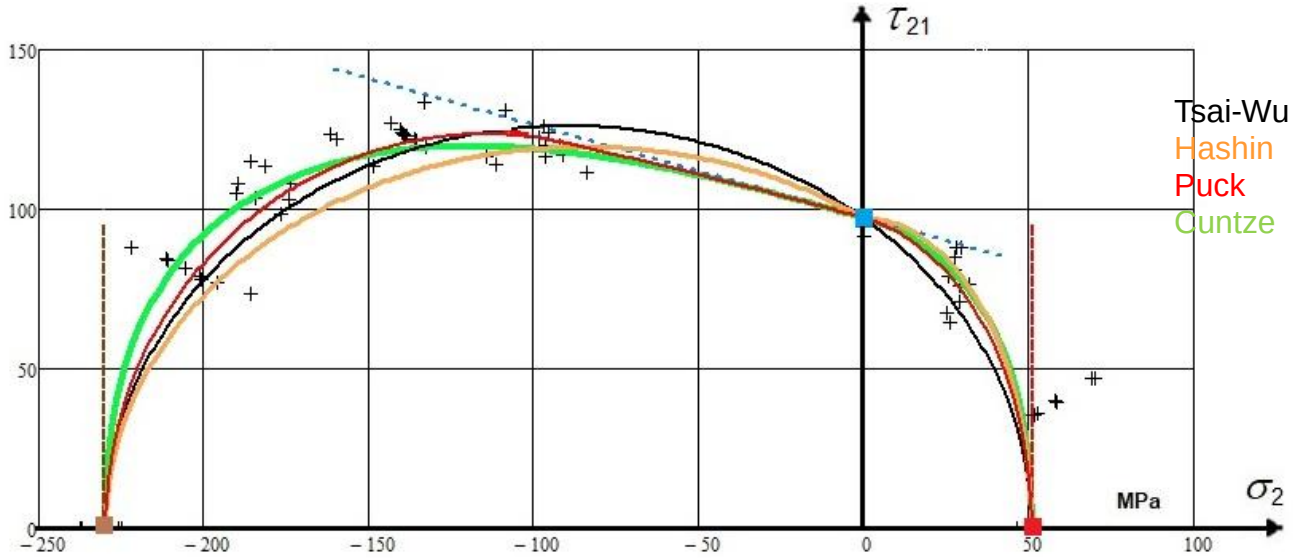


Fig. 27-6: CFRP test results (MAN Technologie research project with A. Puck, IKV Aachen et al.)

$\{\bar{R}\} = (1280,\ 800,\ 51,\ 230,\ 97)^T$ MPa, $\mu_{\perp||} = 0.3$ [*VDI 97*]

Fig.27-7 depicts the failure envelope $\sigma_2(\sigma_1)$, being the WWFE Test Case 3. In this test case below, just the 4 strength values were provided together with the not $R_{\perp}^{c}$-matching test data of a Russian test data

provider showing a test discrepancy (*passed away, no request possible*) in the fourth quadrant of *Fig.27-7*. However, the tendency of the two different (*assumed*) test sets can be carefully used for validation.
The global Tsai-Wu SFC lies fully outside, which would be of high effect for stability analysis. The test data set in the quadrant III was provided by M.. Knops, IKV Aachen, [*Kno03*].
Mapping tells, that modal modelling is the better choice.

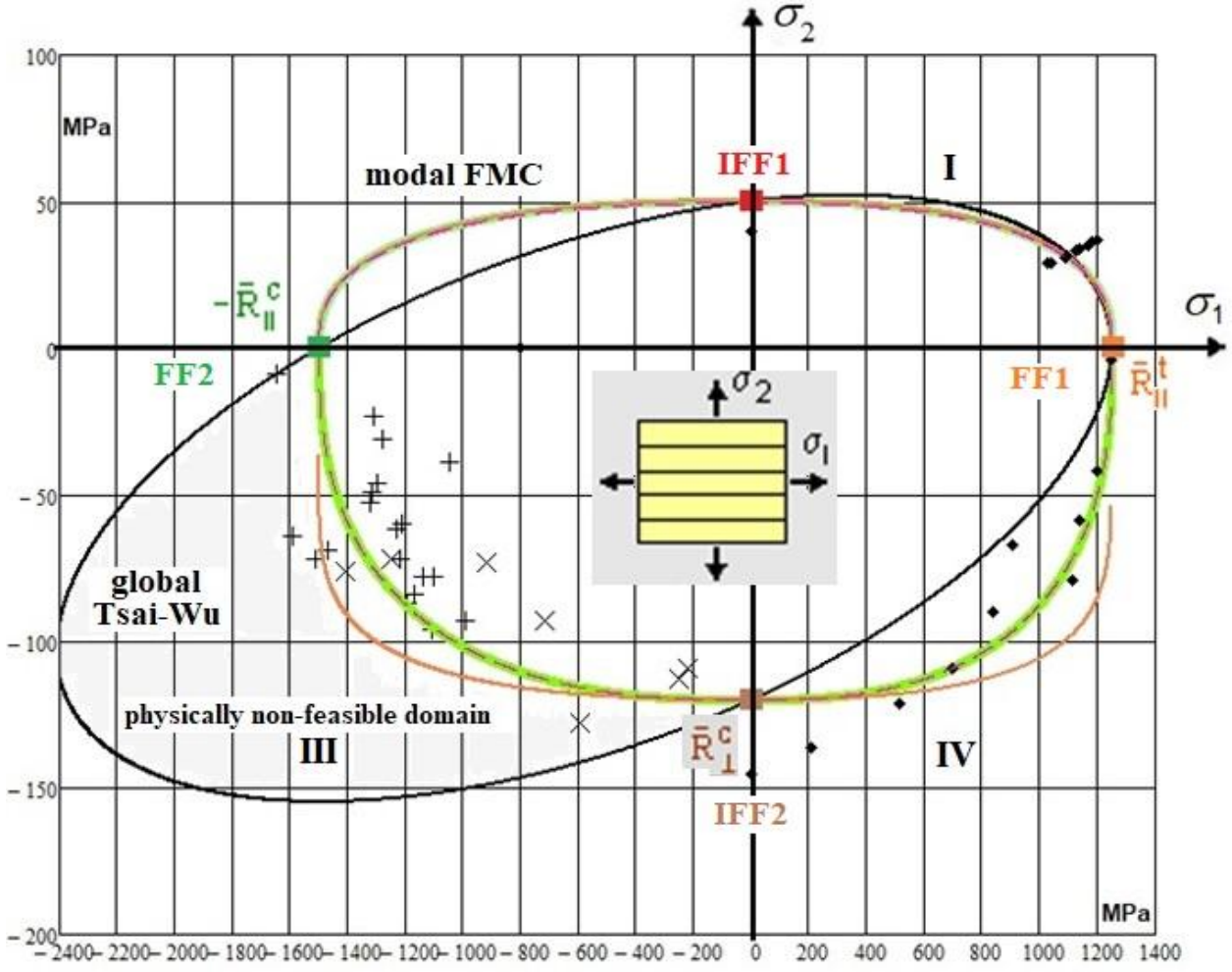


Fig.27-7, WWFE-I, TC3: Hoop wound tube lamina. E-glass/MY750 Ep.

$$\left\{\bar{R}\right\} = (1280,\ 800,\ 51,\ 230,\ 97)^T$$

In order to be able to generate above different envelopes the author had to harmonize terminology and to make them to apply his interaction formula for the modal SFC ones.

This limited the amount of further numerical comparisons. $\tau_{21}(\sigma_1)$ could be investigated.

From *Fig.27-8* can be concluded that the envelope of Puck and Cuntze lie upon another. Modal Hashin and Global Tsai-Wu are lying inside.

27.5 Computation of a SFC-linked Reserve Factor

Principally, in order to avoid either to be too conservative or too un-conservative, a separation is required of the always needed 'Analysis of the average structural behavior' in Design Dimensioning (*using average properties and average stress-strain curves*) in order to obtain optimum structural information (= 50% expectation value) from the mandatory single Design Verification analysis of the

final design, where statistically minimum values for strength and minimum, mean or maximum values for the task-demanded other properties are applied as Design Values. There it is to demonstrate that '*A relevant Limit State is not met yet'*.

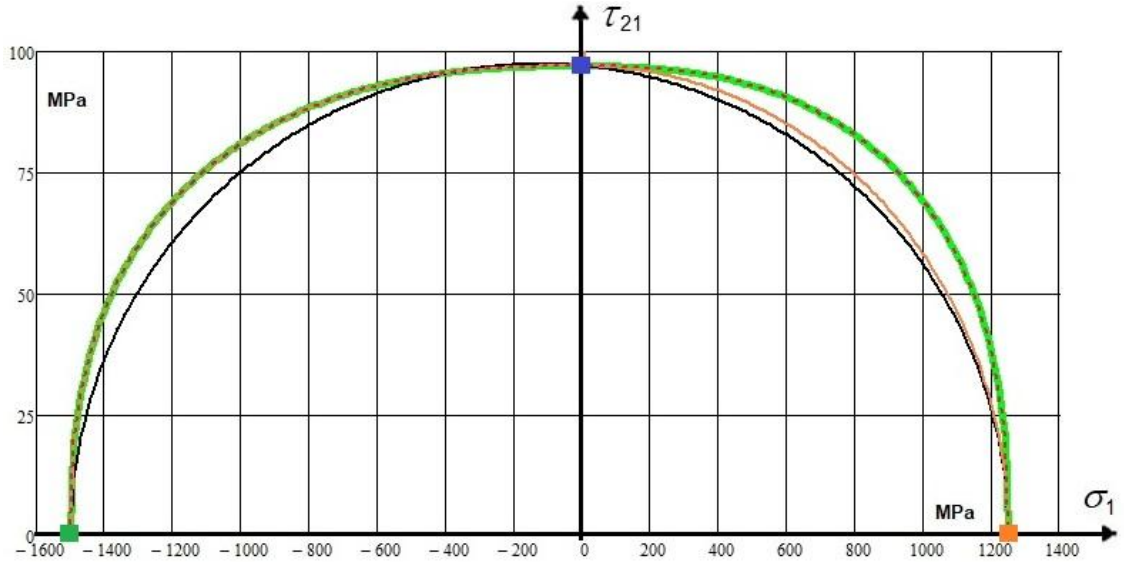


Fig.27-8: $\{\bar{R}\} = (1280,\ 800,\ 51,\ 230,\ 97)^T$

A very simple example of the Design Verification of a critical UD lamina in a distinct wall design was depicted as *RF*-calculation procedure in *$*13. The certification–relevant load-defined Reserve Factor *RF* corresponds in the linear case to the material reserve factor f_{RF}. Its value here is *RF* = 1.25 > 1 → Laminate wall design is verified!

The multiple Lessons Learned and conclusions are incorporated in the following list:

LL

- ✓ *Considering FE-results and necessary properties: We must more and more 3D-design! However properties, especially for composites is 3D-property data test sets, are seldom sufficiently available*
- ✓ *So-called global SFCs couple physically different failure modes whereas the modal SFCs describe each single failure mode and therefore will better map the course of test data*
- ✓ *First-Ply-Failure (FPF) envelopes are searched by these SFCs, which means determination of 'Onset-of-damage' and includes both Inter Fiber Failure (IFF) and Fiber Failure (FF). Last Ply Failure (LPF) usually requires a non-linear analysis, which can be used to save a design*
- ✓ *Material symmetry seems to require for UD materials a 'generic' number of 5, valid for strengths and elasticity properties and the distinct SFCs.*
- ✓ *In this context: The Standard 3D SFCs of Tsai-Wu and Hashin employ the so-called cohesive (shear) strength* R_{23} *and regard it as a technical strength and not as a general strength quantity. The mystery behind the various interpretations is tried to be unlocked by the author. Because most of the published applications are 2D-ones the employed SFCs do not require* R_{23} *and its determination by tests needed not to be presented*
- ✓ *Often, SFCs employ just strengths and no friction value. This is physically not accurate and the undesired consequence in Design Verification is: RF may be not on the safe side*
- ✓ *SFCs are 'just' necessary but not sufficient for the prediction of strength failure. Basically, due to internal flaws, also an energy criterion is to apply. The novel approach 'Finite Fracture Mechanics (FFM)' offers a hybrid criterion to more realistically predict the stress-based crack initiation in brittle isotropic and UD materials.*

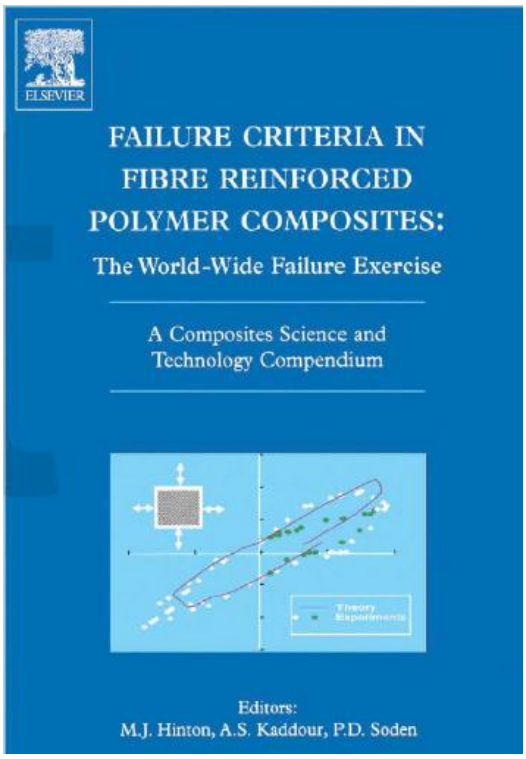
- ✓ *The physically clear-based quantity Eff gives an impressive interpretation of the failure envelope or what 100% strength capacity in 3D stress states physically really means.*
- ✓ ***From the nevertheless well performed WWFEs the author had to learn that provided test results can be far away from the reality like an inaccurate theoretical model.*** *Theory creates a model of the reality and one experiment shows 'just' one realization of the reality. Test article analysis is mandatory to interpret the test results and for a simulation-based improvement of the design. Only well-understood experiments can verify the design assumptions made!*
- ✓ *Assuming 6 strength quantities seems to violate material symmetry. Cuntze's SFC set just employs 5 measurable strengths and 2 friction parameters.*

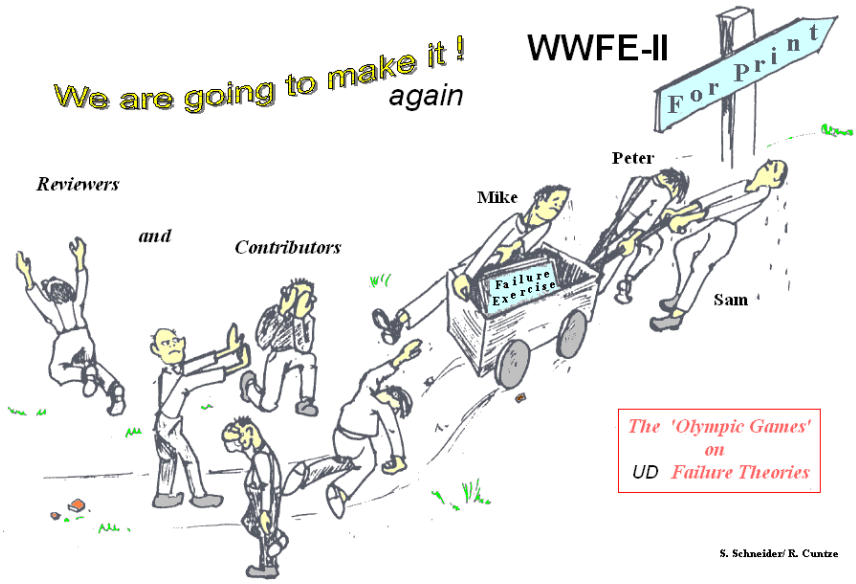
This is a good place to make the reader aware of the World-Wide-Failure-Exercises on UD-material.

Many thanks to the QinetiQ-team, UK, the organizers Mike, Sam and Peter for setting up and survive such a long lasting effortful world-wide exercise.

The SFC models of Puck and Cuntze are most probably those SFC models, which are best validated by 2D and the few 3D UD experiments.

The author did not participate in WWFE-III on *Micro-damage Theories*.
Where are the practical results of this WWFE presented ??





Organizer: QinetiQ , UK, since 1991

[Hinton, Kaddour, Soden, Smith, Shuguang Li]

Aim: For UD materials, only!

'Testing Predictive Failure Theories for Fiber–Reinforced Polymer Composites to the full !'

Below some essential responses to the FMC-based SFCs, which the reader should know:

At first from two colleagues and then from two VDI 2014, Sheet 3, co-runners saying I should withdraw my FMC publication because it would violate Puck's criterion, which I preferred to have it in sheet 3. My criterion was not matured as Puck's one at that time.

Prof. Dr.-Ing. Dr. h.c. G. W. Ehrenstein
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Herrn
Prof. Dr.-Ing. Ralf Cuntze
Matthäus-Günther-Str. 32
D-85229 Markt Indersdorf

Ihr Zeichen	Bearbeiter	Tel.: 09131/85-	Datum
	Prof. Ehrenstein	29701	10.11.2004/s

Lieber Herr Cuntze,

von Professorenkollegen habe ich gehört, daß Sie gegen große namhafte Konkurrenz aus vielen Ländern den Wettbewerb "World-Wide Failure Exercise" gewonnen haben. Im Internet habe ich die Bewertung der Darstellungen gelesen. Es bleibt der Eindruck, daß man Ihre Arbeit deutlich würdigt und besonders deren Bedeutung für praktische Anwendungen schätzt.
Die Konkurrenz der Namen ist beachtlich. Umso höher ist Ihr Erfolg zu werten.
Ich jedenfalls freue mich, Ihnen gratulieren zu können für den Erfolg vieler Jahre harte Arbeit, wohl aber auch der Erfahrung, die diesen Erfolg erst möglich gemacht hat.

Mit freundschaftlichen Gruß
Ihr

co: Prof. R. Jeltsch-Fricker

Hannover, 20. Mai 2007

Sehr geehrter Herr Professor Cuntze,

hiermit möchte ich Ihnen meine Dissertation zum Thema „Robuster Entwurf beulgefährdeter, unversteifter Kreiszylinderschalen aus Faserverbundwerkstoff" überreichen.

Die angeregten Diskussionen mit Ihnen sowie Ihre Publikationen auf dem Gebiet der Faserverbunde haben meiner Arbeit neue Impulse gegeben. Dafür möchte ich mich recht herzlich bedanken.

Für Fragen stehe ich Ihnen jederzeit gerne zur Verfügung.

Mit freundlichen Grüßen

Dr.-Ing. Christian Hühne

Letter from my co-runners, when finalizing Sheet 3

Indictment: With my FNC-based SFCs I would undermine Puck's SFC, which I incorporated in Sheet 3.

Von: Cuntze Ralf
Gesendet: Montag, 25. August 2003 11:05
An: Dirk Huybrechts (E-Mail); Guenther Lutz (E-Mail)
Cc: Andreas Freund (E-Mail)

Lieber Dirk, lieber Günther,

ich möchte Euch keinen Antwortbrief schreiben, sondern lediglich meine Bemerkungen zu Eurem Brief in Eurem Brief an Ort und Stelle einordnen. Siehe Anhang.

Zum Schluß seien mir noch einige Gedanken als Nachlese erlaubt:
Seit 1980 habe ich etwa ein Mannjahr für die VDI-2014 -vornehmlich in der Freizeit- aufgewendet. Als Hauptabteilungsleiter einer nicht kleinen Ingenieurabteilung hat man im Dienst kaum Zeit dafür. Die ganz schön aufwendigen Tipparbeiten plus zugehörigen Arbeiten meiner Sekretärin hat MAN bezahlt.
Das ist ganz schön viel an Investition für eine allgemeine Aufgabe. Wenn ich aber eine Arbeit annehme, dann identifiziere ich mit dieser und halte auch meine Termine. Zweimal habe ich deswegen mit Unterstützung meiner Sekrtärin die 2014 vor dem Ableben gerettet.
Meine Entwürfe zum sog. 'Beispiel-Büchlein' sind damit zu Grabe getragen ebenso wie zum einstigen Blatt 4 'Nachweise', in dem u. a. die Bestimmung der für den Anwender so wichtigen Reservefaktoren enthalten ist.

Die Arbeitsgruppe wird ab Drucklegung von Blatt 3 nicht mehr existieren.
Ist dies nicht vielleicht doch etwas bedauerlich im Sinne der Annwender?

Ralf

My reponse directly incorporated into their letter:

BEMERKUNGEN zu Eurem Brief

Dirk Huybrechts Günther Lutz Heidelberg, 21.8.03 Innsbruck, 21.8.03

Lieber Ralf,

Dein kürzlich übermitteltes Manuskript (Behandelt einen 2D Bruchkriterienansatz, den ich schon lange herausgeben wollte. Da wir im Hause MAN und nicht nur in der VDI 2014-Gruppe Reservefaktor-Definitionen benötigen, habe ich das Ganze kombiniert. *Wo ist Euer Kommentar zu den für uns so wichtigen Reservefaktoren?*) zu einem Aufsatz über die Berechnung von Reservefaktoren, das wie zufällig (Ich habe jetzt mehr Zeit, begonnene Dinge fertig zu stellen.) mit der bevorstehenden Fertigstellung des zweisprachigen Blattes 3 der VDI 2014 zusammenfällt, gibt uns Anlass zufolgenden sehr ernsten Überlegungen.

Es ist die erfreuliche Situation eingetreten, dass im Herbst 2002 mit der Veröffentlichung von Part B der sog. Failure Exercise ein klares Votum für die Theorie von Puck gegeben wurde *(Darüber habe ich mich sehr gefreut).* Diese wird in gestraffter Form und ergänzt mit wertvollen Hinweisen für die praktische Laminatauslegung im Blatt 3 der VDI 2014 in deutscher und englischer Sprache einem breiten Publikum von Ingenieuren zugänglich gemacht. Die in der Vergangenheit vorhandene, diffuse und unklare Situation könnte damit endlich überwunden werden. Dies ist doch eine für die Fachwelt insgesamt sehr erfreuliche Entwicklung, und sie geht immerhin von Deutschland aus! *(Ausgezeichnet)*

Die bereits von Dir vorgenommene und noch bevorstehende (als Postrunner, Part A und B (*Sollte man die 2. Einladung, also noch nachträglich mitzumachen, ausschlagen?*) Veröffentlichung einer weiteren neuen Bruchtheorie reklamiert einerseits, dass sie auf Puck aufbaut *(Natürlich habe ich von Herrn Puck profitiert. Es sollte nicht vergessen werden, daß ich der erste Mitdenker von Puck war, der auch einige Veränderungen bewirkte und der das entscheidende Forschungsvorhaben zu den Hashin/Puck–Kriterien als Projektleiter auf die Beine gebracht hat. Man baut immer auf dem auf, an dem man mitgearbeitet hat).* um dann aber wieder Interpolationspolynome mit Invarianten zu verwenden, und zwar in der Weise, dass sie sich den im Blatt 3 ausdrücklich als bedenklich bezeichneten Pauschalbruchhypothesen annähert *(Habt Ihr das wirklich so verstanden? Ich habe immer betont und geschrieben, daß ich jeweils einen Modus für sich allein abbilde. Die Auswahl der Invaianten erfolgt -auf Beltrami basierend- danach, ob das UD-Werkstoff-Element bei diesem Modus sein Volumen vergrößert oder seine Form verändert oder ob Reibung vorliegt. Ich muß mich fragen: Habt Ihr Euch überhaupt einmal meine generellen Konzept-Gedanken angesehen? Diese –wenigstens- dürfte ich wohl kurz und verständlich formuliert haben).* Das Erscheinen dieser Theorie als Postrunner-Beiträge Part A und B mit nachträglicher Bewertung in Part C birgt die Gefahr in sich, dass es hier wiederum zu groben Missverständnissen und zu Fehlmeinungen *(Wenn bei einer 2. Methode dasselbe herauskommt: Wo sind dann die Fehler?)* sowohl der Fachleute als auch vor allem der

in der Praxis tätigen Ingenieure und nicht zuletzt aller in irgendeiner Form mit Abnahmen oder Beurteilung von FKV-Bauteilen befassten Institutionen kommen wird.

Ein fachliches Urteil über Deine Theorie steht uns weder zu noch können wir es uns aufgrund mangelnder Befassung mit Deiner Theorie erlauben. Es scheint aber so zu sein, dass sie keinen Fortschritt gegenüber der Theorie von Puck bringt, geschweige denn bei Puck allenfalls vorhandene Schwachstellen oder Mängel aufgegriffen und gezielt ausgeräumt werden (*Ist es schlimm, wenn eine 2. Methode –grob gesagt- dasselbe Ergebnis liefert. Sollte man deshalb auf Ihre Darstellung verzichten?).* Puck hat es mit Part B und 2014/3 erreicht, den längst überfälligen Wechsel von Tsai zu Puck zu bewirken *(Ich freue mich darüber, daß dies gelungen ist, und daß der kompetenteste Wettbewerber gewonnen hat).* Eine wiederum neue *(Geburtsjahr 1995)* Cuntze-Theorie (*Ihr scheint nicht zu wissen, daß mein Failure Mode Concept –so sieht es nach Anwendungen auf ganz unterschiedliches Werkstoffverhalten und Werkstoffe aus- allgemeiner anwendbar ist und UD-FKV "nur" als eine spezielle Anwendung beinhaltet. Von Euch habe ich nie gehört, daß Ihr das Konzept einmal erklärt haben wolltet. Etwas Neues ist immer schwierig und noch schwieriger ist es dieses zu formulieren, ohne daß entsprechendes kompetentes ‚Echo' da ist (Kam nur von Herrn Puck und Frau Jelitsch-Fricker, aber kein Echo von Euch). Ich weiß, wie dankbar Herr Puck war, uns als kritische Partner zu haben.)* wäre doch nur angeraten (*Geht so nicht die Wissenschaft ‚haben'?*), wenn deutliche Mängel der 'etablierten' behoben werden könnten *(Ich freue mich, daß die jüngsten intensiven und kritischen Diskussionen mit Herrn Puck mich veranlaßten, die Anwendung von* $F_{1||}$ *(betrifft weder Teil A noch die 2D-Arbeit). in Part B auch auf exotische Fälle durch eine kleine Korrektur anwendbar zu machen)*

Unseres Erachtens kann Deine Arbeit einen solchen 'Step Change' wie von Tsai → Puck nicht bewirken *(War so auch nie gedacht).* Du hast vor einiger Zeit selbst gesagt, dass 'das' von Puck doch viel besser als 'deins' ist *(So habe ich den Sachverhalt wohl nicht formuliert, aber in Part A steht, daß Pucks Arbeit Serienreife hat während meine nur auf Entwicklungsreife verweisen kann. Ein Faktor größer als 10 trifft sicherlich den unterschiedlichen Aufwand. Daß ein Faktor von 10 etwa vorliegt, habe ich gern durch mein persönliches Mitwirken mitverursacht).* Kann sich diese Aussage wirklich innerhalb von einem oder zwei Jahren so grundlegend geändert haben? Wir müssen doch alle neidlos anerkennen, dass niemand sich so intensiv, tief und umfassend in die FKV eingedacht hat wie Puck *(Keine Frage: Er hat auf diesem Gebiet das beste Wissen).*

Wir möchten Dich auch auf folgende, unserer Meinung nach schwerwiegendste, Konsequenz der Veröffentlichung deiner Theorie in Part A und B aufmerksam machen. Bei oberflächlicher Betrachtung Deiner Ergebnisse aus dem uns übermittelten Aufsatz scheint die Theorie überall gut zu passen, so dass die Beurteilung in Part C wohl sehr gut ausfallen wird. Mit hoher Wahrscheinlichkeit wird Deine Arbeit auf Platz 1 gereiht werden *(Bei den Postrunnern eventuell. Ist es etwa schlecht für die deutsche ‚Composite community', wenn eine ohne F&E-Mittel, also in der Freizeit, erstellte wissenschaftliche Arbeit diesen Platz einnähme?).*

Die logische Konsequenz wäre, dass wir das frische Blatt 3 der VDI 2014 einstampfen müssten (*Weshalb? Ich habe seinerzeit Herrn Puck gebeten, die entsprechenden Teile in der VDI zu formulieren, weil er das bestens kann und*

weil seine Arbeit serienreif ist. Außerdem: Es gab einen zeitlichen Versatz VDI2014 zu Part C, der leider weg ist. Und, es taucht mein Namen im VDI-Zusammenhang schriftlich nicht auf) da es fachlich nicht zu verantworten wäre, dass nichts von dieser neuen Theorie *(Warum? Zu einem bestimmten Zeitpunkt wird etwas festgelegt)*, die von einem Fachmann aus Deutschland kommt, im Blatt 3 der VDI 2014 steht. Wir sind eindeutig der Meinung, dass Deiner Theorie diese Stellung nicht gebührt (*In Blatt 3 erwähnt zu werden oder einen guten Platz bei den Postrunnern zu haben?? Also bin ich für Euch doch nicht der Fachmann).* Sie stellt u.E. keinen relevanten Fortschritt zu der von Puck dar, sondern eher im Gegenteil einen gewissen Rückschritt in Richtung Tsai. *(Dieses würde ich gern mit Euch diskutieren, wenn Ihr Gesprächspartner wäret und nicht von vornherein innerlich ablehnen würdet –so muß ich es leider wohl jetzt sehen- die Idee zu verstehen, die hinter dem Failure Mode Concept steht).*

Nicht zuletzt aufgrund der Tatsache, dass Du immerhin der Obmann der Arbeitsgruppe VDI 2014 bist und damit Blatt 3 in der heutigen Form "zugelassen" hast *(So war es mein Wunsch)*, bitten wir Dich deshalb, ernsthaft zu überdenken, ob Du mit Deinem Beitrag der Welt der Anwender nicht eher Schaden als Nutzen zufügst. Bitte wäge Dein verständliches persönliches Bedürfnis nach fachlicher Anerkennung, das ja jeder von uns hat, sorgfältig gegenüber diesem Kriterium ab. Bitte denke auch daran, welches internationale Gewicht Äußerungen oder Veröffentlichungen von Deiner Seite *(Wieso? Bin doch Eurer Meinung nach kein Fachmann, weil mir ‚nicht die Stellung gebührt'. Wo liegt da also noch ein Problem)* haben. Vergiss auch nicht, wie sehr wir um die derzeitigen Inhalte von Blatt 3 gerungen haben und wie oft die Sache zu scheitern drohte. Nun schien doch alles überstanden zu sein *(Was? Verstehe ich nicht. Ich habe meine Hypothese (Theorie) nie in Blatt 3 haben wollen).*

Ein Zurückziehen (*Soll das ein Scherz sein ?)* Deines Beitrages für Part A und B, das nach der vielen vollbrachten Arbeit sicher ein menschlich unglaublich schwieriger Schritt wäre, könnte zum Beispiel durch eine kurze Veröffentlichung (*Wäre übrigens dann mein Arbeitsaufwand*) in Part C, die Bezug auf die bevorstehende Drucklegung der zweisprachigen VDI 2014 Blatt 3 nimmt, erfolgen. Wir sind sicher, dass die Fachwelt und zwar gerade jene aus dem angelsächsischen Sprachraum einen solchen Schritt in Anbetracht der dazu notwendigen menschlichen Größe und des wissenschaftlichen Ethos vollkommen richtig einschätzen würde und dass für Dich keinerlei negative Folgen *(Ihr kennt die Welt aber gut)* damit verbunden wären, im Gegenteil.

Viele Grüße
Dirk, Günther

Als Obmann der VDI-Ri-2014 empfinde ich den Brief als sehr bedauerlich und als Mensch noch mehr.

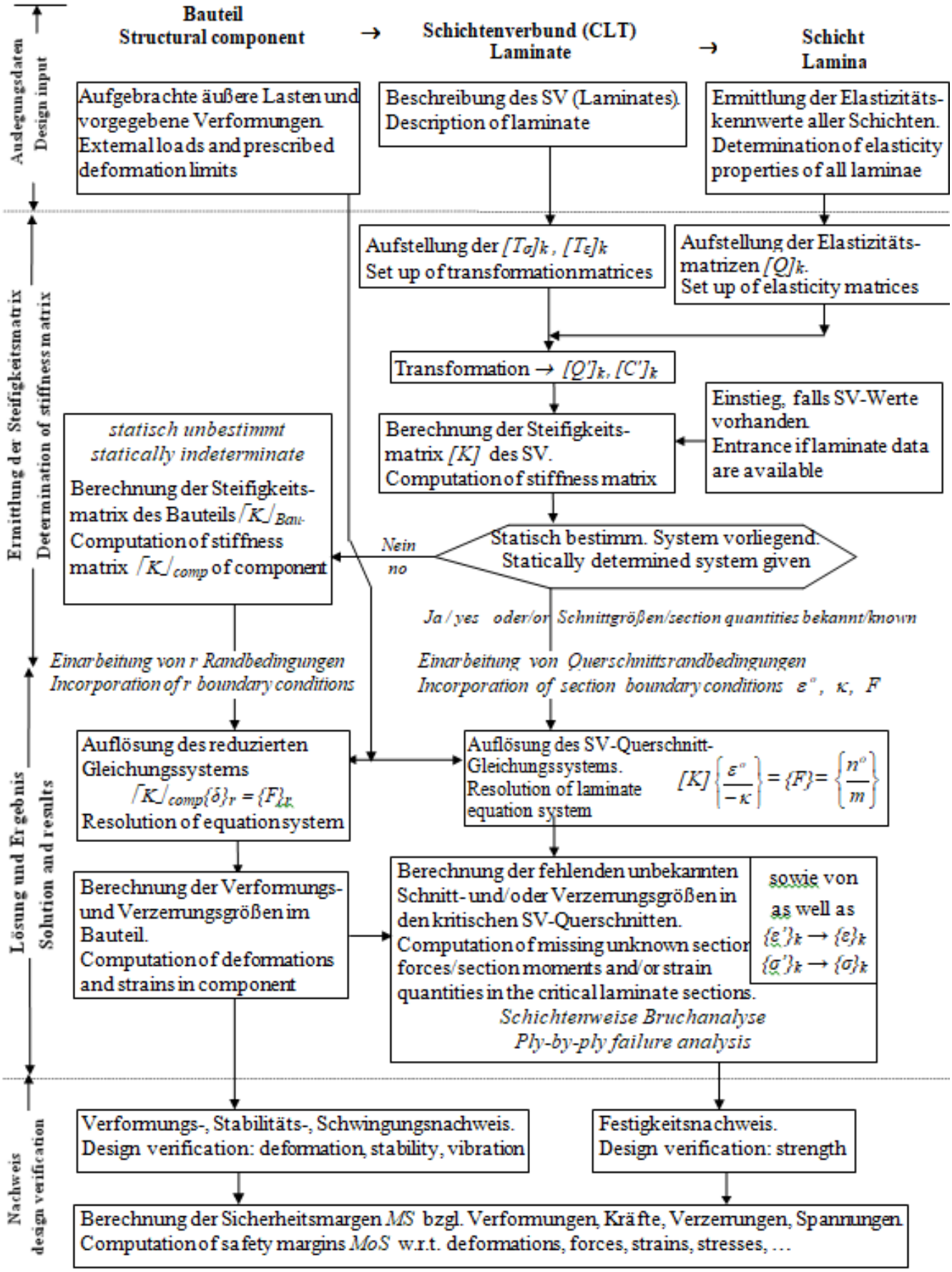
Gruß, Ralf. 21.8.2003

PS: Noch einige nachträgliche Gedanken

* Unsere VDI 2014 muß nicht alle Methoden erwähnen, die es gibt, sondern lediglich eine neue erfolgreiche Methode neben der nicht so guten altbekannten aufführen.
* Ich fühle mich den Puckschen Wirkebene-Kriterien sehr verbunden, weil ich kräftig daran mitgewirkt habe
* Ein Urteil über mein FMC , in der Anwendung auf UD, überlasse ich den Anwendern
* Die Wissenschaft lebt vom „Streit", allerdings vom kritischen Streit.
  Ich freue mich, daß Herr Puck dieses ebenso sieht.
* Neue wissenschaftliche Ideen zu haben, darf man nicht verbieten.
* Allein über Diskussion, Erfahrung, Versuchsergebnisse erfährt man die wirklichen Restriktionen einer Hypothese (Theorie), auf der die Versagensmodelle aufbauen. Unsere Modelle sind immer noch zu wenig 3D-verifiziert (die anderen überhaupt nicht). Die Verifizierung kann man nur gemeinsam weitertreiben
* Das von Beginn an zur allgemeinen Beschreibung von Werkstoffverhalten gedachte und wohl auch funktionierende Failure Mode Concept kann übrigens z. B. auch auf Gewebe angewendet werden. Es müssen allerdings Gewebe-Invarianten genommen werden. Daß es auch auf Beton, CMC, Schaum, duktile Metalle paßt sei am Rande vermerkt.
* Die Tsaischen Interpolationspolynome kann man bekanntlich auch auf Invarianten zurückführen. Das heißt aber nicht, daß die beiden Wege gleich gegangen werden. Tsai legt seine Festigkeitskoeffizienten global fest und ich modal.

Gruß, Ralf. 21.8.2003

I wonder: Should we - after Puck - stop looking for novel practical SFCs?



Design verification procedure of a laminate

28 Technical Terms, Laminate Description, Material Stressing Effort *Eff*

***Aim**: Bridging mutual understanding between engineering disciplines.*

28.1 Terms (see Glossary-Cuntze)

Some terms for a better common understanding and for the application of SFCs comparison shall be added. This is the more necessary for composites:

- Analysis: Computation that uses fixed model parameters, such as of the final design
- Fracture body: smoothed surface of the ends of the multi-axial failure stress vectors
- Failure condition: Condition on which a failure becomes effective, meaning $F = 1$ for one limit state
- Failure criterion: Distinctive feature defined as a condition for one of the 3 states F < = > 1
- Failure Mode Concept (FMC)**:** invariant, failure mode-based general concept to generate strength failure conditions (SFCs) for single failure modes. It is a 'modal' formulation in contrast to 'global' concepts where all failure modes are mathematically linked and a concept for materials that can be homogenized (smeared). Applicability of a SFC ends if homogenization as pre-requisite of modeling is violated
- Fracture body: smoothed surface of the ends of the multi-axial failure stress vectors
- First-Ply-Failure (FPF): usually First Inter-Fiber-Failure IFF in a lamina of the laminate. FPF failure envelopes are searched by the SFCs. This means determination of 'Onset-of-damage' and includes both Inter Fiber Failure (IFF) and Fiber Failure (FF)
- Isotropic material: material with identical properties in all directions
- Lamella: specific lamina in construction
- Lamina: Designation of the single UD ply as computational element of the laminate, used as laminate subset or building block for laminate modeling. It might capture several equal plies
- Laminate: multi-ply-composed structure (stack)
- Last-Ply-Failure (LPF) in the laminate: usually requires a non-linear laminate analysis, which can be used to save a design
- Material Stressing *Effort* $\sigma = R \cdot Eff$ (not material utilization in the usual sense of manufacture waste minimization): artificial term, generated in the UD World Wide Failure Exercises in order to get an English term for the meaningful German term Werkstoff-Anstrengung. The SCF is stress-based and not strain –based. In the linear case it is directly valid $f_{\mathrm{Res}} = RF = 1/ Eff$. (in his book Puck originally used the term effort ε and further exposure). $Eff_{\max} = 100\% = 1$
- Macro-Damage: technischer Schaden):
- Micro-Damage (Schädigung):
- Parameters: usually scattering design parameters including material properties
- Ply, layer: Physical element from a winding, tape-laying process etc
- Properties: 'Agreed' values to achieve a common and comparable design basis. Must be provided with average value and coefficient of variation
- Reserve Factor *RF*: load-defined value $RF_{\mathrm{ult}} = \textit{final failure load} \ / \ \textit{design ultimate load}$ (*DUL*)
- material Reserve Factor f_{Res}: $f_{\mathrm{Res}} = \textit{strength design allowable / stress at distinct design load level}$
- general strength R: strength design allowable for Design Verification;
- average strength $\bar{R}$: in model validation for mapping tasks, marked by the statistical 'bar over'
- Simulation: Process, that consists of several analysis loops and lasts until the system is imitated in the Design Dimensioning process. The model parameters are adjusted hereby to the 'real world'
- Strength quantities: $\{R\} = (R_{\parallel}^{t}, R_{\parallel}^{c}, R_{\perp}^{t}, R_{\perp}^{c}, R_{\perp\parallel};\ R_{23})^{\mathrm{T}} \Leftarrow (\mathrm{X}, X', Y, Y', S_{12}; \mathrm{S}_{23})^{\mathrm{T}}$ Tsai

- Stress tensor components: They should not read ‘stress components’ (*only a shear stress can be composed of a tensile component jointly acting with a compressive stress component*)
- Technical strength, standard-measurable: for UD-clarity symbolically indexed $R_{\perp}{}^{c}, R_{\perp\|}$; R^{t}, R^{c}
- General strength quantity: indexed by numbers like $R_{\perp\perp} \rightarrow R_{23}$.

It seems necessary to again cite for the two different composite domains two long-time used terms:

Material composite (Werkstoffverbund): structural-mechanically a composed ‘construction of different materials.

Note: A not smearable ‘conglomerate’ is usually the Fiber-grid-Reinforced-Concrete.

Composite material (Verbundwerkstoff): combination of constituent materials, different in composition.

For the strength properties it is to discriminate in the English language:

Yield stress (unfortunately termed yield strength, despite of the fact that it is not set as a strength property for Design Verification): material property corresponding to the point at which the material begins to deform plastically (in German Streckgrenze Re), is end of proportionality σ_{prop}

Proof stress: point at which the material exhibits 0.2% of plastic deformation, known as stress at 0.2% strain-offset and set as yield strength property $R_{p0.2}$. (in German Fließgrenze or 0.2% -Dehngrenze).

Repetition: ***Shear Strength Quantities in Spatial Analysis of isotropic and anisotropic materials***

These are an essential input with UD materials however also with isotropic mineral materials.

For 3D-analysis two specific shear strength quantities are applied, see *Fig. 28-1*:

* An approach-formalistic τ_{23}/R_{23} linked shear fracture stress $\tau_{23}^{\text{fracture}} = R_{23} \leq R_{\perp}^{t}$,

used with Tsai-Wu and in the invariant approach of Hashin and further

* A Mohr-based approach linked so-called cohesive strength $R_{23}^{\tau} = \tau_n(\sigma_n = 0)$, used within an

Hashin approach and in consequence, principally also with Puck. Since Puck formulated a full IFF-SFC $R_{23}^{\tau} \Rightarrow R_{23}^{A}$, defined by all 3 IFFs interacting approach, he could model-associated dedicate his action plane resistance a relation with other model parameters.

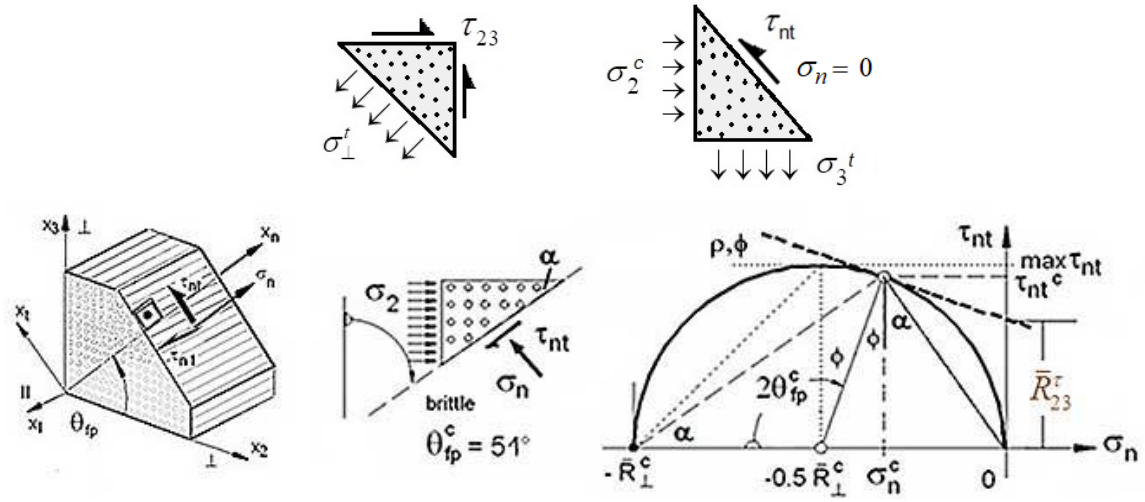


Fig. 28-1: (up) Difference of transversal shear fracture stress and cohesive strength. (below) Mohr-Coulomb curve characteristics

28.2 Indexing and Material Notations

Indexing is a chaos in the disciplines: It seems to be that the author could find (*some years ago for the planned novel ESA –Material Handbook*) a physically clear indexing system for the 3 material family models isotropic, transversely-isotropic UD and orthotropic materials (fabrics etc.). This indexing captures all material properties and allows a switching between.

The author's Glossar on 'Technical Terms' (Springer) hopefully shall be a contribution to a better mutual understanding of 'constructive' engineers from the building industry and engineers from mechanical engineering and further, of engineers from the textile, manufacturing and material discipline as well in order to better manage the more and more interdisciplinary future project tasks.

Notes on designations: As a consequence to isotropic materials (European standardization) the letter *R* has to be used for strength. US notations for UD material with letters X (*direction 1*, ||) and Y (*direction 2*, ⊥) confuse with the structural axes' descriptions X and Y. R_m := '*resistance maximale*' (French) = tensile fracture strength (superscript ^{t} is usually skipped because in mechanical engineering design runs in the tensile domain, which is opposite to civil engineering, where fiber reinforcement is coming up viewing carbon concrete). See further [*Cuntze Glossar*].

In the following Table, on basis of investigations of the VDI-2014 Working Group and on investigations for above Materials Handbook, Cuntze proposed internationally not confusing terms for strengths and physical properties. These self-explaining symbolic designations read for UD- materials:

Property type	**UD quantities**	**'generic' number**
fracture strength properties	$\{R\} = (R_{\|\|}^t, R_{\|\|}^c, R_{\perp}^t, R_{\perp}^c, R_{\perp\|\|})^{\mathrm{T}}$,	5
+ friction properties	$\mu_{\perp\|\|}$, $\mu_{\perp\perp}$	2
elasticity properties	$\{E\} = (\mathrm{E}_{\|\|}, E_{\perp}, G_{II\perp}, \nu_{\perp\mathrm{II}}, \nu_{\perp\perp})$	5
hygrothermal properties	$\{\alpha\} = \mathrm{CTE}\,(\alpha_{\|\|}^T, \alpha_{\perp}^T)$; $\mathrm{CME}\,(\alpha_{\|\|}^M, \alpha_{\perp}^M)$	2 ; 2

Notes on composites and matrices:

(1) The constituents retain their identities in the composite; that is, they do not dissolve or otherwise merge completely into each other although they act in concert. Composite materials provide improved characteristics not obtainable by any of the original constituents acting alone.
(2) Normally the constituents can be physically identified, and there is an interface between them.
(3) Composites include fibrous materials, fabrics, laminated (layers of materials), and combinations of any of them.
(4) Composite materials can be metallic, non-metallic or a hybrid combination thereof. Carbon concrete is one example.
(5) Approximately homogenizable to a smeared material are short fiber-reinforced FRC, SMC, UD-ply = UD-lamella. The lamella is smearable and therefore it can be modelled as a 'composite material'.
(6) Layered materials and foam materials are also forms of composite materials.
(7) Cement-based mortar is a 'smearable' composite material (the construction organization RILEM has a problem here, because they do not discriminate 'material composite' from 'composite material')

Table 28-1: Notations of material properties

9	general orthotropic	R_1^t	R_2^t	R_3^t	R_1^c	R_2^c	R_3^c	R_{12}	R_{23}	R_{13}
5	UD, ≅ non-crimp fabrics	$R_{\|}^t$ NF	$R_{\perp}^t$ NF	$R_{\perp}^t$ NF	$R_{\|}^c$ SF	$R_{\perp}^c$ SF	$R_{\perp}^c$ SF	$R_{\|\perp}$ SF	$R_{\perp\perp}$ NF	$R_{\|\perp}$ SF
6	fabrics	R_W^t	R_F^t	R_3^t	R_W^c	R_F^c	R_3^c	R_{WF}	R_{F3}	R_{W3}
9	fabrics general	R_W^t	R_F^t	R_3^t	R_W^c	R_F^c	R_3^c	R_{WF}	R_{F3}	R_{W3}
5	mat	R_{1M}^t	R_{1M}^t	R_{3M}^t	R_M^c	R_{1M}^c	R_{3M}^c	R_M^τ	R_M^τ	R_M^τ
2	*ductile* isotropic *brittle*	R_m SF	R_m SF	R_m SF	deformation-limited			R_m^τ	R_m^τ	R_m^τ
		R_m NF	R_m NF	R_m NF	R_m^c SF	R_m^c SF	R_m^c SF	R_m^σ NF	R_m^σ NF	R_m^σ NF

9	*general orthotr.*	E_1	E_2	E_3	G_{12}	G_{23}	G_{13}	ν_{12}	ν_{23}	ν_{13}	comments
5	*UD, ≅ non-crimp fabrics*	$E_{\|}$	$E_\perp$	$E_\perp$	$G_{\|\perp}$	$G_{\perp\perp}$	$G_{\|\perp}$	$\nu_{\|\perp}$	$\nu_{\perp\perp}$	$\nu_{\|\perp}$	$G_{\perp\perp} = E_\perp/(2+2\nu_{\perp\perp})$ $\nu_{\perp\|} = \nu_{\|\perp} E_\perp / E_{\|}$ 3 *is perpendicular to quasi-isotropic 2-3-plane*
6	*fabrics*	E_W	E_F	E_3	G_{WF}	G_{W3}	G_{W3}	ν_{WF}	ν_{W3}	ν_{W3}	*Warp = Fill*
9	*fabrics general*	E_W	E_F	E_3	G_{WF}	G_{W3}	G_{F3}	ν_{WF}	ν_{F3}	ν_{W3}	*Warp ≠ Fill*
5	*mat*	E_M	E_M	E_3	G_M	G_{M3}	G_{M3}	ν_M	ν_{M3}	ν_{M3}	$G_M = E_M/(2+2\nu_M)$ 1 *is perpendicular to quasi-isotropic mat plane*
2	*isotropic*	E	E	E	G	G	G	ν	ν	ν	$G=E/(2+2\nu)$

9	general orthotropic	α_{T1}	α_{T2}	α_{T3}	α_{M1}	α_{M2}	α_{M3}
5	UD ≅ non-crimp fabrics	$\alpha_{T\|}$	$\alpha_{T\perp}$	$\alpha_{T\perp}$	$\alpha_{M\|}$	$\alpha_{M\perp}$	$\alpha_{M\perp}$
6	fabrics	α_{TW}	α_{TW}	α_{T3}	α_{MW}	α_{MW}	α_{M3}
9	fabrics general	α_W	α_F	α_F	α_{MW}	α_{MF}	α_{M3}
5	mat	α_{TM}	α_{TM}	α_{TM3}	α_{MM}	α_{MM}	α_{MM3}
2	isotropic for comparison	α_T	α_T	α_T	α_M	α_M	α_M

Table of structural properties

Strength properties: *NF:= Normal Fracture, SF:= Shear Fracture, R:= strength, σ, τ := indicate the fracture responsible normal or shear stress acting on the fracture 'plane'.*
Hygro-thermal properties*: T:= Thermal, M:= Moisture and Mat. λ , c : not listed.*
Elasticity properties: *E:=Young's modulus, ν:=Poisson's ratio, G:=shear modulus. ||:= parallel to the fiber, ⊥ := transversal to the fiber direction; W:= Weft, F:= Fill, M:= Mat . $\nu_{\|\perp}$:= (here!) larger Poisson's ratio. 1:=*

lamina fiber direction, 2:= lamina transverse fiber direction across the width or the plane, 3:= through-thickness direction; x ,y := principal in-plane laminate directions, z:= thickness direction (interlaminar).

For non-linear analyses the author recommends the stress-strain curves in Fig.28-2

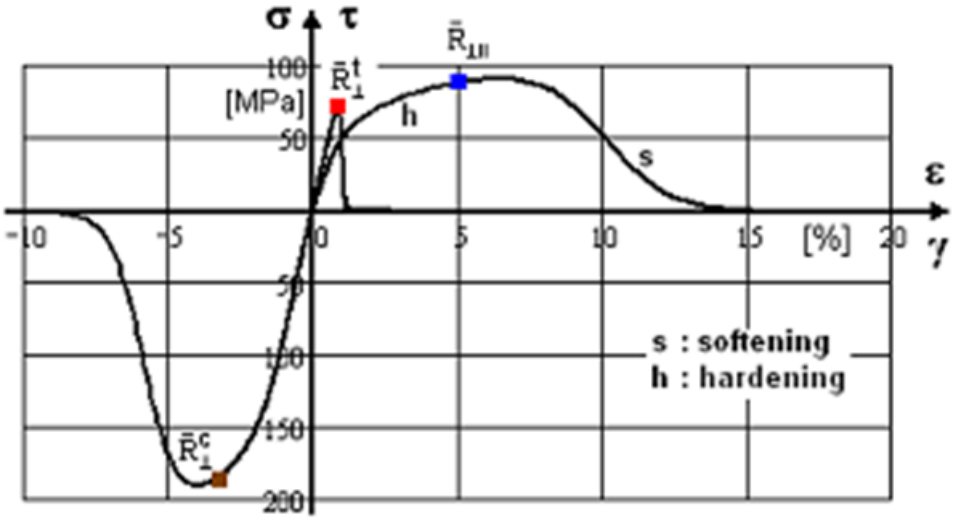


Fig.28-2 UD ply:: Full stress –strain curves with load-controlled hardening and deformation-controlled softeningof the ply (layer)embedded in a laminate

28.3 Upcoming construction standards in Germany with comments

Standards in Germany are finalized, see *Fig.28-3*:

- polymer matrix: BÜV 10 update
- mineral matrix: novel DAfStb-Richtlinie "Betonbauteile mit nicht-metallischer Bewehrung".

Comments of the author after a careful investigation of the two standard proposals, about 2020:

The DAfStb guideline "Concrete components with non-metallic reinforcement" is intended for fiber-reinforced components with concrete matrix.

*For engineers it is confusing not to clearly say which fiber material group the guideline is for. The fiber type CF, GF sets the limits of application.

*Originally for the *open* fiber grid the name lamella for a *dense* non-crimp fabric was used. The lamella however was still intensively used in construction repair of corroding steel-concrete ceilings (see *Fig.28-4*)

*The suffix $_{nm}$ could be replaced by the indices of the polymer matrix world, namely for the pure fiber$_f$ and the cured fiber strand $_{\|}$.

*Why sticking further to the old German-originated letter *f* (strength). Still at the GruSiBau-time (*about 1985, development of the excellent 'Partial safety factor concept'*) the author used the international letter *R* for the resistance entity strength in construction. Using the letter *R* – internationally and partly nationally still started - makes life of engineers over the technical fences simpler, internationally at least.

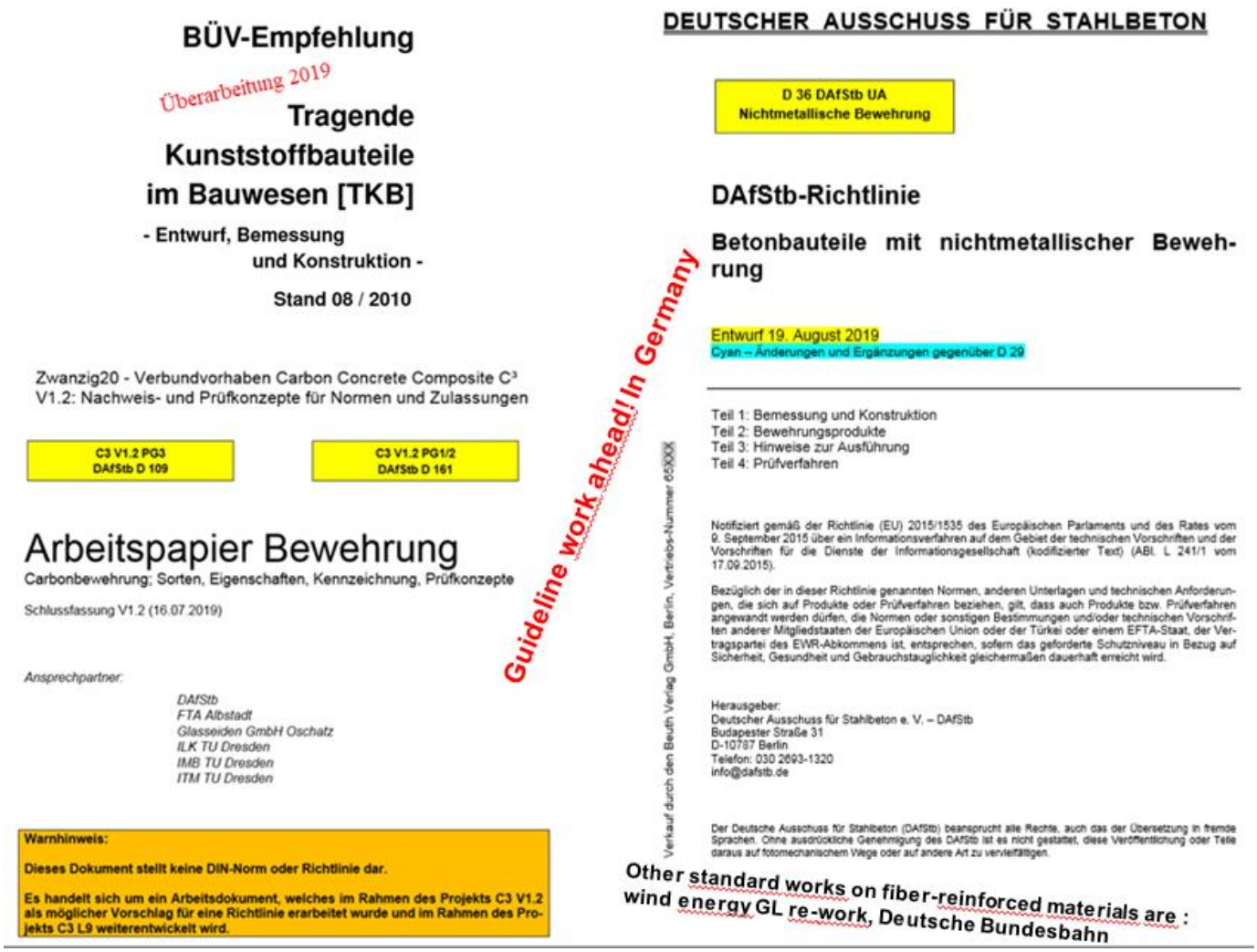


Fig.28-3: Guideline work ahead in Germany, BÜV10 update and D 36 novel

The BÜV-recommendation for load-carrying composite parts in construction is intended for fiber-reinforced components with polymer matrix.

*Above two upcoming standards are not harmonized regarding the designations amongst themselves and w.r.t. terms half a century internationally used in timber construction and also with polymer matrices. This is all the sadder for the author, because he edited the VDI 2014, sheet 3 guideline - initiated by civil engineers!- but not used in construction. The European Codes hopefully will improve this unfortunate situation.

Fig.28-5 presents a proposal for an ordering scheme.

***LL**: Harmonization of denotations remains an urgent on-going task .*

Production of optimal structural components:

It firstly requires an optimum design

which includes connections, joints and applicable materials.

Then the locally best materials are to determine and to sort out - regarding production -

to ensure the required optimum component properties considering sustainability.

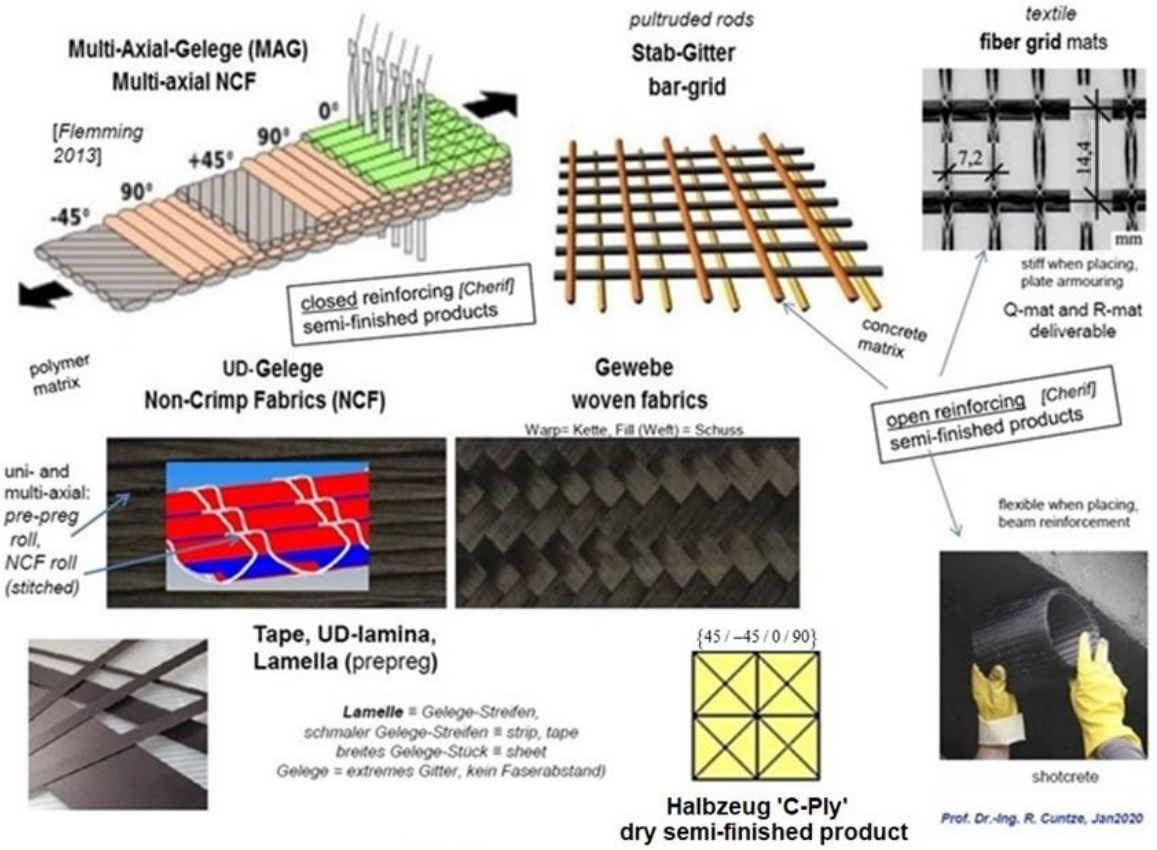


Fig.28-4: Basic fiber-reinforcing products in Engineering

isotropic	Normal-Concrete / Fine [1] Concrete	Concrete matrix	water + cement (CEM I, CEM III) + aggregate (sand, gravel) + possibly additives, such as super-plasticiser, retarder					max. grain > 4 mm [1] / max. grain < 4 mm	Fiber [2] Reinforced Concrete: GFRC, CFRC, PPFRC, PBOFRC (F(R)C)	Fiber Composite Materials FCM
			grid-type reinforcing structures **Fiber-Concrete-Composite FCC**							
anisotropic	[3] CRC or CC, GFC or GC (FRC)	Reinforcement Form	**UDRC**		**Textile-Reinforced Concrete TRC**					
			rope bar	rebar grid	R-, Q-grid		embroid-ered sandwich	non-woven (randomly oriented, oriented)	short fiber long fiber	
			1D		**2D** Reinforcement Alignment		**2D**	**2D — 3D**	**2D — 3D**	
			semi-finished products for reinforcements (endless fiber, long fiber)						for matrix improvement	
	CFRP, GFRP, AFP, BsFRP (FRP)		UD ply lamella strips		NCF lamella sheet		fabric	non-woven (randomly oriented, oriented)		
			Fiber-Polymer-Composite FPC ***closed reinforcing structures***							
isotropic	Thermosets, Thermo-plastics	Polymer matrix	Resin Systems: thermosets, thermoplastics, with catalysts etc.						SMC, BMC (FP)	

Fig.28-5: Ordering scheme proposal for Fiber-Composite Materials FCM, construction-linked such as Fiber-Reinforced Polymer FRP, Fiber-Reinforced Concrete FRC, CFRC:= CarbonFiber–Reinforced Concrete, Bi-Directionally Reinforced Concrete BDRC, UHP-(short)Fiber-Reinforced Concrete, HPFRC. Green couloured are still fixed notions.Matrix types of the Reinforcements FRPm = Fiber-Reinforced Polymer matrix, Fiber-Reinforced-Mineral matrix FRMm. International subscipts f = filament, m = matrix; superscripts t = tension, c = compression

29 Miscelleaneous

In this chapter some results of the author's works are collected, which have been discussed in his various working groups (WG).

29.1 WG Construction-linked Additive Fabrication AF

Classification of fabrication processes: Subtractive processes (waste), Formative processes and Additive processes (automatically digitized fabrication now) [*VDI 2403*]. *The term manufacture is not accurate: Manus* and *facere → means made by hand*.

1. In Subtractive processes, the geometry to be created is created by defining the removal of individual volume regions. Typical representatives of this group of manufacturing processes are machining processes such as turning, drilling or milling. (timber construction etc.)
2. Formative processes refer to the production of geometries by forming in compliance with volume constancy. Formative manufacturing processes are deep drawing, forging or primary forming.
3. Additive fabrication processes create a geometry by joining together volume elements (so-called "voxels"), such as the standard processes concreting, bracketing, plastering a wall etc.

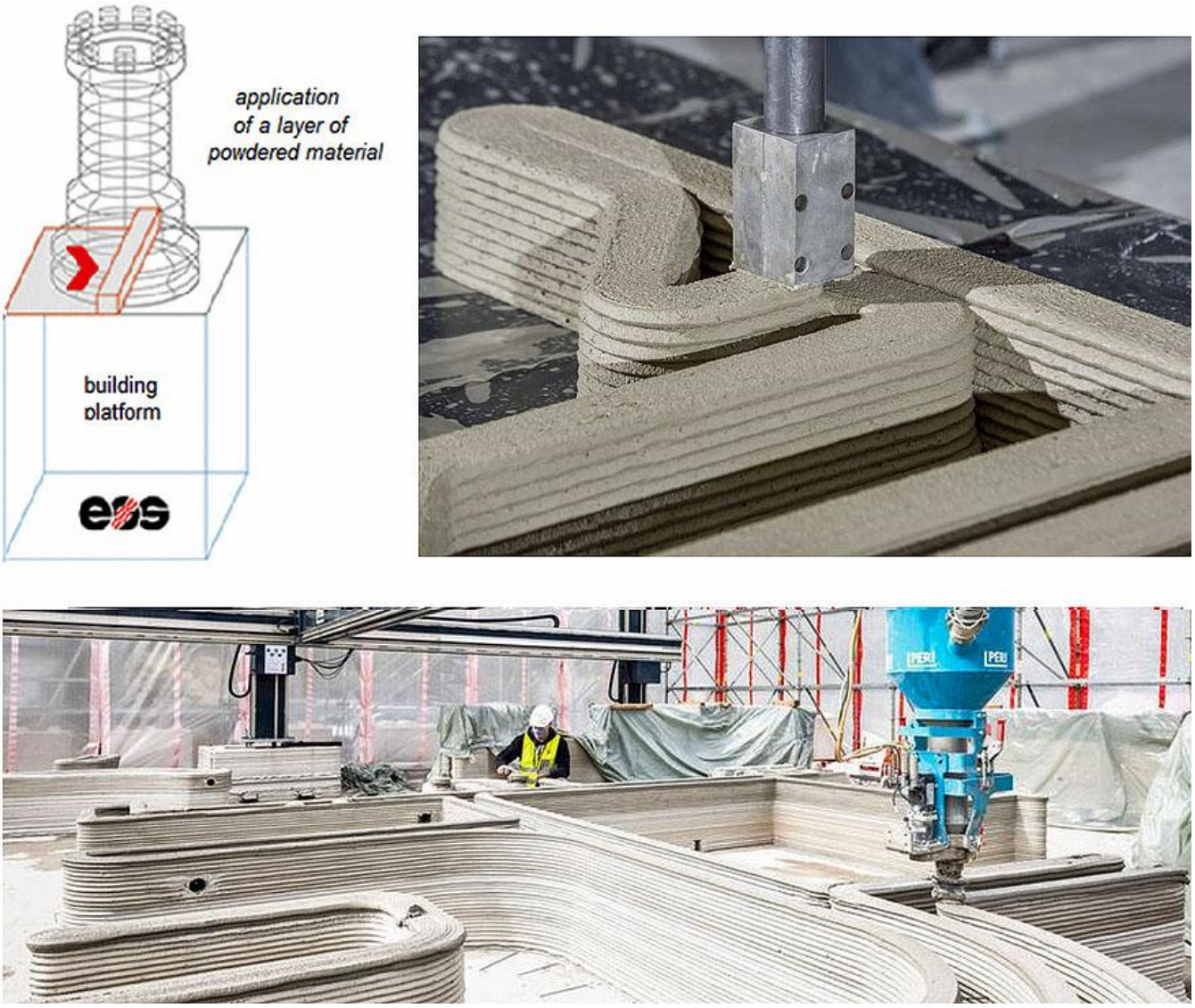


Fig.29-1: Particle-bed technique (up left), Mortar strand depositing technique (up, right); (below) Peri GmbH, building a two-story house in Beckum, 2021

Additive fabrication processes have been an essential part of my CU Construction WG "Automated Fabrication in the Construction Industry including Serial Construction".

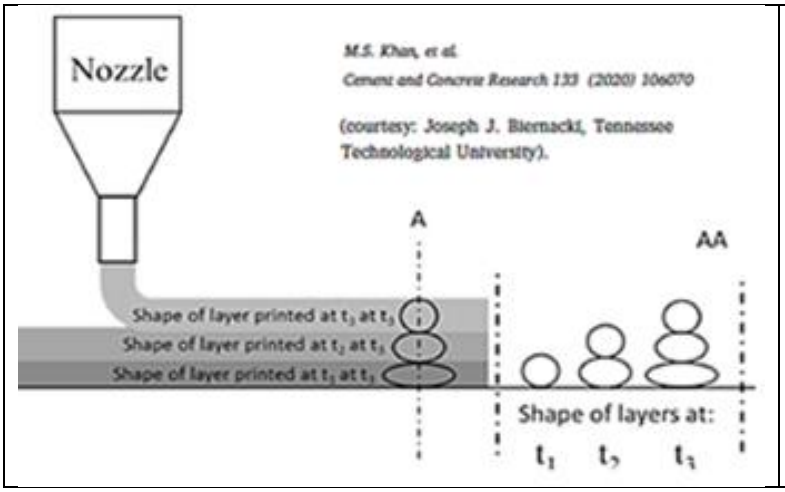
Any material that can be glued, welded or melted can be used in AF. For industrial purposes, metals, plastics, sand and ceramics are common materials, but the process is to adapt. The engineer's desire is to obtain accurate process names in the additive fabrication point 3, the term 3D-print does not give a clear process information. Therefore some basic definitions are provided for construction. The two basic digitized additive fabrication processes in construction are to term:

(3a**)** **Powder Bed process:** *true original 3D horizontal slice printing in construction*

Total cross-section including the 'openings' is produced in a powder bed layering process. Layer thickness is usually << 1 mm. (*for formwork production, usually*). Technique Selective Laser Sintering, does pretty well correspond with the printing definition '*Procedure, to apply something by pressure like printing a book'*.

In mechanical engineering, Fused Layer Modeling (FLM) is probably the most widely used 3D printing process. For copyright reasons, Fused Deposition Modeling (FDM) or Fused Filament Fabrication (FFF), a freely usable name for the 'melt layering process' used, has been established. The layer pattern is then the distinguishing feature for FFF-printed parts.

(3b) **Extruded fine Mortar-Strand Deposit process**: is **no** 3D printing in the original sense



(3a): Technique Extruded mortar strand deposit. Total cross-section including 'openings' is produced in a 'path tracking operation'. Layer thickness is several mm, depending on the strand thickness.

This picture shows very clearly the problem that the mortar has to solve in terms of curing at different times t

Future task will be *"Rethinking construction and relearning".*
Part of this will be "Automated construction with additive fabrication processes", so that we can build cheaper, more sustainably, with better quality, and even faster in the future". The aim is to obtain a force-path-oriented placement of minimal concrete quantity including possible fiber reinforcement (short, long, endless) and thus also to reduce the huge CO_2 backpack of the huge amount of concrete caused by cement production!

***LL**:* *It's always about producing cross-sectional layers. Two procedures exist:*

- *It is often written that entire buildings are produced with a '3D concrete printer'. The correct wording would be: (only) the walls and other compressed load-bearing building structures are made with the special process 'Extruded mortar-strand deposit'. Cost-effective conventional ceiling slabs are still required.*
- *True 3D printing: Thin layers (< 1 mm) of the complete cross-section of the component are produced as a single layer. Exemplarily for production of expensive difficulty shaped formwork*

- *Extruded mortar beads are deposited in a path-oriented manner (> 1 cm) to finally produce the complete cross-section of the building structure.*

29.2 Buckling analysis versus Strength analysis

This chapter provides introductory information about buckling of columns (beams), plates, panels and shells. It shortly addresses just essential features in stability analysis (*speaking stability is more positive than buckling*).

This chapter is just dealing with static stability problems. It covers a very basic background in order to guide the practicing designer to better understand the manuals of commercial analysis software.

The following contents basically stems from the creation of the ESA Buckling Handbook, ECSS-E-HB-32-24A. Cuntze was first convener and founder of the team as well as a co-author of the later prepared HSB 40100-04] from R. Cuntze and J. Broede.

Noteworthy: In the HSB, section 40000, for a wide spectrum of columns, rods, rings and deep beams design sheets are found. The same is given in the chapter plates where the available design sheets on anisotropic plates provided by J. Broede and colleagues are outstanding sheets.

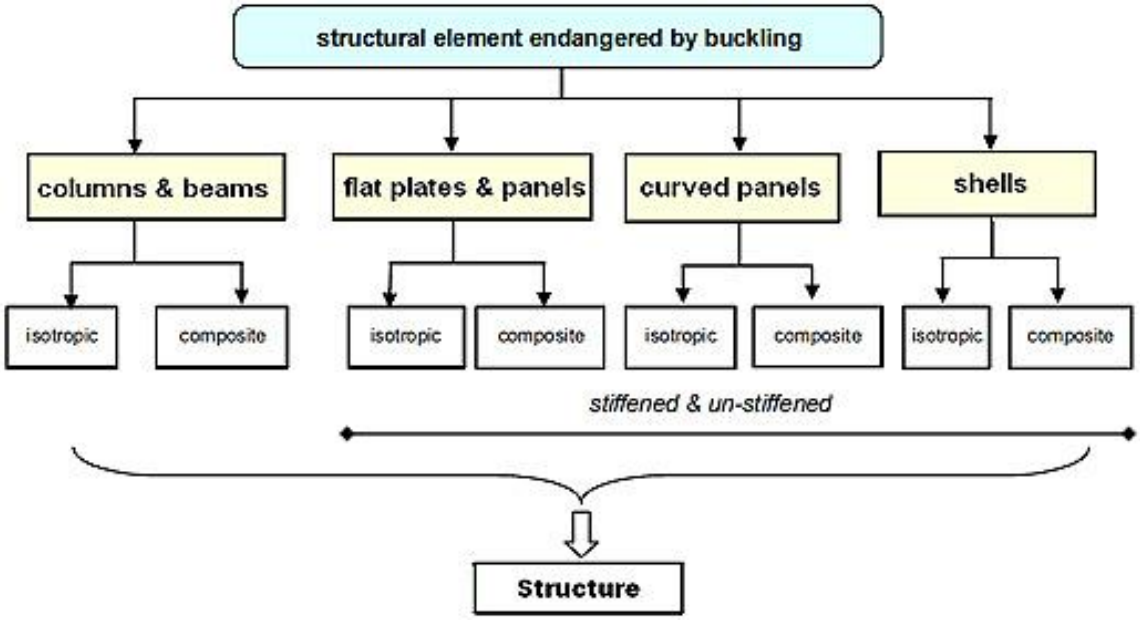


Fig.29-2: Breakdown of buckling of endangered structural elements [Cuntze, ECSS]

Different levels of analysis complexity are treated in the literature above. Going in steps from the lower level of complexity to the higher level of complexity (which will be denoted as a "hierarchical approach") the structural analyst is able to carry out and finally to successfully interpret analyses at the highest level of complexity, typically finite element computations (see [*CUN22*]).

In structural design the following subjects must be demonstrated: *Material* Strength, applying SFCs, strength criteria, and *Structural* Strength, applying buckling resistance conditions. *Fig.23-3* compiles these subjects.

Using such an engineering procedure the engineer is able to analyze the stability of (large) structures composed of structural elements, also referred to in literature as structural components or structural items. The term structural element includes typical elements such as columns and beams, plates, panels, and shells. In practice these structural elements often contain structural details, e.g. shells containing

openings or reinforcements. The associated “basic” structural elements, the elements without structural details are denoted in the ECSS as “Typical Structural Elements”.
Non-axial symmetric shells and truss systems are not addressed in the book.

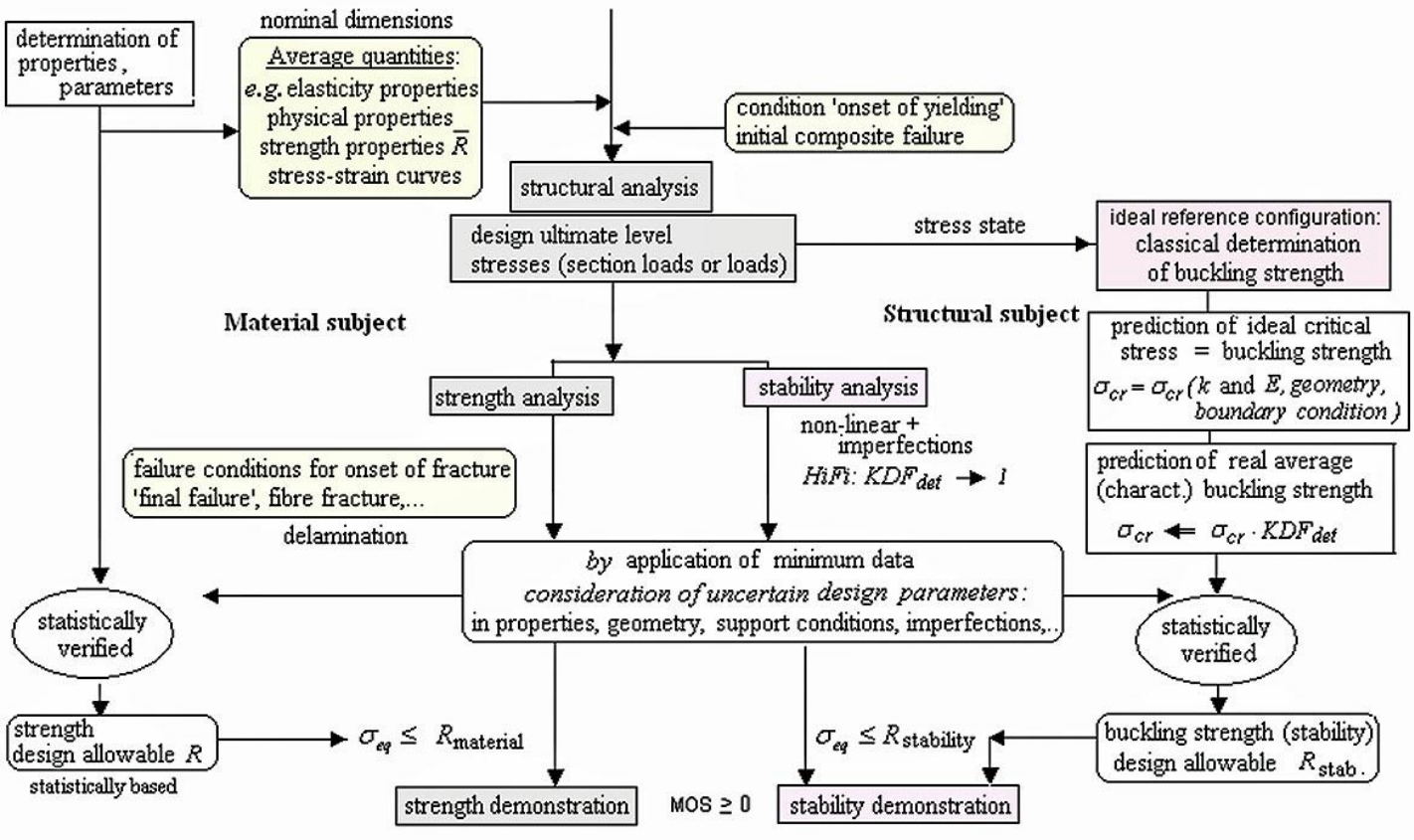


Fig. 29-3: Visualization of the (actually) required deterministic input demands.
Knock Down Factor (KDF) usually corrects difference of calculation model to experiment (50% expectance value), k:= buckling factor (from handbook tables), MoS:=Margin of Safety

29.3 Some Final Notes from Personal Experience

- ✓ Mechanics remains one very essential basis when developing light-weight structural components and Artificial Intelligence (AI) with its algorithms is a helpful supporting tool
- ✓ Only System Engineering with experienced engineers using mechanics and the necessary other disciplines - together with AI - enables to produce qualified products
- ✓ At the end someone has to sign that the developed structure will work and by that will take over responsibility. This experienced person is the absolutely necessary 'plausibility checker' for the obtained analysis and test results including generic AI-supported results.
- ✓ Bridge disciplines and materials by showing up similarities to simplify engineering life!
- ✓ In the present multi-physics applications product development is the work of several experienced engineers. Otherwise one does not deliver qualified 'Multiple function structural products'.
- ✓ In the case of bending of FRPlastic- and FRConcrete-parts carbon fibers can be only exploited using pre-tensioning and thereby compressing the tension-sensitive matrices Plastic or Concrete
- ✓ Viewing SFCs, one must be careful with conclusions reported in literature (unpleasant personal experience): SFC model *modifications* - created by another author - are used under the name of the originator and then poorly rated, however, the modification was not reported!
- ✓ Experienced engineers know: "Check your test together with test data evaluation. Check your analysis including assumptions."
- ✓ There is a rationale to take a distinct $\sigma - \varepsilon$ curve: From risk analyses and decision theory the best prediction will be achieved by applying the *mean(σ,ε)-curve* = 50% probability !
- ✓ "Certification by Analysis, only": Here, simulation can optimize the output of the usually only permitted minimum number of physical tests, and enabling to better manage risk and improve prediction
- ✓ It is a pity for designing: The effort of the NDI-specialist Prof.Gerd Busse and of myself in our fully coupled WGs at Carbon Composites - aiming to also couple NDI-results with strength assessment - was not successful. ***This is an essential future task in engineering.***

30 Presentations, Glossary, Guideline, Contributions, Courses etc.

TECHNISCHE UNIVERSITÄT HANNOVER · LEHRSTUHL B FÜR MECHANIK
Professor Dr.-Ing. O. Mahrenholtz

Hausmitteilung

Vorläufiger Plan für das Oberseminar in Mechanik im SS 1977

Zeit: Montag, 16.15 - 17.45 Uhr

Ort: MR 139

Themengruppe: Strukturmechanische Probleme, Thermodynamik

25. 4.	König Warschau/Hannover	shake down
2. 5.	"	"
9. 5.	Prager Savognin/Schweiz	Tragwerksoptimierung

eventuell weitere Tage derselben Woche

16. 5.	Cuntze München	Faserverbundstrukturen
23. 5.	Epheser Hannover	Thermodynamik nach Caratheodory
6. 6.	Siefer Hannover	Fading memory, oder plastisches Werkstoffverhalten und Thermodynamik
13. 6.	Schroeder Hannover	Grenzen zwischen technischer und theoretischer Thermodynamik
20. 6.	Pesch + Hannover	Quantenmechanische und statistische Begründung der Thermodynamik
27. 6.	J. Müller Paderborn	Wärmeleitungsgleichungen, Objektivität oder Mehrphasenthermodynamik
4. 7.	Muschik Berlin	Neuere Entwicklungen der Nichtgleichgewichtsthermodynamik

+ Hierzu zwei Einführungstermine an Freitagnachmittagen

nachrichtlich Lehrstuhl für Baumechanik, Prof. Stein
Curt-Risch-Institut, Prof. Natke
Institut für Meßtechnik, Prof. Hock
Lehrstuhl und Institut für Statik, Prof. Pflüger
Lehrstuhl für Strömungsmechanik, Prof. Zielke

Dr. R. Cuntze in

Herrn
Prof. Dr.-Ing. O. Mahrenholtz
Technische Universität Hannover
Lehrstuhl B. für Mechanik
3000 Hannover

3279 Dr.Cu/pr 30. März 1977

Sehr geehrter Herr Professor Mahrenholtz,

Ihrer Bitte, eine Fünf Zeilen-Zusammenfassung von meinem Vortrag "Faserverbundstrukturen" zu bekommen, möchte ich mit einer knappen Gliederung entsprechen:
Berechnung von Faserverbundstrukturen

1. Vorstellung einiger hochbeanspruchbarer Faserverbundstrukturen.
2. Durchführung einer Berechnung am Beispiel eines Satellitenmotorgehäuses.
   - 2.1 Kurze Beschreibung des Motorgehäuses.
   - 2.2 Allgemeines zu den möglichen statischen Berechnungsverfahren, der "Netztheorie" und der Kontinuumstheorie, zur Berechnung einer mehrschichtigen Schale.
   - 2.3 Dimensionierung des Gehäuses mit der Netztheorie.
   - 2.4 Berechnung des Gehäuses im Qualifikationsnachweis mit der Methode der finiten Elemente.
   - 2.5 Festigkeitsbeurteilung, Vergleich Theorie - Versuch.
3. Einige Schlußbetrachtungen.

Ich hoffe, Ihnen hiermit gedient zu haben und verbleibe

TECHNISCHE UNIVERSITÄT HANNOVER
LEHRSTUHL FÜR BAUMECHANIK
o. PROF. DR.-ING. E. STEIN

3000 Hannover, den 23.11.1978
Callinstraße 32
Telefon: (0511) 762-3220
Sekretariat 762-3223

OBERSEMINAR IN MECHANIK

im WS 1978/79

Neuer Ort: MZ 117 Hochhaus Callinstr. 32
(Seminarraum Baumechanik)

Da der bisher benutzte Hörsaal MR 139 nicht ausreichend beheizt werden kann, ist diese Änderung notwendig.

Die nächsten Vorträge sind wie folgt geplant:

Mo. 8. 1. 79	entfällt
Dr.-Ing. R. Cuntze: (M.A.N. München) Mo.15. 1. 79	Auslegung einer großen Windenergieanlage, GROWIAN
Prof.-Dr.-Ing. O. Mahrenholtz: Mo. 22. 1. 79	Das Übergangsverhalten von Metallen beim Fließen-eine Erweiterung der Beltrami-Hypothese
Prof.-Dr.-Ing. S. Spierig: Mo. 29. 1. 79	Schwingungen von Seilen bei großen Ausschlägen
Dipl.-Ing. A. Berg: Mo. 5. 2. 79	Konsistente nichtlineare Biegetheorien für kleine Verzerrungen
Dr.-Ing. U. Wittek: (Ruhruniv. Bochum) Mo.12. 2. 79	Nichtlineare Schalentheorie und Phänomene im Nachbeulverhalten

Zeit: 16^{15} bis spätestens 18^{00} Uhr

HOCHSCHULE DER BUNDESWEHR HAMBURG

Institut für Mechanik und Thermodynamik
Prof. Dr.-Ing. Heinrich Rothert

Seminarvortrag am 29. Jan. 1979

Auslegung einer großen Windenergieanlage (GROWIAN)

Vortrag von Dr.-Ing.habil. Ralf Cuntze
M.A.N - München
Bereich Neue Technologie

Es wird in einem 1 1/2-stündigen Vortrag die Auslegung einer großen Windenergieanlage vorgestellt. Der Vortrag untergliedert sich wie folgt:

1. Allgemeines zu Windenergieanlagen
2. System des GROWIAN, Kinematik
3. Statische und dynamische Belastungen, Lastfälle
4. Auslegung von Mast, Abspannung und Gründung
   - 4.1 Auswahlkriterien
   - 4.2 Schwingungsberechnung
   - 4.3 Aerodynamische Anregungsmöglichkeiten
5. Maschinenhaus und Rotor-Nabe
6. Auslegung Rotorblatt
   - 6.1 Kräfte am Blatt
   - 6.2 Flügelanzahl
   - 6.3 Werkstoffauswahl und Vordimensionierung
   - 6.4 Bemerkungen zur Schwingungsberechnung
   - 6.5 Schwingfestigkeitsauslegung
7. Schwingungen des Gesamtsystems

Some presentations linked to MAN projects

Mechanik-Kolloquium

Universität der Bundeswehr München

Fachbereiche:
Bauing.- und Vermessungswesen
Luft- und Raumfahrttechnik
Elektrotechnik

Veranstalter:
Prof.Dr.-Ing. F.A.Emmerlin
Prof.Dr.-Ing. A.Heinen
Prof.Dr.-Ing. D.Könke
Prof.Dr.-Ing. K.P. Michels
Prof.Dr.-Ing. R.Uhrig
Prof.Dr.-Ing. P.Zimmerman

Im Rahmen des Mechanik-Kolloquiums

hält

Herr Dr.-Ing.habil R. Cuntze
MAN - Neue Technologie - München

am Donnerstag, den 31. Januar 1985
um 16.00 Uhr im Hörsaal 0431, Gebäude 33

einen Vortrag über

STRUKTURBERECHNUNGEN IM RAHMEN DER BAUTEILENTWICKLUNG.
- EIN ÜBERBLICK -

1. Welche Dimensionierungsstufen und Nachweise sind notwendig?
2. Welche Rechnungen sind für die Nachweise zur Ermittlung der Einwirkung durchzuführen?
3. Welche Auslegungsbedingungen sind zu beachten?
4. Welcher Lösungsweg für vorgenannte Rechnungen zur Ermittlung der Einwirkung ist methodisch sinnvoll?
5. Welche Werkstoffinformationen und einachsigen Versuche sind für die Eingabe zur Berechnung der Einwirkung notwendig?
6. Was bedeuten mehrachsige Beanspruchungen bzgl. der Ermittlung von Einwirkung und Widerstand?
7. Was bedeuten ein- und mehrstufige Beanspruchungen z.B. (Betriebskollektive, Kriechen unter rel. hoher Last und rel. hoher Temperatur) bzgl. der Ermittlung von kumulierter Einwirkung und Widerstand?
8. Welche Werkstoffinformationen und Versuche werden zur Ermittlung der Größe des Widerstandes bzw. der ertragbaren Einwirkung gebraucht?
9. Was bedeuten Sicherheitsbeiwerte j, Statistik und Ausfallwahrscheinlichkeit für den Nachweis?
10. Was bleibt zu tun übrig?

M·A·N NEUE TECHNOLOGIE

1st Troika Materials Symposium
BNFL-Capenhurst. 1985, May 14/15

High Speed Test Vehicle:
"Investigation of Specially Wound Tube Sections".

1. Test techniques and test results (Mr. Deska)
   15 min. speech, 5 min. discussion
   1.1 Characterisation of composite components
   1.1.1 Resin
   1.1.2 Fibres
   1.1.3 Problems with nonlinearity of Young's Modulus of stand tests
   1.2 Test results of composites
   1.2.1 Statistical reliability of composite results
   1.2.2 Test results of tube sections under radial hydraulic pressure
   1.2.3 Applied techniques to investigate fracture mechanisms
   1.2.4 New aspects in acoustic emission analysis.

2. Theoretical investigations with comparison test-theory (Dr. Cuntze)
   15 min. speech, 5 min. discussion.
   2.1 Continuum calculations of the tube section (Material data input. Calculation results)
   2.2 Pressure versus radial deformation behaviour after theory and test
   2.3 First ply failure prediction and comparison with acoustic noise and replica results
   2.4 Some reflections on the design philosophy in general and specially on the design of the high speed tubes. (Validity of the First Ply Failure design criterium. Allowable strain for the rotor tube.)

The contents meets the symposium sessions 2 and 6!

ULTRA-CENTRIFUGE NEDERLAND NV
STEVE BAKER
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25/3/85
Kind regards.
R. Cuntze

30.1 Glossary Book

"Technical terms for composite components in civil engineering and mechanical engineering"

The construction industry is an industry in which the topic of high-performance fiber composites is not yet established on the one hand, but where there is enormous application potential on the other. Against this backdrop, Carbon Composites e.V. (CCeV) in Augsburg has founded a specialist department in civil engineering "CC Bau (construction)".

For CC Bau, this repositioning meant that Fibre-Reinforced Plastic (FRP) - and the various fiber-reinforced concrete matrices had to be covered, i.e. 'fiber-reinforced concrete'. The latter envolves endless '(roving)-Reinforced Concrete' (RC) as well as '(short) Fiber Reinforced Concrete' (FRC).

The following matrix applications must therefore be captured: *(1) Polymer matrix-related*, such as Glass fiber plastic pipes and containers, wind rotor blades and pedestrian bridges in GlassFRP and CarbonFRP as well, and *(2) Concrete matrix-related*, such as textile 'fiber grid' (mat) -reinforced concrete bridges and machine foundations, overhead line masts, industrial floors, multi-storey car parks, silos, prefabricated garages, transformer houses, offshore applications, tubbings, sandwich façade panels, un-tensioned and tensioned bending panels, FRP shells and bridges.
Further, a big topic is the rehabilitation with FRP-'lamellas' (tapes, strips) such as the reinforcement of a ceiling plate (slab), because of increased moments, using CFRP-lamellas applied by surface bonding,

Carbon Fibers in the construction industry reduce the concrete amount, which is positive for the CO_2 footprint due to the reduced clinker production required and are sustainable due to their non-corroding behaviour in contrast to steel."

Purpose of this Glossary:

Borders between engineering disciplines are disappearing, more and more. It can also be noticed that in the different fields of the fiber-using industry there are different "speeches" and that technical terms are sometimes used very differently. Several groups of engineers would therefore have to be connected conceptually so that they understand each other correctly when making decisions. These are 'constructive' engineers from building industry and mechanical engineering and further, engineers from the textile and material range as well as from manufacturing.
This glossary focuses especially on carbon fibers CF and concrete matrices. At the beginning it presents a first scheme of order for the different, interconnected disciplines. At the end, a picture gallery illustrates technological details and applications. This gallery just includes carbon applications from construction industry because these are less known.



30.2 " VDI 2014, Sheet 1-3" (1980 - 2006)

Development of FRP components (fiber reinforced plastics); concept and design

The author was *Editor, contributor of the VDI 2014, sheet 3, (2006) and contributor to sheets 1 and 2.

ICS 59.100, 83.140.20

VDI-RICHTLINIEN

September 2006

VEREIN DEUTSCHER INGENIEURE

Entwicklung von Bauteilen aus Faser-Kunststoff-Verbund Berechnungen

Development of FRP components (fibre reinforced plastics) Analysis

VDI 2014

Blatt 3 / Part 3

Ausg. deutsch/englisch
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Frühere Ausgabe: 04.97 Entwurf, deutsch
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Die deutsche Version dieser Richtlinie ist verbindlich.

No guarantee can be given with respect to the English translation. The German version of this guideline shall be taken as authoritative.

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VDI-Handbuch Kunststofftechnik
VDI-Handbuch Konstruktion

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***Presenter of a draft on "Reliability & Safety" , Sheet 4**

VDI-Richtlinien Juli 1995

VEREIN DEUTSCHER INGENIEURE	Entwicklung von Bauteilen aus Faser-Kunststoff-Verbund **Zuverlässigkeit und Sicherheit**	VDI 2014 Blatt 4 (4. Entwurf) Zusammengestellt R. Cuntze, MAN

Development of FRP components
(fibre reinforced plastics)
Reliability and Safety

Einsprüche bis ??.??.1995 an
Verein Deutscher Ingenieure
VDI-Gesellschaft Kunststofftechnik
Postfach 10 11 39
40002 Düsseldorf

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Vorbemerkung

Die Richtlinie enthält Empfehlungen für das Entwikkeln von Bauteilen aus Faser-Kunststoff-Verbunden (FKV), die aus einzelnen faserverstärkten Schichten bestehen, bei denen Fasern in einer Kunststoff-Matrix eingebettet sind. Die Bauteilentwicklung wird dargestellt, wobei die Berechnungen eingehender behandelt werden. Die Richtlinie will durch Systematisieren und Vereinheitlichen der Bauteildimensionierung auch die Zulassungsverfahren und die Qualitätssicherung erleichtern. Sie ist in vier Teile gegliedert:

- Blatt 1 Grundlagen
- Blatt 2 Konzeption und Gestaltung .....
- Blatt 3 Berechnung .....
- Blatt 4 Zuverlässigkeit und Sicherheit.

Beispielsammlung: s. VDI Report??

VDI-Gesellschaft Kunststofftechnik

VDI-Handbuch Kunststofftechnik



Jakobi, Puck, Voirol



Eckert, Vollrath, Moser



Eckert, Lutz, Haller





Puck, Voirol, Lutz, Moser,



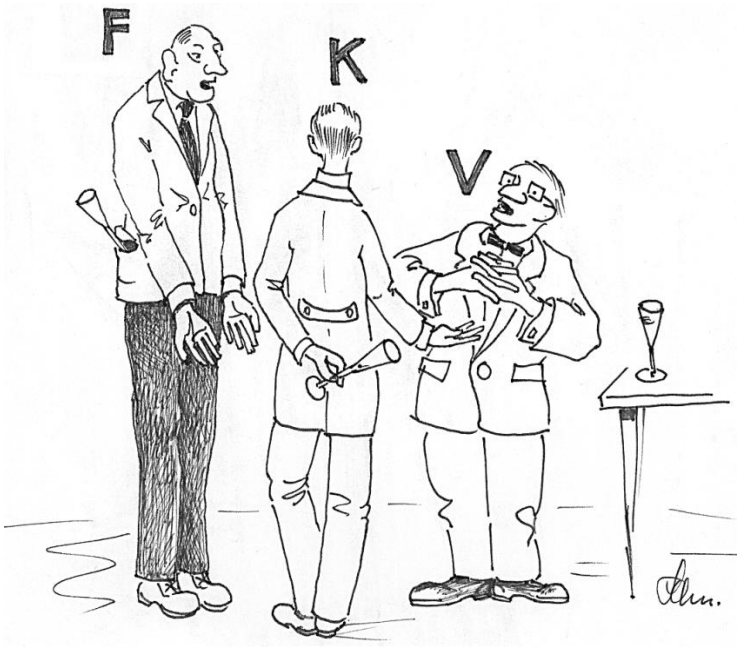
Huybrechts, Knauer



A VDI 2014-dedicated conference at Dresden (invitation Prof. Knauer, VDI contributor)



Verstärkte Plaste 90 at Dresden University (September 1990), organizer B. Knauer.
Panel discussion:
Einsfeld, Sorry, *Cuntze, Buchs, Lustig, Knauer*



Drawing
by my deputy
Siegfried Schneider
describing the 'situation'
after a meeting of the
German Composite (FKV)
people

The treatment of us contributors, who together have spent many 'man-years' for the development of this guideline, by the VDI is very strange.



View of completion-effort of the VDI guidelines in 1989
(Nice, meaningful drawing from my deputy S. Schneider)

VDI-Gesellschaft
Kunststofftechnik

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Düsseldorf, 13.09.2006

VDI 2014 Blatt 3:
Entwicklung von Bauteilen aus Faser-Kunststoff-Verbund, Berechnung

Sehr geehrter Herr Professor Cuntze,

die Richtlinie VDI 2014 Blatt 3 ist mit Ausgabedatum September 2006 erschienen.

Ich möchte mich auch im Namen des Vorsitzenden der VDI-K, Herrn Dr. Rudolf Stauber ganz herzlich für Ihre wertvolle ehrenamtliche Arbeit als Obmann dieser Richtlinie bedanken.

Den übrigen Ausschussmitgliedern haben wir in Ihrem Namen gedankt und Ihnen ebenfalls ein Exemplar der Richtlinie übersandt.

Mit freundlichen Grüßen

(Dr.-Ing. Ludwig Vollrath)
VDI-Gesellschaft Kunststofftechnik

Official VDI-Information, found in the Web:

This guideline includes recommendations for the design of components made of fiber-reinforced plastics (FRP) which consist of individual fiber-reinforced laminae in which fibers are embedded in a plastic matrix. It records the state of the art regarding calculation methods for the development of FRP components. To a very great extent the guideline is based on approved methods which have already been tried and tested in practice and does not therefore necessarily reflect the very latest research findings, this affects methods used for strain and stress calculation. **Editor**: VDI-Gesellschaft Materials Engineering (**GME**). Chairman Prof. Dr.-Ing. Christian Hopmann, IKV, RWTH Aachen. Price: **290 €**, Beuth Publishing.

Reality:

Even, when I edited Sheet 3 there was not yet any GME existing.!!???

- After 26 years, the VDI guideline was finally completed. Twice during this time, we thanked the ladies from MAN, who also made time-based documentation possible.
- Having the translation done at our own expense was no obstacle for us compared to the enormous effort before.

Dear Mr. Lenhart,

After the intense labor pains of a third birth - if you include the two previous rebirths of Sheet 3 - I am incredibly pleased that the 25-year-old "persisting team" and now the remaining members of the VDI 2014 working group can now present the guideline to you for printing. This remaining team consists of Prof. Dr.-Ing. Puck, Dipl.-Ing. Lutz, and myself.

We were also supported at the end by Dr. Geier, Prof. Kroll, and Dr. Stellbrink, as well as several proofreaders of various sections: Prof. Schürmann, Dr. Fischer, and Dr. Lustig.
My special editorial thanks go to Mr. Lutz for taking on the very demanding editorial work.

My sincere thanks to everyone, but especially to the "persisting team, formed by Puck, Huybrechts, Lutz and Cuntze."
By my estimate, this alone - not including the hundreds of hours of typing by the various secretaries, especially the mine one - has generated more than 4000 hours of dedicated time, plus financial resources. Therefore, I was always committed to completing the project, even without any further direct support.

As the chairman of the guideline, I authorize the printing of VDI 2014, sheet 3.
We look forward to receiving the hard copy.

Sincerely Yours,
R. Cuntze

Words of thanks from the VDI:

The **VDI** expressed its **gratitude** to the remaining team: by
3 lines to the industrial editor Cuntze **for 2 'man years' of labor in my vacant time during 26 years,**
2 lines to the other remaining tough persistent contributors Huybrechts, Lutz and Puck.
(By the way: one man year was at that time 150 k€ for me when performing offers).
The VDI-director at that time, Dr. Fuchs, told me on the phone:
"*Mr. Cuntze, I have no influence over that*."
(Mr. Fuchs had previously applied to me for a position.)
On top: The names of us contributors are nowhere cited! Hence, we did never exist for the reader.
This perhaps makes it understandable that only a few thank you lines were enough.

The VDI must ask itself whether this was an appropriate way of saying 'Thank you'.

I'm waiting now for the announced update in 2026.
Naturally I could not win after the traditional time of 10 years, meaning 2016, the remaining members of the old team to work on an update.

I know, that the price of 290 € was one high obstacle for the application of the Sheet 3.

Why did the community not spent 'Beuth Publishing' 100000 €, that industry would have purchased a much cheaper guideline of about 50 € and applied the results of the Working Group (WG), which invested ten times more effort??

Our efforts and their results have therefore unfortunately not been able
to find the desired benefit in the industry !

Members of the first WG meeting

1981, at Freudenstadt, AVK conference:
Moser, Krawinkel, Preuß, Niederstadt, Lutz, Conen, Wurtinger, Cuntze

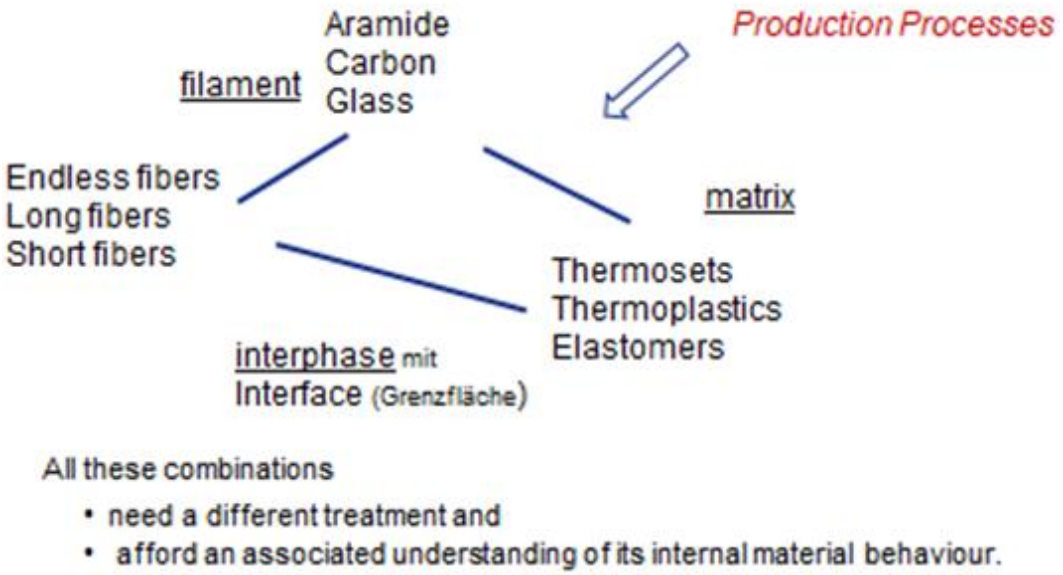


*VDI 2014 WG, meeting members***:** *Moser (founder of the VDI 2014), Cuntze (editor, Sheet 3), Lutz (tough contributor)*

The original founders were all civil engineers,
however, unfortunately the guideline did no become known in civil engineering, for dimensioning!
It did not build the basis for the later civil engineering standards.

VDI 2014 Focus:

Plenty combinations of material components to be captured in the guideline



All these combinations

- need a different treatment and
- afford an associated understanding of its internal material behaviour.

M·A·N
NEUE TECHNOLOGIE

Protokoll der 1. Sitzung des FKV-Diskussionskreises am 6.12.83
bei der Fa. MAN-Neue Technlogie, München

1. Anwesende Diskussionskreis-Mitglieder

Herren Prof. Ahrendts
Dr. Bansemir
Bessler
Buchs
Dr. Cuntze
Prof. Einsfeld
Dr. Geier
Prof. Giencke
Lutz
Prof. Moser
Prof. Puck
Dr. Rother
Dr. D. Schütz
Dr. Schulte
Dr. Stellbrink
Dr. Wurtinger

Die Anwesenden danken Herrn Krawinkel für die Einladung und das Nikolausgeschenk des VDI.

2. Kurzvorträge

Die Vorträge wurden bis auf den Beitrag Lutz/Moser "Sicherheitskonzept" gehalten. Der aus Zeitgründen entfallende Beitrag liegt als Anlage dem Protokoll bei.

Sondersitzung "Schwingfestigkeit", VDI Richtlinie 2014, Teil 3

Ort:	Institut für konstruktiven Leichtbau und Bauweisen, TU Darmstadt
Datum:	21.6.00, 9:15 bis 16:30
Thema:	**Wie wird der rechnerische Schwingfestigkeitsnachweis für Faser-Kunststoff-Verbund-Bauteile in der Praxis geführt?**

Teilnehmer:	
Prof. Cuntze	MAN-Technologie
Prof. Schürmann	Institut für konstruktiven Leichtbau und Bauweisen, TU Darmstadt
Herr Gerharz	LBF Darmstadt
Dr. Huth	Fairchild Dornier, Oberpfaffenhofen
Herr Osthorst	Aerodyn, ...
Herr Garbe	ehemals TUD und LBF
Herr Denzin	Institut für konstruktiven Leichtbau und Bauweisen, TUD
Herr Scholz	Rolladen-Schneider Flugzeugbau,
Dr. Huybrechts	ABB Forschung, Heidelberg
Prof. Puck	ehemals GH Kassel
Dr. Gaedke	DLR, Braunschweig
Herr Kleinhansl	Aero Dynamik Consult, ...
Dr. Wacker	Germanischer Lloyd, HV Hamburg
Herr Kensche	DLR, Stuttgart
Herr Lutz	IMS, Innsbruck

entschuldigt:	
Dr. Hachenberg	DASA, Hamburg
H. Emmerling	ECD, Ottobrunn

Anlass der Sondersitzung:
Beim Endbearbeiten des Kapitels 'Schwingfestigkeit' kam der Ausschuß überein, nachzuprüfen, ob nicht doch ein paar Vordimensionierungsformeln dem Leser bereitgestellt werden können. Dazu sollte ein Expertenmeeting stattfinden, zu dem vornehmlich Industrieleute eingeladen werden, die solche Nachweise zu führen haben.
Bemerkung:
Die stattfindenden 'Fatigue-Conferences' (s. Anlage) geben höchstens Hilfe, das Thema Ermüdung (Schwingfestigkeit) zu verstehen, bieten aber keine Unterlagen für das Aufstellen von 'Auslegungsformeln'.

1. Ausführungen der einzelnen Teilnehmer

Wacker

Der GL gibt in seiner Windflügelrichtlinie Hinweise zur rechnerischen Durchführung des Schwingfestigkeitsnachweises. Wacker verteilt das diesbezügliche Kapitel der GL-Richtlinie.

Im wesentlichen basiert der rechnerische Schwingfestigkeitsnachweis auf folgenden Grundlagen:

- **Die Zeitfestigkeit des FKV wird durch eine synthetische Wöhlerlinie (sog. Typ 2, d.i. Gerade im doppelt-logarithmischen Maßstab ausgehend von der Kurzzeitfestigkeit bzw. deren charakteristischem Wert) beschrieben für R = -1**
- **Annahme: Gültigkeit des Goodman-Diagramms vorausgesetzt zur Umrechnung auf andere Spannungsverhältnisse R**
- **Annahme: Gültigkeit der Miner Regel**

Die Neigungen k der Wöhlerlinie $N^{1/k}$ sind in der GL-Richtlinie angegeben mit:

- k = 9 für GFK mit UP-Harzen
- k = 10 für GFK mit EP-Harzen
- k = 14 für CFK.

VDI 2014: Meeting on Composite Fatigue in 2000

Fatigue comprises the three life sections: Damage initiation, Stable subcritical damage progression or crack propagation, and Unstable residual fracture. The initiation life, during which the sum of fatigue micro-damage (Schädigung) accumulates to a critical macro-damage (Schaden) value and then may end with a technical crack of larger 1 mm in size in metals, and with delamination in FRP, is essential for fatigue strength verification. Damage Tolerance analysis is then required.

- ✓ It is necessary to determine the fatigue-critical points in the component and the laminate.
- ✓ Only the individual layer of a laminate can be considered (modeled) as a material.
- ✓ The guideline sheet VDI 2014/3 is relevant for layer-by-layer fracture FRP-analysis.
- ✓ Smooth, undisturbed FRP components should be designed 'fiber-dominant'; then fatigue and fatigue strength verification pose virtually no problems. This applies if sufficient fibers are arranged in the corresponding force directions, for all load cases.
- ✓ The full entire vibration-caused stress distribution must be considered. Therefore, considering only the vibration amplitudes is insufficient.
- ✓ The usual 'mean stress correction' is only useful if the material is almost always (micro-) damaged in the same failure mode, such as isotropic ductile metals in the yield failure mode. A mean stress correction is hardly useful for brittle isotropic materials, because the damage is then essentially determined by two fracture modes. It's no wonder, then, that the Palmgren-Miner rule (hypothesis) isn't sufficiently accurate even for metallic components.
- ✓ The Palmgren-Miner rule seems to underestimate the so-called 'load-following effect' in GFRP, but it's relatively accurate for CFRP.
- ✓ This applies even more to the material 'Transversely isotropic UD layer,' in which a maximum of five fracture failure modes can have a damaging effect in and perpendicular to the plane.
- ✓ If 'Damage tolerance verification' is required for a macro-damaged laminate, the macro-damage progression must be verified: Has the identified macro-damage (a crack or delamination in FRP) grown to a critical size within the inspection period?
- ✓ A design limit strain of a micro-strain $3_{0/00}$ for the laminate covers the 'Fatigue strength verification' for CFRP and is based on experience.
- ✓ In fiber-reinforced plastic composites, it is important to distinguish whether the fatigue behavior is load- or strain-controlled, as it is with an embedded layer. This requires 'sub-laminate specimens'.
- ✓ With 'Non-synchronous loadings', the locally activated stress state vector does not remain spatially fixed in time and thus activates micro-damage of varying magnitudes in spatially differently oriented section planes, which complicates lifetime prediction.
- ✓ For notched, flat-loaded laminates, the fatigue-linked stress concentration effect is taken into account if the 'Notch factor' was considered statically.

30.3 HSF, "Handbook for the German Ministry of Defense on a Safety Concept for Fiber Reinforced Plastic Structures". Koblenz, 1992 (in German)

Editors/contributors: *Cuntze R., Rackwitz R., Gollwitzer S., Plica S. and Stoeffler G.*

30.4 HSB, "German Aeronautical Handbook" ('Airbus design sheets folder') , since 1972



HSB HANDBUCH STRUKTUR BERECHNUNG	General description	Issue E Year 2018 Page 1 of 21

Luftfahrt-Technisches Handbuch (LTH)

HSB

HANDBUCH STRUKTUR BERECHNUNG

Fundamentals and Methods
for
Aeronautical Design and Analyses

issued by

iasb INDUSTRIE-AUSSCHUSS-STRUKTUR-BERECHNUNGSUNTERLAGEN

Prepared:	Checked:	Date:	
Dr. M. Schagerl	Dr. M. Magin	22.11.2018	IASB / IVW

Digitally signed by Michael Magin
Date: 2020.10.20 00:15:05 CEST

- *Design sheet contributor 1972-2015*
- *Co- reworker and Co-translator of the 'Airbus' structural handbook into English (2004)*

IASB 1972-2024

First participation:
July 1972, Session 12.

Last physical participation:
July 2024,Session 185
at Ottobrunn.



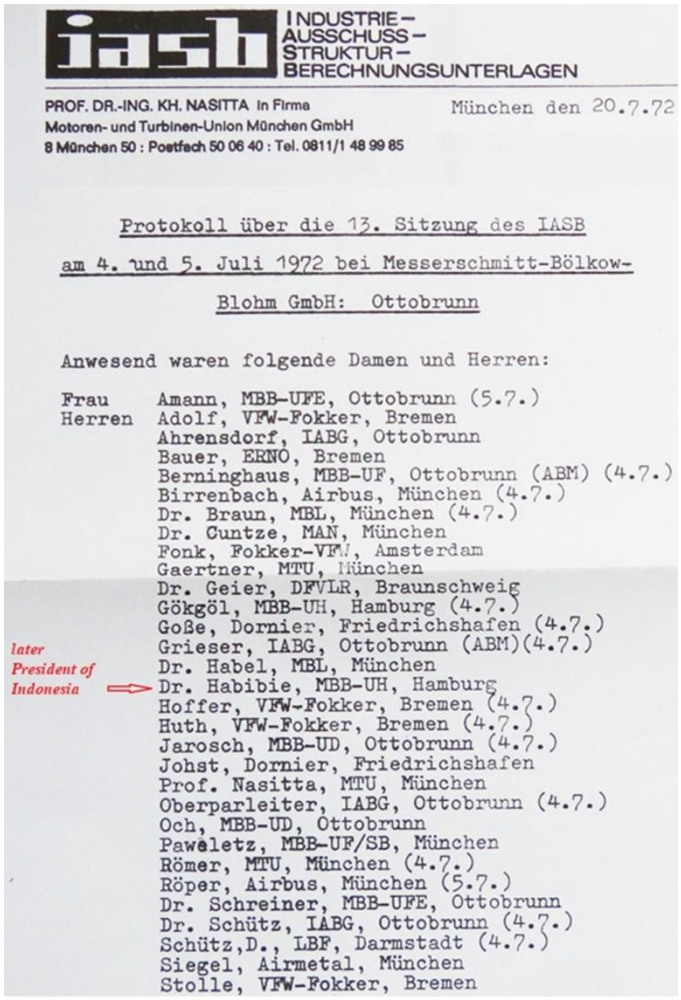




This was the WG where I learned most for our system-wide engineering applications.

My feeling with AI-supported design:

Test-based design sheets (like HSB) will become even more essential.



IASB INDUSTRIE-AUSSCHUSS-STRUKTUR-BERECHNUNGSUNTERLAGEN

PROF. DR.-ING. KH. NASITTA In Firma
Motoren- und Turbinen-Union München GmbH
8 München 50 : Postfach 50 06 40 : Tel. 0811/1 48 99 85

München den 20.7.72

Protokoll über die 13. Sitzung des IASB

am 4. und 5. Juli 1972 bei Messerschmitt-Bölkow-Blohm GmbH: Ottobrunn

Anwesend waren folgende Damen und Herren:

Frau Amann, MBB-UFE, Ottobrunn (5.7.)
Herren Adolf, VFW-Fokker, Bremen
Ahrensdorf, IABG, Ottobrunn
Bauer, ERNO, Bremen
Berninghaus, MBB-UF, Ottobrunn (ABM) (4.7.)
Birrenbach, Airbus, München (4.7.)
Dr. Braun, MBL, München (4.7.)
Dr. Cuntze, MAN, München
Fonk, Fokker-VFW, Amsterdam
Gaertner, MTU, München
Dr. Geier, DFVLR, Braunschweig
Gökgöl, MBB-UH, Hamburg (4.7.)
Goße, Dornier, Friedrichshafen (4.7.)
Grieser, IABG, Ottobrunn (ABM)(4.7.)
Dr. Habel, MBL, München
Dr. Habibie, MBB-UH, Hamburg
Hoffer, VFW-Fokker, Bremen (4.7.)
Huth, VFW-Fokker, Bremen (4.7.)
Jarosch, MBB-UD, Ottobrunn (4.7.)
Johst, Dornier, Friedrichshafen
Prof. Nasitta, MTU, München
Oberparleiter, IABG, Ottobrunn (4.7.)
Och, MBB-UD, Ottobrunn
Paweletz, MBB-UF/SB, München
Römer, MTU, München (4.7.)
Röper, Airbus, München (5.7.)
Dr. Schreiner, MBB-UFE, Ottobrunn
Dr. Schütz, IABG, Ottobrunn (4.7.)
Schütz,D., LBF, Darmstadt (4.7.)
Siegel, Airmetal, München
Stolle, VFW-Fokker, Bremen

later President of Indonesia ⇨ Dr. Habibie

Members

Amann, MBB-UFE, Ottobrunn
Ahrensdorf, IABG, Ottobrunn
Bayerdörfer, Dornier AG, Friedrichshafen
Birrenbach, Airbus, München
Brenner, Dornier AG, Friedrichshafen
Dr.Cuntze, MAN, München
Fonk, Fokker-VFW, Amsterdam
Geng, Dornier AG, Friedrichshafen
Gökgöl, MBB-UH, Hamburg
Goße, Dornier AG, Friedrichshafen
Dr.Habel, MBL, München
Dr.Habibie, MBB-UH, Hamburg
Havertz, Luftfahrt-Bundesamt, Braunschweig
Hoffer, VFW-Fokker, Bremen
Dr.Huff, MTU, München
Jarosch, MBB-UD, Ottobrunn
Johst, Dornier AG, Friedrichshafen
ORR Lang, BWB, Koblenz
Dr.Löffler, MTU, München
Nußbaum, VFW-Fokker, Bremen-Lemwerder
Och, MBB-UD, Ottobrunn
Paul, W., VFW-Fokker, Bremen-Lemwerder
Paweletz, MBB-UF/SB, München
Prof.Dr.Schiffner, DFVLR, Porz-Wahn
Dr.Schreiner, MBB-UFE, Ottobrunn
Dr.Schütz, IABG, Ottobrunn
Schütz, D., LBF, Darmstadt
Stolle, VFW-Fokker, Bremen
Weisgerber, MBB-UFE, Ottobrunn
Woydack, MBB-UH, Hamburg
Zocher, IABG, Ottobrunn
Zöllmann, Normenstelle Luftfahrt, Leinfelde

Prof. Dr. Nasitta **(1st** chairperson of the IASB)

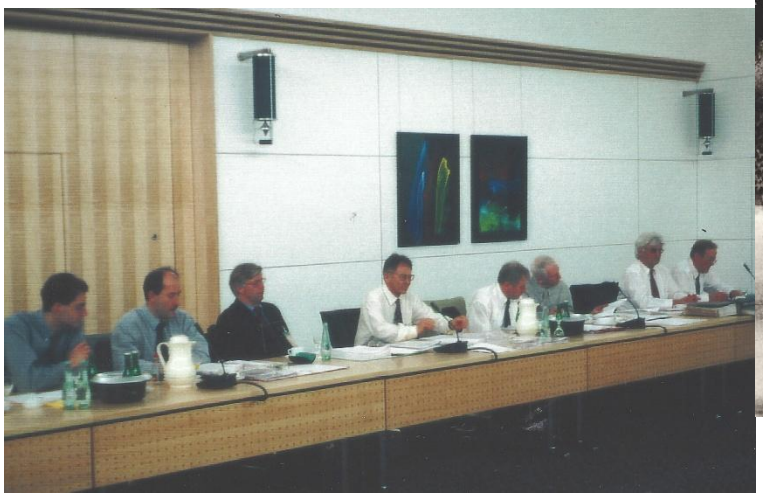


Dr.Bansemir, Dr. Hickethier, (IABG), Spaink, Prof.Schürmann



IABG, Ottobrunn:

Dr. Bansemir, 65 years-present from the chairman Prof. Schwarmann



After the reunification, the first meeting in the new federal states, 1991 at Dresden



Bauer, Dr. Schreiner (*2nd chaiperson of the IASB*), Stolle, Groth



Schmidt, Teske, Grothaus, Dr. Kroll



Prof. Garnatz from north Germany: He explains that Munich is located direct in front of the Alps





Dr. Geier, Bauer, Dr. Bansemir



Jubiläumsurkunde

$\sigma = \frac{F}{A} + \frac{M}{W}$ $\quad D = \sum \frac{n_i}{N_i}$

$\tau = \frac{Q \cdot S}{J}$ $\quad \frac{da}{dn} = f\,(\Delta K)$

$\sigma_k = k \cdot E \cdot \left(\frac{\pi}{\lambda}\right)^2$ $\quad \sigma_c = \frac{K_c}{\sqrt{\pi a} \cdot f}$

$R_m = 420\ MPa$
$R_{p0.2} = 290\ MPa$
$E = 73800\ MPa$

$a_c = \left[\frac{K_c}{\pi \cdot \sigma \cdot f}\right]^2$

100
IASB

Für die Teilnahme an der 100.sten IASB – Sitzung wird

DR. ING. RALF CUNTZE . . .

ein aufrichtiger Glückwunsch und ein Dankeschön für die konstruktive Mitarbeit ausgesprochen.

Prof. Dr. Ing. L. Schwarmann
IASB – Vorsitzender

Dresden, im April 1996



The great chairman thinks !!

Prof. Schwarmann,
Stolle in the back



Dr. Schreiner (head),
Fonk, Johst, Scütz, Groth, Stolle, Hofferz



(left) Dr. Schreyeck (MTU).
Gerd Turlach (instructor of glider instructors)



After the session

My Damping values search attempt, *Proposed HSB Structure*

HSB
HANDBUCH STRUKTUR BERECHNUNG

Gedämpfte Schwingungen

73100
Ausgabe A Jahr 1983
Seite 1 von 38

0. Einführung
1. Mechanisches Ersatzsystem und seine Kennwerte
1.1 Werkstoffkennwerte
1.2 Bauteilkennwerte
1.3 Systemkennwerte
2. Dämpfungsarten — Do, MD
2.1 Viskose Dämpfung
2.2 Reibungsdämpfung (Coulombsche Dämpfung)
2.3 Werkstoffdämpfung (Hysteretische Dämpfung)
3. Einige Erscheinungsformen der Dämpfung — Do, MD
3.1 Strukturdämpfung
3.2 Dämpfung durch umgebende Fluide
3.3 Diskrete Dämpfung
4. Lineare Differentialgleichungen der freien Schwingungen — Do, MD
4.1 Der einfache Schwinger
4.1 Viskos-gedämpfte Schwingung
4.1.2 Hysteretisch gedämpfte Schwingung
4.1.3 Coulomb-gedämpfte Schwingung
4.2 Schwingungssystem — MD, MAN, Hirsch
4.2.1 Viskos gedämpfte Schwingung
4.2.2 Hysteretisch gedämpfte Schwingung
4.2.3 Coulomb-gedämpfte Schwingung
5. Lineare Differentialgleichungen der erzwungenen Schwingungen
5.1 Allgemeines
5.1.1 Harmonische Erregung
5.1.2 Beliebige periodische Erregung
5.2 Der einfache Schwinger bei harmonischer Erregung — Do, MD
5.2.1 Viskos gedämpfte Schwingung
5.2.2 Hysteretisch gedämpfte Schwingung
5.2.3 Coulomb-gedämpfte Schwingung
5.2.4 Kombinierte viskos und hysteretisch gedämpfte Schwingung
5.3 Schwingungssystem bei harmonischer Erregung — MD, MAN, Hirsch
5.3.1 Viskose Dämpfung
5.3.2 Hysteretisch und Coulomb-gedämpfte Schwingung
5.3.3 Hysteretisch gedämpfte Struktur mit diskretem, viskosen Zusatzdämpfer
6. Maßnahmen zur Schwingungsdämpfung — DFVLR, Dr. Sperling
6.1 Mechanische Maßnahmen
6.1.1 Passive Dämpfung
6.1.1.1 Absolutdämpfung
6.1.1.2 Dynamischer Schwingungsdämpfer/Schwingungstilgung
6.1.2 Aktive Dämpfung
6.2 Aerodynamische Maßnahmen
7. Möglichkeiten der Dämpfungsmessung — MD, DFVLR-Gö
7.1 Viskose Dämpfung
7.2 Hysteretische Dämpfung
7.2.1 Werkstoffdämpfung des Volumenelements
7.2.2 Werkstoffdämpfung des Bauteils (Bauteildämpfung)
7.3 Messung der Strukturdämpfung von Flugkonstruktionen
7.4 Messung der Strukturdämpfung von winderregten Baukonstruktionen
8. Bilder, Tabellen
9. Zahlenbeispiele
10. Angabe von Dämpfungs-Zahlenwerten
11. Liste der verwendeten Formelzeichen
12. Quellen

Der Beitrag ist noch außerhalb des IASB bei Spezialisten in Bearbeitung. Es wurde nochmals hervorgehoben, daß vom IASB ein möglichst kurzer, praxisnaher Beitrag erwartet wird. Die Einstufung bleibt in Anlage II, Zeile 296 c.

Aufgestellt: MBB/Bauer / Cuntze
Geprüft:
Datum 21.7.83
MAN-NT

Dr.-Ing. habil. RALF CUNTZE VDI

M.A.N. - NEUE TECHNOLOGIE
Dachauer Straße 667
8000 MÜNCHEN 50
Telefon (089) 1480 3279

München, 22.07.1983

Hr. Prof. Dr. Schiehlen, TU-Stuttgart
Hr. Dr.-Ing. Sperling, TU-München
Hr. Dipl.-Ing. G. Hirsch, RWTH-Aachen
Hr. Dipl.-Ing. Kießling, DFVLR-Göttingen
Hr. Dr.-Ing. Rother, Dornier
Hr. Dipl.-Ing. Stolle, VFW
Hr. Dr.-Ing. Bansemir, MBB-UD
Hr. Dipl.-Ing. Bauer, ERNO

Mitarbeit am HSB-Blatt "Gedämpfte Schwingungen"

Sehr geehrte Herren,

der Industrieausschuß für Strukturberechnung (IASB) bemüht sich für sein luftfahrttechnisches "Handbuch für Strukturberechnung" (HSB) um die Aufnahme eines Handbuchblattes "Gedämpfte Schwingungen". Dieses soll einerseits dem Anwender eine schnelle Arbeit erlauben und andererseits auch den physikalischen Hintergrund nebst diversen Dämpfungsarten aufzeigen, damit eine schnelle Kontrolle der, bei Rechnungen getroffenen Dämpfungsannahmen, möglich wird.
Dieser Blattentwurf enthält eine Ausarbeitung, die die verschiedenen, an mich herangetragenen Wünsche berücksichtigt. Leider fehlen noch die 2 Seiten Beispiele (S. 33, 34), da die Zahlenrechnung im Rahmen einer noch fertigzustellenden Semesterarbeit an der TUM erst geliefert wird. Im übrigen konnten aus Zeitgründen nicht alle Korrekturen seitens der DFVLR aber auch der Verfasser bei diesem Entwurf mit eingearbeitet werden.

In Anbetracht der Wichtigkeit dieses Blattes würden der IASB und speziell ich sich freuen, von Ihnen oder Ihren Mitarbeitern Anmerkungen und Verbesserungsvorschläge zu bekommen. Dieses betrifft auch Kürzungen. Beim vorliegenden Entwurf, gegenüber dem letzten, wurden bezüglich des Gesamtinhaltes schon einige Kürzungen durchgeführt.

Herzlichen Dank für Ihre Mühe im voraus

Dr. R. Cuntze

Kopie: Hr. Dr. E. Schreiner, MBB-UF
Vorsitzender des IASB

Although I was able to contact pretty much all the specialists at the time, we were finally unable to publish a Design Sheet.

Stress determination and failure behavior of fiber composite structures (1983)

Verein Deutsc
VDI-Gesellsch

An Verteiler

Prof. Ahrendts (Uni Stuttgart)
Dr. Bansemir (MBB-UD)
Dr. Brunsch (MBB-UF)
Conen (Dornier), z.Hd. H. Dr. Flemmig
Dr. Cuntze (MAN)
Prof. Einfeld (BAM-Berlin)
Prof. Fitzer (UNI Karlsruhe)
Prof. Giencke (Uni Berlin)
Prof. Puck (Universität-Gesamthochschule Kassel)
Prof. Moser (Uni Innsbruck)
Dr. Schütz oder Gerharz (Lab. f. Betriebsfestigkeit, Darmst.)
Dr. Schulte (DFVLR-Köln), Mitinitiator
Dr. Stellbrink (DFVLR-Stuttgart)
Dr. Stenzensberger (Technochemie)
Dr. Wurtinger (MAN)
N.N. (DFVLR-Braunschweig), H. Dr. Bergmann
N.N. (ERNO), H. Ludwig
N.N. (VFW), H. Stolle

EINLADUNG

Hiermit bitte ich um Teilnahme an einer ersten Diskussionskreis-Runde mit dem Arbeitstitel

"Spannungsermittlung und Versagensverhalten von Faserverbundstrukturen"

Ort: MAN-München, Neue Technologie, Dachauer Str. 667, 8 München 50

Termin: Anfang Dezember 1983

Einladender: Dr.-Ing. habil. Ralf Cuntze, Tel. 089/1480-3279

ANMERKUNG ZUM DISKUSSIONSKREIS

Ziele: "Intern" berichten, wo der Schuh in Richtung obigen Themas drückt. Diskussion der zugehörigen Probleme. Aufzeigen von Verfahrenswegen. Absprache von Untersuchungen.

Anlaß für die Gründung: Probleme, die sich bei der Bearbeitung verschiedener Aufgaben herausgestellt haben, wie

1. bei der Erstellung der neuen VDI-Ri-2013 (Der Berechnungsingenieur weiß häufig nicht, was er tun soll. Z.B. Ermüdung von MSV)
2. bei verschiedenen Forschungsvorhaben zum Versagensverhalten
3. bei der Bestimmung von Reservefaktoren mehrschichtiger Faserkunststoff-Verbunde bzw. der Spannungsermittlung nach dem Erste-Schicht-Versagen

und etliche Gespräche, die die Notwendigkeit eines solchen Kreises dokumentieren.

Teilnehmerkreis: Statiker, Werkstoff-, Schwingfestigkeits- und Fertigungsleute aus Industrie, Instituten u. Universität

Teilnehmerkreisgröße: Weniger als 20 Personen gewünscht.

Angesprochene Teilnehmer: Siehe Verteiler.

Wunsch bisher schon angesprochener Teilnehmer: Es wird um aktive, konstruktiv Mitarbeit gebeten, da nur dann die zu erübrigende Zeit nutzbringend aufgebracht sein wird.

ANMERKUNG ZUM TREFFEN IN MÜNCHEN

Hauptpunkte der ersten Sitzung:
- Allgemeines zum Diskussionskreis
- Angemeldete Teilnehmerkreisbeiträge. Vortrag und Diskussion.
  Bisher geplant sind
  Kurzvortrag Cuntze: Rechnung zwischen Erste-Schicht-Versagen und Bruchberechnung des Reservefaktors.
  Kurzvortrag Schulte: Versagensverhalten von MSV.
- Schwerpunktvorträge von Fachleuten innerhalb oder außerhalb des Kreises
- Falls Zeit, weitere Beiträge des Teilnehmerkreises

Anmeldungen und Absagen bitte an den Einladenden bis 1. November 1983!
Bitte um Anmeldung von Themen von kurzen Beiträgen bis 1. November 1983!
Spezielle Einladung mit Programm folgen im November durch den Einladenden.

LEHRSTUHL UND INSTITUT B FÜR MECHANIK

TECHNISCHE UNIVERSITÄT MÜNCHEN
DIREKTOR: PROF. DR. K. MAGNUS

8000 MÜNCHEN 2 · ARCISSTRASSE 21 · POSTFACH 202420 · TEL. (089) 2105509

Einladung

Am Freitag, den 16. Juli 1976, hält

Herr Dr.-Ing. R. Cuntze,
Maschinenfabrik Augsburg - Nürnberg,
Neue Technologie, München

einen Vortrag über das Thema

Die Berechnung eines hochbeanspruchbaren
Bauteils aus Faserverbundwerkstoff, aufgezeigt
am Beispiel eines Satellitenmotorgehäuses.

Der Vortrag findet im Rahmen des Seminars über Fragen der Mechanik statt. Der Vortrag beginnt um 14 Uhr s.t. in der Bibliothek des Lehrstuhls, Zi. 108 (2. Obergeschoß, Luisenstraße 37 a).

Lecture: Introduction to Fracture Mechanics (Uni Bundeswehr, München/Neubiberg)

HOCHSCHULE DER BUNDESWEHR MÜNCHEN
Fachbereich Bauingenieur- und Vermessungswesen
Wissenschaftliche Einrichtung für Mechanik und Statik

EINFÜHRUNG IN DIE BRUCHMECHANIK
IN ANBINDUNG AN DEN
KONVENTIONELLEN FESTIGKEITSNACHWEIS

RALF CUNTZE

1981, 82, 83

EINLEITUNG

1. DEFINITIONEN ZUR BRUCHMECHANIK
2. KONVENTIONELLER UND BRUCHMECHANISCHER BAUTEILNACHWEIS
3. KONTINUUMSMECHANISCHE GRUNDLAGEN DER BRUCHMECHANIK
4. SPANNUNGS- UND VERSCHIEBUNGSFELD IM RIßSPITZENBEREICH UND SPANNUNGSINTENSITÄTEN
5. BRUCHMECHANIK-KONZEPTE UND RESTFESTIGKEIT
   5.1 KLASSISCHE BRUCHMECHANIK IDEAL SPRÖDER KÖRPER
   5.2 LINEAR ELASTISCHE BRUCHMECHANIK (LEBM)
   5.3 FLIEßBRUCHMECHANIK (FBM)
6. BRUCHMECHANISCHE KONZEPTE BEI DER RIßAUSBREITUNG
7. BESTIMMUNG BRUCHMECHANISCHER WERKSTOFFKENNWERTE
8. VORGEHENSWEISE BEI BRUCHMECHANISCHER BAUTEIL-AUSLEGUNG UND -NACHWEIS

One of the traditional meetings of the Bavarian-Tyrol people working in structural mechanics

TAGUNGSPROGRAMM:
DIENSTAG, 26. FEBRUAR 1985

9.00 BEGRÜSSUNG:
Kommerzialrat Ing. M. Huter, Präsident der Vereinigung Österreichischer Industrieller, Sektion Tirol
Prof. Dr. F. Ziegler, Vorsitzender des Nationalkomitees für Theoretische und Angewandte Mechanik

KONSTRUKTIVER INGENIEURBAU

Vorsitz: *Prof. Dr. G. I. Schuëller, Universität Innsbruck*
Dr. F. Nahler, VOEST Alpine, Linz

9.15 *Prof. Dr. W. B. Krätzig*, Ruhr-Universität Bochum
Nichtlineares seismisches Tragverhalten von Stahlbetonrahmen
9.45 *Prof. Dr. F. Rammerstorfer*, Technische Universität Wien
Abheben und Beulen von zylindrischen Behältern bei Windbelastung
10.15 *Prof. Dr. F. Fischer*, Montanuniversität Leoben
Erdbebenbeanspruchte Tankbauwerke — gelöste und ungelöste Probleme
10.45 KAFFEE
11.15 *Prof. Dr. F. Ziegler*, Technische Universität Wien
Ein praktisches Verfahren zur Wärmespannungsanalyse mit Erweiterung auf stofflich nichtlineare Probleme
11.45 *Prof. Dr. H. Grundmann*, Technische Universität München
Zum Schutz vor Erschütterungen und Körperschall
12.15 *Dr. H. Nußbaumer*, Siemens AG, Linz
Einige baudynamische Fragen des Kraftwerkbaus
12.45 MITTAGSPAUSE

ANLAGENBAU

Vorsitz: *Prof. Dr. F. Ziegler*, Technische Universität Wien
Dr. M. Prodan, Motor Columbus, Baden, Schweiz

14.00 *Prof. Dr. G. I. Schuëller*, Universität Innsbruck
Dynamische und bruchmechanische Probleme bei der Analyse der Rohrleitungen von Anlagen
14.30 *Dipl.-Ing. N. J. Krutzik*, KWU Offenbach
Dynamische Auslegung von Reaktorstrukturen bei äußeren und inneren Störfällen
15.00 *Dr. M. Prodan*, Motor Columbus, Baden, Schweiz
Anwendung bruchmechanischer und spannungsanalytischer Konzepte auf druckführende Komponenten
15.30 *Dr. F. Nahler*, VOEST Alpine, Linz
Probleme der Schalenstatik im Behälterbau
16.00 KAFFEE

NICHTLINEARE PROBLEME

Vorsitz: *Prof. Dr. H. Troger*, Technische Universität Wien
Dr. J. Affenzeller, AVL, Graz

16.30 *Prof. Dr. H. Mang*, Technische Universität Wien
Finite Elementeberechnungen im Stahlbetonbau
17.00 *Prof. Dr. W. Wedig*, Universität Karlsruhe
Parameterschätzung und Identifikation dynamischer Systeme und Prozesse
17.30 *Prof. Dr. K. Desoyer*, Technische Universität Wien
Industrieroboter — Einige spezielle Probleme
18.00 *Dr. W. Mitter*, VEW Kapfenberg
Plastische Anomalien zufolge Änderung der Mikrostruktur

MITTWOCH, 27. FEBRUAR 1985

PROBLEME DES MASCHINENBAUS UND INDUSTRIELLE VERFAHREN

Vorsitz: *Prof. Dr. H. Lippmann*, Technische Universität München
Dr. K. Schwaha, VOEST Alpine, Linz

9.00 *Dr. R. Cuntze*, MAN München
Strukturberechnungen heute — Auf was muß ich achten? Was brauche ich?
9.30 *Prof. Dr. W. Schiehlen*, Universität Stuttgart
Rechnergestützte technische Dynamik
10.00 *Prof. Dr. H. Troger*, Technische Universität Wien
Nichtlineare Stabilitätstheorie und ihre technischen Anwendungen
10.30 KAFFEE
11.00 *Dr. J. Affenzeller*, AVL, Graz
Dynamische Probleme im Kraftfahrzeugbau
11.30 *Prof. Dr. K. Wohlhardt*, Technische Universität Graz
Zur Dynamik des Turbula-Mischers
12.00 *Prof. Dr. G. Schweitzer*, ETH Zürich
Magnetlager — Ein Beispiel für die Verbindung Mechanik und Elektronik
12.30 MITTAGSPAUSE

Vorsitz: *Prof. Dr. F. Rammerstorfer*, Technische Universität Wien
Dipl.-Ing. N. J. Krutzik, KWU Offenbach

14.00 *Prof. Dr. W. Schneider*, Technische Universität Wien
Strömungs- und Erstarrungsvorgänge in Metallen und Kunststoffen
14.30 *Dr. K. Schwaha*, VOEST Alpine, Linz
Möglichkeiten und Grenzen der theoretischen Analyse des Stranggießprozesses
15.00 *Dr. F. Strohmer*, VOEST Alpine, Linz
Anwendung numerischer Methoden zur Strömungsberechnung bei hydraulischen Maschinen

15.30 **PODIUMSDISKUSSION**

Vorsitz: *Prof. Dr. D. F. Fischer*, Montanuniversität Leoben
Dr. G. Gsell, VOEST Alpine, Linz

— *Dr. R. Cuntze*, MAN, München
— *Dr. M. Prodan*, Motor Columbus, Baden, Schweiz
— *Prof. Dr. H. Lippmann*, Technische Universität München
— *Prof. Dr. G. Schweitzer*, ETH Zürich

16.45 Ende der Tagung

Prof. em. Dr.-Ing. Dr. h.c. G.W. Ehrenstein
LEHRSTUHL FÜR KUNSTSTOFFTECHNIK
UNIVERSITÄT ERLANGEN-NÜRNBERG
D-91058 Erlangen-Tennenlohe, Am Weichselgarten 9, Tel.: 09131/85-29700, Fax: 85-29709, email: ehrenstein@lkt.uni-erlangen.de

Herrn
Prof. Dr.-Ing. Ralf Cuntze
Matthäus-Günther-Str. 32
D-85229 Markt Indersdorf

Ihr Zeichen	Bearbeiter	Tel.: 09131/85-29703	Datum
	Prof. Ehrenstein		18.04.2006

Faserverbundkunststoffe

Lieber Ralf,

das Buch ist gerade erschienen. Ich möchte mich ganz herzlich für Deine Unterstützung bedanken, die mir doch sehr geholfen hat. Alleine ist man gar nicht mehr in der Lage, ein so vielfältiges Gebiet zu bearbeiten. Das gilt besonders für die Faserverbundkunststoffe.

Mit freundlichem Gruß
Dein
Gottfried

Gottfried's book

First Presentations of my Failure-Mode-Concept, 1998

European Conf. on Spacecraft Structures, Materials and Mechanical Testing
ESA-CNES-DGLR-DLR: Braunschweig, 4-6 Nov., 1998
Subject: Materials, fracture

The FAILURE MODE CONCEPT - a New Comprehensive 3D-strength Analysis Concept for Any Brittle and Ductile behaving Material -

Ralf Georg Cuntze

MAN Technologie AG, Liebigstraße 5a, 85757 Karlsfeld (c/o Munich)

Extended Abstract (deadline Feb. 12, 300 - 500 words)

Modelling the behaviour of materials remains one of the most difficult challenges in engineering. With the development of the FEA codes and of the capacity of the hardware multidimensional analyses have became state-of-the-art, they are becoming affordable, even for layered composite structures.
This paper will concentrate at an economical achievement of a *reliable* Proof (justification) of Design (fig. 1). A strict application of the author's Failure Mode Concept, which regards probabilistic efects and not only mechanistic ones (as the single failure surface methods do) supports this and provides the designer with a decision tool for the strength condition (table 1) to be taken for 3D-stressed, and ductile or brittle behaving isotropic materials. Kernel of the concept is the strain energy density, which points out a volume change, occurred at fracture, has to be related to the dilatational energy (I_1^2). If a shape change is observed the distortional energy (J_2) has to be used as term in the failure function (fig. 2, 3).

Motivation

* *Reliable* and *effective* predimensioning with basic strengths data, only (poor level of information)
- The same yield condition should be used from initiation of yielding until the associated fracture (precondition: the failure mechanism remeins)
- Different, however, similar behaving materials obey the *same function* as failure condition but have *different curve parameters*
- Avoidance of a 'Single Surface Failure' description.

Main Features of the 'Failure Mode Concept'

- Each mode represents one piece of the complete failure surface (surface of the failure body)
- Each failure mechanism is represented by one failure condition
- One failure mechanism is governed by one basic strength
- Curve-fitting of the course of test data is permitted in the pure failure mode's regime, only
- Rounding-off adjacent *mode failure curves* (partial surfaces) in its transition domain can be based a simple probabilistics based approach leading to complete failure curve (surface)
- Invariant formulation of failure condition (scalar potential) considering the material's symmetries
- Relating each term of the failure function to failure mechanisms in the solid observed such as volume change (I_1^2), shape change (J_2), friction (I_1), or fracture mechanics ($\sqrt{J_\sigma}$)
- Hypotheses applied: Beltrami, Mohr, Coulomb
- Transferability to transversally-isotropic composites (UD-material) and orthotropic fabric composites

* Plasticity theory, *Stress* analysis:
  - Hardening and softening of the mode-related stress-strain curve controls the *volume* of the partial failure body (e.g. for plexiglass *not* convex)
  - Additional parameters representing an affect, such as friction or fracture mechanics of defects in the material, control the *shape* of the partial failure body
* Proof of Design, *Strength* analysis:
  - For each *mode* one *reserve factor* $f_{Res}^{(mode)}$ is to be determined, displaying, where the design key has to be turned
  - The probabilistics-based 'rounding-off' approach delivers the *resultant reserve factor* $f_{Res}^{(res)} = f\,(f_{Res}^{(mode)})_{(k)}$.

MCM-98: Int. conf. on Mechanics of Composite Materials
Riga, April 20-23, 1998. Topic: Strength, Fatigue and Failure

MAN TECHNOLOGIE

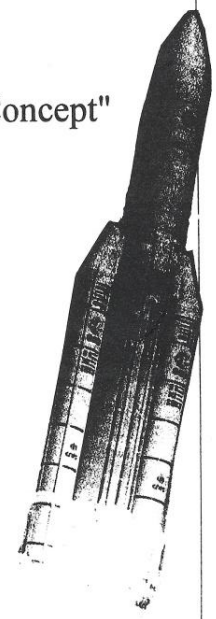
Effective Dimensioning of 3D-stressed UD-laminates on Basis of "Fracture-type Strength Criteria"

Abril 16

(= criteria based on Cuntze's "Failure Mode Concept")

Reasonings for the Investigation:

- Lack of Failure Criteria to *practicably* assess 3D-states of Stress
- Search for an Effective Strength Analysis tool for a reliable (pre-)Dimensioning on basis of Basic Strength Data, only
- To show the Applicability of the presenter's "Failure Mode Concept" to *brittle* UD-material.



Objectives of the talk: the presentation of

- FEM-Code appropriate Failure Criteria
- Computation of Reserve Factors for the 'Proof of Design'.

Contents of the talk (15 min. incl. discussion)

1. Constraints of Effective Dimensioning
2. General Features of the "Failure Mode Concept"
3. Failure Conditions (criteria) derived by above Concept
4. Determination of Curve Parameters
5. Verification of the Conditions by Curve-fitting of GFRP Test Data
6. Numerical Example: GFRP, 2D-state of stress. Determination of Reserve Factors
7. Application of the S/W-tool to a uniformly loaded Sandwich Plate after implementation into MARC/MENTAT [by G. Sukarie)]

Conclusions and Outlook

Presenter: R.G. Cuntze; MAN Technologie AG, Liebigstrasse 5a, D-85757 Karlsfeld. Tel. 0049-8131-89-1783; Fax -1939; E-mail: Ralf_Cuntze@mt.man.de
Co-author: G. Sukarie

Presented at the Tenth International Conference on the Mechanics of Composite Materials (Riga, April 1998)

X. INTERNATIONALES HERMAN F. MARK-SYMPOSIUM

7. und 8. Oktober 1991

Dienstag, 8.10.1991

9.00 Uhr **Begrüßung**
Prof. O. Hinterhofer
Österreichisches Forschungsinstitut
für Chemie und Technik, Wien, A

Eröffnung
Präs. Komm.-Rat Gen.Dir. Dr. E. Witt
Österreichisches Forschungsinstitut
für Chemie und Technik, Wien, A

THEORIE DER VERBUNDE (MAKRO- UND MIKROMECHANISCHE MODELLE)

Leitung: Prof. U. Einsfeld

9.15 Uhr Prof. K. Moser
Universität Innsbruck, Innsbruck, A
"Über Modellvorstellungen zu einer Theorie"

10.15 Uhr Prof. St. Tsai
Stanford University, Stanford, USA
"The Use of Personal Computers in the Design of Composite Materials"

11.00 Uhr K A F F E E P A U S E

11.15 Uhr Prof. R. Rikards
Riga Technical University, Riga, Lettland
"Finite Element Analysis of Vibration and Damping of Laminated Composites"

12.00 Uhr M I T T A G S B U F F E T

BAUTEILENTWURF UND DIMENSIONIERUNG

Leitung: Dr. W. Jessenig

13.30 Uhr Dr. W. Eichberger
Isovolta, Österreichische Isolierwerke AG
"Temperaturbeständige Epoxid-Glasfaser-Verbundwerkstoffe"

14.15 Uhr Prof. B. Knauer
Technische Universität Dresden, Dresden
"Konstruktion und Berechnung bei Hochleistungsverbunden"

15.00 Uhr Prof. G. Nonhoff
Fachhochschule Aachen, Aachen, D
"Berechnung und Überwachung von tragenden Strukturen aus GFK"

CHEMIE UND VERBUNDKOMPONENTEN

Leitung: Dr. O. Seycek

9.30 Uhr Prof. A. H. Cardon
Free University Brussels, Brüssel, B
"From Micro- to Macroproperties of Polymer Based Composite Systems by Integration of the Characteristics of the Interphase Regions"

10.15 Uhr Dr. H. Stenzenberger
Technochemie GmbH, Dossenheim, D
"Neue Entwicklungen bei Matrixduromeren"

11.00 Uhr K A F F E E P A U S E

11.15 Uhr Dr. J. Hugo
National Research Institute for Materials, Prag, CSFR
"GFR Polypropylene - Creep and Toughness as a Reflection of Time and Temperature Dependent Filler/Matrix Interaction"

12.00 Uhr Dr. R. Schmid
Ciba Geigy Ltd., Fribourg, CH
"Fundamentale Zusammenhänge zwischen chemischer Struktur, Eigenschaften des Matrix-Harzes und der Festigkeit von Composites"

12.45 Uhr M I T T A G S P A U S E

WERKSTOFFE UND VERFAHREN

Leitung: Dipl.-Ing. D. Franz

14.00 Uhr Prof. G. Ehrenstein
Lehrstuhl für Kunststofftechnik, Universität Erlangen,
"Mechanische Bewertung von Verbundkunststoffen bei dynamischer Belastung"

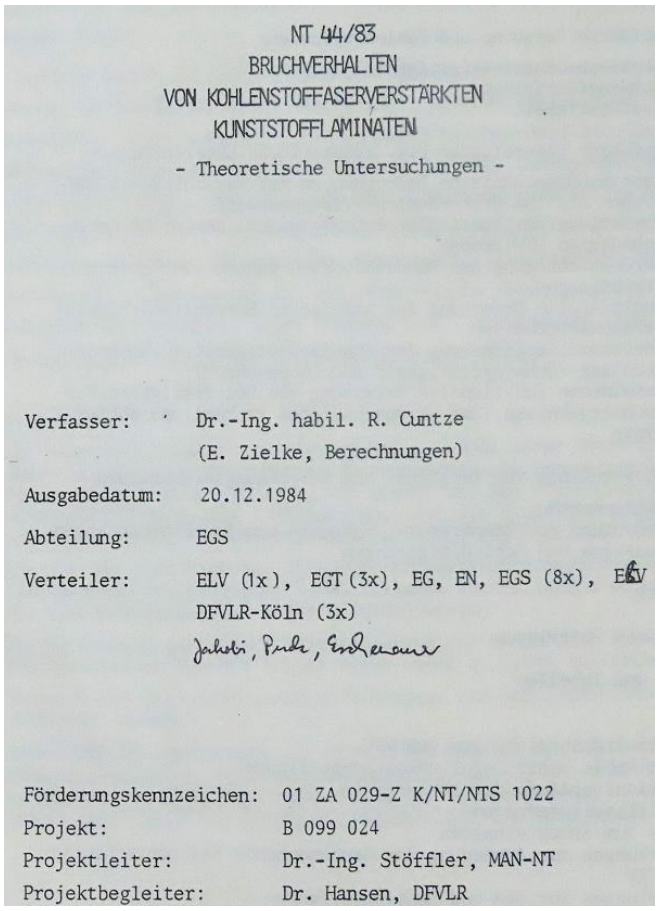
14.45 Uhr Prof. M.Rätzsch
Institut für Technologie der Polymere, Dresden, D
"Polymerverstärkung durch topologische Überstrukturen"

15.30 UHR K A F F E E P A U S E

15.45 Uhr Dr. R. Cuntze, Dr. R. Heibel
MAN Technologie AG, München, D
British Nuclear Fuels Ltd., Chester, GB
"Anhebung der "Einsatzgrenze Rißbildung" eines CFK-Rohrs durch Einbringung von Eigenspannungen"

16.30 **Podiumsdiskussion und Abschluß des Symposiums**
Moser / Knauer / Rätsch / Ehrenstein
Leitung: Prof. U. Einsfeld

Presenting a process in order to increase the performance of rotating tubes
by micro-crack reduction due to pre-straining



NT 44/83
BRUCHVERHALTEN
VON KOHLENSTOFFASERVERSTÄRKTEN
KUNSTSTOFFLAMINATEN

- Theoretische Untersuchungen -

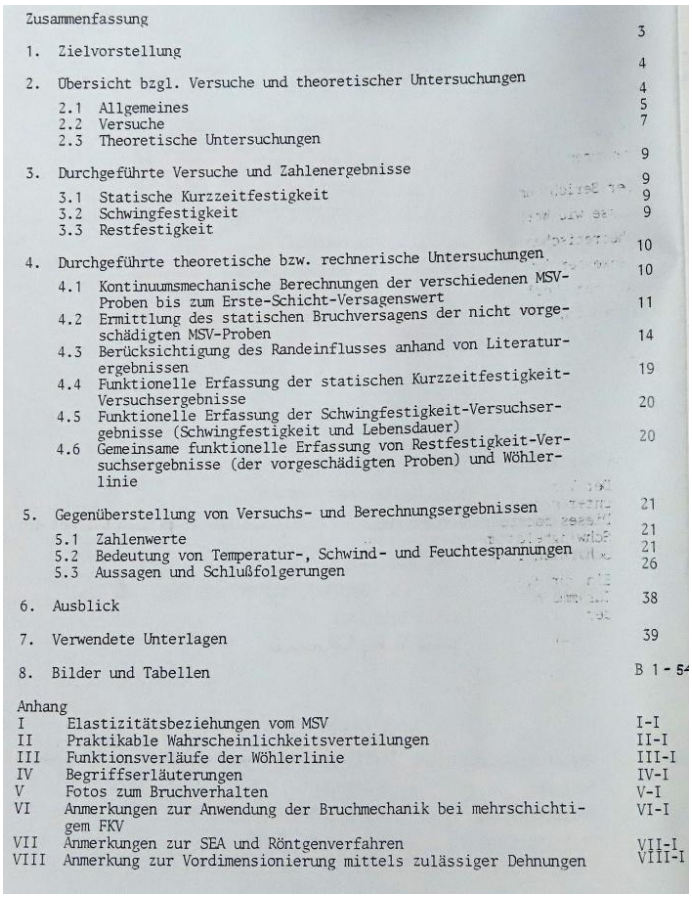
Verfasser: Dr.-Ing. habil. R. Cuntze
(E. Zielke, Berechnungen)

Ausgabedatum: 20.12.1984

Abteilung: EGS

Verteiler: ELV (1x), EGT (3x), EG, EN, EGS (8x), ELV
DFVLR-Köln (3x)
Jakobi, Puck, Eschenauer

Förderungskennzeichen: 01 ZA 029-Z K/NT/NTS 1022
Projekt: B 099 024
Projektleiter: Dr.-Ing. Stöffler, MAN-NT
Projektbegleiter: Dr. Hansen, DFVLR



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Funded Research at MAN-T:
Fracture behavior of carbon fiber reinforced plastic laminates (1984)

Sept. 11, 2001. Planes bomb the World Trade Center and the Pentagon:

Immediately after the news broke,
my co-worker Michael Windisch disseminating the news said

"*This is a shock to the world. This will change our lives. There is only one chance, and that is for the civilized world to stand together*."

And what happened after 20 Years since 2001??
(see Part E, please)

30.5 Weekly courses on "Development of Fiber Reinforced Plastic Components" (1986, 1989)

SHORT COURSE

DEVELOPMENT OF FIBRE REINFORCED PLASTIC COMPONENTS

Pretoria

16th to 18th April 1986

repeated 1989

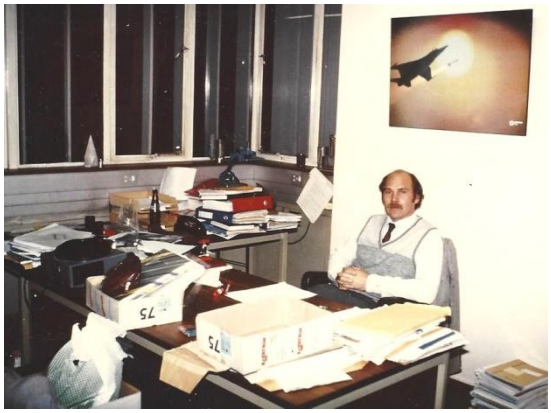
Presented by : Dr R G Cuntze

Course Organizer : P A Coetzer

During Tchernobyl-accident

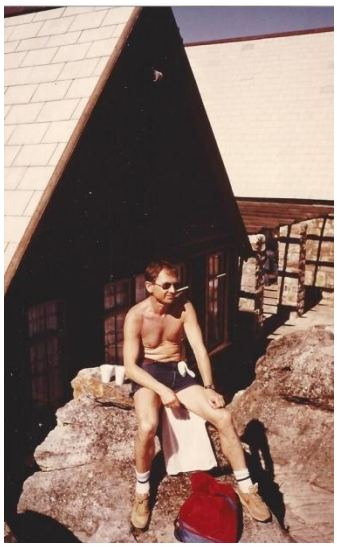


Organizer P. A. Coetzer





Family invitation:
Inviting person, Prof. Pier Haarhoff, right



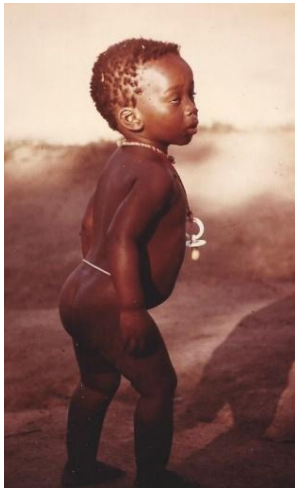
After tackling the Table Mountain alone. Warning: It is a climb through an area of very poisonous snakes



Protea: Blowing for me when getting up (unusual time)



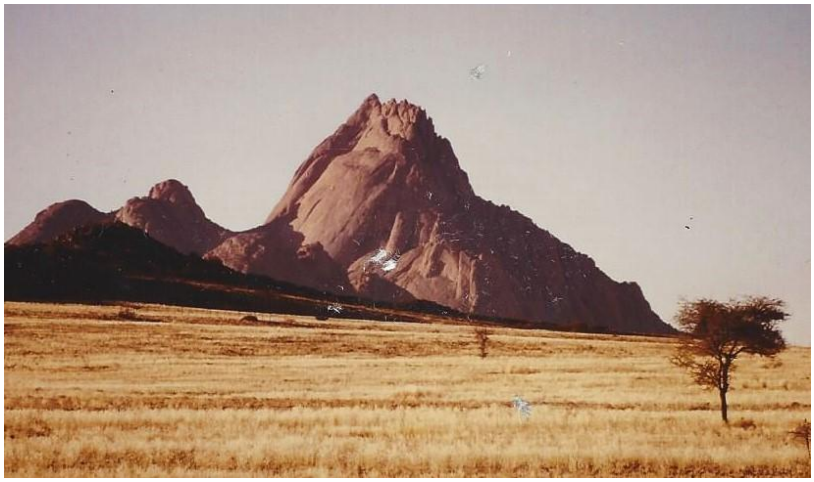
A witch doctor





Victoria falls 1986: Being lucky to be the only non-local to attend a performance





Famous Spitzkoppe



One zebra of a herd of well over 1000 crossing







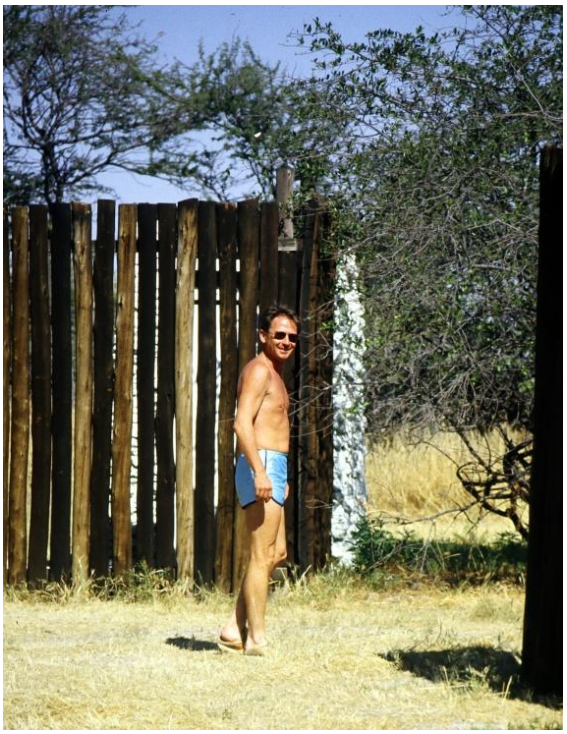
Etosha Pan 1986. Thirsty
Alone with my two friends in the barely fenced camp.



Discussion

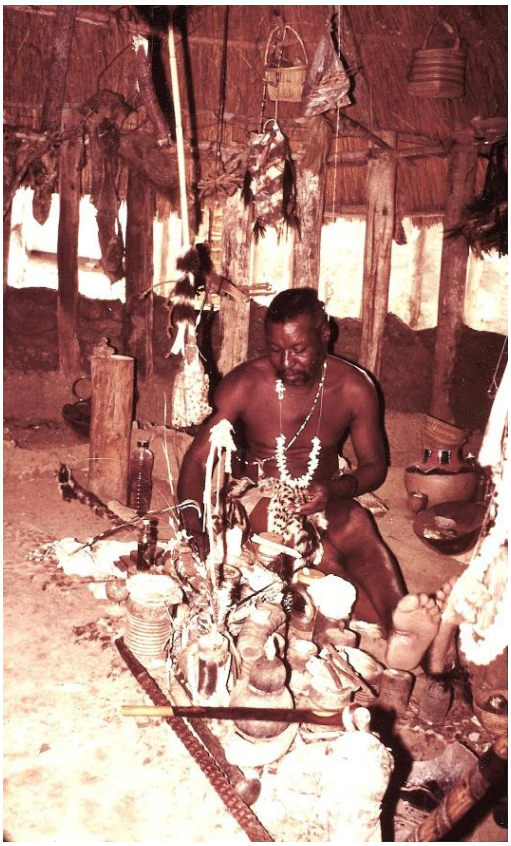


Nothing to be seen on the pan



In the case of an urgent need:

In the wilderness you are forced to go behind the fence not staying in front of it



With the witch doctor



Windhoek



Abundance of game



Carneval celebrations



Famous Christus Church

Ostrich egg story:
Once, I took the time to explore the wilderness area, slowly, step by step, treading firmly so that a slow-moving puff adder could escape. I found a fresh ostrich egg and took it with me. Against the rules, I gave the egg to a female employee, who, overjoyed, immediately rushed to her kraal with this huge egg, balancing more than 20 chicken eggs.

During my first visit to South Africa and Namibia in 1986, I unfortunately made some observations that were apparently not allowed to appear in German daily newspapers. Ultimately, however "*Only honesty helps in solving problems".*
My friends, all of whom were against apartheid (*the systematic segregation of the population in all aspects of life based on racial characteristics),* told me the following:
*Prof. Haarhoff: They had arranged an operation for her excellent housekeeper at a hospital. However, the woman was turned away because it wasn't a hospital open to her tribe.

*People's courts administer justice, having already sentenced at least 100 black "traitors" to "death by hanging" as collaborators: The victims are burned alive in a gasoline-soaked tire. This even happened to a woman who fought against apartheid. The partial state of emergency was lifted on March 7, 1986,

only to be replaced—after my departure—on June 12 by a second, far stricter state of emergency, which then applied throughout the country. The tire burnings stopped when they were no longer reported in the media.

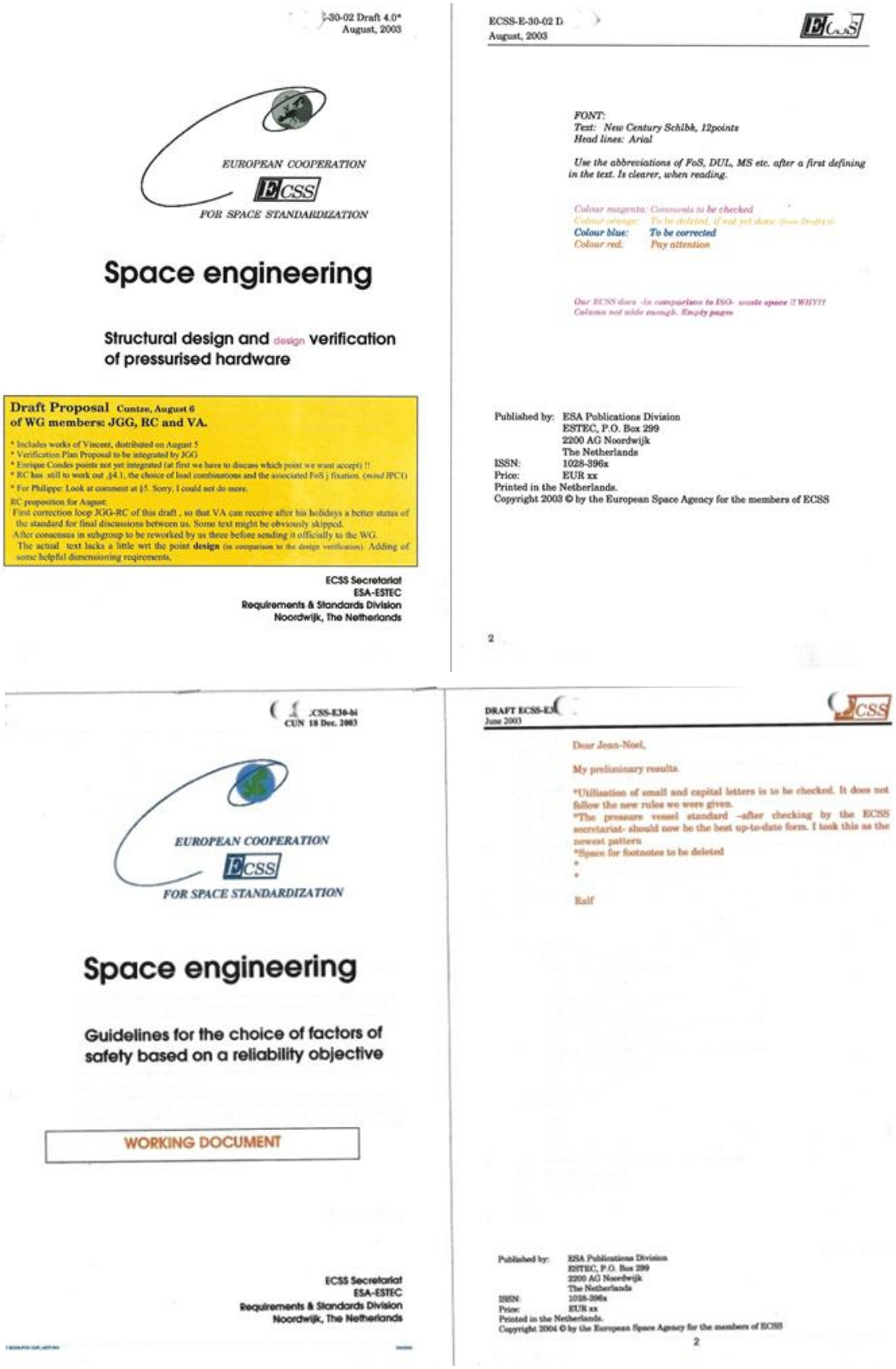
I observed:
*The Süddeutsche Zeitung reported that a ‘famous’ terrible police gang wasn't being reported, however this wasn't the case in South African media.
*In Cape Town, while looking for a hotel, I noticed a cheerful mixed dance group performing for the enjoyment of the spectators.
*I was lucky enough to be one of the first to use a newly established bus route from Cape Town via Tsitsikamma National Park to Port Elizabeth. However, I still encountered the usual black-and-white-coded transport issues when changing buses. In the park hotel area I was fully alone one night. My visit of the shore (10 kms) was beautiful, especially my vivid memory of a park ranger, sitting smoking in front of his hut, peacefully waving back to me on my lonely journey.
* I have observed: In Windhoek (Namibia) the largest car parking in front of the Erfurter Hof belonged to a Black chief. He received much more courteous service than I did as a tourist. The waitresses were running around. Unfortunately, I experienced in a hotel in the outback how an Ovambo treated the other black employees as inferior. Was this not another sort of Apartheid??
* A big surprise was a café in Okahandja: a woman from Munich ran the café, and the waitress was wearing a dirndl. I was told there that her foreman, a young, strong man, had been cursed and, without further complaint, had gone to the kraal to die.
* By the way, most people in
* What I learned, surprisingly, was that in Namibia, about ‘Boer South Africa’ it was spoken more negatively than about the colonial power Germany, which had to hand over South West (Namibia) after World War I to South Africa
* Very good: The SWAPO did it much better in Namibia than the ANC in South Africa.

In April 1994, South Africa held its first general and free elections, marking the end of a decades-long struggle against the apartheid regime. The African National Congress (ANC), which has governed since 1994, maintains its dominant position in South Africa to this day. Many African states supported the ANC's struggle under Nelson Mandela. With the unprecedented liberation from the yoke of apartheid, hope arose in South Africa and throughout Africa for a profound transformation of the entire political and economic system and for a democratic South Africa to lead the way on the continent. Some 25 years later, the image of the infallible liberation movement, the ANC, and the successful transformation of the "Rainbow Nation" has long since been tarnished. The majority of the Black population still lives in poverty. Numerous scandals involving the embezzlement of state funds and the distribution of land to the cronies of the ruling party have surfaced. It is a sad state of affairs.

1986 was a year of tragedy: the explosion of the US Space Shuttle Challenger killed all seven crew members, and the Chernobyl nuclear reactor explosion killed two people instantly and many thousands more over time. One of the biggest events of 1986 was the Chernobyl nuclear disaster in Europe. On April 26, a reactor exploded, releasing radioactive material across Europe and rendering the nearby city of Pripyat uninhabitable. To this day, it is considered the worst nuclear accident in human history.

30.6 ESA/ESTEC Contributions: Since 1970 for the ESA/ESTEC Space Engineering (up)

‘Material Handbook’, ‘Factors of Safety’, Structural’ and ‘Buckling Handbook’ (convener)



-30-02 Draft 4.0*
August, 2003

EUROPEAN COOPERATION
ECSS
FOR SPACE STANDARDIZATION

Space engineering

Structural design and design verification of pressurised hardware

Draft Proposal Cuntze, August 6
of WG members: JGG, RC and VA.

* Includes works of Vincent, distributed on August 5
* Verification Plan Proposal to be integrated by JGG
* Enrique Condes points not yet integrated (at first we have to discuss which point we want accept) !!
* RC has still to work out §4.1, the choice of load combinations and the associated FoS j fixation. (mind IPC1)
* For Philippe: Look at comment at §5. Sorry, I could not do more.

RC proposition for August:
First correction loop JGG-RC of this draft , so that VA can receive after his holidays a better status of the standard for final discussions between us. Some text might be obviously skipped.
After consensus in subgroup to be reworked by us three before sending it officially to the WG.
The actual text lacks a little wrt the point **design** (in comparison to the design verification). Adding of some helpful dimensioning reqirements.

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands

ECSS-E-30-02 D
August, 2003

FONT:
Text: New Century Schlbk, 12points
Head lines: Arial

Use the abbreviations of FoS, DUL, MS etc. after a first defining in the text. Is clearer, when reading.

Colour magenta: Comments to be checked
Colour orange: To be deleted, if not yet done (from Draft 4.0)
Colour blue: To be corrected
Colour red: Pay attention

Our ECSS docs -in comparison to ISO- waste space !! WHY?!!
Column not wide enough. Empty pages

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2

-CSS-E30-bi
CUN 18 Dec. 2003

EUROPEAN COOPERATION
ECSS
FOR SPACE STANDARDIZATION

Space engineering

Guidelines for the choice of factors of safety based on a reliability objective

WORKING DOCUMENT

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands

DRAFT ECSS-E3
June 2003

Dear Jean-Noel,

My preliminary results.

*Utilisation of small and capital letters is to be checked. It does not follow the new rules we were given.
*The pressure vessel standard –after checking by the ECSS secretariat- should now be the best up-to-date form. I took this as the newest pattern
*Space for footnotes to be deleted
*
*

Ralf

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2

Organizer of below Buckling Working Group (WG), convener and contributor”

ECSS-E-HB-32-24A
24 March 2010

EUROPEAN COOPERATION
ECSS
FOR SPACE STANDARDIZATION

Space engineering

Buckling of structures

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands

This Handbook has been authored and agreed upon by:

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C. Bisagni, Politecnico di Milano
A. Calvi, ESA-ESTEC (Convenor)
E. Carrera, Politecnico di Torino
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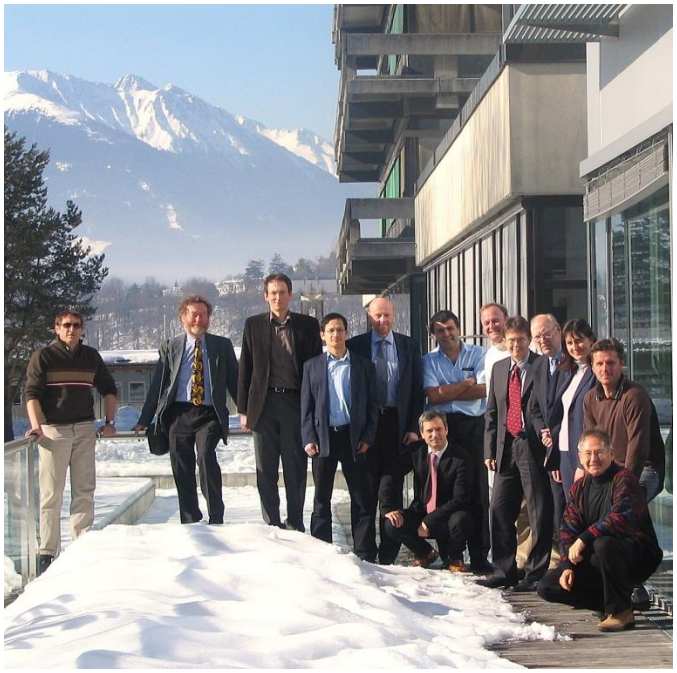
T. Weller, Technion, Haifa
J. Wijker, Dutch Space

The valuable contributions of the following persons are acknowledged:
C. Huehne, DLR Braunschweig; D. Petry, Astrium EADS;
H. G. Reimerdes, RWTH Aachen; K. Rohwer, DLR Braunschweig;
R. Zimmermann, DLR Braunschweig.

The ECSS-E-HB-32-24 has been prepared by merging the volunteer contributions of the authors. Comments concerning the technical content of this handbook will be welcomed by the European Cooperation for Space Standardization, Noordwijk, the Netherlands, www.ecss.nl.



Herbert working.
Meeting of the WG at Innsbruck (Herbert's invitation)



Minutes and Status report

	BUREAU OF LIGHTWEIGHT STRUCTURES MINUTES OF MEETING	Date : Feb. 02/03 2006

Location **: INTALES at Technical University Innsbruck (A)**

Object : **ECSS-E-30-24 Buckling Handbook (BH): 4th** *meeting*

Meeting Place and Time:

- First day: Start at 9.15 , End at 18.00
- Second day: Start at 9.00 , End at 15.30.

List of Participants:

Name	Acronym	Company	Remark
Full members and supporting members			
Johan Arbocz	JA	TU Delft	-
Paul Arendsen	PA	NLR, Holland	-
Gerd Bertrand	GB	AIRBUS-Germany, Hbg.	no response.
Vincent Billey	VB	EADS-ST LM	02/03-
Chiara Bisagni	CB	Politec Milano	02/03
Adriano Calvi	AC	ESTEC	02/03
Erasmo Carrera	EC	Politec Torino	-
Ralf Cuntze	RC (convenor)	Bureau Cuntze	02/03
Richard Degenhardt	RD	DLR, BS	02/03
Bodo Geier	BG	DLR, BS	-
Nunziatino Gualtieri	NG	ALENIA Spazio	02/03
Herbert Haller	HH (secretary)	INTALES, Innsbruck	02/03
Eelco L. Jansen	EJ	TU Delft	02/03
Marie Jacquesson	MJ	CNES DLA (EVRY)	02/03
Ali Limam	AL	INSA Lyon	-
H. R. Meyer-Piening	HRMP	ETH Zuerich	02/03
Huba Oery	HO	RWTH Aachen	-
Dirk Petry	DP	ASTRIUM EADS	02/03
Hans G. Reimerdes	HGR	RWTH Aachen	-
Michael Rotter	MR	Univ. Edinburgh	02/03
Andreas Rittweger	AR	EADS Bremen	never response
Raimund Rolfes	RR	Uni Hannover	02/03
Günther Schullerer	GS	MT-Aerospace Augsburg	02/03
Guy Turzo	GT	CNES Toulouse	02/03
Jaap Wijker	JW	Dutch Space	-
Rolf Zimmermann	RZ	DLR, BS	retired
New and visiting members			
			-

Diffusion : participants + non-attending WG members + T. Henriksen + Athena Tilson.

Thanks to Herbert for providing us with such a nice weather.

7) Checking/Reviewing of a Working Document = DRR folder (proposition from NG)
Presentation by RC
- The DRR folder within a chapter folder is the area for submission of review results.
- In order to not forget any correction proposal, comment etc. the official Document Review Record (DRR) form sheet for ECSS Standards shall be taken, see Website: DRR for E-30-24, template and for one example(of RC), see *DRRs folder for corresponding ECSS Standards.*

Procedure if you wish to write a DRR, on chapter 2.3 e.g.,
- Download the template from the *Template Folder*
- Update the completed file named, e.g. ***DRR2_3 FlatPanels (EJ11oct2005)_RC date*** , as seen above, where RC here means the initials of the author of the DRR
- Upload the document to the folder Working Documents
§2.3 Flat Panels
Chapter DRRs.

8) + How to get on BH **Website?** Repetition for PA.
GOOGLE→ECSS→Log in→My Team

9) Presentation of Company INTALES by HH

10) Presentation about Shell Structures (Analysis, Failure modes, ECCS Handbook) by MR.
Prof. Rotter was invited to present in Innsbruck his institute + past ECCS activities + how ECCS may contribute to ECSS BH.
There are valuable parts/ideas/figures/tables. However, the (legal) possibility of implementation of which will have to be considered by us when taking over something.

11) Example for BEAM buckling presented by HRMP
Variable cross section values – Finite Diff. on Excel Sheet
Example transferable to a solid propellant launcher on launch pad

12) Commitment of RC and RD as compilers for §1.7

13) Full TOC urgently needed.
Therefore, RC needs the not yet structured SUB-TOCs of the respective compilers in order to complete the Handbook TOC

14) Paul Andresen may take over §2.4 Flat Panels (information from EJ)

15) Drafting of §1.8
To A92: RR encourages JW to begin drafting.
Also ask the contributors to give their statements by 1st march 2006.

16) Proposal for § 1.7 „Manufacturing Aspects" (see Website §1.7). Presentation by RC
The proposal, necessary for the upcoming discussions of RC + RG with manufacturing engineers, has been discussed, simplified and uploaded:
New: §1.7 Buckling implications of manufacturing and assembling processes
1.7.1 Sensitive parameters for buckling
1,7.2 Metallic materials

Again, my thanks for the fruitful and effective discussions, for taking over work for the preparation of the BH draft, and to Michael for helping to substantiate 'our' *ECSS* handbook by inputting 'things' from 'his' civil engineering *ECCS* standard/handbook (of mixed type)!

Further Meetings planned:

5th Meeting: End of April, Bremen, EADS (Dr. Rittweger) + AIRBUS (Mr. H. Wellen)
Discussion of *Large Structure Examples,* permitted for being published in our Buckl. Hdbk.
To be fixed by RC with Rittweger and Wellen! Desired: April, 18-20
6th Meeting: planned: June 26-27, Edinburgh (Prof. M. Rotter)
7th Meeting planned: Sept. 21-22, Milano (Prof. C. Bisagni)
8th Meeting planned: first advent week (In 2006 is the latest possible begin!), Dec. 4-8 !, Munich, DP
9th Meeting ….

DISCUSSION POINTS AND RESULTS

1) Welcome, Introduction of new WG Member Prof. Michael Rotter

2) Discussion of MoM, 3rd Meeting, Hannover No comment.

3) Discussion on next meetings Results see above.

4) Discussion of Action Items List (AIL), 3rd Meeting, Hannover Status of Actions
- A19: Linked to A46 are linked concerning strategy. A common agreement is suggested. Impact from later presentation by Michael Rotter to be included.
- A49: The tracking of doc: Marking for example by letter "X" and date for the version (whole doc). Result of discussion:
Name of doc.: (Sub)Chapter Title.(acronym date)
Example ***§1_3 Analysis Methods (NG11oct2005).***
- A62: CB tries further to get agreement from system engineer an input for §3.2
- A64: CB did some analyses and the action is closed for CB. HH tries to do some analyses till next meeting
- A70 RC provides MR and PA with info till 15.2.06
- A77 will be taken over by EJ. RC will inform TW until the next meeting

5) Discussion of contents of Website Folders of the Buckling Handbook.
All folders of the BH Website have been looked at and actual uploaded contents discussed.
- Direct actions are directed to the AIL
- The Hdbk draft will be uploaded as .pdf file.

6) References
- The reference list will be attached to each chapter
- The references will be handled by full authors name for preparation
- The citation will be changed to numbers after checking procedure of WG, tbc see A91, for final draft to be delivered before Public Review
- Equations, Tables, Figures: follow the referencing system of the other ECSS-handbooks
- Paragraphs: As it is.

1.7.3 Composite materials.

17) GT shall provide a presentation on the development of a launcher for Bremen

18) Discussion: Should software be annexed to the handbook for design reasons, only?
* Software: - not certified 'little' programs, no maintenance (author may be addressed)
- Teaching software and checking tools for the more sophisticated FE codes
- Not foreseen for production aspects
* Description of Software: Scope, Theory, Limitations
* Simple Program Structure.
Final Conclusion of Discussion: Decision will be taken at 5th meeting in Bremen. Majority voted for an annex of little programs on EXCEL sheets etc. ..

19) Lack of support by ECSS Secretariat (reported by AC)
Due to this lack the WG members are asked to produce the Figures and Tables as far as possible on their own.
Discussion on a support, again, when the preliminary Hdbk draft will be finalized for Public Review.

20) ***Which are the 'design limit states' to be applied in the non-linear buckling analysis?***
Load reached at stop of a numerical computation; deformation or strain as a usability limit state; initiation of global yielding or of local yielding; initiation of inter-fibre fracture in a lamina of the laminate; delamination; or ??
To be discussed at Bremen.

21) TOC Structure of *Large Examples*
A structure for the body text of the Large Examples was presented by RC (see Website §3.1) and discussed. GT recommends to give Test-Analysis Correlation an own chapter.
This structure may be improved by WG members in order to find a more general structure. Of course, the structure can be tailored by each chapter compiler, if necessary.

22) Virtual Testing shall be mentioned in the handbook

23) **TOC Structure of *Structural Element examples***
A structure for the body text of these examples was presented by RC (see Website § 2.5, shared area) and discussed. The application was for a CFRP cylinder at DLR Braunschweig.
This structure may be improved in order to probably find a more generally applicable structure. Of course, the structure can be tailored by each chapter compiler if necessary.

24) Subgroup fixations
- Ali Limam, Paul Arendsen and Michael Rotter will take over work.
- Rolf Zimmermann still contributes to the sub chapters he addressed before his retirement.

Best regards, *Ralf & Herbert. 07/02/06*

ECSS-E-30 24 BUCKLING-HANDBOOK (BH) — **ACTION ITEMS LIST**

Status: November, 08/09, 2006 at MT Aerospace, Augsburg — for next meeting

Action		Description	Actionee	Deadline	Status
1.	**27/04/05 Noordw.**	use of verbs	EG	30/05/05	closed
2.	27/04/05	sketch on validation/verification to Work Docs	RR	15/05/05	closed
3.	28/04/05	putting MoM attachments on website	AT	asap	ongoing
4.	28/04/05	WG BH member list	RC	15/05/05	closed
5.	28/04/05	review of NWI (basis for Work Plan discussion)	all	20/06/05	closed
6.	28/04/05	plausibility check list for analyses	RC	08/07/05	closed
7.	28/04/05	input glossary/definitions from SRUCTURAL	NG	15/07/05	closed
8.	28/04/05	clarification of *Consideration of operational aspects*	AC, MK	20/06/05	closed
9.	28/04/05	clarification of the meaning "Documentation of lessons learned during design, manufacturing, verification and operations	NG, MK	20/06/05	closed
10	28/04/05	copy right problem (we use source data)	EG, AC	20/06/05	response text required
11	28/04/05	recommend. to fill in the date on 1st page of Hdbk ?	RC	20/06/05	closed
12	28/04/05	asking INSA colleagues for their vacant time	RC	20/06/05	closed
13	28/05/05	provision of ASTM website on "council on codes & standards, committee 60"	AC	20/06/05	closed, on website
14	28/04/05	fill in the Report Form for EP	RC	July 05	closed
15	28/04/05	volunteers for contributions, part 1 through 3	all	20/06/05	closed
16	28/04/05	collection: contributions to sub-chapters	all	20/06/05	closed
17	28/04/05	downloading possibility from our website: for members, only	Athena	asap	closed
18	28/04/05	template for handbook from secretariat	EG, AC	20/06/05	**open**
19	28/04/05	flow chart How to run buckling	HH	20/06/05	closed
20	28/04/05	search for further volunteers for checking (especially those which cannot attend the meetings)	all	20/07/05	ongoing
21	**23/06/05 Noordw.**	asking HRMP for a Part 3structure example or a Part 2 structural element example	RC	01/09/05	closed
22	23/06/05	contributions from EADS-ST France (Aerospatiale) required for §3.1	VB	15/09/05	closed
23	23/06/05	issue of an address list incl. acronyms (add to next MOM)	RC	15/09/05	closed
24	23/06/05	does ESTEC perform Structure buckling tests?	AC	15/09/05	closed
25	23/06/05	interviewing Dr. Vollrath, VDI, for taking VDI2014 Guideline as a Reference Doc and its§6.2, Stability, as a Work Doc	RC	01/09/05	closed
26	23/06/05	example Part 3: from Columbus receivable? NO!	NG	15/09/05	closed
27	23/06/05	giving V. Billey and B. Geier full access to website	Athena	asap	closed
28	23/06/05	processing and distributing of a Work Plan draft	RC	01/08/05	closed
29	23/06/05	adding NASA docs to website AC provides link	EJ, AC	21/07/05	closed
30	23/06/05	interviewing Dr. Clormann, MAN Technologie, for examples Part 3 (Lox-Tank, Front Skirt, Booster,..);	RC	15/09/05	Closed and linked to A32
31	24/06/05	interviewing Hr. Wellen, (fuselage shells, composite bulkhead,..), §3.3	RC, GV	15/09/05 **11/2006**	**pending**
32	24/06/05	interviewing Dr. Rittweger, EADS-ST Bremen for examples, Part 3 (link to A 30 !)	RC	15/09/05	closed (AR agreed)
33	24/06/05	interviewing Prof. Schwarmann, Airbus, for examples at Bremen and Hamburg	RC	15/09/05	closed
34	24/06/05	attempting to put GARTEUR results on website: BG checks potential contributions (Nov. Hannover)	BG, RD	15/02/06	closed
35	24/06/05	upload Koiters article on curvature parameter	EJ	01/08/05	closed
36	24/06/05	PDF draft of BH to website before each meeting	RC	10/09/05	ongoing
37	24/06/05	presentation on COCOMAT (design verification, glossary, philosophy,..)	AK	2nd meet.	closed
38	24/06/05	wrt. definitions adding BG article on Structural Behaviour to Work Doc	BG	01/08/05	closed
39	24/06/05	setting up and distributing a list of the Work Docs (although still on website)	HH		closed
40	24/06/05	setting up and distributing a list of the Reference Docs (although on website)	HH		closed
41	24/06/05	finding a specialist incl. compiler for § Manufacturing Aspects (see SMH group)	GT, RC, RD, all	asap **09/2006**	**pending**
42	24/06/05	informing RMP wrt Zürich on meeting requirements	RC	01/08/05	closed
43	24/06/05	implementing *DRD Buckling* as Work Doc	NG	01/08/05	closed
44	24/06/05	wrt "Engin. language": Can we get a PDF of Bush-Almroth?? If yes, add to Reference Docs	EJ	01/08/05	closed
45	24/06/05	wrt accurate property input for all materials (ductile aerospace metals, usually brittle composites, ductile GLARE hybrid composite, etc.): generate a table for the elasticity properties for the strength properties for the hygrothermal properties	 RC RC RC	 01/09/5	 closed
46	**15/09/05 Zuerich**	handbook flow chart at beginning is required	HH	asap	closed
47	15/09/05	checking whether the ECSS ordering terms for the Handbook (not a standard!!): *paragraph, section, chapter* are correctly used ???	EG	asap	closed
48	15/09/05	DRD on Buckling is added to website	RC	01/08/05	closed
49	15/09/05	Tracking of *Buckling HB* draft changes	ECSS + WG, AC	asap 15/01/06	**Still under discussion**
50	15/09/05	Preparation of general list of symbols (collecting from members) as basis for discussions, this list will be enhanced if necessary	RC	1/11/05	closed
51	15/09/05	Input for action 50, Send to RC (nothing received)	all	23/09/05	closed
52	15/09/05	Discussion between NG + RR about §1.1 to finalize this point	NG, RR	30/09/05	closed
53	15/09/05	Ask HGR and HO to make a TOC §1.4 to be discussed at 3rd meeting	RC	15/10/05	closed
54	15/09/05	§1.5.1 (new), §1.5.3 proposal for draft	RC	4/11/05	closed
55	15/09/05	§1.5.2 proposal for draft	CB	4/11/05	closed
56	15/09/05	§1.6.3 proposal for draft (see A100)	JB, RD	15/10/05	closed
57	15/09/05	Ask JB for contribution to §1.7 (JB cancelled membership)	GT	15/10/05	closed
58	15/09/05	Comments about §1.9 to CB	MJ, GT	15/10/05	closed
59	15/09/05	Information from RC to compilers: Tanchum Weller for §2.3 , Bodo Geier for §2.4, Jerome Buffe for several chapters in PARTs 1 to 3.	RC	23/09/05	closed



Members of 'my' Stability handbook WG



Pressurized Hardware



Structural meeting 2004

Adriano Calvi, Nuntiatino Gualtieri, Michel Klein



FoS 2004







Philippe: Oh my God!

Sadly, I had to cancel the last part of the contract because the contracting people had imposed an unfulfillable demand on me: I was supposed to provide company data from Airbus.

Ralf Cuntze

Von: Michel.Klein@esa.int
Gesendet: Donnerstag, 28. Juni 2007 17:12
An: Ralf_Cuntze@t-online.de
Cc: Torben.Henriksen@esa.int; Adriano.Calvi@esa.int
Betreff: ECSS Buckling handbook

Ralf,

Via Adriano I heard that you had some concern regarding what is going on with the Structural Buckling Handbook. As you know, thanks to you excellent guidance, the handbook has progressed quite a lot, but of course is not completed yet. Although ECSS authorities maintain their interest for the SBH, they have defined priorities for 2007 in terms of reshaping a set of standard in a more condensed way (i.e. spliting the former documents in shortened standards + guideline documents). Our SBH fell short of funding for 2007 as a result of this reassigment of priorities. Not to stop the process, as you know, Adriano took over the convenorship.

Clearly we we would like to keep you in the loop, and the fully agree that this cannot be done without some financial support being a small company without a buffer like the big ones. Unfortunately, as you could experience, this is not well understood by the Agency system, and as a result of the big trouble we had both last time, I am even not sure you are prepared to make another attempt with the Agency. In case you are let me know, and it will always be a pleasure to go ahead with you after all these (many many... before ECSS...) years, perhaps in different conditions (advisor / consultant, not convenor... less burden on
you) however, it might not be in 2007.

Wish you meanwhile all the best, hoping to meet you one of these days,

Michel Klein

Head of Thermal & Structures Division
ESA-Estec
2200 AG Noordwijk ZH
The Netherlands
Tel. +31-(0)71-565-3994
Fax. +31-(0)71-565-6142



Michel Klein (left), listened intensively



Torben Henriksen (left, blue shirt)

Förderung: bmb+f

SimMAT SimPRO SimBAU

Projektträger des BMBF und BMWi

Werkstoffe in der Simulation

Produktinnovationen durch gezielten Einsatz der Werkstoffsimulation

Berichte von den MaTech - Kompetenzzentren

4. November 2004

Projektträger Jülich
Geschäftsbereich PTJ-NMT
Bearbeiter: Dr. C. Wadewitz, 5.12.2003

Termin, Ort	27. November 2003, Max-Planck-Institut für Polymerforschung, Mainz
Thema	4. Sitzung des Lenkungsausschusses für die BMBF Kompetenzzentren „Materialsimulation“ (FZK: 03N6015), „Prozesssimulation“ (FZK: 03N6016), „Bauteilsimulation“ (FZK: 03N6017)
Teilnehmer	**Mitglieder des Lenkungsgremiums:** Prof. Cuntze (MAN Technologie AG), Prof. Arzt (MPI für Metallforschung), Prof. Suter (ETH Zürich), Prof. Haldenwanger (AUDI AG) **Vertreter der Zentren:** Prof. Kremer (MPI f. Polymerforschung), Dr. Besold (MPI f. Polymerforschung), Prof. Michaeli (IKV Aachen), Herr Franz (IKV Aachen), Dr. Schmitt (Fh IWM Freiburg)



The ILK has hosted the Dresden Lightweight Construction Symposium annually since 1997. Photo 2003 with TU-Kanzler Mehlhorn and Ministerpräsident Biedenkopf von Sachsen)

In the following project my friend Werner Hufenbach , ILK, was – besides Puck and Michaeli – one partner. *(It was his first project at the ILK Dresden, 1994)*

30.7 "Project leader of the funded Research on UD Fracture Criteria", investigating **Puck 's Strength Criteria**

Kopie zur Info.: GHK, IKV, LLK, R/P, Prof Puck 30.11.93

FORSCHUNGSZENTRUM JÜLICH GmbH KFA

FORSCHUNGSZENTRUM JÜLICH GmbH · PLR · D-52425 Jülich
Fracht-/Paketanschrift: Leo-Brandt-Straße, D-52428 Jülich

Projektträger
Material- und Rohstofforschung
des Bundesministeriums für
Forschung und Technologie
PLR

MAN Technologie AG
Hauptabteilung Strukturanalyse
Herrn Dr. R. Cuntze
Postfach 50 04 26

80997 München

Ihre Nachricht vom / Zeichen	Bei Beantwortung bitte angeben	Telefon-Durchwahl (02461) 61	Telefax (02461) 61 2396	JÜLICH
	PLR/3/Dr.Pe/Hp 3A 312551093	5866 Dr. Peter		23.11.1993

Förderung von Forschungsvorhaben im Programm Materialforschung

Ihr Projektantrag "Zum verbesserten Festigkeitsnachweis von FKV-Bauteilen", Aktenzeichen 3A 312551093

Sehr geehrter Herr Dr. Cuntze,

wir haben Ihren o. g. Antrag geprüft und sind der Auffassung, daß das Vorhaben in der vorliegenden, fachlich hochwertigen Fassung dem Gutachterausschuß des BMFT zur weiteren Beurteilung vorgelegt werden kann. Die detaillierte Projektbeschreibung vermittelt uns den Eindruck eines anspruchsvollen, innovativen F+E-Vorhabens, das auch wesentlichen Kriterien eines neuen BMFT-Förderprogramms entspricht.

Bezüglich der zur Zeit resultierenden Gesamtförderquote von 69 % möchten wir aber darauf hinweisen, daß gemäß EG-Beihilferegelung für industrielle Grundlagenforschung eine Förderquote von maximal 50 % eingeräumt wird. In Anbetracht des hohen Institutsanteils und damit des vergleichsweise hohen Anteils an stark grundlagenorientierten Arbeiten, die auch mit einem höheren wissenschaftlichen Risiko verbunden sind, halten wir eine Förderpräferenz von 10 % für möglich, so daß von einer Gesamtförderquote von jedoch höchstens 60 % ausgegangen werden kann. Dies ist zu berücksichtigen.

Hinsichtlich der Anwendungsrelevanz Ihres Vorhabens werden vorwiegend Strukturen für die Luft- und Raumfahrt angesprochen. Wir sind der Meinung, daß die Bedeutung wesentlich breiter zu sehen ist. Das ist vor allem deshalb besonders wichtig, weil im Rahmen der Vorbereitung des neuen BMFT-Programms festgelegt worden ist, daß Werkstofforschung für die Luftfahrt innerhalb dieses Programms nur dann als förderwürdig gesehen wird, wenn auch ein erhebliches Anwendungspotential für bodengebundene Verkehrssysteme gegeben ist. Dies sollte deutlich herausgearbeitet werden. Daraus folgt die Notwendigkeit der Beteiligung eines "terrestrischen Anwenders" als

Vorsitzender des Aufsichtsrates: Parlamentarischer Staatssekretär Bernd Neumann · Vorstand: Prof. Dr. Joachim Treusch (Vorsitzender), Georg v. Klitzing (stellv. Vorsitzender), Prof. Dr. Ernst Pöppel, Prof. Dr.-Ing. Rolf Theenhaus · Sitz der Gesellschaft: Jülich · Eingetragen im Handelsregister des Amtsgerichts Jülich Nr. HR B 57
Bankkonten: Landeszentralbank, Zweigstelle Düren, 39506060 (BLZ 39500000) · Kreissparkasse Düren, Niederlassung Jülich, 40030 (BLZ 39550110) · Westdeutsche Landesbank Köln 158964 (BLZ 37050000) · Postgiroamt Köln 186531-507 (BLZ 37010050) · Telex-Nr.: 833556 kfa d · Tel.-Sammel-Nr. (02461) 61-0 · Telefax-Sammel-Nr.: (02461) 615327

Cardanwelle für Golf-Sprecher, Direktlader, Windkraftanlagen, ...

Anlage 3

Berichtszeitraum von Juli 95 bis Juni 96 Stand vom:	PROJEKTBERICHT	

Projekt:	Projekt-Nummer:	Projektleiter:	Planung /Kontrolle:
ZFB Kriterium	B 099207	Szelinski	Dr. Cuntze
Auftraggeber: BMFT / MAN-MT (47 % / 53 %)		**Laufzeit des Vorhabens:** von Mai 94 bis Okt. 96	

PROJEKTSTATUS:

1. TECHNIK

1.1 Abgeschlossene Arbeiten, laufende Arbeiten:
Die Aufgaben wurden im Laufe des BZ zügig abgearbeitet, und lagen im wesentlichen im Plan. Verschiedene Untersuchungen im Detail waren bei den Standardprobekörpern noch nachzuziehen wie z.B. die Ermittlung der Reifenzflächen, die Ausdeutung der Weibull-Effekte und die Erfassung der möglichen Unterschiede zwischen AWV und einsinnig UD-gewickelten Rohren. Bei den Sonderprobekörpern standen die Quetsch-Nut und der gekrümmte Biegebalken zur Bearbeitung an. Beim gekrümmten Biegebalken zeigte sich, daß durch den Einfluß der Schubspannung der Bruch nicht exakt im Scheitelbereich der Trägers erzeugt werden konnte, auch zusätzliche Maßnahmen, die die Schubspannung reduzieren sollten, waren nicht frei von lokalen Störungen. Die Quetsch-Nut, die eine Aussage über die maximale Querbeanspruchung liefern soll, wird noch bearbeitet. Zur besseren Bewertung der Versuchsergebnisse sind noch einige theoretische Untersuchungen, gekoppelt mit FEM-Berechnungen, notwendig.

1.2 Kritische Probleme, Schwierigkeiten:
Auf Anraten der projektleitenden Stelle in Jülich ist ein Aufstockungsantrag gestellt worden, der die Thematik vertiefen und ausweiten sollte. Die Bearbeitung des letztlich doch - aufgrund fehlender Mittel - abgelehnten Aufstockungsantrages, dessen Bewilligung nach den ersten Informationen aus Jülich nur noch eine Formsache zu sein schien, hatte Kosten verursacht und Stunden verbraucht, die zum Ende des Projektes nun leider fehlen.

1.3 Vorgesehene Maßnahmen, Empfehlungen zur Behebung der Schwierigkeiten:
Die abschließenden Aktivitäten müssen so zusammengefaßt und gestrafft werden, daß der zu erwartende Mittelmehrbedarf minimiert wird.

1.4 Fertigstellungsgrad in % (geschätzt): 90 %

2. Zeit

2.1 Sollterminplan : ☒ gehalten ☐ Verschiebung um ..... auf .....

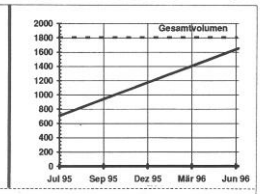
2.2 Erreichte Meilensteine:
sind im Detail nicht spezifiziert.

2.3 Entstandene Berichte : (Kurzfassung beifügen)
3. und 4. Halbjahreszwischenbericht (Kopien beiliegend), zahlreiche Technische Notizen, Entwurf des Technischen Abschlußberichts in der Form eines VDI-Fortschrittsberichtes (zur Veröffentlichung)

3. Kosten

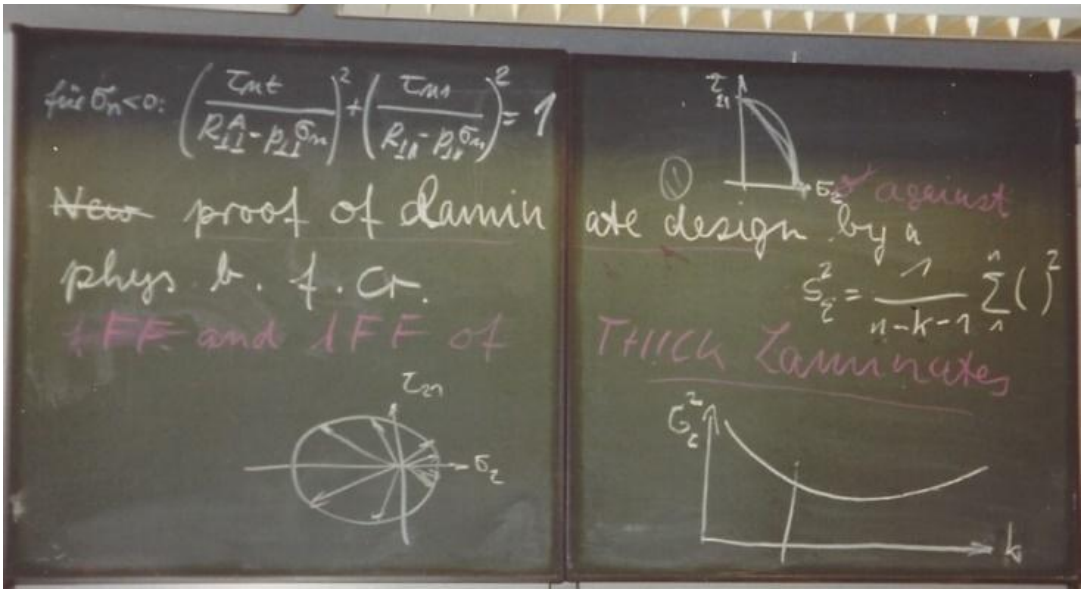
3.1 Kostenstand nach Berichtszeitraum:
(Vergleich : Mittelfreigabe für Projekt und Kostenverlauf)

	Freigabe Soll [TDM]	Kosten Ist [TDM]
Freigabe bzw. Kostenanfall im Berichtszeitraum	945	945
Freigabe bzw. Kostenanfall kumulativ	1.654	1.654
Obligo bis einschließlich Berichtszeitraum		
Gesamtfreigabe bzw. -Kostenanfall einschl. Berichtszeitraum		



3.2 Mittelmehrbedarf:
☐ nein ☒ wahrscheinlich TDM 40 000 ☐ sicher TDM _____

3.3 angefallene Stunden: eigener Bereich 2960 andere Bereiche 1675



Above very good evaluation of a research proposal was then confirmed

by good results and these results were finally published in detail in a VDI booklet

The comprehensive publication of the results of a research project in a book has been regarded as rather unique.



Issued 1997



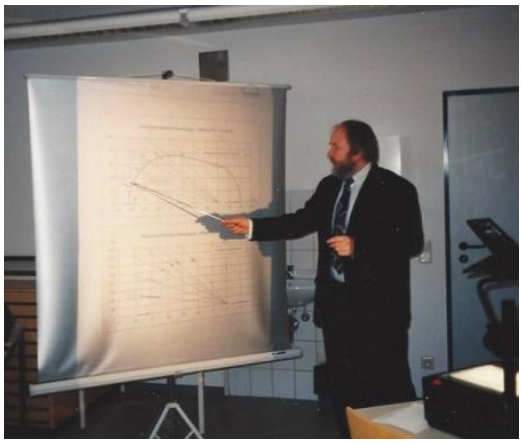
S. Meckbach,
Rita Jeltsch-Fricker,
RüdigerRackwitz



Lothar Kroll,

Alfred Puck,

Rita Jeltsch-Fricker



Bernd Szelinski, MAN Part project leader, informing the team.

(right) Our mathematician lady honoured





Gollwitzer, Meckbach, Szelinski , sorry, Kroll



Puck, Jeltsch-Fricker, Rackwitz



Puck, Petry, Deska, Peter

Forschungszentrum Jülich

Forschungszentrum Jülich GmbH · NMT · D-52425 Jülich
Fracht-/Paketanschrift: Leo-Brandt-Straße · D-52428 Jülich

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Projektträger Neue Materialien und Chemische Technologien
des Bundesministeriums für Bildung, Wissenschaft, Forschung und Technologie

- Ihre Nachricht vom / Zeichen:
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Jülich, 03.12.1997

Förderung von Forschungsvorhaben im Programm MaTech des BMBF

Ihr F+E-Vorhaben „Zum verbesserten Festigkeitsnachweis von FKV-Bauteilen", Förderkennzeichen 03N8002

Sehr geehrter Herr Dr. Cuntze,

nach Prüfung Ihres in Form eines VDI-Fortschritt-Berichts vorgelegten Abschlußberichts möchten wir Sie zu den ausgezeichneten Ergebnissen, die der Bericht noch einmal prägnant verdeutlicht, beglückwünschen.

Das Projekt wurde über zweieinhalb Jahre hinweg mit insgesamt ca. 1,8 Mio. DM gefördert. Das Engagement Ihres Unternehmens - Bereitstellung eigener Mittel und Mitfinanzierung von drei Institutspartnern - sehen wir bei einer derart grundlagenorientierten Thematik als beispielhaft an. Es gelang Ihnen mit Erfolg, hervorragende F+E-Kompetenzen auf diesem Gebiet zusammenzufassen und effizient zu führen. Die Ergebnisse - mehr als 20 Publikationen und Vorträge, der vorliegende Fortschritt-Bericht des VDI sowie signifikante Ausbildungs- und Spin-off-Effekte - sprechen für sich.

Wir würden uns freuen, wenn sich wieder einmal die Gelegenheit zu einer Zusammenarbeit ergeben würde. Bitte übermitteln Sie Dank und Anerkennung auch an Ihre Projektpartner, die ebenso eine hervorragende Arbeit geleistet haben.

Mit freundlichen Grüßen

Forschungszentrum Jülich GmbH

i. V. Harth

i. A. Dr. Peter

INSTITUT FÜR KUNSTSTOFFVERARBEITUNG
LEHRSTUHL FÜR KUNSTSTOFFVERARBEITUNG · RWTH AACHEN · PROF. DR.-ING. W. MICHAELI
Lehr- und Forschungsgebiet für Kautschuktechnologie · Prof. Dr.-Ing. E. Haberstroh

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Unser Zeichen/*Our ref.*	Telefon/*Telephone*	Sachbearbeiter/*Name*	*Datum/Date*
MI/IZ	(02 41) 803806		7. April 1997

Lieber Herr Dr. Cuntze,

aus der Sonne und zwei wandernd entspannenden Wochen in Madeira zurückkommend, fand ich Ihr wirklich sehr deskriptives und hervorragend gemachtes Buch zur Weltraumfahrt auf meinem Schreibtisch. Für diese nette Aufmerksamkeit bedanke ich mich ganz recht herzlich!

In der Zwischenzeit habe ich auch den Abschlußbericht zu dem gemeinsamen Vorhaben durchgesehen und bin überzeugt, daß man sich damit sicher wird "sehen lassen können". - Jedoch hoffe ich nur, daß im Nachgang nicht wieder unsägliche und wenig erquickende, weil alle belastende, Diskussionen zu punktuellen Aussagen im Text, welche eher Eitelkeiten als Sachinhalte ansprechen, entstehen werden. Sie wissen sicher am besten, was ich damit meine, aber leider ist es uns ja allen nicht gelungen, die Kräfte im Sinne der gemeinsamen Sache zum Gesamtwohl und sicher auch zum Wohle der Einzelnen während des Projekts zu bündeln. Das ist sehr schade, auch weiß ich von Ihnen, daß Sie dies sehr ähnlich sehen und auch sehr bedauern.

Dennoch gilt Ihnen ganz besonderer Dank in diesem Projekt, da es ohne Ihre vielen Vermittlungen und Ihr Engagement um die Sache nicht gegangen wäre. Haben Sie ganz herzlichen Dank! Gerne werden wir auch in Zukunft mit Ihnen und Ihrem Team zusammenarbeiten, und seien Sie alle weiterhin in Aachen ganz herzlich willkommen.

Es grüßt Sie für heute herzlichst

Ihr

W. Michaeli

Bank
Deutsche Bank Aachen

TEL - AVIV UNIVERSITY
FACULTY OF ENGINEERING
Dept. of Solid Mechanics,
Materials and Structures
Professor Zvi Hashin
The Nathan Cummings Chair
of Mechanics of Solids

אוניברסיטת תל-אביב
הפקולטה להנדסה
המחלקה למכניקה, חומרים ומבנים
פרופסור צבי חשין
הקתדרה למכניקה של מוצקים
עייש נתן קמינגס

Dr.-Ing. R.G. Cuntze
Fa. MAN Technologie AG,
Karlsfeld b. Muenchen
GERMANY

June 4, 1998

Dear Dr. Cuntze

I am writing you in relation to your VDI No. 506 which you were kind enough to send me. First , I think that this is an important engineering document but since it is written in German not many people outside Germany will be able to read it. Therefore I believe that it would be a good idea to have it translated into English and published in this form. Another reason for this is that Puck's work is not known to the English speaking world. In fact I have never even seen the Journal in which his work was published. Is there any possibility to receive some copies of his papers ? I myself read and understand German.

Second, I would be very grateful if you could send another VDI ,506 to Dr. R. M. Christensen, Dept. of Aeronautics and Astronautics, Stanford University, Stanford, CA 94305, USA. Dr. Christensen will give a lecture on Failure of Composites at the International Congress on Theoretical and Applied Mechanics, Chicago, 2000. Although he does not know German he has expressed interest in this work.

Sincerely yours

Z. Hashin

Linked presentations: ICCM 11 "Failure Criteria Panelists" and ESA Exchange Group

TELAC
Technology Laboratory for Advanced Composites
Department of Aeronautics and Astronautics
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, Massachusetts 02139

Paul A. Lagace, Director
Professor of
Aeronautics and Astronautics
MacVICAR FACULTY FELLOW

MEMORANDUM

To: Participants in the ICCM-11 Failure Criteria Panel
(Chris Chamis, Ralf Cuntze, John Hart-Smith, Michael Hinton, Stephen Tsai)
From: Paul Lagace and Mark Spearing
Date: July 13, 1998
Re: Follow-up on our panel

It is nearly exactly a year ago that we were in Australia for ICCM-11 and we had that very interesting and invigorating panel session and discussion that drew many people that one evening. As we promised then, one of our hopes was to write a paper based on the session. I quote the original "charge/purpose" of the forum which was sent to each of you in preparation for our session:

"The PURPOSE of the forum is to discuss the current status of composite failure criteria with a focus on what we need to do to better our understanding and capability in this regard. Although this clearly begins at the material level, the ultimate objective is to predict failure of composite structures, so we should orient discussion there as well. I should also note that the emphasis should be on what further needs to be done. Clearly each of you needs to indicate where you feel we are now and what approach is proper. But we should not get caught up in a discussion of history. Rather, we need to emphasize the present state and the future. I am further hoping that we may be able to reach some level of consensus on these items by the end of the forum and that this may even lead to a co-authored paper amongst us. But we'll see how things go in the forum before discussing that."

We have, indeed, moved forward in that regard. This has been delayed somewhat by the sabbatical I took during the fall and I apologize for that delay. But we are now ready to send out this material to you, ask you to review it, and get back to us with some comments and answers.

We have reviewed the notes that Mark took at the session and have talked about it extensively. Based on this, we propose the following title and outline for the paper:

"COMPOSITE FAILURE CRITERIA-WHERE WE ARE; WHERE WE NEED TO GO"

1. Introduction
2. Forum (Panel, Charge, etc.)
3. Common themes
4. Key Areas of Disagreement
5. Identified Areas for Further Work
6. Summary

As to the writing of the paper with this outline, Mark and I would write sections 1 and 2 from the material we agreed to prior to the session. After receiving your comments, we would take a first cut at sections 3, 4, and 5 based on the notes that are included with this letter. As previously noted, the first is a set of "minutes" of the session. But of greater importance with regard to writing the paper is an extraction of the "key points" (common themes, key areas of disagreement, identified areas for further work) which we have made from the "minutes". These key points are in the document entitled "ICCM Failure Panel Summary.

The immediate question is whether you are still interested in being a part of this paper jointly authored by all the participants in this panel session. Our hope is that the answer is yes. If so, we ask that you do the following at this point in time:

1. Review the notes and make any corrections.
2. Review the points for sections 3, 4, and 5, in the document titled "ICCM Failure Panel Summary" and make any corrections, additions, etc.

It would help to receive this by mid-September, if not sooner. From there, we will draft the entire paper and send this draft to you for comments and edits. This process will continue until we converge on a paper to which we can all agree. This work up front will make that convergence process easier. We would also like to conduct this by email to make communication easier (we can even send around everyone's comments). So please let us know your current address and any "inabilities" in terms of reading attached documents.

This paper can be a real service to the composites community by enumerating the areas of agreement, disagreement, and further needed work with regard to failure and failure criteria. We hope that you agree and that you do wish to continue to work with us on this paper.

Please contact us by phone or email if you have any immediate questions or thoughts. Both of us look forward to your response.

enc. (2)

PAL/dab

esa

TO: EXCHANGE GROUP MEMBERS and affiliates
Messrs:
R. Cuntze MAN
H. Krings MAN
A. Jimenez CASA
J-P Vialaneix CNES Toulouse
P.Taquet/D.Bouvier SONACA
C.J. Verberne RAUFOSS
P. Fornari ALENIA TORINO
V. Detremmerie SABCA
M. Teare MMS Stevenage
R.W. van der Ven FOKKER LEIDEN
D. Bashford ERA Technology
E. Lettner ICI FIBERITE EUROPE
Ms J. Wilson/R. Hussey RJ Consultants
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H. Aamodt (Kongsberg)
L.J.B Peeters (Stork)

INTERNAL: C. Stavrinides, M. Klein A.Pradier T. Henriksen M. Judd G.Ramusat B.Dunn R. Raynal W. Pinter-Krainer

FROM: D.C.G. Eaton Structural Engineering Section - YME
Fax: +31 71 565 5427
Phone: +31 71 565 3989

DATE: 19 Feb 1997
REF: YME/DCGE/2689

·¶

Introduction¶

Provisional

Objective¶

The structural materials handbook (SMH) provides designers with guidelines on which materials are available, their known properties and performance characteristics, design approaches for using these materials and examples of their use with, where possible, space applications – either actual or intended.¶

SMH includes materials, design and application information for:¶

- Polymer composites: (in chapters 2 to 41), and ¶
- New advanced materials (in chapters 42 to 97).¶

Significant effort has been put into the development of materials which offer, or aim to provide, high-strength or high-stiffness and dimensionally stability for applications in European space projects. Some commercial materials are widely accepted for space use and their characteristics are well-known. ¶

Over the years, the requirements for materials have evolved in line with new projects in all aspects of space engineering, e.g. continued development of Ariane launchers, studies of winged launcher concepts, satellites, exploratory probes and long-term manned structures, such as the international space station (ISS). ¶

Materials are constantly under development or improved to have increased performance over those already established for space applications, or to meet the demands of new projects. New advanced materials offer high temperature capabilities or other thermal-related characteristics. Provided that their tolerance to the special conditions of the space environment are met, use of such materials

can provide mass-savings or improved performance over more conventional ones. Consequently the material options facing designers for current or future space structural projects are ever wider.¶

Numerous ESA-funded studies have considered the potential uses of materials for various structural applications. ¶

[See also: Chapter 1].¶

¶

- **Polymer composites¶**

  Within SMH established materials are discussed and design information given for carbon, glass and aramid fibre-reinforced polymer composites having either: ¶

  - thermosetting resin matrices: epoxy, polyimide, bismaleimide.¶
  - thermoplastic matrices, e.g. PEEK.¶

- ¶

- **New advanced materials¶**

  SMH presents information on the recently emerged groups of new advanced materials and their composites, including:¶

  - Magnesium alloys and their composites,¶
  - Aluminium alloys and their composites,¶
  - Titanium alloys and their composites,¶
  - Superalloys and their composites,¶
  - Intermetallic materials,¶
  - Refractory metals,¶
  - Beryllium,¶
  - Ceramic matrix composites,¶
  - Glass and glass-ceramic matrix composites,¶
  - Carbon-carbon matrix composites.¶

¶

Within these groups, some materials have been evaluated to enable their actual or considered use in space applications, whereas others remain at the 'development' stage.¶

[See also: Chapter 1].¶

¶

NOTE:	Basic information on established, conventional Mg-, Al-, Ti- and super-alloys is included only as an introduction to the newer types of materials, e.g. aluminium-lithium alloys, metal matrix composites. Design data for conventional alloys are available in other publications, e.g. MIL-HD-BK-5.¤

Background¶

In 1994 the existing composites design handbook (CDH), along with its previously unpublished Annex, were integrated into a single-source document for the designers of space structures. This was published as ESA-PSS-03-203: Structural materials handbook. During this integration process the handbook structure and format were changed to make the information more accessible to a wider audience of interested parties. This met the prime objective of the ESA-inspired information gathering and dissemination process. As part of the continued review of the topics contained within the SMH, additional information was also added from ESA-funded work programmes, and studies conducted elsewhere. [See also: Source materials – information].¶

In 1995, a new soft materials section was added in response to a request from the space industry. This covers the use of technical textiles for space engineering applications. Various textile types are described along with aspects of their testing and use illustrated by examples, e.g. spacecraft flexible external protection, parachutes, space suits.¶

The periodic updating of PSS-SMH continued until 1998 with a number of revised, but never officially released, chapters. This was largely due to the on-going change from PSS to the ECSS documentation system. [See also: ECSS SMH].¶

NOTE	Material developments, especially within the newer material groups, are continually progressing. Revisions to the handbook can include new information when it is available.

¶

ECSS-SMH¶

In 2002, a comprehensive handbook review conducted by the European aerospace industry decided to transfer SMH and other large technical handbooks to the ECSS document system. This enabled the evaluation and revision of various chapters identified by reviewers, the inclusion of unpublished revised chapters and information resulting from a number of recent ESA-funded studies and projects, including: ¶

- Polymer matrix systems: low temperature curing, thermal expansion; high stability structures.¶
- Carbon and ceramic matrix composites: materials and fasteners; coatings for high surface accuracy reflectors.¶
- Structural health monitoring: potential techniques for reusable structures and cryogenic tanks.¶

Given the interest expressed during the handbook review, it was also decided to make the ECSS-SMH version an electronic publication on CD-ROM only, instead of a printed paper version. To retain familiarity for current users, the overall document structure remains largely unchanged from that of the PSS-version. However, some changes were made in order to make it easily useable in an electronic format. [See also: Structure]¶

¶

ECSS → Space Engineering → ECSS-E-30-04 Draft <I> ¶
Structural Materials Handbook → December 2023 ¶

Source Materials¶

Information¶

The ECSS version of SMH is based on the previous publication ESA PSS-03-203: Structural materials handbook (volumes 1 and 2). This contained all of the information from the prior ESA-PSS-03-1101: Composites design handbook (volumes I and II) which were compiled by MBB/ERNO. It also includes all of the information contained within the unpublished CDH Annex on advanced metallic and ceramic materials (initially compiled by BNF-Fulmer). ¶

During that integration process (conducted by RJ Technical Consultants), all of the technical information was reviewed and editorial corrections made, as appropriate. New information was added only when it was approved by the then ESTEC-controlled 'advanced structural materials information exchange group' (ASMIEG) committee. The members of the ASMIEG committee were representatives from all the major European space contractors, with experts appointed for particular subject matters.¶

NOTE 1	Wherever possible, the credibility of all the information is substantiated by referring to more than one source. Information and data in the handbook are by no means faultless or presented as guaranteed values. This is particularly appropriate to the newer materials whose characteristics are likely to change.
NOTE 2	Information within the handbook is informative not normative.

¶

The main information and data sources used in ECSS-SMH are of European origin. A number of European companies are involved in joint US-European ventures, such as the X-program demonstrator vehicles and international space station (ISS). Consequently some information from joint programmes is included in the handbook.¶

The whole technical content of this ECSS version is subject to technical review and approval in accordance with ECSS practices.¶

¶

Contributors¶

Since ESTEC instigated the composites design handbook in the early 1980s many European companies have contributed information and data, either directly or from their openly published contract reports, presentations and papers at conferences. Some also provided an auditing role of the technical content of SMH via ASMIEG. ¶

EUROMECH COLLOQUIUM 219 September 23-26, 1986 , Kasse

INFLUENCE OF THE
VARIATION OF STRUCTURAL PROPERTIES ON THE
PROBABILITY OF A COMPOSITE PLATE TO MEET A
TARGET EIGENFREQUENCY

by

Ralf Georg Cuntze and Martin Grimmelt
MAN Technologie GmbH, D 8000 München

OVERALL OBJECTIVE:

Design of structures with respect to specified reliability values (Safety Requirement in Space Craft Vehicles Design Spezification)

SPECIFIC OBJECTIVE OF THIS PAPER:

Determination of the probability that the scattering natural frequency $\bar{\omega}_1$ will lie within a specified window.

CONTENTS OF THE TALK:

1) Formulation of the Task
2) Description of the Mechanical Model with
   . Differential equations of the dynamical model
   . Essential structural parameters of the plate (laminate)
   . Structural properties of a layer (ply)
3) Probabilistic Approach with Description of
   . Stochastic Model
   . Reliability Model
   . Solution procedure
4) Example
   . Description of performed test specimens and properties
   . Results form theory and tests
   . Comparison of results

Conclusions of Investigation

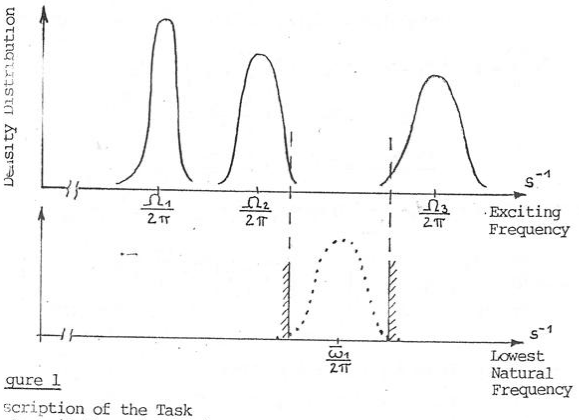
1. FORMULATION OF THE TASK

Requirement:
Meet a specified natural frequency

Reasons:
. To avoid vibration coupling of connected structural parts.
. To fit an eigenfrequency into a poor part of a power spectrum

Model to outline the single Problems:
. Vibrating cantilever, narrow strip of a plate
. Calculation of its lowest natural circular frequency $\bar{\omega}_1$

Visualization of the Task:



gure 1
scription of the Task
Distribution of Exciting Frequencies
Density Distribution of the Stochastic Natural Bending Frequency and Frequency Window to me met

GAMM/IFIP - Workshop on
STOCHASTIC OPTIMIZATION: Numerical Methods and Technical Applications
Neubiberg/München, May 29 - 31, 1990

SCIENTIFIC PROGRAM

The registration and all lectures take place in room 0301, building 33 (see map).
The Reception and the Conference Dinner take place in the Casino (OHG, building 61)

Tuesday, May 29

8.00	- 9.00	Registration	
9.00	- 9.15	Opening Session	
Chairman: K. Marti			
9.15	- 10.00	E.A. McBEAN:	Optimization Modelling for Acid Rain Abatement Decisions
10.00	- 10.30	COFFEE BREAK	
10.30	- 11.15	H.I. GASSMANN:	A Problem of Forest Management under Uncertainty and Numerical Techniques for its Solution
11.15	- 12.00	W. RÖMISCH:	A Stochastic Programming Model for Optimal Power Dispatch: Stability and Numerical Treatment
12.00	- 13.30	LUNCH	
Chairman: P. Kall			
13.30	- 14.15	H. NIEDERREITER:	Lattice Rules for Multiple Integration
14.15	- 15.00	K. FRAUENDORFER:	The Simplicial Approximation Scheme and its Relation to other Approaches for Two-Stage Stochastic Programs
15.00	- 15.30	COFFEE BREAK	
15.30	- 16.15	J. MAYER:	Computational Techniques for Probabilistic Constrained Optimization Problems
16.15	- 17.00	S. FLÅM:	Exact Penalty Functions in Single-Stage Stochastic Programming
18.00		RECEPTION	

Wednesday, May 30

Chairman: H. Eschenauer			
8.30	- 9.15	R.G. CUNTZE:	Structural Design, Optimization and Reliability Justification. A Comparative Study related to the Example: Axially Loaded Strut
9.15	- 10.00	R. RACKWITZ:	Practical Strategies to Identify Local Minima in Reliability Calculations
10.00	- 10.30	COFFEE BREAK	
10.30	- 11.15	A. VASARHELYI:	Collapse Load Analysis and Optimal Plastic Design by Stochastic Programming
11.15	- 12.00	G. PFLUG:	Optimization of Discrete Event Processes
12.00	- 13.30	LUNCH	
Chairman: G.I. Schuëller			
13.30	- 14.15	R. SCHULTZ:	On the Structure of the Objective Function in a Linear Two-Stage Stochastic Integer Program
14.15	- 15.00	N. SIMAKOV:	Adaptive Stochastic Model for the Analysis and Forecast of Energy Consumption
15.00	- 15.30	COFFEE BREAK	
15.30	- 16.15	N. BABA:	Three Approaches for Solving the Noise Corrupted Multiobjective Optimization Problem
16.15	- 17.00	F. KURSAWE:	A Variant of Evolution Strategies for Vector Optimization
18.00		CONFERENCE DINNER	

THURSDAY, May 31

Chairman: J. Mayer			
8.30	- 9.15	N. BABA:	A Stochastic Optimization Approach for Training the Parameters in Neural Network
9.15	- 10.00	E. PLÖCHINGER:	Step Size Selction in Robbins-Monro Processes Considered as a Problem of Stochastic Dynamic Programming
10.00	- 10.30	COFFEE BREAK	
10.30	- 11.15	K.-J. BÖTTCHER:	Efficiency Comparison of Stochastic and Deterministic Search Methods
11.15	- 11.30	CLOSING SESSION	

30.8 European Projects

BRITE/EURAM project 4194, 1991



Sorry, sorry, Santos, sorry, Rackwitz, ?,

Szelinski, Gierlinski, Gollwitzer, ?, sorry, Palle Thoft- Christensen , Else Thoft-Christensen, Nigel



Out of the Summary from the Tender:

The methodologies and software developed during the project will be specialized to applications in the aerospace industry. However, many aspects of the work have much wider potential application. In general, all industrial sectors which involve high performance as safety critical structures will benefit. The benefits come from improved performance, stemming from reliability-oriented design and shortened development times through the use of interactive optimization.

In the last decade or so the lead times from concept to final design of structural components have been reduced, often dramatically, as a result of CAD techniques. Typical of these benefits are:

- A concurrent flexible design technique has the potential to significantly reduce mass and fabrication costs
- Utilization of an effective design tool, which combines sensitivity and reliability concepts, will promote a better understanding of the influence of essential design parameters on the structural behavior. It also will lead to improved efficiency in the design phase of the development of a structural product
- Gain of a strategic advantage as a result of designing with less risk and with considerable time saving.

"RELIABILITY-BASED OPTIMAL DESIGN METHODOLOGY WITH APPLICATIONS TO ADVANCED AEROSPACE STRUCTURES"

(RELOPT DESIGN)

Contract BREU-CT91-0456 (WNSN)
B/E-4194

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Summary

I Requirements for Reliability-based Analysis and Optim. of Aerospace Structures
I1 Introduction
I2 Traditional Design Concept
I3 Modern Design Concept
I4 General Description and Way of Analysis of the Large Example Structures
I5 Requirements for the Development of the Integrated Design SW-product CARBOS
IA Guiding Case Study "Filament wound hollow strut under tension and bending"

II Data Acquisition and Statistical Analysis
II1 Definition of basic variables and data base structure
II2 Data acquisition and evaluation
II3 Statistical analysis procedure

III Design Sensitivity Analysis
III1 Sizing design sensitivity analysis
III2 Shape design sensitivity analysis
III3 Software development

IV Reliability Modelling
IV1 Load models
IV2 Methodology for identification of failure modes and critical points
IV3 Time-invariant and time-variant strength models and failure criteria
IV4 Numerical techniques for time-variant and time-invariant reliability
IV5 Software development

V Interactive Reliability -based Design Optimisation
V1 Reliability-oriented optimisation
V2 Software development

VI Computer System Integration and Case Studies
VI1 Integration of data base with reliability and optimisation software
VI2 Testing and verification of reliability software
VI3 Development of visual aids for control of the computational process
VI4 Setting up model and all necessary data; analysis of test cases

A1 Notions, Abbreviations and Glossary
A2 Literature and Internal Reports
A3 Theoretical Manual
A4 User Guide
A5 Benchmarks for Verification of the Single Modules
A6 Benchmarks for Qualification of CARBOS
A7 Applications

Annexe IA: GUIDING CASE STUDY:

Filament Wound Hollow Strut under Tension and Bending

CONTENTS

1. Introduction

2. Input for the Design
- 2.1 Structure Identification
- 2.2 Design Requirements, Dimensioning Load Cases
- 2.3 Factors of Safety and Reliability Constraints
- 2.4 Design Allowables and their Determination

3. Deterministic Conceptual Design (Phase 0 "Concept" or "Study")
- 3.1 Mechanical Model incl. State Functions (MM)
- 3.2 Definition of Initial Data Set of Design Parameter
- 3.3 Pre-Dimensioning incl. Material Choice
- 3.4 RAMS Functional Analysis, FMECA and Critical Points Log
- 3.5 Reliability Allocation for the Cross Section of the Strut
- 3.6 Determination of Initial (Deterministic) Design Space

4. Probabilistic Preliminary Design (Phase I "Prel. Design Development")
- 4.1 Elaboration of Prel. Stochastic Data Set (StM) and Prob. Design Space
- 4.2 Logical Modelling of the Strut's Failure System
- 4.3 Design Sensitivity Analysis (DSA)
- 4.4 Plan of Design Development Tests (material, manufacture trial, load)
- 4.5 Reliability Analysis (REL)
- 4.6 Reliability based Optimisation (Sizing by OPT)
- 4.7 Assessment of Results and Choice of Design

5. Proof (Justification) of Final Design (Phase II "Design Development")
- 5.1 Evaluation of Design Development Tests (StA)
- 5.2 Final Stochastic Data Set
- 5.3 Design Sensitivity Analysis
- 5.4 Reliability Oriented Optimisation
- 5.5 Assessment of Results and Fixing of Final Design
- 5.6 Justification Computations with Reliability Check

6. Qualification of Structure by Test (Phase III "Design Verification")
- 6.1 Plan and Performance of the Qualification Test
- 6.2 Test Results and Evaluation of the Qualification Test
- 6.3 Qualification Document with Compliance Matrix

Figures

Annexe

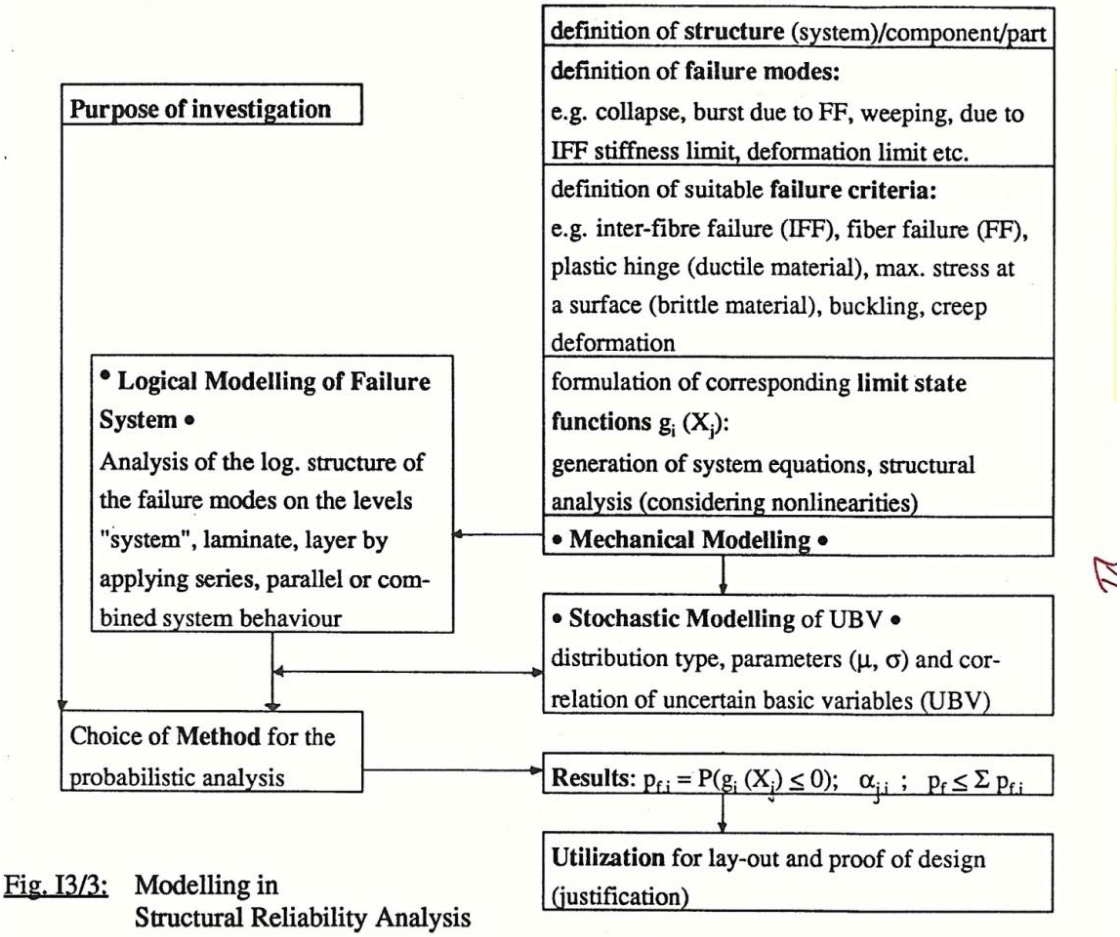

Fig. I3/3: Modelling in Structural Reliability Analysis

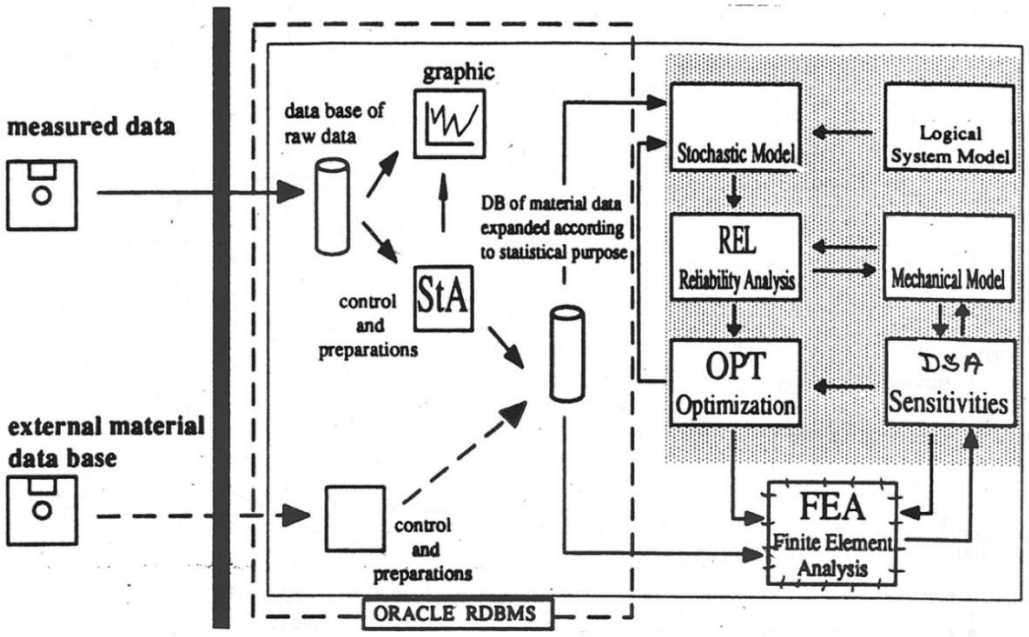

Fig. 4/10: Flow Chart of CARBOS for Reliability Based Optimisation (to be reworked)

8.30	Majela	: Expert Systems in Structural Modelling and Desig
	Moeltzel	: An Interactive Hybrid System Approach to Near Optimal Design of Mechanical Components
9.15	Hartmann	: Application of AI-Tolls for Re-Analysis Within Structural Optimization
	Reitman	: Optimization Problems on the Boundaries of Structural Engineering
10.30	Cuntze	: Reliability - Oriented Optimization With Application
	Mlejnek	: Some Contributions to Optimal Design Using Approximate Explicit Behaviour Models
11.15	Fonseca	: Plastic Limit Design of Shells
	Kaftanoglu	: Computer Aided Design of Power Shafts

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Instituto Superior Técnico
Universidade Técnica de Lisboa
MAGUE: Construções Metalomecânicas, S.A.R.L.
PECHINEY
European Research Office, United States Army
SOREFAME: Sociedades Reunidas de Fabricações Metálicas, S.A.R.L.
Escola Náutica Infante D. Henrique
BPA: Banco Português do Atlântico
TAP: AIR PORTUGAL
Companhia Carris de Ferro de Lisboa
Rodoviária Nacional
MAN Technologie Gmbh

Mota Soares

Volume 3

TRÓIA, PORTUGAL
June 29 – July 11
1986

Univ.-Prof. Dr. sc. math. Kurt Marti
Höhere Mathematik

Universität der Bundeswehr München - D-85577 Neubiberg

UNIVERSITÄT
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FAKULTÄT FÜR LUFT- UND
RAUMFAHRTTECHNIK

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Postfach 1347
85751 Karlsfeld

27. Januar 1997

Betr.: BRITE/EURAM 4149 (1.09.91-12.08.1994), ESPRIT 20189: PROMENVIR
(Jan 96 - Dez 97)

Sehr geehrter Herr Cuntze,

haben Sie vielen Dank für die freundliche Zusendung der Unterlagen über die oben genannten Projekte! Zu den beiden Projekten habe ich folgende Bemerkungen bzw. Fragen:

- BRITE/EURAM 4149

Ganz besonders interessiert bin ich natürlich am Bereich "Reliability Based Design Optimization (RBO)" - sowohl was die theoretischen Grundlagen/Methoden als auch die rechentechnische Umsetzung (Software) betrifft.
Ich würde mich deshalb sehr freuen, wenn Sie oder einer Ihrer Mitarbeiter in unserem Mathematischen Seminar über die Ergebnisse des Projekts auf dem RBO-Gebiet und speziell über das Softwaresystem CARBOS vortragen könnten; ein kleines Honorar (DM 100.--) könnte ich Ihnen als Entschädigung anbieten. Falls Sie kommen können, benötige ich dann den genauen Titel sowie eine Kurzfassung des Vortrages. Wegen eines Termins werde ich mich dann noch telefonisch mit Ihnen in Verbindung setzen.
Könnten Sie auch das Softwarepaket CARBOS demonstrieren? Wenn ja, bitte ich um Mitteilung, welche Hardware Sie dazu benötigen würden.

- ESPRIT 20189: PROMENVIR

Dieses Projekt läuft ja noch bis Ende dieses Jahres. Kennen Sie da schon Zwischenergebnisse oder werden diese erst Anfang März 1997 in Turin präsentiert? Wird neben der Simulationstechnik auch im Bereich der RBO etwas gemacht - in der Beschreibung habe ich nichts gefunden?

VIDEO - Clip ?

Mit freundlichen Grüßen

Kurt Marti

Kurt Marti

Telefon: (0 89) 60 04(1) -25 41, -21 09 BwFspN: 62 17(8) - Telex: 5215800 bwd (unibwm) Telefax: (0 89) 60 04-40 92, 35 60
E-Mail: Kurt.Marti@rz.unibw-muenchen.de Anschrift für Frachtsendungen: Werner-Heisenberg-Weg 39 - D-85579 Neubiberg

30.9 Author-founded Germany-wide group Betriebsfestigkeits-Nachweis BeNa (in 2010)

Considering the high-performance UD lamina-composed laminates the classical fatigue tests are performed on laminates. The idea of the author-founded Germany-wide group BeNa (in 2010) with its members however was to base fatigue life prediction 'embedded lamina-wise' in order to be more general in fatigue life design in the future and to save test costs and time. Associated test specimens shall capture the interface effect of the lamina embedded in the laminate.



„Composite-Fatigue"-Gruppe : 2nd Meeting, at ISD Hannover:

Both, J. (LLB, TUM) , Cuntze, R. (CceV) , Heislitz, A. (KluB, TU-Da) , Himmel, N. (IVW, TU-KL) , Horst, P. (IFL, TU-BS) , Jansen, E. (ISD, LUH) , Koch, I. (ILK, TU-DD) , Krüger, H. (ISD, LUH) , Laveuve, D. (LBF, Fraunhofer) , Rolfes, R. (ISD, LUH) , Schürmann, H. (KluB, TU-DA) , Schulte, K. (TU-HH) , Trappe V. (BAM).

And at later meeting at Dresden: came together

TU Hamburg-Harburg: Prof. Schulte, Herr Kosmann; Uni Hannover: Dr. Jansen; TU Dresden: Prof. Gude, Dr. Koch; TU Braunschweig: Prof. Horst (leader), Herr Greif; IKV Aachen: Herr Marder; IVW Kaiserslautern: Dr. Magin; KluB Darmstadt: Prof. Schürmann, Frau Heislitz, Frau Feldten; LBF Darmstadt: Prof. Büter, Herr Laveuve; BAM: Dr. Trappe; TU München: Herr Both**.**

Minutes of the VDI 2014 committee meeting, Sheet 3, at TU Darmstadt June 21, 2000:

* *Failure: Separation into fiber stress-dominated and interlaminar stress-dominated.*
* *Residual safety specified is based on stress, not lifetime-related!*

30.10 Last Presentations 2023-2025 at Various Conferences



Presentation in the past:
(the *more complicate time'*:
Hope, that the presentation of
the transparencies will *work*

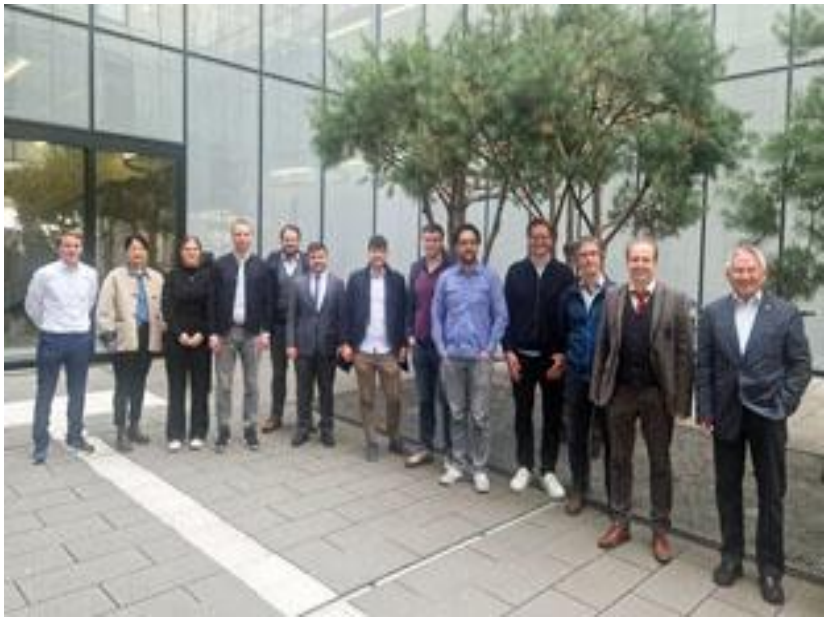


2025, *less complicated presentation time*. Better?
No. The pointer could not *work* due to a false plugging.





Landshut Lightweight Conference and Talk to my Carbon Composites WG "Engineering"



Presentation on

"Static 3D-Strength Failure Criteria for the Structural Material Families Isotropic, Transversely–isotropic UD-Lamina and Orthotropic Fabrics. And? Achievement of a Novel, Simpler Structural Mechanics Building.
on basis of Cuntze's successfully Test Data-linked Failure-Mode-Concept" (FMC)

DGM-Fachausschuss Hybride Werkstoffe,
21.2. 2024

Yearly Munich Lightweight Seminar

Participation with presentations continuously since the beginning 25 years, ago

Leibniz Universität Hannover
Teaching assistant at construction Mechanics Chair

21. Münchner Leichtbauseminar, 2025, ~~20~~ 15 min + ~~10~~ 5 min

Engineering *Strength* Assessment of UD-multilayer-composed Laminates

'Technische' Festigkeitsbewertung von UD-Vielschicht-Laminaten

Prof. Dr.-Ing. habil. Ralf CUntze VDI, engineer from industry MAN-Technologie,
then Carbon Composites ((CCev), still linked to its follower Composites United (CU),
supported by Dr.-Ing. Erik Kappel, German Aerospace Center (DLR), Braunschweig

1 **Design Concern: Reserve Factor RF must be > 1, when assessing the design**
2 **Terminology,** because Terms and Strength Criteria are differently formulated
3 **Presentation of Tsai's idea including the application of a Strength Criterion (SFC)**
4 **Indirect determination of Tsai's Strength Criterion-based '2D-Omni** (principal First-Ply-) **Failure** (strain) **Envelope'**
5 **Cuntze's direct determination of the '2D-Omni Failure Envelope'**
6 **Application: Determination of Material Reserve Factor f_{RF} utilizing the classical Failure Stress Method (SFC) and the SFC-based Failure Strain Method**

Some Conclusions.

NOTE, please: *Results of a non-funded "hobby" work!*

2

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The CV at hand is to some extent only an excerpt of the document [CUN22], which comprises all my research work, and thus the CV is collecting just the last three decades.

Therefore, some specific chapters of [CUN22] shall be mentioned below for probably interested readers.

31.2 Thanks, Acknowledgement, Resumes → **Composites United**

Many Thanks to: My parents Helmy and Werner for my *inherited tenacity* to endure this hobby alongside the job, my first wife Jutta and to my second wife Maria for tolerating my private, very time-consuming scientific hobby and work.

The professors

- *Hans Kauderer, E. Doeinck, Theo. Lehmann, Frederick-Henry Schroeder and Kurt Magnus for my knowledge of mechanics, which of course is still imperfect. Theo Lehmann and F-H Schroeder were my doctoral supervisors.*
- *Theo Lehmann, as well as the purple-robed jaguar driver Zerna, especially for the tensor analysis knowledge, which I was later able to use it in fiber laying winding technique*
- *Bodo Heimeshoff and Huba Öry for the self-critical way of working, which is later called 'self-testing' in ISO 9000. Bodo Heimeshoff and Harry Grundmann, who were my habilitation fathers in 1978*
- *Alfred Puck for many valuable discussions and his indirect initiation of my Failure Mode Concept (FMC) idea*
- *Gerhard Schüeller and Rüdiger Rackwitz for the knowledge of structural reliability, later applied in my FMC idea*
- *Karl-Heinz Schwalbe for my fracture mechanics knowledge, in his specific Working Group*
- *Ms. Rita Jeltsch-Fricker for "Getting on the Right Mathematical Path" in a large MAN research project on A. Puck's Action Plane Stress criterion*
- *The honorary professor-reviewers Hufenbach, Eschenauer and finally Fahlbusch of the Bundeswehr University for the realization of the honorary professorship at the UniBw at Neubiberg.*

Thanks to all those who are not named, especially MAN colleagues and the members of the Aerospace-Technical Industry Committee for Structural Calculation (IASB), who contributed to both my professional and to my scientific work.

Without the encouragement of Wilfried (Prof. Becker, TU Darmstadt) I would not have made it through the laborious work in the last two decades.

Yes, and where wouldn't I have gotten stuck everywhere in Mathcad-code calculations if it there would not have been Dipl.-Ing. Bernd Szelinski, who was usually able to eliminate Mathcad-attributable difficulties, such as changed letters, characters or that vectors were no longer read. It's a pity that such a great calculation program has such shortcomings and errors are incorrectly noted or it doesn't calculate and doesn't give a suspicion of error. Sometimes, another solution way could be gone.
Not to forget Dr.-Ing. Andreas Freund, with whose Mathcad skills I was only able to make the numerical entry into WWFE-I, culminating in a joint paper on WWFE-I A. A big thank-you to Bernd and Andreas. And finally not to forget: Many thanks to my IT-friend, the problem solver Peter Keller.

And again to all my scientific friends and partners during life: arbitrary order

Bodo Heimeshoff, Huba Öry, Alfred Puck, Steve Tsai, Wilfried Becker, Holm Altenbach, Werner Hufenbach, Volker Ulbrich, Rolands Rikards, Lothar Kroll, Klaus Rohwer, Siegfried Schmauder, Gottfried Ehrenstein, Walter Wunderlich, Peter Offermann, Ernst Giencke, Günther Niederstadt, Gerd Busse, Urs Meier, Frank Schladitz etc.

31.3 Resume

Life philosophy, experience

A lifelong close friend of Konrad Zuse and my father-friend once told me Zuse's retrospective:

"Looking back on my career, I can only hope that in the future there will be room not only for the specialist in his field, but also for the universally gifted. I believe that versatility in particular is the prescriptive for ideas that are out of the ordinary. Such an idea, an 'infidelity' of technology, if you will, was ultimately the computer".

In this context what I learned:

"Without versatility, I would never have been able to see the invisible bridges between the materials and their disciplines. Test results of related materials provide valuable information for the pre-dimensioning of novel materials". This saves time and money.

As far as new ideas are concerned, T.A. Edison is right: 1 % inspiration, 99% transpiration.

This was about the same with my FMC. Never stop if people want you to give up or my mathematical codes Mathcad.

Further, with my FMC it basically looks similar to the outstanding scientist Max Planck experiences, who said:

"It is one of the most painful experiences of my life that I have never succeeded in bringing a new assertion, for the correctness of which could provide a compelling theoretical proof, to general recognition. New scientific work prevails after the extinction of the opponents".

Where are the discussions in this contact-simple computer time?

Karl Poppers has summarized what is still very close to my heart in his 12 principles for a new professional ethic:

"It is impossible to avoid all mistakes or even all mistakes that are avoidable in themselves. Since we must learn from our mistakes, we must also learn to accept gratefully when others draw attention to our mistakes."

I hope I've always been very grateful for any bug report.

I'm grateful for a fulfilled life.

Much Experience is required in Design! But what is experience?

"Experience is not what happens to you; it's what you do with what happens to you".

Aldous Huxley

Final notes

Above non-funded work mainly addresses the author's working life in industry with the intension to transfer theory into engineering application.
This 'single authored' work includes:

***Idea finding, *idea exploitation to generate the FMC-theory,**
***text writing of this document, *typing of formulas,**
***extensive numerical analyses with rendering of results like fracture bodies using the programs Mathcad 13 and 15,**
***difficult visualizations of the calculation results, sketches, diagrams etc**.

All these works have been performed by the author himself.

Many thanks are given to those who believed in my work [*W. Becker*] and had some discussions with me on several topics [*Wolfgang Brocks with Fracture Mechanics, Andreas Freund with Mathcad 13 and UD mapping etc, Martin Grimmelt with Statistics, Probabilistics.*]. This thankyou includes the WWFE organizers within the performance of WWFE-I and –II from 1999 through 2013 especially *Sam (Kaddour)* and those that peered my WWFE-contributions. Not to forget are all those which delivered a basis for some body texts. *B. Szelinski* helped not to despair of Mathcad versions.

To my wife Maria: *"My heartfelt thanks for allowing me to devote so much time of 'our time together' to my time-consuming hobby* ".
Dedication to all the people who have guided me to the wide variety of technical fields during my 60-years working life. This was challenging but also difficult and at the same time beautiful. Never giving up was the motto.

Personal desire of the author:

"*It were good for both the dicsciplines mechanical and civil engineering to act side-by-side such as croco and hippo document below*". Surprising picture, Sambia 2011.





The paw-beetle could serve as an excellent model for visualizing a good team.

In addition to very good experience in working life, negative experience should not be forgotten:

- *The belittling of company employees in the event of non-achievement of goals, so that many give up inwardly in the end and prefer to take care of a change of company with the associated deterioration in efficiency.*
- *Reorganize, but do not check whether this measure has led to an improvement in this situation.*
- *The Not-Invented-Here syndrome: It derogatively describes the disregard of already existing knowledge by companies or institutions due to the place of origin [https://de.m.wikipedia.org/wiki/Not-invented-here-Syndrom].*
- *And recently, because the available information on the web is not used actively enough, will AI help here?*
- *Based on my experiences with my Failure-Mode-Concept and from my travels, I can only fully agree with Mark Twain:" "How long it takes for one part of the world to adopt the useful ideas of another part is surprising and inexplicable. This form of stupidity is not limited to any community, no nation; it is universal."*

  Concerning my idea of the existence of a material-symmetry-based 'Generic Number' for Structural materials: Here I fully feel like the great scientist Max Karl Ernst Ludwig Planck, when stating: „It is one of the most painful experiences of my scientific life that I have rarely, yes, I would like to say, never succeeded, in bringing a new assertion, for the correctness of which I could provide a complete, compelling, but only theoretical proof, to general recognition."
- *No blocking of information and workflow between the areas in the companies pursuing a joint project is absolutely necessary*
- *Fighting with Closed Minds people*
- *ARIANE development: Good progress of the projects by the French system managers, but often cost-intensive, unfortunately blocked by the fact that new French project engineers - without the necessary project knowledge and thus without any decision-making authority - were our discussion partners. And, 'bureaucratic' people partly checked the contract fulfilment of the contractors*
- *The preservation of a company's knowledge is targeted by the experienced. One should not say "What, you've been with the company for so long? Our human resources department has done a bad job there." Just motivating instead of threatening alone creates an improvement.*



Hope for my Friends:

I eat finest mild dark chocolate for becoming milder with my progressing age!

”Quid quid agis, prudenter agas, et respice finem” (*a slogan of my school class*)
Whatever you do, do it wisely and remember where it leads to *(*from *Gesta Romanorum).*

I hope that I followed this saying.

If I had known beforehand how much time this work would take, I probably would not have done it.

“Si enim alicui placet mea devotio, gaudebo. Si autem nulli placet, memet ipsam tamen iuvat quod feci”
(A letter from Hrotsvit, nun of Gandersheim, 950 anno domini

If my work pleases anyone, I will be happy, but if it pleases no one, it will nevertheless be good that I did it.

I am grateful that I was able to do all this.

Multi noscunt multa, omnes aliquid, nemo sati.
Many know a lot, everyone knows something, no one knows enough.
The above Latin saying is for me the basis for hopefully coming valuable discussions.

Finally, a word about the future.

Our famous Bavarian comedian Karl Valentin, who starved to death in 1948, once said:
"*The future was better in the past*"! Is this really true?
In any case, I can say for myself, only: "*The future was longer for me in the past*"!

What nowadays worries me deeply as a structural engineer from industry:

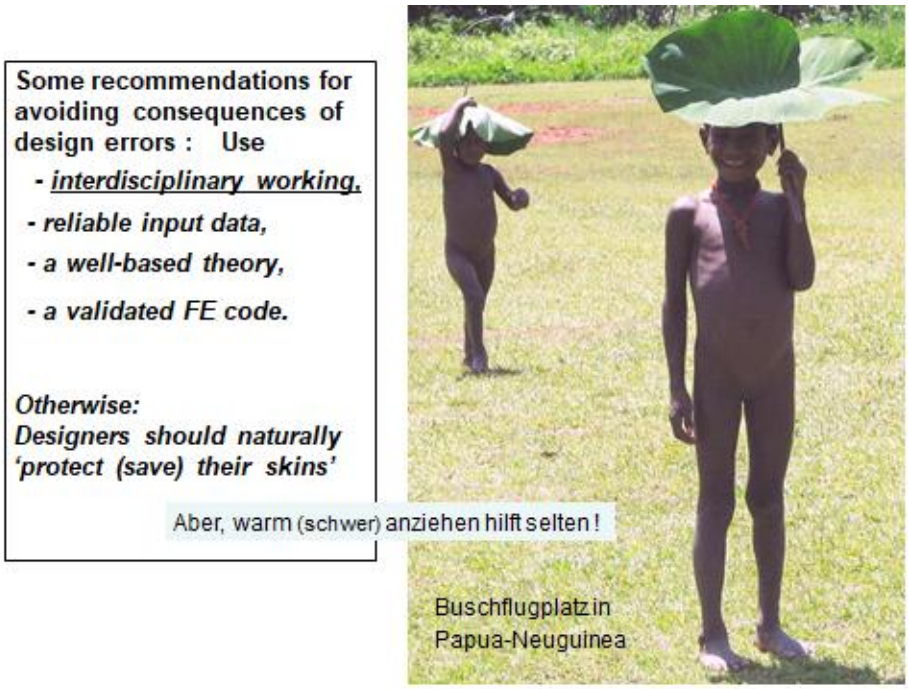
* An acquaintance recently said to me: “*Less than 10% of my students only come to my basic mechanics lecture*”. Too demanding? That would be bad for the German industry. We cannot remain competitive

* Germany is slowly destroying itself if profit separates development from production and testing. (Deutschland schafft sich langsam ab, wenn Profit die Entwicklung von der Fertigung mit Erprobung trennt).

The valuable tool **AI**, sensibly applied, helps us to get suggestions for solutions. But who is supposed to judge them without corresponding knowledge of mechanics?

For structural components the only realistic ‘checking’ in future will be the use of test-validated Design Sheets

It can already be said: The quality of the results of the algorithms-using AI models will decline, if more unverified, AI-generated content forms the growing information basis for the AI models' learning.
Therefore, I hope that at least researched content will be loaded on the technical side. This costs money, but otherwise the designed ‘buildings’ will collapse. Current AI apps are based on statistics and probabilistics. Their electric power and water consumption is gigantic, which no one wants to hear in the current hype.
(Algorithm: A step-by-step instruction that performs a task by transforming a specific input into a desired output, like a cooking recipe or one of the presented material models, being different due to manually searching the data set instead of using a search algorithm.)



In above context: 'Dressing warmly' (*thickening in lightweight engineering)* rarely helps to get a good design!

And concluding some few very different things that I did not understand during my life:

• Why did I, alone on March 30, 1945, bend down in a ditch and walked 300 meters into the woods to my parents, away from my grandparents? That's , why I survived gun fire

• Why did my uncle's property at Erfurt-Bergstromweg no longer officially exist after reunification? Now it officially exists again, but all of his immediate family members and heirs have died.

• Why was there no internationally useful greenback-like euro note from 2000 onwards, but only a heavy, difficult-to-exchange coin?

• Why was conscription (armed forces service) suspended and social service abolished in 2011?

• As someone affected, who nevertheless supported the shutdown of nuclear power plants along with the German majority at the time, I had imagined a sensible phasing out. It appalls me that politicians would have preferred to shut down the power immediately, but after the final shutdown, these same politicians are now clamoring for expensive restarts, however but do not offer a final storage facility.

• It is really surprising that China is better than us in several industrial areas? We sold them the latest equipment. They further have to work more.

* Why is it not mandatory for a government - as is normally the case in industry - to plan for the necessary basic materials for the country and its economy as a primary task?

* Why do tomatoes rarely have an aromatic taste, like these strongly had after the war?

* What I unfortunately have to lament among students is this: Instead of utilizing the fantastic opportunities available online to access original works, they rely on AI-generated results—which, after all, merely follow an algorithm that interprets our query.

Some other affiliation: *Member of*

- **IASB 1972-2025?**
- **VDI (Association of German Engineers) > 50 years**
- **DGLR (German Society for Aircraft and Spacecraft) > 40 years**
- **Founder and organizer of 4 Working Groups at Composites United e.V.**
- Engineering, *aerospace, mechanical engineering*
- Composites Fatigue, *aerospace, mechanical engineering*
- Design Dimensioning and Design Verification, *civil engineering*
  - Automated fabrication in construction including serial production including Extrusion-based Additive Fabrication (not *'~~3D Printing~~'*), *civil engineering.)*
  - .
- Member of DVM-WG "Characteristic Value Determination and Application of **Fracture Mechanics". *Headed by K.-H. Schwalbe (*1980)**

Mitgliederverzeichnis der für die Merkblatterstellung verantwortlichen DVM-Arbeitsgruppe "Kennwertermittlung und Anwendung der Bruchmechanik"

Das vorliegende DVM-Merkblatt wurde in einer Gemeinschaftsarbeit von der Arbeitsgruppe "Kennwertermittlung und Anwendung der Bruchmechanik" innerhalb des "Arbeitskreises Bruchvorgänge", integriert im "Deutscher Verband für Materialprüfung e. V. (DVM)", unter der Federführung der beiden Leiter der Arbeitsgruppe, A. Cornec, J. Heerens, beide GKSS-Forschungszentrum Geesthacht, ausgearbeitet. An diesem DVM-Merkblatt waren nachfolgend aufgeführte Institute und Firmen und deren Mitarbeiter maßgeblich beteiligt:

Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin	K. Wobst
Fraunhofer-Institut für Werkstoffmechanik (IWM), Freiburg	B. Voß
GKSS-Forschungszentrum Geesthacht GmbH	A. Cornec J. Heerens
Institut für Eisenhüttenkunde (IEHK), Aachen	A. Heuser D. Dormagen
Interatom, Bergisch-Gladbach	H. Huthmann
Kernforschungszentrum Karlsruhe (KfK)	A. Brückner
Kraftwerk Union AG, Erlangen	A. Gerscha
Kraftwerk Union AG, Mülheim	F. Vahle
MAN-Technologie, München	R. Cuntze
Messerschmitt-Bölkow-Blohm (MBB), Bremen	K. Blomeier L. Schwarmann
Rheinisch-Westfälischer TÜV, Essen	B. Reimann M. Remke

Dr.-Ing. habil. RALF CUNTZE VDI

M.A.N. - NEUE TECHNOLOGIE
Dachauer Straße 667
8000 MÜNCHEN 50
Telefon (089) 1480279

München, 20.6.84

Herrn Dr.-Ing. Jörgens
RW-TÜV
Steubenstr. 53

4300 Essen

Sehr geehrter Herr Dr. Jörgens,

wie in Düsseldorf vereinbart, sende ich Ihnen zu Punkt 3.6 der DVS 2401/2 anliegende Vorschläge zu, die im wesentlichen auf Unterlagen beruhen, die im Rahmen der Arbeitsgruppe Kennwertermittlung/Anwendung der Bruchmechanik bei Prof. Schwalbe, GKSS, diskutiert werden.

Vorschlag 1
Zusammenhänge von J, COD und K im LEBM-Bereich.

Vorschlag 2
Anwendung der K_R-Kurven-Methode.
(Unterscheidung von physikalischer und effektiver Rißlänge).

Mit freundlichem Gruß

R. Cuntze

Kopie: Prof. Schwalbe

Dr. Agatonovic
Dr. Hoffmann

VORSCHLAG 2 nach, SCHWALBE, Application of the K_R-curve methodology to the prediction of instability / Tearing

K_R-Kurven-Methode

LEBM-Formalismus ist für höhere Beanspruchungen anwendbar, falls K um plastische Effekte korrigiert wird. Dieses zeigen Versuchsergebnisse bei denen sowohl nach dem korrigierten Rißwiderstand K_{eff} als auch nach K_J aus dem J-Integral ausgewertet wurde.

I Ziel
- Ermittlung des Eintrittes der Instabilität eines rißbehafteten Bauteils oder
- Bemessung auf Instabilität oder
- Instabilitätsnachweis.

II Voraussetzung für die Anwendung auf Bauteile:
- Ausgelegte Last bleibt kleiner 90 % der Fließlast
  $F < 0,9 \cdot F_{0,2}$
  Für $F < 0,5 \cdot F_{0,2}$ gilt reine LEBM. Bei einer CCT-Probe z.B. ist
  $$F_{0,2} = \sigma_{0,2} \cdot 2B(W-a_{ph})$$
- Rißausdehnung der Probe ist nicht kleiner als im Bauteil
  $$\Delta a|_{\text{Test der Probekörper}} \geq \Delta a|_{\text{Bauteil unter Last}}$$
  Probe und Bauteil haben praktisch identische R-Kurven.

III Methode

1. Ermittlung der Rißwiderstandskurve/R-Kurve und Versuchsdatendarstellung
   - Messung der physikalischen Rißlänge a_{ph}
   - Feststellung der Ausgangsrißlänge a_0
   - Berechnung der Änderung der physikalischen Rißlänge
     $$\Delta a_{ph} = a_{ph} - a_0$$
   - Prüfung auf $F < 0,9 \cdot F_{0,2}$
   - Festhaltung der Meßwerte durch Darstellung der R-Kurve als
     $K_R(\Delta a_{ph})$
     Δa_{ph} wird z.B. mittels elektrischer Potentialmethode gemessen
   - Möglichkeit zur analytischen Darstellung mit Hilfe einer passenden Ausgleichsfunktion. Eine solche ist
     $$K_R = C_1 \Delta a_{ph}^{C_2} + C_3 \Delta a_{ph}$$
     Die C_i werden nach der Methoden der kleinsten Fehlerquadrate bestimmt.

VORSCHLAG 1

Zusammenhänge J, COD und K im LEBM-Bereich

1. Beginn der stabilen Rißverlängerung

$$J_0 = \frac{S}{E} \begin{cases} K_0^2 & \text{ESZ} \\ K_{I_0}^2 (1-\nu^2) & \text{EDZ} \end{cases}$$

und

$$\delta_0 = \underbrace{(0,5 \div 1,0)}_{\text{Abhängig von Spannungszustand und Verfestigungscharakteristik.}} \frac{K_0^2}{E \sigma_{0,2}}$$

Index 0 entfällt im LEBM-Bereich.

2. Bereich vor dem Instabilitätspunkt. $F < \approx 0,9 \cdot F_{0,2}$

2.1 J-Wert
Messung z.B. aus Biegeprobe

$$J \approx \frac{-2U}{W-a} \quad \text{für } 0,5 < \frac{a}{W} < 0,7$$
$$= \frac{S}{E} K_J^2 \quad \text{(ESZ)}$$

2.2 δ-Wert
Messung aus Biegeprobe. Clip gage.

$$\delta = \frac{K_0^2 (1-\nu^2)}{2E \cdot \sigma_{0,2}} + \frac{0,4 (W-a) V_{plastisch}}{0,4 s + 0,6 a + z}$$

PS:
Insgesamt muß über die Zusammenhänge unbedingt einmal diskutiert werden!

2. Ermittlung der anliegenden Spannungsintensität K_{app}
   - Abschätzung der Größe der plastischen Zone [DVS 2401/1]
     $$\frac{w}{2} \geq r_y = \left(\frac{K}{R_{p0,2}}\right)^2 \frac{1}{n\pi} \quad \text{mit } \begin{matrix} n=2 & \text{ESZ} \\ n=4\sqrt{2} & \text{EDZ} \end{matrix}$$
   - Berechnung von effektiver Rißlänge und Rißverlängerung
     $$a_{eff} = a_{ph} + r_y$$
     $$\Delta a_{eff} = a_{eff} - a_0 .$$
   - Berechnung der effektiven Spannungsintensität d.h. der in Wirklichkeit wirkenden effektiven Größe
     $$K_{app}(a_{eff}) = K_{eff} = \sigma \sqrt{a_{eff}} \, \bar{Y}(\lambda) \quad \text{[DVS 2401/1]}$$
     oder
     $$= \sigma \sqrt{\pi \cdot a_{eff}} \cdot f(a_{eff}/W) \quad \text{[Luftfahrttechnisches Handbuch HSB]}$$
     mit Einarbeitung eines geforderten Sicherheitsbeiwertes in die anliegende Spannung σ.

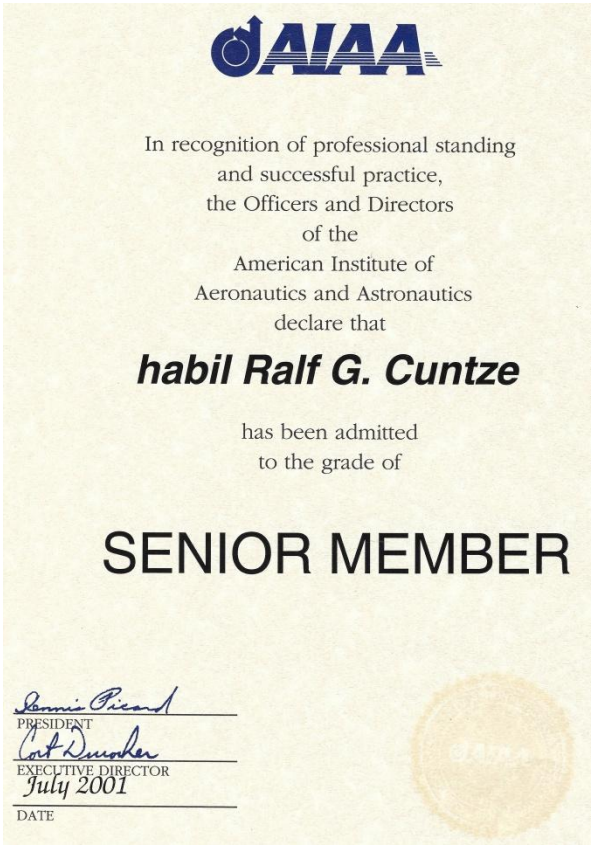
3. Instabilitätsprüfung $K_{app}(\Delta a_{eff})$ und $K_R(\Delta a_{eff})$
   - Umrechnung von K_{app} (Δa_{eff}) auf physikalische Rißgröße. Physikalisch am einleuchtendsten ist, wenn die Prüfung über die Effektivgrößen erfolgt. Da jedoch im Rahmen der Versuchskurven physikalische Rißgrößen direkt aus der Messung vorliegen, ist es besser, die anliegende Spannungsintensität auf die physikalische Rißlänge zurückzuführen, um wiederum gleiche Bezugswerte zu haben, d.h. Überführung von
     $$K_{app}(\Delta a_{eff}) \Rightarrow K_{app}(\Delta a_{ph})$$
   - Verschiebung des R-Kurven (verständlicher für den Anwender wäre hier das Wort K_R-Kurve) -ursprungs auf die Rißgröße a_0, die im Bauteil vorliegt oder abgeschätzt wird.

   a) Zeichnerisch:
   - Berechnung der K_{app} -Kurve für die anliegende Spannung σ
   - Prüfung, ob
     $$\frac{\partial K_{app}}{\partial (\Delta a_{ph})} < \frac{\partial K_R}{\partial (\Delta a_{ph})}$$
   - Wiederholung (σ-Schleife) mit veränderten Werten von σ bis der Tangentenpunkt = Instabilitätspunkt gefunden ist. Zuhilfenahme der Interpolation.

   b) Analytisch
   - Bildung der Ableitungen von K_{app} und K_R und Gleichsetzung
   - σ -Schleife durchprobieren.

19.6.84
Cuntze

- **Member of the American Institute of Aeronautics and Astronautics**



AIAA

In recognition of professional standing
and successful practice,
the Officers and Directors
of the
American Institute of
Aeronautics and Astronautics
declare that

habil Ralf G. Cuntze

has been admitted
to the grade of

SENIOR MEMBER

PRESIDENT

EXECUTIVE DIRECTOR

July 2001
DATE

- **Member of the Probability Working group of *G. Schueller (1986)***

Protokoll der 12. Sitzung der Arbeitsgruppe 4.3 des VDI- Ausschusses Technische Zuverlässigkeit am 28.1.1992 im Hotel Eden-Wolff, München.

20.8.1992

Anwesend (siehe Anlage 1):

Dr.-Ing. D. Flade	FhI für Betriebsfestigkeit, Darmstadt
Dr.-Ing. M.J. Grimmelt	MAN Technologie AG, München
Dipl.-Ing. R. Haak	Deutsche Airbus GmbH, Hamburg
Dipl.-Ing. W. Hofmann	Siemens, Bereich Energieerzeugung, Offenbach
Dr.-Ing. P. Jehlicka	TÜV Südwest, Mannheim
Dr. techn. P. Kafka	GRS mbH, Garching
Prof. H.-J. Melzer	Fachhochschule München
Dr. rer.nat. H. Reichinger	IABG mbH, Ottobrunn
Univ.-Prof. R.J. Scherer	Universität Karlsruhe
Univ.-Prof. G.I. Schuëller	CERRAM, München (Obmann)
Dr.-Ing. W. Schütz	IABG mbH, Ottobrunn
Prof. H. Steinhilber	Fachhochschule Gießen (Protokoll)
Univ.-Prof. E. Tittes	Universität Hannover

Entschuldigt:

Prof. M.v.Tapavicza	Fachhochschule München

Der Obmann begrüßt die Anwesenden und eröffnet die Sitzung.

TOP 1: Genehmigung des Berichts zur 11. Sitzung vom 28. Oktober 1991

Das Protokoll wird ohne Einwände genehmigt.
Herr Tittes entschuldigt sich nachträglich für seine Nichtteilnahme.

TOP 2: Posteingang

Herr Oestergaard sieht sich auf Grund einer Entscheidung des GL-Vorstandes nicht mehr in der Lage im Arbeitskreis mitzuwirken. Herr Schuëller will Herrn Dr. Payer, HSVA, ansprechen, da der Offshore-Bereich im Arbeitskreis vertreten sein sollte. Die Fertigstellung des bisher von Herrn Oestergaard bearbeiteten Handbuchbeitrags übernimmt Herr Schuëller.

ICOSSAR 93 in Innsbruck (9.-13. August 1993): Herr Schuëller bittet die Mitglieder des Arbeitskreises um Beiträge. Eventuell ist eine Sitzung des AK mit 6 (oder mehr) Beiträgen möglich. Termin für Abstracts ist bereits der 30.3.92. Der lange Vorlauf ist wegen der internationalen Review-Prozedur erforderlich, könnte aber für die AK-Mitglieder abgekürzt werden.

TOP 3: Bericht des Vorsitzenden des ATZ (Kafka)

Am 6.12.1991 fand eine Sitzung der Obleute des ATZ statt.
Zum Thema VDI Handbuch Technische Zuverlässigkeit:
1) Es soll eine leicht lesbare Einführung erstellt werden. Deren Entwurf wird den Mitgliedern des AK zur Kenntnis gegeben.
2) Ergänzung durch weitere Beiträge. Zur Zeit ist unsere Gruppe die einzige, die einen Beitrag

On the following page the various icons of
my permanent positions and of my Bureau for Lightweight Structures
Ingenieurbüro für Leichtbau (IfL) For identification purposes, invoices are displayed.

Ralf Georg **CUNTZE**
Prof. Dr.-Ing. habil. VDI
Ingenieurbüro für Leichtbau

Bauwesen IfL Maschinenbau

Matthäus-Günther-Straße 32
85229 Markt Indersdorf
Tel. : 08136 7754
Ralf_Cuntze@t-online.de

schlaich bergermann partner
sbp gmbh
z. Hd. Herrn Dipl.-Ing. Lorenz Haspel
Schwabstraße 43
D-70197 Stuttgart
Deutschland

Rechnung „CFK-Hänger“

Vorläufige gutachterliche Arbeiten im August 2020

Für meine Leistungen:

- ✓ Durchsicht der bereit gestellten Unterlagen
- ✓ Erstellung eines Dokumentationsentwurfs „Gutachterliche Stellungnahme zu Sicherheits- und Bemessungskonzept - Widerstandsseite“
- ✓ Zusammenstellung von Unterlagen für den Lebensdauernachweis.

erlaube ich mir zu berechnen:

- Gesamtleistung 2000 €
- Umsatzsteuer 16% 320 €

Gesamtsumme : 2320 €

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Bei eventuellen Fragen stehe ich gern zur Verfügung.

Mit freundlichen Grüßen
Ralf Cuntze

Markt Indersdorf, 24. Januar 2021

Carbon Composites e.V. (CCeV, Augsburg) and Composites United (CU, Berlin)

Contracts

CARBON COMPOSITES

Carbon Composites e.V. · Stettenstraße 1+3 · 86150 Augsburg

Herrn Professor Dr. Ralf Cuntze
Matthäus-Günther-Str. 32
85229 Markt Indersdorf

Ihr Ansprechpartner
Dr. Hans-Wolfgang Schröder

E-Mail
hans-wolfgang.schroeder@carbon-composites.eu

Tel.: (0821) 3162 286
Mobile: 0175 573 8891

Datum: 28.12.2011

Beleg als ausbildender Dozent

Mit diesem Schreiben bestätigt das Kompetenznetzwerk Carbon Composite e.V., dass Herr Professor Dr.-Ing. habil. Ralf Cuntze die Arbeitsgruppen

Engineering und
Faserverstärkung im Bauwesen

beim Carbon Composites e.V. leitet und durch eigene Vorträge und Veranstaltungen an der Ingenieurausbildung – in Verbindung mit der IHK Schwaben – mitwirkt.

Dr. Hans-Wolfgang Schröder
Geschäftsführer

CARBON COMPOSITES
Carbon Composites e.V.
Stettenstr.1+3, Tel. 0821/3162-286
86150 AUGSBURG

Contract:

Detailed invoices were required from CU and the Bundeswehr University

DER PRÄSIDENT

Universität der Bundeswehr München - D-85577 Neubiberg

Herrn
Dr.-Ing.habil. Ralf Cuntze
Matthäus-Günther-Str. 32

85229 Markt Indersdorf

UNIVERSITÄT DER BUNDESWEHR MÜNCHEN

Werner-Heisenberg-Weg, Neubiberg

Telefon: 089/6004(1) - 2000/20014058
BwFspN: 6217(8) - 2000/2001

16. Februar 1995

Sehr geehrter Herr Dr. Cuntze,

für das Frühjahrs-Trimester 1995 erteile ich Ihnen hiermit einen Lehrauftrag über insgesamt -3- Trimesterwochenstunden an der Universität der Bundeswehr München.

Für	Trimesterwochen-stunden	Fakultät
Faserverbundbauweise in Konstruktion u. Berechnung	2 V, 1 Ü	Luft- und Raumfahrttechnik

Bei Erfüllung dieses Lehrauftrages erhalten Sie eine Vergütung von 50,-- DM/pro gehaltene Einzelstunde. Ein Anspruch auf volle Lehrauftragsvergütung besteht nur, wenn die Unterrichtsveranstaltung zustande kommt und in vollem Umfang durchgeführt wird. Eine vergütungsfähige Lehrveranstaltung setzt fünf Hörer voraus. Ein Anspruch auf Fortzahlung der Vergütung im Krankheitsfalle besteht nicht.

Daneben erhalten Sie die Fahrkosten für die Anreise aus München-Karlsfeld nach Neubiberg und zurück (MVV).

Auch wenn München-Karlsfeld nicht Ihr Wohnort ist, können keine zusätzlichen Fahrkosten für die Fahrt zur Universität der Bundeswehr München, Neubiberg, erstattet werden.

Der Lehrauftrag begründet kein Arbeitsverhältnis.

Ich bitte Sie, die "Bestätigung über gehaltene Lehraufträge" ausgefüllt an den zuständigen Dekan zurückzugeben.

Mit freundlichen Grüßen

Bestätigung über gehaltene Lehr-/ Unterrichtsaufträge

Bitte geben Sie diese Bestätigung **spätestens zwei Wochen** nach der letzten Stunde ab, da sonst Ihr Honorar nicht angewiesen werden kann.

CUNTZE	RALF	15.6.99
Name	Vorname	Datum

Zutreffendes bitte ankreuzen: Honorarprofessor: ☒ ja ☐ nein

An den Dekan der Fakultät / des Fachbereiches / den Leiter

☐ BAU	☐ VERM	☐ ET	☐ INF	☒ LRT
☐ PÄD	☐ SOWI	☐ SOWI/EGA	☐ WOW	☐ MB
☐ BW	☐ BW/EGA	☐ ET/FH	☐ Sprachenzentr.	☐ Sportzentrum

Angaben zum Lehr- / Unterrichtsauftrag:

Herbsttrimester (Okt. - Dez.) 19 .....
Wintertrimester (Jan. - März) 19 .....
Frühjahrstrimester (Apr. - Juni) 19 99.

Thema und Nr. lt. Vorlesungsverzeichnis:

Trimesterwochenstunden: ...3.... ☒ V ☐ S ☒ Ü ☐ Pr

Im abgelaufenen Trimester habe ich ***tatsächlich*** folgende Einzelstunden geleistet:

Datum	Stunden	Datum	Stunden	Datum	Stunden
12.4.	4	31.5.	4		
19.4.	4	7.6.	4		
26.4.	4	14.6.	2		
3.5.	4	+ Exkursion			
10.5.	4				
17.5.	4				

Gesamtsumme der Einzelstunden: ...34 + Exkursionsveranstaltung

The Engineering Working Group: Focus on Parameters *[from CCeV News 2010, second]*

The Engineering Working Group in the CCeV has been in existence since spring 2009. After the kick-off meeting with a keynote speech on the topic "Design and Verification", further theme days with user contributions dealt with the topics of "general optimization", "targeted additions to optimization" (such as hybrid CFRP-metal composites, efficient rotor blade design with ANSYS, robust design optimization taking into account manufacturing tolerances) as well as the formulation of strength-failure conditions.

In spring 2010, a joint, coordinated event took place with the NDI working group "Materials and Component Testing". Within the framework of the topic "Tools in Damage Tolerance Design", the NDI Block in production (determination of defect sizes) and then the Block Requirement of the Approval Authorities, Evaluation of Defects and Verification Methods were dealt with.

The Engineering working group has set itself the task of bringing together practically and theoretically oriented engineers. These come from smaller and large companies as well as from the university and institute sector. The exchange of experience between users and researchers at the university is one of the goals of the working group. In addition, it aims to promote thinking in the component process chain from design to verification, provide appropriate knowledge, convey analysis tools with their applicability limits and integrate the findings of other more practically oriented CCeV working groups.

In principle, the CCeV attaches great importance to the fact that the working groups learn from each other, strive for cross-connections and optimise processes. In this sense, the meeting of the Engineering Working Group always takes place together with that of the NDI Working Group. The above-mentioned lecture series provide a framework for the exchange of experiences. The presentations held together with the minutes of the meeting can be downloaded from the CCeV website (Carbon Composites -> Range of Services -> Working Groups/Groups -> Engineering). For this desired cross-linking, a sub-working group "Evaluation of NDI" is planned with the topics of maintenance, repair, inspectability, damage tolerance, and later recycling.

Another important sub-working group on the "Evaluation of new engineering software products" has already started its work. For this purpose, members are asked to list their software tools according to a fixed scheme, to submit evaluations and to formulate wishes. Some of the criteria to be applied here are: result quality, robustness, reliability, user-friendliness, cost, etc. The software companies are already involved in order to then specifically address the problems of the users.

For the next event, which will take place on 22.10.2010, the topic "Material characteristics and material characterization" was requested. For the members of the Engineering Working Group, the lack of reliable material characteristics (elasticity variables, strength parameters, etc.) for design and verification is also a major problem. In addition, validated strength conditions for the representation of multiaxial fracture stress states of the unidirectional (UD) layer are only available to a limited extent.

In this context, it is regrettable that the huge expenditures and valuable validation results of participants and organizers of QinetiQ (UK) in the implementation of the World Wide Failure Exercises-I and -II are unknown to many designers, but also to materials characterizers and test center employees in industry and institutes. WWFE-I had as its topic the validation of UD strength conditions with biaxial fracture stress states, while the WWFE-II, which is currently being phased out, is trying to do the same with provided 3D fracture stress states. The author was successfully involved in WWFE-I, and has experienced the difficulties of providing reliable test data - especially in WWFE-II: Test specimens, test benches, measurements and evaluation offer many possibilities for error. A test result is always experimental evidence, but almost never the complete experimental proof. A sensible balance of theory and experiment, in addition to good cooperation in both areas, is therefore imperative.

The CCeV strives to pass on experience so that some wheels are not reinvented by expensive experiments, but gaps are closed. For this purpose, contributions are also uploaded to the CCeV website, which help, for example, to determine the necessary multiaxial strength data.



Picture from a meeting of the combined WG.

Gerd Busse invited me in 2009 to merge our two working groups in order to promote the necessary system knowledge of an experienced engineer. Only this joining will provide the opportunity to disseminate NDI knowledge and to make NDI results assessable for design purposes.



This is a good place to thank Bernhard Jahn with whom I organized practically all the events and visited the venues as a co-driver, very well driven.



Seats changed



Examples below:

<u>Some</u> Meetings of the author-founded Working Groups

CC BAU universität innsbruck CARBON COMPOSITES

„Automatisierte Fertigung im Bauwesen von Bauteilen mit Polymermatrix und Betonmatrix“

- Was gibt es Neues? –

2. Thementag ‘Automatisierte Fertigung‘

DACH-Veranstaltung von allen CC Bau-AG´s, speziell AG ‘Robotergestützte Fertigung‘

Zielgruppen: Bauwirtschaft, Architekten, Planer, Handwerker, Auftraggeber, Zulassungsstellen

am **13. Juni 2019 an der Uni Innsbruck, Technikerstrasse 21, A 6020 Innsbruck**
Institut für Konstruktion und Materialwissenschaften, Arbeitsbereich für Massivbau und Brückenbau: Univ.-Prof. Dr.-Ing. Jürgen Feix
Institut für Experimentelle Architektur, Arbeitsbereich Hochbau: Univ.-Prof. Dr. M. Colletti,
DI G. Grasser 0043 650 441 9086

CCeV-Kontakt Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).
Thementag: 95 € für Nicht-Mitglieder, frei für Vortragende, Presse.
Folien: englisch, deutsch. Vorträge: 25 + 5 min Diskussion.

8:30	Registrierung der Teilnehmer mit Kaffee, Brezeln, Getränke
9:00	**Einführende Worte.** *R. Cuntze*
9:15	**Vorstellung des Instituts.** *M. Colletti, J. Feix*
.9:30	**3D Concrete Printing - from Lab to Practice**. *F. Bos, Uni Eindhoven Holland*
10:00	**Eine mögliche zukünftige Bauweise für den Hoch- und Brückenbau unter den Gesichtspunkten von Lebensdauerkosten, Qualität, Erhaltung der Flexibilität des Ortsbetonbaus und BIM.** *J. Kurath, ZHAW Winterthur*
10:30	*Kaffeepause*
11:00	**Entwurfs- und Bemessungsstrategien für den Faserverbundpavillon auf der BUGA in Heilbronn 2019**. *V. Koslowski, ITKE (Knippers) Uni Stuttgart*
11:30	**Integration der Bewehrung in die additive Betonfertigung**. *V. Mechtcherine, Institut für Baustoffe, TU Dresden*
12:00	**Material und Prozess - adaptive Strategien in der Baurobotik mithilfe von Assistenzsystemen**. *S. Brell-Cokcan, Lehrstuhl für Individualisierte Bauproduktion, RWTH Aachen*
12:30	*Mittagspause*
13:30	**Technische Umsetzung des 3D-Betondrucks in praxisgerechte Fertigung.** *E. Artner, O.Balog, Baumit GmbHTextile*
14:00	**Modulares bauen bei Max Bögl**. *J. Schaffrath, Max Bögl, Neumarkt in der Oberpfalz*
14:30	**COEBRO - Additive Fabrication of Concrete Elements by Robots – Technologie und Anwendungsbeispiele.** *A. Trummer, TU Graz*
15:00	*Kaffeepause*
15:30	**Textile Bewehrung für den 3D Druck mit Beton**. *J. Konzilia, G. Grasser, Uni Innsbruck*
16:00	**Resümee, Abschlussdiskussion zur Inhaltsbelegung der AG "Robotergestützte Fertigung"**
16:15	**Institutsbesichtigung mit "Techn. Umsetzung des 3 D Betondrucks in praxisgerechte Fertigung"**
	Get Together

Ihre Ralf Cuntze und G. Grasser

<u>Hinweis</u>:
CC Bau, Fachabteilung des CCeV, besteht aus 4 AGs: Bemessung und Nachweis (Prof. Dr.-Ing. habil. Ralf Cuntze, Augsburg), Faserverbundarmierter Beton (Dr.-Ing. Ingelore Gaitzsch, texton Dresden), Faserverstärkte Kunststoffe (Prof. Dr.-Ing. Jens Ridzewski, IMA Dresden), Robotergestützte Fertigung (Dipl.-Ing. Otto Kellenberger, AlphaTeck)
<u>Nächste Termine der CC-Bau-AGs:</u>
13. November 2018: CC Bau-Abteilungsversammlung mit 4 Fachvorträgen bei der HWTK Leipzig. März 2019: AG „Faserarmierter Beton“ bei Neviges. Oktober 2019 AG „Bemessung und Nachweis – vom Werkstoff bis zur Zulassung für Bauteile mit Polymermatrix und Betonmatrix“ bei der Uni Weimar

2. Thementag 'Automatisierte Fertigung im Bauwesen'_RC_13juni19_final

CC BAU

COMPOSITES UNITED

CU-Thementag

„Vom Werkstoff bis zur Zulassung von Bauteilen aus Polymermatrix und Betonmatrix“

22. Oktober 2019 beim Institut für Angewandte Bauforschung Weimar gGmbH, Über der Nonnenwiese 1, 99428 Weimar

Zielgruppen: Bauwirtschaft, Architekten, Planer, Handwerker, Auftraggeber, Zulassungsstellen
Veranstaltung der CC Bau-AGs „Bemessung und Nachweis“ und „Faserverstärkter Kunststoff“

CCeV-Kontakt: Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).
Teilnehmergebühr: 95 € für Nicht-Mitglieder, frei für CCeV-Mitglieder, Vortragende und Presse.
Folien: englisch, deutsch. Vorträge: 25 + 5 min Diskussion.

8:30	Registrierung der Teilnehmer, Begrüßungskaffee
8:45	**Einführende Worte mit Ausrichtung CC Bau.** *R. Cuntze / J. Ridzewski*
9:00	**Vorstellung Institut:** *Dr.-Ing. Barbara Leydolph, IAB Weimar*
9:15	**Verwendete Baustoffe mit Schwerpunkt Carbonbeton:**. *M. Butler, Institut für Baustoffe, TU Dresden*
9:30	**Fertigungsverfahren: Bauteile mit Polymermatrix.** *J. Ridzewski, IMA Dresden*
10:00	**Fertigungsverfahren: Bauteile mit Betonmatrix**. *G. Eisewicht, BCS Natur- und Spezialbaustoffe GmbH Dresden*
10:30	*Kaffeepause*
11:00	**Festigkeitsmodellierung der Baustoffe Beton und Lamelle**. *R. Cuntze, CC Bau Augsburg*
11:30	**Lasten, Sicherheitskonzept und Zulassungsaspekte.** *S. Rempel, Solidian Albstadt*
12:00	**Dimensionierungsbeispiel, GFK-Behälter** (nach BüV 2010). *M. Oppe, Büro Knippers-Helbig Stuttgart*
12:30	*Mittagspause*
13:30	**Dimensionierungsbeispiel, Faserbetonbauteil.** *B. Wietek, Sistrans, Tirol*
14:00	**Dimensionierungsbeispiel, CF-Textilbeton-Bauteile**: *S. May, Carbocon-GmbH. Dresden*
14:30	**Dimensionierungsbeispiel, CLT-Modellierung und Bemessung einer Textilbeton-Schale.** *D. Franitza, FE-Union GbR, Chemnitz*
15:00	*Kaffeepause*
15:30	**Abteilungsversammlung - CC Bau**
16:30	**Get Together**

Wir freuen uns auf Ihre Beiträge Ihr Ralf Cuntze und der weitere CC Bau-Vorstand

Hinweise: CC Bau, ehemals CC TUDALIT, Fachabteilung des CCeV, besteht ab 1.1. 2018 aus den 4 AGs: Bemessung und Nachweis (Prof. Ralf Cuntze), Faserverbundarmierte Betone (Dr. Ingelore Gaitzsch), Faserverstärkte Kunststoffe (Prof. Jens Ridzewski), Automatisierte Fertigung im Bauwesen (Ralf Cuntze)
Termine 2020: Workshop am 19. Februar, Ulmer Betontage bzgl. „Wie bekomme ich Carbonbeton-Anwendungen auf die Baustelle“?; CC Bau-AGs-Sitzung, 17. März bei der Universität Siegen.

COMPOSITES UNITED

BETONTAGE CONCRETE SOLUTIONS

COMPOSITES UNITED

CC Bau-Forum

“Carbonbeton-Anwendungen in der Praxis
- ***auf der Baustelle und im Fertigteilwerk“***

Transformation von praktischem Anwendungswissen.
Zielgruppe: Hersteller, Sanierer, Vertreter der Betonbranche
am 19. Februar , integriert bei den
Ulmer Betontage vom 18. - 21. 2. 2020

10:30	***Kaffeepause – Networking***
10:55	**Einführende Worte** *Prof. Dr.-Ing. habil. Ralf Cuntze - Composites United e.V.(former Carbon Composites e.V.)*
11:00	**Verwendete Baustoffe** *Dr.-Ing. Marko Butler - Institut für Baustoffe, TU Dresden*
11:20	**Mehrfach gekrümmte Schalentragwerke aus Carbonbeton :** **Entwicklung wirtschaftlicher Betontechnologien zur Herstellung von Fertigteilen** *Dr.-Ing. Gerald Eisewicht - BCS Natur- und Spezialbaustoffe GmbH Dresden* **Entwicklung einer Spritzbetontechnologie am Beispiel der „TWIST“-Schale des Ergebnishauses CUBE** *M.A., Dipl.-Wirtsch.-Ing. (FH) Matthias Tietze - Institut für Massivbau, TU Dresden*
12:00	**Einsatzbereiche von C³ – Carbon Concrete Composite aus Sicht einer mittelständischen Bauunternehmung** *Dr.-Ing. Frank Jesse - Hentschke Bau GmbH, Bautzen*
12:30	*Mittagspause und Besuch der Ausstellung*
14:00	**Carbon-bewehrte Parkhausdeckenplatten: Von der Idee zur industriellen Fertigung** *Dipl.-Ing. Oliver Heppes - GOLDBECK Bauelemente Bielefeld SE*
14:30	**Ökobilanz der Carbonbeton-Brücke in Albstadt-Ebingen** *Dr.-Ing. Sergej Rempel - solidian GmbH, Albstadt*
15:00	**Carbonbetontechnologie in der Sanierung** *Diplom-Ingenieur Ammar Al-Jamous - Carbonbetontechnologie und Tragwerksplanung, Dresden*
15:30	*Kaffeepause*
16:00	**Die wirtschaftliche Carbonbeton-Wertschöpfungskette - am Beispiel der Vorzugsanwendung Carbonbeton-Fertigteilwand** *M.A., Dipl.-Wirtsch.-Ing. (FH) Matthias Tietze - Institut für Massivbau, TU Dresden*
16:25	**Projektkostenabschätzung – eine realisierbare Vision?** *Dr.–Ing. Arne Ostermann - 4 cost, Hamburg*
16:45	**Praxisbericht: Wann rechnet sich Carbonbeton – und wann ist seine Verwendung nachhaltig?** *Dr.-Ing. Frank Jesse - Hentschke Bau GmbH, Bautzen*
17:15	„Der besondere Beitrag“ als Ulmer Tagesabschluss – Info wurden angefordert (Frau Blank)

Ihr Ralf Cuntze und der weitere Vorstand CC Bau

Weitere Termine 2020 der CU-Fachabteilung CC Bau:

- **17.03.2020** AG-Faserarmierter Beton bei der Uni Siegen
- Juli 2020 AG-Sitzung bzw. CU-Thementag-Automatisierte Fertigung im Bauwesen, Ort noch offen
- **10.09.2020** AG-Sitzung bzw. Thementag aller AG´s / TU-Chemnitz

Registrierungsliste:

4. Thementag der AG 'Automatisierte Fertigung im Bauwesen inklusiv Serielles Bauen'

Zoom-Videokonferenz am Donnerstag und Freitag, den 30.03.2021

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One meeting day: A good mixture, most people from industry

"Carbon concrete-Applications in practice - on the construction site and in the precast plant"

CU-Thementag

„Richtlinien, bauaufsichtliche Zulassungen und Bauartgenehmigungen für die potenziellen Anwender Architekten, Tragwerksplaner und Bauherrn“

am 19. November, 2020, als Zoom-Videokonferenz

25 min Vortrag + 5 min Diskussion, Folien deutsch oder englisch, Vortrag deutsch

08:30	**Einführung** ***Prof. Dr.-Ing. habil. Ralf Cuntze, CU Bau, Augsburg. Composites United e.V. CUeV (formerly CCeV)***
09:00	**Herausforderungen beim Inverkehrbringen von Bauprodukten aus faserverstärkten Kunststoffen – Von Dimensionierungshilfen bis zur Zertifizierung.** *Prof. Dr.-Ing. Jens Ridzewski, Leiter der Zertifizierungsstellen für Bauprodukte (LBO/BauPVO, IMA Dresden. Erster Vorstand von CU Bau*
09:30	**Bauaufsichtliche Zulassungen.** *Dr. –Ing. Lars Eckfeldt oder Dr. –Ing. Rolf Alex, DIBt, Berlin*
10:00	**Vorhabenbezogene Bauartgenehmigungen.** *Dr. Hans-Alexander Biegholdt, Landesstelle für Bautechnik Sachsen , Leipzig*
10:30	***Pause***
11:00	**DAfStb-Richtlinie "Betonbauteile mit nichtmetallischer Bewehrung" .** *Dr.-Ing. Christoph Alfes und Dipl.-Ing. Anett Ignadiadis, Deutscher Ausschuss für Stahlbeton, Dr.-Ing. Norbert Will, Institut für Massivbau der RWTH Aachen University*
11:30	**Zustimmungen im Einzelfall für carbonbewehrte Fassadenplatten.** *Dipl.-Ing. Reiner Grebe, Hering-Bau, Burbach*
12:00	**Bauart oder Bauprodukt? Weg der abZ einer Parkhausdeckenplatte aus Carbonbeton.** *Dipl.-Ing. Oliver Heppes, GOLDBECK Bauelemente, Bielefeld*
12:30	***Pause***
13:30	**Entwicklung, ‘Zulassungsprozess‘ und Marktaufbau von neuen Bau-Produkten in der Schweiz - Beispiel Vorgespannte Carbonbetonplatte CPC.** *Prof. Dipl.-Ing. Josef Kurath, Fachgruppe Architektur, Gestaltung und Bauingenieurwesen, ZHAW Winterthur*
14:00	**Zustimmungen im Einzelfall - vorhabenbezogene Bauartengenehmigungen an konkreten Carbonbeton-Praxisbeispielen.** *Dipl.–Ing. Alexander Schumann, Technischer Geschäftsführer, und Dipl.-Ing. Sebastian May, CarboCon GmbH Dresden*
14:30	**Zulassungsverfahren in der Luftfahrt: Wie macht man es vergleichsweise im Helikopterbereich?** *Dipl.-Ing. Rupert Pfaller und Kollege/in, Eurocopter Deutschland, Donauwörth*
15:30	**Neue Märkte erschließen – Vorteile und Nutzen von Standards für Unternehmen.** *Alexandra Horn, DIN – Leiterin KMU und Verbandskooperationen, Deutsches Institut für Normung, Berlin*
16:00	*Ende ZiE für das erste ‘3D-gedruckte‘ Haus in Deutschland‘. Dr.-Ing. Fabian Meyer–Brötz, Leitung 3D Construction Printing, Peri GmbH, Weissenhorn*

Programmentwicklung: Vorstand Netzwerk CU Bau (Cuntze, Gaitzsch)

Weitere Termine 2020 / 2021 des Netzweks CU Bau:

- 20.10.2020: Arbeitsgruppe “Faserverbundarmierter Beton", Zoom-Videokonferenz
- 25.02.2021: CU Bau-Forum bei den 64. Ulmer Betontagen
- 17.03.2021: CU-Thementag aller Arbeitsgruppen des Netzwerkes CU Bau, Zoom-Videokonferenz ??

Das Netzwerk CU Bau, besteht aus 4 Arbeitsgruppen: Bemessung und Nachweis (Prof. Ralf Cuntze), Faserverbundarmierter Beton (Dr. Ingelore Gaitzsch), Faserverstärkte Kunststoffe (Prof. Jens Ridzewski), Automatisierte Fertigung im Bauwesen (Cuntze)

Agenda Richtlinien Zulassung_ Cuntze_ Stand 13okt20

Joint meeting of the 3 CCeV WGs:

Engineering, Non-destructive material and component testing, Adhesive and joining technology

CARBON COMPOSITES

Gemeinsame Sitzung der 3er-CCeV-AG

Engineering, Zerstörungsfreie Werkstoff- u. Bauteilprüfung, Kleb- und Verbindungstechnik,

am **9. 3. 2018 beim CCeV, Am Technologiezentrum 5, D 86159 Augsburg**
CCeV-Kontakt Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).

Agenda (Folien deutsch oder englisch, 25 + 5 min)

9:00	**Begrüßung**
9:15	Vortragstitel. *NN, LCC, München (Kümmerer Dr. Hartmann)*
9:30	**Betrachtungen zur Betriebsfestigkeit von CFK-Triaxialgeflechten.** *F.Herrla, Institut für Leichtbau, UniBw, Neubiberg*
10:00	**Novel Lifetime Prediction for UD-materials**. *R. Cuntze, CCeV Augsburg*
10:30	*Kaffeepause*
11:00	**Schwingfestigkeit von Klebverbindungen unter multiaxialer Schwellbelastung**. *C. Nagel, IFAM Bremen*
11:30	**Festigkeitssimulation in Klebverbindungen**. *R. Sachse, DLR Stuttgart*
12:00	**Einbeziehung geklebter Fensterbänder und Glasfronten in die Festigkeit von Schiffen**. *O. Klapp, IFAM Bremen*
12:30	*Mittagspause*
13:30	**Carbon Fiber Armored Polymer – a novel economic process?** *R. Müller, Kube GmbH Ingenieurbüro, Plochingen*
14:00	**Konzentrierte Lasteinleitung in CFK-Strukturen unter Anwendung der lokalen Metall-hybridisierung**. *E.Petersen, DLR Braunschweig*
14:30	**Faseroptische Prüfmethoden zur Inspektion von CFK-Komponenten.** *D. Samiek, Polytec GmbH*
15:00	*Kaffeepause*
15:30	**Koppelmittelfreie Prüfung von CFK und CFK-Metall-Klebeverbindungen mit Hilfe von Luftultraschall.** *R. Steinhausen, Forschungszentrum Ultraschall*
16:00	**Einsatz des Nichtlinearen Ultraschalls für die Untersuchung geklebter CFK-Strukturen.** *M. Kreutzbruck, Institut für Kunststofftechnik, Uni Stuttgart*
16:15	**Resumee, Abschlussdiskussion**
	Get Together

Wir freuen uns auf eine rege Beteiligung und interessante Vorträge

Ihre Ralf Cuntze (08136-7754), Marc Kreutzbruck und Markus Brede

Hinweise: **Sitzungstermine: 16. 11. 2018, gemeinsam mit CC Austria, FH OÖ Campus Wels (Österreich), Dr. R. Hinterhölzl (Leiter Studiengang Leichtbau und Composite-Werkstoffe); 8. 3. 19 UniBw, Neubiberg (Institut für Luft- und Raumfahrt, Prof. H. Rapp)**

Theme day "*Determination of structural-mechanical characteristic values and model parameters, taking into account design, design verification and approval*"

Thementag der AG Engineering
"Ermittlung strukturmechanischer Kennwerte und Modellparameter *unter Beachtung von Auslegung, Nachweis und Zulassung*"

- *Betrachtung von Schicht, Laminat, Festigkeitsmodell etc.* –
Zielgruppe: Berechnungsingenieure in Anwendung und Forschung

Donnerstag, 6. November. Beginn: 9:00 Uhr, Ende: ca. 16 Uhr
Atrium-Saal der HWK Schwaben, Siebentischstraße 52-58, 86161 Augsburg
(Unkostenbeitrag Thementag: 95 € + MwSt für Nicht-Vortragende und Nicht-CCeV-Mitglieder)
Am 7.11. ist eine Veranstaltung der 3 AGs Engineering, NDI und Kleben. IHK-Schwaben, Stettenstr., 9 Uhr
Münchner Leichtbauseminar: "Werkstoff- und Bauteildaten für Simulationsmodelle im Leichtbau" 29.10., 12.11., 26.11.

Begrüßung *R. Cuntze (CCeV) , H. Bansemir (vormals Eurocopter)*

Vorträge (5 min Diskussion), Folien, englisch oder deutsch

1. (9.05) **SURVEY: Material Properties and Model Parameters, necessary for the Analysis of Static & Cyclic Stress States.** *R. Cuntze, CCeV-AGs Engineering Maschinenbau* und *Faserverstärkung im Bauwesen*
2. (9.45) **Beitrag zur korrekten Bestimmung der Quer-Längsschubsteifigkeit und Festigkeit und von Pucks Modellparametern zur Erfassung interner Werkstoffreibung.** *A. Bleier, Karl Mayer Textilmaschinenfabrik, Obertshausen; vormals KLuB TU-Darmstadt*
3. (10.15) **Normen und Standards, Normungsportal der Composites Germany**. *F. Fendt, CCeV-AG Normung und Standardisierung*

Kaffee-Pause: (10.45)

4. (11.15) **Prüfmethoden und Werkstoff-Probekörpergestaltung.** *H. Bansemir, vormals Eurocopter)*
5. (11.45) **„Bessere Methoden für bessere Werte", Verbesserungsvorschläge u.a. am Beispiel der Modul-Degradationsmethode.** *T. Haberle, RUAG*

Mittagsbuffet: (12.15)

6. (13.00) **Ermittlung von UD-Kennwerten und Cuntzes Reibungsparametern beim DLR-Braunschweig.** *E. Petersen, DLR-Braunschweig*
7. (13.30) **Welche Baustoffkennwerte benötigen die Textilbetonbauer?** *F. Schladitz, IfM TU-Dresden*
8. (14.00) **Establishing an in-house Process for Composite Testing – an overview**. *J. Bold, Johnson Controls, Burscheid*

Kaffee-Pause: (14.30)

9. (15.00) **Digimat Multi-Scale Modeling Platform. A Paradigm Shift in the Optimal Engineering of Composite Materials & Structures**. *R. Assaker, X-stream, Munich*
10. (15.30) **Neue Prüfmethoden zur Ermittlung temperatur- und dehnratenabhängiger Kennwertfelder für die Luftfahrt- und Automobilindustrie.** *R. Bochynek, Leichtbau-Zentrum Sachsen, Dresden*
11. (16.00) **Diskussion:** Wo drückt der Schuh am meisten? **mit Ausklang im Foyer, Abendbuffet**

Es freuen sich auf eine rege Beteiligung und inhaltsreiche interessante Vorträge

Ihre Ralf Cuntze und Horst Bansemir

German "*Fatigue of components made of fiber-reinforced polymer composites*"

CARBON COMPOSITES	*MINUTES OF MEETING (MOM)* THEMENTAG ERMÜDUNG	Februar 14, 2013

Gemeinsame Sitzung mit „Deutsche Arbeitsgruppe BeNa (Betriebsfestigkeits-Nachweis)
Ermüdung von Bauteilen aus Faserverbundwerkstoff (FVW)
- Vertiefte Betrachtung von UD-Laminaten mit Ausblick Textile Composites –

Ort: IHK Schwaben, Stettenstrasse 1+3, 86150 Augsburg, Hans-Liebherr-Raum. Zeit: 8.00 bis 17.00.
Vorträge: 20 min + 5min Diskussion
Begrüßung: *(P. Horst, TU-Braunschweig, Leiter AG BeNa)*; einführende 'Folien' *(R. Cuntze, CCeV*
Vorstellung und Ziele der AG BeNa. *P. Horst, TU-Braunschweig*

1. Vom Ermüdungsverhalten von Metallen zu dem von FVW. *G. Kress, ETH Zürich*
2. Ein Lebensdauervorhersagemodell für langfaserverstärkte Laminate. *R. Cuntze, CCeV*
3. ZfP und Festigkeit/Ermüdung. *V. Trappe (BeNa), BAM Berlin*
4. Ein neues physikalisch basiertes Ermüdungs-Schädigungsmodell für Faser-Kunststoff-Verbunde. *R. Rolfes (BeNa), ISD, TU-Hannover*
5. FE-Analyse der Ermüdungsschädigung von FKV. *M. Magin (BeNa), IVW Kaiserslautern*
6. Anforderungen und Herausforderungen an die Betriebsfestigkeiten für Faserverbund strukturen bei der A350XWB. *D. Hartung, Premium Aerotec Augsburg*
7. Composite Fatigue Approach in Airbus. *W. Göbel / L. Ratier, Airbus*
8. Ermüdet Textilbeton? *F. Jesse, BTU-Cottbus*
9. Fatigue Life Simulat. and Verification of Wind Turbine Rotorblades. *E. Eyb, Re-Power*
10. Betriebsfestigkeitsbewertung von Faserverbundwerkstoffen – Übersicht und Ausblick. *M. Hack, LMS Kaiserslautern*
11. Methods for life predict. of comp. materials and adhesively-bonded composite joints. S. *Vassilopoulos, EPFL Lausanne, CH*, editor *"Fatigue life prediction of composites and comp. structures"*, 2010
12. Lebensdauervorhersage bei BMW. *P. Wagner, BMW München*
13. Zur Festigkeitsbewertung von CFK-Strukturen unter PKW-Betriebslasten. *C. Hahne/ U. Knaust, Audi Ingolstadt*
14. Praxiseffekte bei der Schwingfestigkeitsanalyse orthotroper Faserkunststoffverbunde. *Ch. Enke / J. Eulitz / R. Grothaus, EAST-4D Carbon Technology Dresden*
15. (I) Geschichte der Fatigue-Nachweisführung bei Eurocopter (seit 1965). *H. Banvemir.* (II) Vorgehensweise bei dem Fatigue-Nachweis mit der Bestimmung der Wöhlerkurven und Arbeitskurven. *E. Ahci, Eurocopter Donauwörth .* (III) Die dynamische Festigkeit von Kohlefaser-Verbundstrukturen. *A. Weinert, Eurocopter*

Aufnahme von interessierten Industrie- und Behördenmitgliedern in die AG BeNa. :
Laut Teilnehmern (>120) ein erfolgreicher Thementag mit der richtigen Mischung.

1. Workshop "Composite Fatigue",6.2.2014: Bitte um Vortrags-Vorschläge bis zum 1. 9. 2013 an mich.
2. Thementag "Industrielle Anwendbarkeit der Schädigungsmechanik – Schwerpunkt FVW", 24.10.2013, ganztägig in Augsburg vor der Herbstsitzung der AG "Engineering ", Fr.25.10.13
3. Fazit : Die Abschätzung der Lebensdauer von FKV-Bauteilen unter Betriebsbeanspruchung ist eine wichtige Aufgabe, weil man sich nur begrenzten Testaufwand erlauben kann. Generell kann man sagen: Es ist keine allgemein anwendbare Lebensdauervorhersagemethode für Laminate vorhanden und das erst recht für textile Laminate. Ermüdungsgefahr besteht auch seitens der Textilbetonindustrie.

Meinen allerbesten Dank an alle Vortragenden für die gelungenen Vorträge.

Ihr Ralf Cuntze

PS: Nur Mitarbeiter von CCeV-Mitgliedern haben vollen Zugriff auf alle PDFs auf der CCeV-Website.

Experience Composites 2016 – Symposium/Congress, Sept. 21-23

Augsburg Messezentrum **Thementag**

1. (10.00) **Introduction Design and Design Verification.** *R. Cuntze, CCeV, Augsburg*
2. (10.30) **Novel Material models and multi-scale simulation methods for composite materials.** *R. Boehm, ILK Dresden*
3. (11.00) **Simulation of Manufacturing Processes.** *C. Huehne, DLR-Braunschweig*
4. (11.30) **MAI-Cluster, Impacts from Section Design Results.** *R. Hinterhoelzl, LLC, TU-München*

Lunch Break (12.00)

5. (13.30) **Load Introduction in Monolithic and Hybrid Leightweight Structures.** *H. Rapp, UniBw München*
6. (14.00) **Fatigue, BeNa's View State–of-the-Art**: *I. Koch, ILK TU-Dresden (member of German fatigue working group BeNa, Betriebsfestigkeits-Nachweis)*
7. (14.30) **Strength and Curing Simulation of Thick-walled Composites with ANSYS WB 17.0.** *R. Roos, ANSYS Switzerland*
8. (15.00) **Impacts from the NAFEMS Composites Group.** *C. Huehne, DLR-Braunschweig, NAFEMS Steering Committee*

Coffee Break (15.30)

9. (16.00) **The German Aeronautical Handbook HSB: Current contributions and research activities on fundamentals and methods for structural design and analyses.** *M. Schagerl, JKU-Linz, Austria*
10. (16.30) **First-Ply Failure and what then? – Solutions for a detailed simulation of failure.** *Matthias Hörmann, CADFEM GmbH, Grafing*
11. (17.00) **Certification Aspects.** *H. Bansemir, formerly Eurocopter Germany, München.*





Theme day "*Industrial applications of damage mechanics*"

Thementag "Industrielle Anwendbarkeit der Schädigungsmechanik"

- *Betrachtung von UD Laminaten bis zu textilen Composites – Grundlagen und Anwendung*

Zielgruppe: Berechnungsingenieure in Anwendung und Forschung

Donnerstag, 24. Oktober. Beginn: 8:15 Uhr, Ende: 16.00 Uhr

A1-01-A1.02-Saal der HWK Schwaben, Siebentischstraße 52-58, 86161 Augsburg

(Am 25. 10. ist die gemeinsame Veranstaltung der 3 AGs Engineering, NDI, Kleben. Hierzu sind alle Teilnehmer ebenfalls eingeladen. Zwei Schädigungsmechanik-Vorträge werden dann nachgeholt. Unkostenbeitrag: 95€ für Nicht-Vortragende und Nicht-CCeV-Mitglieder)

Begrüßung *R. Cuntze (CCeV), R. Böhm (ILK Dresden)*

Vorträge (25 min + 5 min Diskussion): *Betonung: Was geht? Wo drückt der Schuh?*

1. (8.30) **Einführung in die Schädigungsmechanik von Werkstoffen.** *Dr. U. Weber, Prof. S. Schmauder (IWMF Uni Stuttgart), in English or German*
2. (9.00) **Schädigungsmechanik für Faser-Kunststoff-Verbunde: Phänomenologische Ansätze.** *Dr. R. Böhm (ILK Dresden)*
3. (9 .30) **Virtuelle Werkstoffentwicklung mit Multi-Skalen-Simulationen am Beispiel von Leichtbau-Flugzeugturbinen.** *A. Freund (LZS Dresden).*

Kaffee-Pause: (10.00)

4. (10.30) **Modellierung der Schädigungsmechanismen bei keramischen Faserverbundwerkstoffen.** *Dr. S. Hofmann, (DLR Stuttgart)*
5. (11.00) **3D-XFEM-Modellierung des Schädigungsverhaltens von Faser-Kunststoff-Verbunden.** *Dr. M. Kästner, S. Müller, Prof. V. Ulbricht (IFKM Dresden)*
6. (11.30) **A link between damage initiation thresholds in static loading and fatigue strength of textile composites.** *Prof. S. Lomov, MTM Leuven*

Mittagsbuffet: (12.00)

7. (13.00) **Entwicklung der Schädigungsmechanik für Faser-Kunststoff-Verbunde (FKV) von 1970-2013.** *Prof. A. Matzenmiller (Uni Kassel)*
8. (13.30) **Anforderungen an die Schädigungsmechanik von FVK-Laminaten für die virtuelle Fahrzeug Crash-Auslegung.** *Dr. M. Nossek (BMW AG)*
9. (14.00) **Failure Analysis at Airbus.** *Dr. Anja Wetzel (Airbus, Hamburg)*

Kaffee-Pause: (14.30)

10. (15.00) **Mechanism-based Three-dimensional Constitutive Model for Anisotropic Damage in Fiber-reinforced Composites.** *M. Chatiri (CADFEM)*
11. (15.30) **Diskussion zur erreichten Anwendbarkeit der schädigungsmechanischen Ansätze**

Ausklang im Foyer, Abendbuffet, Zeit für Gespräche

Freitag, 25.10. Nachläufer (Vortragende vorlesungsmäßig am 24. belegt) im Rahmen der AG *Engineering*:

1. **Modellierung von Material- und Strukturschädigung des Verbundwerkstoffs Stahlbeton.** *Prof. Y. Petryna (TU-Berlin)*
2. **Schädigungsmechanik für Faser-Kunststoff-Verbunde – Mikromechanisch basierte Ansätze.** *Prof. R. Rolfes (ISD Uni Hannover),*

Bitte Herrn Jahn (CCeV) mitteilen: (1) Wegen Catering, Teilnahme an welchen Buffets; (2) Übersendung des Vortrag-PDFs

Es freuen sich auf eine rege Beteiligung und inhaltsreiche interessante Vorträge

Ihre Ralf Cuntze und Robert Böhm

"Design and Design Verification - from the material to the approval of components made of polymer and concrete matrix –"

CC BAU

CARBON COMPOSITES

Bemessung und Nachweis

- *vom Werkstoff bis zur Zulassung von Bauteilen aus Polymermatrix und Betonmatrix* -

Veranstaltung von allen CC Bau-AGs

Zielgruppen: Bauwirtschaft, Architekten, Planer, Handwerker, Auftraggeber, Zulassungsstellen

22. Oktober 2019 in Weimar, beim Institut für Angewandte Bauforschung Weimar gGmbH

Örtlicher Kontakt: Frau Schalling, 03643 8684 148, k.schalling@iab-weimar.de>

CCeV-Kontakt Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).

Thementag: 95 € für Nicht-Mitglieder, frei für Vortragende, Presse.

Folien: englisch, deutsch. Vorträge: 25 + 5 min Diskussion.

8:30	Registrierung der Teilnehmer, Kaffee und Brezeln o.ä.
8:45	**Einführende Worte mit Ausrichtung CC Bau.** *R. Cuntze / J. Ridzewski*
9:00	**Vorstellung Institut:** *Dr.-Ing. Barbara Leydolph, IAB Weimar*
9:15	**Verwendete Baustoffe mit Schwerpunkt Carbonbeton:**. *M. Butler, Institut für Baustoffe, TU Dresden*
9:30	**Fertigungsverfahren: Bauteile mit Polymermatrix.** *J. Ridzewski, IMA Dresden*
10:00	**Fertigungsverfahren: Bauteile mit Betonmatrix**. *G. Eisewicht, BCS Natur- und Spezialbaustoffe GmbH Dresden*
10:30	*Kaffeepause*
11:00	**Festigkeitsmodellierung der Baustoffe Beton und Lamelle**. *R. Cuntze, CC Bau Augsburg*
11:30	**Lasten, Sicherheitskonzept und Zulassungsaspekte.** *S. Rempel, Solidian Albstadt*
12:00	**Dimensionierungsbeispiel, GFK-Behälter** (nach BüV 2010). *M. Oppe, Büro Knippers-Helbig Stuttgart*
12:30	*Mittagspause*
13:30	**Dimensionierungsbeispiel, Faserbetonbauteil.** *B. Wietek, Sistrans, Tirol*
14:00	**Dimensionierungsbeispiel, CF-Textilbeton-Bauteile**: *S. May, Carbocon-GmbH. Dresden*
14:30	**Dimensionierungsbeispiel, CLT-Modellierung und Bemessung einer Textilbeton-Schale.** *D. Franitza, FE-Union GbR, Chemnitz*
15:00	*Kaffeepause*
15:30	**Abteilungsversammlung**
16:00	**Get Together**

Wir freuen uns auf Ihre Beiträge Ihr Ralf Cuntze und weiterer CC Bau-Vostand

Hinweise: CC Bau, ehemals CC TUDALIT, Fachabteilung des CCeV, besteht ab 1.1. 2018 aus den 4 AGs: Bemessung und Nachweis (Prof. Ralf Cuntze), Faserverbundarmierte Betone (Dr. Ingelore Gaitzsch), Faserverstärkte Kunststoffe (Prof. Jens Ridzewski), Automatisierte Fertigung im Bauwesen (kommissarisch: Ralf Cuntze)

Termine 2019: 22. Februar, AG „Faserarmierter Beton", Uni Dresden, 13. Juni, AG „Automatisierte Fertigung im Bauwesen", Uni Innsbruck

Termine 2020: Workshop am 19. Februar, Ulmer Betontage bzgl. „Wie bekomme ich Carbonbeton-Anwendungen auf die Bausstelle"?; CC Bau-AGs-Sitzung, 24. Februar, Siegen (weitere Sitzungsplanung mit Möglichkeiten Aachen, Dresden,

Carbon concrete - the future of construction has begun.

Carbonbeton – die Zukunft des Bauens hat begonnen



Foto: Silvia Stettmayer

Prof. Dr.-Ing. Ralf Cuntze

Als sich 1970 zum ersten Mal Carbonfasern (CF) in meine Fingerspitzen bohrten, wusste ich noch nicht, wie schmerzhaft erst der weitere Weg in Richtung Anwendung sein würde. Die damals gegenüber heute hundertfach teurere Carbonfaser fand praktisch nur Einsatz in Raumfahrt, Luftfahrt oder ultraschnellen Zentrifugen, also im Maschinenbau, und sie war eingebettet in eine Kunststoffmatrix. So waren Ende der 1970er Jahre Diskussionen mit Prof. Rupert Springenschmid, damaliger Institutsleiter „Zentrum Baustoffe und Materialprüfung" der TU München, über den Einsatz von Carbonfasern im Bauwesen schlicht visionär. Erst als ich etwas später bei Prof. Urs Meier, eidgenössische Materialprüfanstalt EMPA, einen sechs Meter langen Biegeträger aus Glasfaserkunststoff bei einem erfolgreichen Langzeit-Ermüdungstest bewundern konnte, bekamen Gedanken bzgl. der Verwendung von Faserkunststoff und Faserbeton im Bauwesen wieder einen Nährboden. An einen Einsatz der immer noch sehr teuren Carbonfasern im Bauwesen war aber noch nicht zu denken.

Der Einsatz z. B. von Kurz-Glasfasern in Faserbeton zur Erhöhung der Zugfestigkeit war ein erster Schritt in Richtung Fasereinsatz, allerdings darf dieser derzeit nicht als anrechenbarer Anteil von tragender Bewehrung gesehen werden, sondern als eine signifikante räumliche Erhöhung lokaler Festigkeit, die sonst zusätzlich durch „händisch" zu armierende Lasteinleitungsstellen abgedeckt wird. Für solche Fälle könnten mm-lange Carbonfasern, hergestellt aus „gemahlenem" rezykliertem Carbonfaser-Gewölle, räumlich verteilt in trockenen Zement, sicherlich ihren Einsatz finden. Erst als es gelang, Stahlstäbe in Stahlbewehrungsmatten durch textile Gelege aus polymermatrixbeschichteten alkaliresistenten Glasfaserrovings und später auch Carbonfaserrovings zu ersetzen (entspricht einem Faser-Kunststoff-Verbund), war der Startschuss für professionelle Anwendungen gegeben und der sogenannte Textilbeton geschaffen. Natürlich ist die Betonmatrix an die jeweilige Faserverstärkung anzupassen. Zulassungen für Bewehrungsstäbe gibt es für Glas.

Durch die im Vergleich zum Stahlbeton kleinere Maschenweite der Carbon-Bewehrungsmatte und die feinere Betonmatrix werden die lokale Rissbildung und somit das Eindringen von Feuchtigkeit stark verringert. Damit wird das gefürchtete Beton-Abplatzen (stahlkorrosionsbedingtes Abplatzen gibt es nicht mehr) nach einigen Jahren als Folge der sogenannten Alkali-Aggregat-Reaktion behindert und die Dauerhaftigkeit des Bauteils erhöht. Bauwerke mit der immer noch relativ teuren Carbonfaser „rechnen sich", wenn man die minimale Wartung, die geringere Betonmasse sowie den niedrigeren Montageaufwand lebenszyklusbezogen kostenkalkuliert. Dies gilt speziell für den anstehenden riesigen Aufwand zur Bauwerkserhaltung und -verstärkung!

Energieverbrauch und CO_2-Erzeugung sind wesentlich geringer als bei Betonstahl, wobei die Einsparpotenziale noch nicht ausgeschöpft sind. Carbonbeton, diese neue Art des Bauens, wird somit sicherlich einen wesentlichen Innovationsschub im Bauwesen auslösen. Leichtere und filigranere Konstruktionen bis hin zu einem neuen Möbeldesign werden Wirklichkeit. Bauen wird ressourcenschonender, nachhaltiger und effizienter werden. Wünschenswert wäre es, wenn die langwierige Zulassungsprozedur weniger Hürden hätte, aber auch die Planung von Bauten mehr auf der Basis von Nachhaltigkeit durchgeführt würde.

Lassen Sie sich durch die Beiträge in diesem Heft begeistern. Besonders möchte ich Ihnen dabei die Vorstellung der sogenannte Planermappe ans Herz legen, mit der die notwendige Überzeugungsarbeit bei Architekten, Baufirmen und Zulassungsstellen einfacher wird.

Ihr *Ralf Cuntze*
(R C = Reinforced Concrete)

By the way: I almost forgot, but I met Prof. Springenschmid (now 95) in November 2024:
As early as 1977, I (*MAN-Technologie*) often discussed with him and co-workers (Dr. Volkwein etc, *Center II for Building Materials and Materials Testing at the Technical University of Munich*) in detail about reinforcing finer concrete with k-filament CF- rovings (*now applied are tows containing 50k filaments*).
One idea at MT, July 4, 1975 with colleagues Dr. Wurtinger, Simon, Kreft discussed with Dr. Volkwein was:

*Pre-tensioning of concrete by alkali-resistent glass fibers.
* Fatigue knowledge not enough
*Walls, ceilings: CFRP facing layer, sandwich panel with expanded clay or resin foam core, slack reinforcement.


Sandwichwand-System mit AR-Glasbewehrung der Firma solidian GmbH | © Adrian Schulz

11. CARBON- UND TEXTILBETONTAGE

24. und 25. September 2019
Deutsches Hygiene-Museum Dresden

anerkannte Fortbildung bei Architekten- & Ingenieurkammern

Die Veranstalter

C3 carbon concrete composite

TUDALIT
Leichter bauen – Zukunft formen

In Zusammenarbeit mit

GWT forschung+innovation

TECHNISCHE UNIVERSITÄT DRESDEN

GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung

zwanzig20

PROGRAMM-KOMITEE

- Dieter Babiel, Hauptverband der Deutschen Bauindustrie e. V.
- Gerhard Breitschaft, Deutsches Institut für Bautechnik
- Harald Budelmann, TU Braunschweig
- Chokri Cherif, TU Dresden
- Ralf Cuntze, CC Bau
- Manfred Curbach, TU Dresden
- Oliver Fischer, TU München
- Jürgen Feix, Universität Innsbruck
- Josef Hegger, RWTH Aachen
- Klaus Holschemacher, HTWK Leipzig
- Jan Knippers, Universität Stuttgart
- Christian Kulas, solidian GmbH
- Viktor Mechtcherine, TU Dresden
- Peter Offermann, TUDALIT e. V.
- Jens Ridzewski, IMA Materialforschung und Anwendungstechnik GmbH
- Frank Schladitz, C³ – Carbon Concrete Composite e. V.
- Mike Schlaich, TU Berlin
- Werner Sobek, Werner Sobek Stuttgart GmbH & Co. KG
- Luc Taerwe, Universität Gent, Belgien
- Roy Thyroff, TUDALIT e. V.
- Udo Wiens, Deutscher Ausschuss für Stahlbeton e. V.

D.A.CH event of all working groups of the CCeV specialist department "CC Construction"

DACH-Veranstaltung aller Arbeitsgruppen der CCeV-Fachabteilung „CC Bau“

am 21.06.2018, Raum MY 01.09, bei der
ZHAW Architektur, Gestaltung und Bauingenieurwesen,Gebäude MY, Lagerplatz 21, 8400 Winterthur,
Frau Sydow, 0041 58 934 69 82, CCeV-Kontakt: Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).

Das Bauwesen ist eine Branche, bei der das Thema Hochleistungsfaserverbund einerseits noch nicht etabliert ist, andererseits jedoch ein enormes Anwendungspotential besteht. Vor diesem Hintergrund hat sich der Carbon Composites e.V. (CCeV) entschieden, das Thema für seine Mitglieder weiter aufzubereiten, zu vertiefen und gemeinsam voranzutreiben. Am 28. September 2017 wurde daher „CC Bau" als CCeV-eigene Fachabteilung gegründet. CC Bau knüpft direkt an die bisherige Gemeinschaftsabteilung CC Tudalit von CCeV und Tudalit e.V. an. Auch in Zukunft wird die Fachabteilung CC Bau zum Mehrwert der Mitglieder eng mit anderen Netzwerken wie Tudalit e.V. und C^3 – Carbon Concrete Composite e.V. kooperieren. Die Fachabteilung CC Bau bietet mit ihren Arbeitsgruppen eine Plattform für Kontakte, Wissenstransfer und Erfahrungsaustausch auf dem Gebiet leichter faser- und textilverstärkter Verbundstrukturen für Anwendungen im Bauwesen. Eingeladen sind Vertreter aus Wissenschaft, Forschung und Lehre, Unternehmer aus der gesamten Wertschöpfungskette von textilverstärkten Verbundstrukturen sowie Planer, Vertreter von Behörden und interessierte Bauherren. Die Arbeitsgruppen unterstützen mit Vortrags- und Gesprächsangeboten die Entwicklung neuer Projekte und innovative Zusammenarbeit.

CCeV-Thementag: CCeV-Mitglieder und Vortragende frei, Nicht-CCeVler 95€ (zzgl. 19%MwSt)

Programm (Folien deutsch oder englisch, 25 + 5 min),

9:15	**Begrüßung** - *Prof. Cuntze, Prof. Kurath*
9:30	**Mit Carbon stark vorgespannte, sehr dünne Betonplatten CPC** - *Prof. J. Kurath, ZHAW Winterthur, Architektur, Gestaltung und Bauingenieurwesen*
10:00	**3D Carb.** - *Prof. P. Ermanni/ 3D Carb-Beteiligter, ETH Zürich*
10:30	*Kaffeepause*
11:00	**22 Jahre Forschung über mit Karbonfasern vorgespannten Beton an der EMPA.** - *Prof. G. Terrasi, EMPA, Dübendorf*
11:30	**Faserverbundwerkstoff-Visionen der 1970er und 80er Jahre: Update 2018.** - *Prof.. U. Meier, EMPA, Dübendorf*
12:00	**Eigenschaften und Anwendungsfelder gestickter textiler Bewehrungen.** - *Prof. J. Feix / M. Egger, Institut Massivbau und Brückenbau, Uni Innsbruck*
12:30	*Mittagspause*
13:30	**Stickerei als Fertigungstechnologie für die Bautechnik.** - *Prof. T. Bechtold, Textilchemie, Uibk Vorarlberg*
14:00	**Zur Bemessung von Brücken und Dächern aus Faserverbundwerkstoffen.** - *Prof. T. Keller, EPFL-ENAC-CCLAB, Lausanne*
14:30	**CFK- Verstärkungen in Deutschland.** - *Dr. H. Peters, Büro HPS (Carbon for Civil Engineering Stuttgart / T. Lepinski, Entecsol, Wittstock,*
15:00	*Kaffeepause*
15:30	**Die TUDALIT-Planermappe.** *(Autoren: U. Assmann /. P. Offermann, TUDALIT e.V. - Dresden)* - *Prof. Cuntze*
16:00	**ZHAW-Besichtigung**
	Get Together

Ihr Ralf Cuntze (08136-7754) mit Ingelore Gaitzsch, Jens Ridzewski, Otto Kellenberger

Hinweise: Nächste Veranstaltungen aller Arbeitsgruppen der CCeV-Fachabteilung CC Bau ist am 09.11.2018 in Stuttgart (DLR Stuttgart, Pfaffenwaldring 38-40, Hörsaal, 70569 Stuttgart, Campus Vaihingen).
10. Carbon- und Textilbetontage, 25.-26.9. 2018 in Dresden.

4. Thematic day of the working group *'Automated manufacturing in the construction industry including serial construction'*

4. Thementag der AG 'Automatisierte Fertigung im Bauwesen inklusiv Serielles Bauen'

Dienstag, 30.03.2021
Zoom-Videokonferenz

CUeV-Kontakt: Bernhard Jahn (Bernhard.Jahn@carbon-composites.eu).
Teilnehmergebühr: 55 € für Nicht-Mitglieder, frei für CU-Mitglieder, Vortragende und Presse.
Folien englisch, deutsch. Vorträge: 25 + 5 min Diskussion, in Deutsch, falls möglich .

08:30	**Registrierung der Teilnehmer**
09:00	**Begrüßung.** *CU BAU* (Cuntze und Dr. Thomas Heber für Roy Thyroff)
09:10	**Kurzvorstellung Composites United mit CU Bau + Einführung.** *Prof. Dr.-Ing. habil. Ralf Cuntze*
09:30	**Industrieller 3D-Druck im Bauwesen – Anwendung des Powder-Binder-Jettings.** *Dipl.-Ing. Tobias Grün; Voxeljet AG, Friedberg*
10:00	**'3D-Druck' in der Baupraxis – Erfahrungen der ersten zugelassenen Gebäude in Deutschland.** *Dr. Fabian Meyer-Brötz, Leitung 3D Construction Printing, Peri GmbH, Weissenhorn*
10:30	**Additive Fertigung im Bauwesen: Neue Herausforderungen für numerische Simulations-methoden.** *M.Sc. Alexander Paolini. Lehrstuhl für Computergestützte Modellierung und Simulation. TU München*
11:00	*Kaffeepause*
11:30	**Klassifizierung digitaler Fertigungsverfahren im Betonbau.** *Prof. Dr.-Ing. Viktor Mechtcherine, Institut für Baustoffe, TU Dresden*
12:00	**Connecting Value Chains – Status Quo der Robotik im Bauwesen .** *Dipl.-Ing. Thomas Adams, Individualized Production in Architecture/RWTH Aachen University*
12:30	*Mittagspause*
13:30	**Automatisierung im Bauwesen – Robotereinsatz auf der Baustelle (Mauerwerksrobotik).** *M.Sc. Adrian Fehrle, Lehrstuhl für Fertigungsautomatisierung und Produktionssystematik, FA-Uni Erlangen-Nürnbg*
14:00	**Additive Fertigung im Bauwesen durch selektive Zementaktivierung.** *M.Sc. Daniel Talke, Lehrstuhl für Holzbau und Baukonstruktion, TU München*
14:30	*Kaffeepause*
15:00	**Produktion individueller Teile für Decken und Träger bei ersten Praxisprojekten.** *Dipl. Ing. Eduard Artner, BauMinator / '3D Druck', Baumit GmbH, Wopfing, Österreich*
15:30	**3D-Welding - WAAM im Bauwesen.** (Auftragsschweißen) *Dipl.-Ing. Christoph Holzinger, Assoc.-Prof. DI. Dr.nat.techn. Andreas Trummer, Technische Universität Graz*
16:00	**Virtuelle Besichtigung der 3D-Druck-Einrichtungen des IGCV-Neubaus in Augsburg.** *Dipl.-Ing. M. Binder, IGCV Fraunhofer Augsburg, Additive Fertigung – Werkstoffe und Prozessentwicklung*
16:45	**Schlusswort / Get Together**

Programmgestaltung: Ralf Cuntze

Letzte und kommende Termine der Fachabteilung CU BAU:
20.10. 2020: CU-Bau AG Faserverbundarmierter Beton. Zoom-Videokonferenz
19.11. 2020: CU Bau-Thementag „Richtlinien, bauaufsichtliche Zulassungen und Bauartgenehmigungen für die potenziellen Anwender Architekten, Tragwerksplaner und Bauherrn"
25. 02. 2021: CU Bau-Forum „Carbonbeton-Anwendungen in der Praxis – auf der Baustelle und im Fertigteilwerk". Ulmer Betontage.

Definition: ISO/ASTM 52900 defines (digitized) Automatic Fabrication (Fertigung, nicht 'Manufaktur') as "Process of joining materials to make parts from 3D model data, usually layer upon layer". 3D-Druck ist ein Verfahren innerhalb AF, nicht korrekt oft noch immer *Manufacturing* genannt, obwohl automatisiert
'3D-Druck' bedeutet laut VDI-Ri 3405 „Kaltes Extrusionsverfahren, wobei der Baustoff über eine Düse strangweise abgelegt wird" oder baubezogen "Extrudierte Ablage von Betonsträngen". 3D-Druck ist im Wesentlichen ein "Pulverbett-basiertes Verfahren", wie es z.B. Voxeljet für die Herstellung von Schalung benutzt.

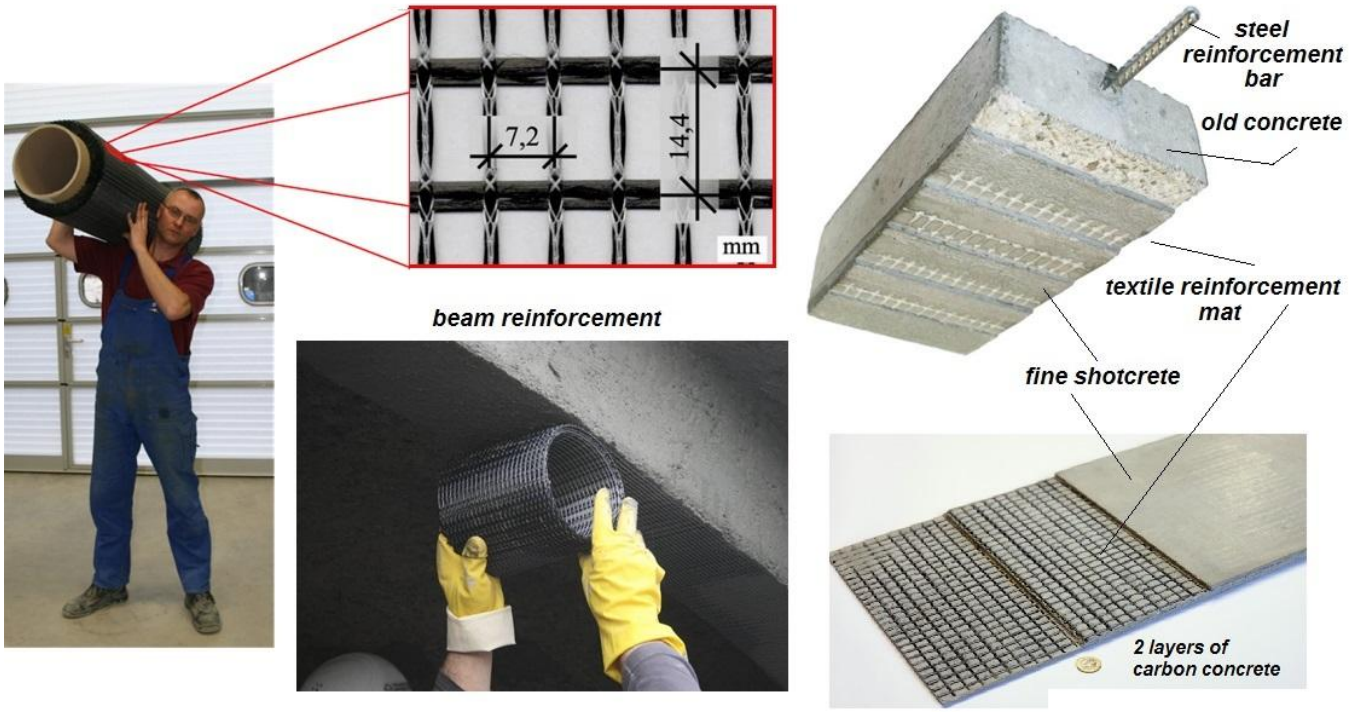


Fig.: For Rehabilitation, retrofitting of a slab. Fiber grid in detail and wrapped on a roll during application. As an example 2 applied fiber grid lattice layers of CF yarns. [IfM Dresden]



Fig: Erected over night!
First, purely CF-reinforced concrete bridge in the world. Albstadt-Ebingen. 2015, using a solidian GRID Q95-CCE-38 fiber grid (mat) [christian.kulas@solidian.com, www.solidian.com]
Thanks to Christian.

Citation of the (civil engineer) Mayor of Albstadt, Udo Hollauer:

*"**The bridge pays off, and it is sustainable"!!***

Some project disappointments after having made a large effort

MAN-Technologie (MT):

- ***Stop of the Uranium Enrichment Multi-body Centrifuges in Steel and CFRP after having achieved a speed record with the CFRP rotor version***

- ***MT stopped the wind energy business after GROWIAN, WKA 60 etc***

- ***Ariane 5-Hermes after some ESA-driven effort***



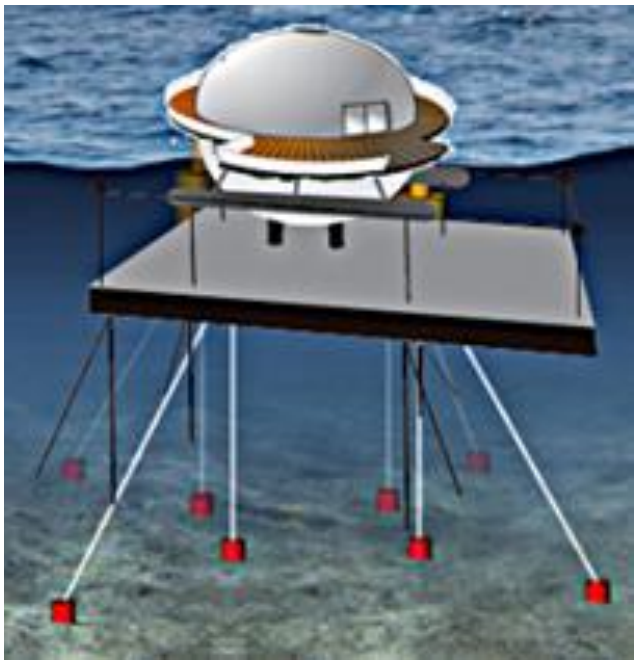


{{Information |Description ={{fr|1=Projet de navette spatiale Hermès.
 "Olympus OM10 + Kodachrome 100 ASA"}} |Source ={{own}} |Author =Daniel Villafruela |Date =1992-05-05 |Permission = |other_

From WIKIPEDIA: Hermes was originally a project of the French Space Agency (CNES) for a manned space shuttle to supply flights into low Earth orbit (LEO) and continued by the European Space Agency (ESA). The project was discontinued in November 1992 after a change in financial and political conditions. Hermes was to be launched into space at the top of an Ariane 5 and consisted of two modules: the resource module, which will be separated before re-entry into the atmosphere, and the space shuttle itself, which would land in the same way as the Space Shuttle. In the last planning version, before the end of the project, Hermes was supposed to transport three astronauts and three tons of payload. The total mass at launch would have been 21 tonnes, which was considered the maximum payload of an Ariane 5 Plus

- ***'Rejection' of a very good, effortfully prepared proposal regarding "Biomechanical studies on bone transplantation" (1986), probably driven by distinct medical competitors. Two years later, a very related research title was submitted by these people.***

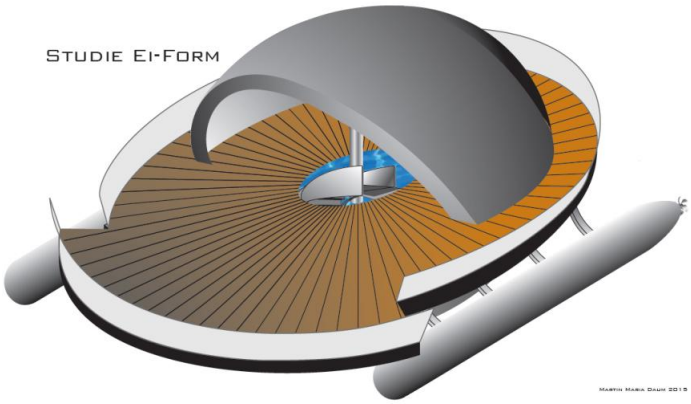
Private promising project ideas:



Project Idea, ArcOval, 2015

Purist-Engineering bureau:
(*Martin Maria Daum & Elis Heck, Karlsruhe*)
"Development of new concepts for the water habitat"

Floating House on a 'Tension Leg' Platform (TLP)



Humans have always dreamed of making the oceans habitable, but a colonization of open sea areas with artificial islands firmly fixed to the seabed is still pending. The project described below shows which possibilities can already be realized. Young developments in the field of materials such as carbon concrete, constructive developments in the construction of marine structures, as well as progress in solar energy generation and energy storage enable the construction of the floating and mobile building described below:

The floating building consists of a coated, corrosion-free textile carbon-reinforced concrete shell. Inside, there are residential and functional units on two levels. With a volume of approx. 500 m^3, the ArcOval is comparable to a small single-family house:

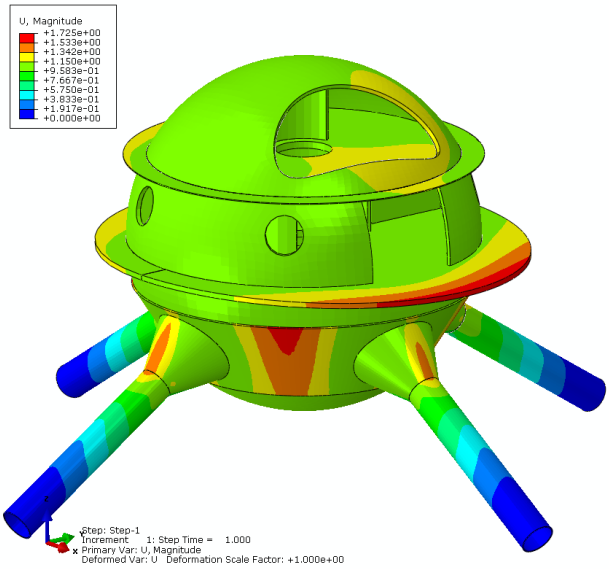
* Architect Martin Maria *Daum*, Karlsruhe: The idea
* Civil Engineer Ralf *Cuntze*, head of the working group "Fiber Reinforcement in Construction" at Carbon Composites e.V. Augsburg:
  The composition of further consortium members
  Prof. Dr.-Ing. Frank *Dahlhaus*, TLP, Uni Freiberg
  Dr.-Ing. habil. Sandra *Gelbrich*, Research area 'lightweight construction in construction' with Uni Chemnitz
  Dr.-Ing. Peter *Strangfeld*, BTU Cottbus
  Prof. Dr.-Ing. Frank *Hülsmeier*, Uni Leipzig
  with preparation of the template for funding.

A 75 m^2 photovoltaic system is used for self-sufficient energy supply. The solar-generated electricity is stored by lithium-ion batteries. To reduce unnecessary electricity consumption through electricity conversion, there is both an alternating current grid and a low-voltage supply.

The principle of the Tension Leg Platform was developed for anchoring large oil rigs and offshore wind turbines. At sea depths of over 30 meters, this anchoring method offers significant cost advantages over conventional steel constructions. The enormous buoyancy of the 400 m^3 ArcOval buoyancy body is

compensated by the ballast bodies placed on the seabed. A stiffening rope construction combines ballast and buoyancy. The platform, which floats below the surface of the water, is almost immune to wave movements due to this construction, i.e. like a solid island.





Design studies
above: ***Living space concept,***
*right****: preliminary statics***

Andreas Ehrlich, Sandra Gelbrich (*TU-Chemnitz*)
Professur Strukturleichtbau und Kunststoff-verarbeitung (*L.Kroll*), FB Leichtbau im Bauwesen



Tension-leg Platform

Frank Dahlhaus (*TU Bergakademie Freiberg*)

Counterweight on the seabed.
Toroidal floating ring is held under
the water surface (*horizontal line right*) with ropes.
Stabilization by buoyancy of the ring.

Unfortunately,
after the completion of this preparatory work,
Mr. Daum fell pretty ill and the project had to be stopped
before submission as a real research project with a diverse
combination of new tasks.

My Project Idea "Nano-2-Beton" (Nano-ZIM money chance)

High Performance Concrete (HPC) optimized with Carbon Nano Tubes (CNT) and nano-structured cement, with and without fiber reinforcement, 2014/15

Basic ideas of the project application manager Ralf Cuntze:

1. Basic idea of the project application manager R. Cuntze: Concrete matrix: Dispersion of multi-k roving snippets, so that a stochastic spatial distribution of the very light individual fibres homogeneously reinforces the concrete matrix, fibre volume content approximately 1%. This helps to strengthen stress concentration loci avoiding the introduction of locally necessary, time-consuming reinforcement at these local stress concentration points, such as edges, load applications, boreholes.
   → main project goal: High tensile strength UHPC concrete 'matrix' through evenly distributed insertion of mm-sized individual fibers in an optimized cement mixture for the concrete matrix. Good for local stress peaks, force application points of highly stressed components such as railway sleepers, etc.
2. Load-carrying components: Replacement of the steel reinforcement mats in the planned demonstrators with carbon and possibly very inexpensive basalt fibre mats (alkali resistance!), called fiber grids. Weight reduction is directly given, as no rust protection cover of about 2 cm is necessary.

The short version of the research proposal reads:
The aim is to develop a dense, ultra-high-strength concrete in order to use short-fibre and long-fibre reinforcements to produce components with optimum weight, strength, fracture toughness and wear, with a long service life. In addition to the use of specially activated CarbonNanoTubes (CNT), the use of nanostructured cement (CO_2 savings by avoiding energy-intensive clinker burning due to the use of blast furnace slag) helps to achieve this.

*In the project, the flooring manufacturing partner KLB (Kötztal) is responsible for mixing the concrete matrix components and producing the standard test specimens required for certification.
*The KMU Zoz activates the blast furnace slag as well as dry dispersion CNTs and creates the concrete matrix composition with Uni-Augsburg and KLB.
*Uni-A creates, tests and analyzes small test specimens as part of matrix optimization.
*Construction company Kalchschmid lays out and manufactures the transformer house demonstrator achieving a reduction of wall thickness and of the about 35% steel reinforcement with its difficult armoring
*Technical University of Munich determines relevant hardened concrete properties.

Compilation of the future consortium partners and preparation of the project documents by R. Cuntze.

The offer was submitted via fax at the partner Weissgerber's office on December 24, 2014, at 11:55 AM! Project winning chance was very high. Nevertheless, two SME partners dropped out and could not be replaced, so that further application efforts became pointless.

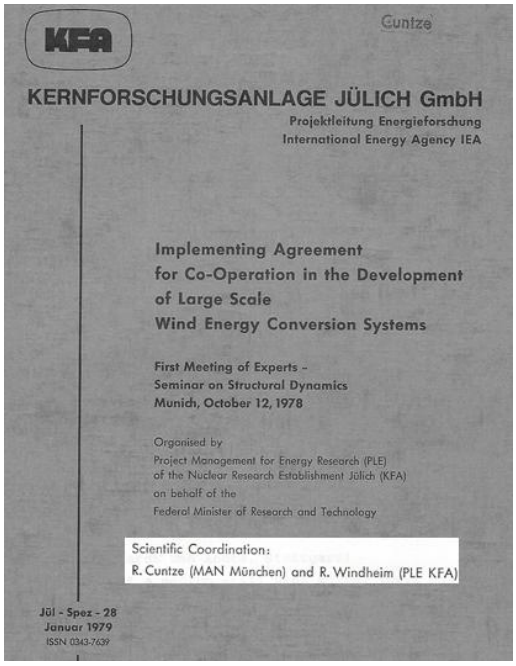


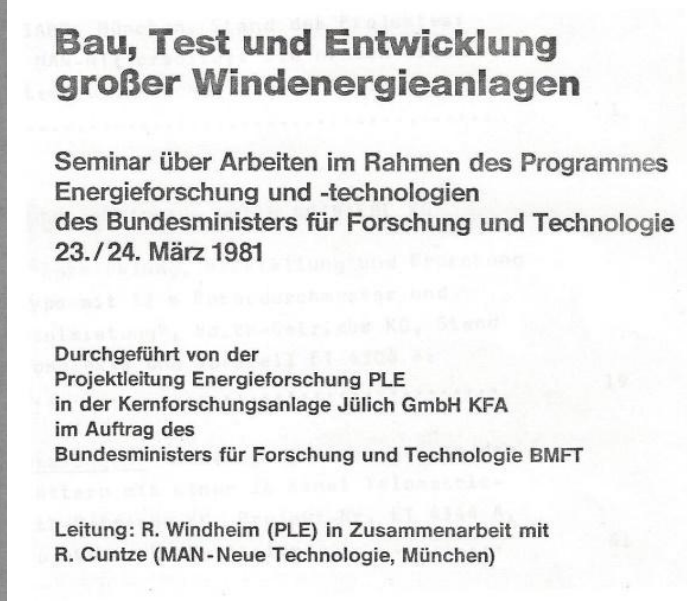
Celebrating a promising project
(*unfortunately, it wasn't ultimately successful*)

Unfortunately my private project ideas starved by the very different reasons of the team members although quite good project prospects were given.

At MAN-Neue Technologie:

Probably the first World-Wide Conference on Wind Energy (1978)





(left) International wind energy conference at MAN (1978),
(right) Seminar Research project from KFA Jülich GmbH (1981)
(below) contributors

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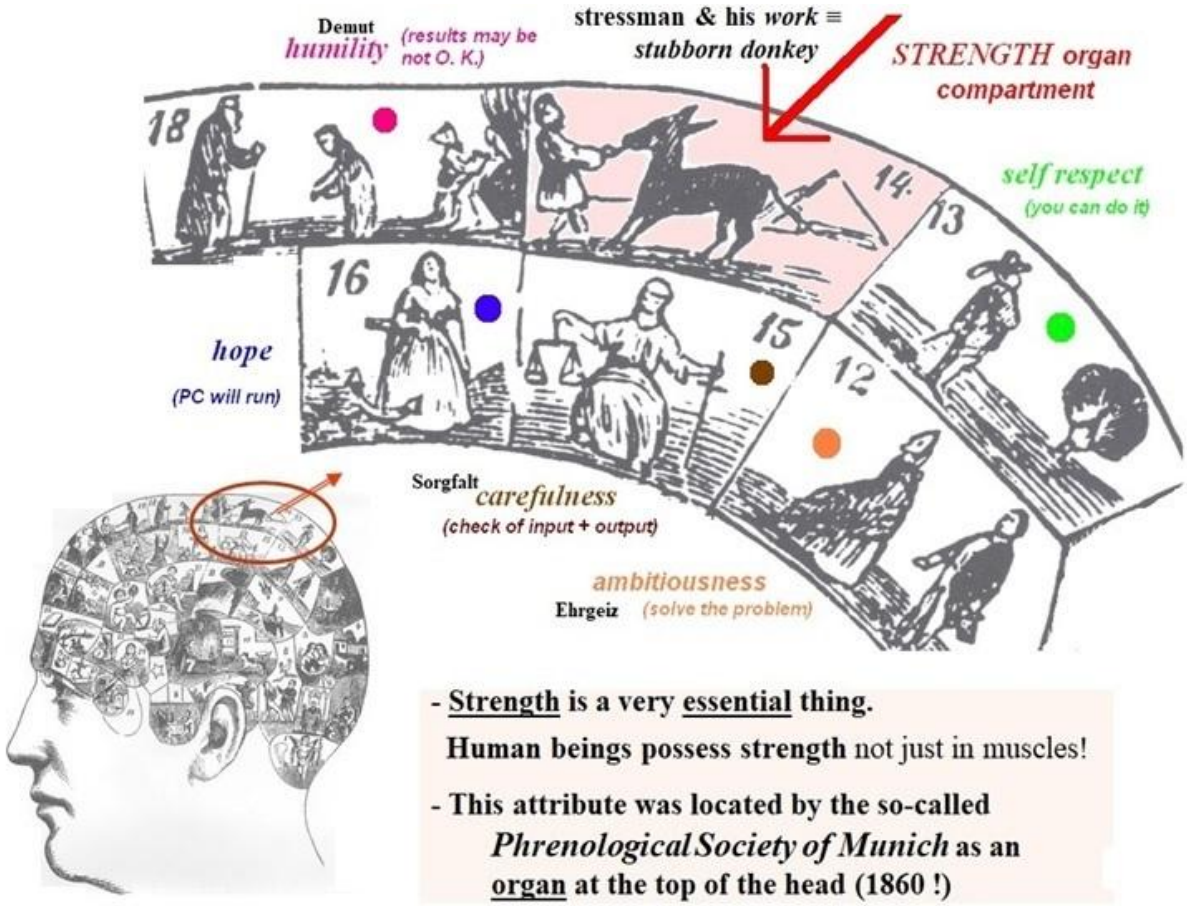
Peculiarities addressing Strength and Composites

From a presentation to the working group members of the
Kurt A. Körber Stiftung on "Innovationsfaktor Mathematik"

"How presenting mathematics to industry people".

Standing in the medieval tradition of pictorial expression, the so-called phrenologists created a map of the brain by inscribed the abundance of mental qualities and tendencies of the human being – called organs – in the form of air bubbles in the skull. Phrenology is the study of the size and shape of people's heads in the belief that you can find out about their characters and abilities from this.

How much do you think this 'organ' is weighing?
About 15 g of about 1.3kg brain → extreme lightweight !



(For us Southern Germans: This has nothing to do with the well beloved 'white-blue' soccer club 1860 Munich *(Bayern Munich are the Reds)* but it might stimulate more club success in future, hopefully).

The phrenological theory of localization places the

- Strength organ' in an excellent position of the skull, as a Stubborn donkey, which the strength man (14) has to tame namely a position between the 'organs'
- Self-respect (13), that one dares to approach a thing
- Ambitiousness (12), to solve the problem
- Carefulness (15), to check the computational output
- Hope (16), that hardware and software work
- Humility (18), when something was wrong.

Innovation Factor Mathematics, → Book Publication, 50 DM

Goal: To eliminate barriers to industry in terms of language and description.



Wissenschaftszentrum Nordrhein-Westfalen

Herrn
Dr. Georg Cuntze
MAN Technologie AG
Main Dept. Struct. and Thermal Analysis
Bauschingerstraße 20

80997 München

Düsseldorf, den 21. Oktober 1993

Buchpublikation "Innovationsfaktor Mathematik"
hier: Protokoll der Beiratssitzung vom 29. September 1993
in Heidelberg

Sehr geehrter Herr Cuntze,

ich übersende Ihnen in der Anlage das Protokoll der Beiratssitzung vom 29. September 1993 in Heidelberg.

Kurz gesagt, es wurde bei der Sitzung beschlossen, das Buch auf der Basis von "success stories" aufzubauen. Alle Beiratsmitglieder sind gebeten, mir einen Entwurf **bis zum 15. Dezember 1993** zuzuschicken.

Weitere Details finden Sie im Protokoll. Bei Rückfragen können Sie sich gern jederzeit an mich wenden.

Mit freundlichen Grüßen

Dr. Simon Golin M.Sc.

Anlagen
Protokoll

Protokoll

der Beiratssitzung
zur Buchpublikation "Innovationsfaktor Mathematik"
am 29. September 1993 in Heidelberg

Anwesend waren die Herren Bock, Bulirsch, Cuntze, Engl, Golin, Grieß, Heinze, Huber, Jaßen, Königs, Minnemann, Neunzert und Stoyan.

Zu Beginn des Treffens stand die Diskussion über die Zielgruppe und die Abgrenzung zu anderen bestehenden Buchprojekten. Es wurde Einvernehmen darüber erzielt, daß auf der Basis des im folgenden skizzierten Konzepts die geplante Publikation

- sich von existierenden bzw. geplanten Büchern genügend abhöbe
- sinnvoll und wünschenswert sei
- unter Mitwirkung der Beiratsmitglieder (als Autoren und/oder in beratender Funktion) machbar sei
- und sich finanzieren ließe.

Buchkonzept

Zielgruppe des geplanten Buches sind in erster Linie die sog. Entscheidungsträger in Industrie und Wirtschaft (definiert als "diejenigen, die für Projekte, Forschung und/oder mathematische Anwendungen Geld ausgeben können"). Ebenfalls erreicht werden sollen die Entscheidungsträger in Politik und Administration, wie auch zu erwarten ist, daß darüber hinaus Abiturienten, Lehrer, Studenten in Anfangssemestern sowie Studien- und Berufsberater das Buch lesenswert finden werden.

Inhaltlich wird angestrebt, bei dieser Zielgruppe Aufmerksamkeit für die **anwendungsorientierte** Mathematik zu wecken und ein korrektes Bild von ihrem ökonomischen Nutzen zu erzeugen. Nicht **die gesamte** anwendungsorientierte Mathematik, sondern ihre Bedeutung, aktuelle Veränderungen und typische Anwendungen sollen repräsentativ dargestellt werden. Kurz gesagt, es geht um "eine Werbebroschüre in Form eines Buches" (Herr Engl).

Es wurde beschlossen, das Buch anhand von "Geschichten" in angenehm lesbarer Form aufzubauen. Jede dieser Stories soll eine allgemeine "Botschaft" über die anwendungsorientierte Mathematik zum Ausdruck bringen und die Gliederung

- Fallbeispiel / "success story" (unter Einbezug von Hinweisen, wie es zu Mißerfolgen kommen kann)
- das Instrumentarium der anwendungsorientierten Mathematik
- allgemeine "Botschaft" zur Bedeutung und/oder der Situation der anwendungsorientierten Mathematik

(in dieser Reihenfolge!) aufweisen.

Lesson Learned here as an engineer from industry:

The Applied Mathematicians in this WG were better understandable than most of my mechanics scientist colleagues in engineering!

(in dieser Reihenfolge!) aufweisen.

Zur Phantasieanregung seien einige Themen und Botschaften genannt (von Herrn Stoyan): die wunderbare Rolle des Zufalls / Systemdenken (Zuverlässigkeit) / Arbeiten mit Software-Paketen (die sog. "gefrorene" Mathematik) / Es geht nur mit Mathematik! überraschende Anwendungen / Simulation / Optimierung / Arbeitsplatz des Mathematikers / bedarfsorientierte Mathematik.

Falls möglich soll auch eine "executive summary" im Buch hinzukommen, die die Botschaften zusammenfaßt.

Die Autoren sollen (im wesentlichen) dem Kreis des Beirats entstammen. Herausgeber des Bandes ist Herr Golin.

Finanzierungskonzept

Umfang:	ca. 200 - 300 Seiten / ca. 30 Abbildungen
Auflage:	$x \cdot 10^3$ (x>3)
Plazierung am Markt:	Buch erscheint in keiner Reihe / Hardcover / visuell attaktiver Umschlag / Preis: ca. DM 48.-

Dazu bräuchte der Verlag eine garantierte Vorwegabnahme von ca. 1000 Exemplaren (für die ein Rabatt von 40 % gewährt würde). Es herrschte Einvernehmen, daß möglichst zahlreiche Unternehmen (aus dem Arbeitskreis "Mathematik in Forschung und Praxis" und darüber hinaus) um Sponsoring in Form eines solchen Vorankaufs gebeten werden sollten. Außerdem würde dies nach außen hin das Interesse von Industrie und Wirtschaft an der Mathematik dokumentieren. Es wurde allgemein - insbesondere auch von den Unternehmensvertretern - als realistisch angesehen, daß sich Unternehmen jeweils zu einem solchen Zuschuß von einigen Tausend Mark bereit fänden. (Die angekauften Exemplare sollen insbesondere auch an die Zielgruppe "Entscheidungsträger" verschenkt werden.)

weiteres Vorgehen

Alle Beiratsmitglieder sind aufgefordert ein Resümee von zwei bis drei Seiten für eine der "stories" (siehe oben) bis zum 15. Dezember 1993 Herrn Golin zuzuleiten.

Diese Proposals sollen umfassen

- geplante Seitenzahl des endgültigen Beitrags (in DIN A4)
- geplante Zahl der Abbildungen (getrennt nach Farbe / Halbton Schwarz-Weiß)

und wie oben beschrieben aufgebaut sein.

Die gesammelten Proposals werden dann an alle Beiratsmitglieder (auch an die, die am 29 Oktober 1993 nicht anwesendend sein konnten) verschickt, so daß bei der sich anschließenden Beiratssitzung eine Auswahl und Entscheidung über die Kapitel des Buches getroffen werden kann. Auf dieser Basis kann dann mit dem Schreiben der Beiträge begonnen werden. Zeitlich parallel werden die Unternehmen um Sponsoring des Buches gebeten.

gez. Golin / 4. Oktober 1993

EINGEGANGEN
7 JULI 1993
Erl.

Wissenschaftszentrum Nordrhein-Westfalen

Herrn
Dr. Georg Cuntze
MAN Technologie AG
Main Dept. Struct. and Thermal Analysis
Bauschingerstraße 20

D 80997 München

Düsseldorf, den 5. Juli 1993
Neue Postleitzahl: 40217
Neue Telefonnummer: 02 11 / 3 87 90-20

Buchpublikation "Innovationsfaktor Mathematik"
Treffen des Beirats

Sehr geehrter Herr Cuntze,

herzlichen Dank für Ihre Bereitschaft, im Beirat zu der Publikation "Innovationsfaktor Mathematik" mitzuwirken.

Die Resonanz war ausgesprochen positiv; es liegen Zusagen vor von

Bock (IWR, Heidelberg)
Bulirsch (Techn. Univ. München)
Burkard (Techn. Univ. Graz)
Cuntze (MAN Technologie AG, München)
Engl (Univ. Linz)
Griem (Mannesmann DV, Ratingen)
Hackbusch (Univ. Kiel)
Hesse (Thyssen Stahl AG, Duisburg) (?)
Hoffmann (Techn. Univ. München)
Huber (Univ. Bayreuth)
Janßen (IBM, Heidelberg)
Jeltsch (ETH Zürich)
Königs (DFG, Bonn)
Merten (Siemens AG, München)
Minnemann (Westdeutsche Landesbank, Düsseldorf)
Neunzert (Univ. Kaiserslautern)
Plitt (BMW AG, München) (?)
Stoyan (Bergakademie Freiberg)

Eine Sitzung des Beirats ließ sich für den Juli leider nicht mehr arrangieren, da zahlreiche Verpflichtungen der Angesprochenen (sowie der Endspurt kurz vor Semesterende) dem im Wege standen.

Reichsstr. 45 – 4000 Düsseldorf 1
Telefon: 02 11 / 37 05 81 – Telefax: 02 11 / 37 05 86

Sepr 29, 1983

WISSENSCHAFTSZENTRUM NORDRHEIN-WESTFALEN

Arbeitskreis "MATHEMATIK IN FORSCHUNG UND PRAXIS"
Mathematik-Publikation

Name Institution Abteilung	Strasse Plz. Ort Telefon Telefax *: angemeldet zum 29.9.93	
Prof. Dr. H. Bock Universität Heidelberg IWR	Im Neuenheimer Feld 368 D-69120 Heidelberg 0 62 21/56-82 37 0 62 21/56-54 44	*
Prof. Dr. R. Bulirsch TU München Mathematisches Institut	Arcisstraße 21 D-80333 München 0 89/21 05-82 71 0 89/21 05-81 56	*
Prof. Dr. R. Burkard Technische Universität Graz Institut für Mathematik	Kopernikusgasse 24 A-8010 Graz 00 43/316/82 76 85	
Dr. G. Cuntze MAN Technologie AG Main Dept. Struct. and Thermal Analysis	Bauschingerstraße 20 D-80997 München	*
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Dr. S. Golin Wissenschaftszentrum NRW	Reichsstraße 45 D-40217 Düsseldorf 02 11/3 87 90-20 02 11/37 05 86	*
Dipl.-Math. W. Griem Mannesmann DV GmbH MDV-TM	Rehhecke 50 D-40885 Ratingen 0 21 02/97 12 48 0 21 02/97 13 45	*
Dipl.-Math. B. Hesse Thyssen Stahl AG Forschung - S - MV	Kaiser-Wilhelm-Straße 100 D-47145 Duisburg 02 03/52-2 59 71 02 03/52-2 61 23	
Prof. Dr. K. Hoffmann Technische Universität München Lehrstuhl für Angewandte Mathematik	Dachauer Straße 9 a D-80335 München 0 89/55 22 48-0 0 89/55 22 48-19	
Prof. Dr. P. Huber Universität Bayreuth Fakultät f. Mathematik u. Physik	Postfach 10 12 51 D-95440 Bayreuth 09 21/55-32 69 09 21/55-29 99	*
Dr. R. Janßen	Vangerowstraße 18	

Name Institution Abteilung	Strasse Plz. Ort Telefon Telefax
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Dr. K. Merten Siemens AG ZFE SPT	Otto-Hahn-Ring 6 D-81739 München 089/63 64 88 25 089/63 64 19 96
Dr. J. Minnemann Westdeutsche Landesbank Math. Beratung/Neue Technologien	Herzogstraße 15 D-40217 Düsseldorf 02 11/8 26-31 66 02 11/8 26-40 15
Prof. Dr. H. Neunzert Univ. Kaiserslautern AG Technomathematik	Erwin-Schrödinger-Straße D-67663 Kaiserslautern 06 31/2 05-27 46 06 31/2 05-30 52
K. Plitt BMW AG ET-72	Petuelring 130 D-80809 München 089/31 83 47 29 089/31 83 44 52
Prof. Dr. D. Stoyan Rektor der Bergakadamie Freiberg Fachbereich Mathematik	Bernhard-von-Cotta-Straße 2 D-09596 Freiberg 0 37 31/51-25 50 0 37 31/2 21 95
Dr. J. Heinze Springer-Verlag Planung Mathematik	0 62 21/4 87-409 0 62 21/4 87-366

Famous *COMPOSITES:* Looking at the *combination of skills*

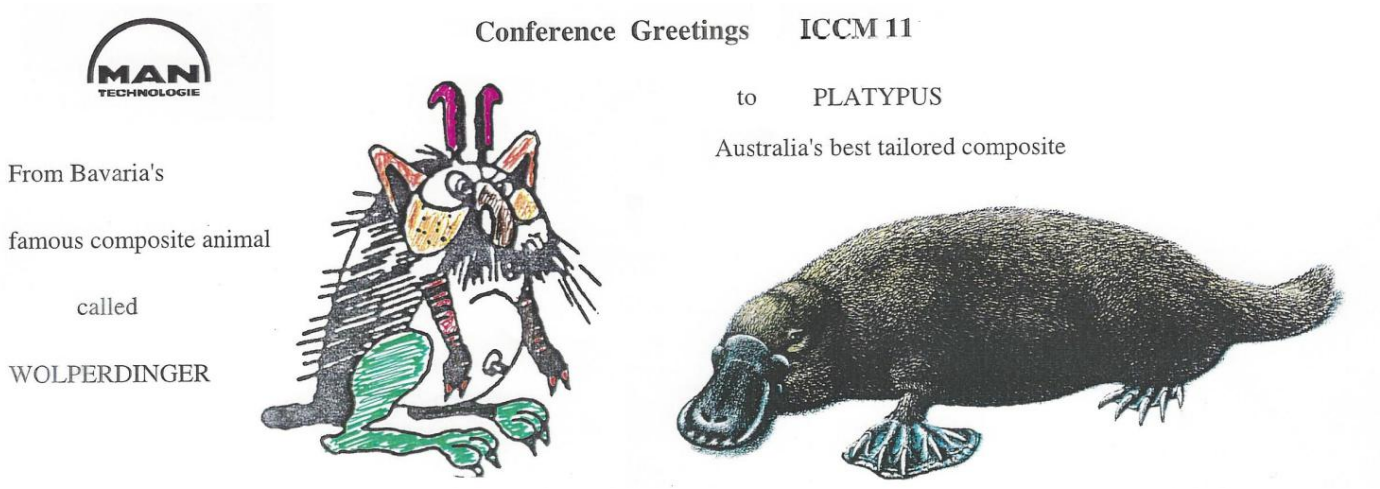
(multi-functionality)

The Wolpertinger, the most famous Bavarian ‘Composite’, is a Bavarian mythical creature whose exact origins are unclear. It is depicted as a hybrid creature in various forms, including a squirrel with a duck's beak (Schnabel).

The platypus (Schnabeltier) is an egg-laying mammal from Australia. Animals like the platypus have already realized the highly valued multi-functionality in design to a very large extent.

By the way, Wolpertinger and platypus have in common that they are very shy and nocturnal.

This does not predestine them as models for multifunctional strength criteria, because these are used unrestrainedly during the day without checking the special applicability limit.



32 Private Affiliations and Contracts, Special Conferences, Private Information

32.1 L'Ordre des Coteaux de Champagne' and Chaine de Rotisseurs

10 years 'L'Ordre des Coteaux de Champagne'



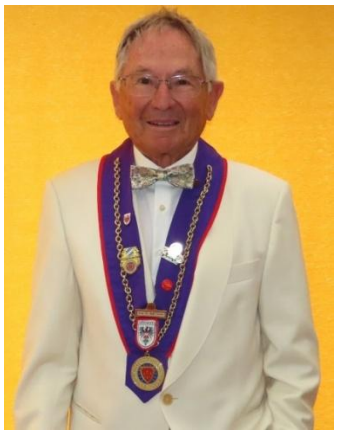


Combined Chapitre: Ralf with our beloved 'boss Teddy'

30 years 'Chaine de Rotisseurs'



about 2000

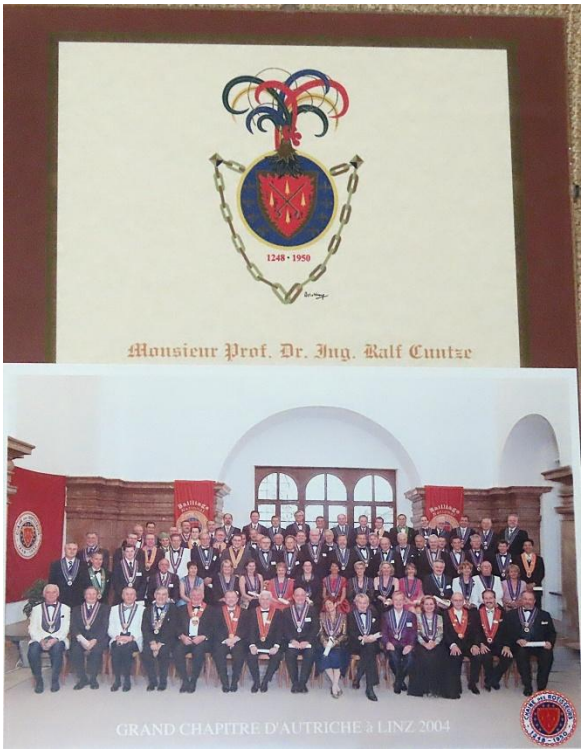


White tuxedo, some years later





(left) excellent, (right) a dinner with former wife Jutta





The French King Louis IX, who was later canonized, ordered the establishment of several guilds to improve professional knowledge. Two godparents are required to vouch for the new member's impeccable character. My fatherparent (Pate) for joining the Chaine was Prof. Dr. Wolfgang von Stetten, the German head of the order and cousin of my friend Helmut Hermann, the other fatherparent.

The ***'Chaîne des Rôtisseurs'*** is an International Association of Gastronomy now established in over 75 countries bringing together enthusiasts who share the same values of quality, fine dining, the encouragement of the culinary arts and the pleasures of the table, since 1248. The distinctive character of our association is to bring together amateurs and professionals.

The '***Ordre des Coteaux de Champagne'*** is one of the oldest wine brotherhoods in France and has been celebrating the wines of Champagne in all their breadth and diversity since 1656.

……..

Chers confreres & consoeurs:

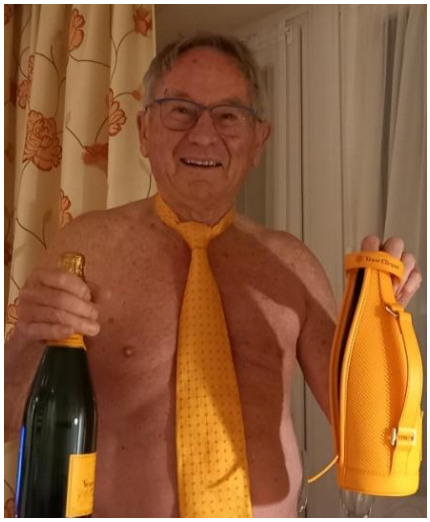
"Ce fut un moment très agréable et agréable avec vous en Bavière et en Autriche.

Je vous en remercie sincèrement."

Coat of arms

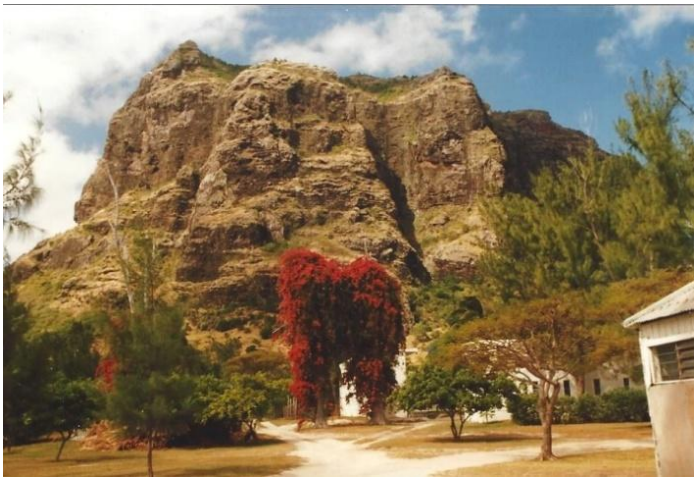
After visiting champagne cellars in the Champagne including Veuve Cliquot,

it was much more comfortable at home than wearing a white tuxedo



32.2 German Mauritious Association





(left) Final Meeting of the German Mauritius Association, 25 years.
founded by my friend Consul General Prof. Dr. Dr. Johannes Kneifel (left)

(right) Famous hill ‘Le Morne’,
which I could still climb in 1986 with the hill-owning farmer….
Now closed.

32.3 DAV = German Alpine Club > 50 Years

Some Experiences with the Alpine Club

June 1973, Großglockner with Föhn storm gusts:

During an excursion with my wife from Kals (1325 m) to the Stüdlhütte (2800 m), a mountain guide persuaded me to join him on the Großglockner the following day. He was an experienced guide who had survived twice on the Großglockner as rescuer (*On September 19, 1971, a climbing team perished in a fatal mountaineering accident on the Großglockner after a sudden change in weather. Our mountain guide was part of the rescue team, which was itself swept down by an avalanche, an event he survived*) and a lightning strike that damaged his ice axe. I gathered the necessary protective gear, such as gloves, helmet, and crampons, from what was available at the hut. Ropeed up and wearing crampons, we set off at 5:00 via the Kleinglockner to the Glocknerscharte and then on to the Großglockner (3798m, 8:55). The Glocknerscharte was a narrow, half-meter-wide snow ridge. I could sit on it while waiting out the strong Föhn gusts. Unfortunately, this was necessary because we encountered another rope team coming the other way. Incidentally, there's a sheer drop of about 1000 meters on either side.

Lucky, we were back at Kals at 14:50 hrs.

Juli 1977 Taschachhaus-Eiskurs, Wildspitze



Saas Fee

Learning by doing
and recreation.
4000 m plus, Dom etc.





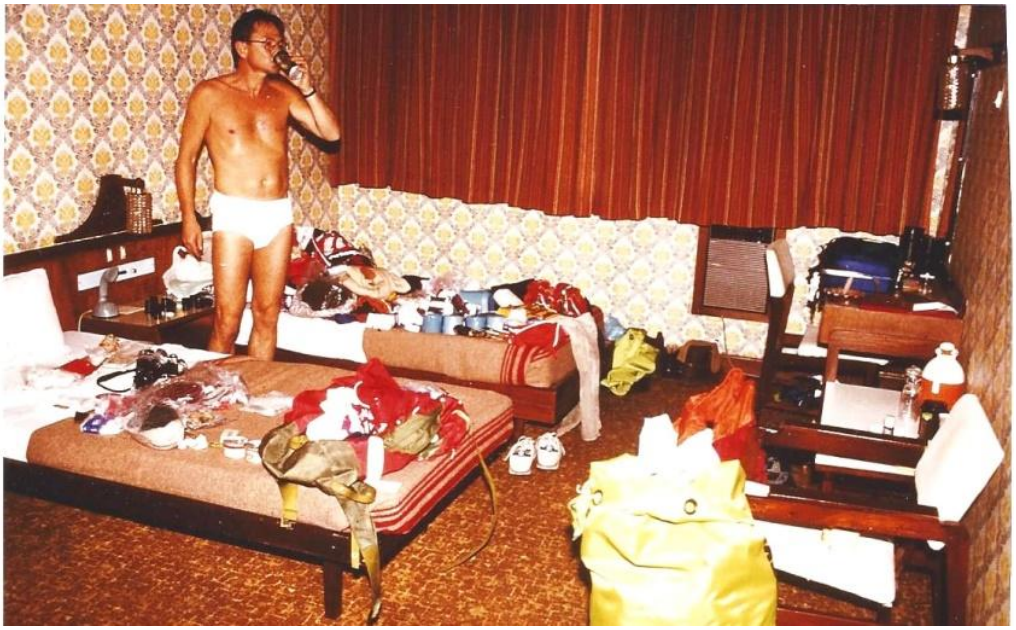
Taschachferner, 1977
Ice climbing course



lapel pins of the Alpine Club





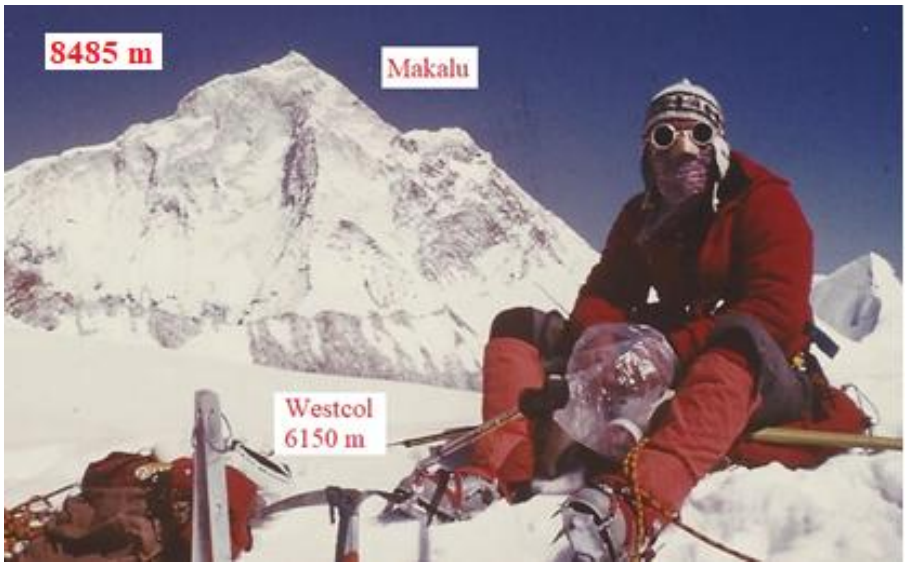


Equipment for higher mountains



Double shoe for the high mountains

Abseiling from the Mingbo La pass, 5800 m, extreme life event:

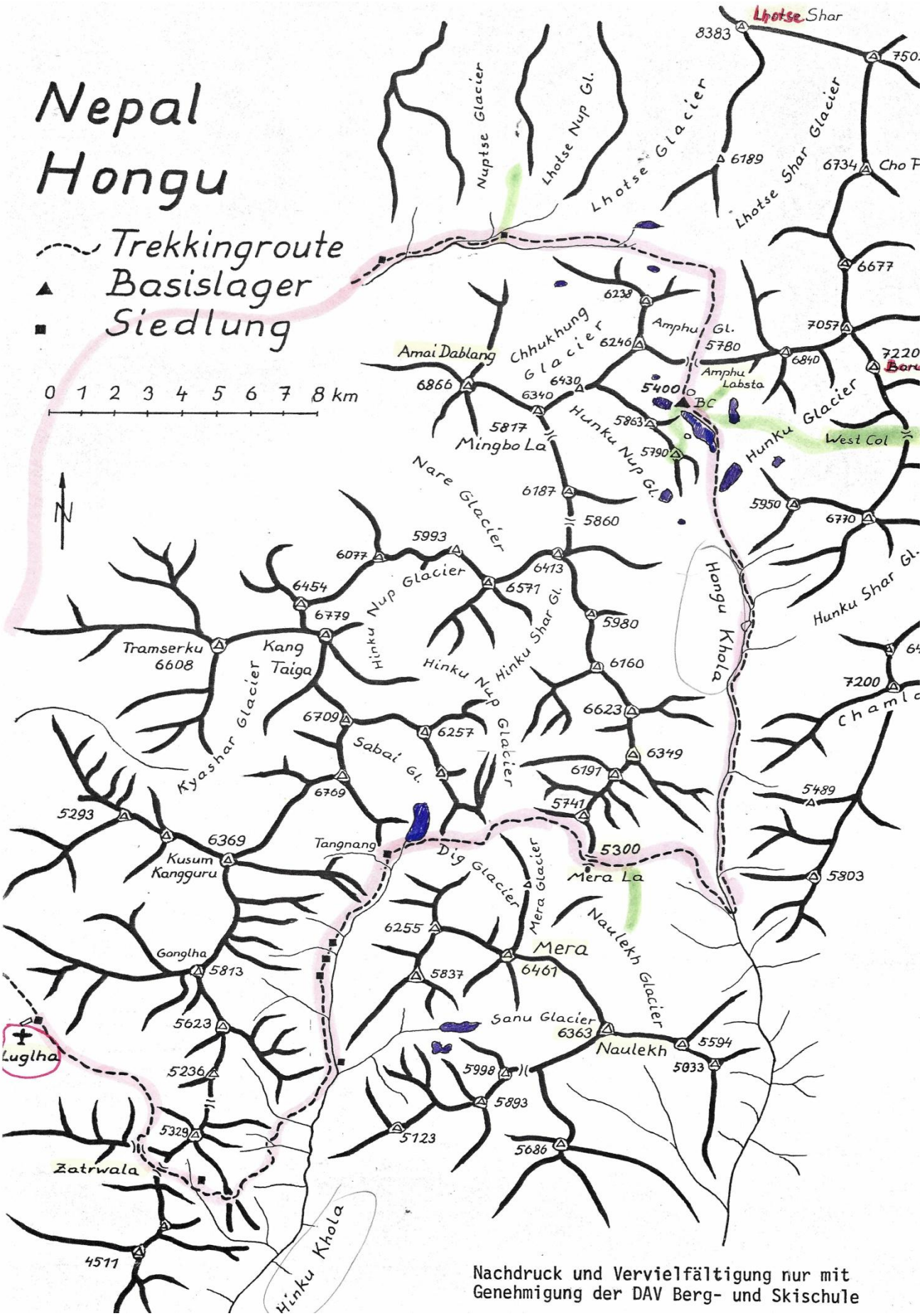


Equipment, missing:

Since the porters with the equipment were missing, we had to take spare clothes.

Consequence:
You take what you have..
Because much is possible if a goal is pursued

Over 5000 m: 14 days stayed (only minor cleaning allowed).
21 days without showering.



Nachdruck und Vervielfältigung nur mit
Genehmigung der DAV Berg- und Skischule



Description of the Abseiling

Arrival 9 a.m. Abseiling together with a fearful sherpani (*with <u>rubber boots</u> in the ice channel*) to take over the intermediate station at 10 o'clock.

Then for 8 hours let down the trekking participants, equipment and Sherpas descending in the ice channel secured to the rope and then pull this heavy rope up again and again. From 4 p.m. sunlight gone and freezing cold. I had the to go down the ice channel with the last person, our cook – tied up in front of me. When we were downstairs, he untied himself and then disappeared downstairs with a last cry in the dark.

Now my exhausted colleague from the high station slowly came down with his headlamp. I gave him my ice pick, because I still had an ice axe and then we crossed the steep slope extremely carefully. After about an hour, someone came towards us. It was the guide who told us that he had met the cook on the ascent. Great joy and relief.

For me, the only thing left was to drink, wrap myself in the two sleeping bags and sleep on a mat between boulders.

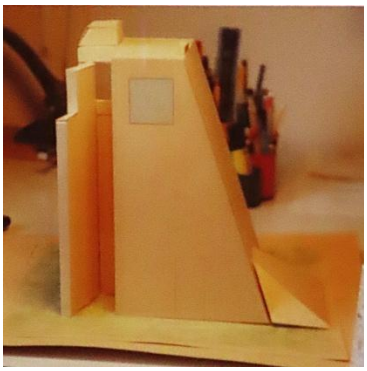
<u>Note</u>s:

**Sherpas can carry twice as much of us at great height, but could not help pull the heavy rope.*

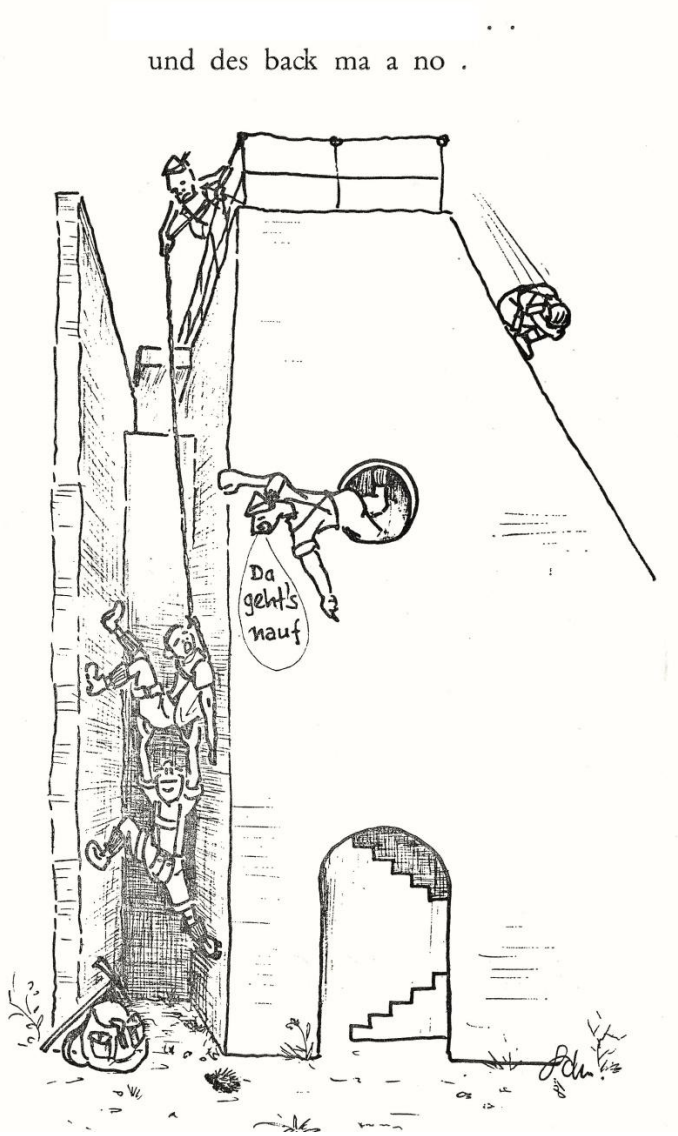
**All the pictures my colleague took of this event from above were developed incorrectly. Grief.*

32.4 Hiking & Mountain friends Club "Glonntal-Indersdorf e.V."





My model



EINWEIHUNG

KLETTERANLAGE

INDERSDORF

26. September 1981

Wander- und Bergfreunde Glonntal / Indersdorf e. V.
Rothbachstraße 18
8062 Markt Indersdorf
Tel. 0 81 36 / 79 29

FESTPROGRAMM

1980, inauguration of 'my' climbing garden
With the administrative officer of the County Dachau and the well-known climbers Michel Dacher, Otto Wiedemann and Sepp Gschwendner

Baubeschreibung

Turmhöhe: 8.10 m

Material: Beton, ca. 53 m³
1 Seite Natursteinwand (Kalkbruchstein aus dem Gebiet der Thierseer Ache)
Gewicht mit Verankerung zum Turm
ca. 20 Tonnen

Innenausstattung:

Erdgeschoß: Schulungs- und Aufenthaltsraum
Obergeschoß: Lagerraum

Div. Außenanlagen und Lehrgarten geschützter Pflanzen (in Vorbereitung)
Erstellung: in Eigenleistung
Bauzeit: 1 1/2 Jahre
Freiw. Arbeitsstunden: 2600
Finanzierung: Gemeinde Indersdorf,
Landkreis Dachau,
Vereinsmittel

Benützung

Vereinsmitglieder: kostenlos

Gäste: DM 2,-- je Std. u. Pers.

Eintragung im Turmbuch Pflicht

Benützung auf eigene Gefahr

Schlüssel für die Anlage sind erhältlich gegen Unterschrift bei:

- Schreibwaren Blank, Kloster Indersdorf
  Mo, Di, Do, Fr 13.00 - 18.00 Uhr
- Helmut Ebert, Rothbachstr. 18, Kloster Indersdorf
- Georg Pickl, Ringstr. 12, Röhrmoos

Zum Geleit

Der Kletterturm hat die Gemüter der Indersdorfer Bürger und auch der Gemeinderatsmitglieder stark bewegt. Anfangs war es der Standplatz, der nicht paßte, dann wurde die Gefährlichkeit eines solchen Turmes angesprochen und schließlich war es wieder einmal das liebe Geld, das nicht unnütz ausgegeben werden sollte. Auch von einer Verschandelung des Glonntales war die Rede und, daß der Fußballsport darunter leiden würde.

Was vor 2 Jahren noch als Wunschtraum einiger Wander- und Bergfreunde in den Sternen geschrieben stand, ist nun Wirklichkeit geworden und den Lästerern ist bei dem gezeigten Fleiß und Arbeitseifer nur noch das Staunen geblieben. Wenn jede Vereinsgemeinschaft so tatkräftig mit anfassen würde, wäre dem Markt manche Sorge erspart.

Nun haben wir einen Kletterturm in Indersdorf! Den ersten im Landkreis. Unsere Jugend kann sich mit Klimmzügen und Auffangstraining für schwierige Bergfahrten stählen und dadurch Gefahren mindern. Eine neue Erlebniswelt wird den Benutzern erschlossen, ohne Belastung anderer. Denn die Bergsteiger sind ein stilles und friedvolles Völkchen.

Der Indersdorfer Jugend und den Förderern des Wandervereins Glonntal e.V. danke ich im Namen der Marktgemeinde herzlich, für die Mühe und Beschwerden, die sie auf sich genommen haben. Allen Nutzern der Anlage Freude, Spaß und das Erleben der körperlichen Kräfte!

Dem Bergsteiger sind die Sterne näher!

Berg Heil!

Hans Strixner

Hans Strixner, Bürgermeister

Liebe Bergfreunde

Mit was für Schwierigkeiten hatten wir zu kämpfen, als wir uns vor 2 Jahren Gedanken machten, einen Kletterturm zu errichten.

Dies ist aber nun alles Vergangenheit und wir freuen uns, endlich nach 1 1/2-jähriger Bauzeit die Kletteranlage Indersdorf vorstellen zu können.

Mit diesem Trainingsgelände wollen wir nicht nur eine Übungsmöglichkeit für Sportkletterer, sondern in erster Linie eine Ausbildungs- und Trainingsstätte für unsere Bergfreunde schaffen.

Sicherheit am Berg, das war unser allererster Gedanke, der uns bewog, diese Anlage zu erstellen. Jeder, der in die Berge geht, soll sich hier das Rüstzeug holen können, um in schwierigen Situationen in den Bergen bestehen zu können.

Die Ausrüstung richtig zu handhaben und vor allem unseren Kleinsten das richtige Verhalten am Berg zu vermitteln, das wird unsere Hauptaufgabe in nächster Zeit sein.

Die Wander- und Bergfreunde bedanken sich bei der Marktgemeinde Indersdorf und dem Landkreis Dachau für die finanzielle Unterstützung und für die Überlassung des Grundstückes, bei den verschiedenen Firmen für die Bereitstellung von Baumaterial, bei den privaten Gönnern und natürlich bei seinen Mitgliedern für die freiwillige Leistung von 2600 Arbeitsstunden und für die vielen Geldspenden.

Helmut Ebert

Helmut Ebert, 1.Vorstand

Programm

Veranstaltungsort: Kletteranlage-Indersdorf
am Sportplatz in Markt-Indersdorf

Beginn: 10.00 Uhr

Begrüßung der Gäste

Ansprachen von Landrat H.-J. Christmann
und vom Schirmherrn der Veranstaltung
Hans Strixner

Turmweihe

Klettervorführungen durch:

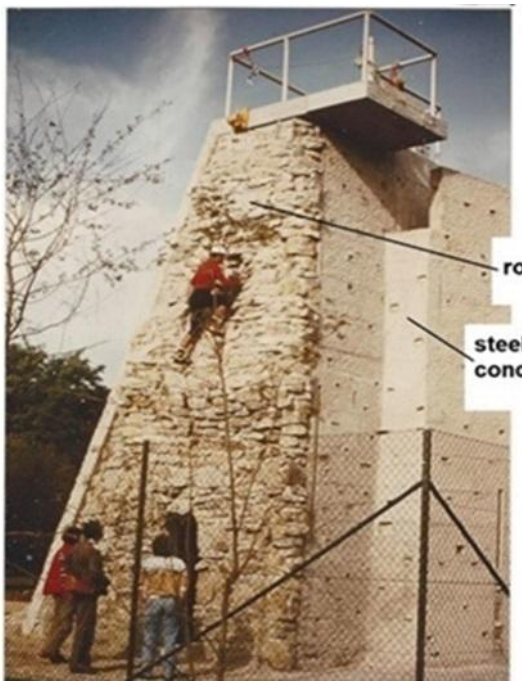
Michael Dacher	(4 Achttausender)
Otto Wiedemann	(einer der schnellsten Kletterer der Welt)
Sepp Gschwendtner	(einer der extremsten Deutschen Freikletterer)

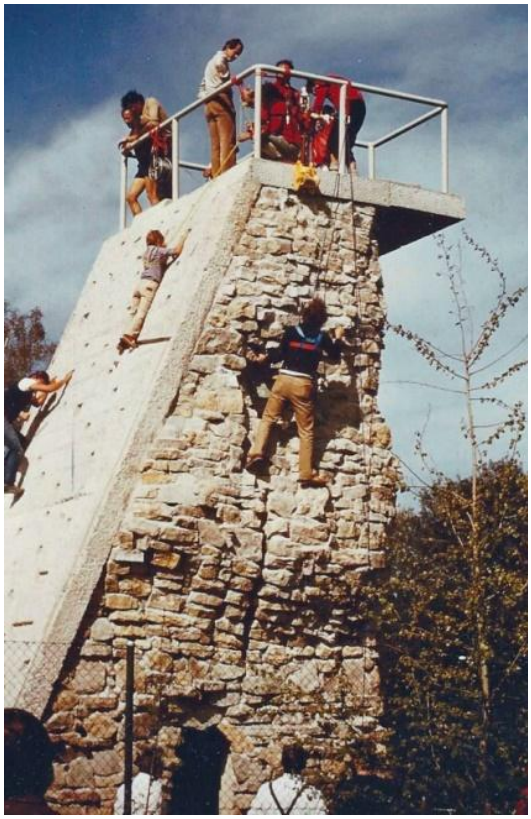
Bergvorführungen durch:

die Bergwacht München

Den Stand der neuesten Ausrüstungen zeigen die Firmen Scheck, Hanwag und Salewa.

Für Ihr leibliches Wohl sorgt ein Festzelt mit diversen Schmankerln,
Bierpreis DM 3,90 je Maß







With us the 3 famous climbers
Dacher, Wiedemann, Gschwendner ,



Mayor: Hans Strixner
Our mayor has very supported the club and desired the construction of the climbing facility

Catholic Mass on the Wallberg mountain, 1977
(left: our mayor Hans Strixner †)





Indoor sports during winter time



With Hans Rumler and Hans Ebert on the Thaneller (moderate, 1000m elevation gain, 4:45h)

The Thaneller (2341m) is a sensational panoramic mountain in the Lechtal Alps near Reutte.







Hiking tours



with Hans Rieger in the mountains:
On my Birthday 66



On the top



with Helmut Ebert (Board of our hiking club since 1974)
and his wife Rosemarie





Done



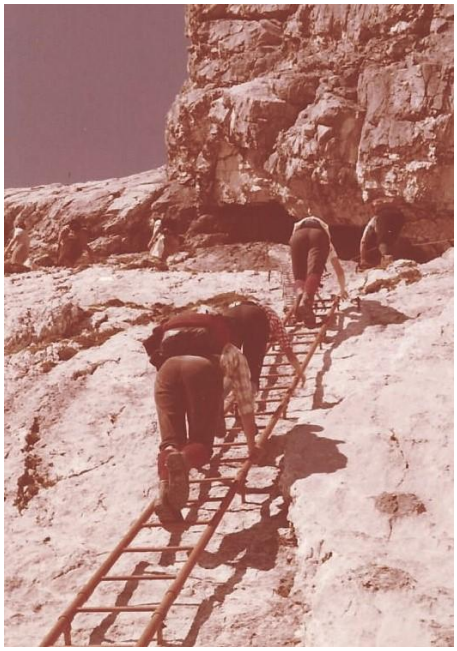
Music band on top



Our top event at the well of the Isar river
Hiking Theme ***Isar***: From the source until running into the river Danube



In the mountains with my neighbour Elmar.



Via ferrata





On the way up to Germanies highest mountain





Up on the Zugspitze again

One day experience, above:
In the early morning by car (130km) to the Zugspitze carpark at Ehrwald. Then up to 2962 m, followed by 25 km down to the olympic ski jumping ramp, after a head-threatening half hour during a sudden thunderstorm, groping through the completely dark Partnachklamm tunnel. After a short relaxing time then home in the later evening.



Reached



blue gentiana



End of one day Zugspitze-trip







Our traditional Christmas Hiking Tour on Dec.26
Exceptionally with snow here



(left) Helmut Ebert, boss of the Hiking Club



Christmas Hike, Dec 26: Usually GREEN

The MAN-NT football group at a Christmas party.



Still at that time people always dressed up more for a celebration.

32.5 Saying Good Bye at MAN; Good bye composites, too ????

Von: Cuntze Ralf

Gesendet: Mittwoch, 11. August 2004 18:09

An: Albinger Juergen; Asching Martin; Bau Manfred; Beck Robert Teran; Becker Ralf; Block Ulfert; Brueckl Arno; Buettner Petra; Burkard Karl; Clormann Ulrich; Diem Heiko; Stromer Klaus; Dogigli Michael; Draeger Michael; Fiedler Klaus; Forster Rudolf; Friedl Josef; Geiss Gunter; Grimmelt Martin; Groll Peter; Haller Herbert; Hartmond Ralf; Holzportz Dieter; Klupsch Bernd; Krings Herbert; Lange Harald; Locke Wayne; Murawski Bernd; Patzelt Aicke; Roos Dieter; Sacher Hanno; Schaefer Christian; Scharringhausen Joachim; Scheider Frank; Schermann Thomas; Schullerer Guenther; Schwarz Annemarie; Spiegel Michael; Steinacher Armin; Stroehle Hans-Georg; Sygulla Dieter; Szelinski Bernd; Toprak Taylan; Waldeyer Heinz; Weiland Stefan; Wein Josef; Windisch Michael; Wittmann Michael; Zaun Josef; Denk Franz; Deska Rolf; Eisenmann Alwin; Grunmach Rolf; Klug Juergen; Muehlratzer August; Radtke Wulf; Starmans Hermann-Josef; Wiesemann Susanne; Wolf Georg; Link Thomas; Schermann Thomas; Waechter Peter; Zielke Edmund; Moeller Christian; Petz Franz; Wegmann Christian; Reichle Michael

Betreff: Teilnahme an Cuntzes Abschiedsfeier

Liebe Kolleginnen und Kollegen,

nach über 34 Jahren kommt der letzte Arbeitstag unaufhaltsam auf mich zu.
Es waren spannende Jahre und auch erfolgreiche Jahre. Der Erfolg war im wesentlichen das Ergebnis einer guten Zusammenarbeit. Für diese möchte ich mich ganz herzlich bedanken und gleichzeitig alles Gute für das weitere Bestehen der MT wünschen.

Aus Anlaß meines Abschieds lade ich zu einer kleinen Abschiedsparty ein:

31.08.2004



Farewell party

before

clearing out the office





Mini
Kevlar Motor Case.

A very valuable
Good Bye-Hardware gift.

Surprisingly, it was not clear - under German law - ,
who would have to pay the remaining days of the month after the 65th birthday;
i.e. from retirement day, September 9, until on October 1.
MAN kindly took over the payment of this amount.

M·A·N NEUE TECHNOLOGIE

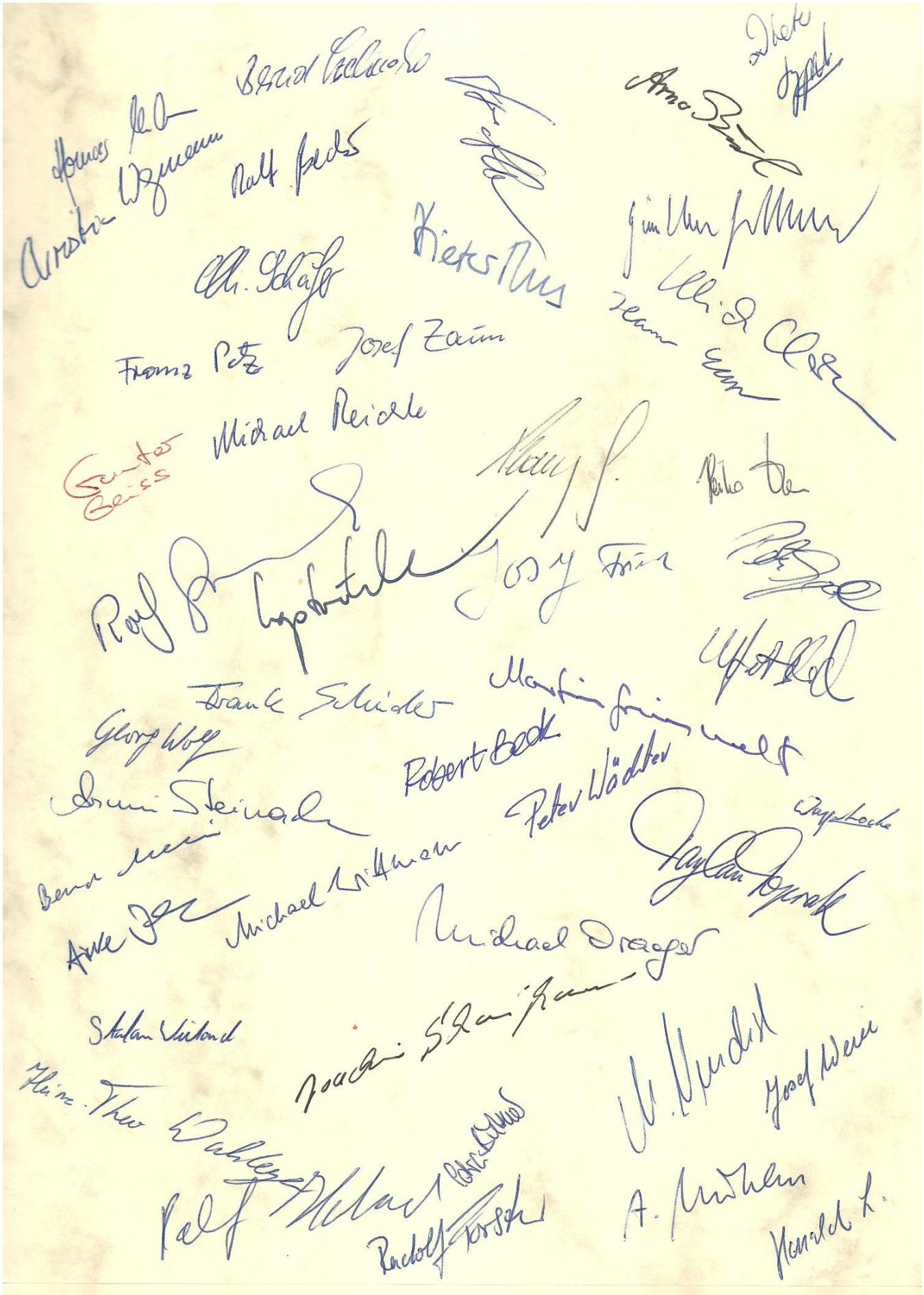
M·A·N TECHNOLOGIE

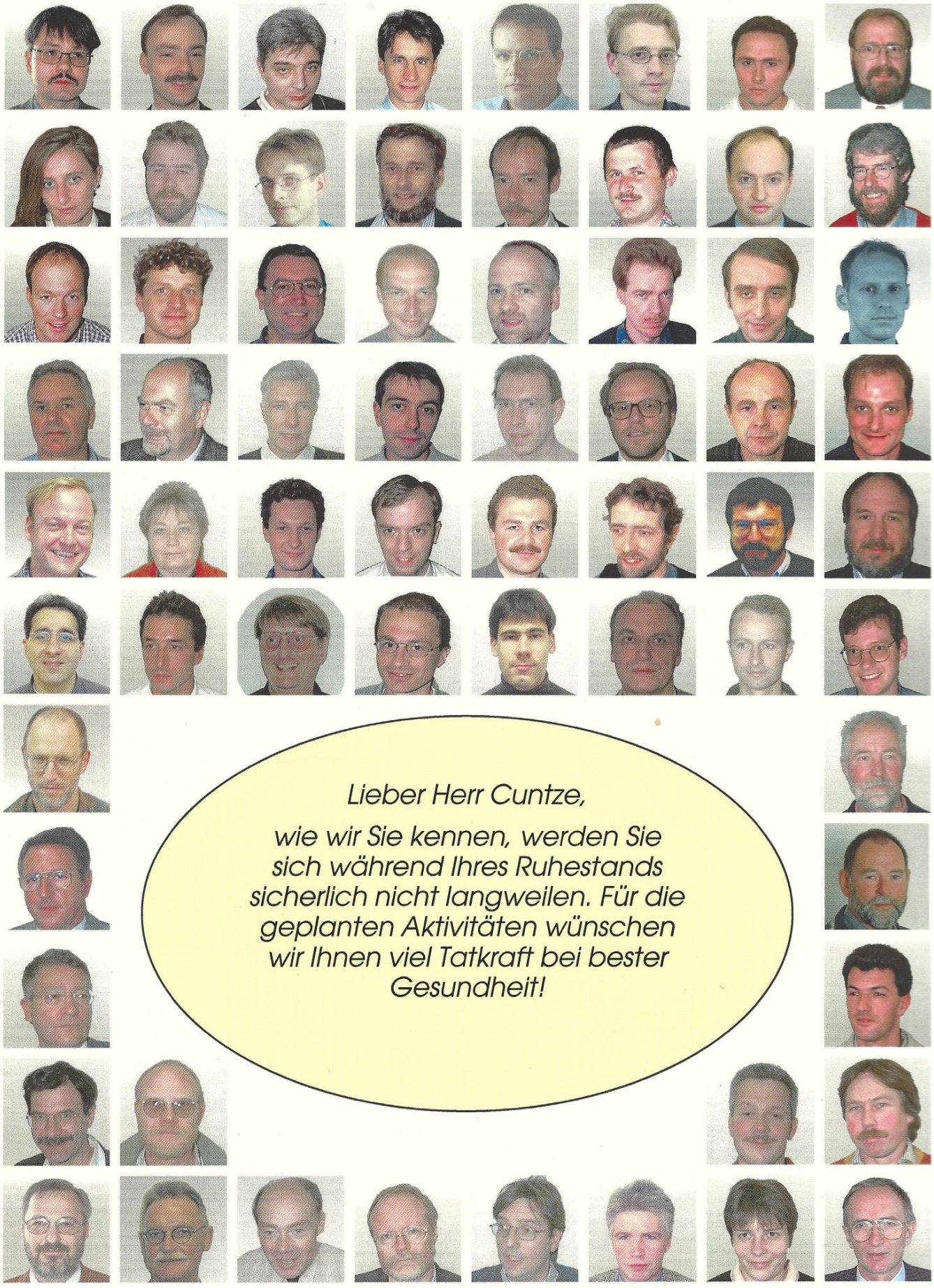
MAN TECHNOLOGIE

MAN



34 Jahre




Lieber Herr Cuntze,
wie wir Sie kennen, werden Sie sich während Ihres Ruhestands sicherlich nicht langweilen. Für die geplanten Aktivitäten wünschen wir Ihnen viel Tatkraft bei bester Gesundheit!



Team: Maximun 50, including 10 Dr.-Ings.

Finally, to my colleagues:

***Thank you for putting up with my weaknesses for 34.5 years.**

***Thank you for the excellent collaboration across departmental boundaries.**

***Thank you for making it a pleasure to (almost) always come to work. Otherwise, I would probably have been sick for more than five days in total.**

***Thank you for the attention I received and the conversations with you.**

My greatest pride was when the A4- and A5 - production lines ran side by side!

VDI Direktor

VDI - Postfach 10 11 39 - 40002 Düsseldorf

Herrn
Professor Dr.-Ing. habil. R. Cuntze
Mathäus Günther Str. 32

85229 Markt Indersdorf

Düsseldorf, 6. September 2004

Sehr geehrter Herr Professor Cuntze,

im Namen des Vereins Deutscher Ingenieure gratuliere ich Ihnen sehr herzlich zu Ihrem 65. Geburtstag.

Für die kommenden Jahre wünsche ich Ihnen alles Gute, vor allem Gesundheit und persönliches Wohlergehen. Ich hoffe, dass Ihnen die Pläne, die Sie sich vorgenommen haben, viel Freude und Erfüllung bringen werden.

Gleichzeitig möchte ich unseren Dank dafür aussprechen, dass Sie dem VDI seit 26 Jahren als Mitglied die Treue halten. Der VDI – als große Gemeinschaft der Ingenieurinnen und Ingenieure in Deutschland – lebt ganz wesentlich vom Engagement und der Stetigkeit seiner Mitglieder. Ich hoffe, dass Sie auch weiterhin noch viele Jahre ein Teil dieser Gemeinschaft bleiben werden.

Sicher wissen Sie, dass sich unsere Mitglieder auf Wunsch ab dem 65. Lebensjahr als pensioniertes Mitglied einstufen lassen können. Die Beiträge sind dann etwas geringer. Eine kurze Mitteilung an unsere Mitgliedsabteilung genügt.

Mit freundlichen Grüßen

Dr.-Ing. Willi Fuchs

Verein Deutscher Ingenieure e.V. · Graf-Recke-Straße 84 · 40239 Düsseldorf · Postfach 10 11 39 · 40002 Düsseldorf
Deutsche Bank AG Düsseldorf (BLZ 300 700 101, Kto.-Nr. 5 492 020 · Postbank Essen (BLZ 360 100 431, Kto.-Nr. 685 044 30
Telefon +49 (0) 211 62 14-0 · Telefax +49 (0) 211 62 14-5 75 · vdi@vdi.de · www.vdi.de · USt.-ID: DE 119 353 189

Hannover, 20. Mai 2007

Sehr geehrter Herr Professor Cuntze,

hiermit möchte ich Ihnen meine Dissertation zum Thema „Robuster Entwurf beulgefährdeter, unversteifter Kreiszylinderschalen aus Faserverbundwerkstoff“ überreichen.

Die angeregten Diskussionen mit Ihnen sowie Ihre Publikationen auf dem Gebiet der Faserverbunde haben meiner Arbeit neue Impulse gegeben. Dafür möchte ich mich recht herzlich bedanken.

Für Fragen stehe ich Ihnen jederzeit gerne zur Verfügung.

Mit freundlichen Grüßen

Dr.-Ing. Christian Hühne

Manfred Hajek
Andréestr. 17
8000 München 19

München, 20.2.84

Herrn
Dr. Ing. Ralf Cuntze
MAN-NT, Abt. EGS
Dachauer Str.667
8000 München 50

M.A.N. - Werk München
E 21. FEB. 1984
B

Sehr geehrter Herr Cuntze,

anbei schicke ich Ihnen meinen Ausweis, bevor er angemahnt wird.

Vielen Dank auch noch für die Zusendung des Artikels und vor allem auch dafür, daß Sie mir hier eine Gelegenheit gegeben haben, an einer Veröffentlichung mitzuarbeiten.

Die Arbeit bei Ihnen war für mich nicht nur finanziell interessant, sondern ich habe dabei vor allem auch fachlich und nicht zuletzt auch menschlich dazugelernt.

In diesem Sinne hoffe ich, daß wir uns bei irgendeiner Gelegenheit wieder über den Weg laufen werden.

Freundliche Grüße

Manfred Hajek

Liebe Ralf,
ich wünsche Dir alles Gute im nächsten großen Lebensabschnitt. Mit eigenen Prioritäten wirst Du sicher noch einige gelungene Sprünge machen!
Gruß, Stefan

P.S. CCards Bestell-Nr. 109-171
Image Fabrik Am Krümmling 1 06184 Zwintschöna
Tel. 03 45 / 687 99 39 Fax 03 45 / 687 99 41
im Vertrieb von modern times Tel. 05 21 / 13 60 397

Dear Ralf,
I wish you all the best in the next big phase of your life. With your own priorities, you'll surely make some successful leaps forward.”
Best regards, Dr.-Ing. Stefan Dieker

(Stefan helped us with the Sloshing Designing of the Ariane tanks)

Cuntze Ralf

Von: Waldeyer Heinz
Gesendet: Donnerstag, 12. August 2004 08:51
An: Cuntze Ralf
Betreff: AW: Teilnahme an Cuntzes Abschiedsfeier

Sehr geehrter Herr Dr. Cuntze,

vielen Dank für Ihre Einladung.
Für Ihren neuen Lebensabschnitt wünsche ich Ihnen und Ihrer Familie alles Gute. Dies auch im Namen des Betriebsrates.
Für die langjährige, gute und effektive Zusammenarbeit möchte ich mich besonders bei Ihnen bedanken.
Bleiben sie weiterhin gesund, damit Sie noch lange in den Genuss der MT- Betriebsrente kommen.

Liebe Hr. Cuntze,
ich möchte mich auf diesem Wege für das gute Zeugnis bedanken. Weiterhin bedanke ich mich nochmals für die gute Zusammenarbeit. Sie waren wirklich ein toller Chef. Danke!
Nette Grüße an Ihre Frau! Renate Mehren

Hallo Herr Cuntze,

wie schon erwähnt werde ich am 03. September heiraten und danach eine kleine Hochzeitsreise genießen sodaß ich leider nicht an Ihrer Abschiedsfeier teilnehmen kann.

Ich möchte Ihnen herzlich dafür danken, daß Sie mir als mein erster außeruniversitärer Chef den "Berufseinstieg" so leicht gemacht haben - einen besseren Chef kann man sich nicht wünschen!! Vielen Dank dafür.

Persönlichkeiten, die fachlich und menschlich so außergewöhnlich sind, begegnen einem nur selten. *

Ihnen alles Gute für Ihre sicherlich weiterhin aktive Zukunft

Ihr

Thomas Schermann

***** ***"You rarely encounter individuals who are so exceptional both professionally and personally."***
A BigThank You to you, Thomas and to my former colleagues as well.

Mail below :

Above letters were a fantastic gift for my work at MAN-Technologie (MT), however, they are in contrast to the opinion and its subsequent action of the CEO on the next slide!!

Something cannot fit regarding the Betriebsrat-letter and those of my coworkers!

Herrn Dr. W. Brunn, MT1

Kopie: Herrn H. Rauck, MT2

Sehr geehrter Herr Dr. Brunn,

im Zusammenhang mit den von Ihnen vorgesehenen Umstrukturierungsmaßnahmen, möchte ich noch einmal auf einige für mich sehr wesentliche Aussagen aus der Entscheiderkreis-Sitzung (31.8.01) und dem Gespräch über eine E-Neustrukturierung (9.11.01) zurückkommen, da ich Verständnis-Probleme mit diesen Aussagen habe:

1. In der REKOS-Entscheiderkreis-Sitzung des E-Bereichs bin ich vor Betriebsrat und Kollegen als Errichter von Abteilungsbarrieren (Dr. Eschbach) und nachfolgend als Boykottierer der Zusammenarbeit von Funktionseinheiten (von Ihnen) bezeichnet worden.
2. Alle Projektleiter sagen (9.11.01):
   - Wir in EA machen , was wir wollen. Wir leben nicht die Bedienung der Kunden innerhalb der Matrix.
   -Ich kümmere mich nicht um das Tagesgeschäft.
3. Ich sollte mehr mit meinen Mitarbeitern reden, weil diese sich nicht trauen würden mich anzusprechen .

Diese Aussagen treffen mich in meinem Verständnis einer Führungskraft zutiefst. Es ist für mich als Führungskraft bei MAN Technologie seit 1970 das Wichtigste gewesen:

* Abteilungsbarrieren abzubauen (wozu es auch Belege gibt) und für eine Verbesserung der Schnittstellenkommunikation zu sorgen
* Dort zu helfen, wo es beim Tagesgeschäft brennt. Den Projektleitern nach Anruf schnellstmöglich eine Antwort zu geben
* Täglich mehrmals durch die Arbeitsräume zu gehen, um vorhandene Probleme ansprechen zu können.

Deshalb habe ich die herzliche Bitte an Sie, mir einige nachvollziehbare Beispiele für ein von mir nicht erkanntes schlechtes Führungsverhalten zu nennen.

Mit freundlichen Grüßen

R. Cuntze, Abt. EA

10.1.2002

A case for the denial of my professional honor

(you never forget something like that, it keeps burning).

In a company restructure meeting, I was labeled in front of the board, works council, and colleagues as an instigator of departmental barriers (by management consultant and employee interviewer and evaluator Dr. Eschbach) and subsequently as a sabotage of cooperation between functional units (CEO Dr. Brunn. Statement: "I would be the last blockhead in MT").

My direct request for clarification with supporting evidence was denied. My interviewed employees, the Basis- Managers', informed Dr. Eschbach that there must be a case of misinterpretation. Answer of this person who seems to be alien to human dignity: "That's just how it went".

If this claim were true, then, based on my established leadership style — without anyone in the company having noticed — I would have been schizophrenic for 31.5 years already.

If the management wants or needs to change something, it should be able to discuss it with those affected.

"Then the board must have employed an unsuitable department head for over 30 years !?.

Other statements from this passionately reorganizing CEO were something like this:

**Employees shouldn't feel too secure in their positions.*

**You've been with the company for almost 20 years? The personal department has done a terrible job*

**I don't care whether I'm marketing aerospace components or bras.*

Can these statements inspire passionate employees??

A statement from a passionate employee for a passionate reorganizer:

Reorganization works if one knows how the company really works! It is no company playground.

Unwiderrufliche Freistellung

Sehr geehrter Herr Prof. Dr. Cuntze,

hiermit stellen wir Sie mit sofortiger Wirkung, jedoch unter Fortbezahlung Ihrer vertragsgemäßen Vergütung, unter Anrechnung von Resturlaub und etwaiger Gleitzeitguthaben unwiderruflich bis zu Ihrem Beschäftigungsende am 07.09.2004 von der Verpflichtung zur Arbeitsleistung frei.

Mit freundlichen Grüßen

MAN Technologie AG

Köppel ppa. Meyer-Höfer

'Irrevocable release'
with continued payment
(This is something a company can afford !?)

The only good thing about this decision was that I now had a lot of time
to discuss project tasks
with my former co-workers.

Composite works continued at Carbon Composites e.V (CCeV) and later Composites United (CU)

Good-bye Present

from CCeV, CU

CFRP-ware
for the author,
who sufferered in1970
the first tine
from C- fiber pieces
in his finger tip



32.6 Good-Old-Boys and a Good–Girl, former members of MAN-Technologie





One of our yearly trips, 2010, 2015 and down at our former company





32.7 Some specific Scientific Conferences, ICCM 1986

Tuesday, July 30, PM

Mechanical Properties of Composites I
ROOM: Council/Chamber

Chairman: Dr. Steven Tsai, Chief, Mechanics & Surface Interactions Br., AFWAL, Wright-Patterson AFB, OH 45433

Vice Chairman: Dr. R. Cuntze, MAN - Nene Technologie, AbC, EGS, Dachaner Str. 667, Post fach 500620, D-8000 Munich 50, West Germany

Lightweight Progress:
At least in <u>conference material weight</u>:
Transport of symposium documents: ICCM Hawai 1985
(books, 11kg, post office, received after 5 months),
Below later , NAFEMS (6g, direct home)



"Scientists are researching what is,
engineers create what never existed."
Theodore von Kármán

Conference at Leeuven with giving a presentation
TexComp1 conference in 1992



Conference, when Ignaas Verpoest changed his activities from metal to composites.



SIXTH INTERNATIONAL CONFERENCE ON COMPOSITE MATERIALS

ICCM & ECCM

SECOND EUROPEAN CONFERENCE ON COMPOSIT MATERIALS

IMPERIAL COLLEGE, LONDON, UK, JULY 20-24, 1987

SCIENTIFIC PAPERS SELECTION COMMITTEE

Australia
J. R. Inglis

Belgium
A. H. Cardon
N. Sprecher
I. Verpoest

Canada
K. N. Street

Denmark
H. Lilholt

France
A. R. Bunsell
F. X. de Charentenay
R. Naslain

Germany (Federal Republic)
R. Cuntze
K. Friedrich
H. Kellerer
K. Schulte

Italy
I. Crivelli-Visconti

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A. Cervenka
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A. W. van Breen
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R. Warren

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E. Anderson

UK
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M. G. Bader
W. M. Banks
A. Bennett
M. J. Bevis
S. M. Bishop
B. J. Briscoe
N. C. Buskell
W. S. Carswell
P. Cawley
T. W. Clyne
F. N. Cogswell
T. A. Collings
P. T. Curtis
M. W. Darlington
A. G. Gibson
J. S. Higgins
J. M. Hodgkinson
P. J. Hogg
D. Hull
F. R. Jones
A. Kelly
D. Kewley
A. J. Kinloch
P. A. Lloyd
A. Marchant
I. H. Marshall
F. L. Matthews
J. Morton

N. A. Payne
L. N. Phillips
R. T. Potter
R. D. Rawlings
G. Scowen
R. L. Smith
K. A. Stevens
G. Turvey
I. M. Ward
J. G. Williams

USA
P. Beardmore
H. F. Brinson
T.-W. Chou
L. J. Cohen
J. H. Crews
H. Dharan
A. K. Dhingra
D. A. Dillard
S. G. Fishman
C. T. Herakovich
M. W. Hyer
W. S. Johnson
R. M. Jones
F. A. Kulacki
J. K. Lees
K. Liechti
R. B. Pipes
D. Post
K. M. Prewo
Y. Rajapakse
R. Rowlands
R. A. Signorelli
G. S. Springer
S. W. Tsai
J. M. Whitney
J. F. M. Wiggenraad
D. J. Wilkins

TITLE: Interlaminar Stresses VENUE: Huxley 340

CO-CHAIRMEN: Dr. R. Cuntze, MAN-Neue Technologie, Munich, W. Germany
Prof. R.M. Jones, Virginia Polytechnic Institute, Blacksburg, USA

TIME	PAPER
10.00	On the finite element calculation of failure modes in laminated CFRP specimens – an engineering approach *by K. Ickert and J. Argyris, ICA, University of Stuttgart, W. Germany*
10.25	Analysis of suppression of free-edge delamination by introducing adhesive layer *by S.R. Soni, Adtech Systems Research Inc, Fairborn, OH, USA and R.Y. Kim, University of Dayton Research Institutes, OH, USA*
10.50	Efficient three-dimensional finite element failure analysis of compression loaded angle-ply plates with holes *by S.W. Burns and C.T. Herakovich, Virginia Polytechnic Institute, Blacksburg, VI, USA*
11.15	A simplified approach for interlaminar stresses around a hole in $[\theta/-\theta]_s$ laminates *by Zhang Kai-da, Northwestern Polytechnical University, Xian, Shaanxi, China and C.E.S. Ueng, Georgia Inst of Technology, Atlanta, GA, USA*
11.40	The analysis of deformations and strains in composites by Moiré interferometry *by D. Post Virginia Polytechnic Institute, Blacksburg, VI, USA*
12.05	Studies of delamination growth and final failure under tensile loading *by P.A. Lagace and J.C. Brewer, Massachusetts Institute of Technology, USA*

On the Occasion of
the 6th International and 2nd European Conference
on Composite Materials

HER MAJESTY'S GOVERNMENT
in the United Kingdom of Great Britain and Northern Ireland
request the honour of the company of

Herr Dr RG Cuntze

at a Reception at Lancaster House St James's SW1
on Monday 20 July 1987 from 6.30 pm to 8 pm

Mr Robert Atkins MP
Parliamentary Under Secretary of State
at the Department of Trade and Industry
will receive the guests

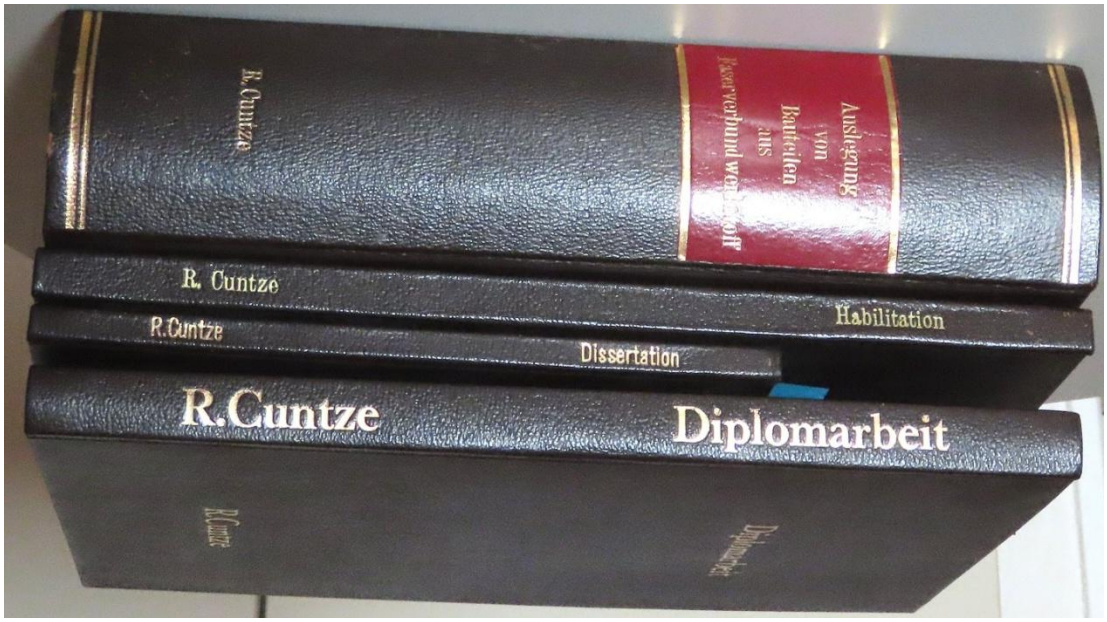
Please reply to: Government Hospitality
8 Cleveland Row St James's SW1A 1DH

Cars to approach Lancaster House
by way of Cleveland Row

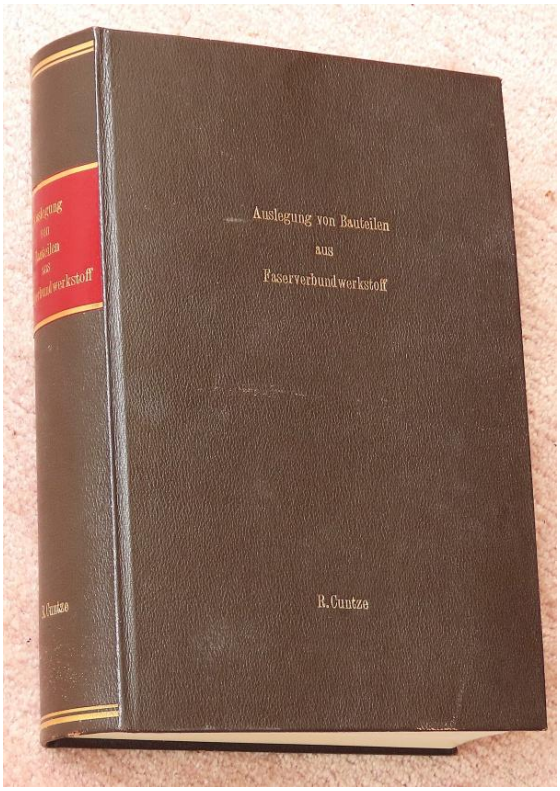


UK, to be well-dressed for the welcome dinner

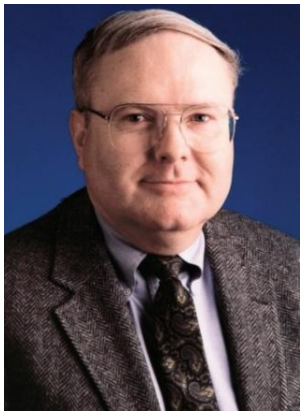
Stan Matthews let us enter the room of the celebratory event after knocking with a stick and saying our name.



Bookbinding of several works



Downloadable from carbon-connected.de/Group/Prof.Ralf.Cuntze

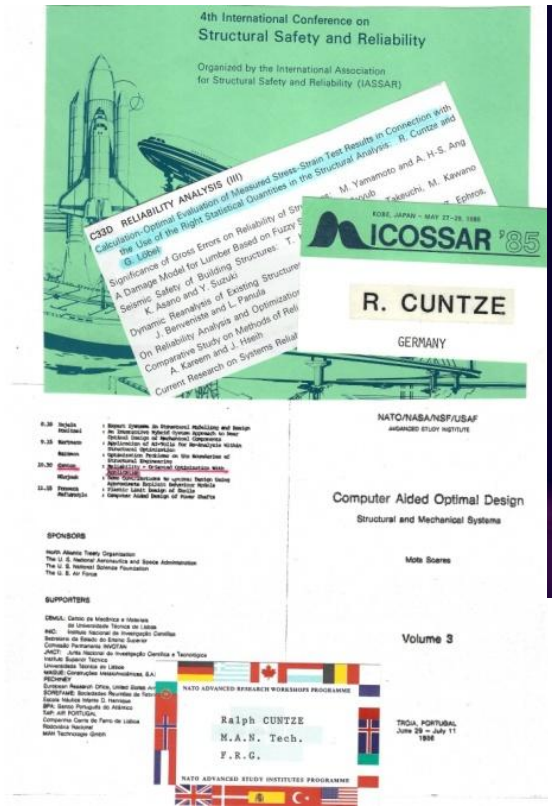


Mechanics of Composites Materials 1975.

(left):
My book idea (*600 pages on composites, of course in German,*
I could directly stop when Bob presented his book on composites



Ralf, Holger, Klaus Friedrich with Ignaas
visting
Rolands Rikards (*central behind*) at 'Rolands's conference, MCM 1998





Cinference at Osaka
Japan

World Fair at Tsukuba





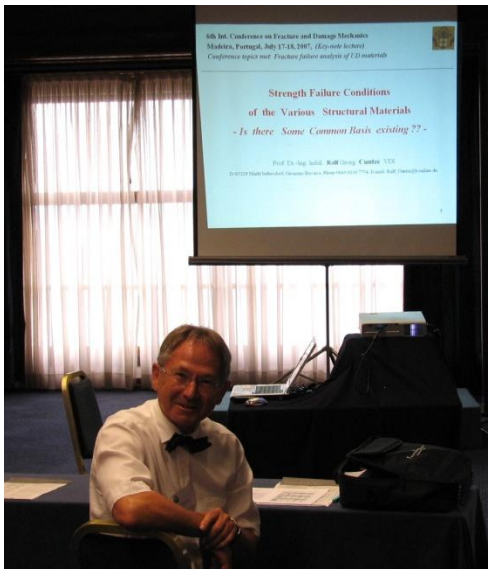






World Fair at Tsukuba





Madeira, 2007



Wolfgang, Holger with wife, Ralf and Fritz

Location:
Porto Rio Hotel
Rio, Patras, Greece
Tel. + 30 61 992102
Fax + 30 61 992115

Course Fee:
150,- DM; for ATIT Members
250,- DM for non-ATTT Members
The fee covers all course materials and refreshments.

Course Language:
English

Course Schedule:
The daily lectures will start at 9.00 and end at 17.00 hours.

Registration Deadline: 31 August 1994

General Information:

The Porto Rio Hotel is a beautiful and comfortable place offering excellent conference equipments and also various health, ball and sea sport facilities.

Rio is a beautiful resort place with sandy beaches, 8 km east of the city of Patras.

Patras is one of the most ancient cities in Greece (founded in 1080 BC by the Achaians) which has developed into the third largest city in Greece now (population of over 200.000), and which forms an important cultural, industrial and commercial centre. Patras is a capital of the Prefecture of Achaia and is situated in the north-western Peloponnese, 214 km west of Athens. The town itself is interesting to visit and it provides numerous historical places and cultural events.

Other interesting places to visit in the greater area are Nafpaktos, Ancient Olympia, Delphi and Mycenae. During September the weather conditions in Patras are ideal, with average temperatures varying between 15 and 22 °C and average humidity of about 60 %. No rainfall is normally expected.

Accommodation:

Is recommended to book at the Porto Rio Hotel, where the course takes place. Special prices have been negotiated for delegates. Room rates in Drs are: Single room 10,800., Double room 14,300. (incl. cont. breakfast, service charges and taxes) Delegates are requested to make their own hotel reservations, with reference to the COMETT-Course, as soon as possible. (only a limited number of rooms can be provided for delegates through block reservation, because in Rio and Patras the touristic season lasts until October)

Current Exchange Rate:
Current parity 1 DM approximately corresponds to 150 Drs

Travel Connections to Patras:

To reach Athens air travel is most convenient. Patras is connected to Athens by a regular coach and train service. It is recommended to use a taxi or the blue express bus from Athens International Airport to the Main Coach Station (coaches are running every twenty minutes from 6.00 to 24.00 hours). Coach departures from Athens to Patras are from 6.15 to 21.30 every hour. The trip for the 208 km distance is about three hours. From down town Patras to the Porto Rio Hotel (about 8 km) it is recommended to use a taxi.

Lecturers:

- Mr. A. Anastassopoulos, Prof. S. A. Paipetis, Dr. D. Polyzos, University of Patras, Patras, Greece
- Dr.-Ing. F.-G. Buchholz, University of Paderborn, Paderborn, Germany
- Dr.-Ing. R.G. Cuntze, MAN Technologie AG, Munich, Germany
- Prof. M. Kumosa, Oregon Graduate Institute of Science and Technology, Portland, OR, USA
- Prof. R. Rikards, Riga Technical University, Riga, Latvia

Course agenda:

Mr. A. Anastassopoulos, Prof. S. A. Paipetis, Dr. D. Polyzos
(3 hours) **University of Patras, Greece**
- Structural integrity aspects of composites
- Wave propagation in composite materials
- Wave scattering problems - Ultrasonic and accoustic emission techniques
- Advanced interpretation of ultrasonics and AE signals

Dr.-Ing. F.-G. Buchholz **University of Paderborn, Germany**
(4 hours)
- Virtual Crack Closure Integral Method
- Mixed-mode debonding analysis of thermally stresses fibre/matrix models and of fibre pull-out
- Mixed-mode delamination analysis of cross-ply laminated three-point bend specimens

Dr.-Ing. R. G. Cuntze **MAN Technology AG, Germany**
(4 hours)
- Introduction to structural integrity and to procedures and tools to verify and proof it
- A new physically based strength criterion covering 2D/3D-stress states in anisotropic and isotropic materials
- Reliability based optimal preliminary design and proof of final design: Simple Case study on a "Filament wound hollow strut under tension and compression"

Prof. M. Kumosa **Oregon Graduate Institute, USA**
(5 hours)
- Mechanical behavior of composite materials and structures
- Simple and mixed modes of fractures in UD fibre-reinforced composites
- High voltage fracture mechanics in polymer matrix UD composites used in non-ceramic insulators

Prof. R. Rikards **Riga Technical University, Latvia**
(5 hours)
- Optimal design of composite materials and structures with respect to damping properties
- Optimal design based on planning of experiments
- Damping analysis of sandwich and laminated composite structures by the FEM
(including PC software demonstrations and distribution)

Who should attend:

The course should attract engineers, designers, materials scientist, advanced students involved in composite materials developments or applications.





(above)

Rolands Rikards, Holm Altenbach, Holger Theilig, Klaus Rohwer, Ralf Cuntze




FAM
University of Paderborn
3rd International Conference on
Fracture and Damage Mechanics, FDM 2003
2 - 4 September, 2003
Liborianum, Paderborn, Germany
Queen Mary
University of London



Zvi Hashin

He was one of the world's leading experts on micromechanics of composite materials and a pioneer in the exploration and application of materials.



DURACOSYS 1999

Zvi said at a conference: *"It will not be possible to provide a design verification (proof) using the existing UD fracture criteria*."

My response: "*As someone working in industry, I am obligated to proof, because otherwise the component will not be ready for the market*."



Again Paderborn, in the monastery









Rikards, Kumosa, Theilig, Cuntze, Richard



Fritz from behind, Ralf, Rolands



Mechanics discussions with

Wilfried Becker, Holm Altenbach and Vladimir Kolupaev



Over the years with other friends:



My school friend Walter Fischer:

How to make twig brooms?



Huba Öry with Heinrich Wellen (Airbus Bremen) 2008



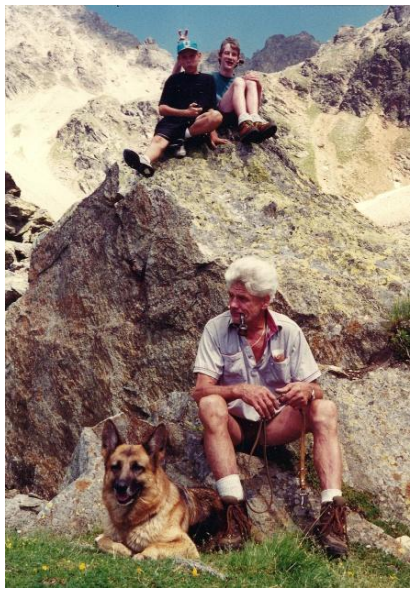
Anatolyi Levin

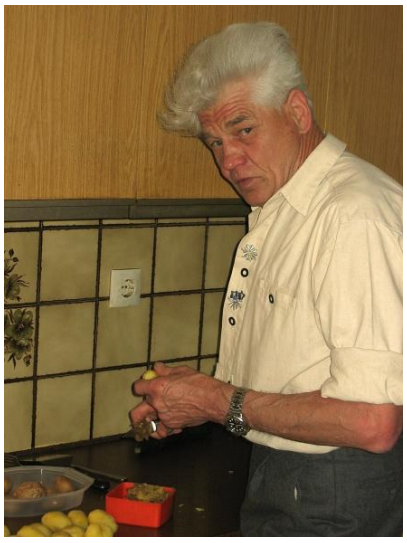


Helmut Hermann



Alois Albrecht





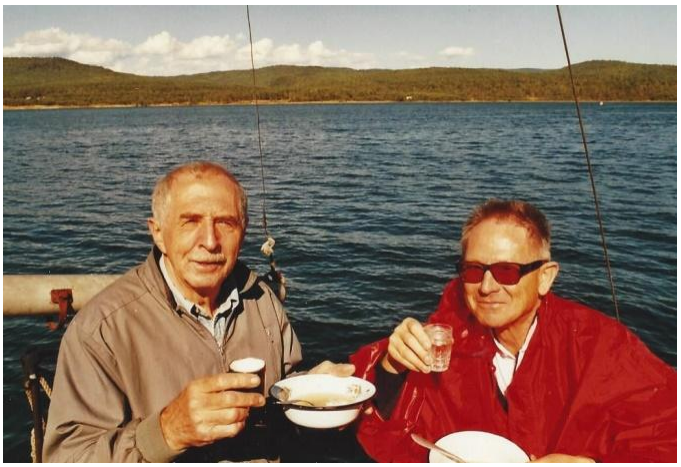
Alois is cooking

Oblast Irkutsk with Republic Burjatia,

Ulan Ude conference, July 2002, on

Mises-derived stresses: Input for Strength and Fatigue Analysis.

- Is it correct to always simply apply a Mises stress input?-



With my friend Anatol.
Enjoying the Baikal Sea, just before an extreme gust of wind put the sailing ship to the water *(we had luck*)
Capital Ulan Ude Hauptstadt
Alle fotos weg

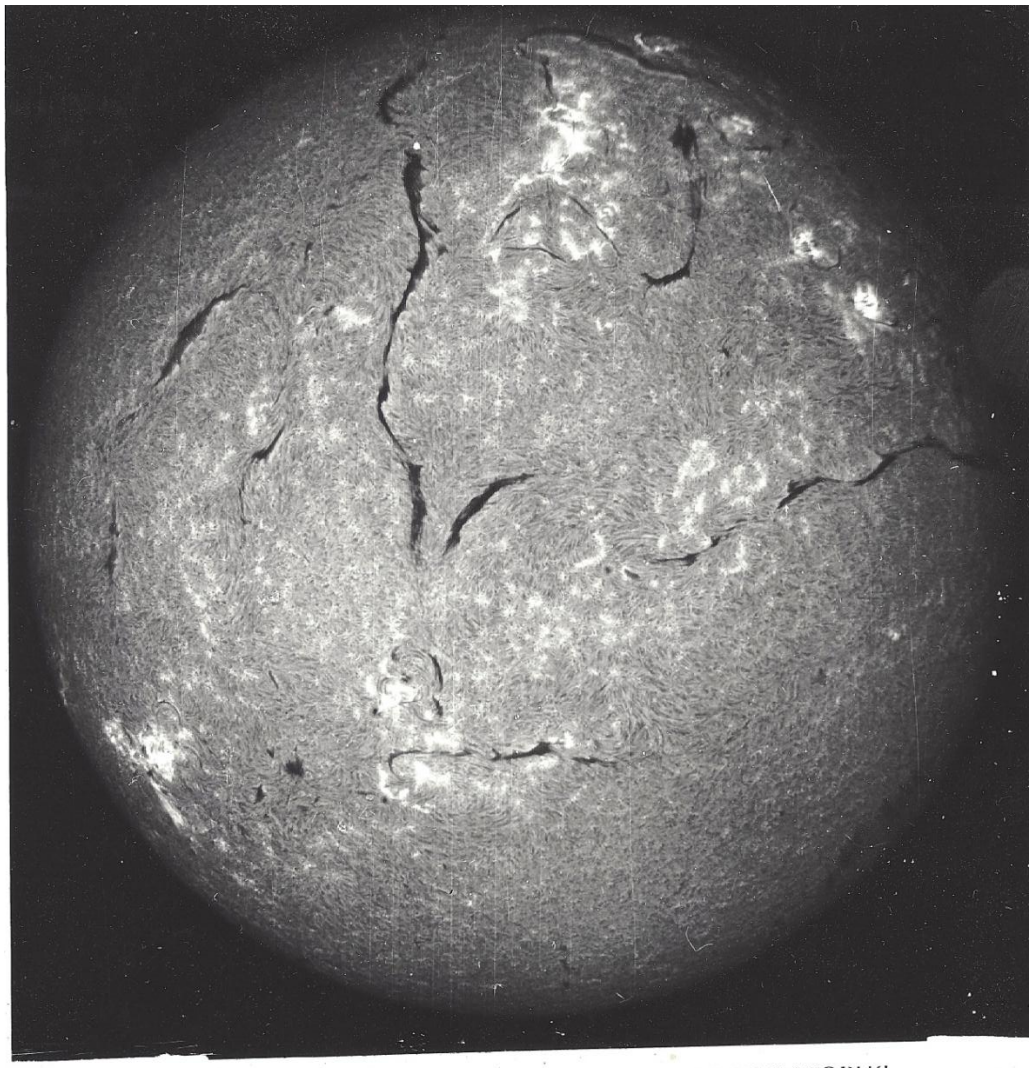


Дорогой Анатолий!
Огромное спасибо за чудесное время, которое мне удалось провести с тобой.

Dear Anatol.
My deepest thanks for the wonderful time I was able to spend with you.

(Unfortunately the digital photographies of this conference trip 'vanished').

With Anatol I was able to visit a huge (unknown?) space observation station south of Lake Baikal and a great farm museum not far from Irkutsk.
Anatol was further invited to visit the solar observatory high above Lake Baikal.
(His friend was the director.)
I was allowed by her to look at the sun and was then given a stunning photo of the sun.



БАЙКАЛЬСКАЯ АСТРОФИЗИЧЕСКАЯ ОБСЕРВАТОРИЯ
г. ИРКУТСК - 33 А/Я - 4 СИБИЗМИР СО АН СССР



Anatol, Walter and two Ladies friends of them



eating and drinking with f riends at Moscow



I

Irkutsk Pushkin Theater

КРЕЧЕТ
Авиационно-туристическая компания

Свидетельство

RALF

CUNTZE

является почетным гостем,
посетившим "9" июля 2001 года Долину Гейзеров,
один из уникальнейших уголков планеты Земля
Почетный гость располагает приятными воспоминаниями
и незабываемыми впечатлениями.

Ph.: .: +7-4112-446665
+7-4112-446184
+7-4112-257373
+7-4112-257668
Fax: +7-4112-446665
– 7-4112-257333
E-mail: t.a.kapitonova@sci.yakutia.ru
v.p.larionov@sci.yakutia.ru
inm@sci.yakutia.ru

REGISTRATION FEE

The Registration fee will be $400. It can be transferred to the following address:
1, Oktyabrskaya St., 677891, Yakutsk, Russia
or to the currency exchange account:

INSTITUTE OF NONMETALLIC MATERIALS SB RAS:
S.W.I.F.T.: SABRRUMM SA1 SAVINGS BANK OF THE RUSSIAN FEDERATION (SAKHA-YAKUTIA OFFICE)
ADDRESS: 17, OKTYABRSKAYA STREET, YAKUTSK, RUSSIA
account # 40603840376020200129
corr.acc.# 30301840100000607600

We are looking forward to seeing you in Yakutsk!

Organizing Committee

CALL FOR PAPERS

1. Papers are invited on the topics indicated. A report of no more than 10 pages of A4 paper using Microsoft Word 7.0 or earlier.
2. Times New Roman font; k. 12 is desired
3. The title of the report is printed in the center with capital letters k. 14. Then the author's names are typed (initials first). After that follows the abstract. Company names and addresses are printed in the footnote on the first page.
4. The text of the report should be single-spaced and printed in the following format: (left 25 mm, right 20 mm, top and bottom 20 mm).
5. Figures and tables should be made in the programs for WINDOWS. Tables be placed into the text; figures – at the end of the report. References should include the authors' names, title, the journal title, volume, number, pages; for books – the authors' names, title, publisher, year.
6. One copy of the report is submitted to the Organizing Committee on paper and on a 3,5" diskette. It can be sent by E-mail to one of the aforementioned addresses.

Addresses to dispatch reports and receive additional information:

Institute of Physical and Technical Problems of the North SB RAS, 1, Oktyabrskaya St., 677007 Yakutsk, Russia
Institute of Nonmetallic Materials SB RAS, 20 Avtodorozhnaya St., 677007, Yakutsk, Russia

INTERNATIONAL SCIENCE AND TECHNOLOGY CONFERENCE

PHYSICAL AND TECHNICAL PROBLEMS IN THE NORTH

July, 10-11, 2000
Yakutsk

United Institute of Physical and Technical Problems of the North SB RAS

WIDOS – Germany

FRIATEC – Germany

KWH Tech – Finland

Higher Education and Science department of RS(Ya) Government

RS(YA) Academy of Sciences

Thermophysics Institute SB RAS

Institute of computer simulation SB RAS

Liebe Frau Lukina, liebe stolze Grossmutter,

ich habe schon sehr lange nichts mehr von mir hören lassen.

Zuerst möchte Ich Ihnen und Ihrer Familie alles Gute zum gerade angebrochenen russischen Neujahr wünschen.

Mir und meiner Frau geht es, Gott sei Dank, gesundheitlich sehr gut. Ich hoffe, dass Sie dieses von sich und Ihrer Familie ebenfalls sagen können.

Trotz der 66 Jahre arbeite ich von zuhause aus noch voll für die europäische Raumfahrtbehörde ESA und die deutsche Forschungsgemeinschaft. Es macht mir einerseits viel Freude ist aber andererseits natürlich auch anstrengend. Russland arbeitet beim Hochschiessen von Satelliten mit der ESA gut und erfolgreich zusammen.

Ansonsten versuche ich mich sportlich fit zu halten. Im Sommer habe ich etliche Bergtouren machen können. Das Bild zeigt mich mit einem Bergfreund, der mir auf einer Almhütte eine nette Musik zum Geburtstag spielt.

Im Oktober war ich in Syrien, Libanon und Jordanien. Es ist gewaltig, was unsere Vorfahren bereits vor 2000 bis 5000 Jahren vor uns gebaut haben. Ich kann mir nicht vorstellen, wie man solche riesigen Bauwerke mit den damaligen Werkzeugen erstellen konnte.
Konnten Sie dieses Jahr nach Süd-Ost-Asien fahren?

Einen kalten Winter haben wir bisher noch nicht gehabt. Zur Zeit ist die Temperatur einige Grade unter dem Gefrierpunkt.
Vor 2 Wochen hatten wir allerdings ein für mich neuartiges Erlebnis: Innerhalb von 12 Stunden stieg die Temperatur von -16°C auf +10°C = 26° Differenz.
Übrigens waren spätester Schnee-Tag der 2. Juni und frühester Schneetag der 30. September. Andererseits, wenn wir Südwind (Föhn) haben, ist es so warm, dass ich auch in jedem Wintermonat auf dem Balkon in der Badehose in der Sonne liegen kann!

Für heute ganz herzliche Grüsse aus Bayern
Ihr R. Cuntze

-----Ursprüngliche Nachricht-----
Von: z.n.lukina@iptpn.ysn.ru [mailto:z.n.lukina@iptpn.ysn.ru]
Gesendet: Dienstag, 25. Januar 2005 01:32
An: Ralf_Cuntze@t-online.de
Betreff: An Anschrift

Sehr geehrter Herr R. Cuntze!

Ich bin sehr froh an Ihre Meldung. Zuerst gratuliere ich Sie und Ihre Frau zum Neujahr und wunsche ihnen Gesundheit, Wohlergehen.
Ich drucke mein Beileid zum Ableben von Ihr Mutter aus.
Bei uns ist der Winter zu kalt in diesem Jahr.Es war am 1.Oktober schon geschneit.Es ist zu viel geschneit.Der Frost war im November und Dezember zu stark.Es war von -45 bis - 51Grad unter 0 fast 2 Monate lang. Es ist schrecklich , wenn so tiefer Frost jeden Tag uber zwei Wochen ist.Im Januar, Gott sei Dank, ist der Frost nicht so stark wie im Dezember und November. Die Temperatur ist vom -37 bis -43.

Der Direktor des unseren Instituts Akademiemitglied, Professor Larionov Vladimir Petrovitsch war am 4. Marz 2004 gestorben . Er ist in seinem Heimatdorf Lomtuka begrabt worden. Zur Zeit ist Sleptzov Oleg Ivkentijewitsch Direktor des unseren Instituts.
Ich hore mit grossem Interesse die Information uber Hyugainsexpedition an Titan. Das ist phantastisch! Das ist groser Erfolg der Weltraumforscher.Ich gratuliere auch Sie zum diesen Erfolg als einen Weltraumforscher.
Ich bin schon Grossmutter geworden. Ich habe Enkeltochterchen. Sie heisst Sophija und ist 3 Jahre alt . Es ist alles in Ordnung in meiner Familie, Gott sei Dank, wir alle sind Gesund.
Ich wollte dieses Urlaub im Sud-Ost-Asien verbringen. Aber mein Bruder war todkrank und ich verlegte mein Urlaub. Mein Bruder starb am 19. Dezember 2004.
Ich freue mich an jede Meldung von Jhnen.

Mit freundlichen Grusse
Sinaida Lukina.

(above) Correspondence with my lovely translator.
Out-worst weather: -20°C, slightly humid with wind. School closed below -50°C.



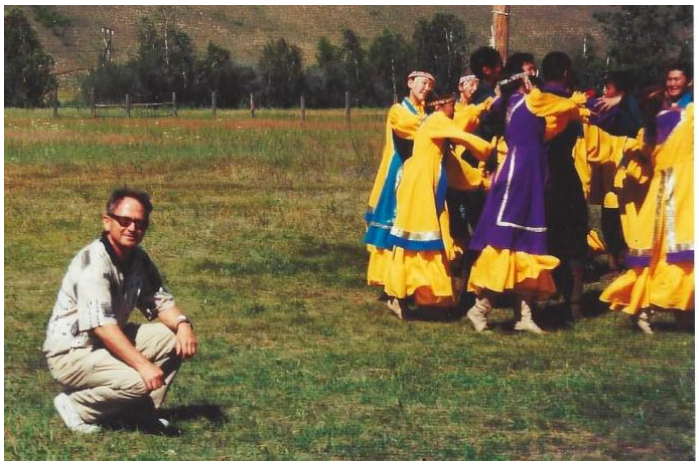
I could enjoy one of the first celebrations of the old dancing tradition (forbidden before)



Yakutzk conference on a ship .

Talk but much wodka-encouraged recreation on the boat necessary

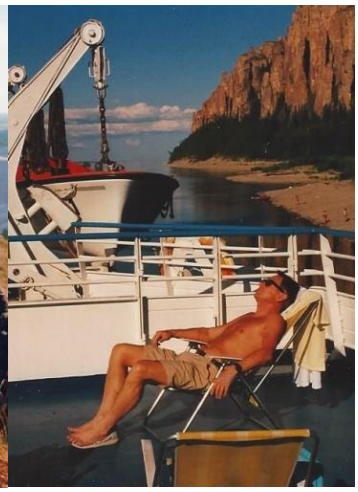
Celebration of the old customs







On the Lena rocks, 2001



Relaxing during conference





Was forbidden during the strong Soviet time: Revival of the ancient customs of the Yakuts.

Totem Poles, equal to the attaching North-America Inuit



Setting a Totem pole



Untypical minimalized Russian breakfast



with the witch doctor at the Lena river shore





Institute leader



congress ship



Lena, river side



evening mood



(up) Celebration, general view



(right) The photo shows that the city is built on stilts to prevent the permafrost beneath the houses from warming up.





















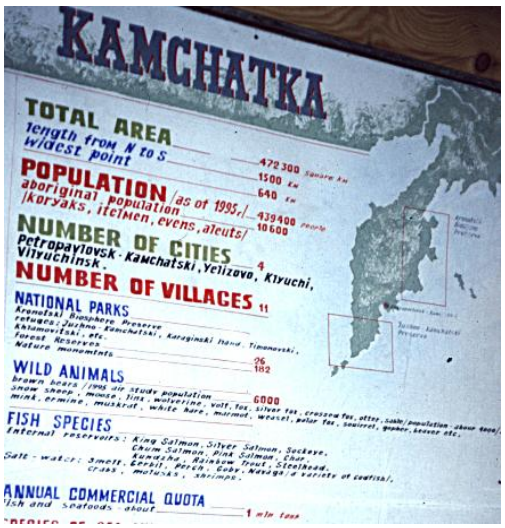
Harvesting



Bath in the cold Lena river



Excursion Kamtchatka, 2003





In front of the volcanic institute



me with the Institute leader



The target, reached: Our volcano with a relatively fresh lava flow



shopping for provisions for the excursion
at the market





Michael Schumacher was still there



Target: Our camp at the volcano
Maly Semjachik,
Karymskoye Lake

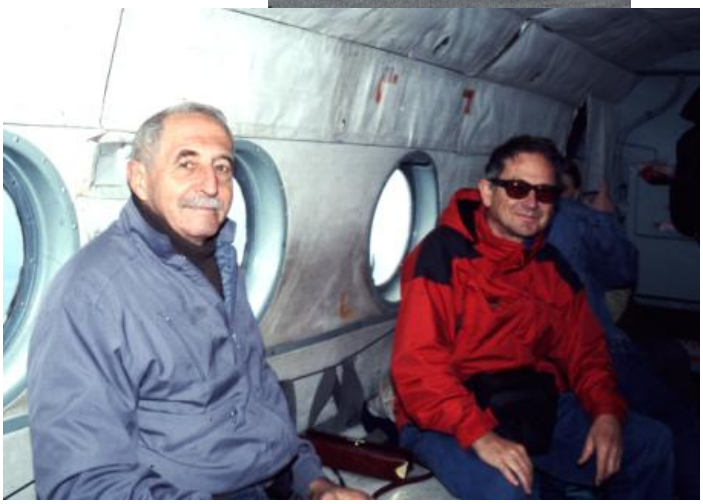






Institute leader and wife of the corresponding institute on the island Sachalin (he invited me to come to Sachalin).
(right) Leaving Petropawlows-Kamchatsk for a research excursion of the volcanic institute.











mealtime





Excursion to the Geysers land





Pure chance, a ZDF team from St. Petersburg was invited to the institute.
Quite by chance, I was able to watch this short film on television.



Happy Anatol:
“ Alles wird gut”. “Everything will be fine”.

This is one reason why Anatol didn't want to emigrate to Israel!



Work: Checking the water consistence of the fumaroles



in the
Valley of Vapors



Food available??

i



Collecting firewood



Bad weather for the heli.
Food and vodka were only planned for three days.



Water at vulcan edge: 80°C !!



Crossing the dead volcano lake. No fish, no bear!?. ►



(above)
However, not all bears seems to have gone!

Good for us, because no huge Kamchatka bears had been there anymore.



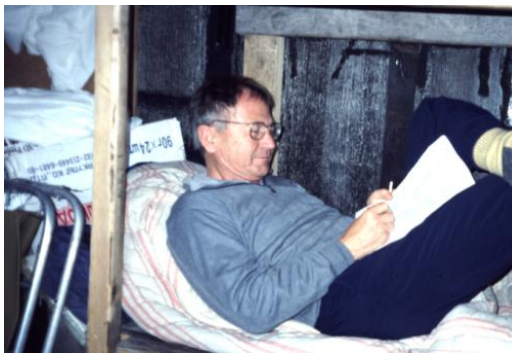
(right) last day no food anymore, waiting for the heli



Our volcano in the background



Somehow a pretty narrow living







Some days later:
Good vodka and cake are the key to a good meeting result



Food available:
Dining again, with Anatol & friends

Enjoying life
with some Russians





Being invited

Moscow Conference with Star City visit



'All Russian spacecraft conference':

2002

Invitation of Prof. Alifanov (right) to below anniversary at Moscow, being the first ***All*** Russian spacecraft conference , bringing together – for the first time - all Russian engineers and a few western engineers.

The conference in the hotel COSMOS was designed to address both military and civilian development. However, since these areas were completely separated in Russia, it didn't surprise me afterwards that we were only allowed to view the hardware on display for two hours during a break

Cuntze Ralf

Von: Malyshev [forum2001@mail.rcnet.ru]
Gesendet: Donnerstag, 07. Dezember 2000 14:57
An: ??? Technologie ??; Cuntze ?.

Forum-en.ZIP

Dear Colleague,

The 40-year anniversary of the first manned space flight in the history of mankind will be celebrated on April 12, 2001. We would like to inform you about Forum 2001, which will be held on April 11 -13 next Year in Moscow in honor of that event. You can find the detailed information into Attach File.

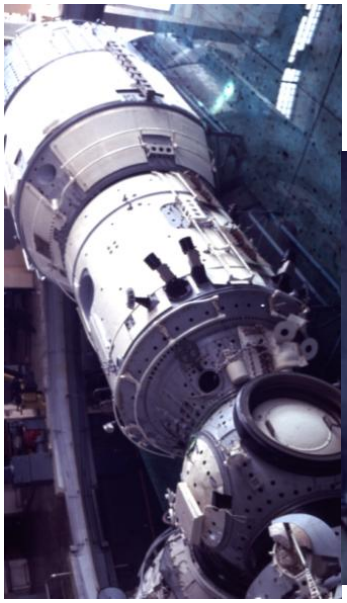
It would be great pleasure for us if you participate in this Forum.

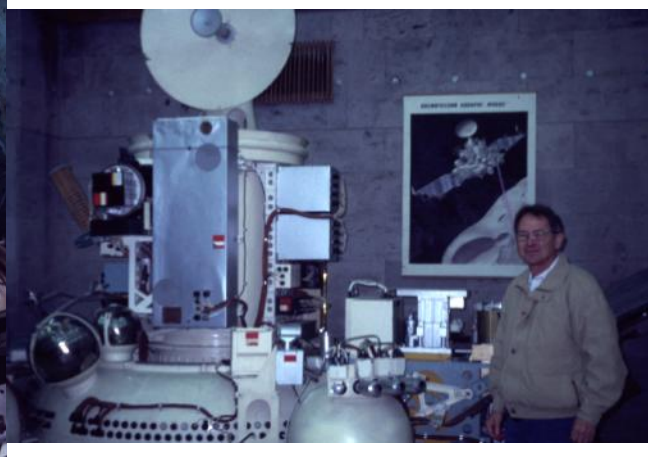
Organizing Committee

Viewing ***Star City*** ,
invited by colleague Alifanov →

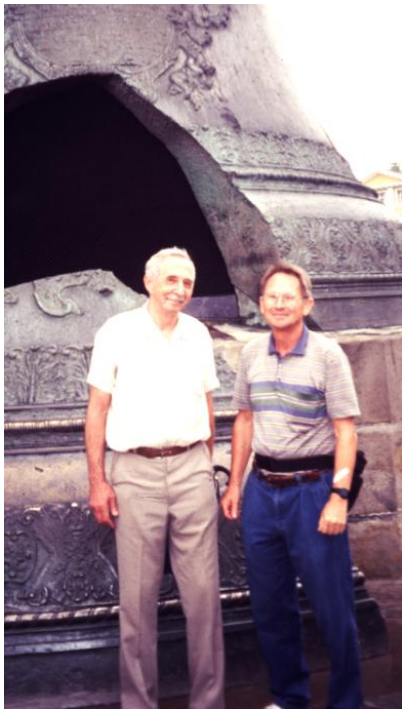


Visiting MIR (peace) at Star City











Being inside of the Kremlin was problem-free possible



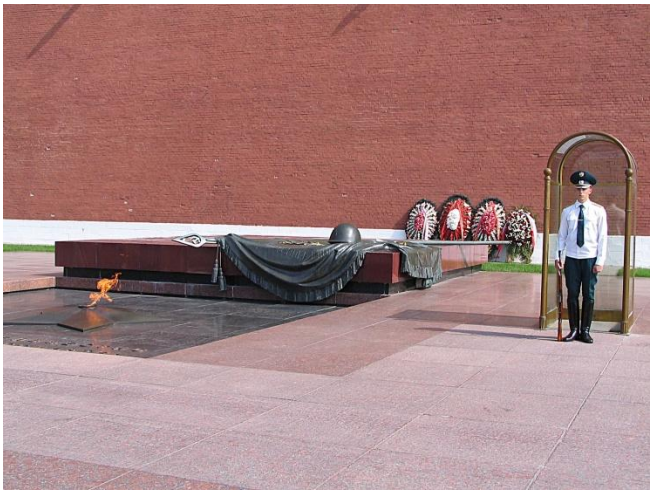
procession



An orthodox patriarch and soldiers







Waiting





Meetings at the house of Walter & Rotraud Wunderlich

(*common SAP 4 FEM-memories*)



Knittel, Cuntze,

and Obermeyer, Ramm, Pfeiffer, Heimeshoff



Pfeiffer, Cuntze, Heimeshoff



Where is Walter on the pictures ??

So I was able to have a pleasant conversation with his wife Rotraud, whom I have known practically as long as Walter has.

Industrial & Scientific Advisory Committee (ISAC), mission letter

Dear MAAXIMUS ISAC Members. Welcome on MAAXIMUS board !

Dominique GUITTARD as Technical Coordinator, myself as Project Coordinator and the whole Management Committee are really proud to have you in our MAAXIMUS Advisory Board. We all thank you again for accepting to support us.

MORE AFFORDABLE AIRCRAFT THROUGH EXTENDED, INTEGRATED AND MATURE NUMERICAL SIZING.

**** Project month M1,M2, starting from the 1st April 2008.***



Meeting of our WG.

Daniel Heiserer, Lars Herbeck, Pedro Camanho, ??, Francois Imbert

Pedro explains something to the photographer (me).

MORE AFFORDABLE AIRCRAFT THROUGH EXTENDED, INTEGRATED AND MATURE NUMERICAL SIZING

Project Coordinator
Cédric MEYER
Technical Coordinator
Jocelyn GAUDIN
Airbus France

16 March 2009

Subject: Letter of agreement on MAAXIMUS ISAC membership

Dear Expert,

You have accepted our invitation to be a member of the MAAXIMUS Industrial & Scientific Advisory Committee (ISAC) for our project and we thank you for your support.

Please return a signed copy of this letter **no later than March the 31st 2009** to confirm that:

- You will not disclose outside the MAAXIMUS Consortium any information concerning the MAAXIMUS project without the prior written approval of the MAAXIMUS Consortium. This approval should be sought through the MAAXIMUS Project Coordinator.
- You hereby agree that:
  - MAAXIMUS information presented to you is of a confidential nature and remains the exclusive property of each of the disclosing MAAXIMUS participants;
  - all original documents and copies (including electronic documents) distributed to you in whatever form which disclose MAAXIMUS information shall not be reproduced in whole or in part and shall be promptly destroyed;
  - your role within the ISAC and participation to MAAXIMUS project events is limited to the scope as defined in the ISAC Mission letter;
  - In as much as you are given sufficient prior notice, you will make every attempt to attend each of the ISAC related meetings that you will be invited to attend.

In line with the MAAXIMUS Consortium Agreement, this obligation of confidence shall continue after the conclusion of the project for a period of ten (10) years.

Should a signed copy of this letter not be returned by the above date, as Coordinator, I may consider this as a cancellation of your membership to the MAAXIMUS Industrial & Scientific Advisory Committee.

We thank you very much and we are looking forward to sharing our MAAXIMUS achievements with you.

On behalf of the MAAXIMUS Consortium
Cédric MEYER & Jocelyn GAUDIN, MAAXIMUS Project and Technical Coordinators

---

Agreed by and on behalf of

Date: 19/03/09

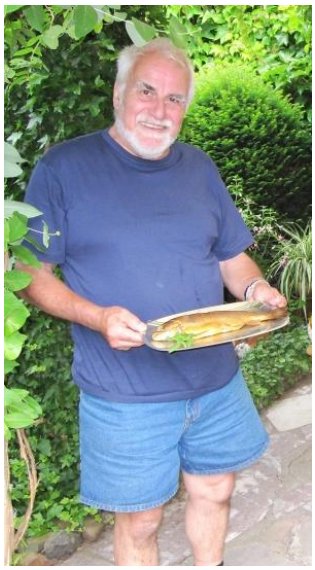
Signature: R. Cuntze

Name: CUNTZE

Organisation: /

My Travelling Friends

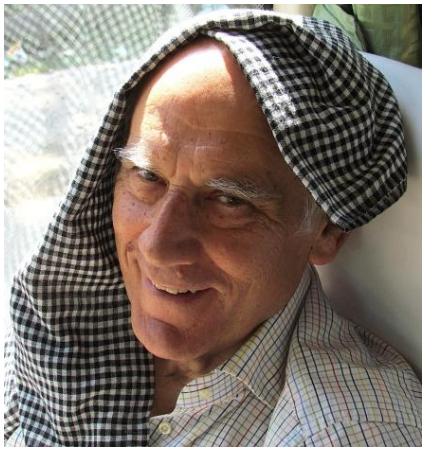
Eddi: Look the excellent fish!



Julius: up a pyramid



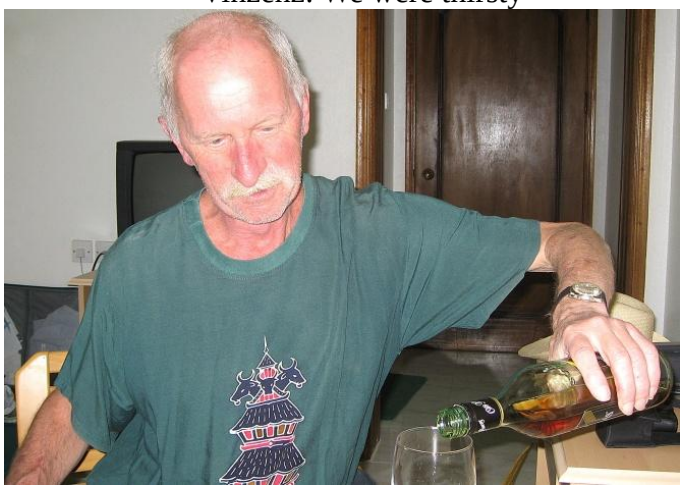
Marian:
Mango SUPER FAN



Ralf (enjoys double) & Otmar (teetotaller, thanksfully)



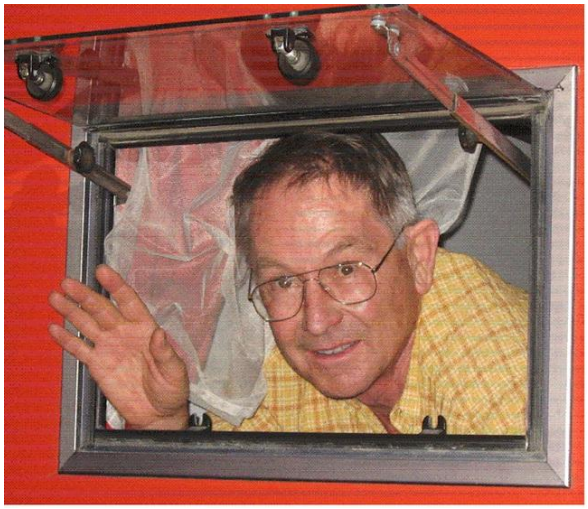
Vinzenz: We were thirsty





Naturally old boys, relaxing. Excuse me, please!

32.8 Rotel Tours with Begin of Digital Photography



Cabin: 80cm x 80cm x 210cm

The relative narrowness of a ROTEL sleeping cabin helped the author to explore the wide world of nature and

his good basic engineering education helped him to widely explore the world of engineering.





Daily cleaning job, Ralf

Digital time onset

* Taking photos on a long vacation with a camera: Previously, 30 rolls of film were expensive and bulky, and the price was about the same as a camera later on.
Very carefully had to be regarded that at that time the bulk of film rolls should not pass the scanner!

* Discussion about: Digital SLR replacement cameras: Not yet practical as long as projectors and TVs don't have the same quality as the projector! >10 M pixels, image stabilizer for large zoom, 12x zoom, 4 x 512 MB memory cards.

* Advantageable photography since 2001*: I saved more and more transport volume and money.*

* My Canon SX 70 HS now: Z*oom 21 → 1365* (35 mm equivalent)



my begin with 8 MB, next size above



following size of
Secure Digital (SD) Memory Card



+ adapter

present small ones

corresponds to 5 billion punch cards

5,000,000



Elastic string around the neck for safety reasons during difficult use





Canon SX 70 HS (used since 2019)
after several SX pre-runners

32.9 New engagement, 2015

Der Herbst ist ein zweiter Frühling,
wo jedes Blatt zur Blüte wird.

Albert Camus
(1913 – 1960)



Einen Menschen lieben
heißt einwilligen,
mit ihm alt zu werden.

Wir haben uns vertraut,
wir sind vertraut.

Wir haben uns getraut,
wir sind getraut.

Die Mausi hat's erlaubt ?





Marriage



she signs



he signs



Accomplished, satisfied



Cheers: It's done!
Maria Saying Good Bye at 'her Karlsfeld Kinderhaus'



The teaching Mary !??



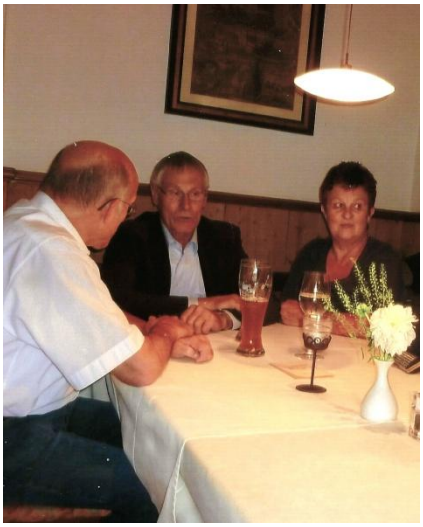
Maria & colleagues

Ralf becoming 75 years





My friends, in front Karin & Toni.
My hiking friend Hans Rieger played on



Neighbors Elmar, Fritz & Rita



Maria, Andrea, Biggi, Christian, Hubert, Doris

Ralf becoming 80 Years: Birthday Celebration









This is ‘our’ Bavarian family music-band

← It's still possible.



Maria with family



In 80 years around the world.

This is not a suitcase
but a birthday cake



Everything in the world is strange and wonderful
to a pair of wide-open eyes



A wonderful little memory book of Mausi from
Maria as a gift for me



A good view and a good picture



Special mountain tart for me







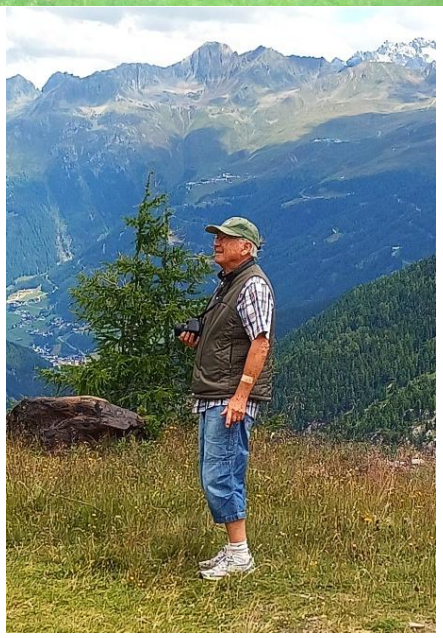
Bavaria meets South-Tyrol.
Maria, hiking with her South-Tyrol relatives



(up)The novel farmhouse of Hilda
(right) the photographer



Hilda, Maria, Waltraud

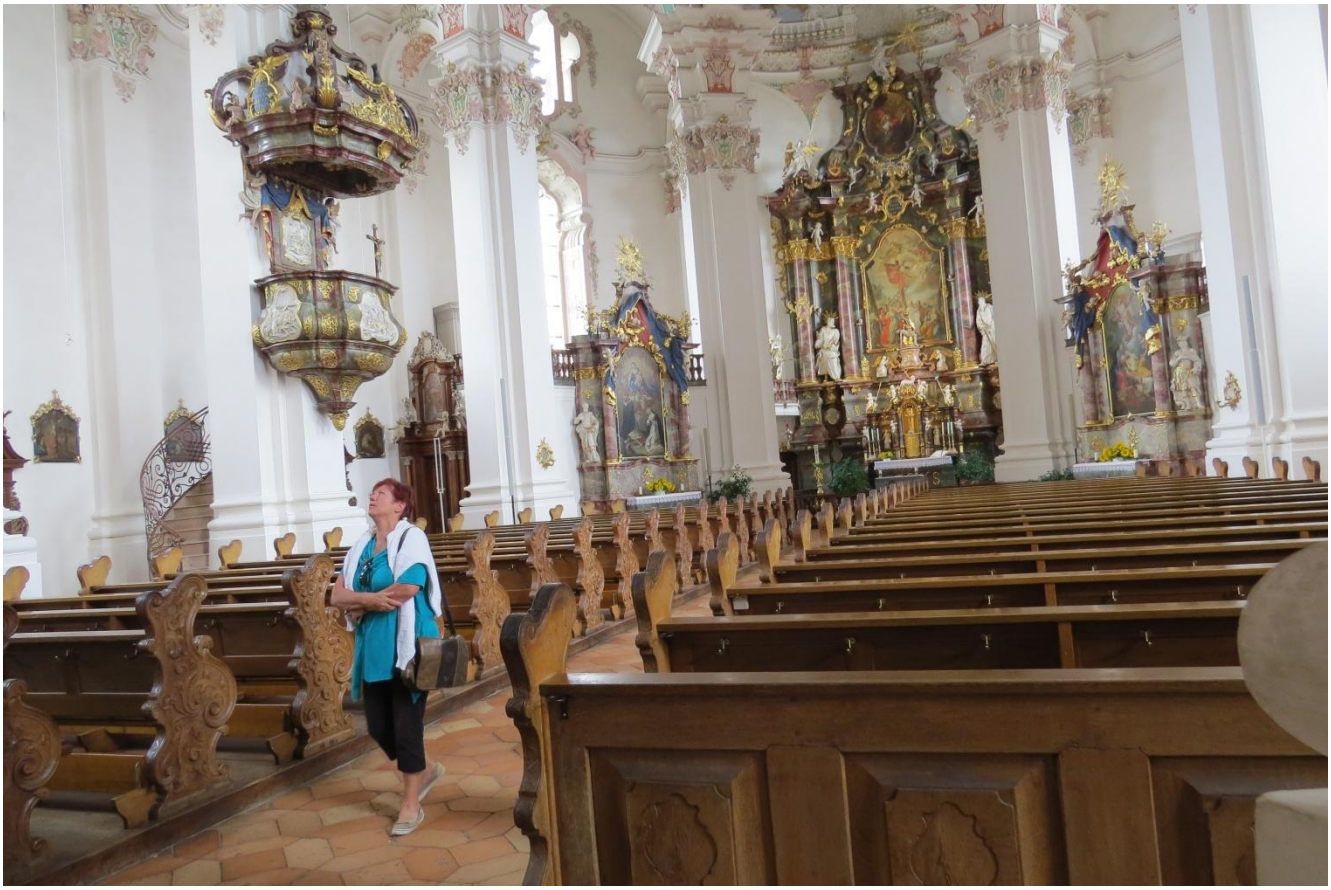


Who is the king??



youth





Maria in her home church in the pilgrimage site of Maria Trens, her birth place, and the adjacent cemetery.



Cemetery at Trens



Madeira: All is good in Funchal

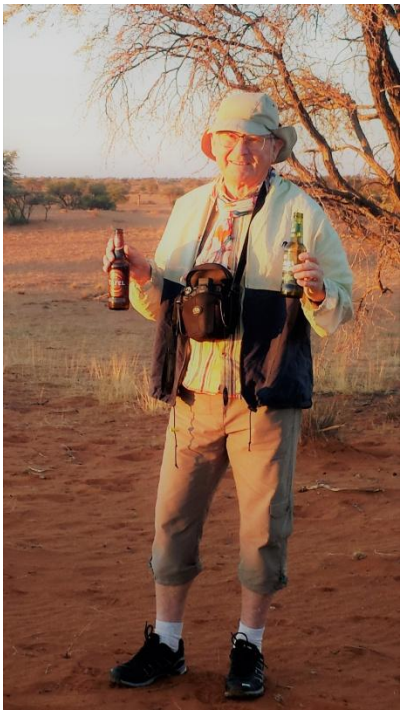


me and 2 others








Different situations require different clothing and equipment.

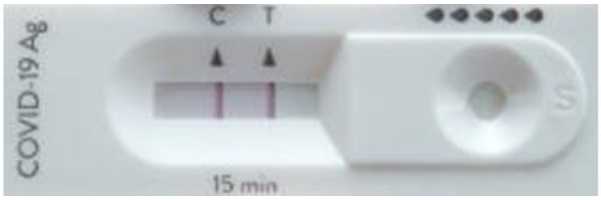



Covid Pandemie, Corona



Covid Pandemie in D
27. 1. 2020 - 7. 4. 2023
2 x Astra Zeneca , 1 x Moderna.
Have not been affected.

Measurement tool:





Hair: 7µm, fine dust 10 µm, corona virus 0.1 µm

In mid-April 2020, I sent an email (unanswered, of course) to Prof. Dr. Streeck, asking why we weren't properly informed about the physical requirements:

Our Requirement: 1.5 m distance. Why?

"***The risk to a person depends on the virus-amount ingested and on the person's resistance.***"

This leads to the conclusion: No breathing on them!

But don't chase two men away from a fully open train station park bench at night.

The fact that medical professionals with additional training in statistics have long publicly claimed that the risk of spread is exponential is simply outrageous: With exponential spread, theoretically all 81 million Germans would have been affected after 21 days.



At the end of February 2020 we flew to Island for a winter trip. With us flew some Icelanders which had been skiing at Ischgl, Tyrol.

After 3 days we were put in quarantine in a nice landscape. However, good food from a good hotel kitchen is not so good if it is cold.



Very Bad but also a little Good for me.

The good thing of the Covid time was**:**

I could concentrate on my CV parts.

⇐ With the current protective measures in place, eating had become difficult!

Time to think:

We human beings, too, ultimately share the same original cell as all plants (*based on observations, these are now also all life forms*) and animals.
This is evident in the development of the embryo.
Adaptation to ongoing environmental changes, supported by genetic 'leaps',
has led to this colorful cosmos.

This made it necessary and so interesting for me to see and think more globally.



Hope for the Future.

The well-known volcano Pinatubo:

Renatured after about 15 years.

Nature repairs, however,
this takes more or less time !

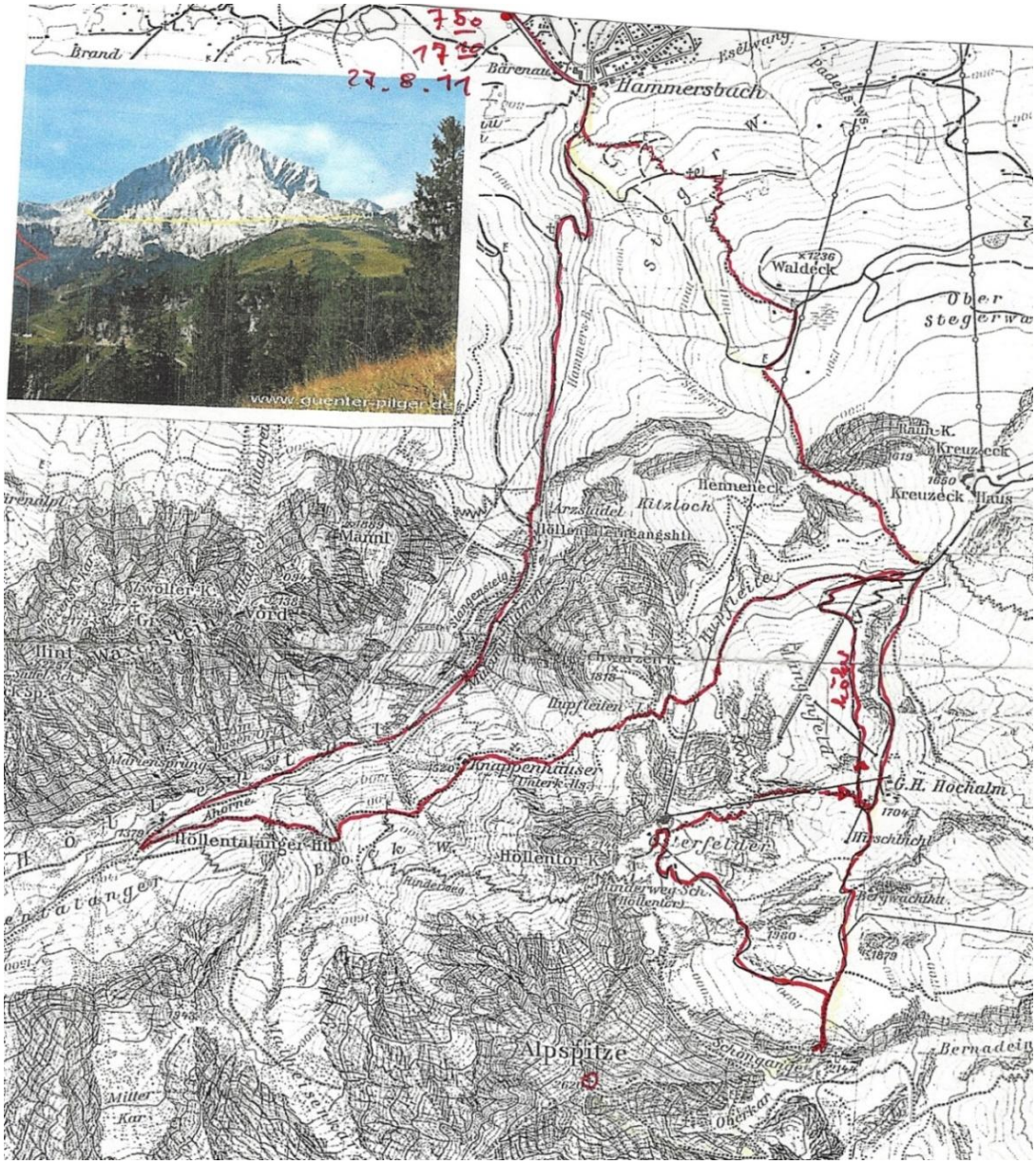
Nature will survive.

Sportsmanship of the author

After I had to say goodbye to soccer at the age of 55 because I couldn't see the football on the ground quickly enough due to a weakness of the upper eyelid muscle, mountain hiking, cycling and jogging remained for the time being. From the age of 75 on, there are 2x circle training, cycling per week and a special type of so-called 'slow jogging ', protecting the knees, on Sunday morning (*60 min +*), plus swimming in summer and gymnastics in winter. 10 more or less big hikes are added per year. More then 40 swims in our Mückensee lake.

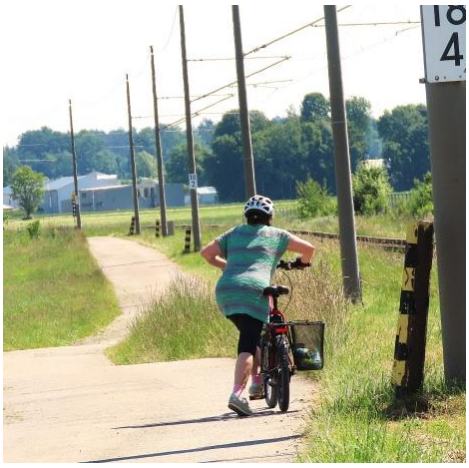
I do not take much care of energy consumption: 60 min cycling at 160 Watt = 1570 kcal (1 kcal = 4.19kJ), eating 100 g apples = 50 kcal and 100 g butter = 717 kcal. We poor old Cyclists and 'Slow joggers' can never balance this by sports!

My last day-trip with my neighbor Elmar: By car 120 km (about 2 hours) to the car park. There up at 7:50. (*The Alpspitze could not be managed due to fresh autumn snow*). Another trail was gone passing the famous Höllental. Back to the car and 17:10 back to Markt Indersdorf, a little exhausted however proud and happy.





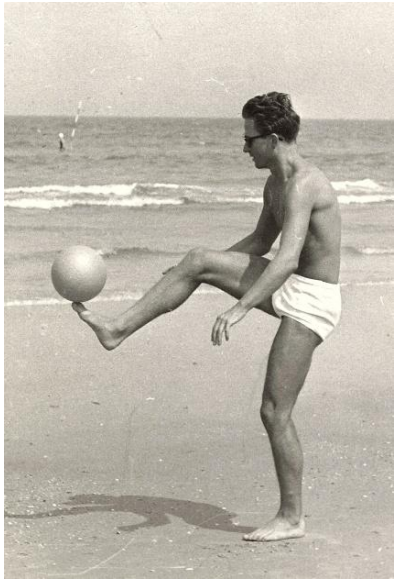
Ischgl 1973
(right) Where did this happen??



Biking with Maria:
More than 50 times







Soccer player up to 55 years, when Blepharospasm (*bilateral eyelid closure*) stopped playing in the MT-team.
Botox After many years and two eyelid surgeries, relief finally came in the form of extremely painful Botox injections, administered at six-month intervals into the eyelids and around the eyes with a very fine needle that I had to pay for separately (€1 compared to the €150 for the treatment). I no longer had to tape my eyebrows up!



The annual ARIANE Cross run of all contributors.

Here in Munich's Olympic Stadium. Host,1980: MAN-Neue Technologie

The Car Driver

Ford M15



Opel Manta with my mum



Mercedes Coupe 230



BMW 230



BMW 3 compact



BMW 125





Mom and her girlfriend
before embarking on a trip to Italy.



The Missing Manta, 1976.
In front of our garage.

Free view at that time.

At our beloved Mückensee Lake



dragon fly couple sink eggs →





Swimming over the years with my coot family and Maria. They remember feeding people!

She too



Maria, mother of 2 sparrow groups at home, each at about 50 members.
Now swimming with a mother duck with 9 ducklings







dragon flies above



dragonfly on floating leaf



Carp species weighing several kgs



great crested grebe

33 Documenting Hobbies: Globetrotter, Hiking, Photography, Cyclamen ‘Breeding’

33.1 Flowers and Flower Curiosities faced at home



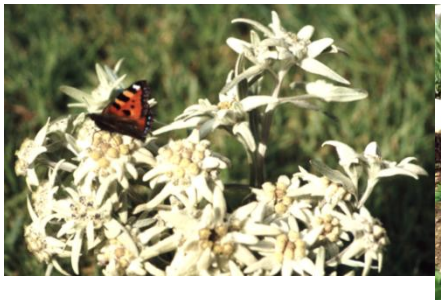
big gentiana



lime-loving alpine rose



garden orchid



Edelweiss





alpine roses











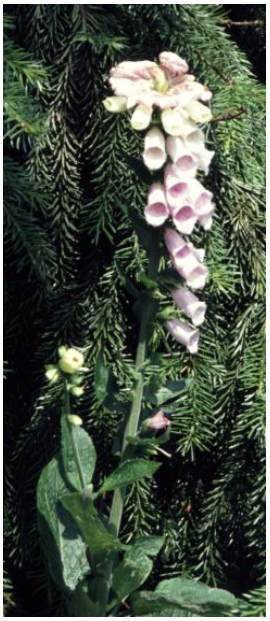
(left,
first time
found)

Real
Moonwort

(right)

lichen plant







seldom foxglove hybrid and
right a blossom sensation







Red Kite pictures

Mother duck knows wher to go fast and produces a contrail



rare banded dragonfly







New behavior? In the past, male blackbirds fought with one another in a song contest; in 2026, they brawl and rip out each other's tail feathers



Edelweiss flower on November 30, 2024, in the snow. 8 months too early!



Winter alpine lilies, needing snow !



shrub gentian



leave in winter



daisy from the back





Who will win in 2025?

Water roses in my garden ‘lake’





anemone

The big fern or the summer alpine lilies?



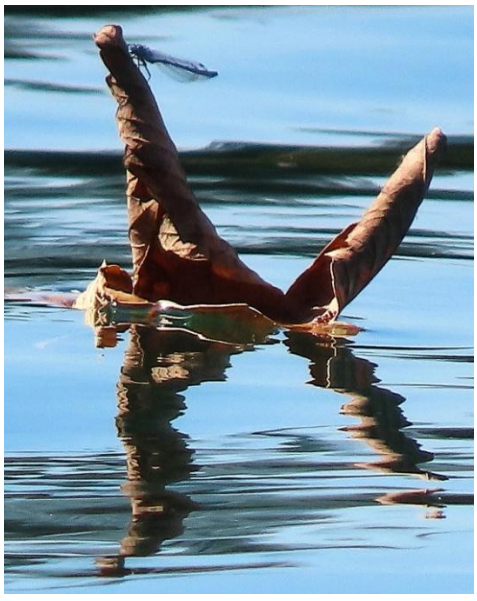
anemone



Home of the troll family



Beautyful Gentiana: 35 years old flower





Do sparrows eat tit balls? Yes, if they can see the tits doing it. They'll forget about it until the next year.

My experience of software and hardware in the year 2025,
especially, when viewed in the face of a huge Word document of over thousand pages.

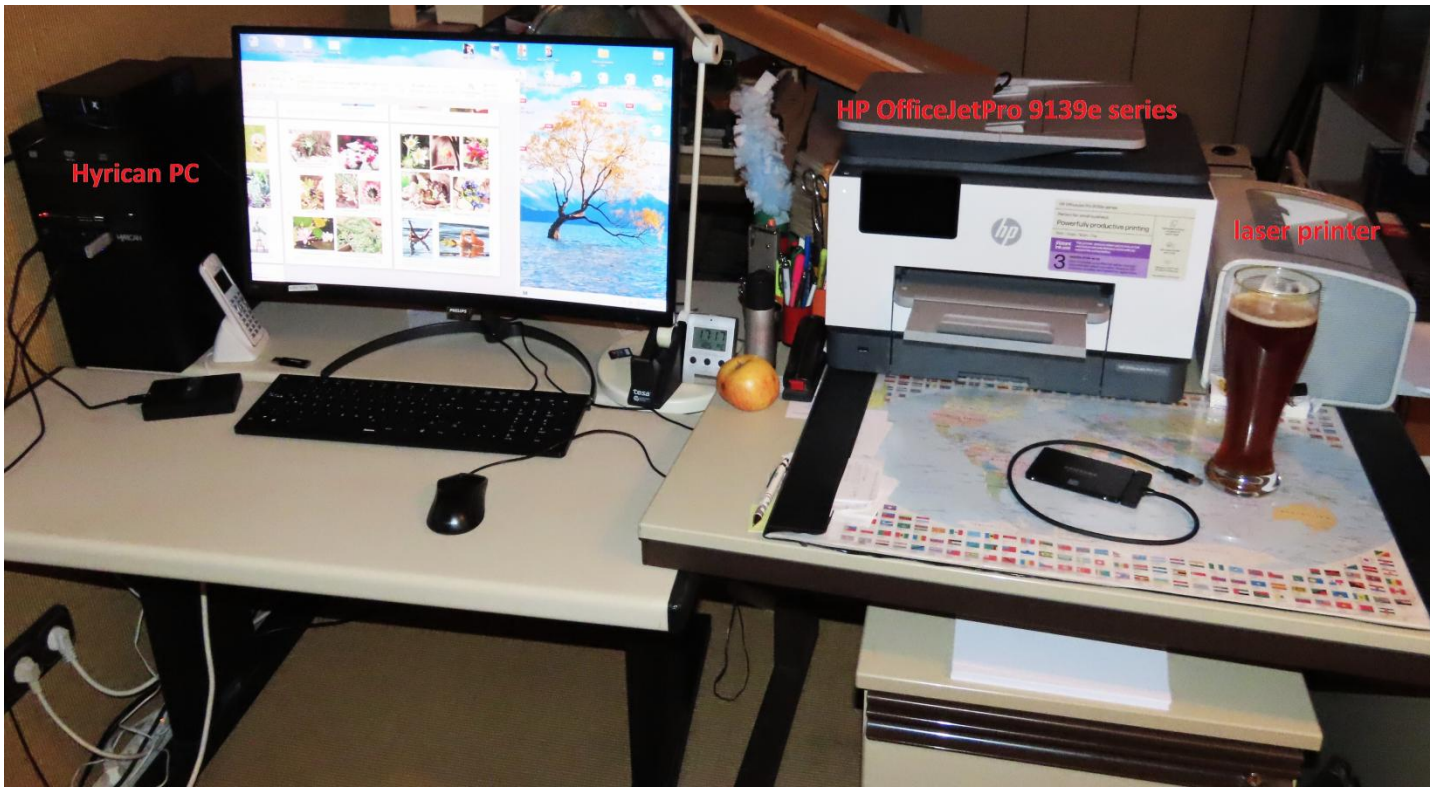
- Before March, The CV doc Word Program crashed twice per day at least: Handling such a large document was the major ongoing challenge! I discovered that disabling autosave (*seems to overload by adding file by file*) was the only way to work with the huge document! Of course, I now had to constantly remember to save it myself and to rely on the PC to do so. *This gave me some more years to live, I guess.*
- Use of the simple, engineering old Paint program, forget the still cumbersome looking novel one
- June, Transfer Windows 10 to 11 consequences: making the 'private' Mathcad 15 and formula editor (signs vanished like ||, however not regularly!), old paint etc not working anymore. Support for Mathcad 15 has officially been discontinued. Luckily, after numerous inquiries, this mathematical calculation program (with thousands of calculations saved) was reactivated. (What will my former company do if, in response to a legal request, they no longer have any documentation and therefore can't prove anything? This is actually criminal behavior on the part of the software company), cost €200 and total stress
- Word corrections were indicated to have been executed but in reality not performed.
- Self-Experiencing limits, no usually given MB hint: Word 512 MB (otherwise one cannot open the doc anymore). PDF- coupling, each doc < 100 MB, <500 pages, max 2 GB. Now cut into 5 parts
- I couldn't really fix formatting by myself, finding not any logic for the automatic constantly changes made by the program. I have tried dozens of times in vain to set the selected font Times New Roman and the font size 12 points. *
- It is disastrous for the user if a Word document is simply enlarged by MS from 380 MB above the critical value of 512 MB without any user intervention and the missing hint (see above). This renders the document unusable, lost!
- September: The special Four-in-One device failed (€ 300)
- October: The 4-year-old GoPro 2 no longer receives power (SW + HW lost along with its contents: €800)
- November 14, Hardware crash: Indicated by not shutting down after clicking the right apps uploading button. Then were problems with the PC shut down at all. Finally still uploading an USP stick with a presentation I gave on Nov.13 (uploading checked) worked. However, not saved on the PC + external storage for two days became the corrected large CV doc parts (unfortunately, these 2 days I did not check saving!!). All contents lost. New build-up necessary, cost about € 1450).

GRIEF: Two PC crashes in the very past and an old External storage was no longer accessible resulted in the loss of pretty all digital images before 2010.

Thanks God, two of my 20 years old laptops still work, but they can only help with some detail work.

A year full of despair. More than one third of my time I worked for nothing.
Digital effiency?

The re-freshed Workshop 2025 at home



Liquid food: Wheat beer, 0.5 liter

External storage media: Seagate Expansion Desktop Drive 4 TB, Seagate Expansion HDD 4 TB.

4 in one,color Print-Copy-Scan-Fax: Double side printability. Black-white Laser printer

Novel Hyrican PC:

Datum: 09.12.2025
Kunden-Nr.: 105902
Telefon: 08136-7754
Mobil:

Rechnung

Seite: 1

Pos.	Artikelbez.	Menge	Einzelpreis	Gesamtpreis
	Angebot 952872 vom 26.11.2025			
1	Hyrican CTS00826 Office PC AMD Ryzen 7 5700X min 65W (3.4GHz - 4.6GHz, 32MB, 8C/16T DeLOCK USB 2.0 CardReader All in 1 - Kartenleser - 57-in-1 DDR4 - Modul - 16 GB - DIMM 288-PIN - 3200 MHz SSD - 1 TB - intern - M.2 2280 - PCIe 4.0 x4 (NVMe) IronWolf Pro ST4000NT001 Interne Festplatte 3,5 Zoll 4 TB MSI GeForce RTX 5050 8G SHADOW 2X OC 8GB GDDR6 1x HDMI/ 3x DP Minitower InWin EFS052 2xUSB2.0/3.0 schwarz Asus DRW-24D5MT interner 24x DVD Brenner (DVD+-RW, Gamemax GP-750 Netzteil 750W 80+ Bronze Microsoft Windows 11 Pro 64Bit	1 Stck	1.299,00 €	1.299,00 €

MwSt 19,0% auf 1.091,60 € = 207,40 € **Endbetrag** **1.299,00 €**

The Hobby Photographer: some special Pictures from home and vicinity







3 different wood anemones
pink, white, yellow







Nature loves diversity: Cornflowers



Roses, January 1, 2020.



a winter flower



Yellow & red thimble





stone carnation



The gardening engineer, July 2025



2025: New garden arrangement



Orchid



Slug repellents: oat flakes, wheat beer



What is this ??
⇔





Swallowwort gentian (not anymore in my garden)



autumn gentian



crocus



Silver thistle



Gentian



Daphne (red)



wasp nest



the last apple

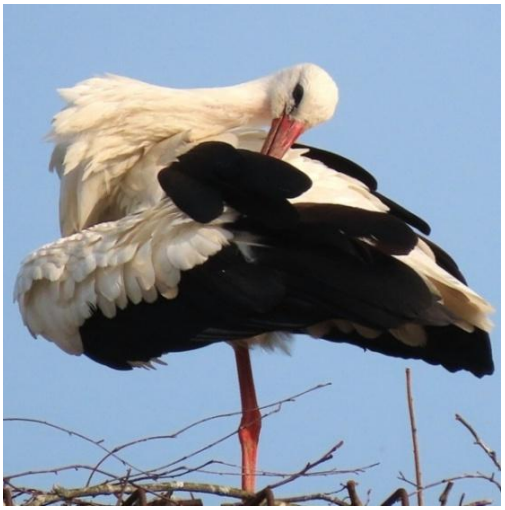


Edelweiss flower on November 30, 2024.
In the fresh snow. 8 months too early



breeder of winter Alpine lillies





elegance







Wild bee

Butterfly: hummingbird hawk-moth





Sparrows, learning from the tits



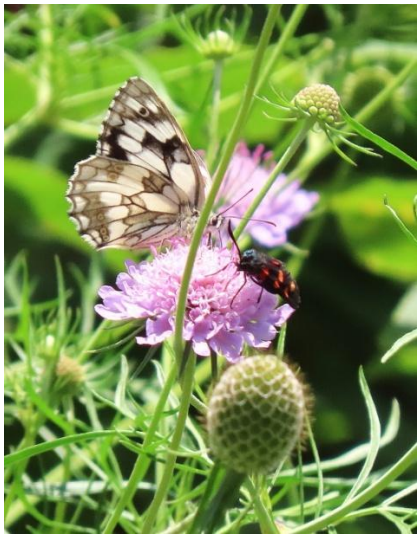




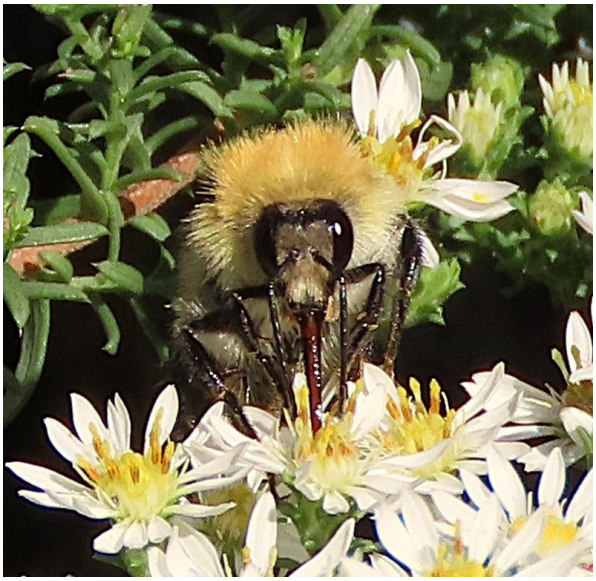
three different butterflies at a time on our butterfly bush



a bumblebee is approaching









a Bumblebee's Visit



Me, accidental breeder of a white daphne plant.



Spindle shrub



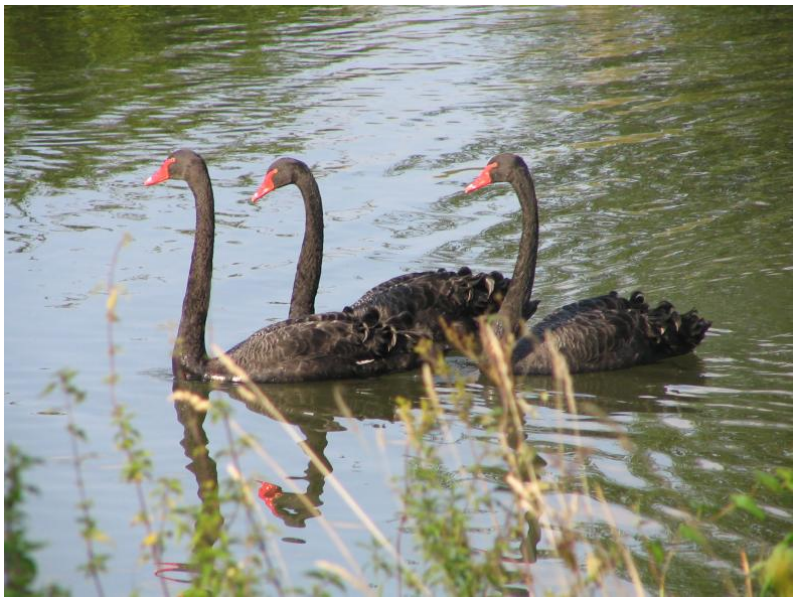


anemone

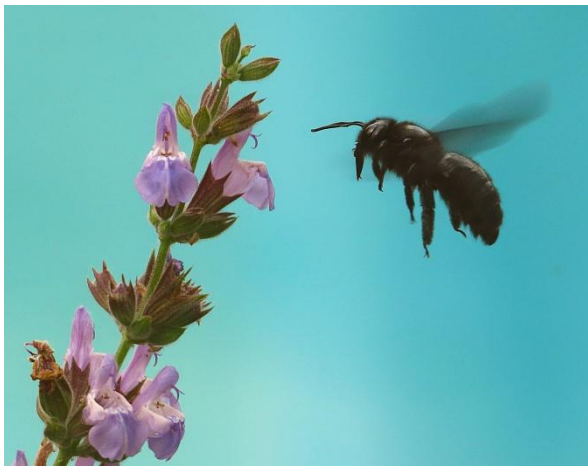


beautyful Gentiana: > 40 years old flower!!

In our Garden and somewhere nearby



Black swans in our little river Glonn

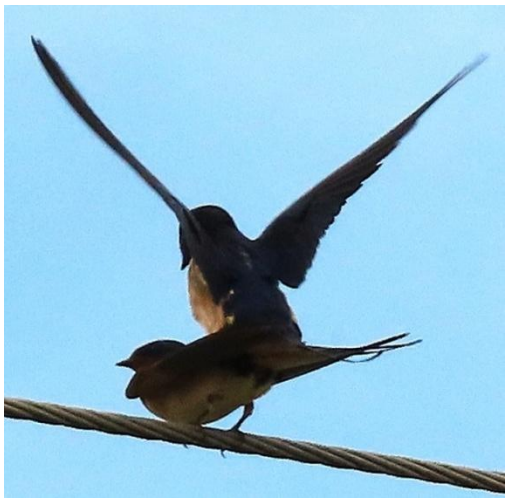


Black giant bumblebee on a sallow



‘our’ pheasant neighbor





swallows



sparrow with star



Wood Pigeon with Roman Snail





Hoarfrost



Autumn gentiana.
The gardener himself, proud on
his new Rock Garden →





midday flower
abundance of snow →





Which butterfly caterpillar is this in my garden pond?







Beautiful dragonfly at our pond



If the amphibian became too intrusive, *he* was quickly swept away with caterpillar's tail



On the entrance way:
The same species as right ??



In the water



two deer from our pack.



(right) Hedgehog in the garden



pheasant



magpie



sparrow and great tit at the tit feeder



Feeding sparrow mum: Stuff in



Great tit



marsh tit



Blue tit





Young bird



Young bird

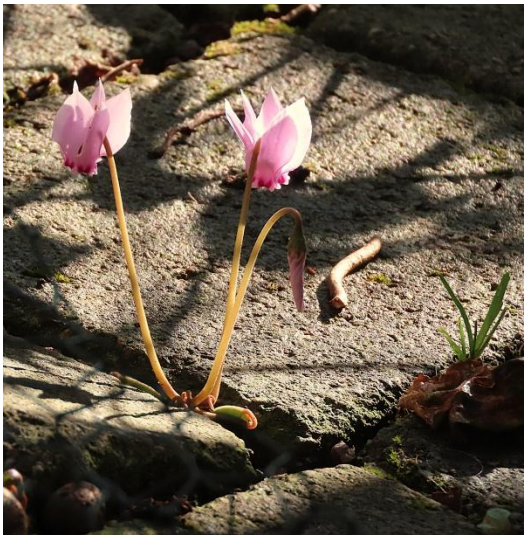


another nice mouse





A very young sparrow



My cyclamens are now blooming modestly between paving stones



Tiger snail



chaffinch



Bathing makes fun







Why not moving in?



Common blackbird













My amphibians at the wedding dance



Beautiful mouse
In my garden



wasp spider



mind



A nice young frog couple in love (*a year later I saw when she ran away from him*!)



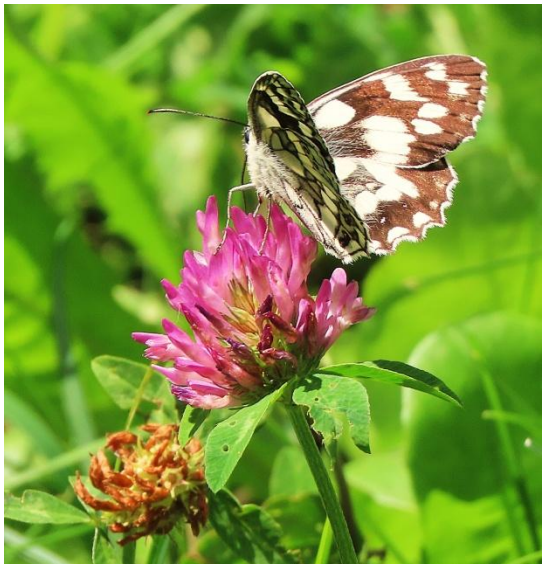


Slugs suck out a dead frog. I catch them with a mixture of oat flakes and wheat beer



Copulation of snails



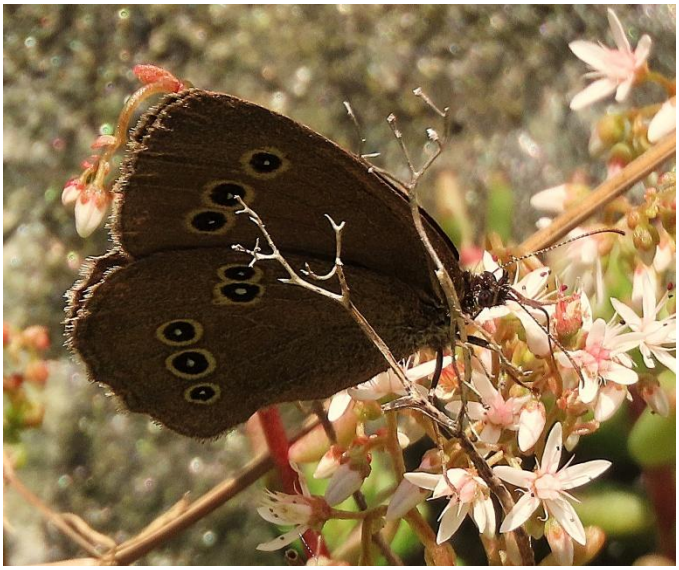








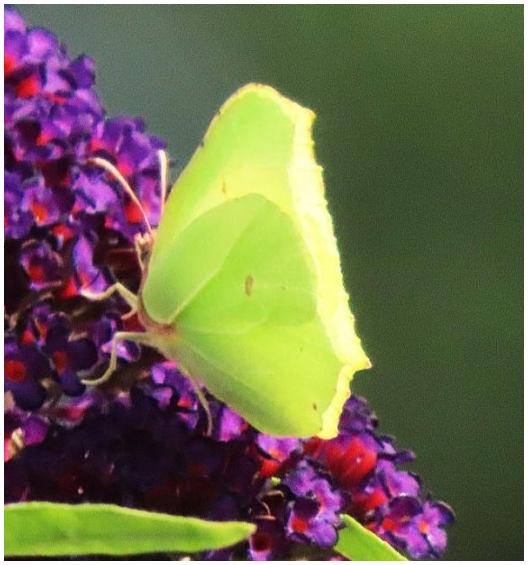
various butterflies















beautiful





What is this? Small ferns??



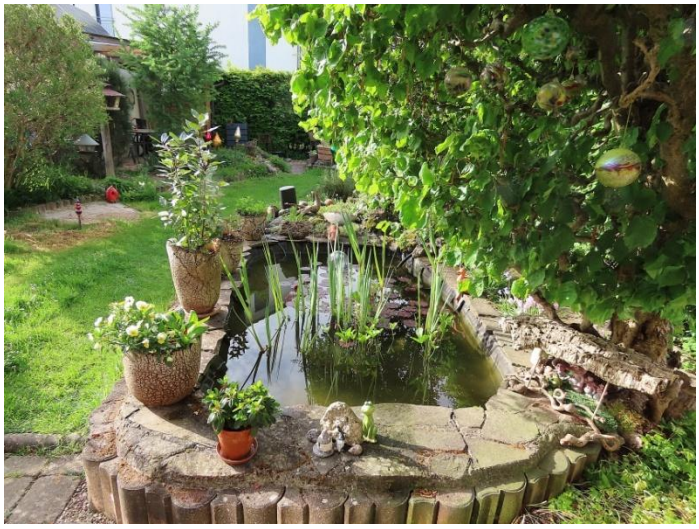




.. and this?



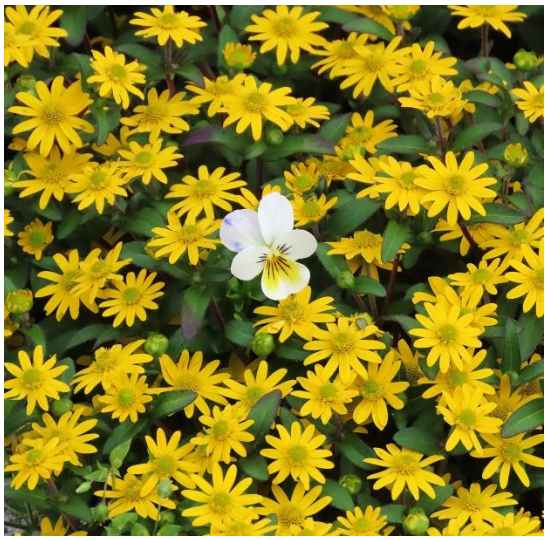








I‘m the greatest



Me, too. I am here



Garden view 2010



Sphere with snow reflected in the pond



Yellow water lily



summer alpine lily





Family discussion















Doesn't that deer look great?



Altogether there were 13 deer on our standard walk within our village



March: a weary hare



common buzzard



robin



the very rare goldcrest
in front of our kitchen window



sparrow with star



Wood Pigeon with Roman Snail

Pets in House and Garden



Hamster 1970



Bunny Chinchi



2000



Mausi, completely asleep



(left) relaxing.

(right) Maria and Mausi, both deep-sleepers





Have you finally found me?

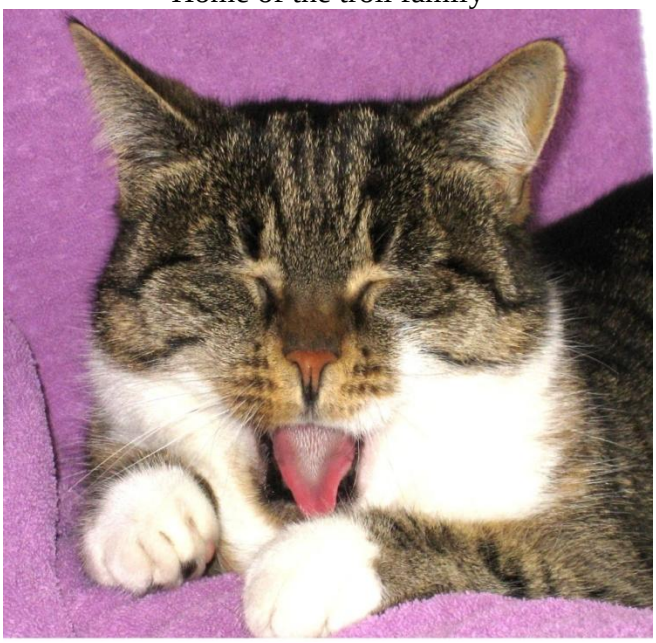


I know what to do!



Home of the troll family





I'm not Einstein



Food is coming, hello

Pictures from around the world



marmot



chameleon





largest Moth & Tarsier, the smallest ape

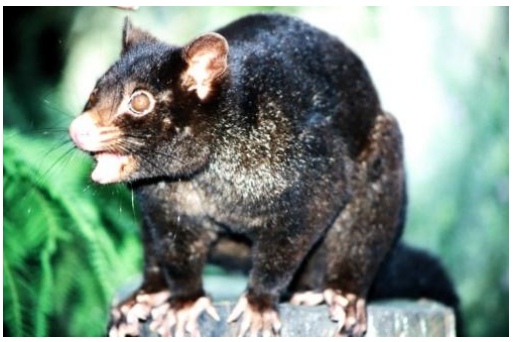




echidna







Wombat and Tasmanian devil































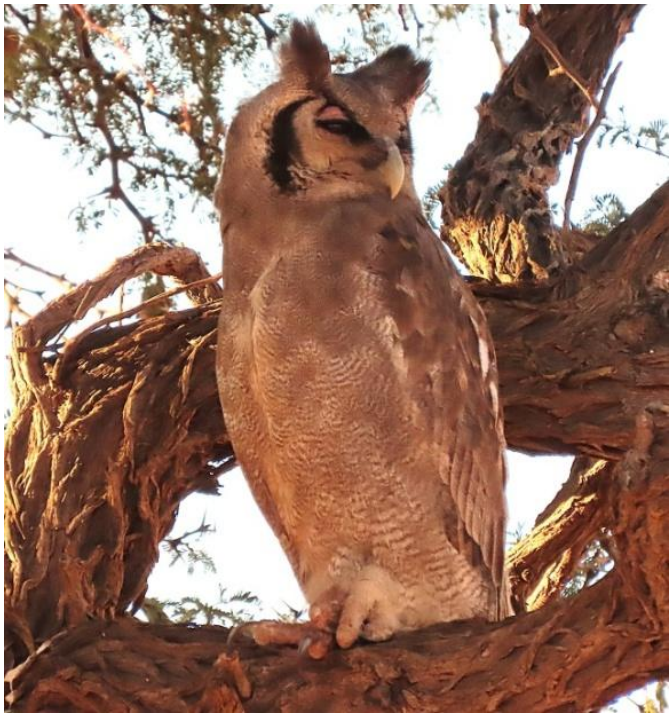




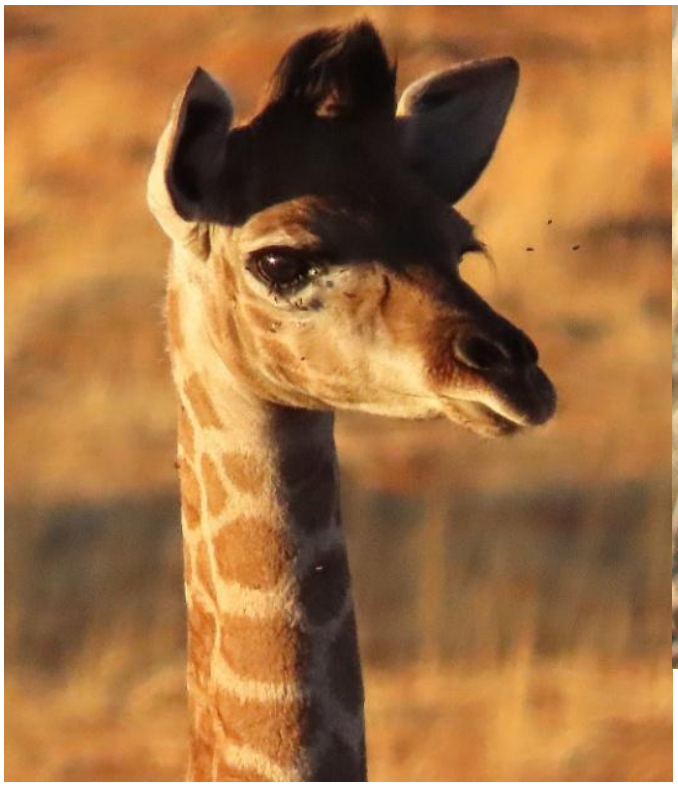






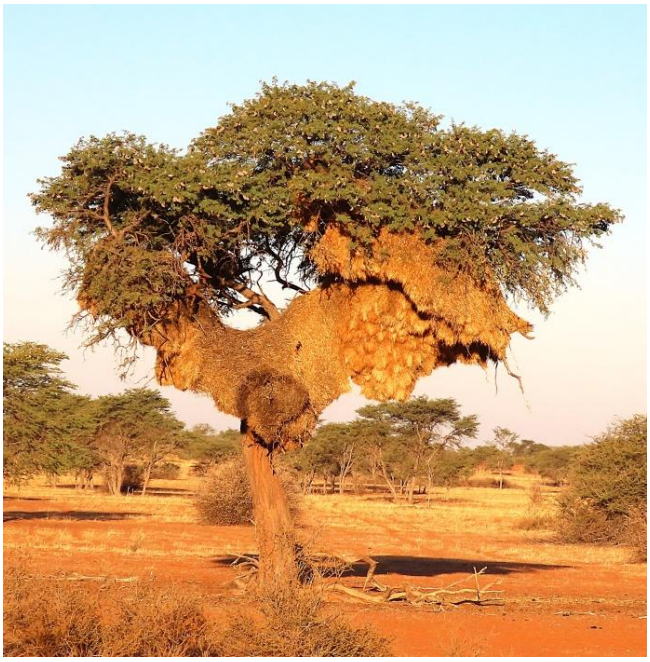






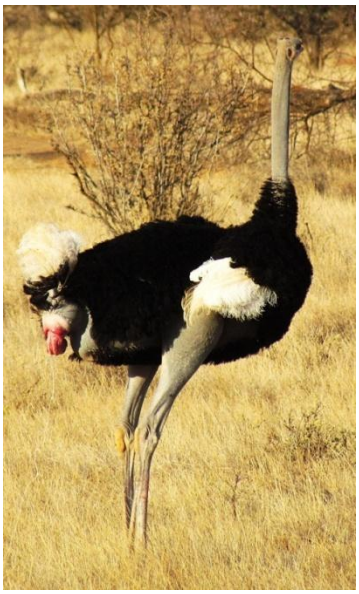




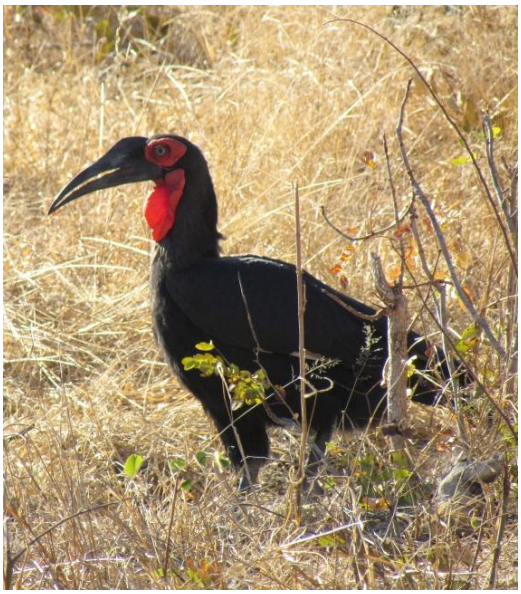








An egg is coming





Mother helps to get at the beach



Mother gives nourage





color-adapting right



Venezuela 2013

Me and the guide

Venezuela

“Challenging tasks strengthen!









Komodo waran, 80kg, approaching me on Komodo.

During my hasty retreat, I lost the valuable memory card containing this video clip of the sneaking Komodo dragon.

33. Some further Family Pictures



Alaska 1986 etc



Bed & breakfast at the Venice-like
Fairbanks near the polar circle.
Together with a trapper and a bush pilot
and Grandma with grandson

A Story from a railway-trip to Fairbanks

On the train from Anchorage to Fairbanks (venice of the north), you usually stand outside the carriage on the platform. When I returned to the carriage after a longer stay, part of my seat was simply taken. Never mind the amount of space. Upon returning after my second stay, the group was sitting comfortably together, chatting. I recognized the language: Bavarian! It turned out that the elderman was the chief physician of the hospital located 300 meters as the crow flies from my home.



Surprise for me as wheat beer drinker:
At the reception dinner in a Kodiak restaurant my favorite wheat beer at that time, Moy Beer, was served in the small town Kodiak, a *good flying distance south of Anchorage*





(right) Riding an ATV in the Kodiak mountains:
Here the All-Terrain Vehicle, not to be confused with our Automated Transfer Vehicle for the space station



Lori Russell with son


Jutta's relatives: Kyle, Chris, Jeff.
Together with the family

Bear hunting at Kodiak Island: 1986
Number of Kodiak bears to be shot: 50 at about 50 dollars each.
Mass, possible: > 600 kg. Grizzly > 400 kg.
Shooting is cheap however the preparation costs 100-fold.
This did not enjoy the wife of my relatives neighbor!
Kodiak bears in Alaska are predominantly carnivores. They are active during hunting seasons and are voracious salmon eaters all year, especially during the period regarded as 'salmon spawning season'. This must be due to their coastal diet, which slowly accumulates into their huge mass.
The Kamtschatka bear is of the same size.

Since I happened to be in Kodiak during salmon season, we naturally went fishing. There was no fishing luck, just like the schoolboys next door!





Children of Jutta's sister In the US

(left)
Wedding of Jeff

(right)
Curt Aubley.
Sportsman, soccer player, selfmademan (*parents passed away*).
Married and father of 5 soccer-loving daughters

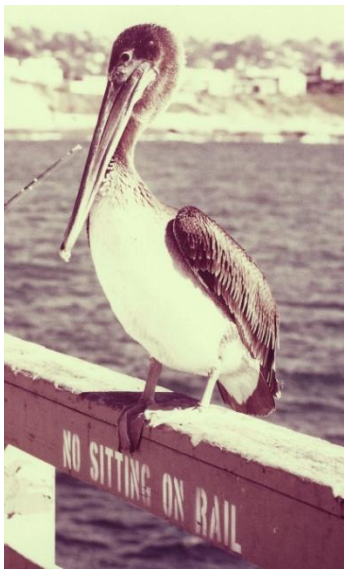






Nome, end of the Iditarod sled race

San Diego
No sitting on the rail !!

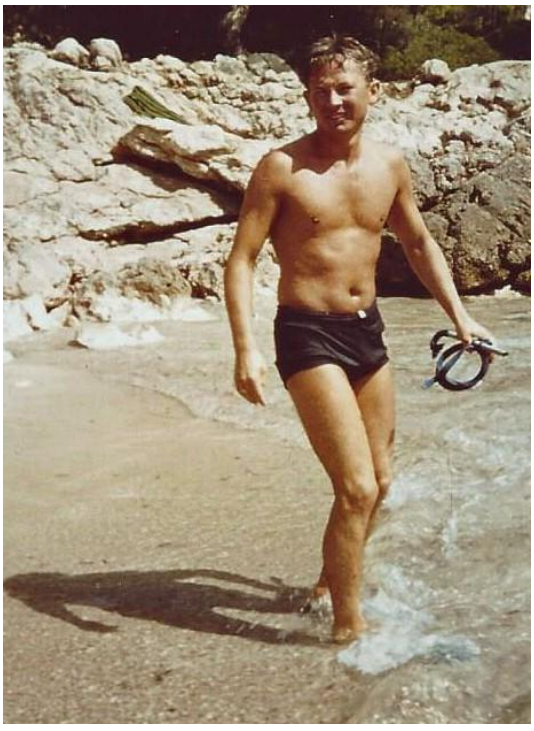




Ralf & Maria 2024



Christian (Maria's child) & his wife Biggi



Once upon a time



A good meal on the balcony.
Don't forget the red wine, good for the heart!

'A Lesson Learned:

My shortening by 3 cm and 1kg more mass - over the 6 decades –
became balanced by a thickening of the belly!
This is nature.



In our restaurant nearby



What is pretty forgotten:
A resident of the flower city of Erfurt (my birthplace) had a nickname, pronounced 'Buffbohne



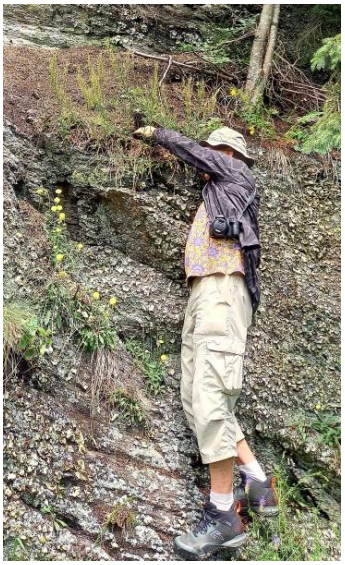
Tobogganing in South Tyrol



One drink is not enough

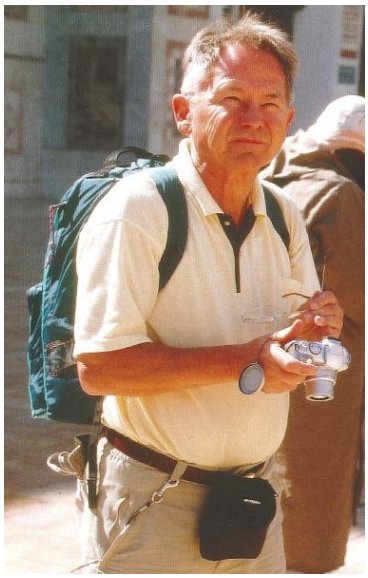


In our wintergarden.
(right) Searching seldom plants





There are people who also photograph their shadows



Cleaning the view





Just up







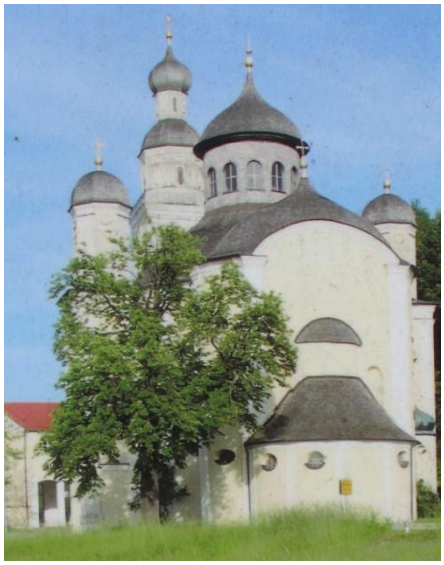
Yearly Pilgrimage



Indersdorf



⇔



Scheyern

more than 30 times
Maybe I could do this long hike of 44 km in 2026 for a last time.



2022



2023



2024



2025
9 h, 9 min, 9 ?? sec



A little faster,

when I was younger.

Measured at the home entrance

Some memorabilia, with their special experiences, always look at me on the way to my study.





Prayer mill



eligious pipe



Stamp with ‘Nazi’swastika













ancient Burmese Za-Da



script



Sand Writing Tablet





Sikh ring



Braided ball



stock for physical relief of the back



Thai Buffalo Bell Wood Wooden Hand Carved Cow Double Clackers



Gaucho equipment



Papua-New Guinee:
jewelry with boar tusks
,



phantastic wooden jewelry
from Papua New Gumee



Buddhistic Kalligraphy

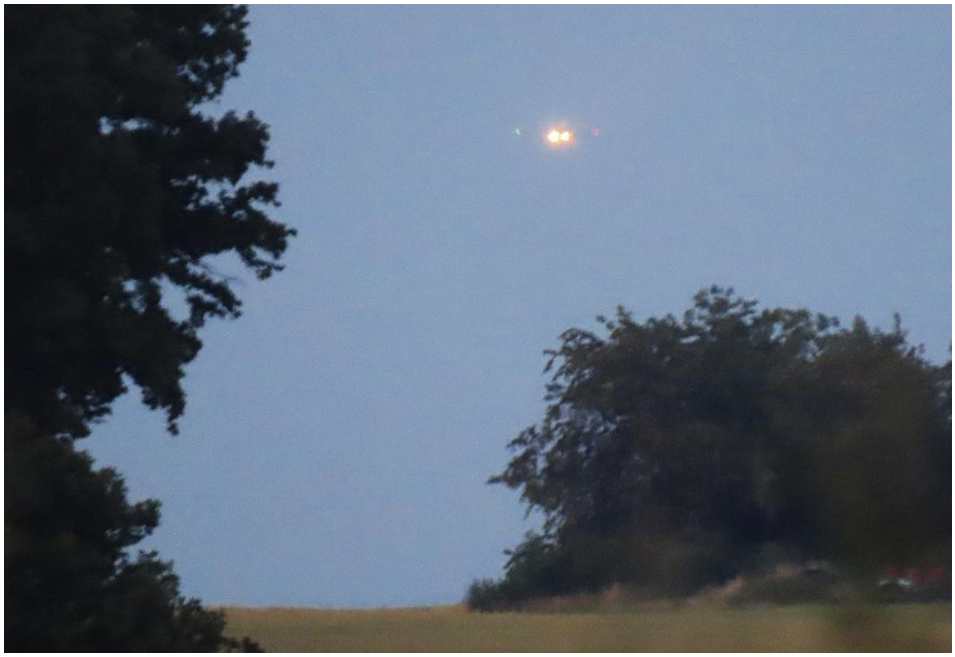




Flying back:
One astonishing way back to Munich airport

If flying will be not possible anymore:
Then I can comfortably watch from my balcony the landing planes on the southern Munich runway and the taking off on the northern



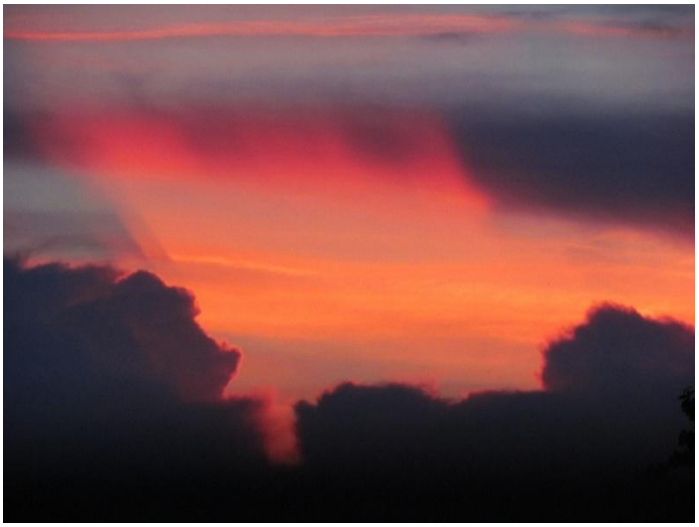


Munich Airport view from my balcony, 30 km west

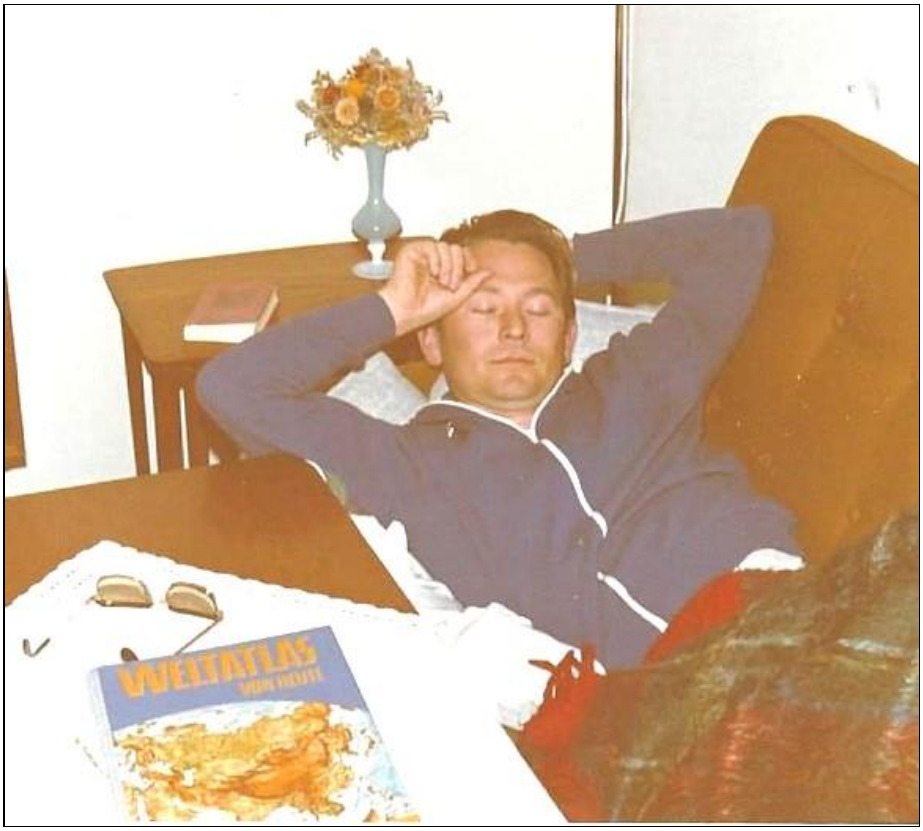
I'm very Thankful for all.

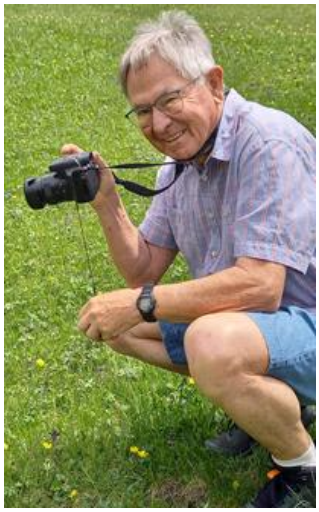
From my balcony:

Isn't this picture from at home not also very beautiful?



Dreaming of Visiting the World and its Mountains
and of taking interesting Pictures ► Life Recording





The photographer,
some years later and



when seeing the shadow he made

Climbing Exercises as first preparations

First climbing skills experienced with Brian in the Dales, UK, summer 1957!

Note, please:

Slide presentation sets of the time with my first wife Jutta are fully missing, just some collected paper pictures could be scanned and included.
These journeys were Tunesia, Canary Islands, Peru, Ladakh, Nepal (1983), Sri Lanke, Alaska, Japan 1986, south East Asia in the first month after opening they could be visited (Myanmar, Laos, Cambodia, Saigon with Thailand, 1991), Australia, Tasmania, New Zealand, Pacific Islands (Hawai, Fidji, Tonga, Aitutaki, Bora Bora, Tahiti), Emirates-Oman, Patagonia, South America DAV-Anden trekking, ..

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1 Early mountain experiences, most interesting Private Journeys



With my friend Alois †:
Relaxing after having climbed my first mountain above 3000 m, the Acherkogl in the Ötz-valley, under bad weather conditions,1958, and 1988 again.

(right)
Mother does not look to the top!!





Saas Fee

Learning by doing
and recreation.
4000 m plus, Dom 4500 etc.





Taschachferner, 1977
Ice climbing course







Sitting together after the
Saas Fee 4000er climbing tour



Feeding a marmot

Lucky in the mountains , after:

While strenuously climbing an ice face, sweat ran down my glasses, so for a brief moment I couldn't see if my climbing partner's securing was alright. It wasn't, but thankfully he didn't slip with his crampons and his pickl. I was very grateful after this huge scare**.**



about 1960 at Oetz



Since 2013 the last place of Alois, from where however he can view his Acherkogl, 3008 m







Gentiana nivalis



Alpine rose



saxifraga

Iran 1975, mountain tour Demavend (4667m), Teheran, Caspian Sea, Isfahan, GOM





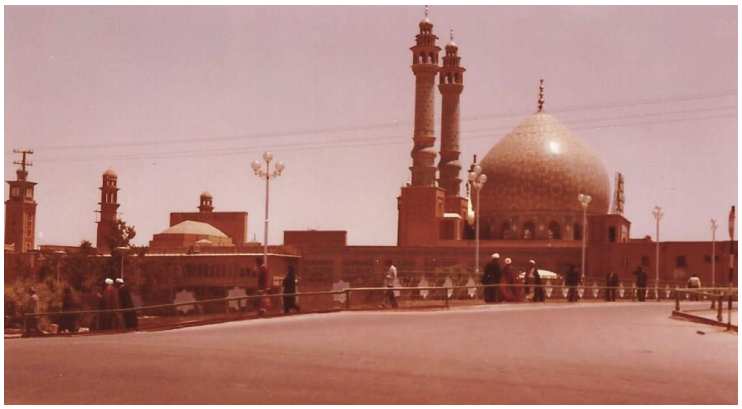








Swinging Minarett





Finding the priceless ancestors of today's tulips in red and yellow

Before Khomeini, not to forget:
The "Shaw" sent busses to the mountains to get children to school !









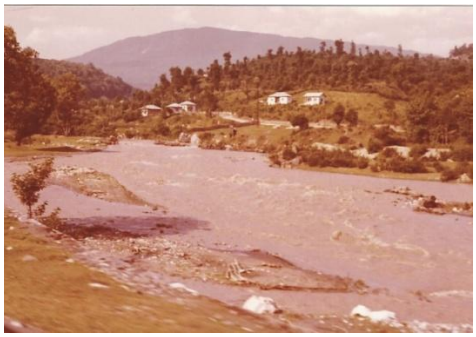
I did not reach the top,

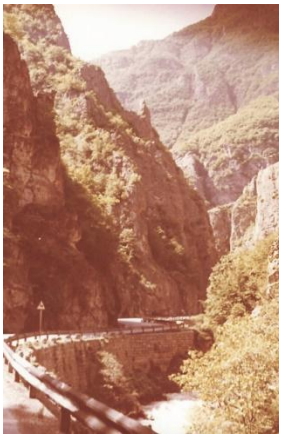
LL: The mules could not go through the too high snow, so I also pulled a trekking bag up the mountain with the mountain guide. Even if you are very strong. Never overexert yourself on the mountain !!

On top, I mixed up the headache pill.

It was 3 hours too late when I was fit again.

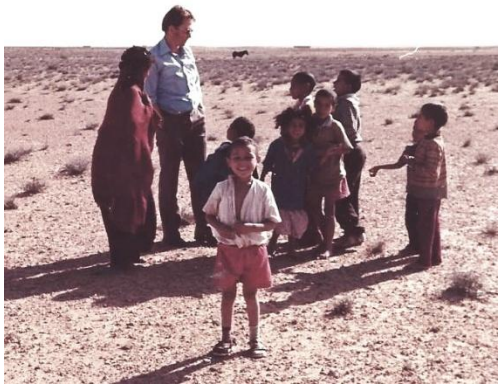
From Caspean Sea back through the mountains and then to Isfahan







Tunesia 1972







Peru 1979



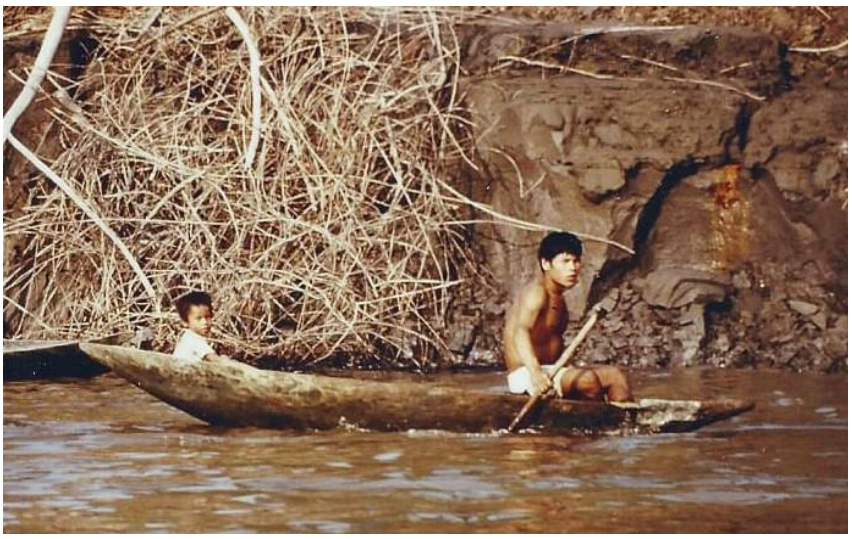




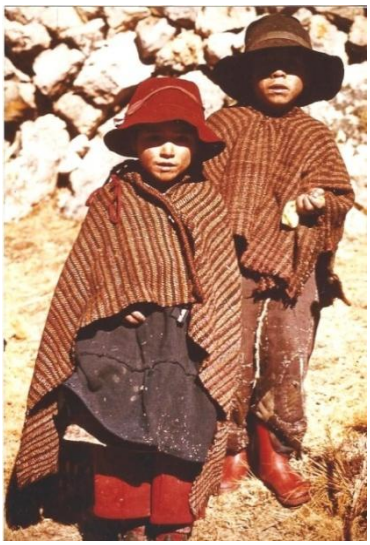
No high-up mountain pictures saved. Became lost.



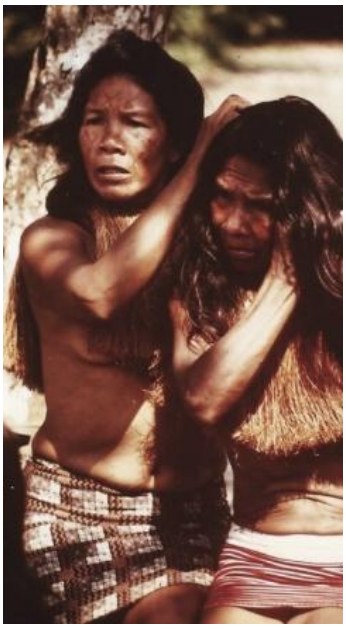
After a birth under a rock-roof dwelling in the Andes

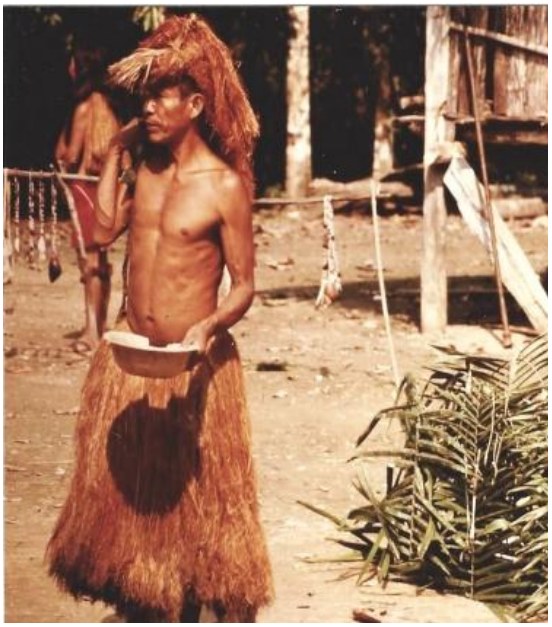


Amazon



These children had never seen a ball and did not know what to do!





2 Ladakh 1981

Muslims, Buddhists, Hindhus and Sikhs



Sikh Golden Temple at Amritsar



Buddha



Invitation into the house of a yak herd owner with my first wife Jutta



two praying ladies, they turn the prayer wheels



camp

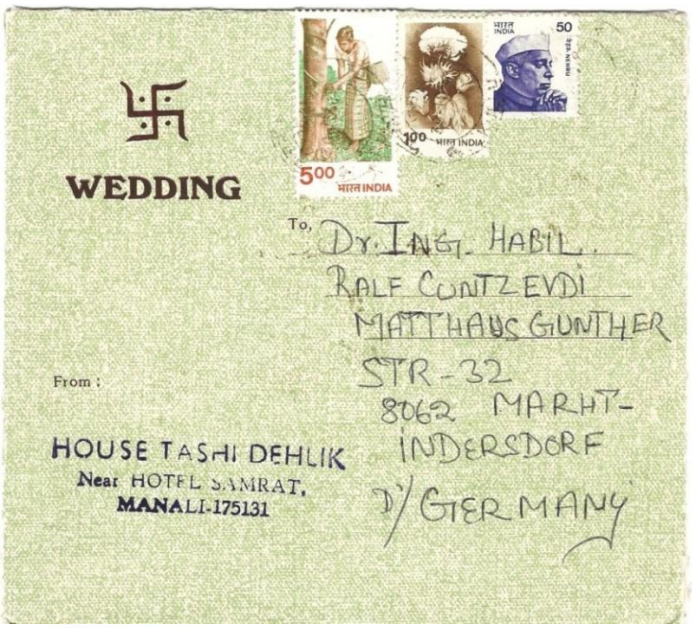


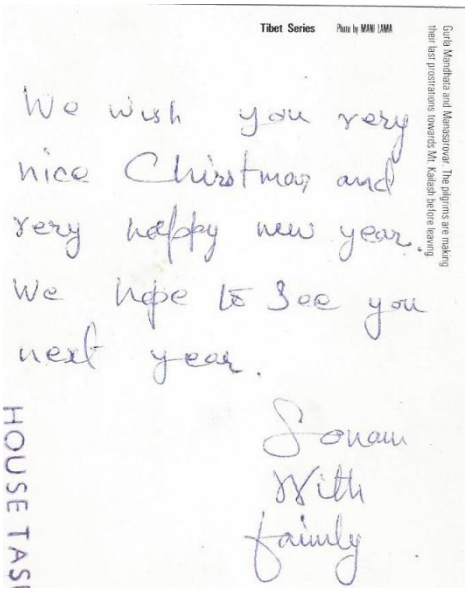
Jutta with our equipment

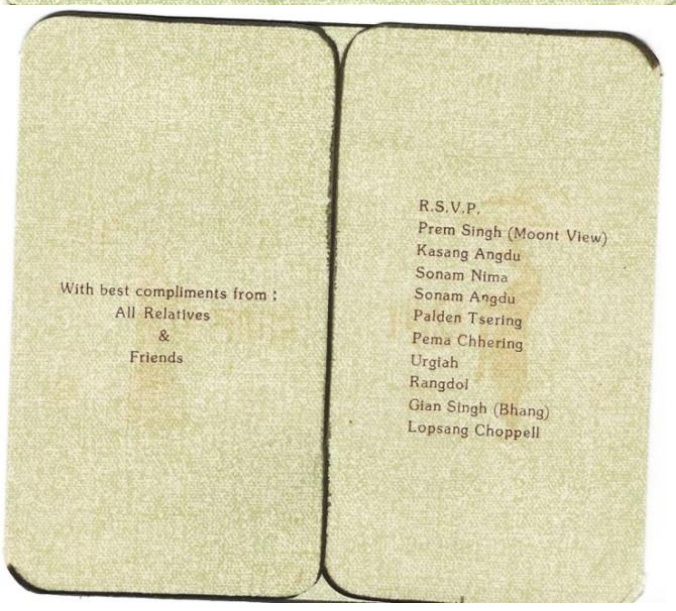
The unimaginable value of 5 cm pasture grass in Ladakh

As you can see from the photographies above, the grass is very short and therefore about 5 cm large pasture grass is extremely valuable for the mountain farmers:
The path led our trekking group into the valley of the neighboring community, which then led to a serious threat situation for us by the mountain farmers living there. Our problem was quickly solved the next day, when a judge was 'called', who arrived on foot - walking under a parasol of the assistant - after many hours of walking. He immediately convicted the leader in a court hearing at an altitude of 4500 m and immediately had him taken to prison. When we descended again a few days later, the prisoner's relatives asked us to help them get him released. A major reason for this was that the relatives had to bring food to the detainee. Living 10 km away and having to take care of it *on foot* was a very big problem for them.

An invitation from a dealer in Leh, with whom I had also talked a lot:



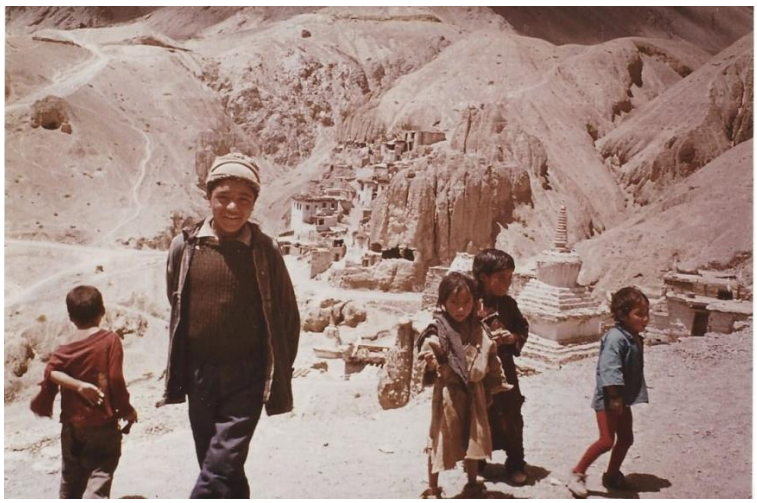














(right): This woman on a mountain pasture high in the mountains needed painkillers. But after she repeatedly shook her head, it didn't seem to be enough, and we all searched for more pills. What we didn't know: shaking her head meant thank you!





3 Himalayan Trekking, Nepal 1983

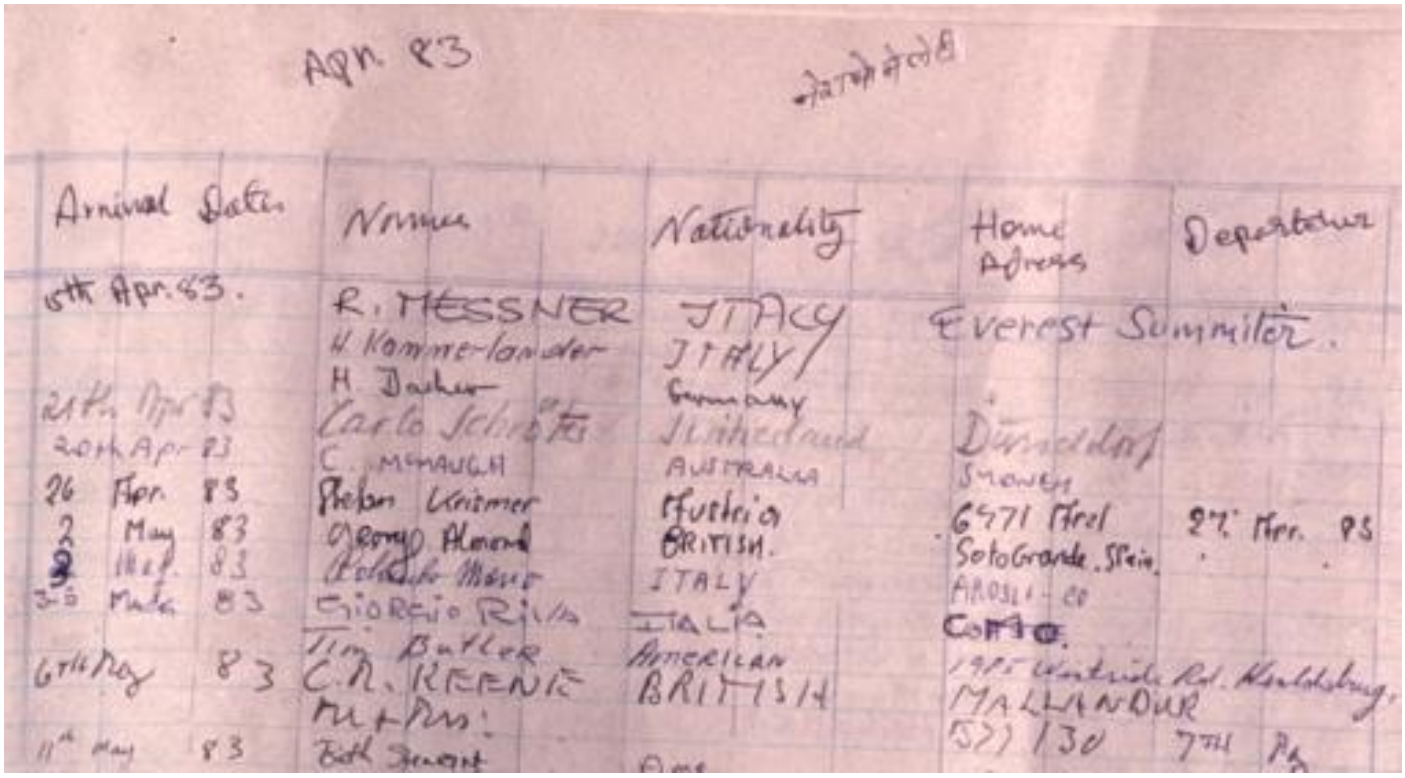


"Difficult Himalayan high altitude tour, 31 days".

Destinations: Westcol 6153 m, Naulekh 6363, Mera Peak 6461m. Mera La Pass 5415 m. Base Camp: 4600 m at Baruntse 7220m. Over the Mingbo La Pass, 5817 m, back to Lukhla via Pangpoche, Tengpoche Khumjung









4 days waiting: Getting-up early, airport Kathmandu, back to hotel etc.
After 4 days arrival at Lukhla airport



Lukhla airfield at almost 3000 m: Very dangerous landing and starting

The airfield is served from Kathmandu fully depending on weather and visibility conditions. The slope of the 527 m long runway is around 12 %, and it can only be landed uphill and taken off downhill. The end of the runway then abruptly breaks off about 600 m deep to the Dudh Kosi River. After landing, we noticed the good fencing of the former airfield garden. As we marched past: The fence was constructed from over 280 propeller blades.

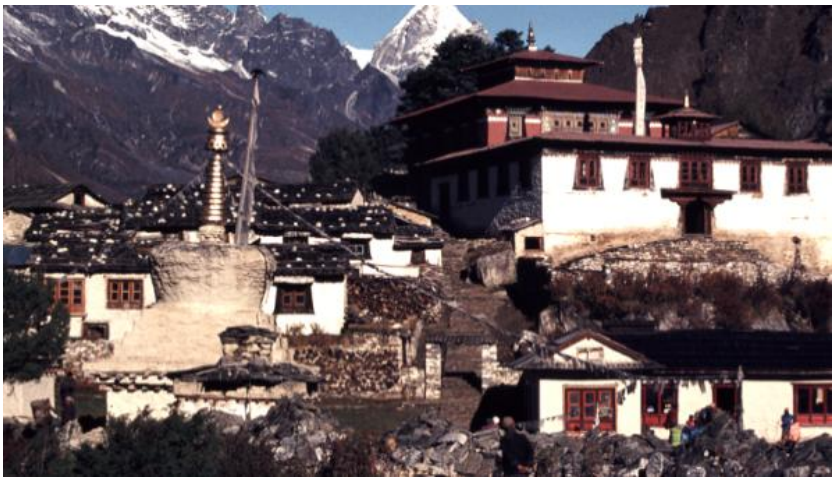
Previous, down: The Mount Everest Log Book: Messner, Kammerlander, Dacher (*followed my invitation and opened 'my' climbing garden'*). Successful ascent via a variant of the normal route in alpine style.



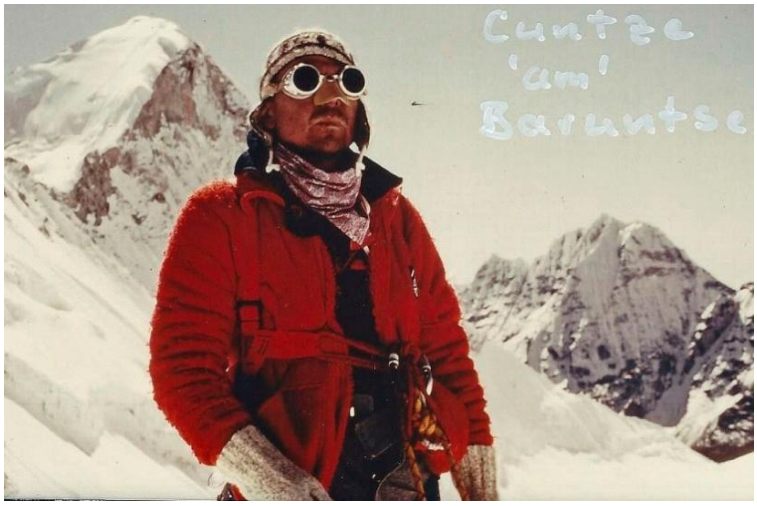








(left) Ama Dablam, 6800 m. Namche Basar





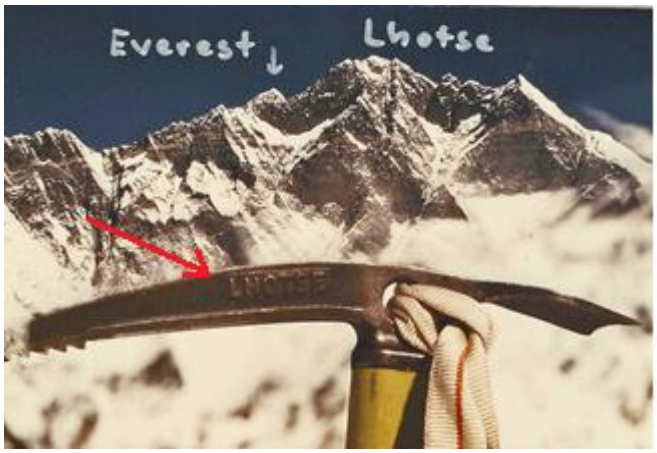
C*untze* (6150 m) in front of the Bar*untse* (7150 m) with the 'spare' clothes I had carried (*number of sherpas not fully available*)



At home all is much better!!!



Grand view



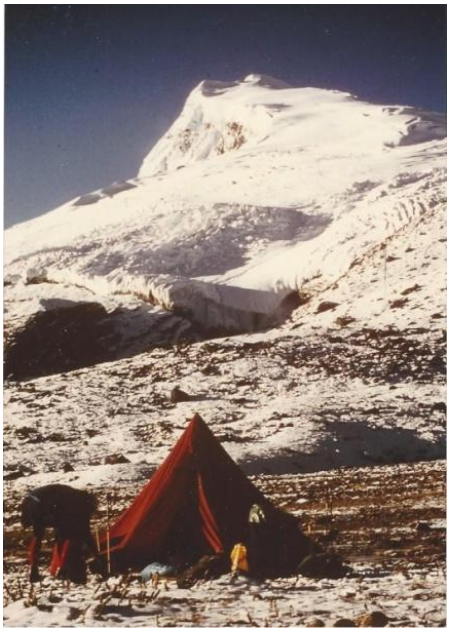


(up): heavy snowfall. (left): Lhotse ice-pick in front of the Lhotse (8516 m)

Mountain experience

After waking up in the morning: opening the 4 zippers inner sleeping bag, outer sleeping bag, inner tent, outer tent. Great view: Half a meter of fresh snow. Ascent of Mera La? Too strenuous!







left: A yak manure place keeps warm when having breakfast. Mind the dog!









Yak.
(left) this famous Nepalese suspension bridge is now overcrowded by tourists on the Everest track

Über Gletscher und moränenfelder bei ziemlich gefärlichem Steinschlag hoch zum Camp



Camp, high up



after all efforts







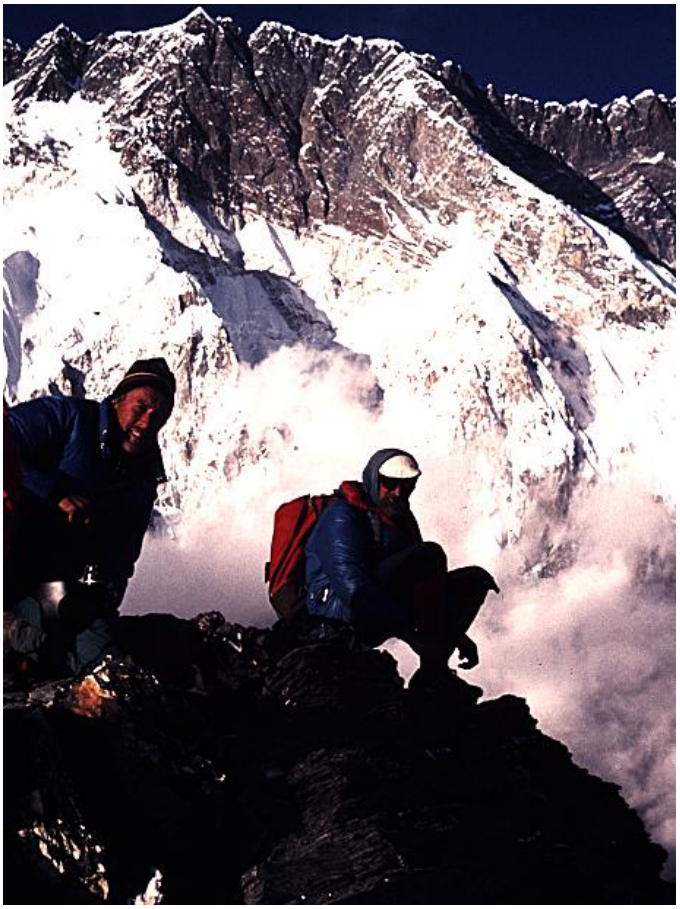


(up) relaxing
(right) A yak manure place keeps warm when having breakfast. Mind the dog in front!

A lasting memory:

At an altitude of almost 6000 meters, receiving a thick slice of Cervelat sausage from the mountain guide after a strenuous climb with the rope team, using crampons, pickl, and ice hammer.

And all this with a fantastic view at the 8000-meter peaks in the Everest region.





At the end, gifts are distributed to the sherpas

Patagonia DAV Trekking 1987

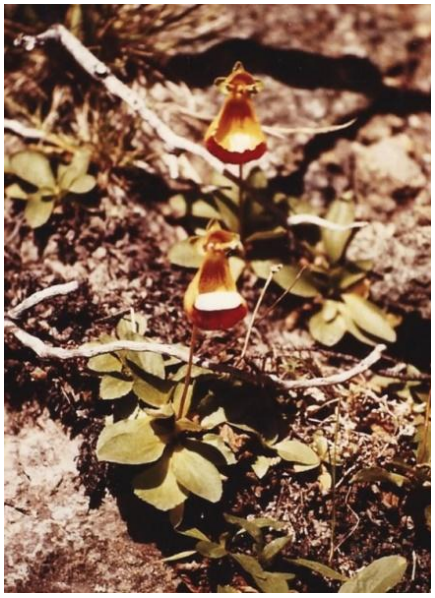


Hiking in the El Paine parquet, Cerro Torre (left) & Fitz Roy (right)





(left) super-difficult Cerro Torre and (right) Fitz Roy (3406 m)



Slipper flowers

DAV-tour, 1994:
Trekking with climbing.



Holy mountain of the Inka
Licancabur (5921 m)
and the famous flamingo lake
at 4000 m height















Lago Argentino

Breaking off ,
a glacier wall

into the lake

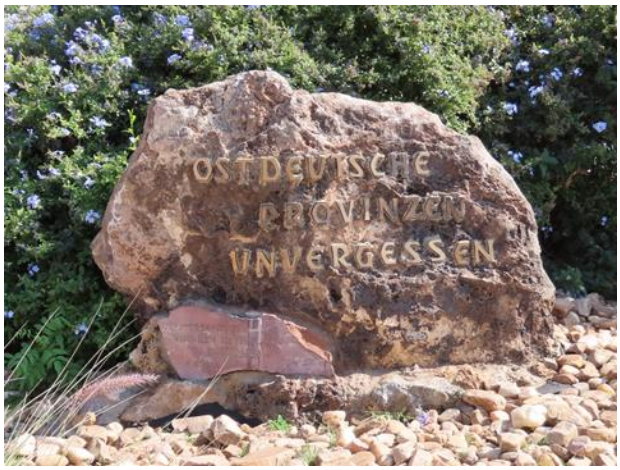


4 Namibia, 1986, 2020





Famous Christus Kirche



German memories !!





Carneval at Windhoek



Alone in the Etosha Pan, 1986.
2020 : crowd of tourists



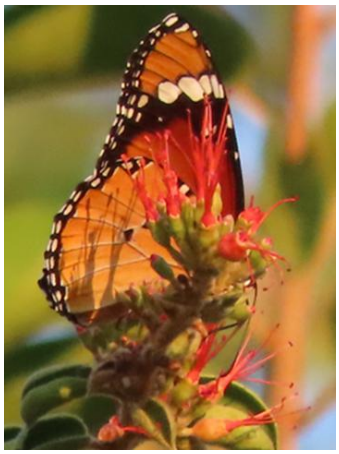


Reminder:
A thin, approximately 4-meter-long black mamba snakes its way across the bumpy road in front of the car. Since bumpy roads require very high speed, the snake was already gone by the time we drove back.







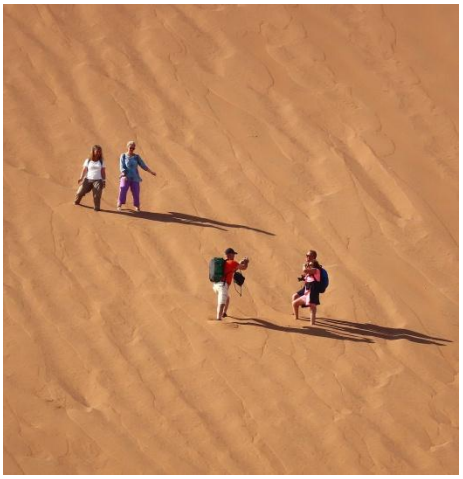








The highest sand dune of the world.
Fast sand surfing downward





walking along the sand ridge:
3 steps forward, 2 steps back



fashion photography in front of the big dune







Leopard, neglecting the photographer



Best fruits are up



Don’t come here!



























Dancing





hungry



Welwitschia mirabilis

5 Oman 2023





Desert rose



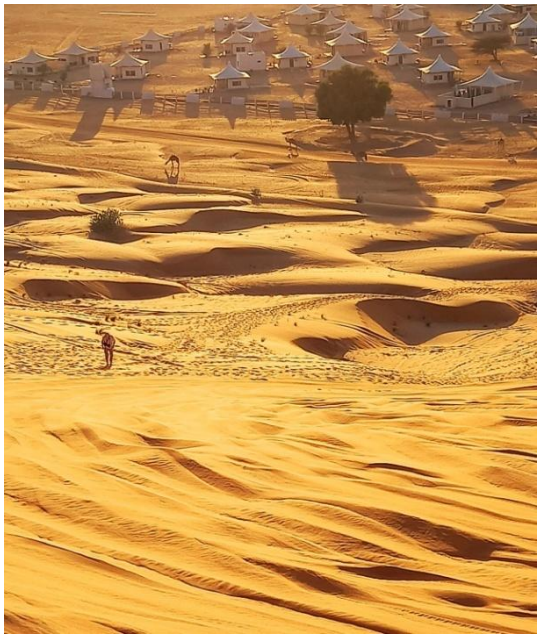




Frankincense and dromedaries



a white young dromedar





Person left: Thats' me going f*or sunset:*
One step up, half a step down again



A lake in the dry Oman







Seagull: Pay attention

6 Ethiopia Trekking

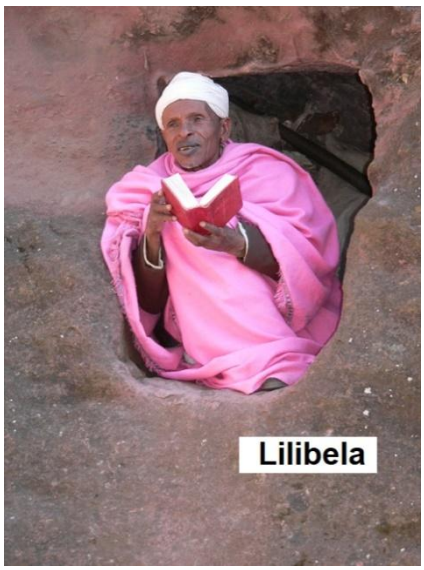


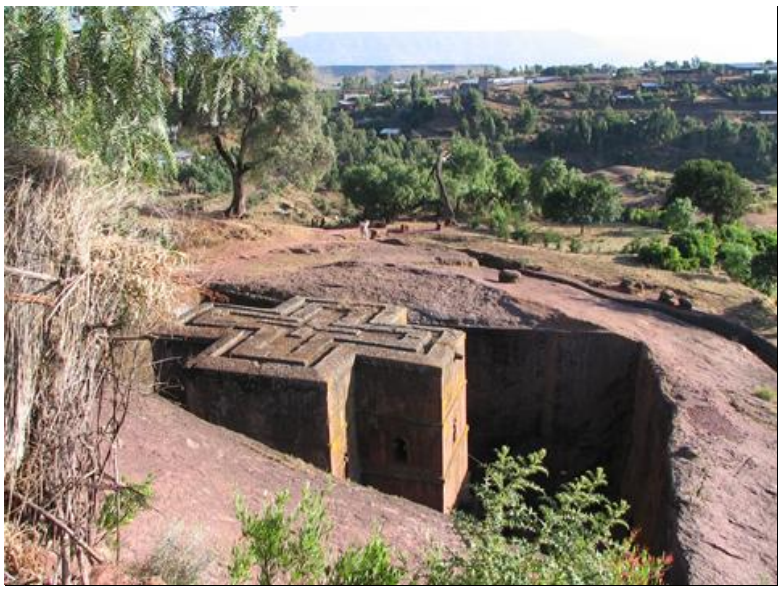




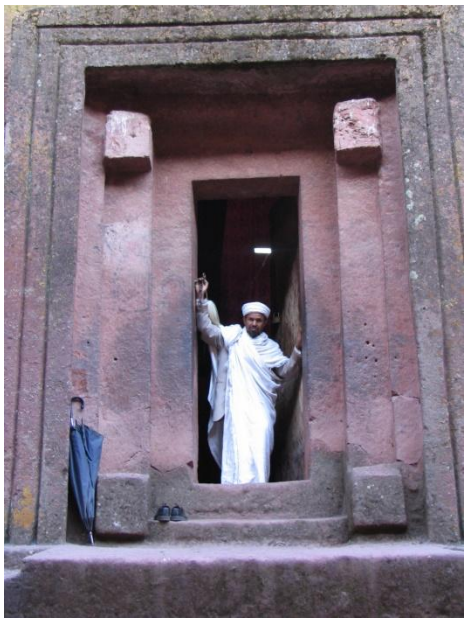
Stone of languages





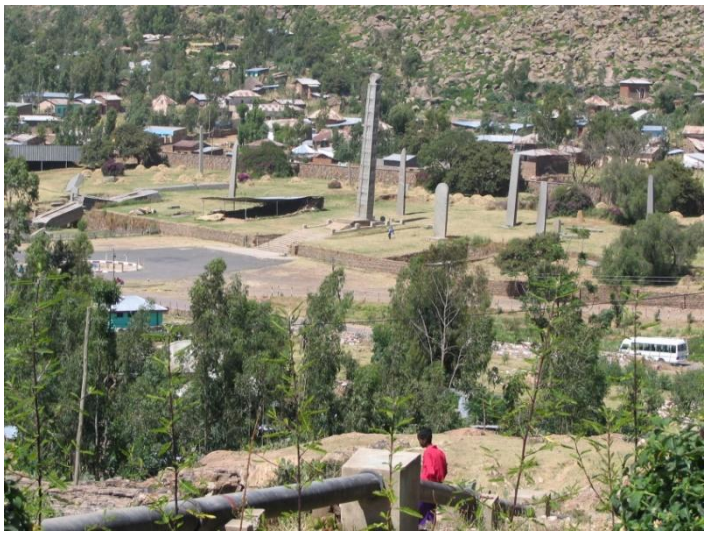


Lilibela: Church, cut out of the mountain rock



























Defending the group







Semiyen mountains





Beautiful pavians



refurbishing





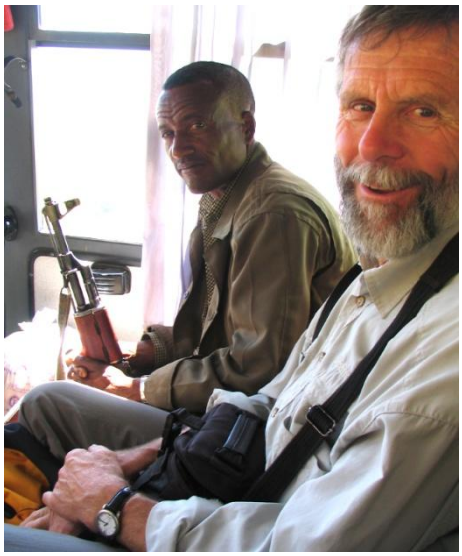








Ras Dashen, 4550 m (a gunman took care of the group)



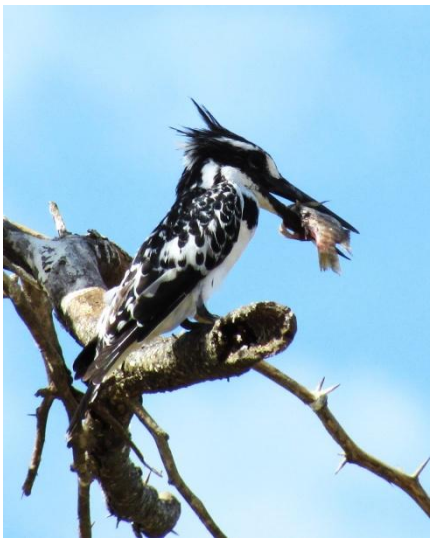
with Sigi Hupfauer, our experienced alpine tour guide (*8 peaks of the 14 over 8000 m*)

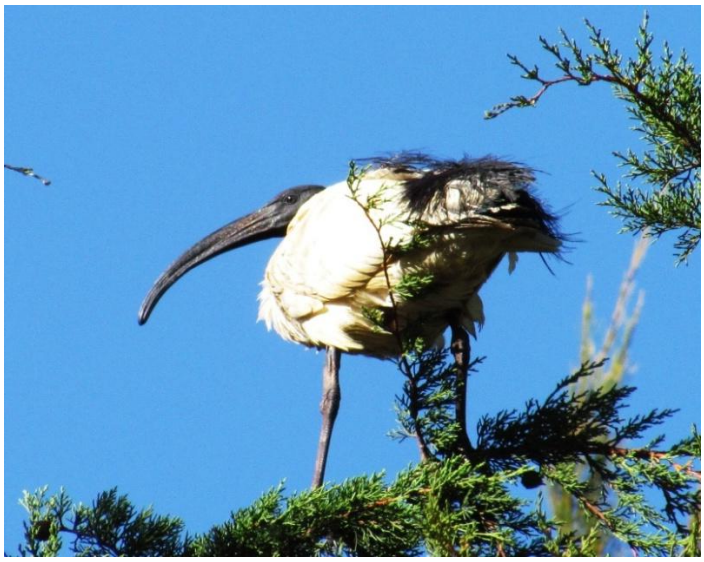














African freshness in the evening

Egypt



Transport of dromedars



Incredible for me: Kairo
The moon, taken by hand on a ship !!



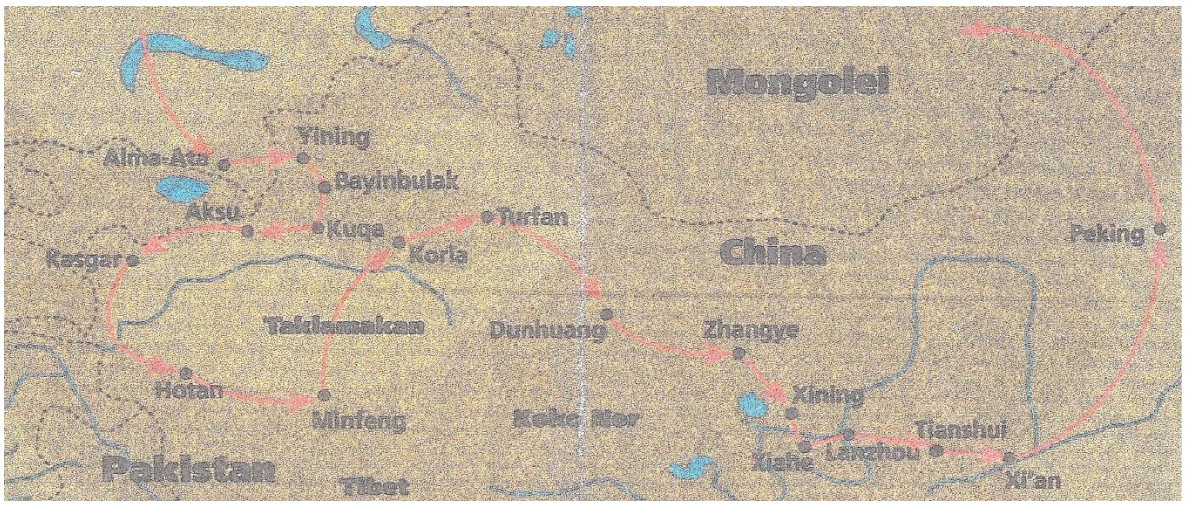
A nice lady in the National Museum





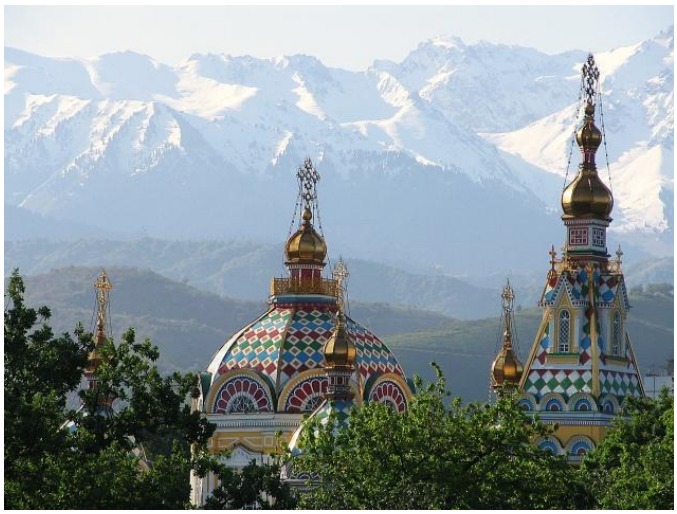
nice discussion with a group of girls

7 From Almaty to Peking



Following the old Silk Road





Almaty with its high mountains



Famous Medeu Skating Area







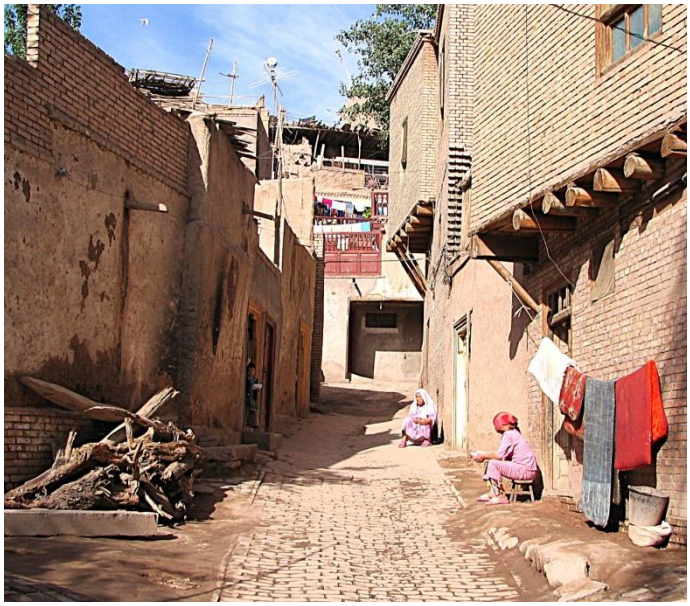


Death Valley of Kasakhstan









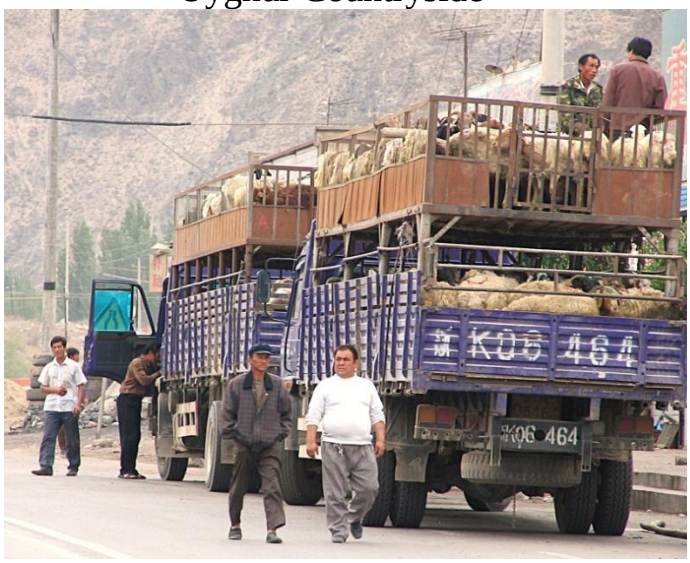




Uyghur Countryside



Honey production



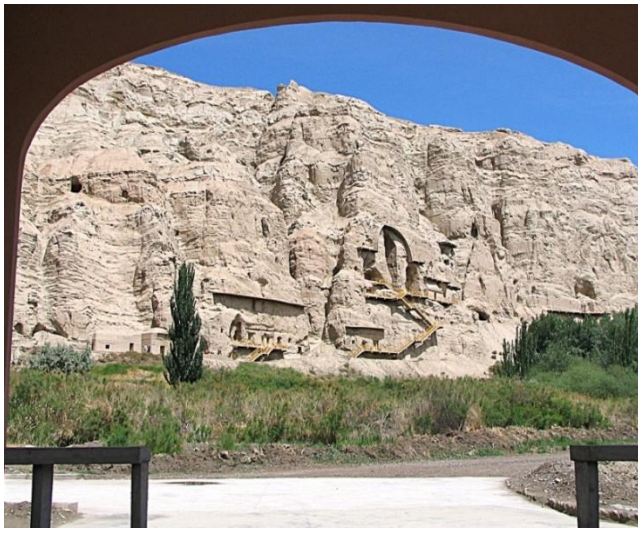






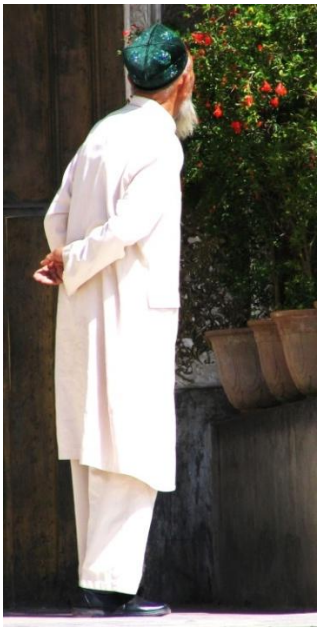


Onset of Chinese Wall
























TCL




KONICA MINOLTA









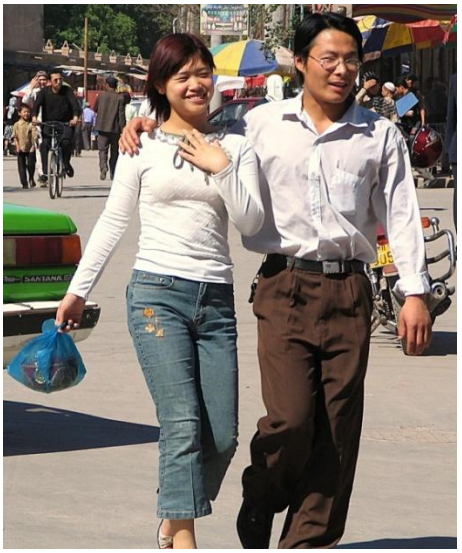
Yining, first big Chines town after the border

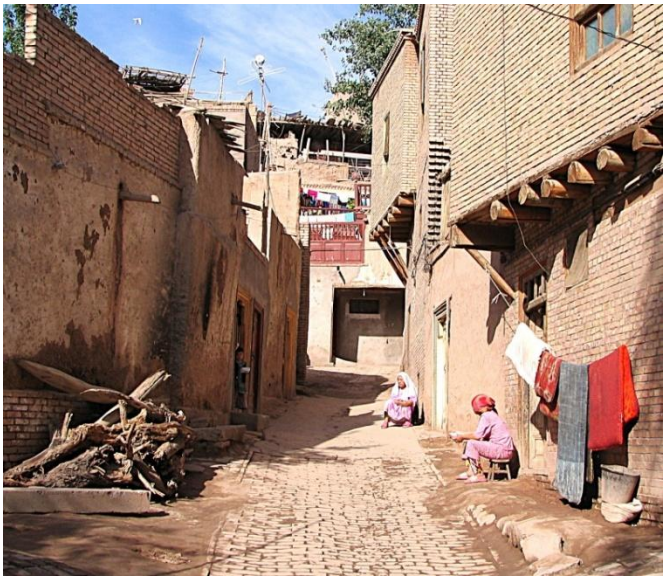




Water features much larger than in Han**n**over's Herrnhäußer **G**arden

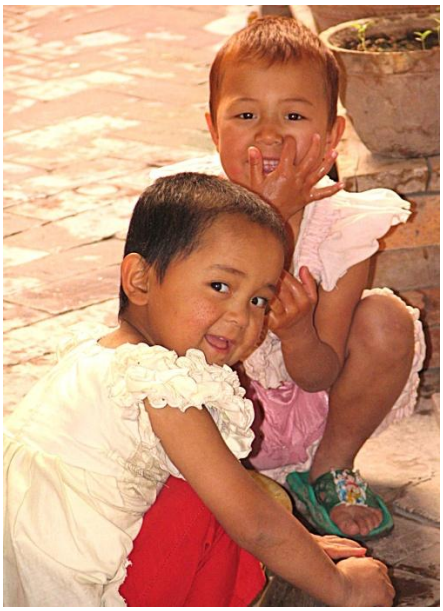








Country side

















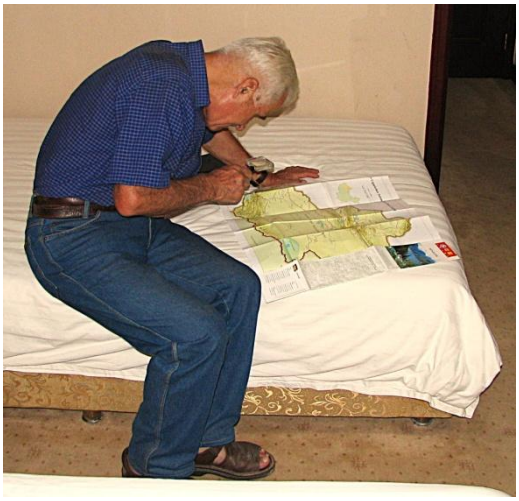




he praises his sexual stimulants







Otmar studies the nest part of the journey















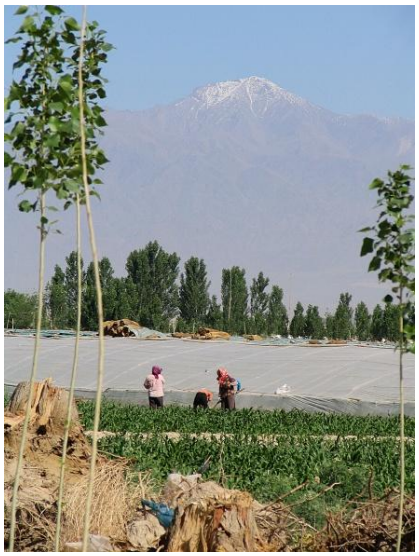
Greening the road which crosses the desert Taklamakan




پىلانلىق تۇغۇتنى يولغا قويۇش دۆلەتنىڭ تۈپ سياستى !
实行计划生育是我国的基本国策
中华人民共和国万岁
中共民丰县委民丰县人民政府










POSITIVE

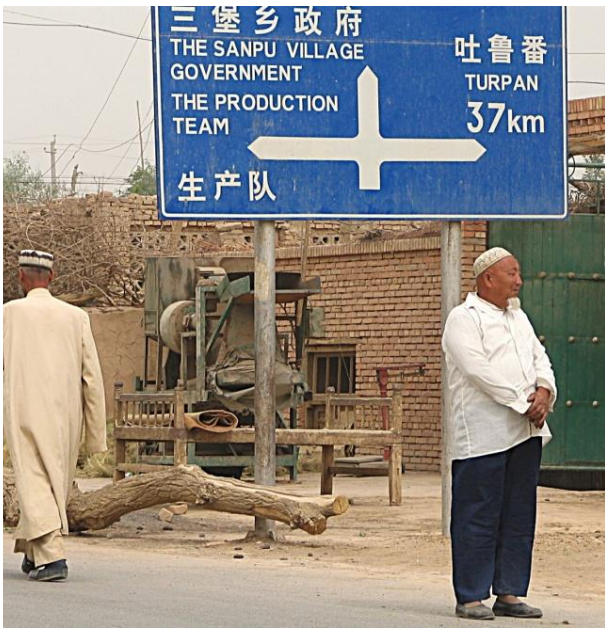












A Tramp Animal, no dromedar


ALAMART
























兰州车站
东岗东路
东岗西路











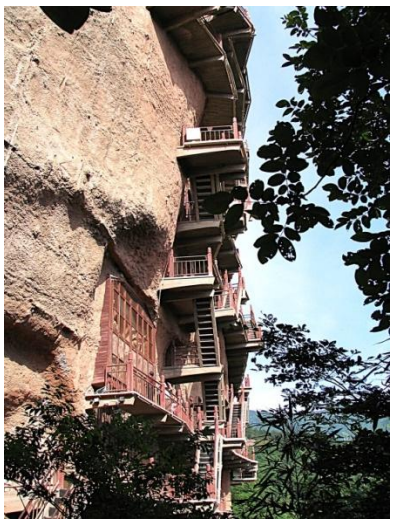


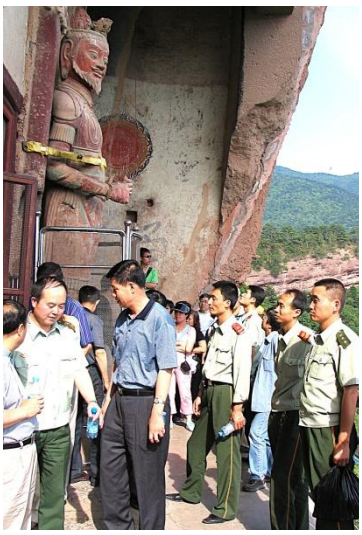

家居物流集散地
名酒典范
铁网电话超市
铁网电话超市
车站
小件寄存
车站
厕所
WC















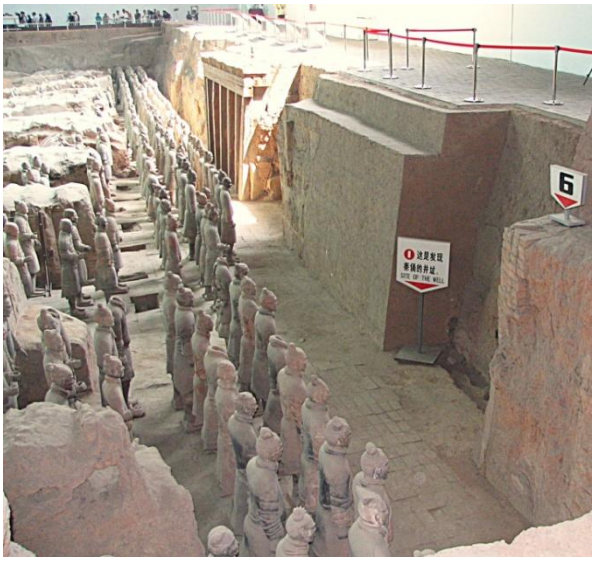


Julius enters the train











Terrakotta Army

This Mausoleum of Qin Shuhuangdi is an early Chinese tomb complex built for the first Chinese emperor, Qin Shuhuangdi. Construction began in 246 BC, and the emperor was buried there in 210 BC. It is one of the world's largest tombs and is best known for its large soldier figures, the so-called Terracotta Army.

In March 1974 a Chinese farmer was digging in the earth to find water for his withering trees and came across a clay soldier. Farmer Yang Zhifa hit something hard with his hoe. Several meters down in the ground, he saw a clay object with an opening. Perhaps a jug? The men continued digging, and the supposed pot soon turned out to be the torso of a statue, the head missing. Yang Zhifa and his comrades had stumbled upon the Terracotta Army.





The picture shows Yang Zhifa when selling his book. When I stood next to him in the urinal,



later, he looked at me with little enthusiasm, because I did not buy his book.











Exhausted from visiting






咸阳机场宝鸡
XIANYANG AIRPORT BAOJI
铜川潼关
TONGCHUAN TONGGUAN
户县
南郊
阎良
蓝田
东郊
宝 鸡
BAOJI
出口
EXIT


TSINGTAO BEER
青島啤酒



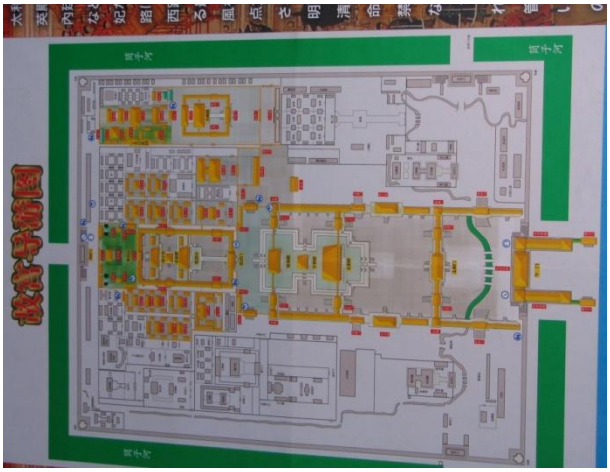



建国门内大街
北京站

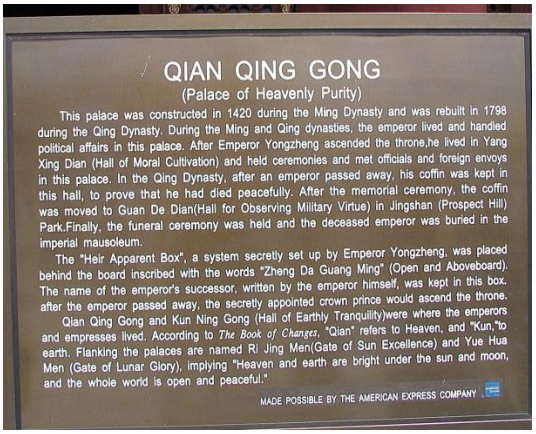



华人民共和国万岁
世界人民大团结








QIAN QING GONG
(Palace of Heavenly Purity)
This palace was constructed in 1420 during the Ming Dynasty and was rebuilt in 1798 during the Qing Dynasty. During the Ming and Qing dynasties, the emperor lived and handled political affairs in this palace. After Emperor Yongzheng ascended the throne,he lived in Yang Xing Dian (Hall of Moral Cultivation) and held ceremonies and met officials and foreign envoys in this palace. In the Qing Dynasty, after an emperor passed away, his coffin was kept in this hall, to prove that he had died peacefully. After the memorial ceremony, the coffin was moved to Guan De Dian(Hall for Observing Military Virtue) in Jingshan (Prospect Hill) Park.Finally, the funeral ceremony was held and the deceased emperor was buried in the imperial mausoleum.
The "Heir Apparent Box", a system secretly set up by Emperor Yongzheng, was placed behind the board inscribed with the words "Zheng Da Guang Ming" (Open and Aboveboard). The name of the emperor's successor, written by the emperor himself, was kept in this box. after the emperor passed away, the secretly appointed crown prince would ascend the throne.
Qian Qing Gong and Kun Ning Gong (Hall of Earthly Tranquility)were where the emperors and empresses lived. According to The Book of Changes, "Qian" refers to Heaven, and "Kun,"to earth. Flanking the palaces are named Ri Jing Men(Gate of Sun Excellence) and Yue Hua Men (Gate of Lunar Glory), implying "Heaven and earth are bright under the sun and moon, and the whole world is open and peaceful."
MADE POSSIBLE BY THE AMERICAN EXPRESS COMPANY








京A·82162











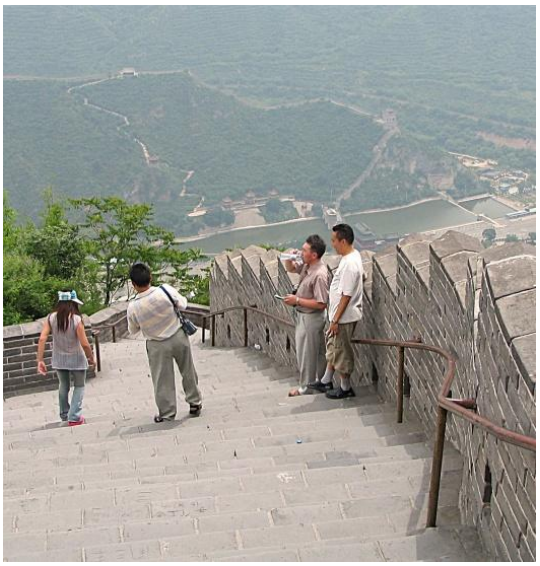
















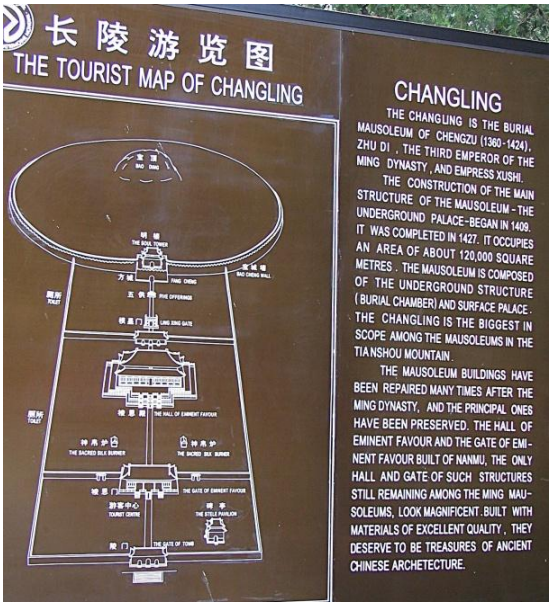


Chinese family on the wall (2005)








长陵游览图
THE TOURIST MAP OF CHANGLING
CHANGLING
THE CHANGLING IS THE BURIAL MAUSOLEUM OF CHENGZU (1360-1424), ZHU DI , THE THIRD EMPEROR OF THE MING DYNASTY , AND EMPRESS XUSHI.
THE CONSTRUCTION OF THE MAIN STRUCTURE OF THE MAUSOLEUM - THE UNDERGROUND PALACE-BEGAN IN 1409. IT WAS COMPLETED IN 1427. IT OCCUPIES AN AREA OF ABOUT 120,000 SQUARE METRES . THE MAUSOLEUM IS COMPOSED OF THE UNDERGROUND STRUCTURE (BURIAL CHAMBER) AND SURFACE PALACE . THE CHANGLING IS THE BIGGEST IN SCOPE AMONG THE MAUSOLEUMS IN THE TIANSHOU MOUNTAIN .
THE MAUSOLEUM BUILDINGS HAVE BEEN REPAIRED MANY TIMES AFTER THE MING DYNASTY, AND THE PRINCIPAL ONES HAVE BEEN PRESERVED. THE HALL OF EMINENT FAVOUR AND THE GATE OF EMINENT FAVOUR BUILT OF NANMU, THE ONLY HALL AND GATE OF SUCH STRUCTURES STILL REMAINING AMONG THE MING MAUSOLEUMS, LOOK MAGNIFICENT. BUILT WITH MATERIALS OF EXCELLENT QUALITY , THEY DESERVE TO BE TREASURES OF ANCIENT CHINESE ARCHETECTURE.





















Lufthansa, in parallel

8 Special Digital Photography's from several trips



Venezuela
Me and the guide

Venezuela

"Challenging tasks strengthen!

2013
Venezuela







Komodo waran, 80kg





At Fiji,

in the house of a retired Hindhu sugar engineer:

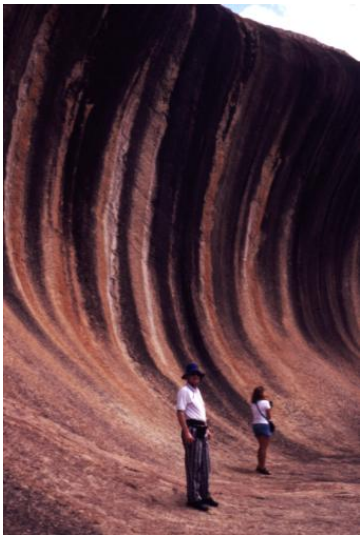
Look and feeling is like that one I had when I walked with my Grandma for spinning and crocheting in 1944.

People are almost the same in the world.

The world is small.

Australia 1997





aborigines





looking from Ayer's Rock









Early morning desert flight

etc.



Friend or lazy beneficiary, **Columbia**



hyacinth



Indonesian wedding

,



Feeding an Oran-Utan



India



Blessing by a Hindu priest

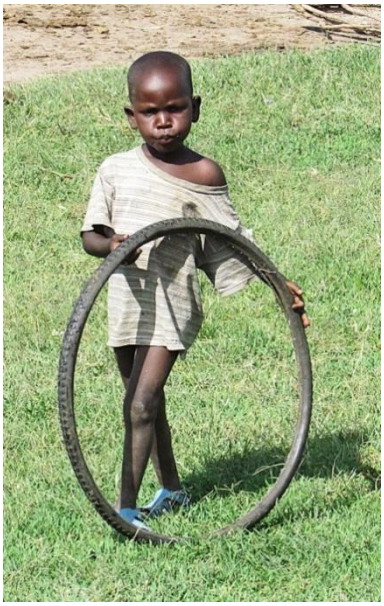


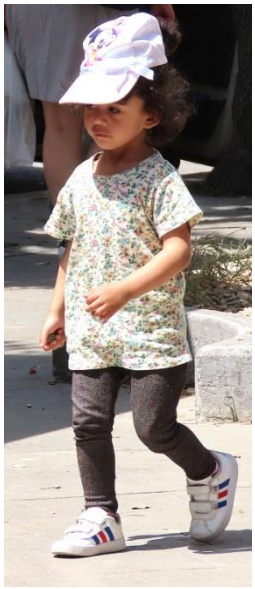
Banana with beautiful bird



Bye, bye beautiful **Ama Dablam**













Moving the home







encounters



Crossing

Polar Circle
(Finland)

and

equator





Is this the right pencil??

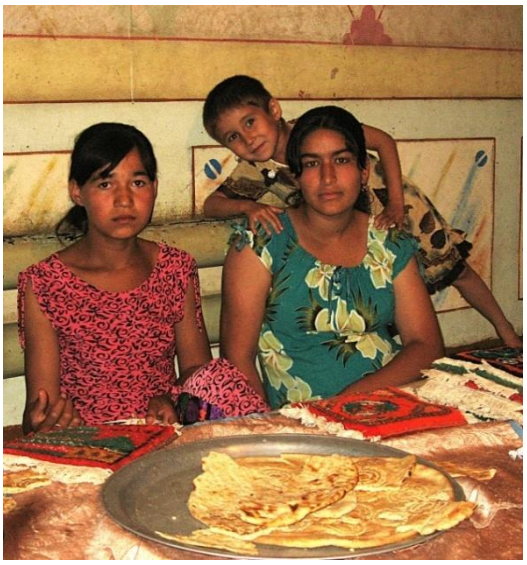


the girl seems to be not interested in the smartphone











Нилуфардек либослар била ой
Бўлди хуршеддек жаҳон орой.
Ўйлаким кўз ёрутқали жовид
Чиқти кўк атласин кийиб хуршед.

Шах, в голубом от головы до ног,
Избрал жилищем голубой чертог.
Вошла к нему красавица тотчас.
Ее одежда — голубой атлас.

Lieo Erinnerung
an die Familie
in Samarkand.
Viel Glück,
Gesundheit,
Schönheit
und
Liebe!
25.05.2007
Dilja

Заказ № 2506. Тираж 100.000. Цена 03 коп.
© Издательство ЦК КП Узбекистана, 1978 г

Prose: The moon, dressed as a lotus, became as beautiful as the sun .....
Which girl was probably my nice unknown writer??



Auslegung bedeutet Multi-Tasking: Viele Dinge gleichzeitig erledigen:

die Beteiligten richtig "füttern" und einbeziehen,
über den besten Weg entspannt und konzentriert nachdenken,
bei der Durchführung des Projekts sich gezielt Unterstützung holen !



Table of contents of part C

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5 A selection of photos from a long Rotel journey, from Panama to Mexico (mixed) 929

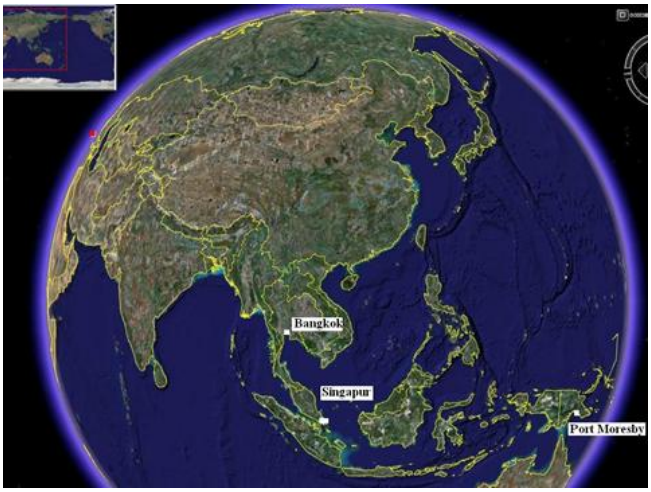
1 Papua-New Guinee

August 2006

mit Ikarus



SING-SING in Papua-Neu-Guinea



Not a safe country anymore





PPT [2008_Papua-Neuguinea](carbon-connected.de/Group/Prof.Ralf.Cuntze), downloadable from carbon-connected.de/Group/Prof.Ralf.Cuntze






Schau mal, wer
da schaut!















45th Mt. Hagen Show (‘Sing Sing’): Event to promote unity and peace amongst people of the highlands















































What is this on their backs?
Child care !














winter or summer




airport in the
bush


transport to lodge




world record
moth






highlands of
Tari









wig maker

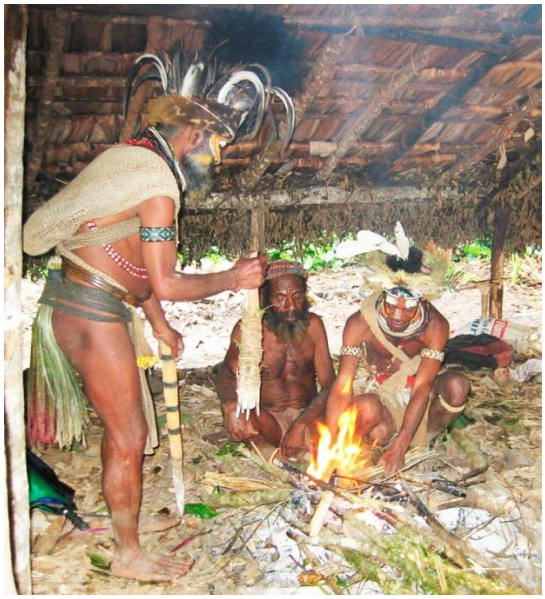


At night to save the wig

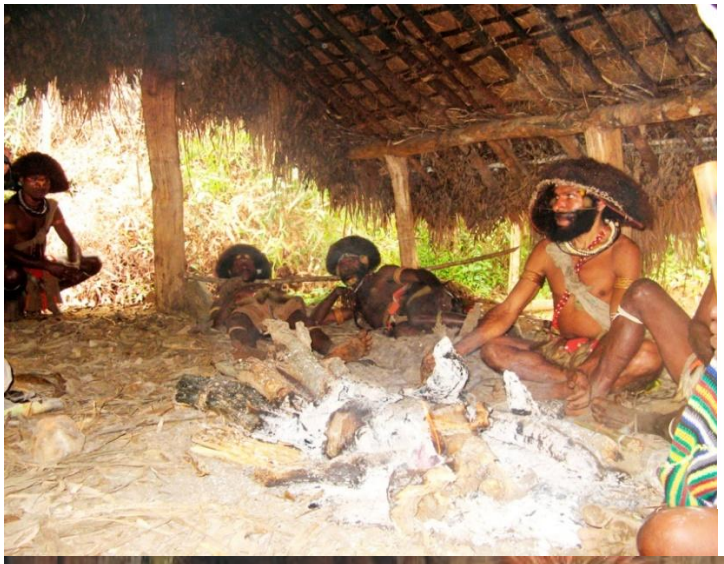




15 months life to obtain the high-valued wig from the wig maker













witch doctor










entrance to Tari settlement


manufacture of ropes



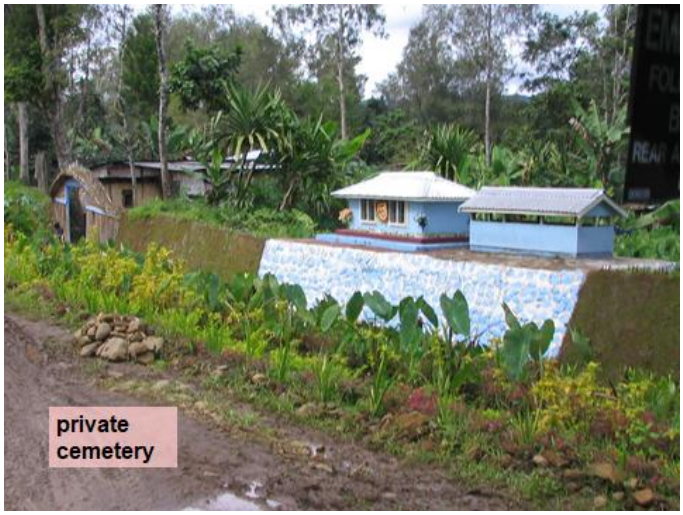

Mi laik Kaikai = have hunger



Jew's harp



orchid





















purchase price for the bride is probably okay


Saying good-bye at the Ambua-Lodge




Nearby the 4000 peaks to Timbukte

4000 m high









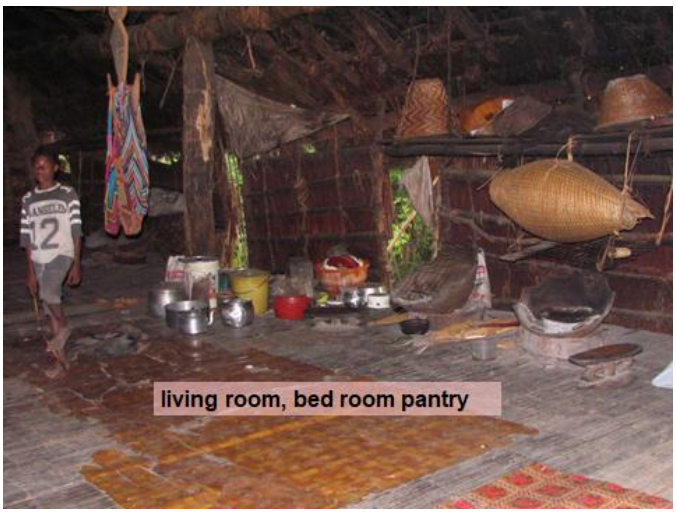











living room, bed room pantry









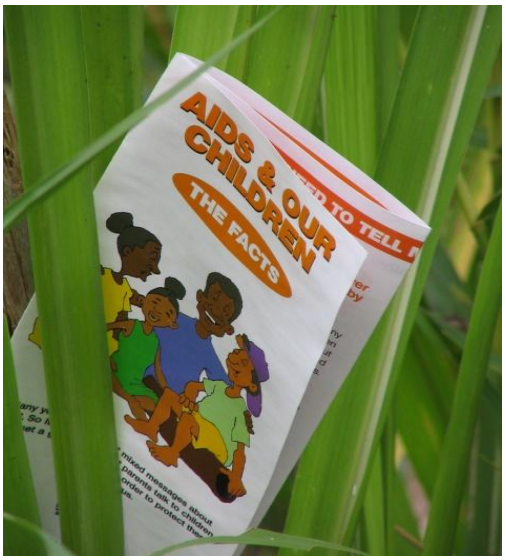


Vanilla



palm fertilization













































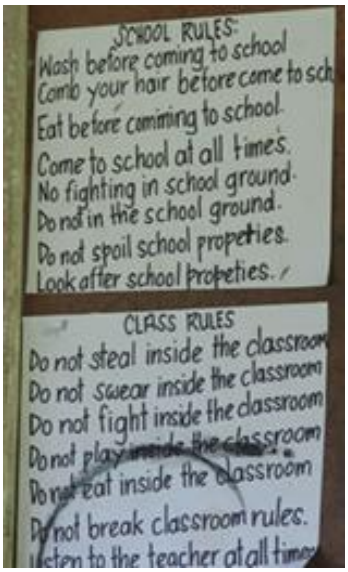











SCHOOL RULES:
Wash before coming to school
Comb your hair before come to sch
Eat before comming to school
Come to school at all times.
No fighting in school ground.
Do not in the school ground.
Do not spoil school propeties.
Look after school propeties.
CLASS RULES
Do not steal inside the classroom
Do not swear inside the classroom
Do not fight inside the classroom
Do not play inside the classroom
Do not eat inside the classroom
Do not break classroom rules.


Nothing can disfigure a beautiful fellow













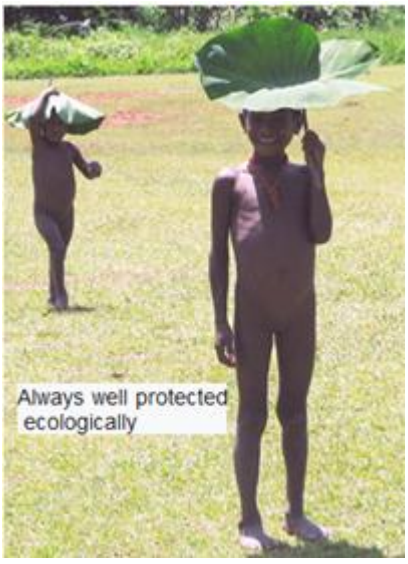



cacao beans
with
good-tasting
pulp








Always well protected
ecologically


no rope
20 m







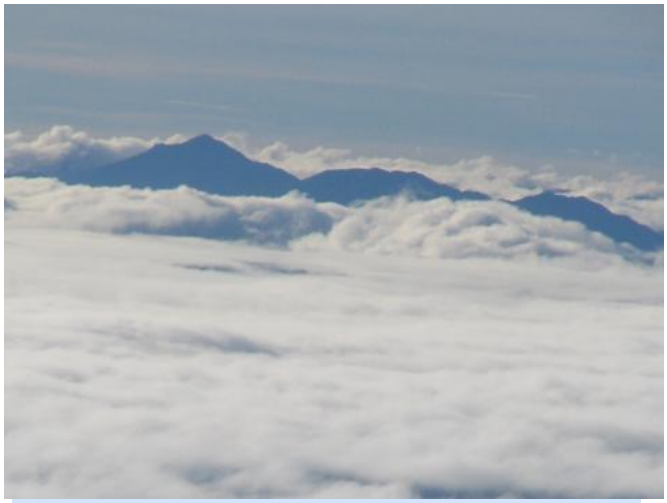




??????







Mount Wilhelm is the highest mountain in Papua New Guinea with a height of 4509 meters





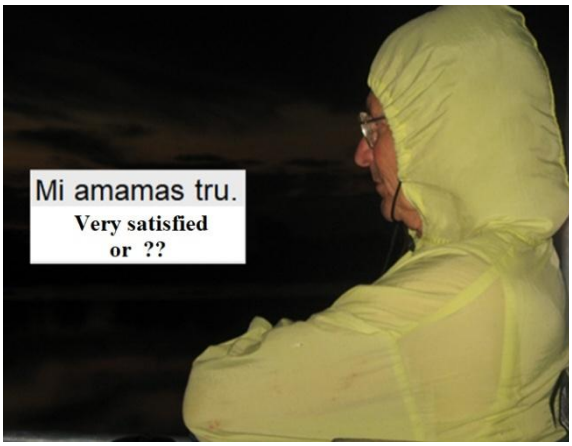


Parliament building & president

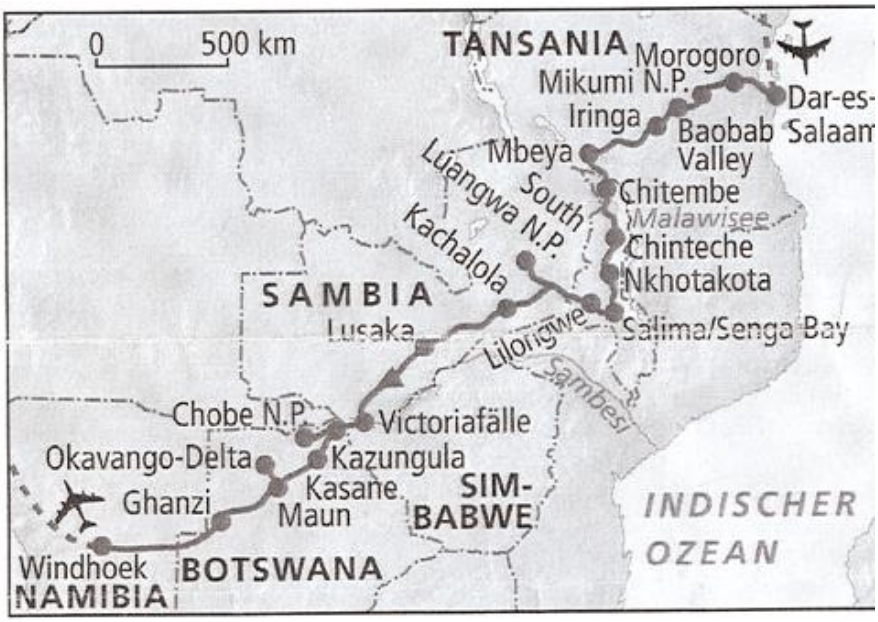
Port Moresby






Mi amamas tru.
Very satisfied
or ??

2 Africa across: Dar-es-Salam → Windhoek











Summer





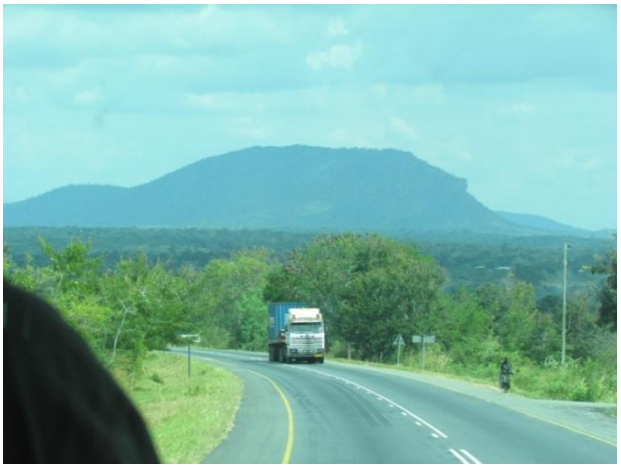









ZANTEL HIGH LIFE
Afrika Mashariki
3




MIKUMI
NATIONAL PARK
WANYAMA WA PORINI
KMS 80 ZIPUATAZO
MIKUMI
NATIONAL PARK
WILD ANIMALS
NEXT 80 KMS





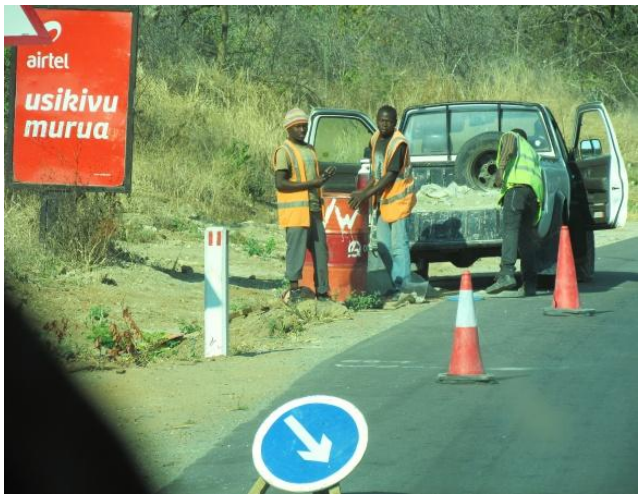











airtel
usikivu
murua












2 KM








IN EVERLASTING MEMORY
OF THOSE OF IRINGA
DISTRICT WHO GAVE THEIR
LIVES DURING THE WAR
1939 – 1945
MIKAEL MLAPWILA
ELIAS MPONZI
FATULUPEMBE MKANGAWALA
HAMISI AUGUSTI
WANGILICHUMA
PETERI MNGOLA
TENGENEZA KITOGERE
SELEMANI FALASITA
DANIEL MWACHANGO
SAMBAMAKALI KIBOTI
SALIMU MWAZALA
SAPIYAN GOMBE MULUWA
HAMSINI KAYWANGA
CHUMACHANGOMBE MWENDELE
MSUNGALEDI MLILINGOYA
MWAWELA NDANGA
SIMBILIGUNGA KAZIGUDI
JULIUS CHUSI
MKONOMAU KISOMA
ASMANI MTAWANGU
MUSASIMELA MANDELE
HENERICK GALUS
WANGIPOLINI MWAWELA
MNYAKANGO KALEBELA
SAIDI SIMBA
KWA MAKUMBUSHO YA
ASKARI WA JIMBO
LA IRINGA WALIOKUFA
KATIKA VITA YA
1939 – 1945
MUSTAFA MUANDA
JONIFASI LUGUBULA
EMANWELL MUSA
GUNCILINGOMBE NGUVUMALI
SIGAWANO GALAMENDA
PATRICK MWAKOWALI
SALIM MALUA
JULIUS KILUGUMA
MTAKAMBALI TOSAMASINDA
HALFANI MKALIMOTO
SAIDI MTAKI
HALFANI CHOTUMGANGA
HASSANI ABDALAH
ROBATI CHANGA
SIMBAYUKALI MWACHIETENGE
TEMELACHUMA M.
FALINGOMBE KIWELO
MUOMBA MPONZI
BOJIMDOG CHUNGA MUGANGA
CHIGULU PEMBE SEOGANILE
ASMANI MASARATE
LEONA MUKISAME
SELEMANI LANGALE
ASMANI CHITISAMBA
HOSDATE NUNYIHAGE


tigo
tigo
tigo
SAJILIna
USHINDE
HAPA!










BEI YADA
KILO 3500
NUSU 1750
GRAM 300 1200
ROBO 900
GRAM 200 800
GRAM 100 500


DOWN TOWN SHOPPING CENTRE

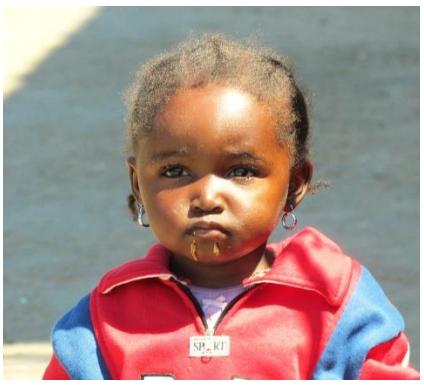

DOWN TOWN SHOPPING CENTRE

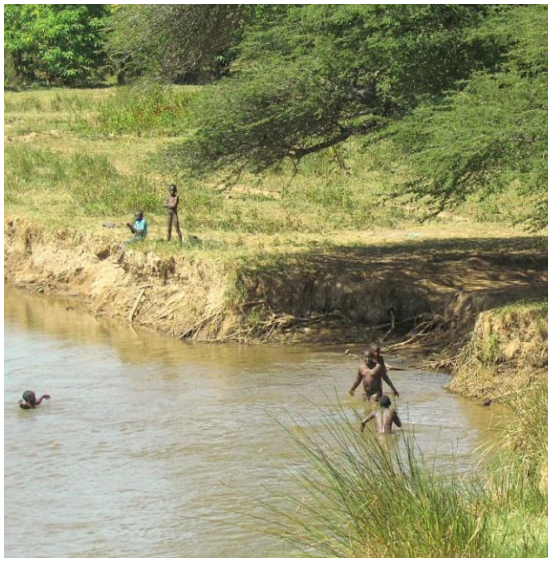













VISITORS ARE REMINDED
THAT THIS IS PROTECTED BY
LAW AND THAT THEY ARE NOT
PERMITTED TO MOVE, DAMAGE OR
TAKE AWAY ANY OBJECTS THEREFROM









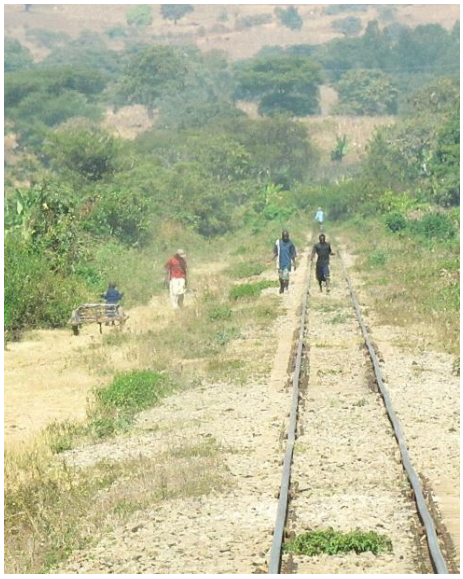








(Right) The better road





Going home from school



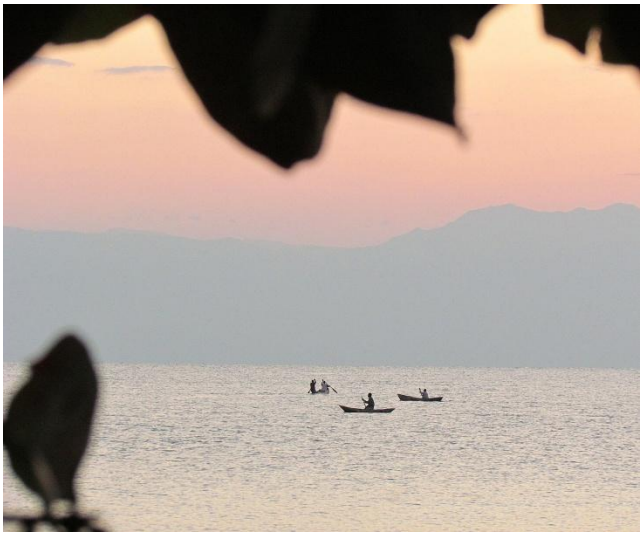






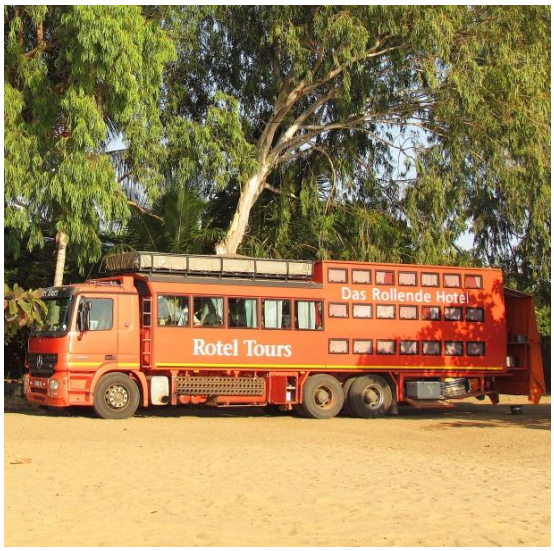






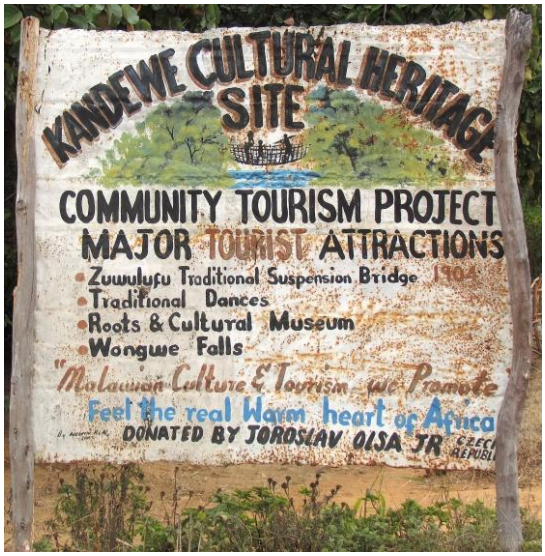





Das Rollende Hotel
Rotel Tours









This was not 'good balancing'



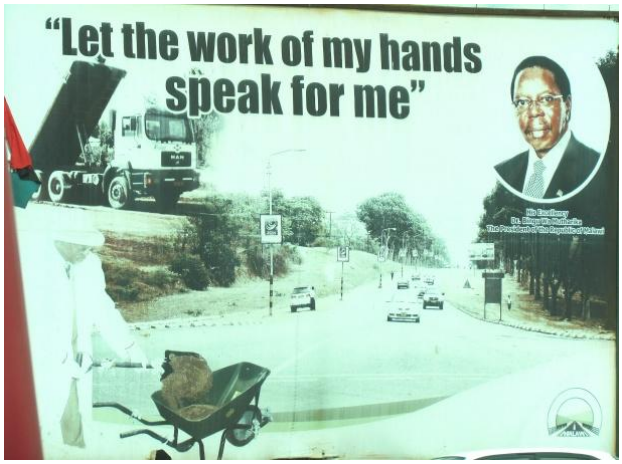
Witch doctor










"Let the work of my hands
speak for me"














TIGONJETSE KOLERA M'MALAWI

















For us: a very Strange food



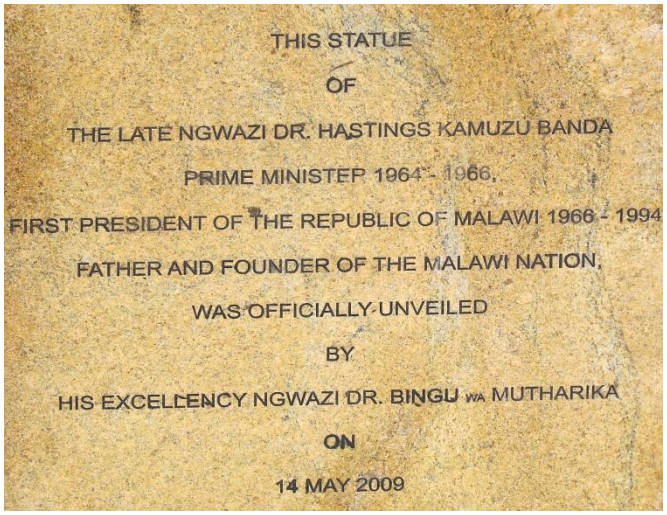

TSOGOLO, TIYENI TIYENDE
LIMODZI KUTSOGOLO LINA KUMBUYO
WE MOVE TOWARDS THE FUTURE LIKE THE CHAMELEON:
LOSING SIGHT OF THE PAST, FIRMLY ROOTED IN OUR BUSHES

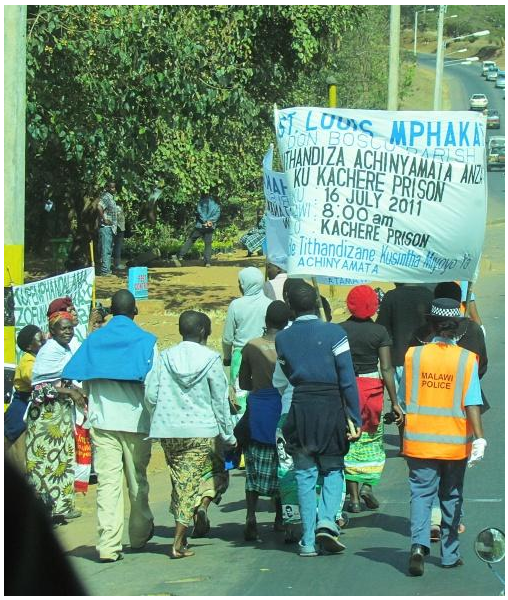



SPAR
SPAR


THE MUA MISSION
WELCOMES YOU ALL
TO
THE KUNGONI ART CRAFT CENTRE.
THANK YOU




THIS STATUE
OF
THE LATE NGWAZI DR. HASTINGS KAMUZU BANDA
PRIME MINISTER 1964 - 1966,
FIRST PRESIDENT OF THE REPUBLIC OF MALAWI 1966 - 1994
FATHER AND FOUNDER OF THE MALAWI NATION,
WAS OFFICIALLY UNVEILED
BY
HIS EXCELLENCY NGWAZI DR. BINGU wa MUTHARIKA
ON
14 MAY 2009


ST LOUIS MPHAKA
ITHANDIZA ACHINYAMATA ANZ
KU KACHERE PRISON
16 JULY 2011
8:00 am
KACHERE PRISON
MALAWI POLICE





























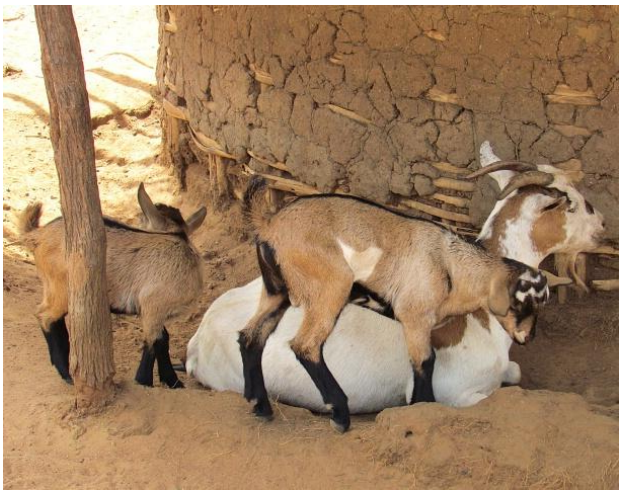
Excellent tracks ?



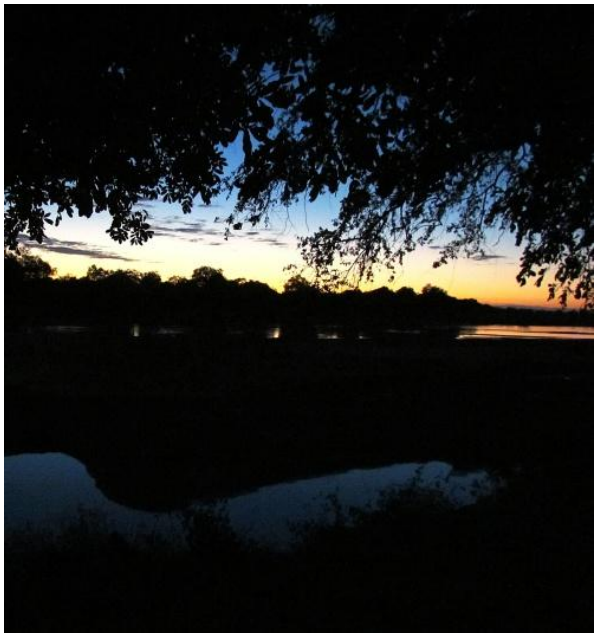




Question: Food in the bowl ??













(left) the most dangerous animal in Africa



tongue

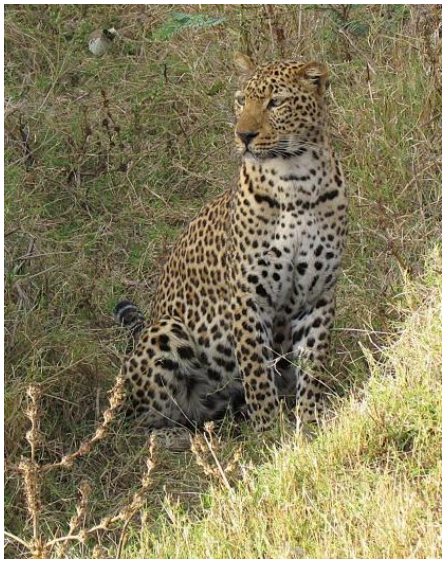








The phantastic leopard

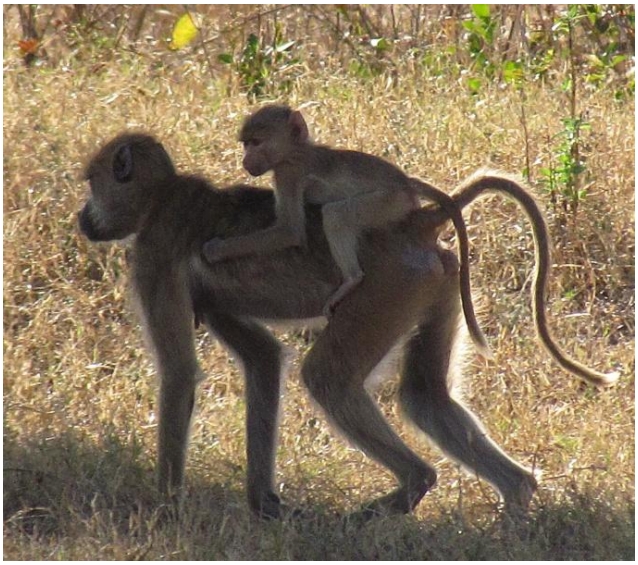






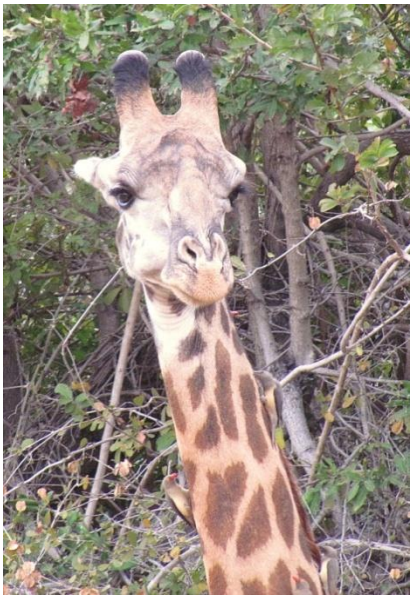
lioness







Photographer's summits



How are you?



Mother helps

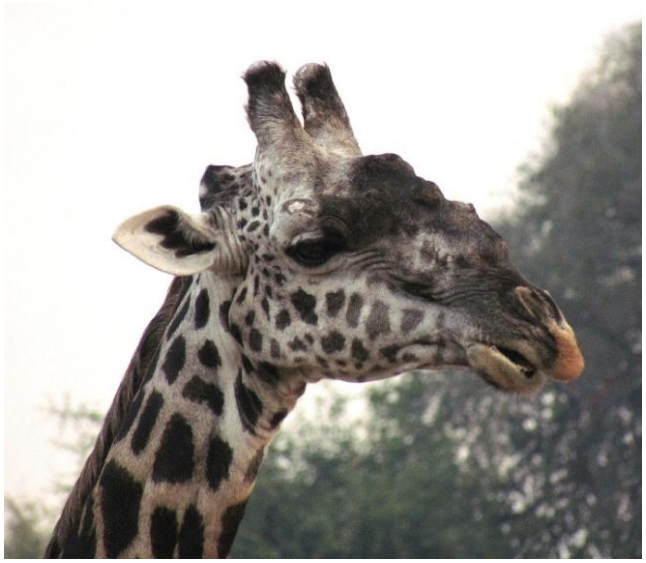




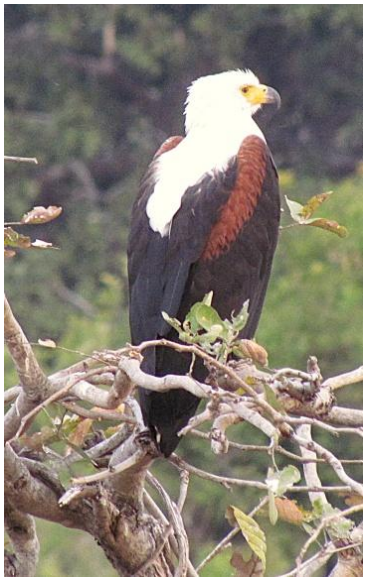










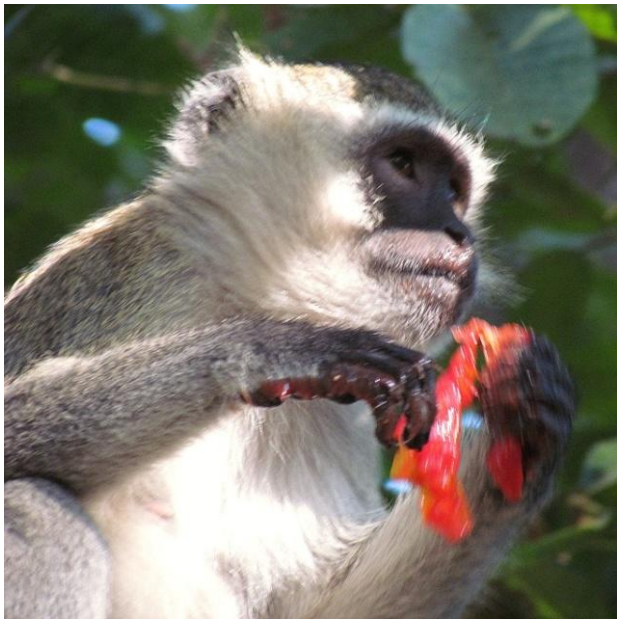


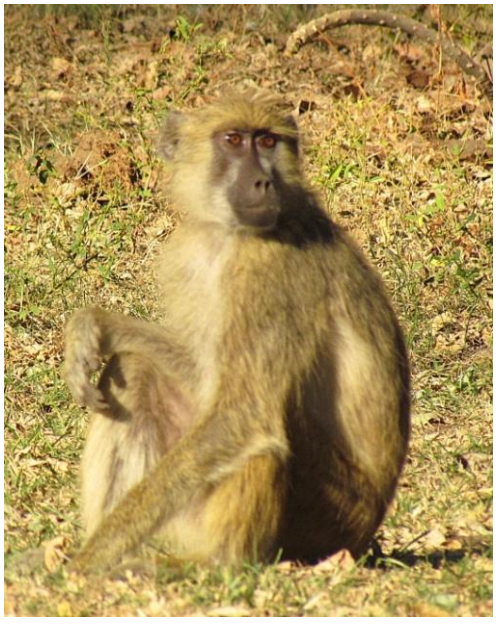






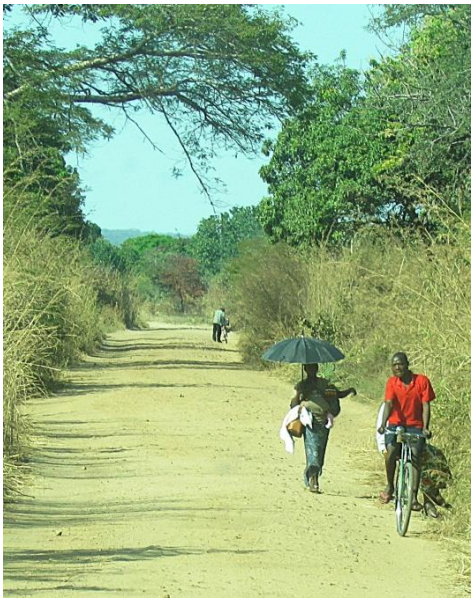
In the dark

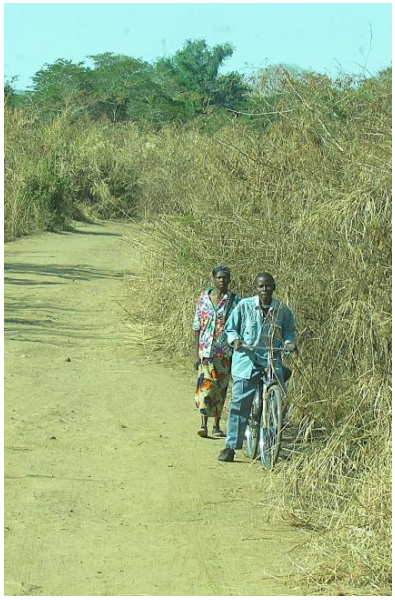








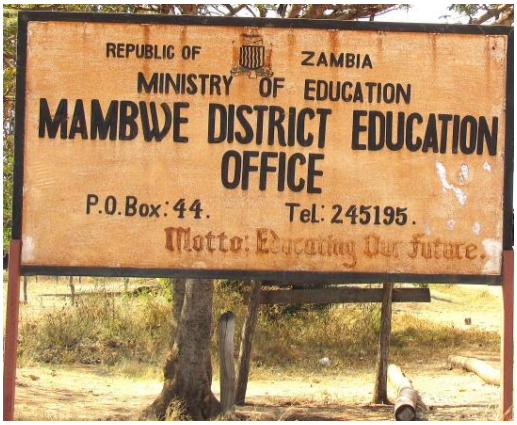








Where is the cyclist?













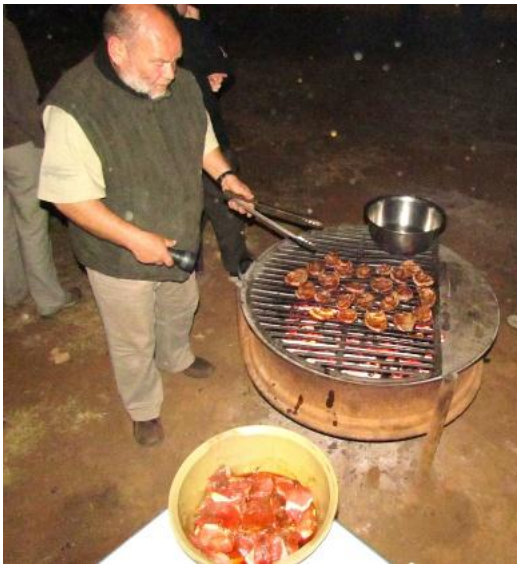
Astonishing inland clouds


Prevention of mother to child transmission of HIV (PMTCT) helps to have
HIV FREE CHILDREN.
When pregnant get tested and treated
For HIV.
Ministry of Health


TALK TO ME
DON'T BEAT ME
BATTERING OF CHILDREN IS AN OFFENCE !
ABUSE
just stop it!
REPORT ALL CASES TO THE NEAREST POLICE STATION
USAID
unicef
M.S.P. FARMERS SHOP LTD
EDDIE
Dreads
SALON & BARBER
SHOP
CALL 0975 212927
MURPHY
GUEST HOUSE


T4
Lusaka 45

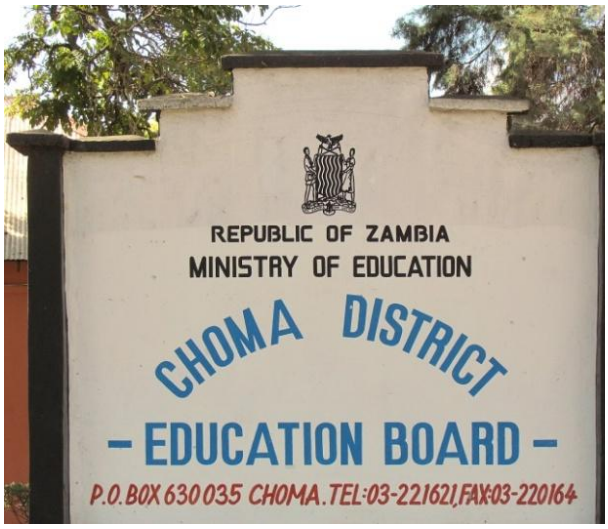


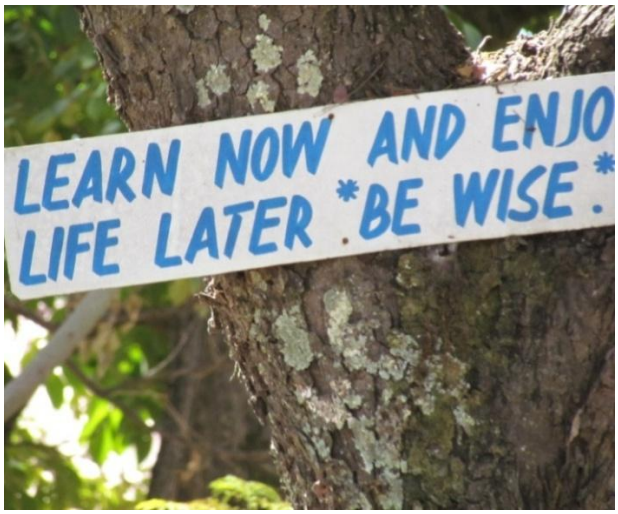






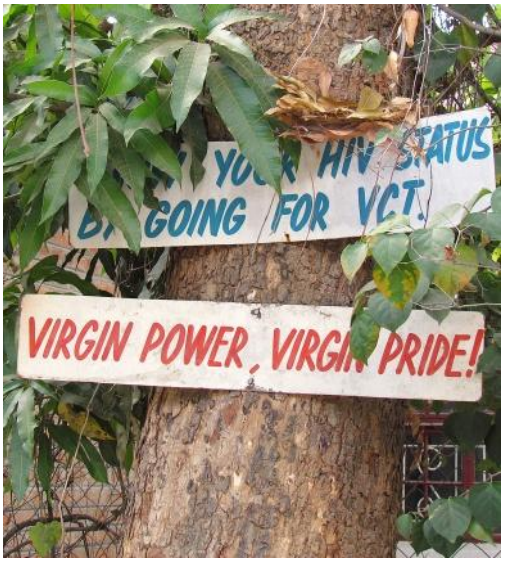


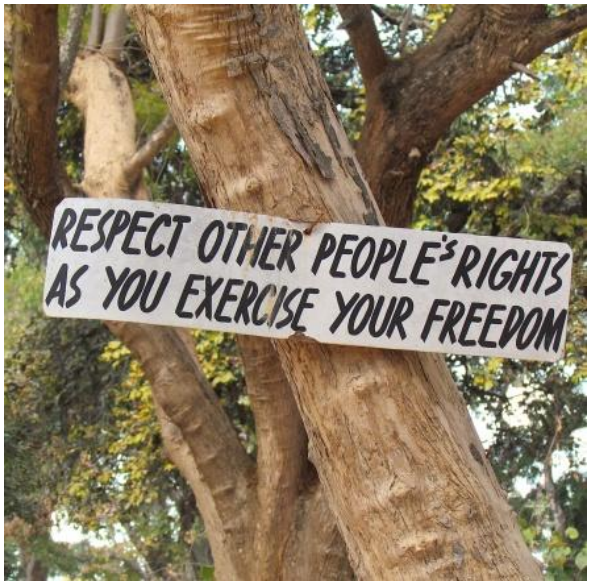

REPUBLIC OF ZAMBIA
MINISTRY OF EDUCATION
CHOMA DISTRICT
- EDUCATION BOARD -
P.O.BOX 630035 CHOMA.TEL:03-221621,FAX:03-220164


LEARN NOW AND ENJO
LIFE LATER *BE WISE.*


RESPECT YOUR TEACHERS.


BREAK THE SILENCE -
TALK ABOUT HIV/AIDS.


GOING FOR VCT.
VIRGIN POWER, VIRGIN PRIDE!


RESPECT OTHER PEOPLE'S RIGHTS
AS YOU EXERCISE YOUR FREEDOM

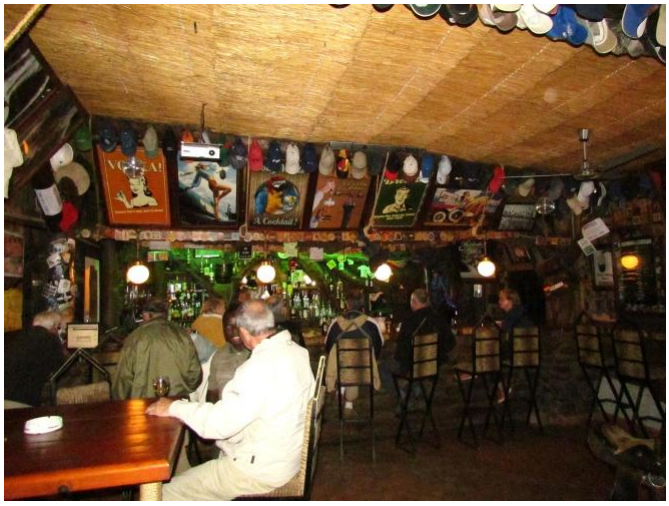






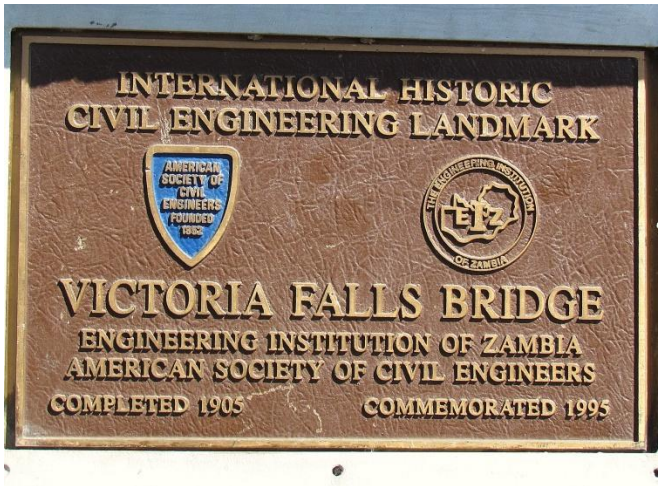

WELCOME TO
LODGE
Chalets B&B
Camping
German & Intern. Cuisine
Booking for all Activities
Specials for Overlanders
NO CREDIT CARDS!
Trabant


VICTORIA FALLS
WORLD HERITAGE SITE
ENTRY FEES
Zambian Residents
Adults : K7000
Children : K3500
Non Residents
Adults : USD20.00
Children : USD10.00
Children below 5 yrs
FREE
PARKING: FOREIGN US$5 RES. K5000 TOUR OPER. US$5 PER VEHICLE PER DAY








INTERNATIONAL HISTORIC
CIVIL ENGINEERING LANDMARK
AMERICAN SOCIETY OF CIVIL ENGINEERS FOUNDED 1852
THE ENGINEERING INSTITUTION OF ZAMBIA
VICTORIA FALLS BRIDGE
ENGINEERING INSTITUTION OF ZAMBIA
AMERICAN SOCIETY OF CIVIL ENGINEERS
COMPLETED 1905
COMMEMORATED 1995










Rotel Tours
























Hotel Tours











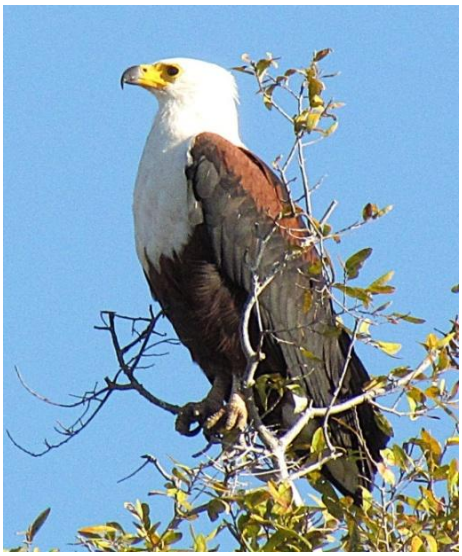




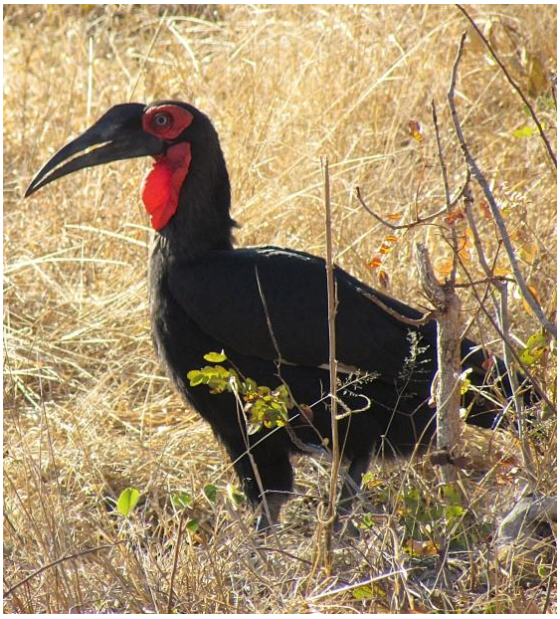




















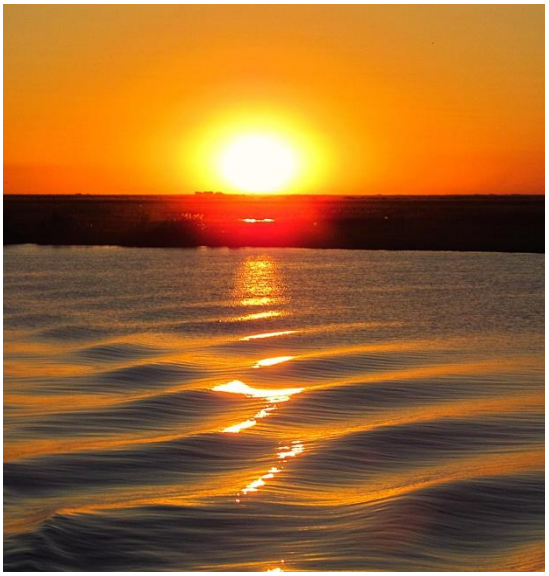




I‘m young. I keep running



a large lizard hunting for crocodile eggs





Okavango Delta:
Overnight in the jungle









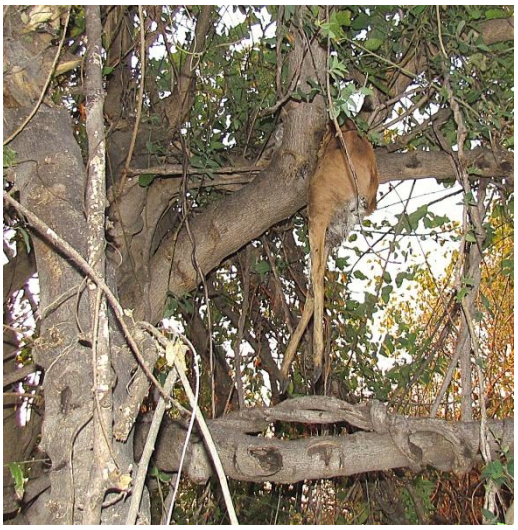


Snake: Meeting during the boat trip













Overnight in tents in the bush, together with the wild animals



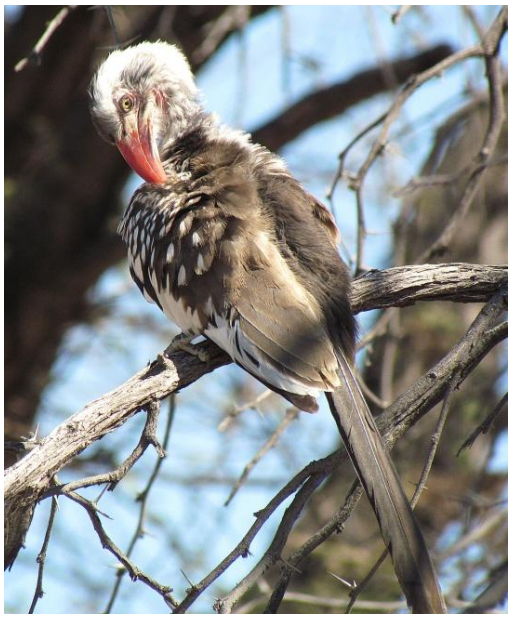






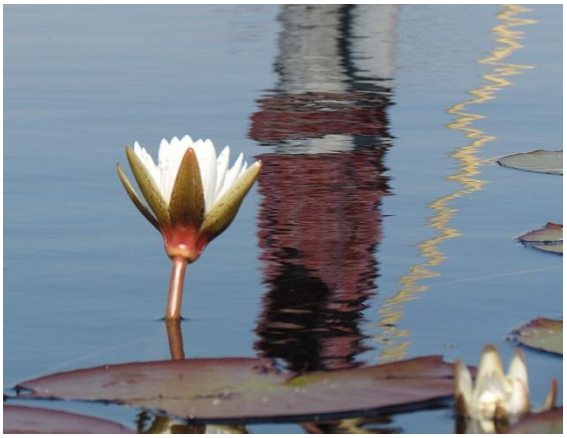


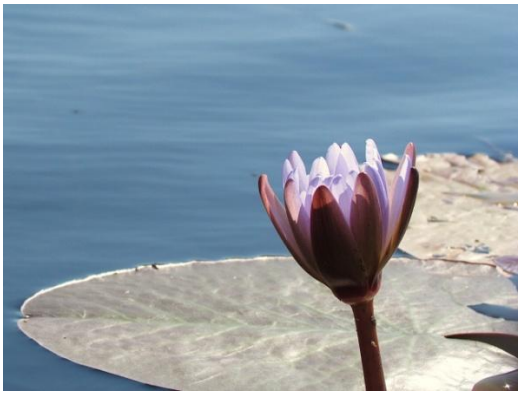


















Flight over the Okavango Delta







the rotation is like in the northern hemisphere, random process















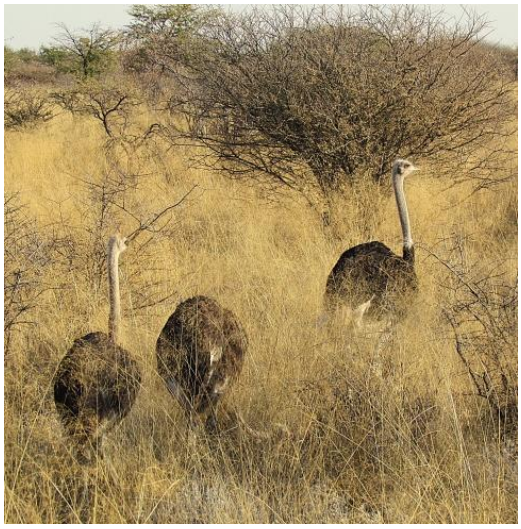






It’s sometimes cool in Africa













Stop for the old boys





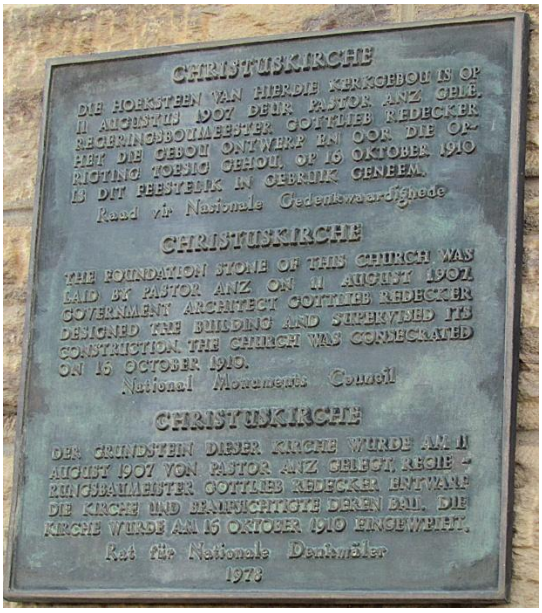




I guess “This doesn’t taste so good”.
However, a Windhoek Wirtshaus is not so far!






CHRISTUSKIRCHE
DIE HOEKSTEEN VAN HIERDIE KERKGEBOU IS OP
11 AUGUSTUS 1907 DEUR PASTOR ANZ GELÊ.
REGERINGSBOUMEESTER GOTTLIEB REDECKER
HET DIE GEBOU ONTWERP EN OOR DIE OP-
RIGTING TOESIG GEHOU. OP 16 OKTOBER 1910
IS DIT FEESTELIK IN GEBRUIK GENEEM.
Raad vir Nasionale Gedenkwaardighede
CHRISTUSKIRCHE
THE FOUNDATION STONE OF THIS CHURCH WAS
LAID BY PASTOR ANZ ON 11 AUGUST 1907.
GOVERNMENT ARCHITECT GOTTLIEB REDECKER
DESIGNED THE BUILDING AND SUPERVISED ITS
CONSTRUCTION. THE CHURCH WAS CONSECRATED
ON 16 OCTOBER 1910.
National Monuments Council
CHRISTUSKIRCHE
DER GRUNDSTEIN DIESER KIRCHE WURDE AM 11
AUGUST 1907 VON PASTOR ANZ GELEGT. REGIE-
RUNGSBAUMEISTER GOTTLIEB REDECKER ENTWARF
DIE KIRCHE UND BEAUFSICHTIGTE DEREN BAU. DIE
KIRCHE WURDE AM 16 OKTOBER 1910 EINGEWEIHT.
Rat für Nationale Denkmäler
1978


Windhoek
Gobabis
Reiterdenkmal
Alte Feste
Parliament Building

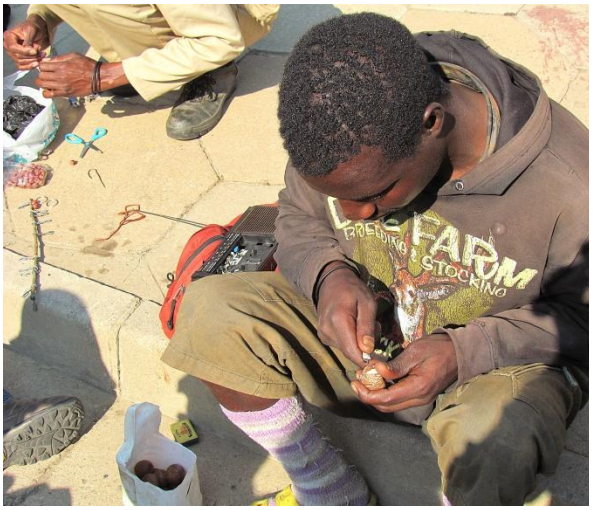

OSTDEUTSCHE
PROVINZEN
UNVERGESSEN




WINDHOEK STATION
1652 m ABOVE SEA LEVEL
DESERT EXPRESS
STARLINE PASSENGERS
AND
OTHER TRAINS



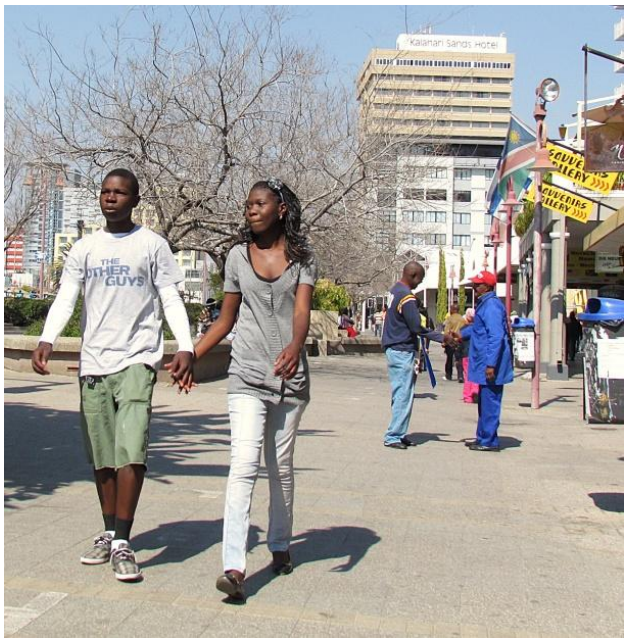




The SAME: 1986, 2011, 2019









emancipation



Good- bye Meal



I enjoyed this long Rotel-trekking tour

3 Venezuela

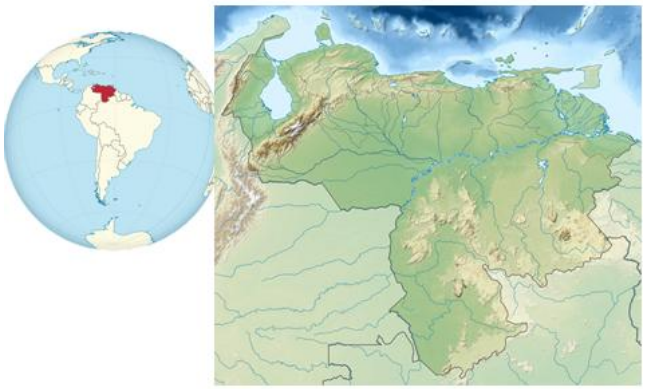


República Bolivariana de Venezuela
Bolivarische Republik Venezuela
(Teil von ehemals Groß-Bolivien)



Amtssprache: Spanisch, Indigenasprachen
Hauptstadt: Caracas
Staatsoberhaupt: N. Maduro nach Chavez
Religion: Römisch-katholisch
Fläche: 916000km² (3 x Bundesrepublik)
Einwohner: bald 30 Millionen , ca. 55% < 20 Jahre
Bevölkerungsdichte: 30 Einwohner /km²

Reise: Take-Off, Febr./März 2013









Eddi, Marian



Sugar cane farm




















EL MAESTRO ESTA AQUI Y TE LLAMA


ARTESANI






TAXI
BEETHOVEN
TLF: 2448647
2440859









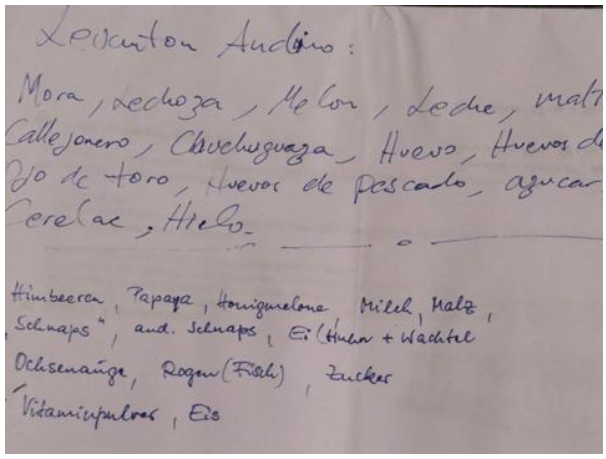








mixing



a special drink for the 'strong' Venezuelan man. Recipe above.



the ingredients



Oh my God





Ralf & Marian fit for the mountains



Hikimg high in the clouds







A random encounter twice:
→ Then she became swarm of the group



Austrian team repairing the lift (5000 m!)








EL VALLE
SAN JAVIER
LA CULATA
MUCUCHIES
APARTADEROS
PICO EL AGUILA


CONVERSE







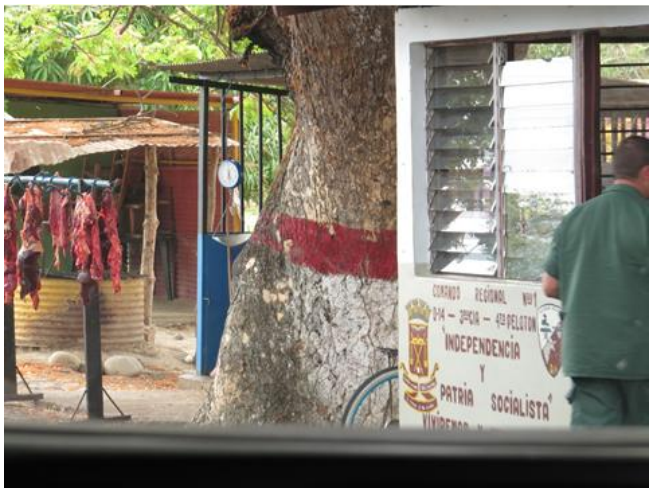









Los Candidatos de Chávez
¡Vamos con todo!
ADAN CHÁVEZ
GOBERNADOR
PSUV
ANÍBAL CHÁVEZ
ALCALDE


INDEPENDENCIA
Y
PATRIA SOCIALISTA







Piranha mouth



capybara





Large iguanas

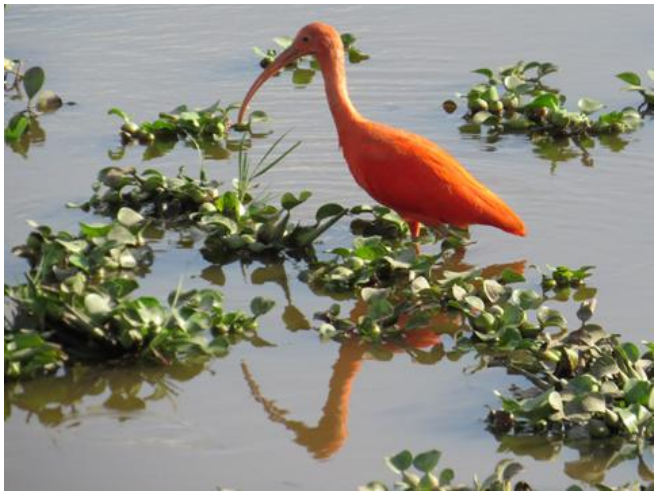


termites go in 'tunnels' to the termite hive above











Good food??










Erdeule:
kleinste Eule




Marabu















Don't run me over













Eddi & me
annoying the crocodile mother Maria:



She was faster than we thought, but stopped according to the sign “No trespassing” *(thought for human beings).* Good for my friend Eddi, who fell in front of her snout !!!



Searching

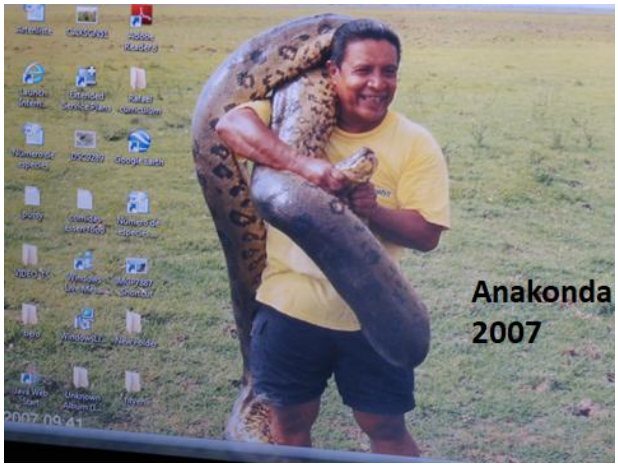




My anaconda emptied itself, so I was able to enjoy the back part of the boat alone on the return trip



Young crocodile: The right grip is very important.



Our guide


Food for many weeks

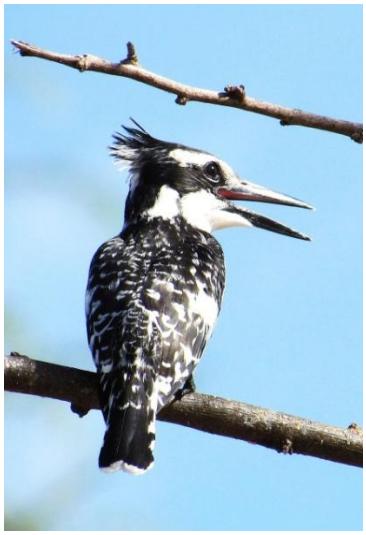




mantis


Proud birds: tall and small







Laughing??







Hey, fans



iguanas on the treetops!!







At this time, Chavez was probably no longer alive



An excellent special coffee drink



Check points

























Crossing the Orinoco to Colombia for a good meal with special meats



Cheap gas for Columbians



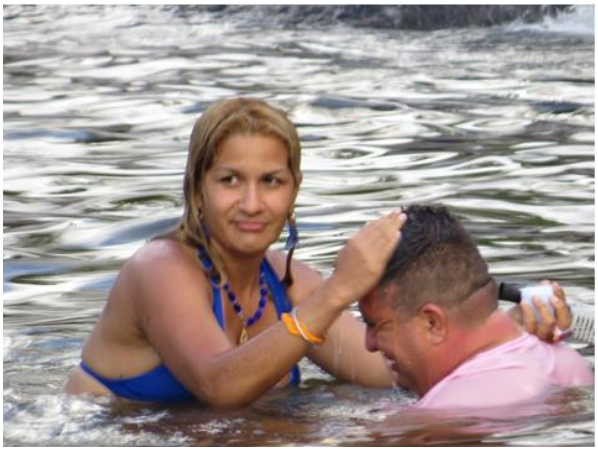


Rock painting





Water sliding in the forest



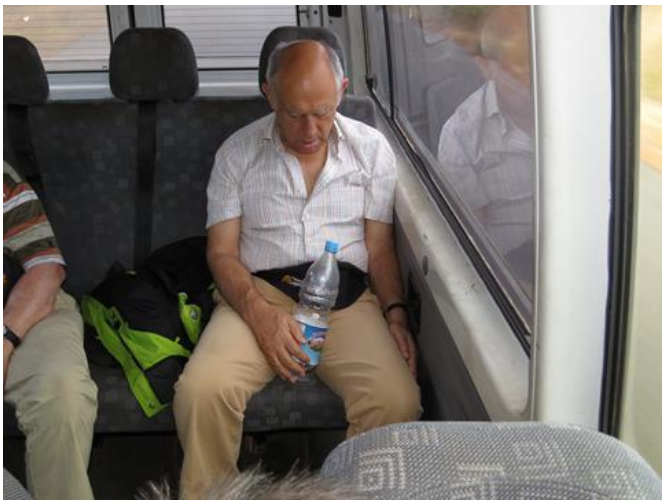
No comment





a frog as an exterminator





Marian is completely exhausted













Alligator jumping for a good meal














BIENVENIDOS
A
LA PONCHA














mata
tapa
tela
patito
moto
totuma
Esa mata
Papá toma tilo
Mamá toma té,
tapa la sopa,
usa su tela de seda,
mima a su pato.
Papá pide sopa,
la toma,
usa su moto.
Identifiquemos y describamos






















MORAL Y LUCES SON
NUESTRAS PRIMERAS NECESIDADES
BOLIVAR




CASIO







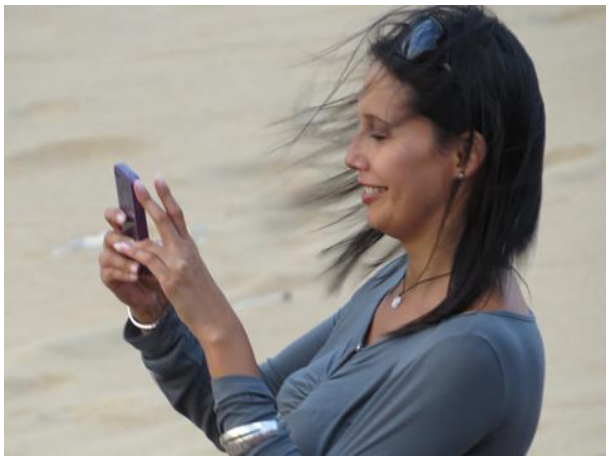















Canaima und
Tafelberge







A beautiful view from the hotel





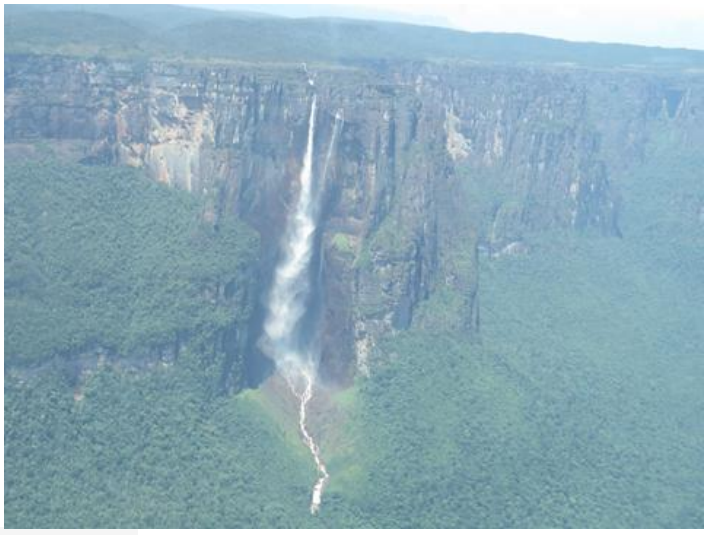












the water falls from a height of 1300 m down 800 m


















BIENVENIDOS
ESCUELA BASICA NACIONAL CANAIMA
PRE - ESCOLAR GRAN SABANA























high in the Mango tree




Papaya
















Zurück nach
Ciudad Bolivar




messi
10


DENNYS












CIUDAD GUAYANA 65 km
UPATA 125 km



















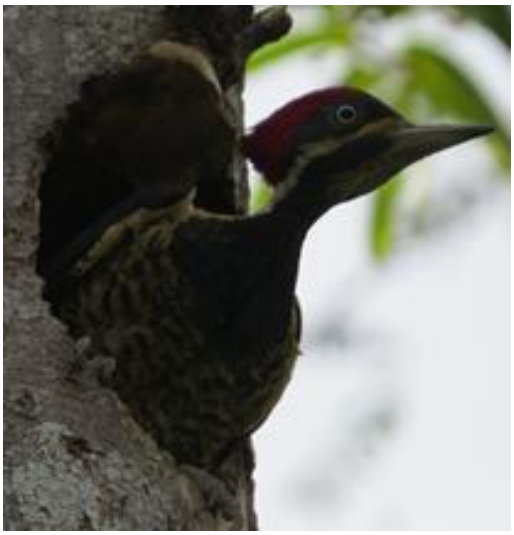




Food in the jungle













hyacinth
















Wasserkakao-
Blüte



















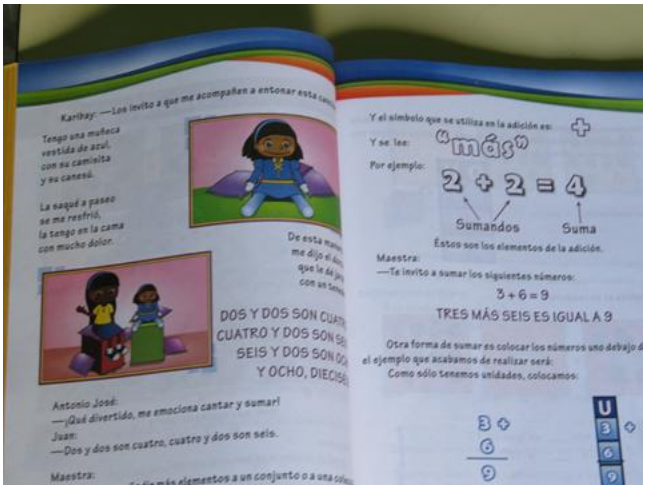
Living in the Orinoco delta jungle










Y el símbolo que se utiliza en la adición es:
Y se lee:
"más"
Por ejemplo:
2 + 2 = 4
Sumandos
Suma
Éstos son los elementos de la adición.
Maestra:
—Te invito a sumar los siguientes números:
3 + 6 = 9
TRES MÁS SEIS ES IGUAL A 9
Otra forma de sumar es colocar los números uno debajo
el ejemplo que acabamos de realizar será:
Como sólo tenemos unidades, colocamos:
U


LOS DERECHOS DEL NIÑO
¿QUÉ SON LOS DERECHOS DEL NIÑO?
¿CUÁL FUE SU ORIGEN?

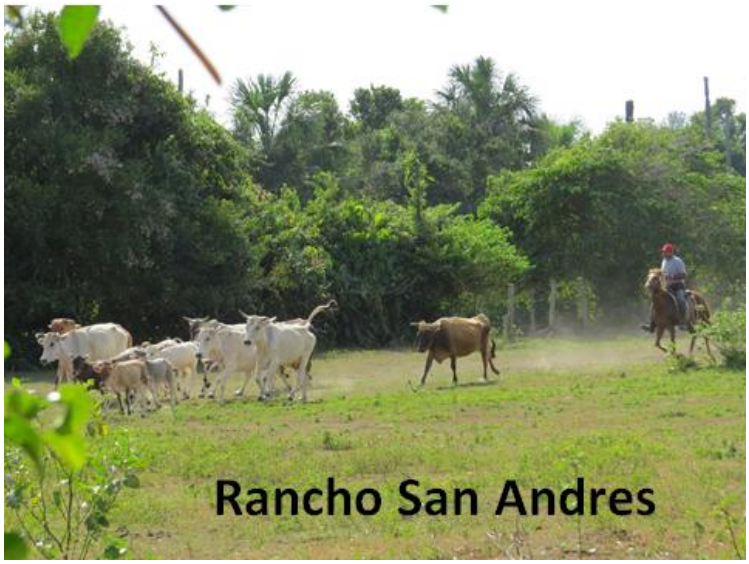

Los números
1- Uno - isaka
2. Dos - manamo
3. Tres - dijanamo
4. Cuatro_mananamuese
5. Cinco - mojabasi
6- Seis - Kuare isaka
7- Siete - Kuare manano
8- Ocho - Kuare dijanamo
9- Nueve - Kuare
mananamuese













Viewing my first anaconda














Kokosflocken
in allen Farben


1 € = 200 l Diesel
Venta BS
3.00
Litros
30.91
Precio Por Litro
Super
91
0.097
Sin Plomo

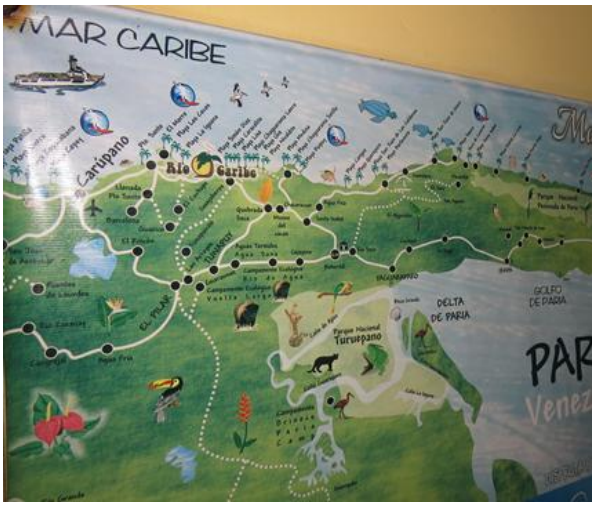









Rio Caribe
Caripito
Maturin


MAR CARIBE
Caripano
Rio Caribe
DELTA DE PARIA
GOLFO DE PARIA




MIS VALLITA












TAPOU









Cacao requires shadow. (right) flower









The desired seeds





And finally the product chocolate.
The same price as with us = expensive
























Seewolf
Muräne






Fregattvogel








Fahrt nach Canaima


104.7FM
Musora
Feliz
www.emisorafeliz.com













It is official: Chavez passed away !!!





'Girls of Chavez party'

The political system has been characterized by authoritarianism since the reign of Hugo Chávez, and his successor, Nicolas Maduro, has been in power since 2013. Declining oil revenues, mismanagement, and the global economic crisis led to a deep economic and nationwide humanitarian crisis. Between 2014 and 2020, the country lost around 80 percent of its gross domestic product. Over 80 percent of the population is considered poor, despite the slight economic recovery since 2021. Seven million Venezuelans, a quarter of the population, have left the country in the last eleven years.
All of this was already feared in 2013 and has unfortunately come to pass.







Hasta
la vista
'Venezuela',
pero es
pericolo !



Die 2 aufregendsten Dinge in Venezuela



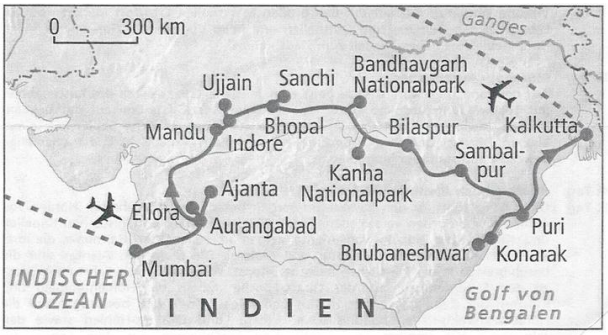




At the domestic airport, the tour guide "dumped" us. We had to wheel our suitcases to the international airport, where we had to wait for five hours, but there were practically too few seats.

4 India across, Mumbai-Calcutta





- Finanz- und Filmmetropole Mumbai
- Mittelalterliche Ruinenstadt Mandu
- Stupa von Sanchi
- Heilige Stadt Ujjain
- Sonnentempel von Konarak
- Bandhavgarh und Kanha Nationalpark
- Bhubaneshwar und Pilgerort Puri
- Baden am Golf von Bengalen
- 8 Hotelübernachtungen: in Mumbai, Sanchi, Bilaspur, Sambalpur und in Kalkutta

83a
Rotel
2012









































Place of work and overnight

















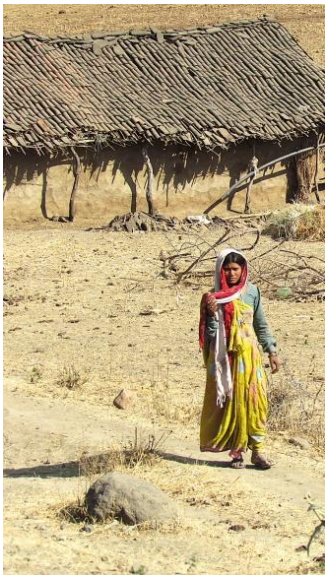


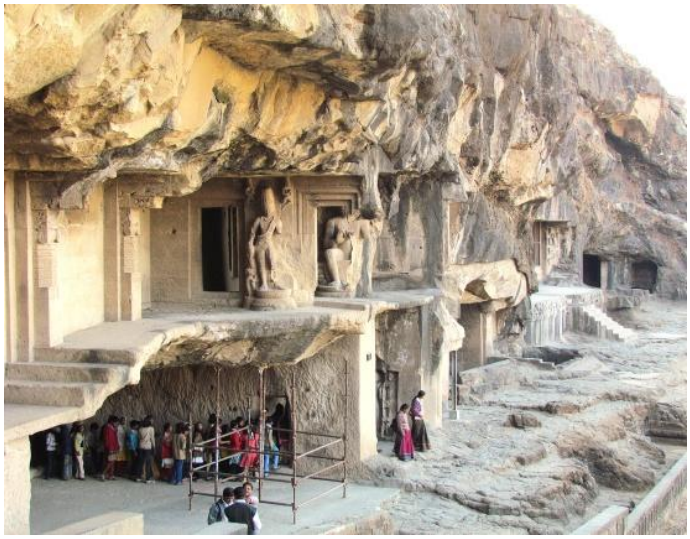




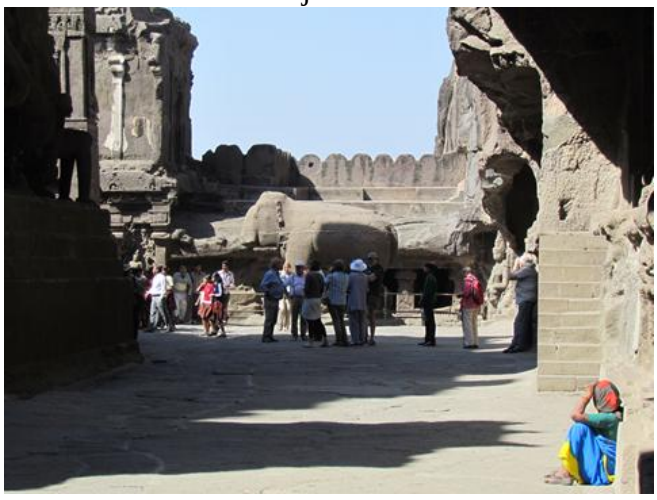








Ajanta



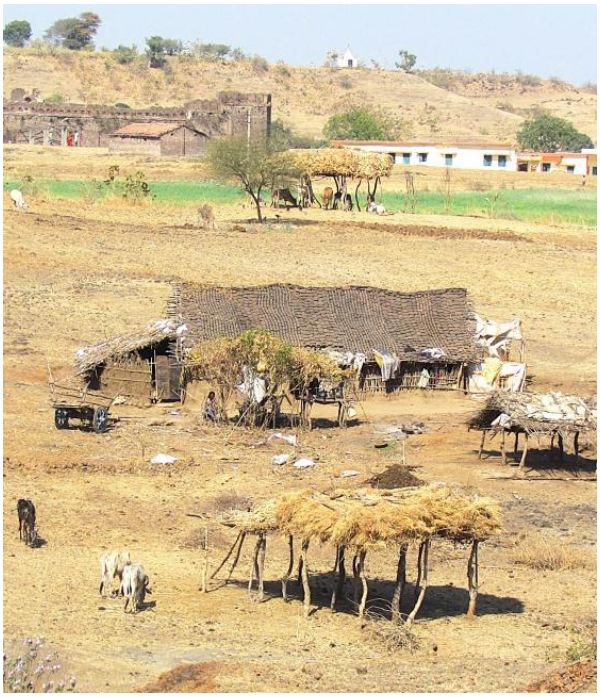






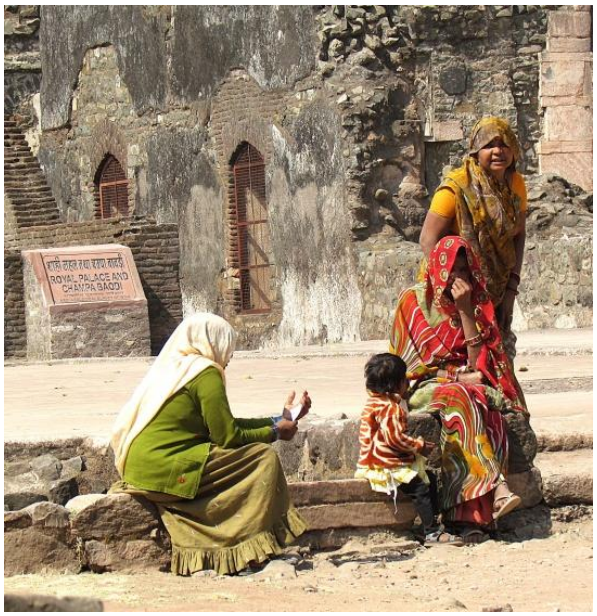




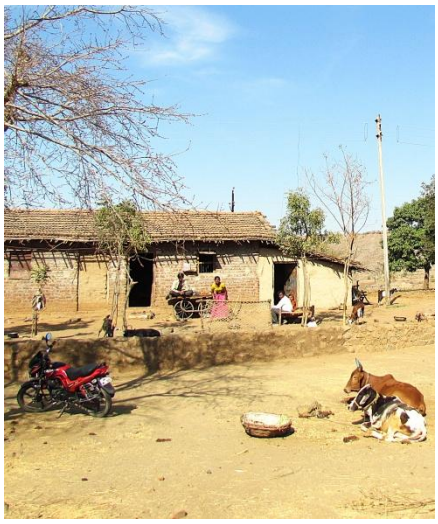







ROYAL PALACE AND
CHAMPA BAOLI









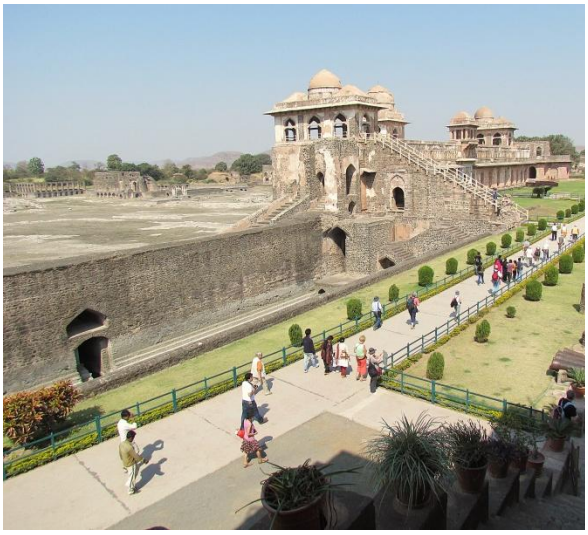
































































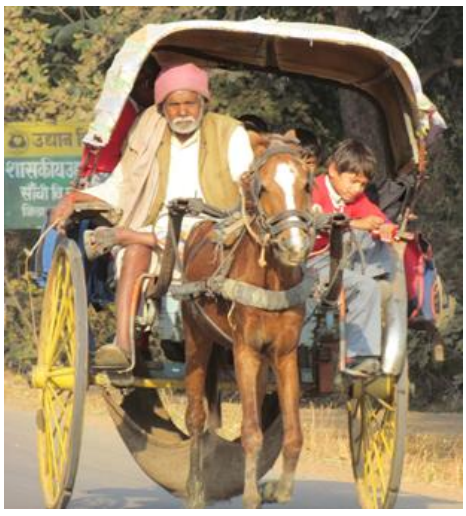



SECOND CLASS
















DGFC
DGFC
TATA













Last food ??













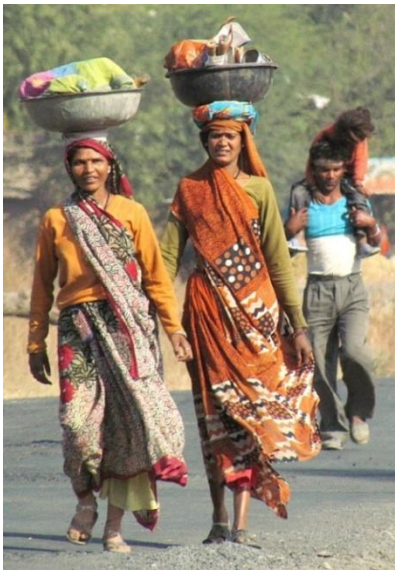
















Lal Bagh





Tomb of Hoshang Shah









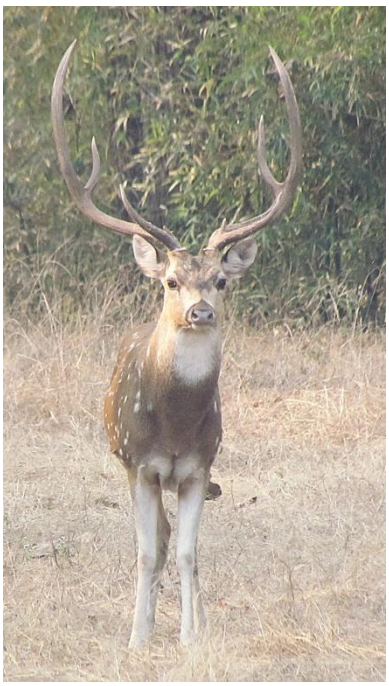






































Who will win?



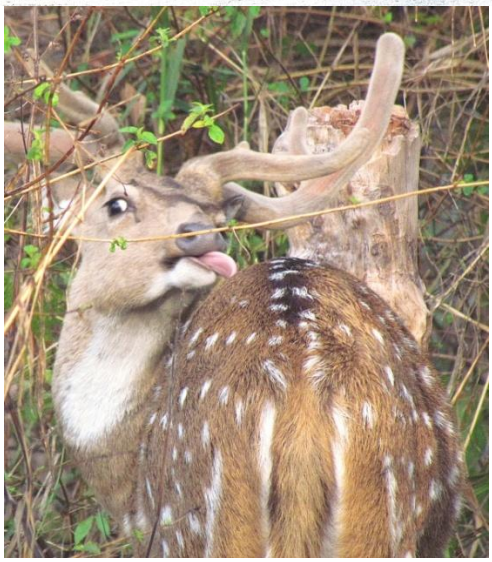


































Leopard, also in India



tiger scratching post



The jeep with our reverend met a tiger three times, we others had no luck
























स्व.श्री स्वामीदीन काशी प्रसाद जायसवाल की स्मृति में 2004






होटल नटराज









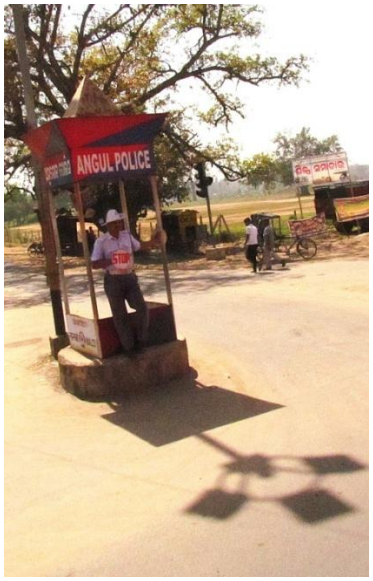











ANGUL POLICE





































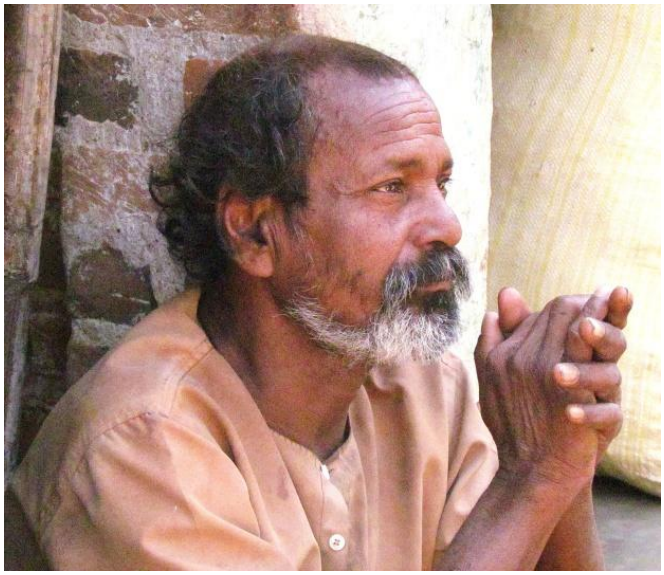


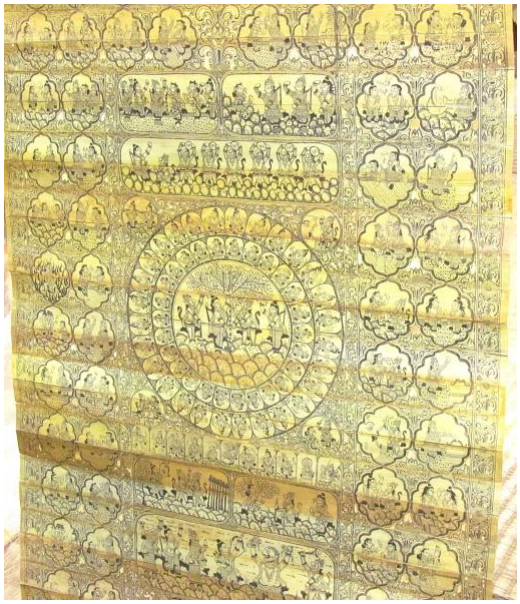

NILU
weds
RANI















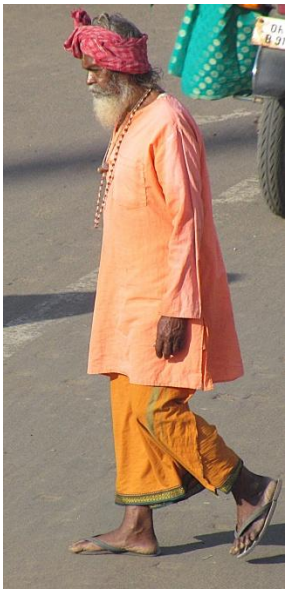




















Young boy’s dancing group








vodafone
POLICE




EARL



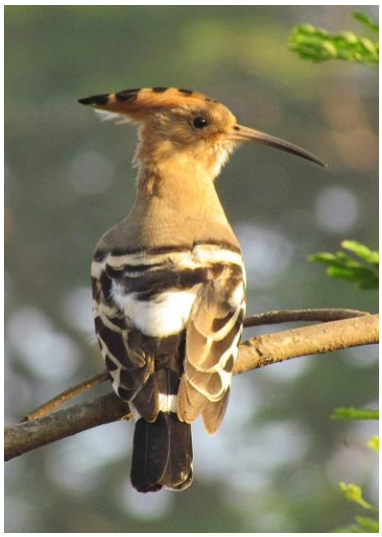









"NEVER USE MOBILE PHONE
WHILE DRIVING."





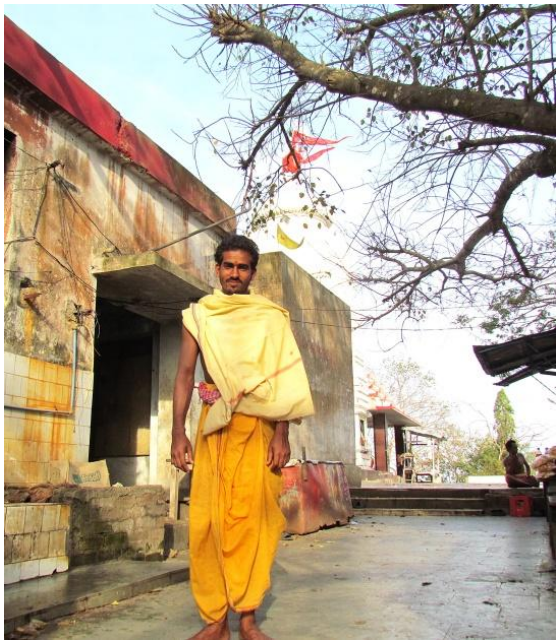




Shanti Stupa



Blessed by a Hindhu priest

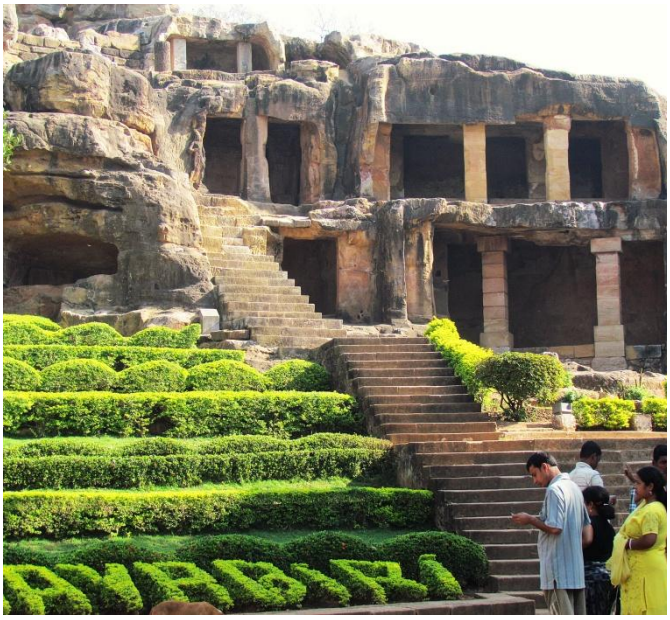




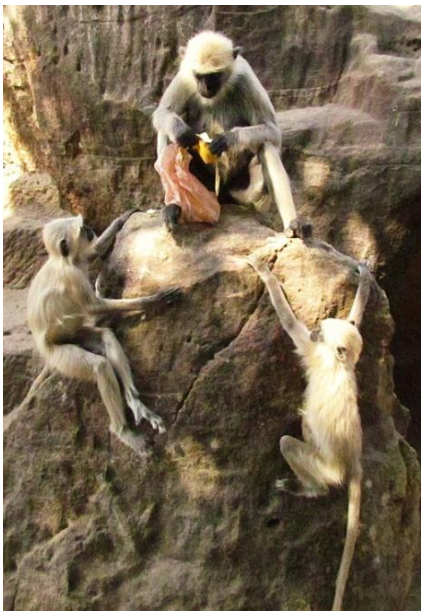


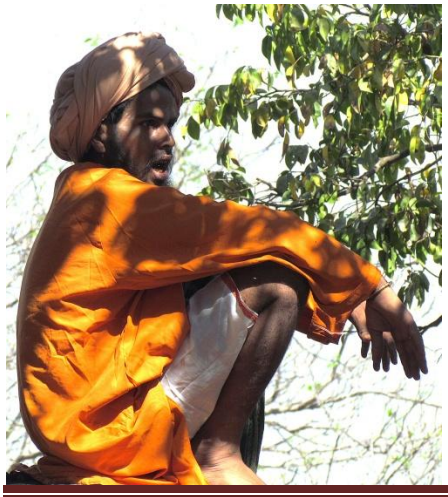


special crescent moon with full edge
(right) Gumpha







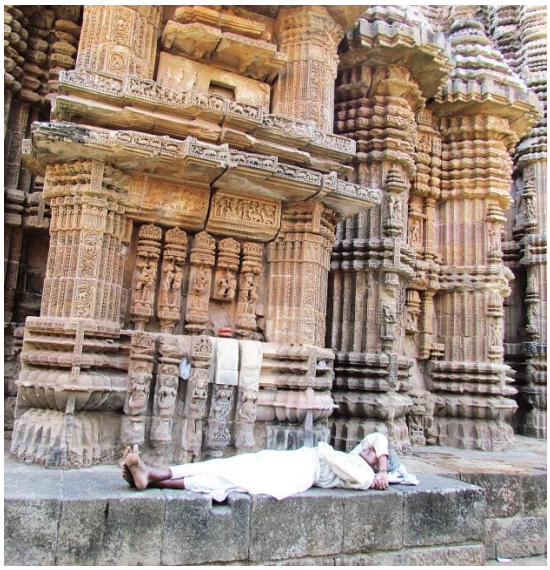








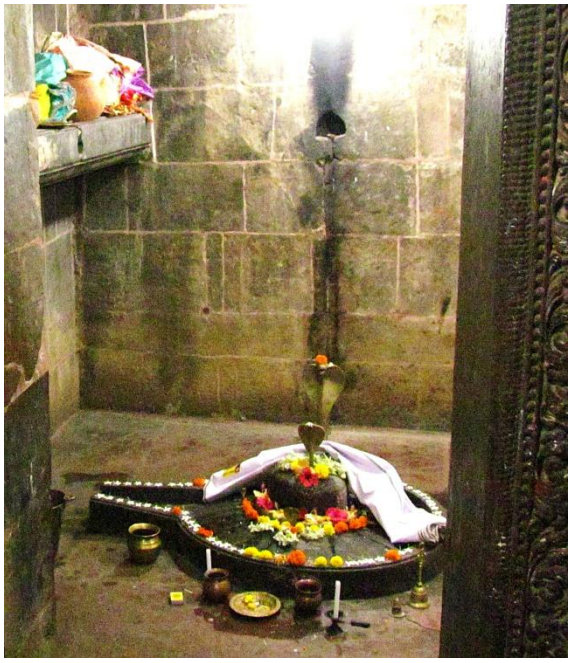
















Stone joints !!



























Essentia for cooking










Das Rollende Hotel
Rotel Tours
Rotel
2648


2648



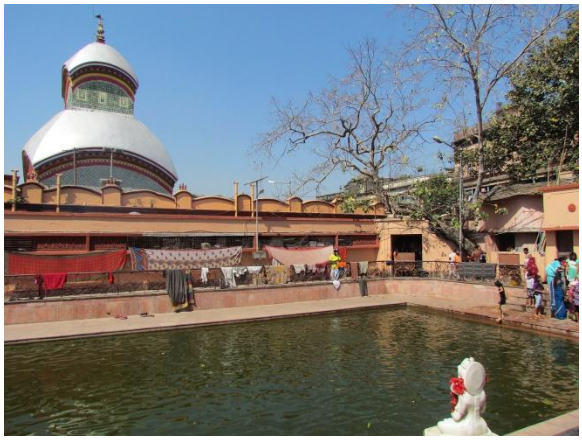

also the other direction is possible

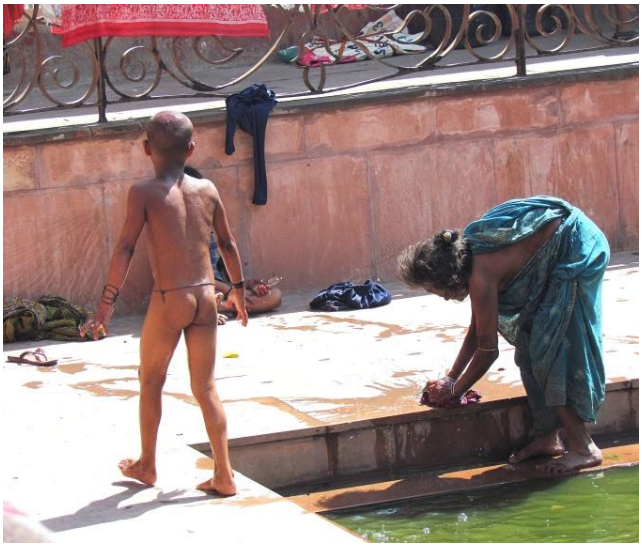






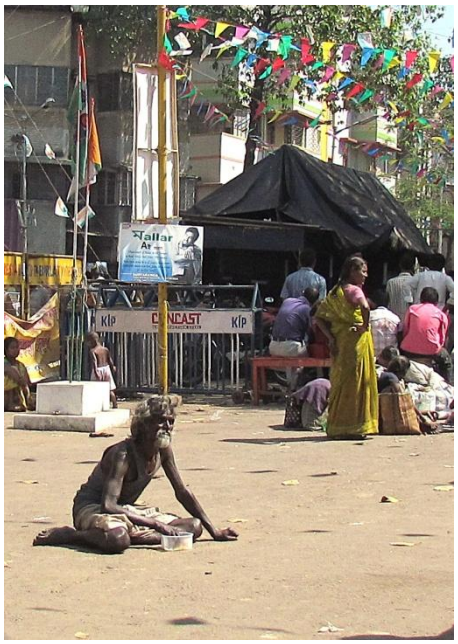







DOMINO'S
TRAFFIC VOLUNTEER
KOLKATA
POLICE


WEDDING
EVENT
FURNITURE &
February









Mother Theresa, Calcutta

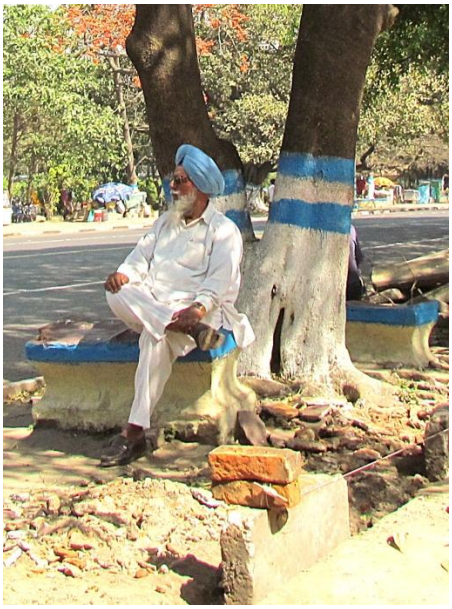




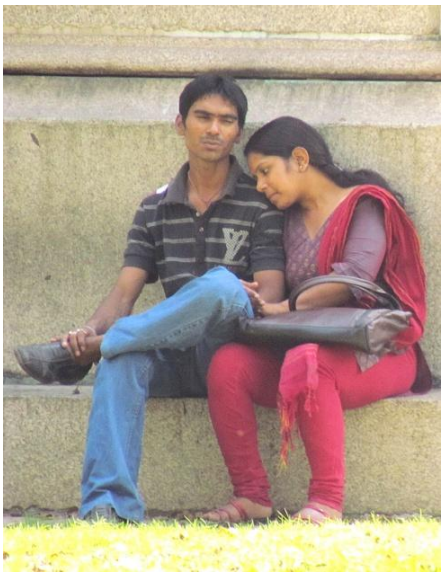





















VAJRA
RIOT CONTROL VEHICLE
KOLKATA POLICE
KOLKATA POLICE
RAPID ACTION FORCE

5 A selection of photos from a long Rotel journey, from Panama to Mexico (mixed)

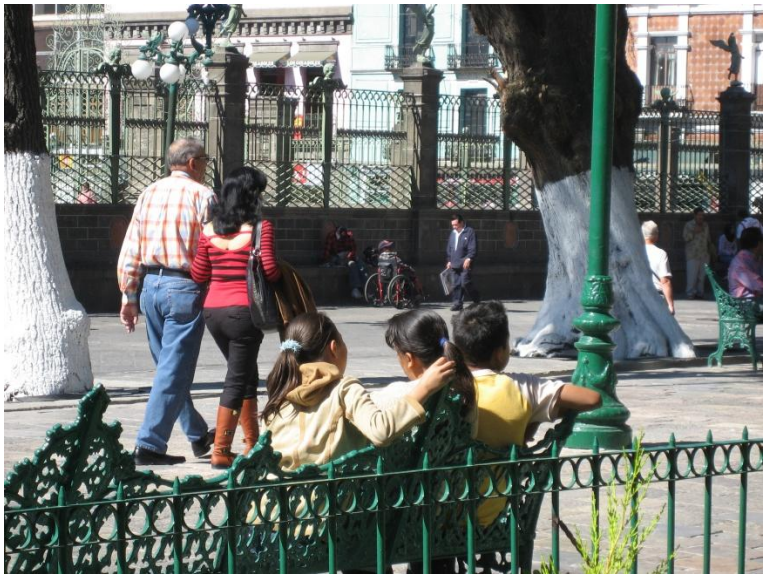




bus kitchen





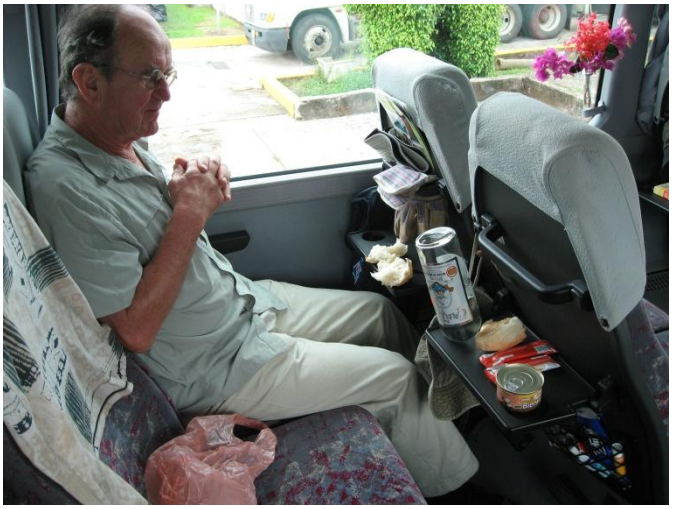






Sending mails in Latin America





All necessary goods are accurately located



Wristwatch with a Giant Grasshopper

















Wedding Dance of an Orange Iguana before His Beloved



Arenal Costarica



Atigua Guatemal



San Pedro volcano,
behind the famous Atitlan lake, Guatemala

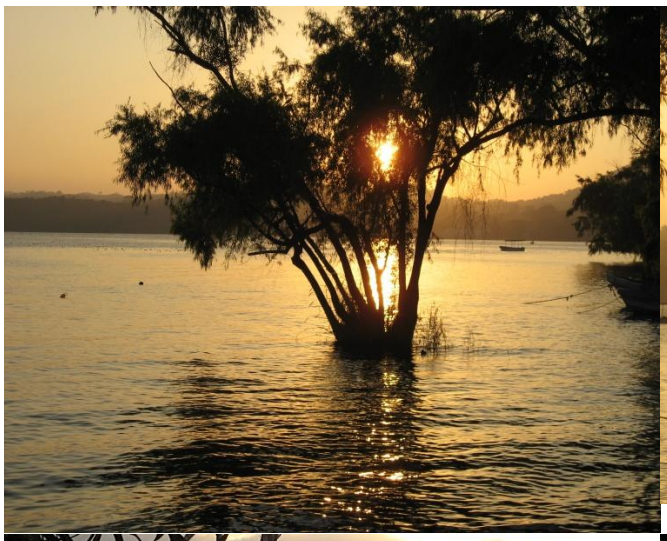


Popocatepetl, 5400 m, Mexico





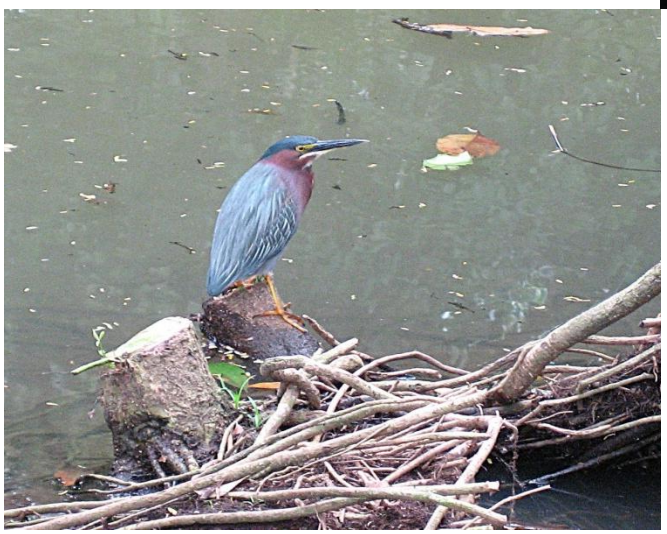
Pico de Orizaba 5636m

















Shaving Brush Tree





Coral tree





Cathedral at Campeche



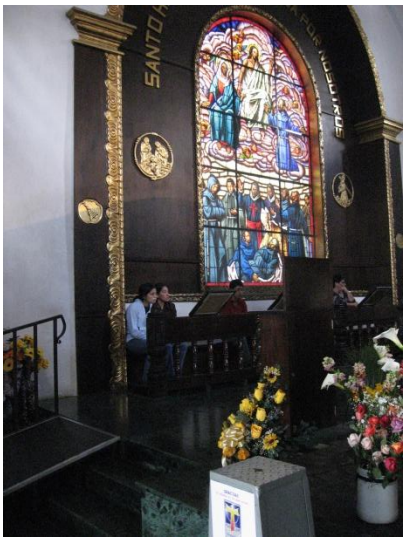
Monarch on the way back to Canada



Emperor moth



How it looks within a Hyper Caravan



Church San Francisco, Antigua



historic Palacio Municipal de Mérida am Plaza Grande in Mérida, Mexiko





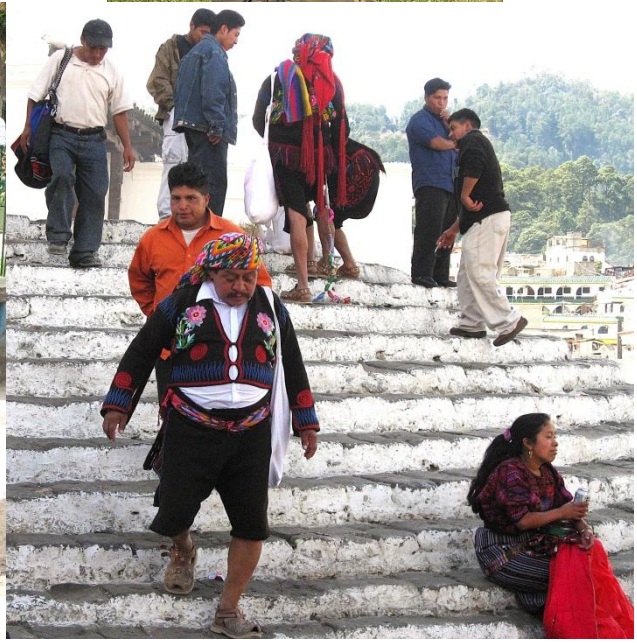





















TODO
NATURAL



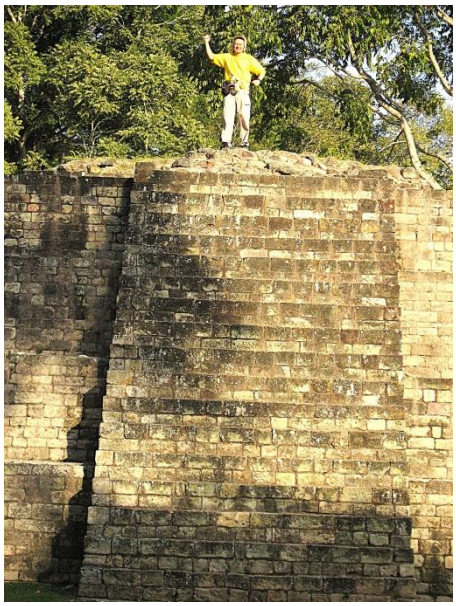












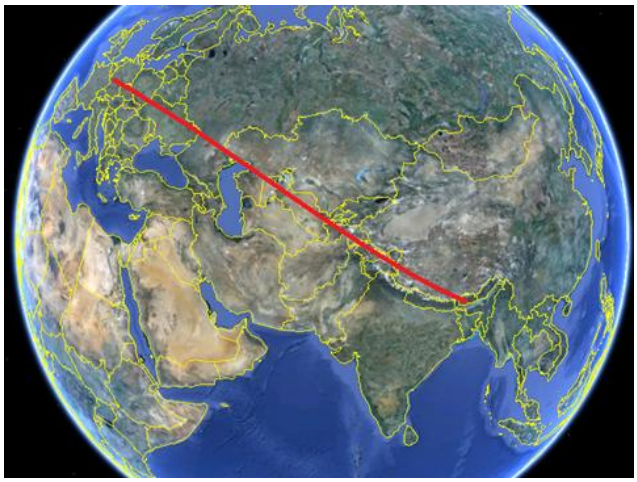
...illegally

— up on top of the pyramid after all.

Table of contents of part D

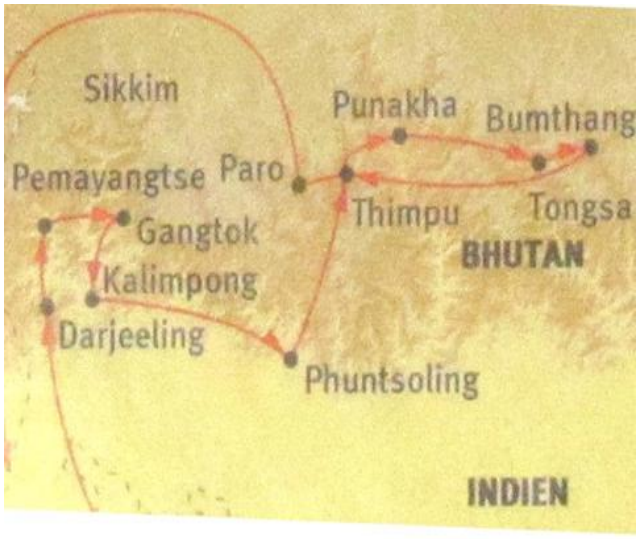
1 Darjeeling-Sikkim-Bhutan 941
2 Yemen 1034
3 North-Korea 1057
4 Selected photos from Indonesia 1119

1 Darjeeling-Sikkim-Bhutan









Dzongs, gorges and temple festivals





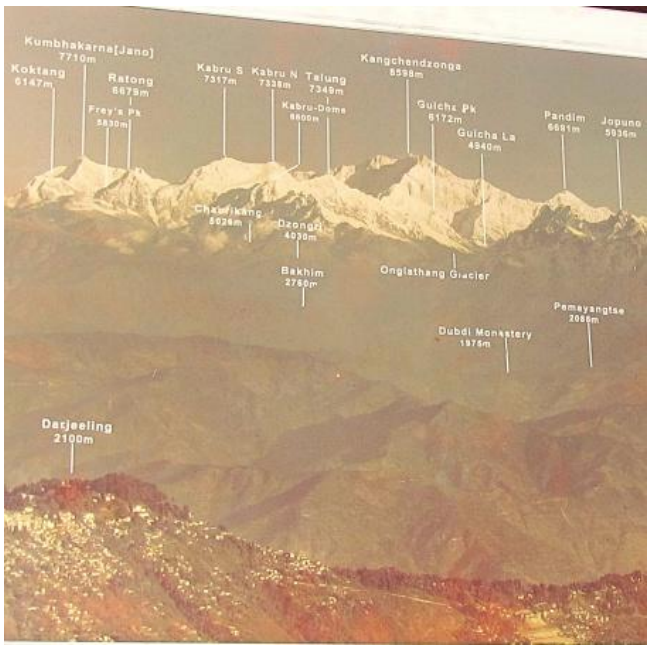




A beautiful market at Darjeeling







View from Darjeeling if the weather works



And where is the third-highest mountain of the world? Kanchenjunga





downtown



No disappointed visitors, coming from the Kanchenjunga outlook, getting up at 4 o'clock









Dalai Lama



picture shows the high-altitude city of pleasant freshness, consisting of steep individual mountains












PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK
& HIMALAYAN MOUNTAINEERING INSTITUTE
ENTRY
EXIT





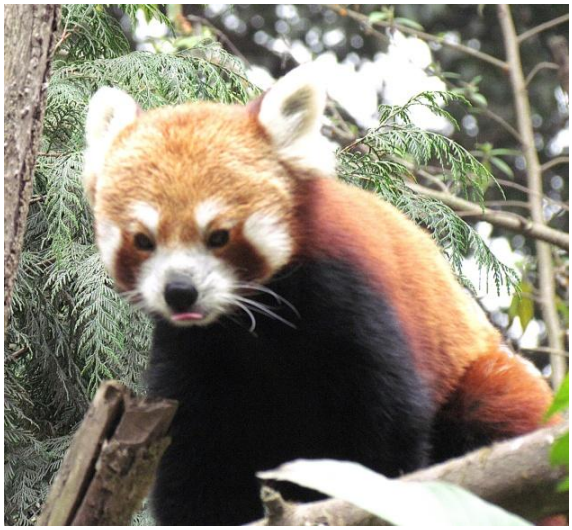

DARJEELING LOCAL DRESS
Done Here

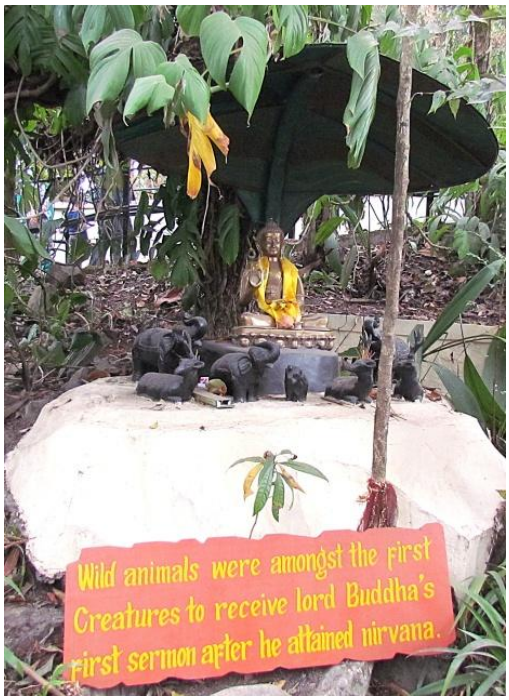


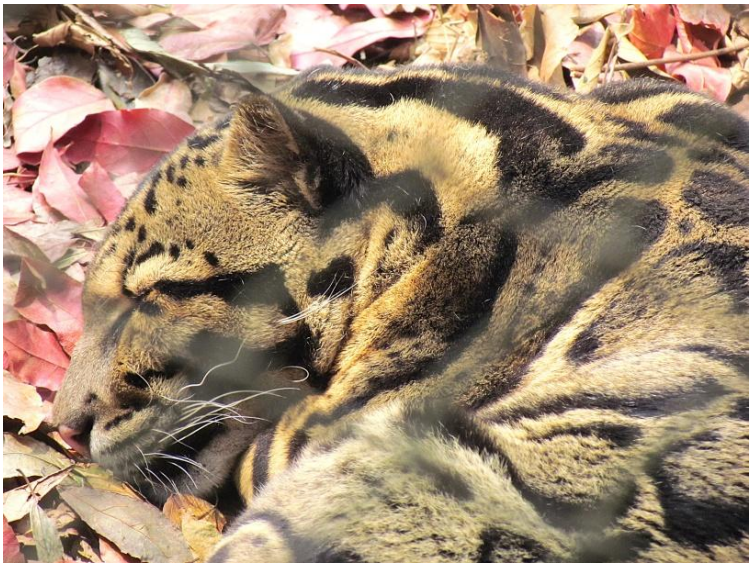
Zoo

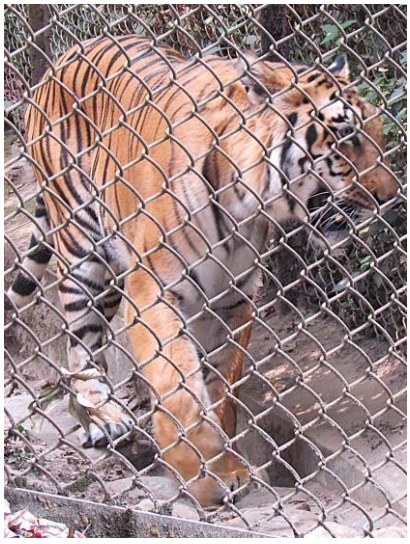







Wild animals were amongst the first
Creatures to receive lord Buddha's
first sermon after he attained nirvana.





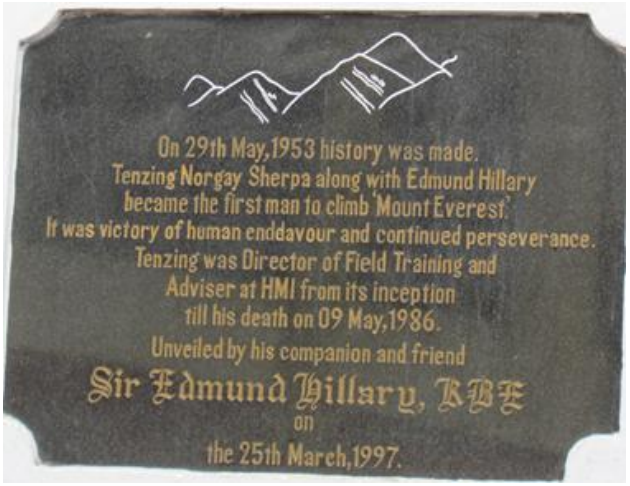






A special goat







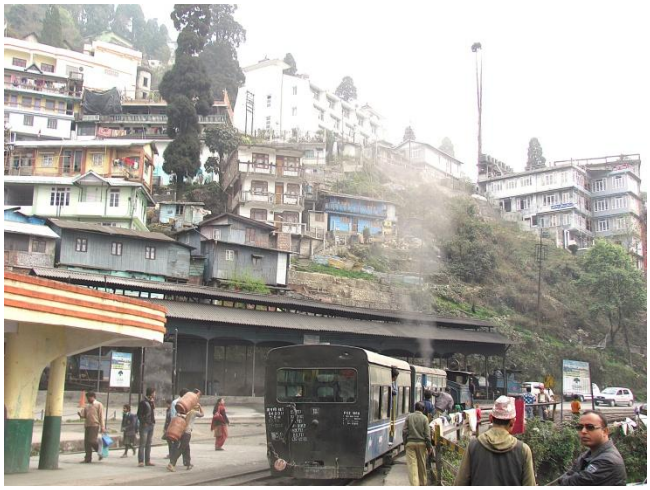


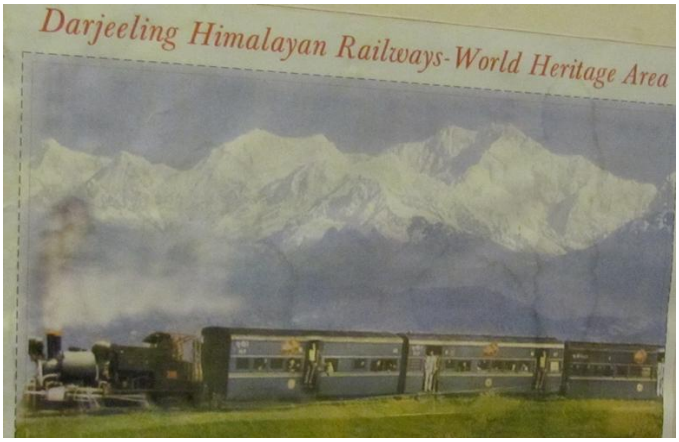





CASHMERE
PASHMINA
SHAWLS
CASHMERE
SHAWLS






Darjeeling Himalayan Railways-World Heritage Area





A general problem before getting the train running

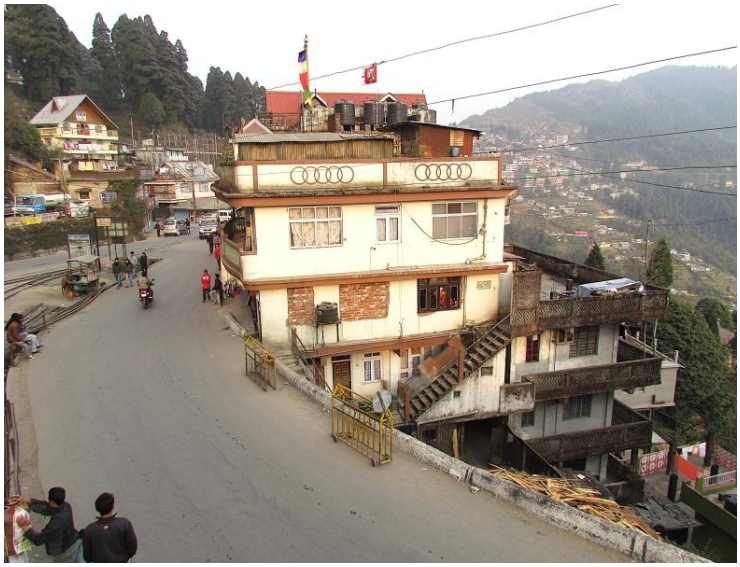


The rails lie on the road, which was no problem for the Darjeeling-loving British over 100 years ago





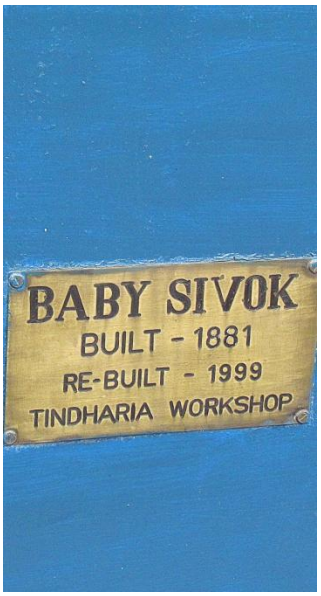




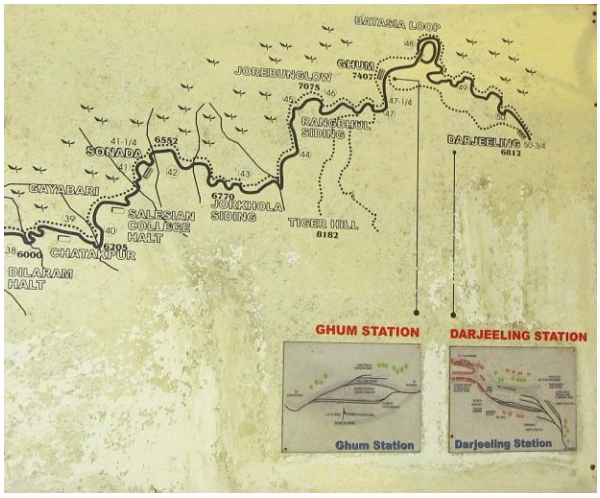


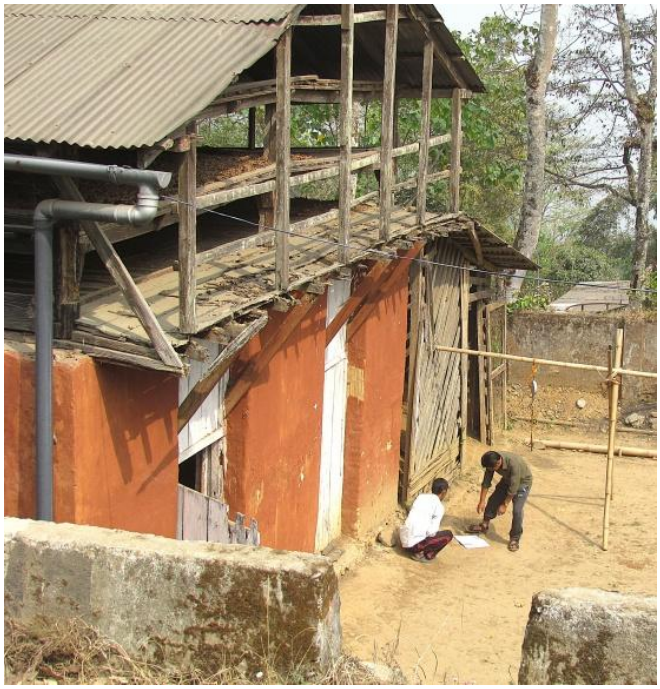





BABY SIVOK
BUILT - 1881
RE-BUILT - 1999
TINDHARIA WORKSHOP


Take a Toy Train ride to the clouds!
An Experience Beyond Journey!
Darjeeling Himalayan Railway
A UNESCO World Heritage Area


BATASIA LOOP
GHUM
JOREBUNGLOW
RANGEBHUL SIDING
DARJEELING
SONADA
GAYABARI
SALESIAN COLLEGE HALT
JORKHOLA SIDING
TIGER HILL
CHATAKPUR
DILARAM HALT
GHUM STATION
DARJEELING STATION
Ghum Station
Darjeeling Station






BORDER ROADS ORGANISATION
NAME OF BRIDGE-RAMBHJHORA
LOAD CLASS - 40R
SPEED LIMIT - 40KMPH











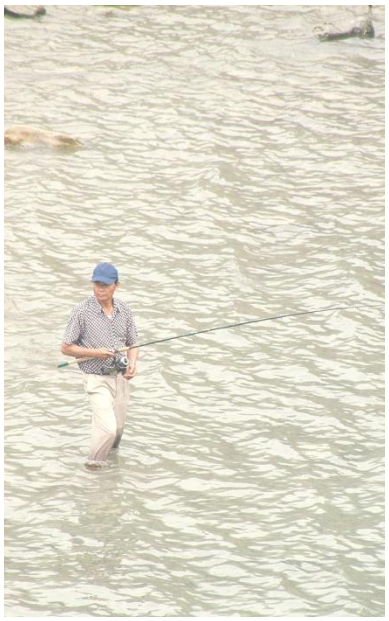
Chinin tree leaves





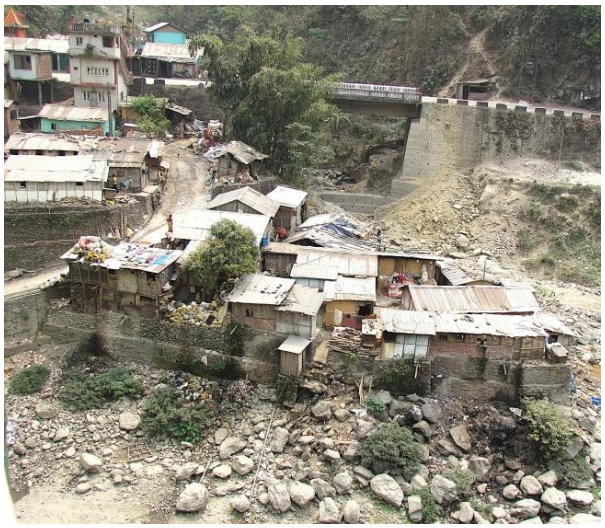








fishing in Sikkim









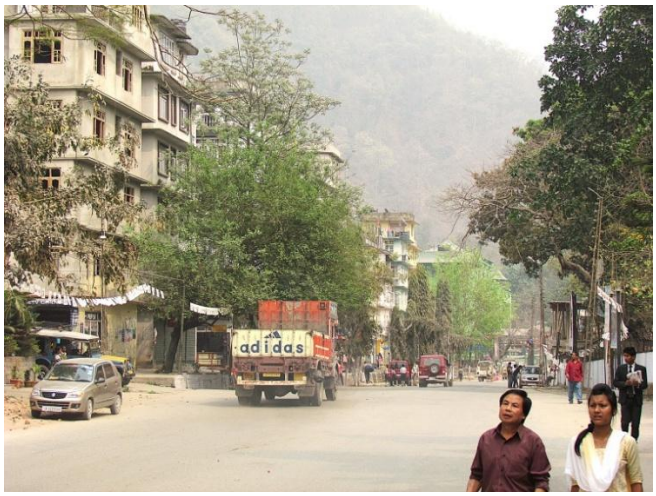






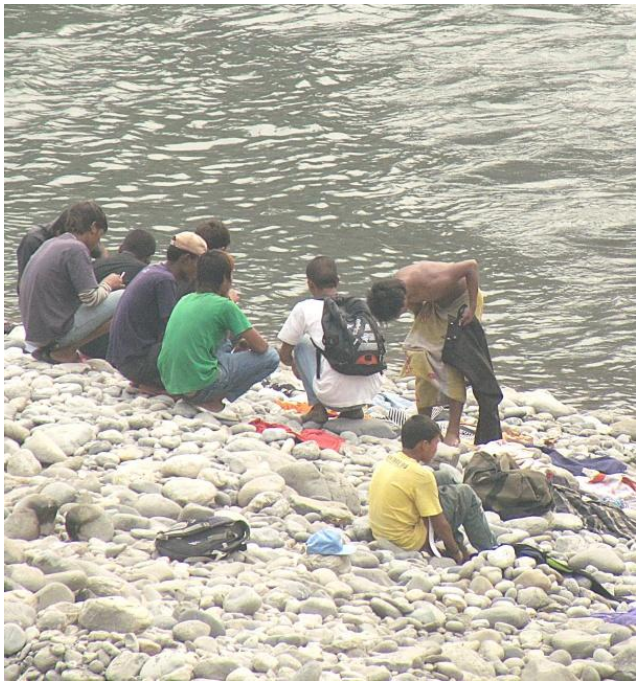


Breaking stones into small pieces. There is no gravel in high mountain areas















Swimming in a warm pool







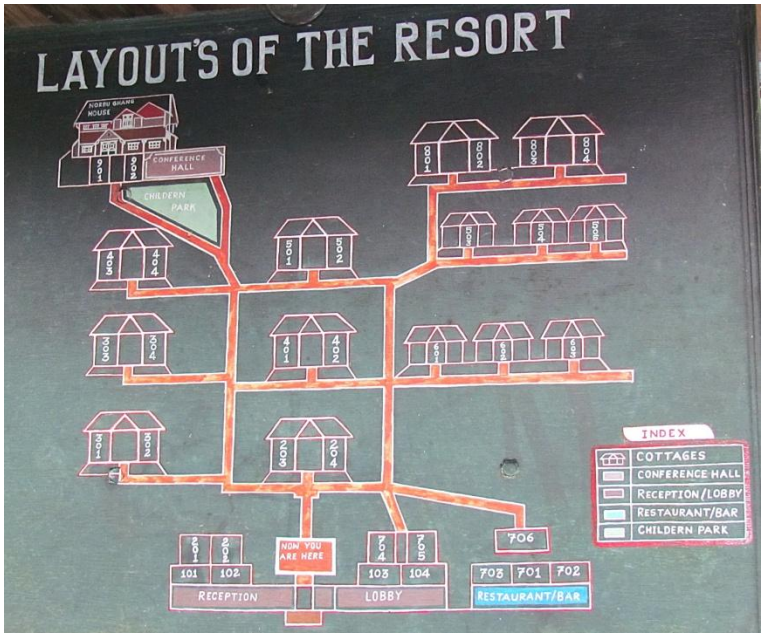












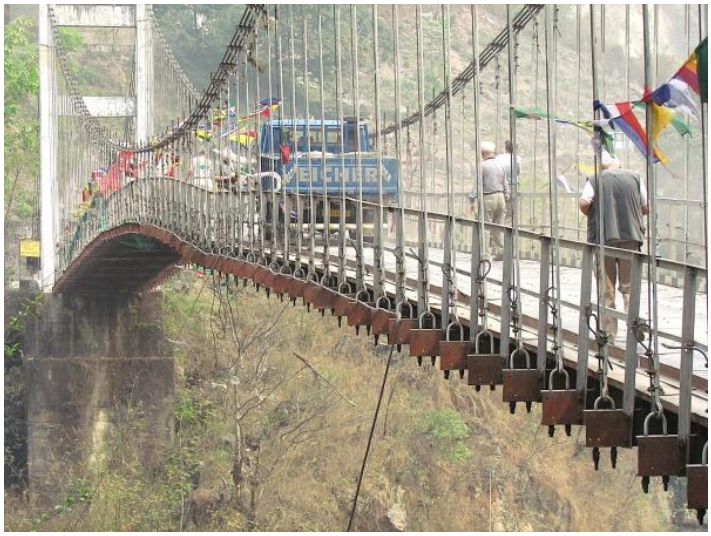






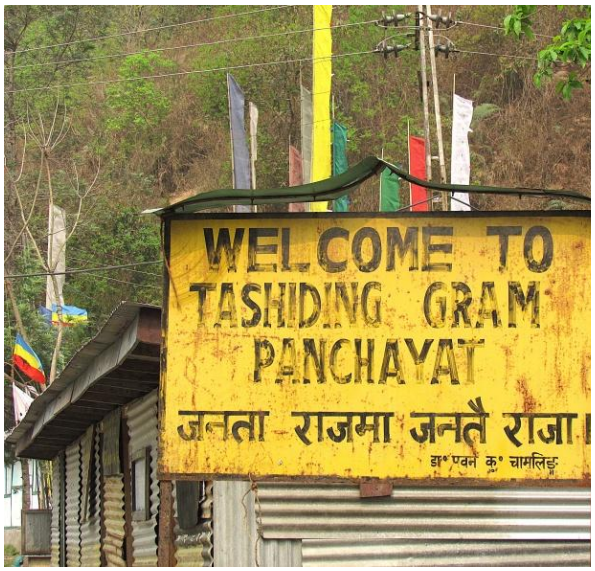




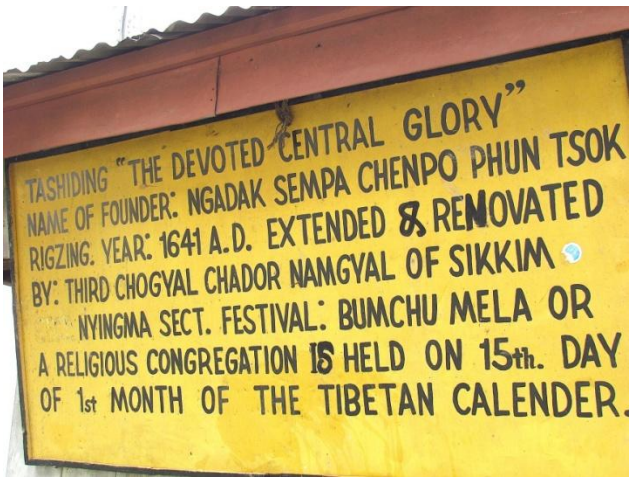


Look at the deforming bridge under loading




WELCOME TO
TASHIDING GRAM
PANCHAYAT
जनता राजमा जनतै राजा।




TASHIDING "THE DEVOTED CENTRAL GLORY"
NAME OF FOUNDER: NGADAK SEMPA CHENPO PHUN TSOK
RIGZING. YEAR: 1641 A.D. EXTENDED & RENOVATED
BY: THIRD CHOGYAL CHADOR NAMGYAL OF SIKKIM
NYINGMA SECT. FESTIVAL: BUMCHU MELA OR
A RELIGIOUS CONGREGATION IS HELD ON 15th. DAY
OF 1st MONTH OF THE TIBETAN CALENDER.
















YUNG DRUNG KUNDRAK LING BON MONASTERY





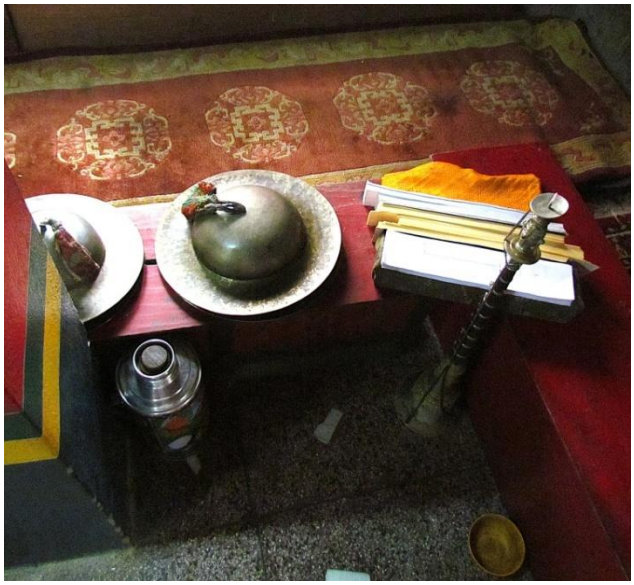










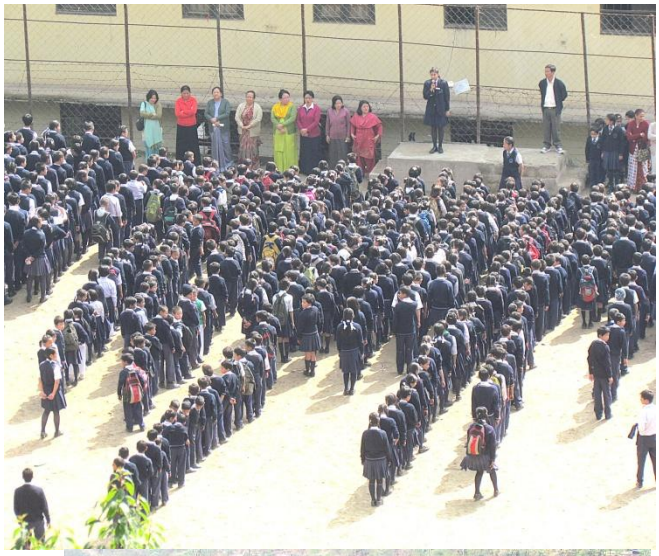






cleaning





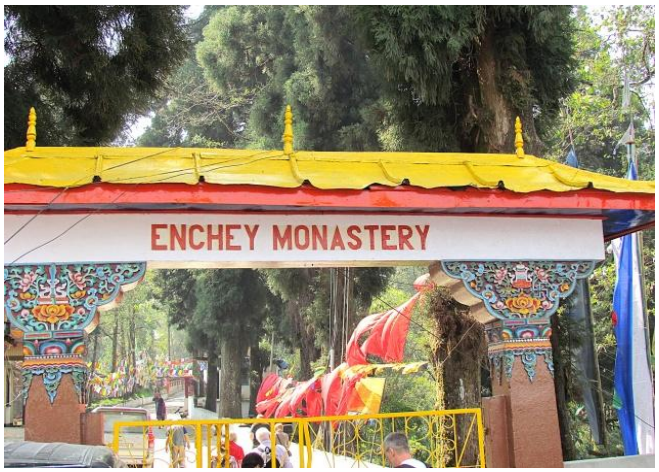


Inside and outside of a school yard





Farmer’s hard work, ploughing
















WELCOME TO
SIKKIM FLOWER FESTIVAL 2012
from 17th March 2012 onwards











armoring


DIRECTORATE
OF
HANDICRAFTS & HANDLOOM





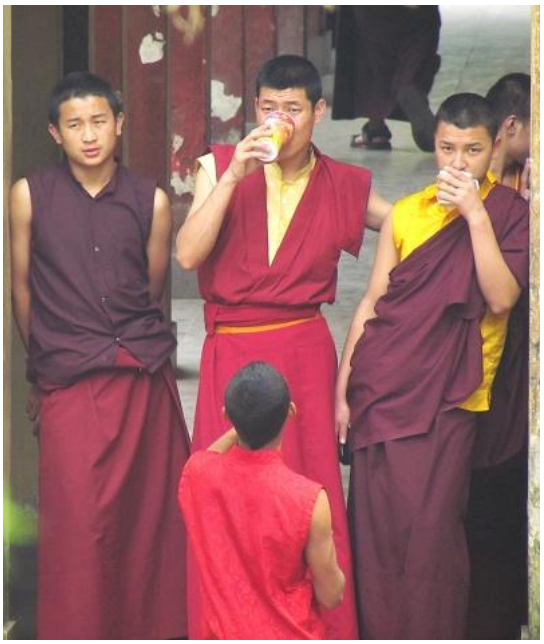


















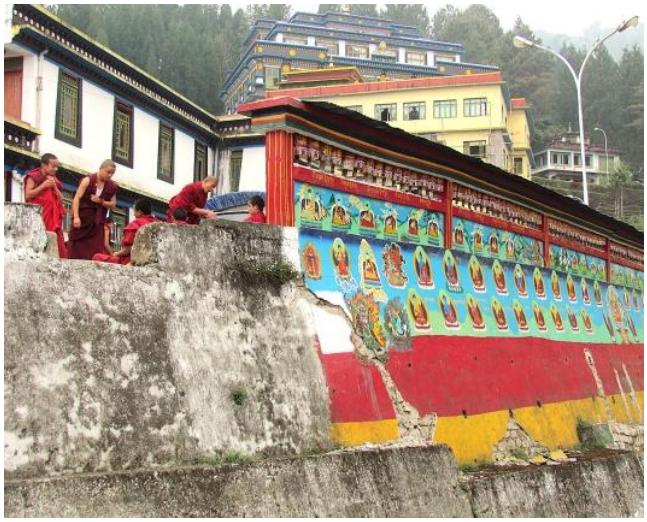



Reuse
Reduce
Recycle
Our future depends on it"
By 17th Karmapa


RANIPOOL 68
SINGTAM 25
RANGPO 36
SILIGURI 113


DHARMA CHAKRA CENTRE
24 KMS FROM GANGTOK





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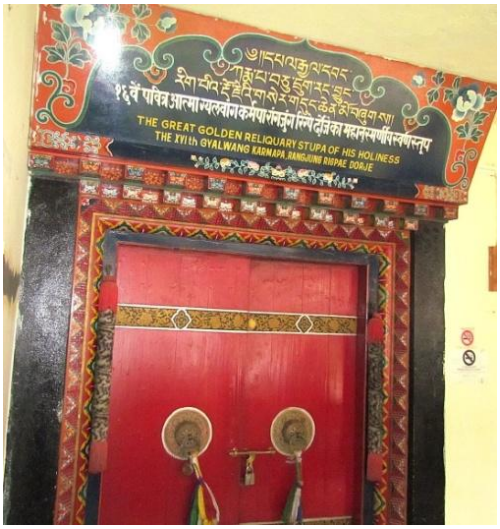






Finally, Kanchenjunga could be seen from further east
















NSH
CHUNGTHANG
65
MANGAN
37




NSH
30
GANGTOK
30
PHENENGLA
23













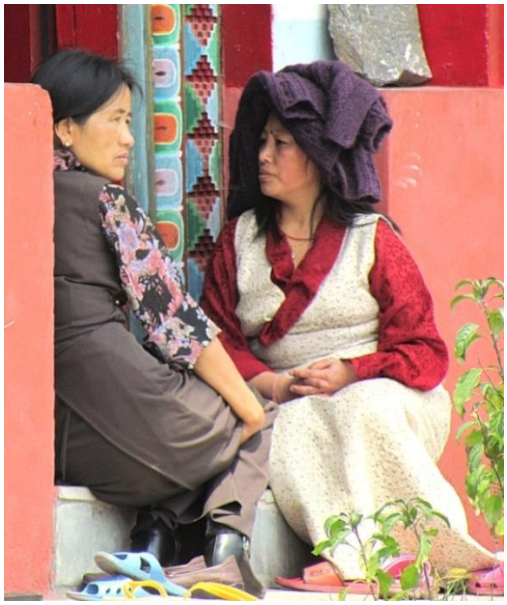




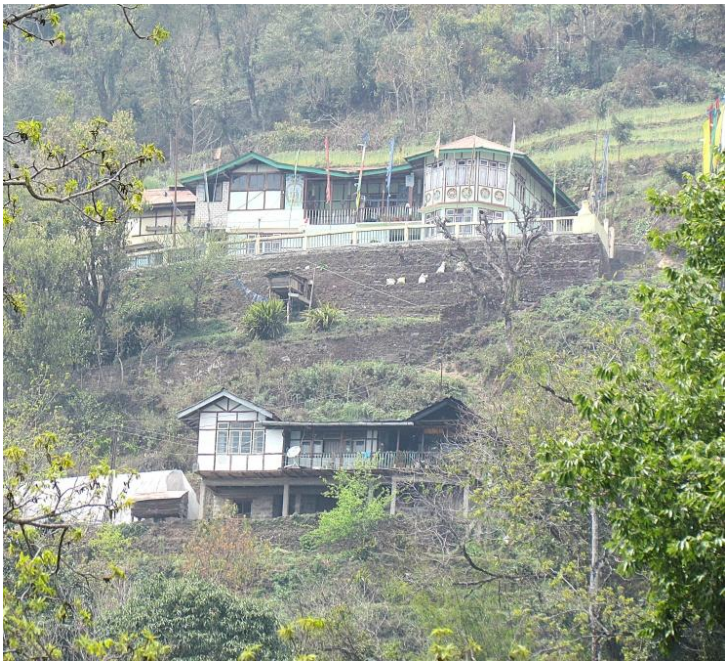





















NAME OF THE PLACE OF WORSHIP: KABI-LONGTSOK
HISTORY:
THIS IS THE PLACE WHERE INDIGENOUS TRIBES BHUTIA-LEPCHA HAD SWORN AS BLOOD BROTHERHOOD TO LIVE HARMONIOUSLY IN THIS HIDDEN VALLEY. AS PER ORAL TRADITION, IT IS SAID THAT IN 13TH CENTURY A.D. KHYE BUMSA, THE GREAT ANCESTOR OF THE BHUTIAS AND THEKONG TEK, THE LEPCHA CHIEF PRIEST ALONG WITH THEIR RETINUE ASSEMBLED AT THIS SPOT TO SWEAR IN AS BLOOD BROTHERHOOD. THEY INVOKED ALL THE POWERFUL SPIRITS OF THIS VALLEY AS WITNESS AND SWORN TO REMAIN AS BLOOD BROTHERS BETWEEN TWO RACES UNTIL THE RIVER RANGIT CEASED TO FLOW & MOUNT KHANG-CHEN-DZO-NGA REMAINS. THEY PUT THEIR FEET IN A VESSEL FILLED WITH ANIMAL BLOOD AND ERECTED A STONE AS MARK OF THIS EVENT.
THIS PLACE OF WORSHIP IS PROTECTED UNDER THE GOVERNMENT OF SIKKIM NOTIFICATION NO.701/HOME/2001 DATED 20.9.2001 AND THE PPOVISION OF THE PLACE OF WORSHIP (SPECIAL PPOVISION) ACT. 1991 GOVERNMENT OF INDIA.
DEVOTEES/VISITORS ARE THEREFORE APPEALED TO MAINTAIN THE SANCTITY OF THIS SACRED PLACE.
DEPARTMENT OF ECCLESIASTICAL AFFAIRS,
GOVT. OF SIKKIM.


SIKKIM TOURISM
Gangtok
GUIDE MAP










gangtalk
Bata




State Bank of India
STATE BANK ATM
Heels 'n' Toes
JAGDAM
KURTA








LADIES QUEUE
NO PARKING
TIBET BURNING
How Many More Lives
CHINA IS LYING
TIBET IS DYING



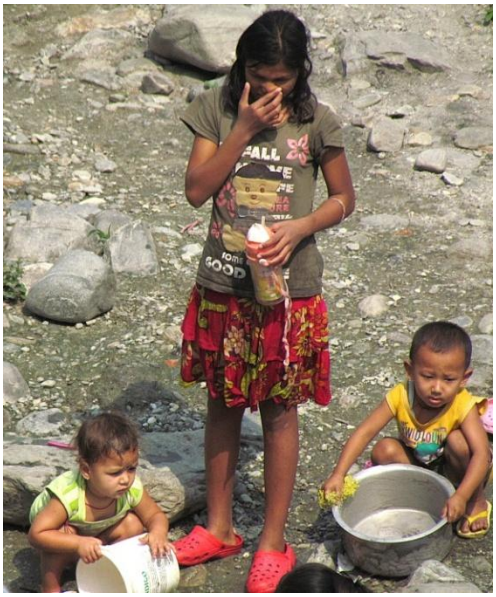





हिन्दुस्तान पेट्रोलियम


HORTICULTURE & CASH CROPS DEVELOPMENT DEPARTMENT
GOVERNMENT OF SIKKIM
HORTICULTURE MISSION FOR
NORTH EAST AND HIMALAYAN STATES
Area Expansion on Commercial Crops
Production of Planting Materials
Promote Organic Farming
Popularize Protected Cultivation
Water Management
Integrated Pest Management
Integrated Nutrient Management
Human Resource Development
Capacity Building
Establish & Strengthen
Horticulture Infrastructures
Technology Transfer
WELCOME TO SIKKIM
DIRECTORATE OF HANDICRAFTS & HANDLOOM
GOVERNMENT OF SIKKIM
हस्तकला एवं हतकघा निदेशलय
सिक्किम सरकार
TREASURE HOUSE OF TRADITIONAL ARTS & CRAFTS
परम्परा शिल्पकला एवं कलाविधा कोषागार
KEEP SIKKIM CLEAN & GREEN.






6
Please do not pluck flowers/plants, leave as it is for other to see.
7
Take pictures of clean Sikkim and share your fond memories with others
8
Make proper use of all tourist facilities- taking care of it is everybody's responsibilities.
PERMIT
9
OBTAIN PROPER ENTRY PERMITS AND KNOW THE REGULATION OF THE AREA YOU'LL VISIT.
10
Please support our concern for the environment and local conservation initiatives.
ENJOY YOUR STAY IN SIKKIM & SEE YOU AGAIN
TOURISM DEPARTMENT
GOVERNMENT OF SIKKIM
Helpline: (03592) 21634, 204408
www.sikkimtourism.travel
SIKKIM TOURISM DEVELOPMENT CORP. LTD.
(A Government of Sikkim Undertaking)
Deorali - 737102, Sikkim, India
Ph. (03592) 203960, 281372 (O), Fax: (03592) 280325
E-mail: stdcsikkim@yahoo.co.in
10 steps to Responsible Tourism
WELCOME TO SIKKIM
Avoid littering,
1
bring all your garbage back and dispose it at proper place.
2
Smoking in Sikkim is prohibited.
3
Discourage drivers from using Cell phone while driving.
Use public sanitation facilities while traveling and set a good example.
4
THROW NO WASTE FROM THE VEHICLE
5
Be a responsible traveler

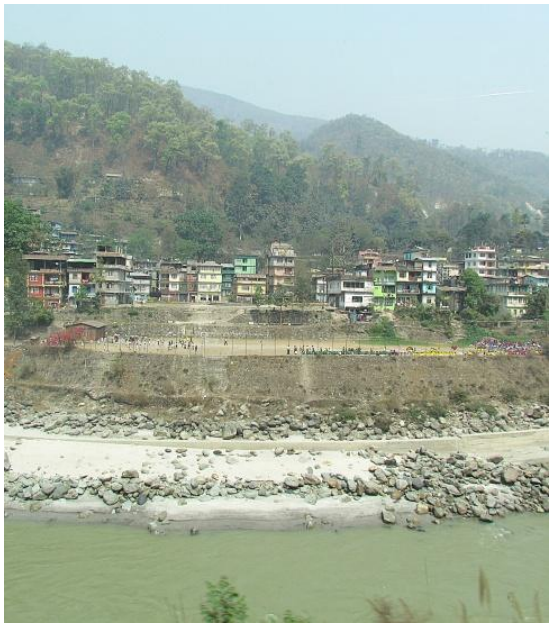













GNLYM

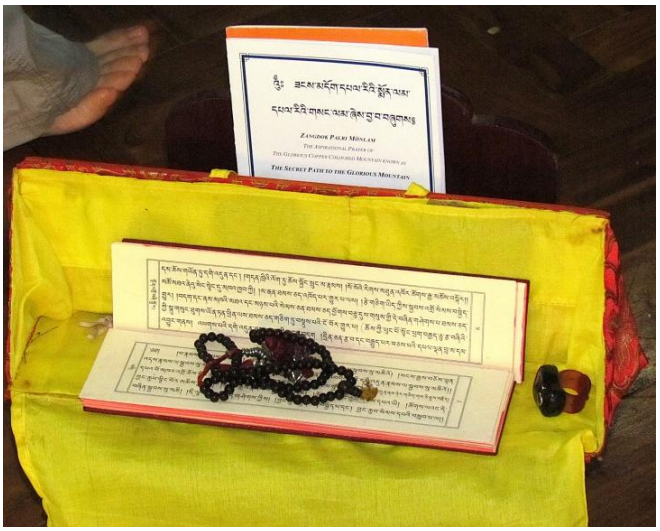


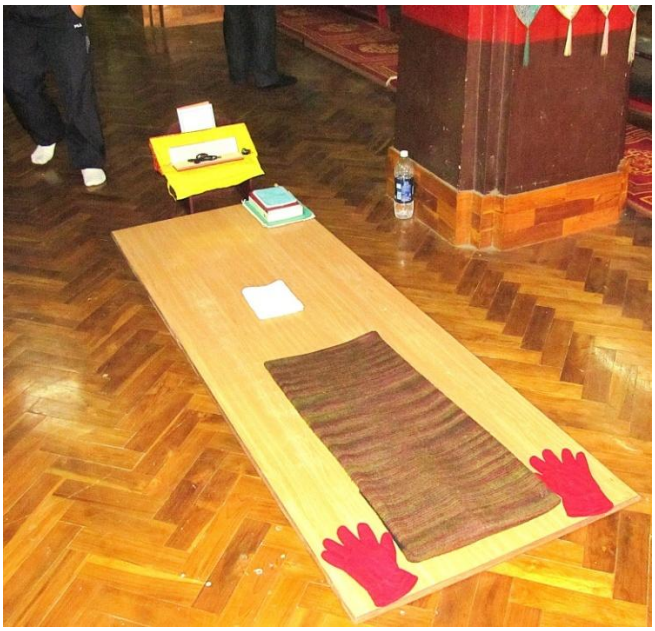












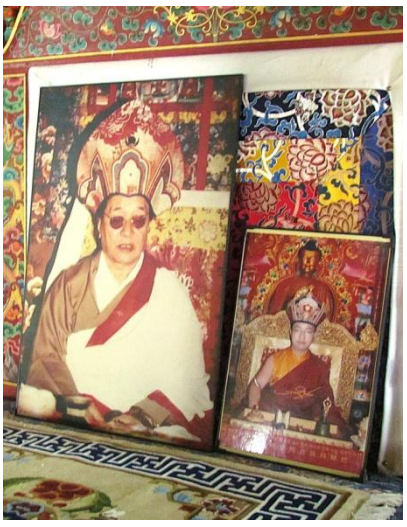

DHARAM CHAKRA
THIS PRAYER WHEEL IS MADE
IN THE MEMORY OF
LATE TENZING SHERPA
W/O LATE CHAMPA SHERPA
OF KALIMPONG
BY
MRS YANGCHEN AND
YANGZUM SHERPA
(DAUGHTERS)


Please
don't touch any things
Thank you



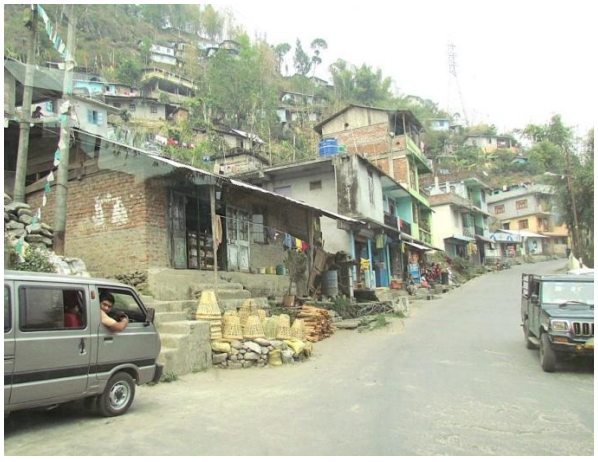
























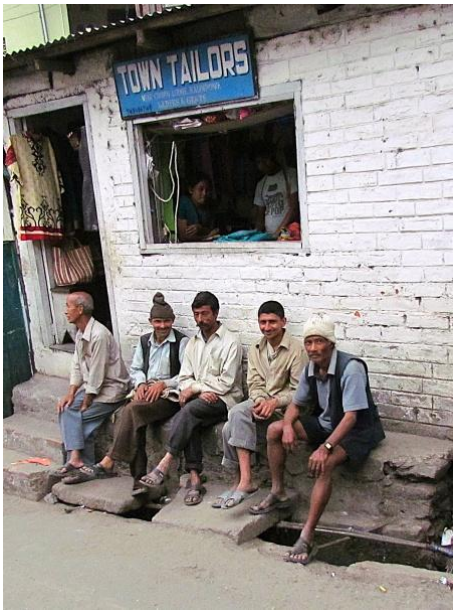





TATA




INDIGENOUS LEPCHA TRIBAL ASSOCIATION
HEADQUARTERS KALIMPONG


TOWN TAILORS











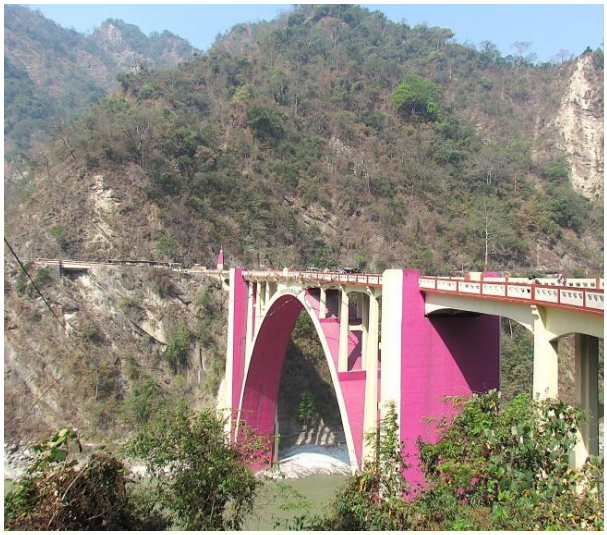





KALIMPONG
SPORTS ASSOCIATION








TO BAGRAKOTE
TO KALIMPONG
AND SIKKIM


NH-31A
SILIGURI-22KM
BARHI -595KM
87RCC 764TF BRDB


























FRONTIER CHECK POST
(IMMIGRATION OFFICE)
GOVERNMENT OF INDIA
JAIGAON






GEDU
45
PHUENTSHOLING
THIMPHU
172
20


20











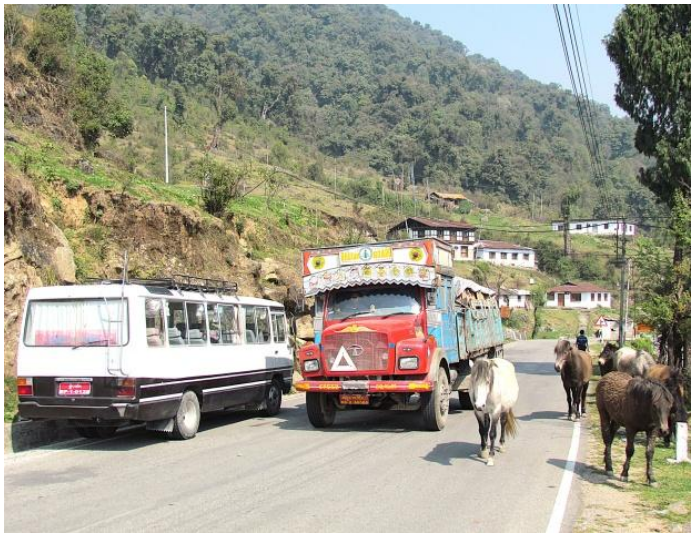




Dangerous road

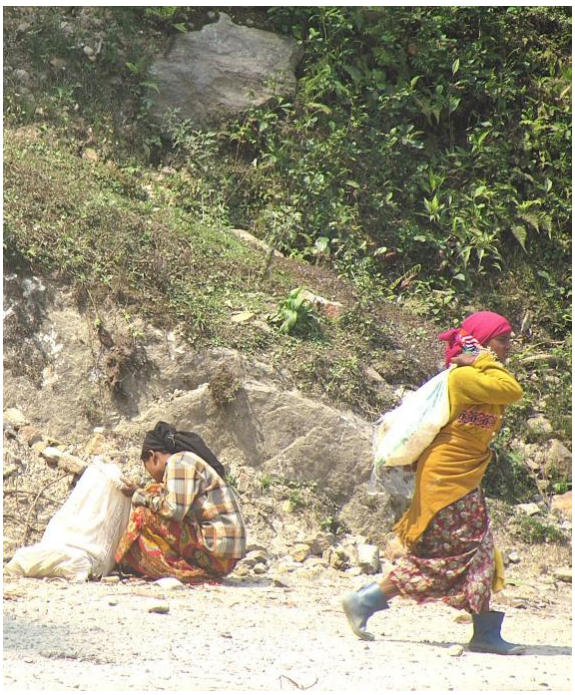







CHAPCHA
22
TSIMASHAM
THIMPHU
76









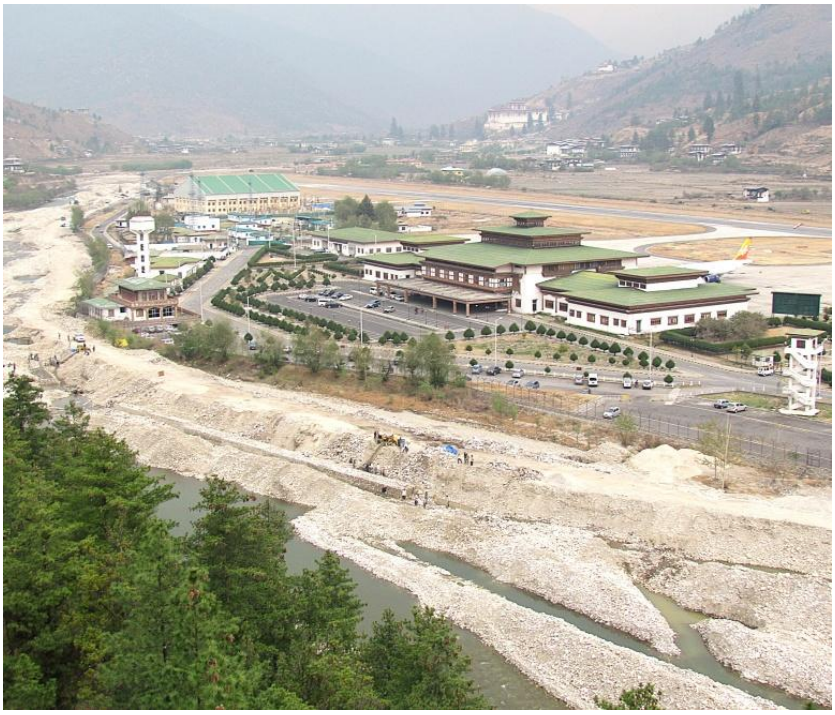








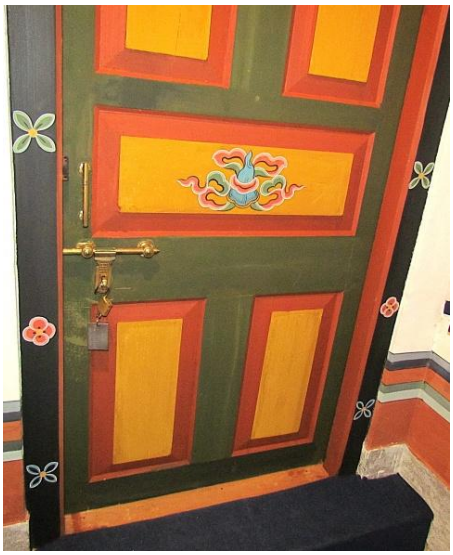




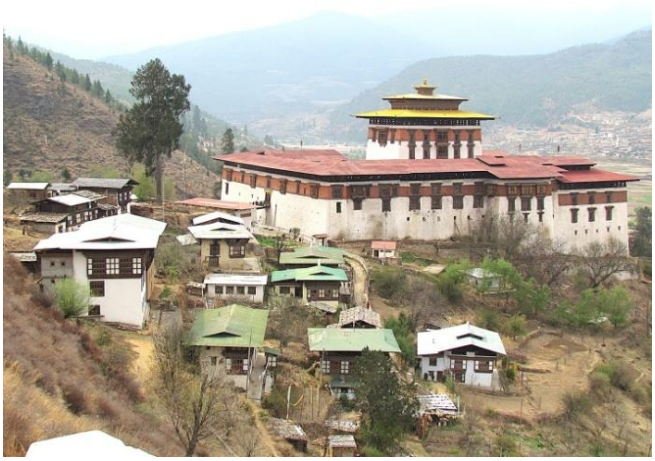
Gangtok
















RINPUNG
DZONG





























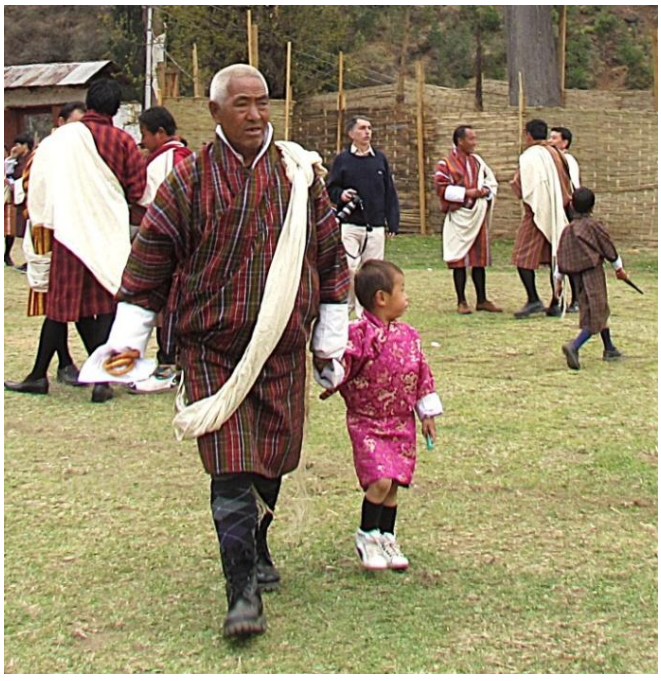
































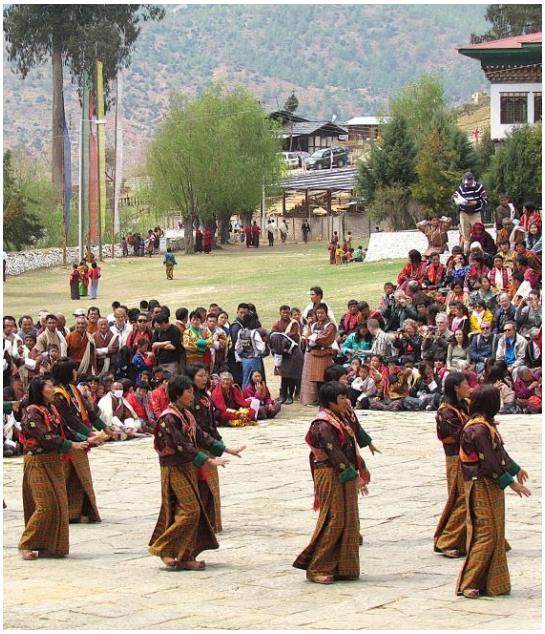



COMMUNITY
POLICE












UNITY
ICE











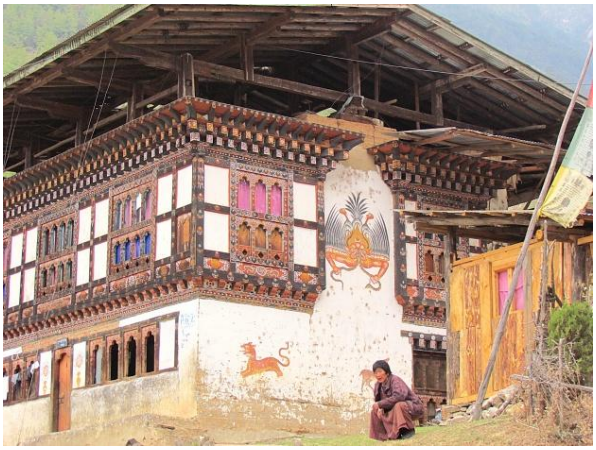












Invitation into a farm house





The guest room

























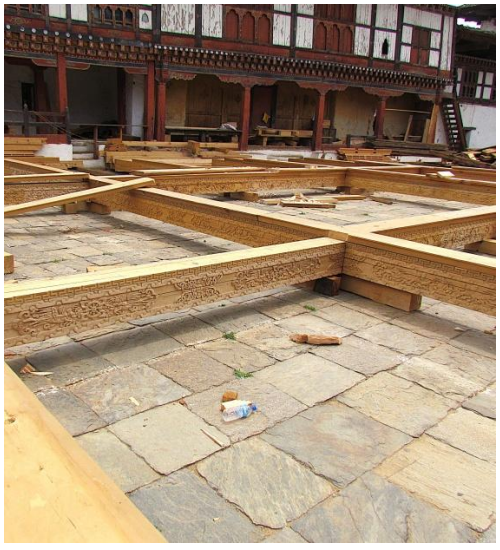









WANGDUEPHODRANG DZONG CONSERVATION PROJECT
Funded by Government of India
Division for Conservation of Heritage Sites
Department of Culture, Ministry of Home & Cultural Affairs
Royal Government of Bhutan
Project Commencement : 20-05-2009
Project Completion : 30-06-2013
Project Total Cost : Nu. 200 million





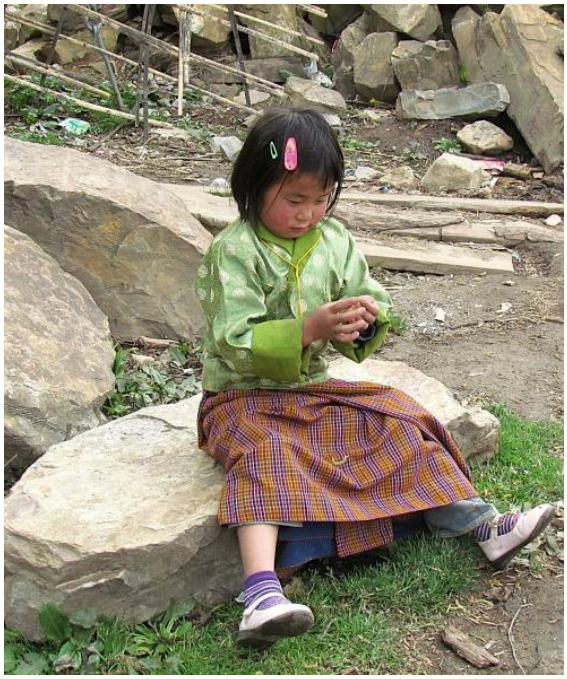






















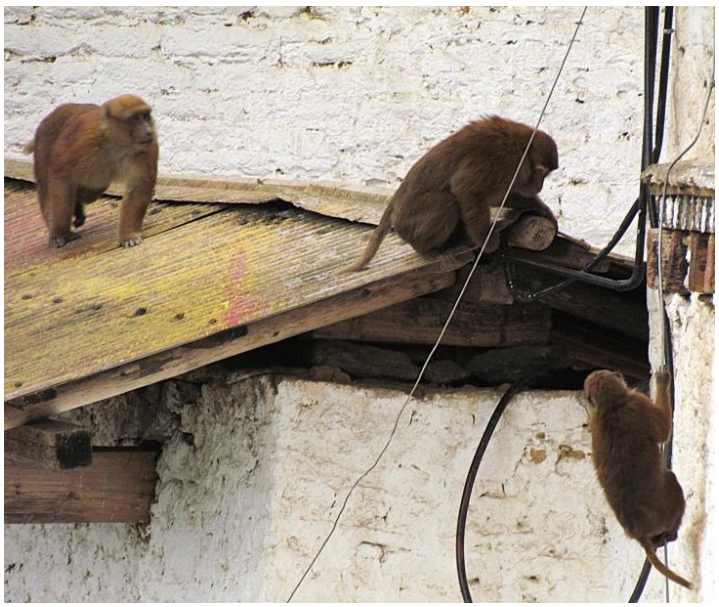


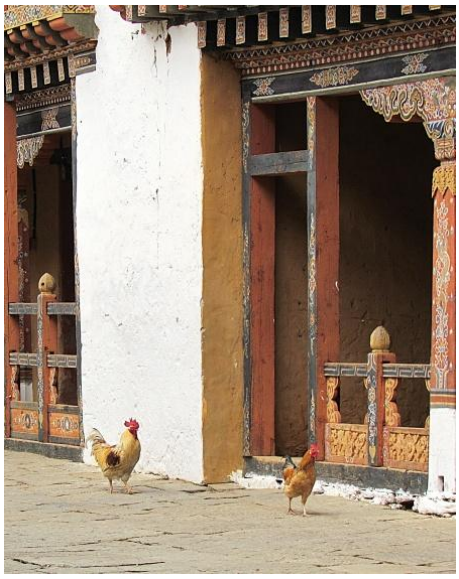





















THANK YOU
NO TIME TO JOKE WITH AIDS
MSTF, BUMTHANG








WELCOME TO
BUMTHANG DZONGKHAG





















































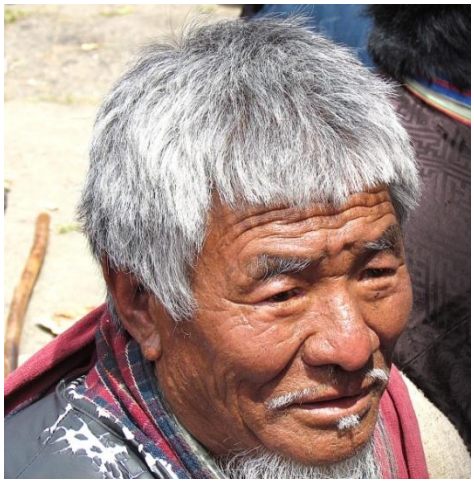








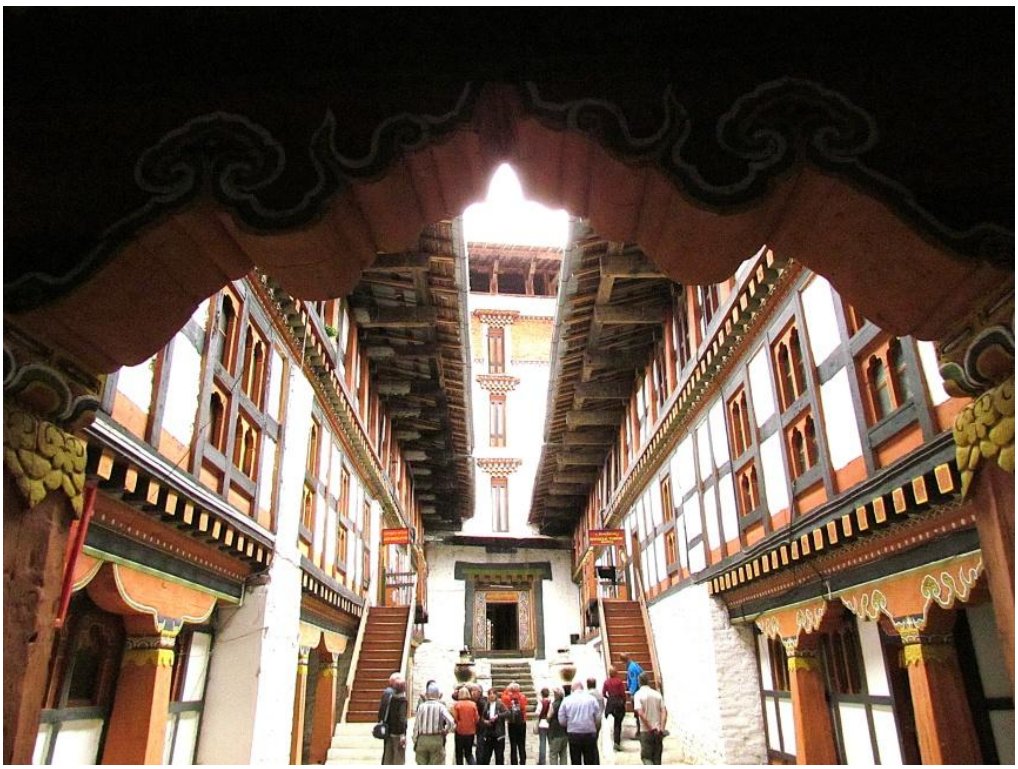












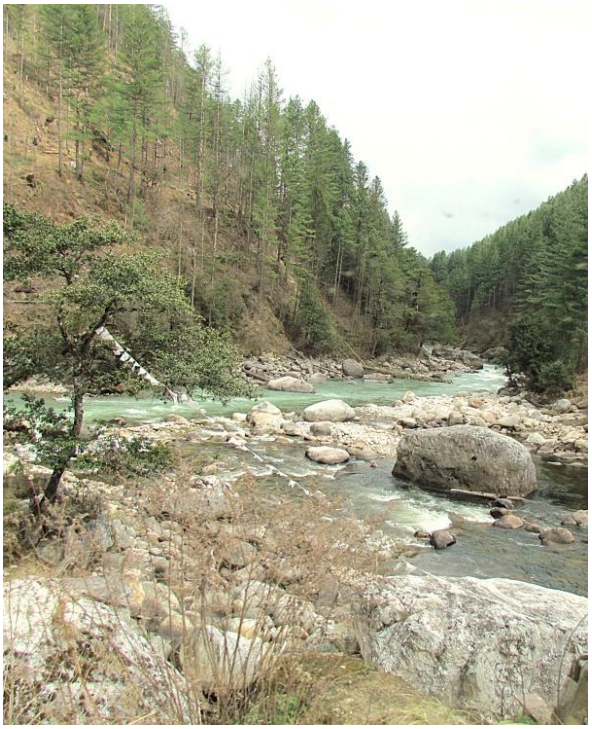


A farm house

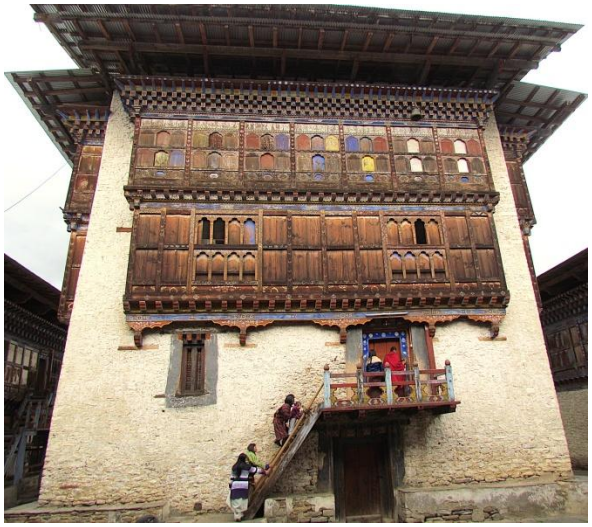










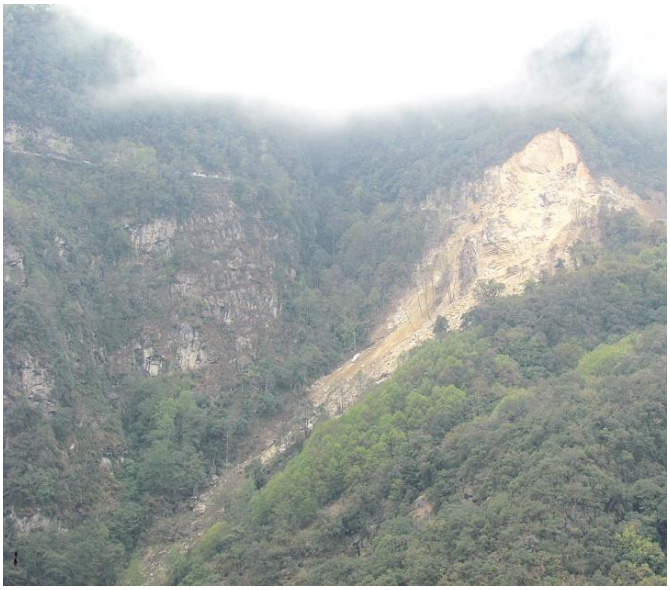














Landslide: Closing Bhutan's main road.
7 o'clock. Go south, down the Himalaya*!!*









fighting passes



Walking: several times







We were very happy to stay alive after remarkable 7 hours over steep gravel roads (see below the final end)











Evening: Upward again into the mountains



Next morning: Beautiful outlook in the mountains







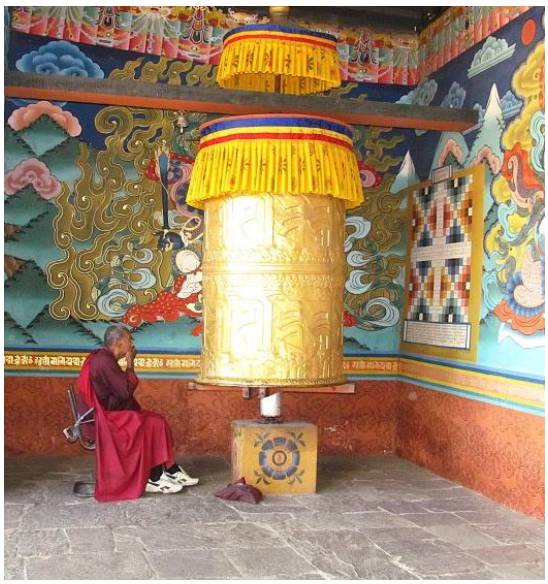








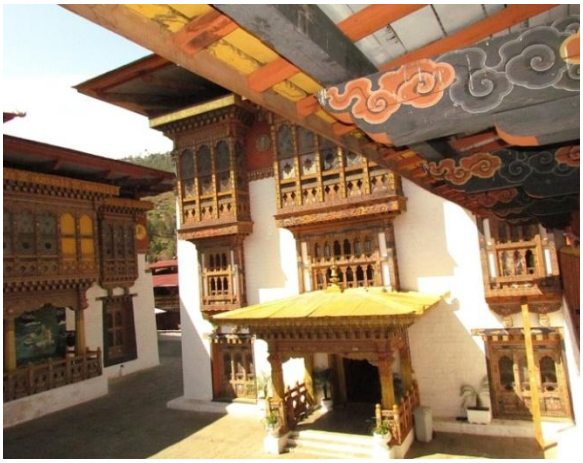












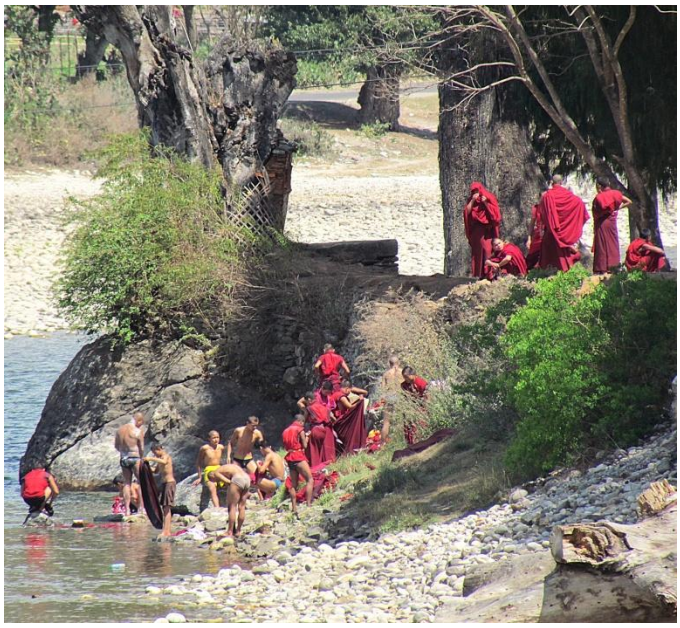




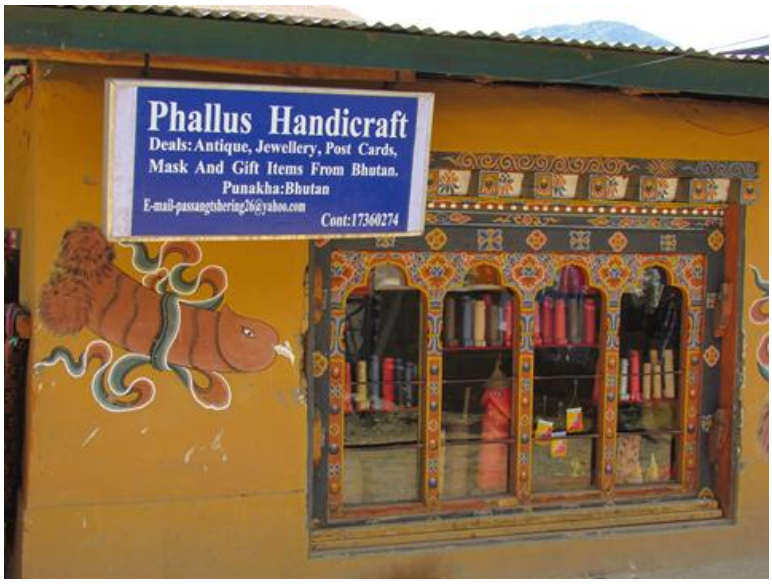




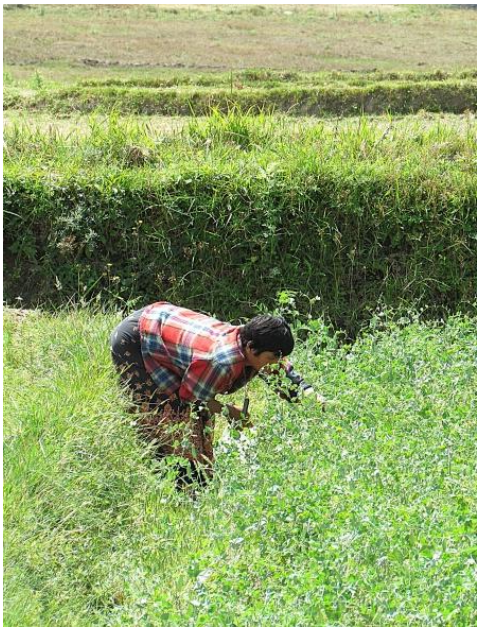


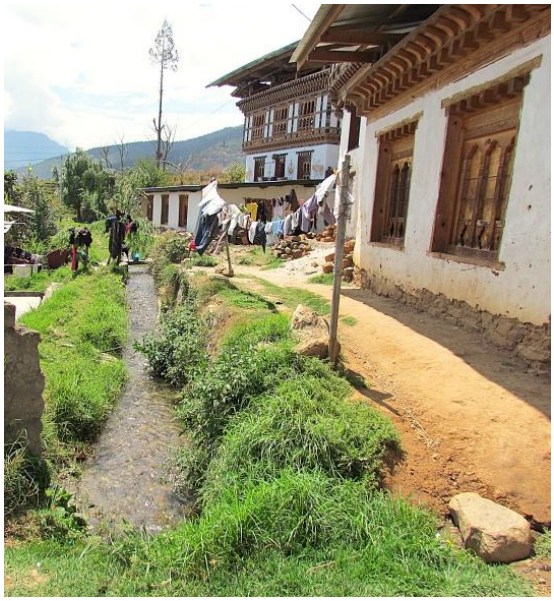




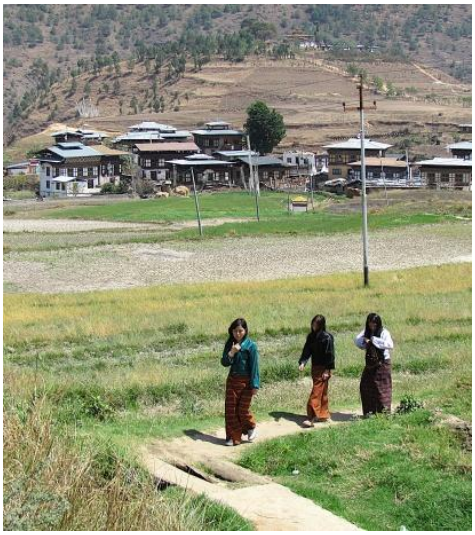

Phallus Handicraft
Deals: Antique, Jewellery, Post Cards,
Mask And Gift Items From Bhutan.
Punakha: Bhutan
E-mail-passangtshering26@yahoo.com
Cont:17360274









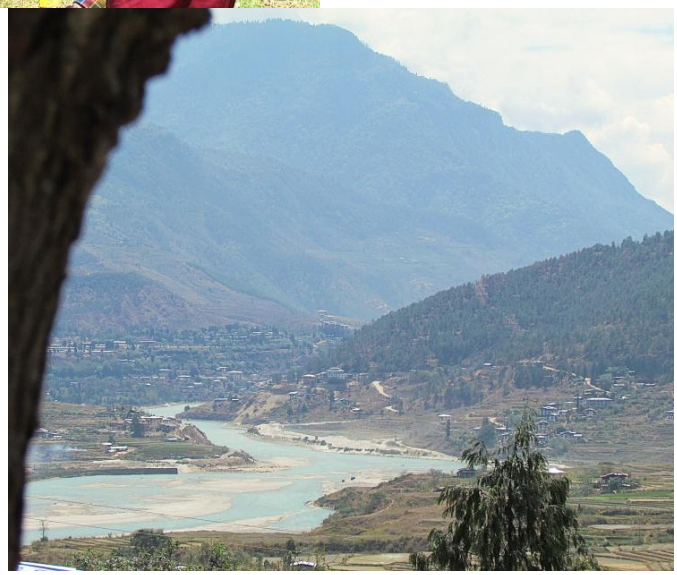


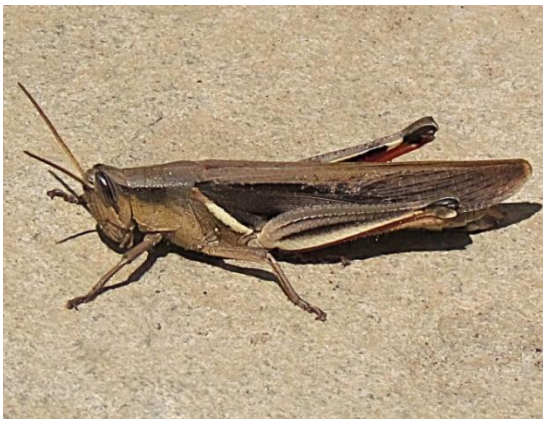














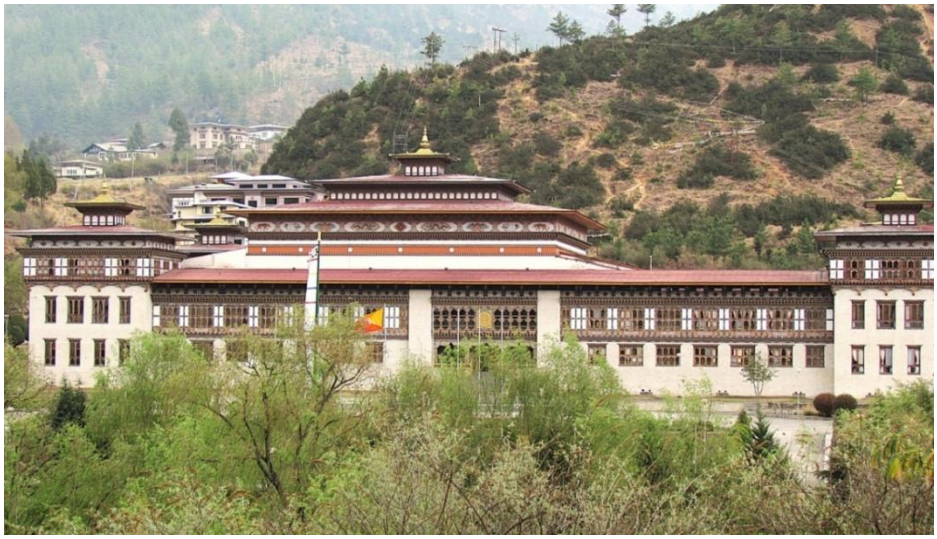
harvesting




MAP OF BHUTAN
TIBET (CHINA)
LEGEND
N
WEST BENGAL (INDIA)
ASSAM (INDIA)
ARUNACHAL PRADESH (INDIA)
GASA
PUNAKHA
HAA
PARO
WANGDUE PHODRANG
TRONGSA
BUMTHANG
LHUENTSE
TRASHI YANGTSE
TRASHIGANG
MONGAR
ZHEMGANG
SARPANG
DAGANA
TSIRANG
CHUKHA
SAMTSE
PEMAGATSHEL
SAMDRUP JONGKHAR























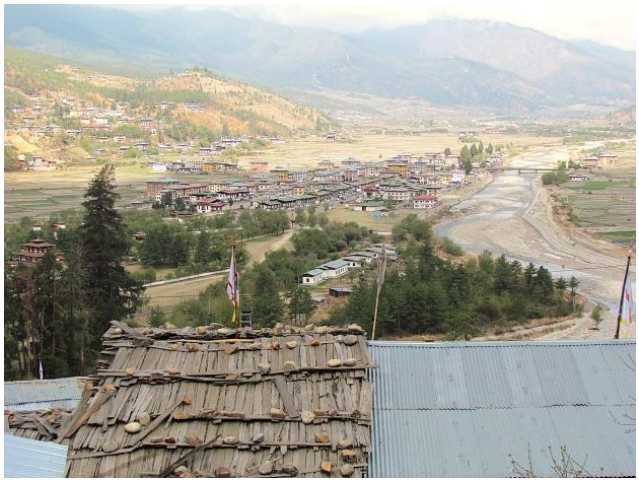


Eating the last canned ration













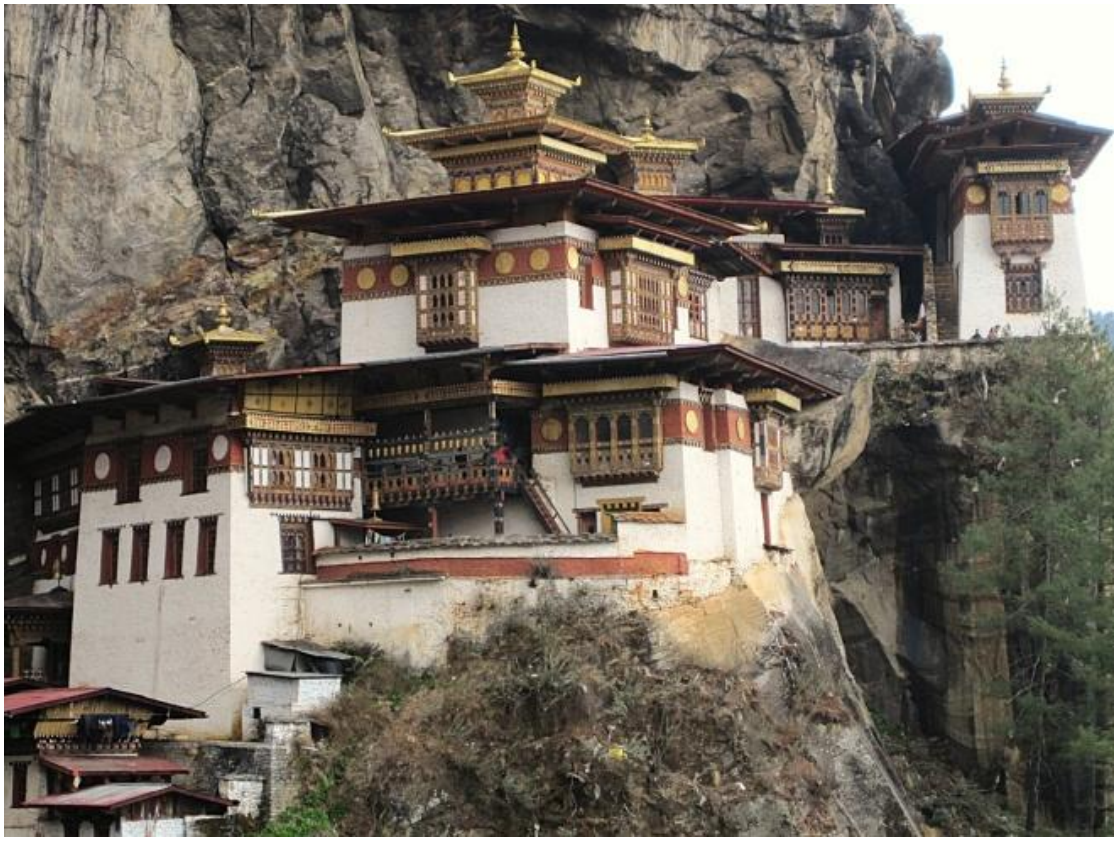


monk on the way to the famous Tiger's Nest





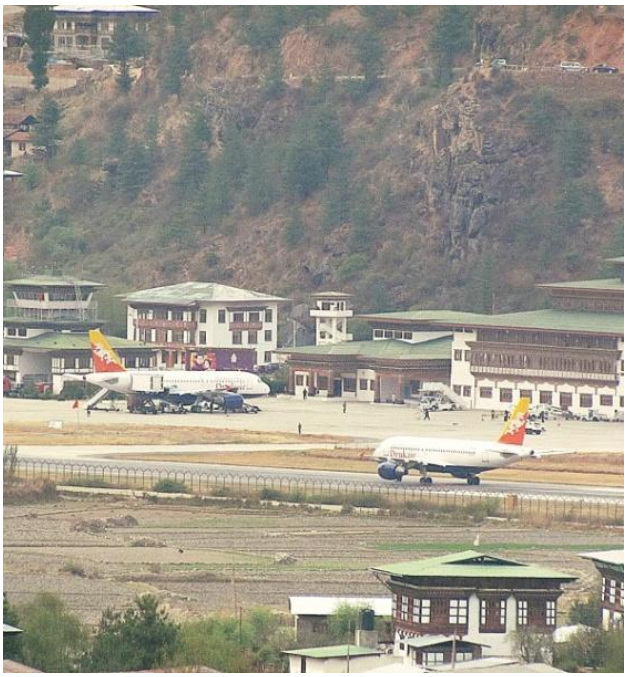
Tiger nest



Tiger Nest

in Bhutan.

High up





Airport Gangtok:
Bike traffic

My New Delhi airport Story:

After arriving from Gangtok, a very unpleasant thing awaited me in New Delhi:

In India, there was a new regulation that prohibited re-entry within six months, but both my trips were booked.
Therefore, I sent my documents to the Indian Embassy in Bonn. However, they failed to note my necessary request for permission to travel in my accompanying passport.
A the New Delhi airport a young customs officer must have earned his merits as a good supervisor. So, I wasn't allowed to finish the trip with the group in New Delhi, but instead sat alone for about seven hours with my unguarded luggage in the "no man's land", the transit area of the airport. There was no food or drink available for purchase there, and the luggage had to be left alone because you couldn't take it to the bathroom.
Experienced trekkers, like me, always carry emergency rations! That was luck.

A day earlier, for an additional €100, I was able to fly in the evening.
What a huge relief for me. I didn't have to wait the 24 hours for my group's departure.

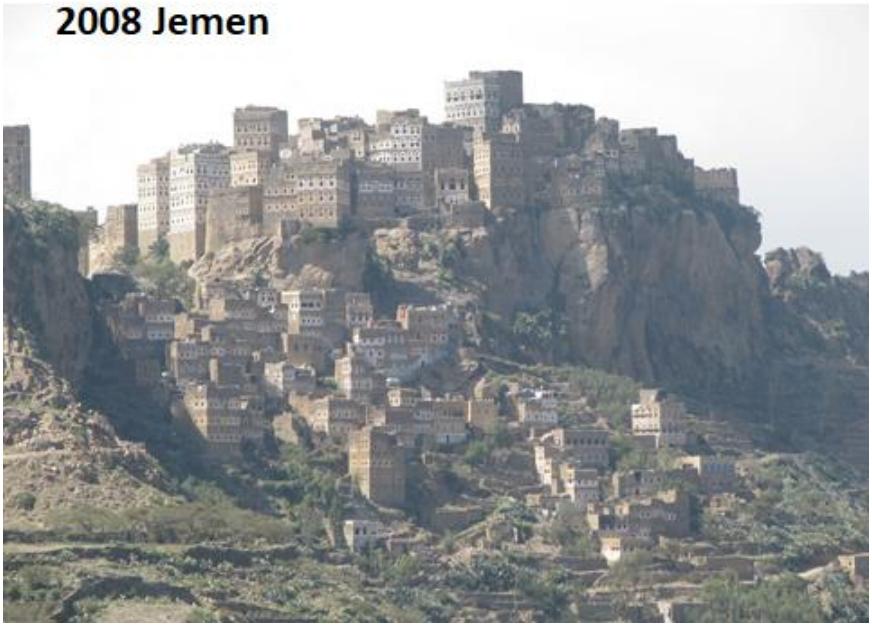




I very much enjoyed
the meal at the earlier home flight !!!

2 Yemen


Hajjah
Hodeidah
Sana'a
Seyun
Shibam
Menacha
Jemen
Jibla
Taiz


2008 Jemen









Jemenitische Republik	
Flagge	Emblem
Amtssprache	Arabisch
Hauptstadt	Sanaa (*de jure*) Aden (*de facto*)
Staats- und Regierungsform	präsidentielle Republik (*de jure*)
Staatsoberhaupt	Staatspräsident Abed Rabbo Mansur Hadi
Regierungschef	Premierminister Maeen Abdul Malek
Fläche	528.076 km²
Einwohnerzahl **Währung**	30.536.729 (Juli 2017)[1] (47.) Jemen-Rial (YER)
Unabhängigkeit	Nordjemen: 30. Oktober 1918 (Osmanisches Reich); Südjemen: 30. November 1967 (Großbritannien)
Nationalfeiertag	22. Mai (Vereinigung von Nord- und Südjemen 1990)

























































































Relaxing on a cactus leave















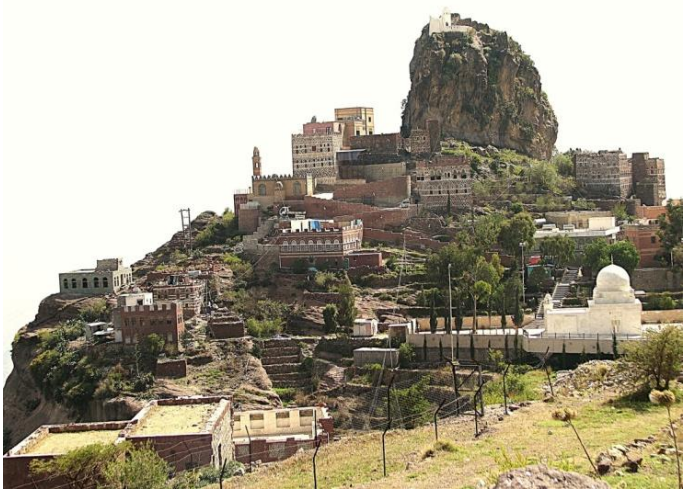







cut of frankincense






goodbye beautiful and
very interesting Yemen


our group protected by police cars


In desert landscapes, water is the greatest danger.


Shibam





Mukallah




Cool





















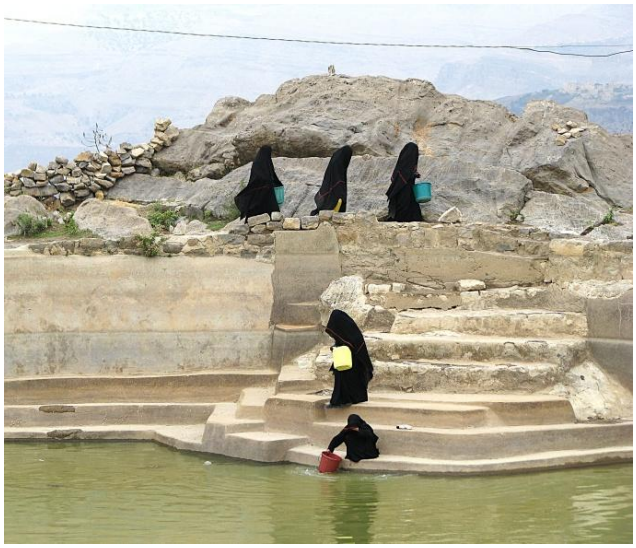






dagger dances















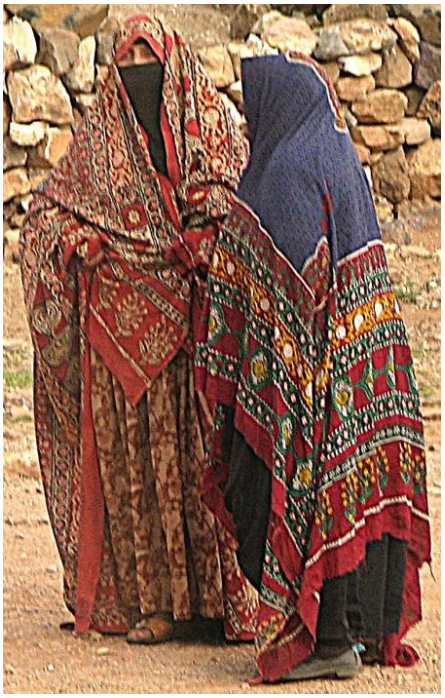


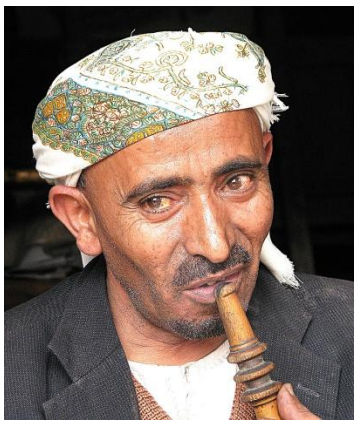












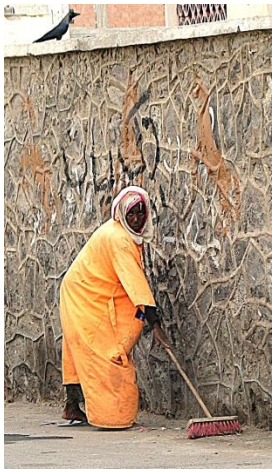










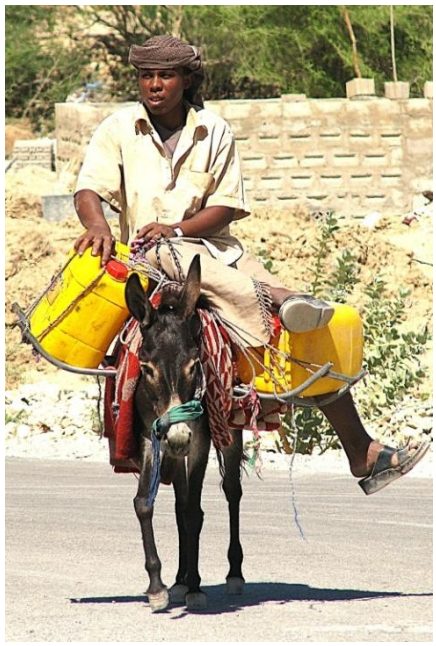
















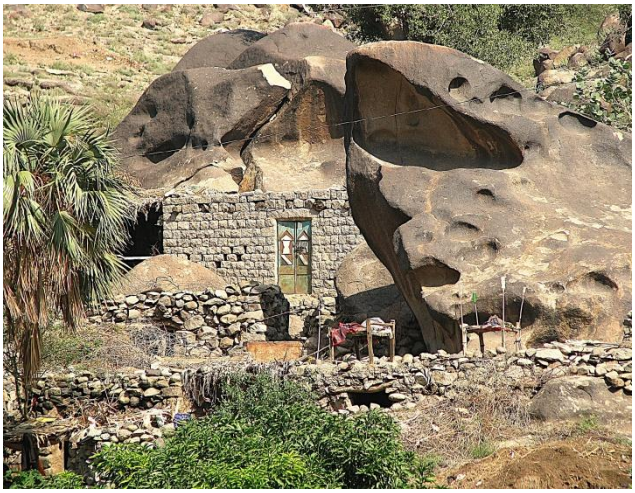










































visiting a family







3 North-Korea

Land behind a border fence





Demokratische Volksrepublik Korea	
Flagge / Wappen	
Amtssprache	Koreanisch
Hauptstadt	Pjongjang
Staats- und Regierungsform	Volksrepublik mit Einparteiensystem, de facto Diktatur auf dynastischer Basis
Staatsoberhaupt	Ewiger Präsident Kim Il-sung † (symbolisch) Vorsitzender des Komitees für Staatsangelegenheiten „Oberster Führer" Kim Jong-un (de facto) Vorsitzender des Präsidiums der Obersten Volksversammlung Choe Ryong-hae (de jure)
Regierungschef	Vorsitzender des Ministerrats Kim Tok-hun (de jure)
Fläche	120.538 km²
Währung	Won (= 100 Chon)
Unabhängigkeit	9. September 1948 (von der Provinz Chōsen)

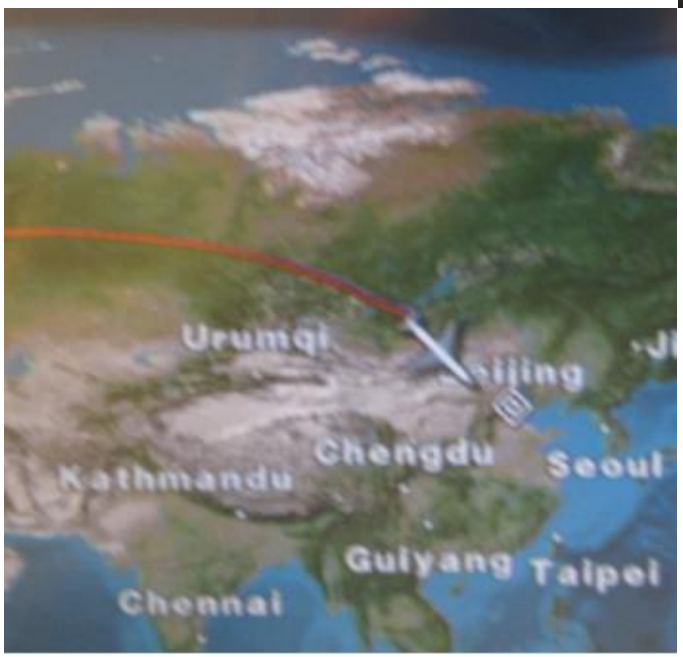


Singing North-Korea













Me: Grown-up at the German nation separating border, now visiting the internal Korean border.







Kim Il Sung

Kim Jong-Suk
(Mother of Korea):
First wife of Kim Il Sung, mother of Kim Jong Il and grandmother of Kim Jong Un







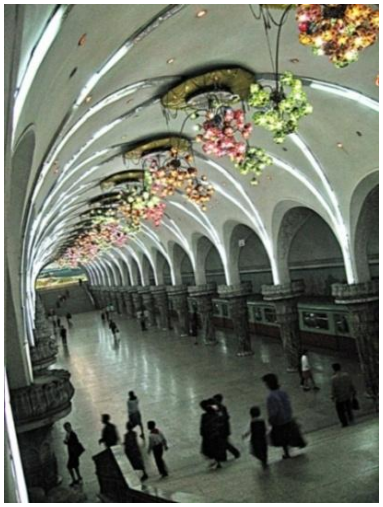
Pyongyang



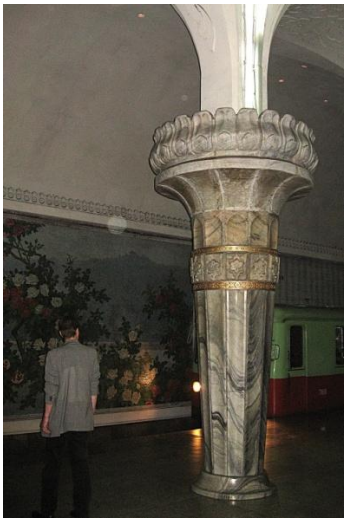




Excellent subway









mausoleum

















(right)







(above left) our companion.
(right) our very nice tour guide



















busy people



Travel colleague from Cottbus, formerly Eastern Germany celebrating the team rise into the first German Bundesliga







Where Kim Il Sung came from

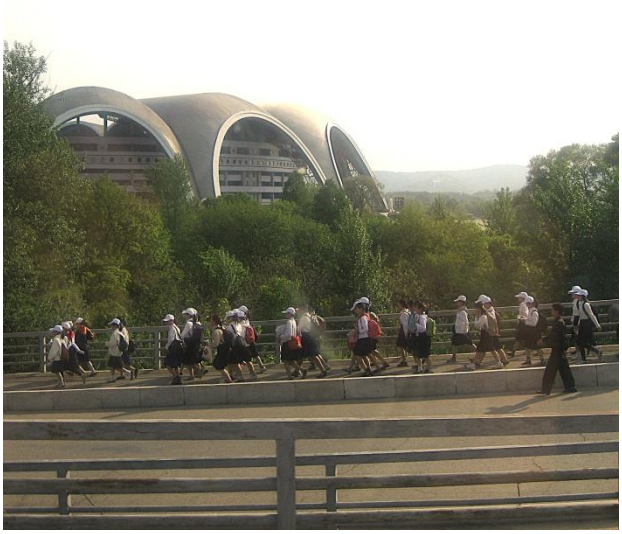
















One of the hotel rooms





a specialty









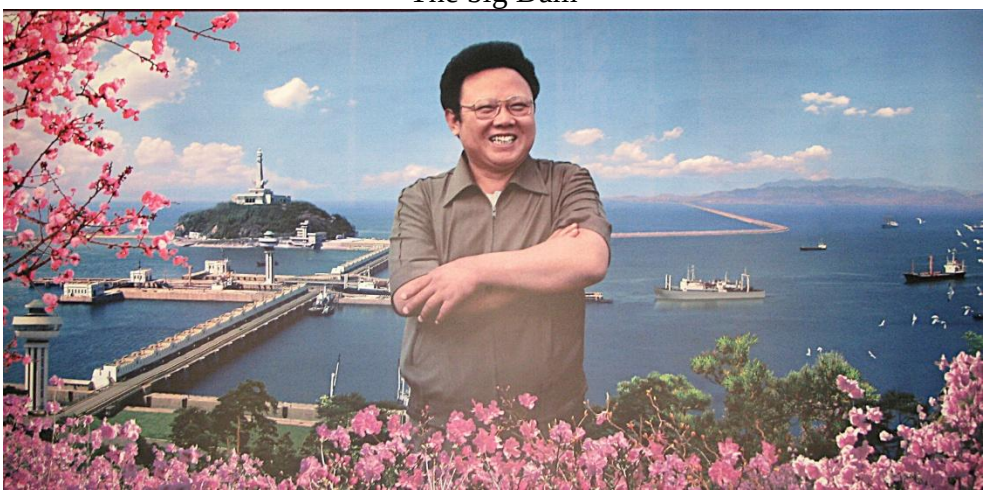


Organized trip in North-Korea.
Otmar & Ralf (2 viewing civil engineers)





The big Dam





guide



Accompanying photographer, dam information presenter





At the internal Korean border





border installations

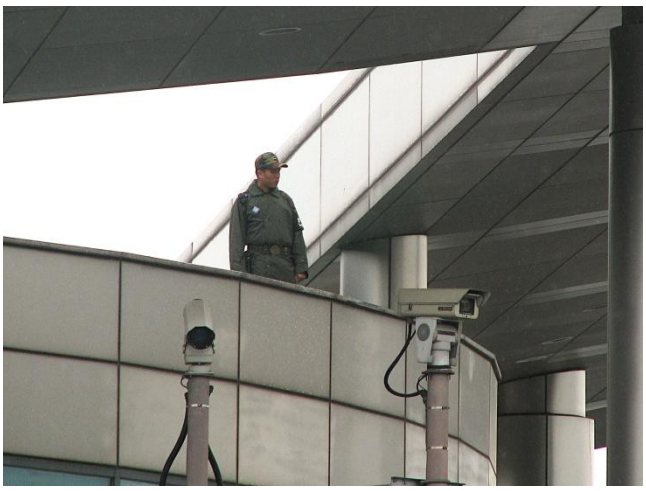


Our group is approaching the border house



Information on Korean war and peace treaty with US





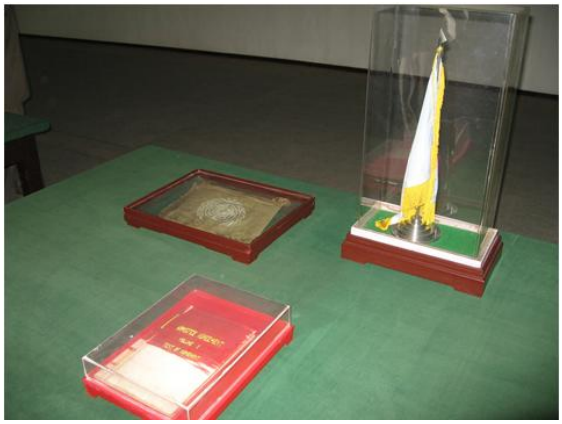
The Southern Korean side



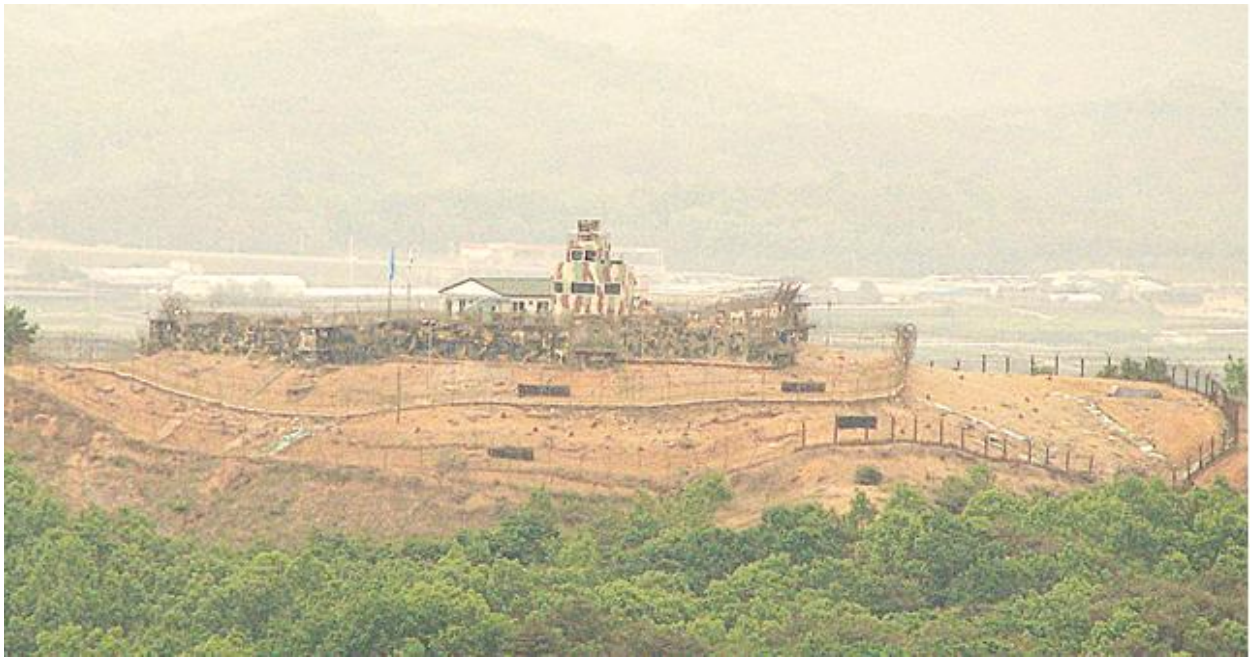


US-North Korean peace negotiations room





documents



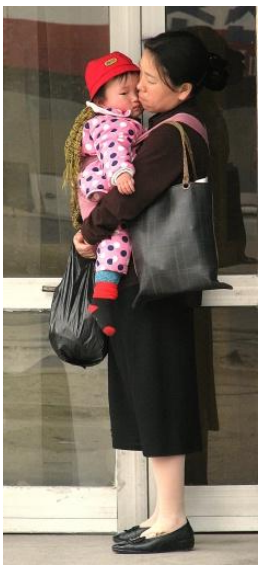
Southern Korean side from the north












3대헌장



















Education of the youth



















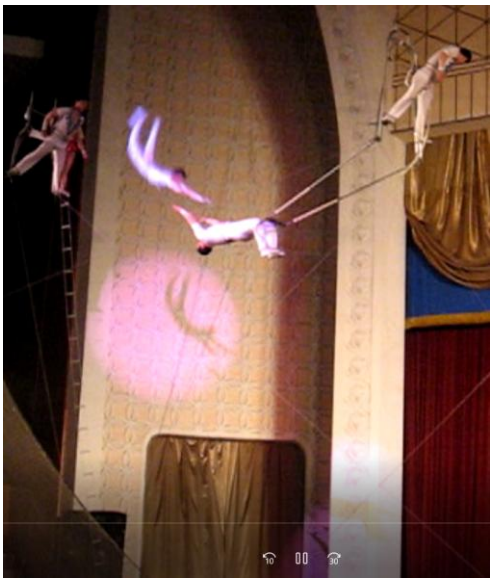






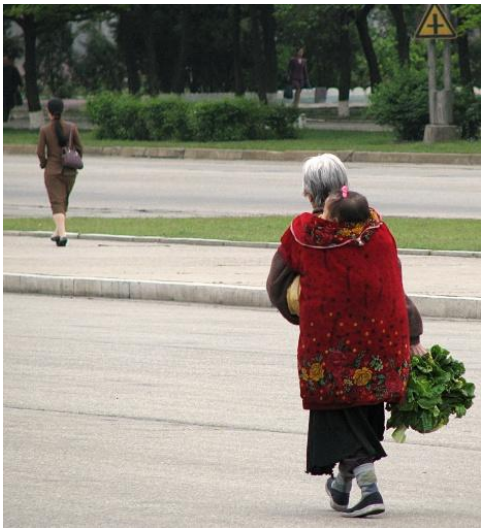
Saying thank you and presenting a gift





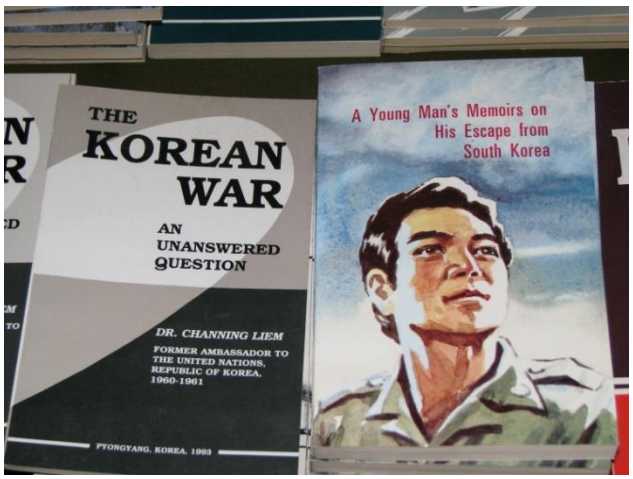
Two pictures of the famous circus presentations

















War and peace.
Think about pictures below!











USS Pueblo (A GER-2) is a Banner-class technical research ship, placed into service during World War II, then converted to a spy ship in 1967 by the United States Navy





'Pueblo incident' 1968.
Visiting the US 'fisher' boat






















大雄殿










Rave




























BECK'S
KING CAN
Potato Chips





Sports


만 포 360 km
강 계 305 km
향 산 144 km
개 천 91 km
평 성 25 km
흥 성 6 km


만 포 360 km
강 계 305 km
향 산 144 km
개 천 91 km
평 성 25 km
흥 성 6 km





































our hotel in the mountains





getting up and down





A dam



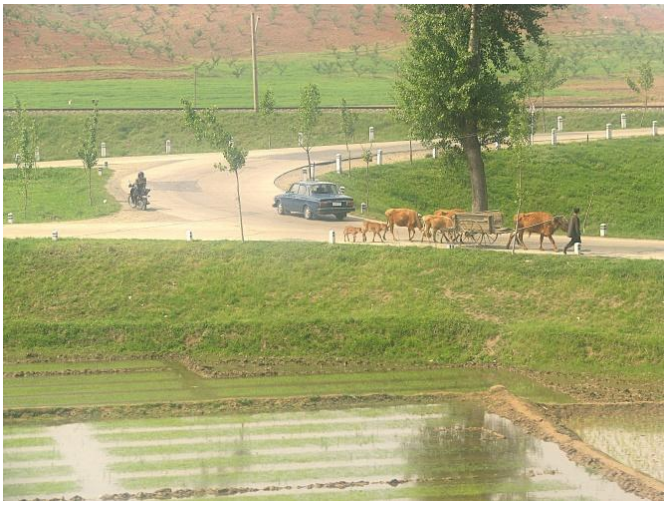


Insect food













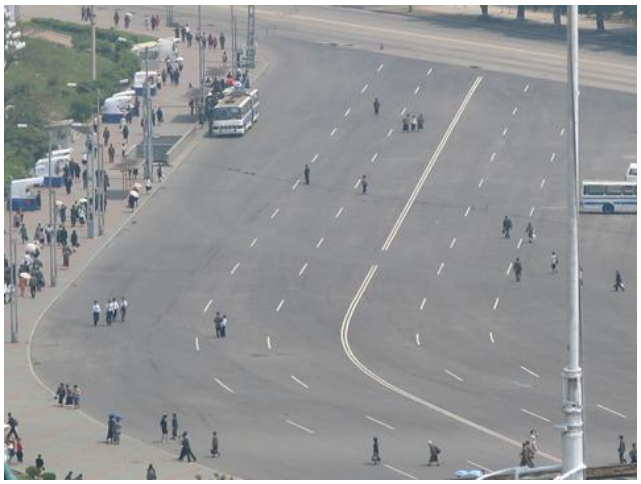


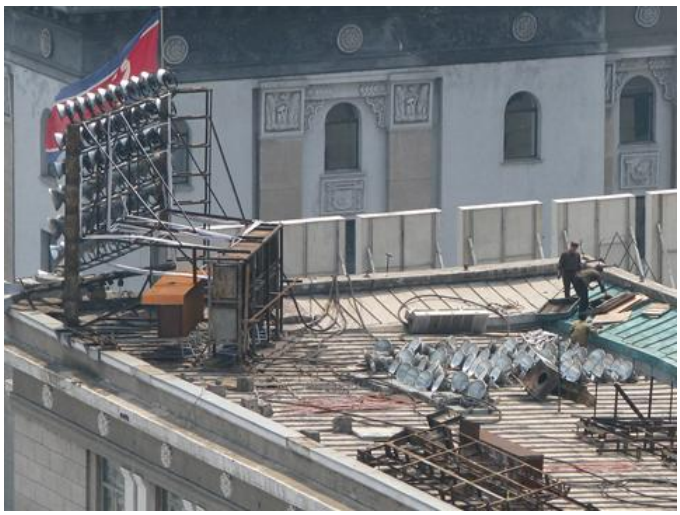
university





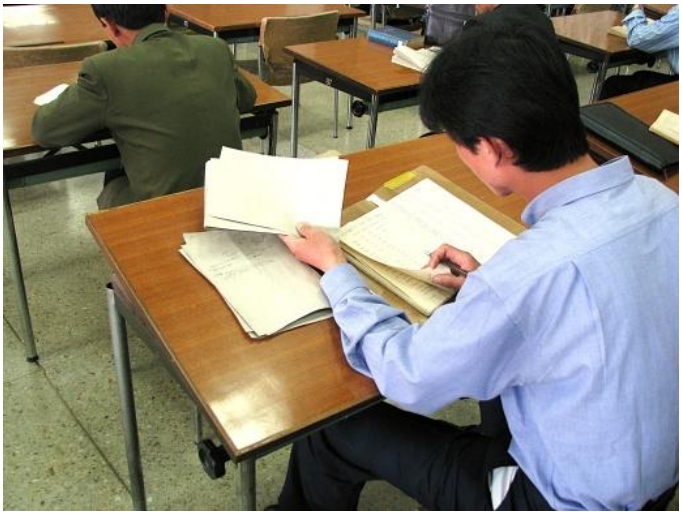

백두의혁명정신






함밍35-2891





















Celebrating North-Coreans









Taking a trip





being invited to sing and dance











former North-Korean Hollywood

























Korean war 1950- 1953



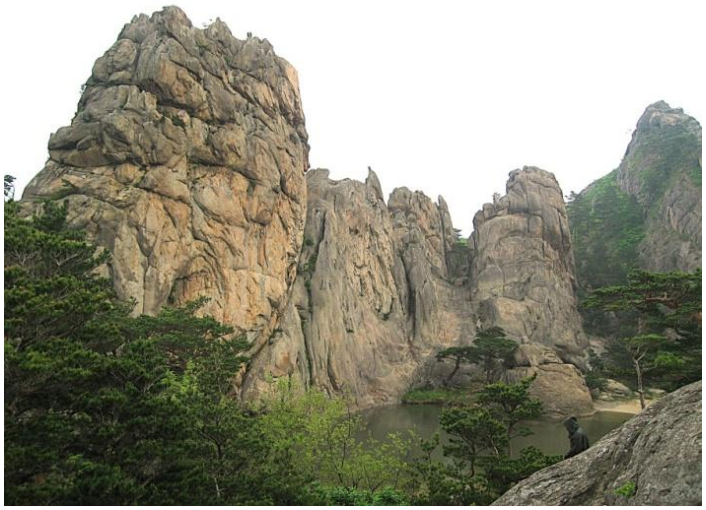


War museum













Build and repair











tadpoles

















Our excellent driver









Wonsan











Invited into a house























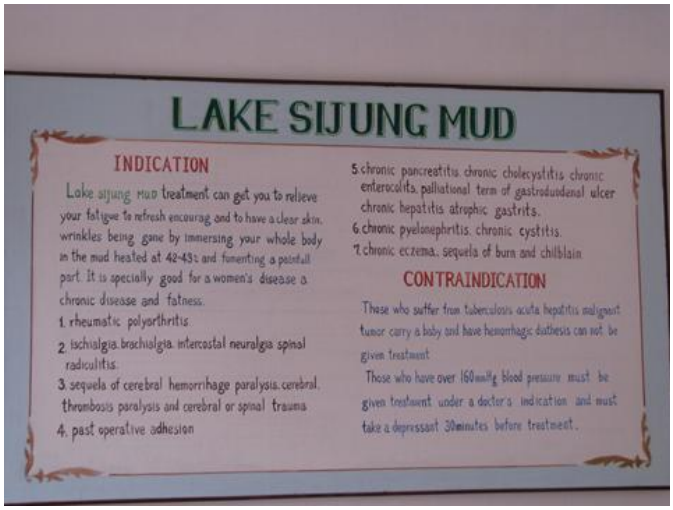




Accident as everywhere















just me



Some flowers for our very nice interpreting guide and translator



















our newly married couple from Munich















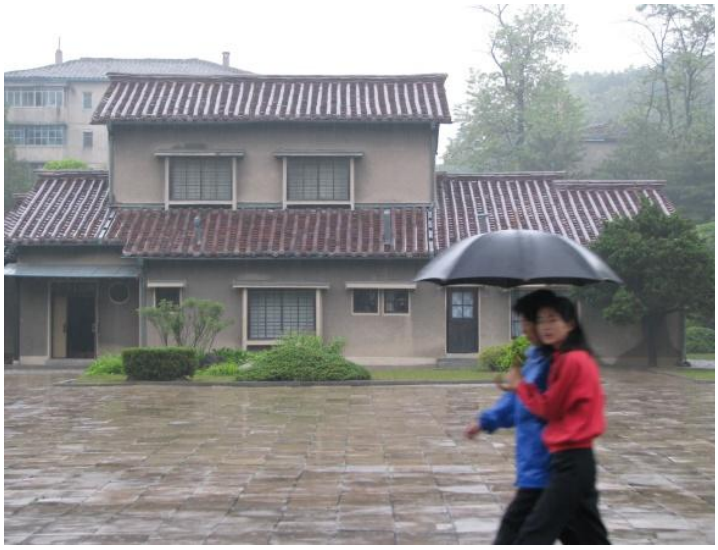

경애하는 수령님께 끝없이 충직한
혁명가의 최고전형
향일의 녀성영웅
김정숙동지
우리 어머님의 한생은 비록 짧았지만 충성으로
빛나는 고귀한 한생이었습니다.
김 정 일







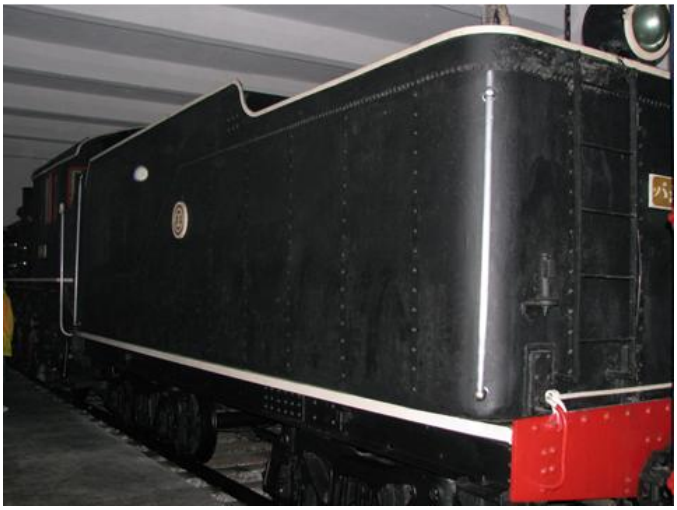












The train of Kim-Il Sung































camp

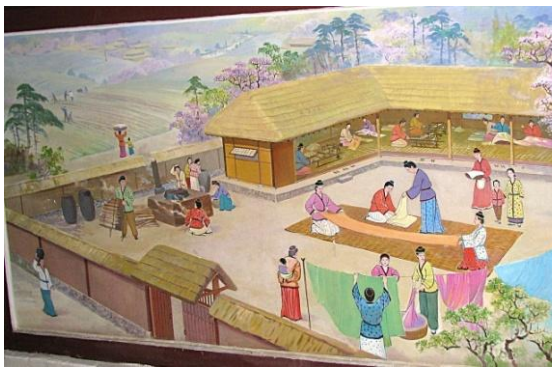




































Handing over a north-Korean flag
to a traffic police officer



A big smile was the thank you









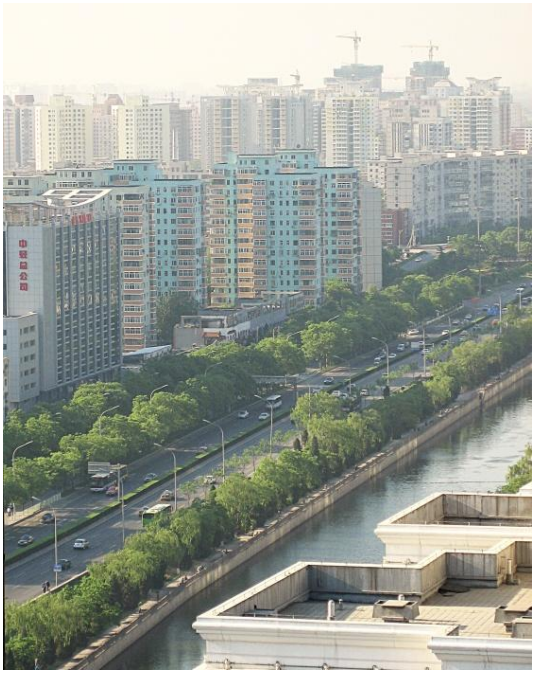













대성수출품전시







Final dinner



we had much fun together on our bus trip



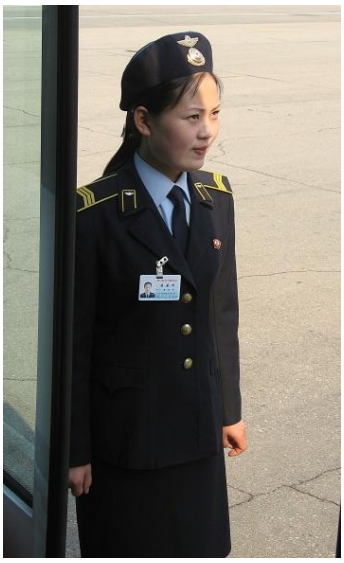
Camera man, driver and companion
(unfortunately the film presented could not be played)













This North Korea trip

– for me, after two years of waiting –
was a very successful trip for our tour group,
and we were grateful that it was possible.
Our newlyweds from Munich especially
enjoyed their honeymoon.

Our nice translator, as well as the other tour
guides and photographers, were excellent.
And our driver transported us superbly.

The satisfaction of both parties is clearly
visible in the smiling faces in the photos.



4 Selected photos from Indonesia













































Borobodur







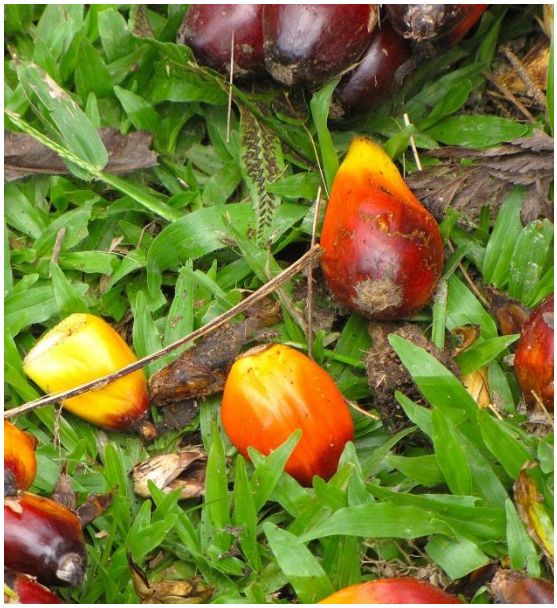







DESA PAKRAMAN SELAT
BANJAR PARUMAN SILADARSANA SELAT
Ngemorgiang
UPACARA PITRA YADNYA " ATMA WEDANA NGEMADIA "
RING WRASPATI POH UYE ICAKA 1932
SELAT 29 JULI 2010



































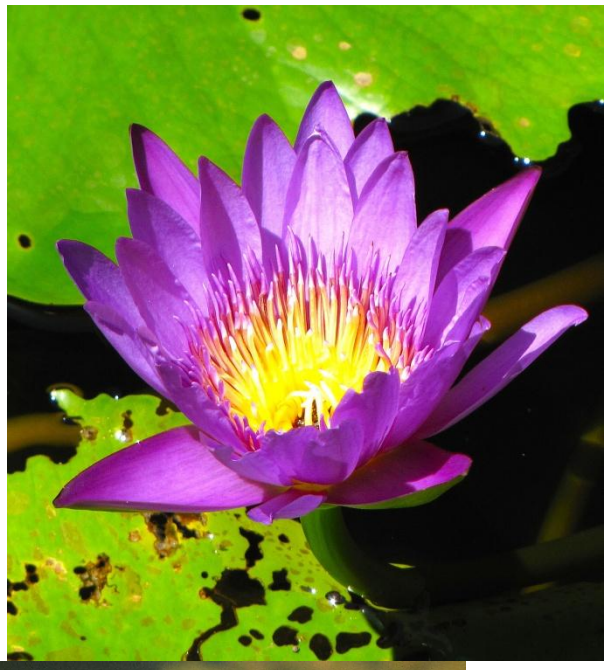
























Dragonfly mating













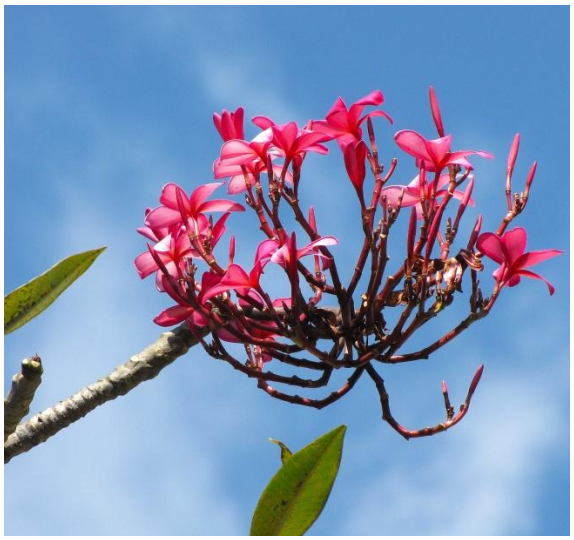








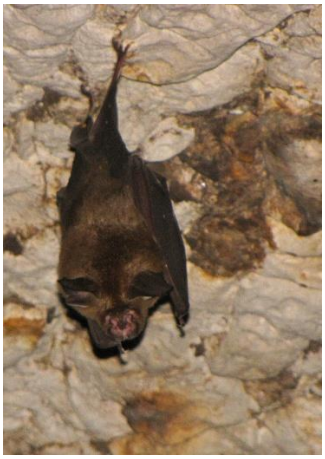




Atlas moth (Attacus atlas), one of the largest moths in the world. The wingspan of females can reach up to 30 cm.







Bat hanging from a rock face with a characteristic nose structure





Fruit bats feed primarily on fruit and nectar and play an important role in seed dispersal.

























Distance means safe



Comodo-Leguan (Waran), 75 kg. Injects venom + kills via bite causing protein poisoning.



Walk on Komodo. Walking portions of less good food. Standard good food in the back.



Standard good food



Tongue that smells everything.
The young ones need to get up into the trees—
otherwise, they'll become food! ⇒

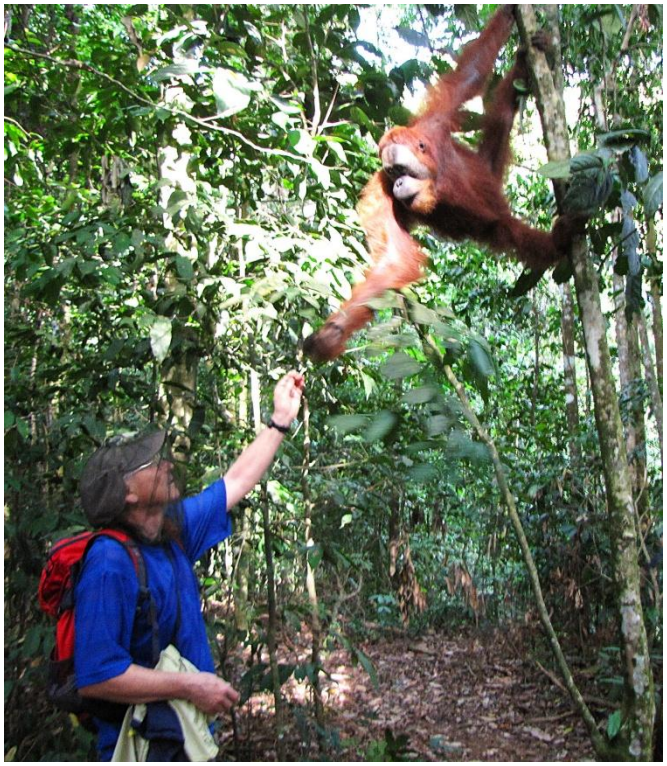




Die Reste der Mahlzeit







← Contact of family members



He doesn't seem to have been fully pleased about the contact.

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Excerpts from my Collection of important <u>German</u> Newspaper Issues

(*German texts, from many sources extracted. Some personal notes are added*)

1 Emperor's War Information, Depeches (Reports) of the Franco-Prussian War (1870/1871)

Very essential for the excerpts are the associated wars.

Franco-Prussian War , 1870/1871
The pretext for France's initiation of the war was the candidacy of Hereditary Prince Leopold of Hohenzollern-Sigmaringen for the vacant Spanish crown in July 1870. War broke out in July 1870. It was essentially a military conflict between France and the North German Confederation, led by Prussia. Unexpectedly, the South German states of Bavaria, Württemberg, Baden, and Hesse-Darmstadt joined the fray. In the end, Germany emerged victorious, thus laying the foundation for a German nation-state. For the French, the defeat was a profound humiliation.

World War I , 1914-1918
The assassination of Archduke Franz Ferdinand, heir to the Austro-Hungarian throne, and his wife by the Serb Gavrilo Princip in Sarajevo is considered the trigger. Russia supported Serbia, thus bringing the Entente into the fray. On August 1, 1914, the German Empire declared war on the Russian Empire. Key war partners were the so-called 'Mittelmächte', consisting of the German Empire and Austria-Hungary. They were joined by the Ottoman Empire and the Kingdom of Bulgaria. Opposing them was the so-called "Entente," also known as the Allies. This included France, Great Britain, and Russia. Other countries such as Italy, Japan, and the USA also joined them. On November 11, 1918, the German government signed an armistice in the Forest of Compiègne (north of Paris). The Treaty of Versailles of 28 June 1919 between the 26 Allied and Associated Powers and the 'Deutsche Reich' assigned blame for the outbreak of the First World War to the Germans and its allies.
It cost the lives of approximately 3.2% of the French population (1.3 million), approximately 3% of the German population (2 million), and approximately 2% of the British population (850,000).

World War II (WW-II) , 1939-1945
The war was triggered by Hitler's Germany's illegal attack on Poland on September 1, 1939. Hitler's goals were the extermination of all Jews, the conquest of "living space (Lebensraum)" in the East, and the achievement of superiority over all other nations. Hitler had an overarching goal of territorial expansion, driven primarily by his desire for the reunification of the Germans and his pursuit of Lebensraum, which he believed would enable the Germans to become economically self-sufficient and militarily secure.
Nazi Germany murdered over 11 million people as part of a systematic extermination program, including 6 million Jews. In addition to the Nazi concentration camps, the Soviet Gulags (labor camps) led to the deaths of 3.6 million civilians. 1.3 million Wehrmacht soldiers are listed as missing.
According to Article 231, the so-called war guilt clause, Germany had to accept full responsibility for the war. Germany lost 13% of its territory and 12% of its population to the Allies. France, which had suffered greatly in the war, was determined to ensure that Germany could not challenge it again; the Saarland remained occupied by France until 1955.
War deaths relative to population: Poland 17%, Soviet Union 14%, Yugoslavia, Hungary 10%, Germany 10%, Japan 5%, China 2.6%, France 1%, Italy 0.7%, USA 0.3%.

"***What for***?" remains as question.

(The following pages could be zoomed for better readability!)

Deutsch-französischen Krieg

Sämmtliche Depeschen

nach amtlicher Bekanntmachung des Königl. Polizei-Präsidii.

No. 1. Depesche 1–106. Druck und Verlag von H. Ertz in Berlin Oranien-Straße 151, am Moritzplatz. **1870 und 71.**

An mein Volk!

Indem ich heute zur Armee gehe, um mit ihr für Deutschlands Ehre und für Erhaltung unserer höchsten Güter zu kämpfen, will Ich, im Hinblicke auf die einmüthige Erhebung Meines Volkes, eine Amnestie für politische Verbrechen und Vergehen ertheilen. Ich habe das Staats-Ministerium beauftragt, Mir einen Erlaß in diesem Sinne zu unterbreiten.

Mein Volk weiß mit Mir, daß Friedensbruch und Feindschaft wahrhaftig nicht auf unsere Seite war. Aber herausgefordert, sind wir entschlossen, gleich unseren Vätern und in fester Zuversicht auf Gott den Kampf zu bestehen, zur Errettung des Vaterlandes.

Berlin, den 31. Juli 1870. **Wilhelm.**

An die Armee!

Ganz Deutschland steht einmüthig in den Waffen gegen einen Nachbarstaat, der uns überraschend und ohne Grund den Krieg erklärt hat. Es gilt die Vertheidigung des bedrohten Vaterlandes, unsere Ehre, des eigenen Heerdes. Ich übernehme heute das Kommando über die gesammte Armee und ziehe getrost in einen Kampf, den unsere Väter in gleicher Lage einst rahmvoll bestanden. Mit mir blickt das ganze Vaterland vertrauensvoll auf Euch. Gott der Herr wird mit unserer gerechten Sache sein.

Mainz, 2. August 1870. **Wilhelm.**

1. Depesche.

Teise, den 30. Juli, Mittags 12 Uhr.

Der Feind hält sich ruhig.

[illegible] Angriffs Befehl, sich aus Saarbrücken zurück zu ziehen; die Cavallerie soll Fühlung am Feinde behalten.

Oestlich von Thionville concentrirt sich der Feind. Derselbe hat Gerswelier verlassen nachdem er aus dem Walde von St. Arnual vertrieben worden ist.

Saarlouis, den 31. Juli, Vormittags 9 Uhr.

Hinter Forbach standen gestern vom Feinde 4 Infanterie-Regimenter, 1 Jäger-Bataillon, 3 Reiter-Regimenter und 1 Batterie.

Königliches Polizei-Präsidium.
von Wurmb.

2. Depesche.

Am 2. August, Vormittags 10 Uhr ist das kleine Detachement in Saarbrücken von 3 feindlichen Divisionen angegriffen, die Stadt mit 23 Geschützen beschossen worden. Um 12 Uhr wurde die Höhe des Exercierplatzes, um 2 Uhr die Stadt von dem Detachement geräumt und der Rückzug zum nächsten Soutien angetreten. Verlust verhältnißmäßig gering.

Nach Aussage eines Gefangenen war der Kaiser um 11 Uhr vor Saarbrücken eingetroffen.

Königliches Polizei-Präsidium.
von Wurmb.

3. Depesche.

Zu der letzten Nacht von der Armee eingegangene Details über das Gefecht bei Saarbrücken lauten:

Ungeachtet des Feuers einer bedeutenden Artillerie verblieben unsere Vorposten in ihrer Stellung bis zur vollen Entwickelung des Gegners; erst als dieser 3 Divisionen formirt hatte und vorging, räumte die schwache preußische Vorposten-Abtheilung die Stadt und nahm dicht nördlich derselben eine neue Beobachtungs-Stellung.

Diesseitiger Verlust in diesem Vorposten-Gefecht 2 Offiziere, 70 Mann, trotz Chassepots, Mitrailleusen und zahlreicher Artillerie. — Der Feind scheint bedeutende Verluste zu haben.

An demselben Tage, 2. August, ging der Feind bei Reinheim östlich Saargemünd mit einer starken Kolonne über die Grenze, eröffnete auf die kleinsten diesseitigen Patrouillen heftiges Tirailleurfeuer ganzer Compagnien, wobei jedoch nur ein Pferd getroffen wurde; vor Anbruch der Nacht ging der Feind wieder zurück.

Unsere Truppen in allen diesen kleinen Gefechten herrlich.

Berlin, den 4. August 1870.

Königliches Polizei-Präsidium.
von Wurmb.



4. Depesche.

Glänzender aber blutiger Sieg der Kronprinzlichen Armee, unter des Kronprinzen Augen, bei Erstürmung von Weißenburg und des dahinter liegenden Geisberges, durch Regimenter vom 5. u. 11. preußischen u. 2. bayrischen Armeecorps.

Französische Division Douay vom Corps Mac Mahon, unter Zurücklassung ihres Zeltlagers, in Auflösung zurückgeworfen.

General Douay todt. Ueber 500 unverwundete Gefangene, 4 Kanonen viele Turcos, und 1 Geschütz in unsere Hände. Unserseits General Kirchbach [illegible] Königs-Grenadier- und 58er Regiment starke Verluste.

Berlin, den 4. August 1870.

5. Depesche.

An die Königin Augusta! Mainz, 4 August.

Unter Fritzen's Augen heute einen glänzenden aber blutigen Sieg erfochten durch Stürmung von Weißenburg und des dahinter liegenden Geisberges. Unser 5. und 11. Corps und 2. bayrisches Armee-Corps fechten.

Feind in die Flucht. 500 unverwundete Gefangene, 1 Kanone und das Zeltlager in unseren Händen. Divisions-General Douai todt. Von uns General v. Kirchbach leicht gestreift.

Mein Regiment und 58er starke Verluste. Gott sei gepriesen für diese erste Waffenthat! Er helfe weiter. **Wilhelm.**

6. Depesche.

Mainz, Freitag, den 5. August, Morg. 9 Uhr 25 M.

Nach soeben im großen Hauptquartier eingegangenen Nachrichten sind in dem Gefecht bei Weißenburg nicht 500, sondern 800 unverwundete französische Soldaten in preußische Kriegsgefangenschaft gefallen.

Auch in Mainz sind bereits französische Kriegsgefangene eingetroffen.

München, Freitag, den 5. August, Vormittags.

Eine amtliche Mittheilung des bayerischen Kriegs-Ministeriums meldet, daß sich unter den 800 bei Weißenburg in Kriegsgefangenschaft gefallenen Franzosen 18 Offiziere befinden.

Frankfurt a. M., Freitag, den 5. August, Vormittags 11 Uhr 20 Minuten.

Soeben traf ein Zug von Weißenburg mit 10 gefangenen Offizieren und 480 Mann französischen Gefangenen, darunter viele Turkos, hier ein. Die Gefangenen wurden hier gespeist, dann nach dem Norden, wie man hört über Berlin, weiter befördert.

7. Depesche.

Eine von der Armee am 6. August des Morgens eingegangene Depesche sagt: Der Kronprinz hat am 5. d. den Vormarsch über Weißenburg hinaus fortgesetzt, ohne auf ernstlichen Widerstand zu stoßen. Die von ihm passirten französischen Ortschaften mit Verwundeten gefüllt, unter letzteren auch der Oberst des französischen 50. Regiments. — Der tiefe Eindruck des Gefechts unverkennbar.

Bei Saarbrücken findet der Feind ein barbarisches Vergnügen daran, die unbefestigte Stadt immer von Neuem mit Granaten zu überschütten, in keiner anderen Absicht, als seinen Muth an friedlichen Bürgern zu üben.

8. Depesche.

Siegreiche Schlacht bei Wörth.

Mac Mahon mit dem größten Theile meiner Armee vollständig geschlagen, Franzosen auf Bitsch zurückgeworfen.

Auf dem Schlachtfelde bei Wörth, 6. August 4½ Uhr Nachmittags. **Friedrich Wilhelm.**
Kronprinz.

9. Depesche.

Mainz, den 6. August, [illegible] 6 Uhr 10 Minuten.

Die französische Armee hat auf der ganzen [illegible] ins Innere begriffen. [illegible] das nach der berühmten Schlacht der drei [illegible] gösischen Divisionen gegen drei preußische Corps [illegible] nen von den Franzosen besetzte Saarbrücken [illegible] selben wieder geräumt, vor ihrem Abzuge aber diese offene und wohlhabende Stadt in Brand gesteckt.

Auf ihrem Rückzuge haben sie von den nahen Bergen dem angelegten Feuer durch Brandkugeln nachgeholfen.

10. Depesche.

Mainz, den 6. August, Abends 9 Uhr.

An General von Hannenfeld.

Die Todten der preußischen Colonnen hatten sich am 5. der Saar genähert, heute früh traf General von Kamecke westlich Saarbrück den Feind in starker Stellung auf den Bergen bei Spicheren und ging sofort zum Angriff über. Auf den Kanonendonner eilten Abtheilungen der Division Barneckow und Stülpnagel eben dahin, General von Göben übernahm das Commando und gelang es nach sehr heftigem Kampfe die von Seiten des französischen Corps Frossard besetzte Position zu erstürmen. General von Francois und Oberst von Reuter verwundet.

A. L. v. Verdi.

Mainz, 7. August, 4 Uhr 30 Minuten Morgens.

An den General v. Hannenfeld.

Kronprinz meldet vom 6. Abends: Zu siegreicher Schlacht über Mac Mahon, dessen Corps bestand durch Divisionen der Corps de Failly und Canrobert, 2 Adler, 6 Mitrailleusen und einige 30 Geschütze genommen, über 4000 Gefangene vorläufig gezählt. General Bose verwundet. General Kirchbach commandirte wieder sein Corps. Beiderseits starke Verluste.

von Podbielsky.

Mainz, 7. August, 6 Uhr Morgens.

An den General von Hannenfeld.

General Göben meldet weiter über Gefecht westlich Saarbrück: Mehrere hundert Gefangene vom Corps Frossard. Nach ihren Aussagen standen uns vier Divisionen gegenüber. Ende des Kampfes erst bei völliger Dunkelheit. Feind deckte seinen Rückzug durch starkes Geschützfeuer von Spicheren her. General Steinmetz gegen Abend angekommen und Befehl übernommen. General Francois gefallen. Verlust, namentlich an Offizieren, groß, vom Feinde zahlreiche Todte.

von Verdi.

An die Königin Augusta!

Welches Glück, dieser neue große Sieg durch Fritz! Preise nur Gott für seine Gnade! Genannt einige 30 Geschütze, 2 Adler, 6 Mitrailleusen, 4000 Gefangene. Mac Mahon war [illegible] verstärkt aus der Haupt-Armee.

[illegible] soll Victoria geschossen werden. Wilhelm.

11. Depesche.

Homburg, den 8. August 1870, 9 Uhr 45 Min. früh.

Seine Königliche Hoheit der Kronprinz meldet:

Der Feind ging nach gestriger Schlacht von Wörth in größter Aufregung zurück. Bei Niederbronn verfahrte französische Artillerie zu halten, es wurde von den Bayern genommen. Der Feind ging auf der Straße nach Bitsch zurück. Würtembergische Cavallerie nahm bei Reichshofen viele Vorräthe und 4 Geschütze. Todte und Verwundete bedecken die Rückzugsstraße. Heute früh wurde das vom Feinde verlassene Hagenau besetzt.

An der Saar wurde Saargemünd von den diesseitigen Truppen besetzt. Forbach nach leichtem Gefecht genommen.

12. Depesche.

Saarbrücken, den 9. August, 11 Uhr 45 Min. Nachts.

An General von Hanenfeldt.

Das Gefecht vom 6. August bei Spicheren umweit Saarbrücken hat größere Dimensionen und Resultate gehabt, als bisher bekannt gewesen. Das französische Corps Frossard ist in demselben fast gänzlich aufgelöst worden. Die Verluste desselben an Todten und Verwundeten [illegible] außerordentlich bedeutend. Das Lager et Division und verschiedene bedeutende Mago sind genommen; außerdem eine sehr große zahl Gefangene eingebracht, deren Zahl sich [illegible] stündlich vermehrt. Bis jetzt herein über [illegible] noch [illegible]

Bei der 5. Division allein circa 1800 Mann. Die französische Armee weicht auf allen Punkten zurück. St. Avold von diesseitigen Truppen besetzt.

Patrouillen streifen bis 2 Meilen von Metz. Sonst am 9. bis jetzt nichts von Belang gemeldet.

v. Podbielski.

13. Depesche.

Saarbrück, den 9. August.

Bei Forbach haben unsere Truppen dem Feinde einen vollständigen Brückentrain von etwa 40 Wagen abgenommen. Daß dies geschehen konnte, wird als ein Symptom starker Demoralisation auf feindlicher Seite angesehen.

14. Depesche.

Saarbrücken, 10. August, Abends 11 Uhr 15 Minuten.

An General von Hanenfeldt.

Die französische Armee setzt ihren Rückzug gegen die Mosel auf allen Punkten fort. Von sämmtlichen preußischen Armeen folgt die Cavallerie ihr auf dem Fuße.

Die Linie Saarunion, Groß-Tenquin, Faulquemont, Feuling, les Etange ist von der Cavallerie bereits überschritten.

Große Vorräthe von Lebensmitteln, zwei Ponton-Colonnen, mehrere Eisenbahn-Trains sind in unsere Hände gefallen.

Die kleine Festung Lützelstein (La petite pierre) in den Vogesen ist vom Feinde geräumt, unter Zurücklassung von Geschützen und [illegible] Offiziere [illegible] adet. Feind-

15. Depesch[illegible] Paris nichts

[illegible] Podbielski.

Die französische Armee hat [illegible] französischen Ried zur Berüh[illegible] Treydem ist sie gestern bei M[illegible] gegangen. — Unsere Cavallerie [illegible] Mousson und Nancy. — Abtheilungen [illegible] vor Straßburg eingetroffen. — Die kleine Festung Lützelberg in den Vogesen hat kapitulirt. — Lützelstein (la petite pierre) ist vom Feinde verlassen. — Daselbst und an anderen verschiedenen Stellen große Magazine und Militair-Vorräthe vorgefunden.

16. Depesche.

Aus dem großen Hauptquartier.

Pont-à-Mousson, den 13. August, 10½ Uhr Abends.

Ein feindliches Bataillon von Metz per Bahn auf Pont-à-Mousson dirigirt, zog, als unsere Infanterie heute früh die Stadt besetzte, mit Hinterlassung seines Gepäcks eiligst ab.

Nancy ist vom Feinde geräumt.

Unsere Cavallerie streifte nördlich der S[illegible] die Bahn Frouard, andere Cavallerie-Abtheil[illegible]te nahmen Fourage-Transport in den Vor[illegible] auf dem Glacis von Metz noch beso[illegible] zösischen Truppen.

17. Depesche.

Ihre Maj. die Königin hat soeben von Seiner Majestät dem Könige folgende Depesche erhalten:

Herny, Sonntag, 14. August.

Siegreiches Gefecht bei Metz durch Truppen des VII. und I. Armee-Corps. Details fehlen noch. Ich begebe mich sogleich auf das Schlachtfeld.

Wilhelm.

18. Depesche.

Depesche Seiner Majestät des Königs an Ihre Majestät die Königin.

Herny, den 15. August, 7 Uhr 30 Minuten Abends.

Um 3 Uhr vom Schlachtfelde von Metz zurück. — Die Avantgarde des VII. Corps griff gestern Abend gegen 5 Uhr den abziehenden Feind an; dieser stellte und verstärkte sich zusehends aus der Festung. — Die 13. Division und Theile der 14. unterstützten die Avantgarde, desgleichen Theile des I. Armee-Corps. — Ein sehr blutiges Gefecht entspann sich auf der ganzen Linie; der Feind ward auf allen Punkten geworfen und die Verfolgung ging bis vor das Glacis der Außenwerke. — Die Nähe der Festung gestattete dem Feinde vielfach, seine Blessirten zu sichern. Nachdem unsere Blessirten geborgen waren, zogen die Truppen in ihre alten Bivouacs mit Tagesanbruch. — Die Truppen sollen sich alle mit unglaublicher und bewunderungswürdiger Energie und mit Lust geschlagen haben. — Ich habe viele gesehen und ihnen von Herzen gedankt. — Der Jubel war ergreifend. — Ich sprach mit General Steinmetz, Zastrow, Manteuffel, Goeben.

Großes Hauptquartier Herny, per Post wegen Drahtstörung nach Sarbrücken befördert.

Den 14. d. M., gegen 4 Uhr Nachmittags, glaubte unsere vor Metz befindliche Avantgarde den Abmarsch der unter dem Schutz der Festung noch lagernden Corps zu erkennen. Unverzüglich griff Brigade Goltz die Arrieregarde des Corps Decuen (bisher Bazaine) an, verwickelte diese in so heftiges Gefecht, daß das feindliche Corps sowie Abtheilungen des Corps Frossard zu ihrer Unterstützung Front machen mußten. General Glümer führte seine zweite Brigade Osten-Sacken sofort vor. Rechtzeitig griffen ferner die Divisionen Kamele und Wrangel in wirksamster Weise […] dem linken Flügel in das Gefecht ein und […]en den Feind schließlich auf allen Punkten […]hinter die Festungswerke. […]nzwischen hatte das Corps Admirault die […] Flanke des I. Armee-Corps zu erfassen […]ht, aber es wurde vom General Manteuffel […]nen Tambour-battant vorgehenden Reserven angegriffen und unter Erstürmung einer […]eihe von Abschnitten der Feind auf diesem […]ügel eben so entschieden in die Festung zurückgeworfen. Die diesseitigen Truppen drangen bis Bellecroix und Borny bis in den Bereich der neu angelegten Forts vor. Heute früh recognoscirte Seine Majestät der König das Schlachtfeld und besichtigte die zur sicheren Abführung der preußischen wie französischen Verwundeten auf demselben stehen gebliebenen diesseitigen Vorposten. Von den höchstliegenden Punkten war auf dem rechten Ufer der Mosel vom Feinde nichts mehr zu erkennen. Dichte Staubwolken jenseits des Flusses ließen auf den Abmarsch der feindlichen Haupt-Armee schließen.

Herny, den 15. August, 9 Uhr 30 Minuten Abends.

Die kleine Festung Marsal hat nach kurzer Beschießung des Bayerischen II. Armee-Corps capitulirt. Erhebliche Bestände und circa 60 Geschütze sind daselbst vorgefunden.

19. Depesche.

Mundelsheim, den 16. August, 9 Uhr 40 Min. Abends.

Die Garnison von Straßburg unternahm heute Nachmittag einen Ausfall gegen Ostwald und wurde nebst Verlust an Mannschaft und drei Geschützen zurückgeschlagen. von Werder.

20. Depesche.

Pont-à-Mousson, den 17. August, 7 Uhr 10 Min. Abends.

[…]tenant von Alvensleben mit […]mee-Corps am 16. westlich von […]zugsstraße des Feindes nach […] Blutiger Kampf gegen Divisionen […] Admirault, Frossard, Canrobert und die […]liche Garde. Vom zehnten Corps (durch) Abtheilungen des achten und neunten Corps, unter Oberbefehl des Prinzen Friedrich Carl, successive unterstützt, wurde der Feind trotz bedeutender Ueberlegenheit nach zwölfstündigem heißen Ringen auf Metz zurückgeworfen. Verluste aller Waffen auf beiden Seiten sehr bedeutend; diesseits General von Döring und v. Wedel gefallen, von Rauch und von Grüter verwundet. Seine Majestät der König begrüßten heute die Truppen auf dem siegreich behaupteten Schlachtfelde. A. B. von Verdy.

21. Depesche.

[…]Majestät die Königin hat von Sr. Majestät […]ige aus Pont-à-Mousson den 17. August, […] datirte Depesche über die Schlacht erhalten, die noch folgende inter[…]en dem bereits bekannten Inhalt […]t fand bei Mars-la-Tour statt. 2 Adler und 7 Kanonen[…]

22. Depesche.

Witte, Posthaus, Mittwoch, 17. August.

Die Flottillen-Division, bestehend aus Seiner Majestät Yacht „Grille“ und den Kanonenbooten „Drache“ „Blitz“ und „Salamander“, ist heute Nachmittag westlich von Rügen im Gefecht gegen vier französische Panzer-Fregatten, eine Korvette und ein Aviso gewesen. Die feindliche Flotte liegt gegenwärtig noch seewärts vom Dornbusch. Dieselbe, unter Befehl eines Vice-Admirals, kam von Westen und wurde von „Grille“ zuerst nordwärts von Darserort angetroffen. Keine Verluste. Graf Waldersee.

23. Depesche.

Großer Sieg! unter Führung Sr. Majestät des Königs.
An Ihre Majestät die Königin!

Bivouac bei Rezonville, d. 18. August, 9 Uhr Abends.

Die französische Armee in sehr starker Stellung westlich von Metz heute unter Meiner Führung angegriffen, in neunstündlicher Schlacht vollständig geschlagen, von ihren Verbindungen mit Paris abgeschnitten und gegen Metz zurückgeworfen. Wilhelm.

24. Depesche.

Von der Armee sind bis jetzt keine näheren Details über die Schlacht am 18. August eingegangen, bis auf die Mittheilung, daß die feindliche Haupt-Armee sich in der Nacht vom 18. zum 19. ganz in die Befestigung von Metz zurückgezogen hat.

Berlin, den 21. August, 8 Uhr Morgens.

Königliches Polizei-Präsidium.
von Wurmb.

25. Depesche.

Stuttgart, Sonntag, den 21. August.

Von dem würtembergischen Kriegs-Ministerium wird Folgendes amtlich publicirt:

Die Vogesen-Festung Pfalzburg (an der Straße von Saverne nach Nancy), welche bisher von den würtembergischen Truppen eingeschlossen war, hat gestern Nachmittag bereits capitulirt.

26. Depesche.

Dresden, Sonntag, den 21. August, Mittags.

Das „Dresdner Journal“ veröffentlicht nachstehenden, beim sächsischen Kriegs-Ministerium eingegangenen telegraphischen Bericht über den Antheil des zwölften (sächsischen) Armee-Corps an der Schlacht bei Rezonville:

„Das sächsische Armee-Corps war neben den preußischen Garden um 4 Uhr mit gutem Erfolge ins Gefecht getreten. Beide Divisionen und die Corps-Artillerie waren engagirt. Verluste und Details noch unbekannt. Viele Gefangene gemacht. Engagirt waren das zweite, siebente, achte, neunte, zwölfte, dritte und Garde-Corps und Artillerie.“

27. Depesche.

In der Schlacht […]n 18. waren vorzugsweise engagirt: Ga[…] 2., 7., 8., 9. und 12. Armee-Corps. In […]erve befanden sich das 3. und 10. Corps, […]on diesen nur geringe Abtheilungen im Gefecht, großentheils Artillerie. Der Feind in festu[…]ähnlicher Position mit seiner ganzen Armee[…]sgenommen das Corps Mac-Mahon und […]ivisionen Failly. Bei Einbruch der Nacht sämmtliche Höhen erstürmt. Verlust noch nicht annähernd zu übersehen. General Craushaar (Sachsen), Oberst Roeder, Erckert todt. Dauer der Schlacht von 12 Uhr Mittags bis 9 Uhr Abends. Mehrere Tausend Gefangene gemacht.

General-Quartiermeister von Podbielski.

Diese, am 22. Morgens 7 Uhr eingetroffene Depesche ist in Pont-à-Mousson aufgegeben, das Datum der Aufgabe bleibt noch festzustellen.

Berlin, den 22. August 1870.

28. Depesche.

Bar le Duc, den 24. August 9 Uhr Abends.

Chalons ist vom Feinde geräumt, unsere Spitzen darüber hinaus. — Die Armee setzt ihren Vormarsch fort. v. Podbielski.

29. Depesche.

Mundolsheim, den 26. August, 9 Uhr Morgens.

Seit dem 23. Abends wird Stadt und Festung Straßburg von Kehl mit Belagerungs-Geschützen beschossen; von der Südfront des Nachts mit der Feld-Artillerie, von der Nordfront seit 24. früh mit Belagerungs-Geschützen. Die Vorposten stehen 5 bis 800 Schritt von der Festung. Der Schaden in Straßburg bedeutend. Kleinere Pulvermagazine sind in die Luft geflogen, Citadelle, Magazine und eine große Anzahl Gebäude stehen in Flammen.

Verluste diesseits sehr gering. v. Verdy.

30. Depesche.

Bar le Duc, den 26. August, 3 Uhr Nachmittags.

Die kleine Festung Vitry hat sich gestern früh, am 25. August, ergeben. 16 Kanonen wurden vorgefunden. Zwei Bataillone Garde mobile, welche sich verirrt hatten, wurden von unserer Cavallerie gesprengt. 17 Offiziere und 850 Mann gefangen.

Diesseitiger Verlust: Major v. Friesen schwer blessirt, 3 Mann verwundet. v. Podbielski.

31. Depesche

1. Von der Armee sind in den letzten Tagen mehrfach Telegramme eingegangen, die indeß 3 bis 4 Tage bedurften, um in Berlin einzutreffen, und somit von Privat-Nachrichten überholt worden sind. — Nicht bekannt bis jetzt war, daß die französischen Generale Frossard und Bourbacki verwundet sein sollen. —

2. Großes Haupt-Quartier, 28. August, 7 Uhr Abends.

Gestern siegreiches Gefecht des 3. sächsischen Reiter-Regiments, 1 Escadron des Ulanen-Regiments Nr. 18 und der Batterie Zwinler gegen 6 Escadrons französischer Chasseurs in der Gegend von Busancy. Der französische Co[…]mandeur verwundet und gefangen.

v. Podbie[…]

32. Depesche.

Varennes, den 30. August, 2 Uhr 30 Min. Nachm.

Die Avantgarde des zwölften (Königlich sächsischen) Armee-Corps hatte heute Nachmittag ein glückliches Gefecht bei Nouart mit Truppen des französischen fünften Arme-Corps. Die die Verbindung von Thionville mit Paris vermittelnde Eisenbahn ist zwischen Thionville und Mezières in zwei verschiedenen Stellen durch diesseitige Detachements unterbrochen. Zwei preußische Husaren-Escadrons stürmten, abgesessen, Voncq und machten daselbst viele Gefangene, Turcos, Infanterie und Pompiers. von Podbielski.

33. Depesche.

An die Königin Augusta in Berlin.

Varennes, d. 30. August, 3 Uhr 30 Minuten Nachm.

Wir hatten gestern ein siegreiches Gefecht durch das vierte, zwölfte (Sächsische) und erste Baierische Corps. Mac Mahon geschlagen und von Beaumont bis über die Maas bei Mousson zurückgedrängt. 12 Geschütze, einige Tausend Gefangene und sehr viel Material in unsern Händen. Verluste mäßig. Ich kehre soeben auf das Schlachtfeld zurück, um die Früchte des Sieges zu verfolgen.

Möge Gott uns ferner gnädig helfen wie bisher!
Wilhelm.

34. Depesche.

Varennes, d. 1. September, 9 Uhr 20 Minuten Vormittag.

Der Versuch Mac-Mahons, Metz zu entsetzen, ist durch die Operationen der letzten Tage und die Schlacht am 30. völlig vereitelt. In der gestrigen Schlacht mehr als 20 Geschütze genommen. Verlust des Feindes außerordentlich groß, der unsrige verhältnißmäßig gering. Früher haben preußische Ulanen und Husaren, letztere zu Fuß, zwei von stärkerer feindlicher Infanterie besetzte Dörfer in der Nähe von Sedan genommen. v. Podbielski.

35. Depesche.

An die Königin Augusta in Berlin.
Auf dem Schlachtfelde von Sedan,
den 1. September 5¾ Uhr Nachm.

Seit halb 8 Uhr siegreich fortschreitende Schlacht rund um Sedan. — Garde, vierte, fünfte, elfte, zwölfte Corps und Bayern. — Feind fast ganz in die Stadt zurückgeworfen. Wilhelm.

36. Depesche.

St. Barbe bei Metz, den 1. September,
9 Uhr 45 Minuten Abends.

An General von Borke, Königsberg i. P.

Seit gestern früh ist Marschall Bazaine mit seiner ganzen Armee im Kampfe gegen das erste Armee-Corps und die ihm zugetheilte Dvision v. Kummer bei Tag und Nacht gewesen, und gestern in der Nacht und heute überall siegreich zurückgeschlagen worden.

Die Franzosen haben […] großer Tapferkeit […]fochten, mußten aber der […]reußischen weichen. […]rinz Friedrich Carl, der O[…]er-Befehlshaber der […]rungs-Truppen, ha[…]tern und heute dem ersten Armee-Corps seine […]rkennung und seinen Glückwunsch zu beiden Sie[…]usgesprochen. Die vierte Landwehr-Division […] an dem heutigen Siege ruhmreichen Antheil.

v. Manteuffel.

37. Depesche.

Mundolsheim, den 2. September, 11 Uhr Mittags.

Der Feind eröffnete heute früh 4 Uhr von der ganzen Front ein sehr heftiges, nicht gut gezieltes Feuer. Heftiger Geschützkampf. Um 8 Uhr war der Feind zum Schweigen gebracht. Verluste unserer Artillerie noch nicht bekannt, jedenfalls nicht bedeutend. Zu gleicher Zeit fiel der Feind auf der Insel Waaken und gegen den Bahnhof aus. Oberst Renz warf mit einem Bataillon 2. badischen Grenadier-Regiments den Feind vom Bahnhof bis in die Festung. Hauptmann Graef dieses Regiments geblieben, circa 50 Mann todt und verwundet. Angriff auf Waaken durch das 30. Regiment abgeschlagen. 1 Offizier und 4 Chasseurs gefangen. Lieutenant von Versen verwundet. Die zweite Parallele fast vollendet. v. Werder.

38. Depesche.

Malamcourt, den 2. September, 11 Uhr 20 Min. Vorm.

Vom Morgen des 31. August bis Mittag des 1. September hat Marschall Bazaine fast unausgesetzt versucht, mit mehreren Corps aus Metz nach Norden durchzubrechen. Unter Oberbefehl des Prinzen Friedrich Carl hat General von Manteuffel alle diese Versuche in ruhmvollen Kämpfen, die in dem Namen Schlacht bei Noisseville zusammenzufassen, zurückgeschlagen. Der Feind wiederum in die Festung zurückgeworfen.

An den Gefechten waren betheiligt: das erste Armee-Corps, das neunte Armee-Corps, die Division Kummer (Linie und Landwehr), die 28. Infanterie-Brigade. Die Haupt-Gefechte fanden um Servigny, Noisseville und Retonfay statt. Nächtliche Ueberfälle wurden mit ostpreußischen Kolben und Bajonetten zurückgewiesen. Unsere hierfür verhältnißmäßig nicht sehr großen Verluste noch nicht zu übersehen, die des Feindes sehr bedeutend.

General von Stiehle.

39. Depesche.

Der Königin Augusta in Berlin.

Vor Sedan, den 2. September, ½2 Uhr Nachm.

Die Capitulation, wodurch die ganze Armee in Sedan kriegsgefangen, ist soeben mit dem General Wimpfen geschlossen, der an Stelle des verwundeten Marschalls Mac-Mahon das Commando führte. Der Kaiser hat nur sich selbst Mir ergeben, da er das Commando nicht führt und Alles der Regentschaft in Paris überläßt. Seinen Aufenthaltsort werde Ich bestimmen, nachdem Ich ihn gesprochen habe in einem Rendezvous, das sofort stattfindet.

Welch' eine Wendung durch Gottes Führung!
Wilhelm.

40. Depesche.

St. Menehould, 5. Sept. 7 Uhr 25 Min. Nachm.

Die bei Sedan vernichtete Armee Mac-Mahons zählte vor der Schlacht bei Beaumont am 30. Aug. noch über 120,000 Mann. Der Transport der Gefangenen, unter denen über 50 Generale, nach Deutschland, ist in der Ausführung begriffen. Unsere Armeen sind im Vormarsch auf Paris. v. Podbielski.

41. Depesche.

Varennes, den 4. September, 9 Uhr 45 Minuten Vormittag.
(In Ludwigshafen von Nancy per Post eingegangen.)

Die feindliche Armee, welche bei Sedan kapitulirt hat, zählte 14 Infanterie-, 5½ Cavallerie-Divisionen nebst zugehöriger Artillerie und Train. Während der Schlacht am 1. wurden allein an 30,000 Gefangene gemacht, mehrere Adler und viele Geschütze genommen. Mac-Mahon schwer blessirt. Diesseits Oberst von Scherbening todt, General von Gersdorff, Oberst von Bessel verwundet. Unsere Verluste verhältnißmäßig gering. Kaiser Napoleon heut früh nach Cassel abgereist. v. Podbielski.

42. Depesche.

Rheims, den 6. Sept. 9 Uhr 20 Min. Nachm.

Se. Maj. der König haben heute am 5. Sept. Ihren Einzug in Rheims gehalten. v. Podbielski.

43. Depesche.

Rheims, den 9. September, 1 Uhr 30 Minuten Mittags.

Außer 25,000 in der Schlacht von Sedan Gefangenen sind durch die Kapitulation vom 2. September 83,000 Mann inclusive 4000 Offiziere in Gefangenschaft gefallen, ferner 14,000 Verwundete vorgefunden. Ueber 400 Feld-Geschütze einschließlich 70 Mitrailleusen, 150 Festungs-Geschütze, 10,000 Pferde, überaus zahlreiches Armee-Material befindet sich in unseren Händen.

Hierzu die Verluste in der Schlacht von Beaumont, sowie circa 3000 nach Belgien Versprengte, ergiebt eine Gesammtstärke der Armee Mac-Mahons vor dieser Schlacht von nahe an 150,000 Mann. von Podbielski.

44. Depesche.

Der Königin Augusta in Berlin. Rheims, den 11. September.

Traurige Nachricht aus Laon, wo Citadelle gestern nach Capitulation und nach Einmarsch unserer Besatzung in die Luft gesprengt ward. 50 Mann todt und 300 Mobilgarden, viele Verstümmelt, Wilhelm von Mecklenburg verwundet. Unbedingt Verrath liegt vor. Wilhelm.

45. Depesche.

Nach soeben eingegangener Meldung hat sich am 9. Laon der sechsten Kavallerie-Division ergeben. — Nach abgeschlossener Kapitulation besetzte die vierte Kompagnie Jäger-Bataillons Nr 4. die Citadelle. Als der letzte Mann der Mobilgarde diese verlassen, sprengte der Feind vertragsbrüchig das Pulvermagazin in die Luft. — Furchtbare Zerstörung in Citadelle und Stadt, Herzog Wilhelm contusionirt. 95 Jäger der Kompagnie, über 300 Mobilgarden todt oder verwundet. von Podbielski.

46. Depesche.

Mundolsheim, den 15 September.

Nachdem dritte Parallele am 13. und 14. vollendet, ist die Glaciskrönung vor Werk 53 heute Nacht ausgeführt. — Bresch-Batterie wirkt mit gutem Erfolg. — In Straßburg am 13. die Republik erklärt. Das Detachement des Generals Keller vertrieb 200 Franc-Tireurs bei Bischheim und Colmar. von Werder.

47. Depesche.

Hauptquartier Meaux, den 15. September.

Der Feind hat auf den Chausseen u. Eisenbahnen nach Paris sämmtliche bedeutende Kunstbauten unnöthig gesprengt, da der Marsch diesseitiger Kolonnen dadurch nicht eine Stunde aufgehalten wurde. von Podbielski.

48. Depesche.

Von der Armee vor Paris.

I. Aus dem großen Hauptquartier vom 20. September.

Nach den vorbereitenden Bewegungen der letzten Tage ist am 19. durch einen Vormarsch sämmtlicher Corps die vollständige Cernirung von Paris ausgeführt worden. Seine Majestät der König recognosciren im Laufe des Tages die Nordost-Front der Befestigungen. v. Podbielski.

II. Ein Telegramm an Ihre Majestät die Königin von Sr. Königl. Hoheit dem Kronprinzen aus Versailles den 20. September.

Die Einschließung von Paris auf der Linie Versailles bis bei Vincennes siegreich durch meine Armee unter Zurückwerfung des Feindes und Eroberung einer Schanze mit 7 Geschützen ausgeführt. Verluste gering.

III. Aus einigen Telegrammen Sr. Majestät des Königs an Ihre Majestät die Königin vom 20 September.

Gestern früh die Meldung, daß die feindliche Position nördlich St. Denis bei Pierrefitte beim Erscheinen unserer Truppen verlassen ist. — So eben die Meldung, daß gestern Nachmittag das 5. Corps und das 2. bayerische Corps nach Seine-Uebergang bei Villeneuve St. Georges südlich Paris drei Divisionen des Generals Vinoy auf den Höhen von Sceaux angegriffen, mit Verlust von 7 Kanonen und vielen Gefangenen geschlagen und hinter die Forts auf Paris zurückgetrieben haben. Mein 7. Regiment wieder viel Verluste. Fritz war zugegen. Das Wetter ist seit 8 Tagen prächtig.

Von den Belagerungs-Corps vor Straßburg.

Mundolsheim, den 20. September.

Lünette 53 heute Nachmittag 4½ Uhr vom Lieutenant v. Müller des Garde-Füsilier-Regiments mit Mannschaften des Garde-Landwehr-Bataillons Cottbus durch überraschenden Angriff über den eben fertig gewordenen Damm genommen. Der Feind eröffnete ein äußerst lebhaftes Infanteriefeuer, was gegen 8 Uhr zum Schweigen gebracht war. v. Werder.

49. Depesche.

1) Von der Armee vor Paris.

Ferrières, den 20. September.

Bei der Cernirung von Paris folgende siegreiche Gefechte: Am 17. warfen Theile der 17. Brigade feindliche Bataillone nördlich des Waldes von Bevannes über den Haufen. Am 18. kleines Gefecht bei Bicêtre; am 19. Zurückwerfung des Feindes aus der verschanzten Stellung daselbst durch 5. preußisches und 2. bayerisches Corps bis hinter die Forts, wobei ihm 7 Geschütze abgenommen wurden. Diesseitige Verluste verhältnißmäßig sehr gering. In Versailles 2000 Mobilgarden gefangen. Sèvres, das diesseits Garnison verlangte, wurde besetzt.

von Podbielski.

2) Von dem Belagerungs-Corps vor Straßburg.

Mundolsheim, den 22. September.

Gestern Nacht um 11 Uhr wurde nach Lünette 52, die verlassen war, eine Faß-Brücke geschlagen und das Werk besetzt. Beim Einlogiren eröffnete der Feind auf das Werk ein sehr starkes Feuer. Das 34. Regiment und eine Compagnie Garde-Landwehr (Lissa) behaupteten sich jedoch und logirten sich ein. Major von Quitzow todt, die Verluste noch nicht ermittelt, aber nicht unbedeutend. In Lünette 53 sind 5 Kanonen genommen. v. Werder.

50. Depesche.

An den General von Hanenfeld.

Ecrouves, den 23. September,
5 Uhr 35 Min. Nachm.

Toul genommen.

von Krenski.

51. Depesche.

Ferrières, den 23. September 1870.

Vor Paris nichts Neues. Pariser Journale vom 22. gestehen über den Kampf am 19. ein, daß vier französische Linien-Divisionen an demselben Theil genommen, in voller Flucht zurückgegangen sind, und die Panique bis in das Innere der Stadt hineingetragen haben. Sie erheben gleichzeitig die Mobilgarde, die nichts gethan hat, auf Kosten der Linie, welche sie mit Schmähungen überhäufen.

So eben meldet Großherzog von Mecklenburg: Toul hat sich heut um 5½ Uhr nach achtstündiger Beschießung mit den Bedingungen der Capitulation von Sedan ergeben. v. Podbielski.

52. Depesche.

Ecrouves, den 24. September.

Durch die Kapitulation von Toul sind 109 Offiziere, 2240 Mann, 120 Pferde, 1 Mobilgarden-Adler, 197 Bronce-Geschütze, darunter 48 gezogene, 3000 Gewehre, 3000 Säbel, 500 Küraße, sehr bedeutende Munitions- und Ausrüstungs-Vorräthe, 143025 Tages-Portionen und 51949 Tages-Rationen in unsere Hände gefallen. von Krenski.

53. Depesche.

Ferrières, den 25. September.

Außer unbedeutenden Patrouillen-Gefechten vor Paris nichts Neues. v. Podbielski.

Ein Telegramm aus Versailles vom 25. September giebt die Aufstellung der III. Armee vor Paris und fügt hinzu:

Der Feind unternimmt nichts Ernstliches, zeigt drei Kanonenböte auf der Seine. Ueberall Verschanzungen und Barrikaden bemerkbar.

Karnatz.

54. Depesche.

Der Königin Augusta in Berlin.

Ferrières, den 27. September, 11 Uhr Abends.

Straßburg kapitulirte heute Abend um 9 Uhr. Wilhelm.

55. Depesche.

An Ihre Majestät die Königin. Mundolsheim 28. Sept.

Soeben Nachts 2 Uhr Kapitulation Straßburgs durch Oberstlieutenant v. Leszynski abgeschlossen. 451 Offiziere, 17,000 Mann incl. Nationalgarden strecken die Waffen. Um 8 Uhr werden Straßburgs Thore besetzt. v. Werder.

56. Depesche.

Ferrières, den 28. September.

Vier telegraphische Leitungen von Paris nach Rouen und nach dem Süden sind im Seine-Bett und unter der Erde diesseits aufgefunden und zerstört worden. Sonst nichts Neues. v. Podbielski.

57. Depesche.

Ferrières, den 30. September.

Am 30. früh sind stärkere Massen französischer Linien-Truppen gegen das sechste Armee-Corps aus Paris vorgebrochen. Gleichzeitig wurden die Vortruppen des fünften Armee-Corps durch 3 Bataillone angegriffen, während eine Brigade gegen das elfte Armee-Corps demonstrirte. Nach nur zweistündigem Gefechte, in welchem der Feind sehr bedeutende Verluste erlitt, ohne daß die diesseitigen Reserven eingreifen brauchten, zog sich der Gegner in großer Eile unter den Schutz des Forts zurück. Diesseitiger Verlust noch nicht bekannt, aber nicht bedeutend; beim elften Corps z. B. nur 8 Mann. Mehrere hundert Gefangene in unseren Händen.

von Podbielski.

Versailles, den 30. September.

Am 30. September, dem Geburtstage Ihrer Majestät der Königin, hat das sechste Armee-Corps mit großer Bravour einen Ausfall, welchen der größte Theil des Corps Vinoy gegen Süden unternahm, glänzend zurückgeschlagen und über 200 Gefangene gemacht. Der Kronprinz war während des ganzen Gefechts zugegen. Gegen das fünfte Corps ebenfalls ein feindlicher Ausfall nach Südwesten mit geringen diesseitigen Verlusten zurückgewiesen. Karnatz.

58. Depesche.

Mundolsheim, 30. September.

Heute Einzug in Straßburg, und sodann feierlicher Gottesdienst in der Thomas-Kirche. Ueber 500 französische Offiziere unterzeichneten Ehrenscheine, 50 bis 100 gingen in Gefangenschaft. Zahl der Gefangenen noch nicht festgestellt, da noch fortwährend deren eingeliefert werden. Die Beute in Straßburg beträchtlich 1070 Kanonen bis jetzt gezählt; 2 Millionen Francs Staatseigenthum in der Bank ermittelt, 8 Millionen noch zweifelhaft, Munition und besonders Tuchvorräthe sehr bedeutend.

Im Auftrage v. Leszczynski.

Rheims, den 30. September 1870.

Die Landwehr-Bataillone Landsberg, Frankfurt, Woldenberg des 1. Armee-Corps haben am 28. Sept. wiederholte Ausfälle der Garnison von Soissons abgewiesen. Die Garnison erbat Waffenruhe zur Abholung der Todten u. Verwundeten. Diesseitiger Verlust gering. v. Krenski.

59. Depesche.

Haupt-Quartier Corny vor Metz, den 8. October.

Feind griff (gestern) Nachmittags 2 Uhr über Woippy Division Kummer an. Heftiger Kampf bis in die Nacht. Der Feind überall mit großem Verluste und Nachtkampf zurückgeschlagen. Die 9. Infanterie-Brigade und Theile des 10. Corps griffen kräftig ein. Vom Feind suchten auch Garde-Truppen. Gleichzeitig entwickelte der Feind auf rechtem Moselufer mehrere Divisionen gegen 1. und 10. Corps. Es war dort lebhafte Kanonade. Verluste, namentlich der Division Kummer und des 10. Corps, sind auf 500 Mann, die des 3. Corps auf 130 Mann zu schätzen. v. Stiehle.

60. Depesche.

Versailles, den 8. October.

Das Telegramm enthält zunächst die Mittheilung über den Ausfall Bazaine's aus Metz am 7. und fährt fort:

Am 6. siegreiches Gefecht der badischen Brigade Degenfeld zwischen Raon l'Etape und St. Dié gegen größere Massen Francstireurs und Abtheilungen französischer Truppen, unter General Dupré. Letzterer verwundet, Feind auseinander gesprengt.

Vor Paris nicht Neues. v. Podbielski.

61. Depesche.

Versailles den 11. October.

Ein gemischtes Corps aus Truppen der Armee des Kronprinzen unter General von der Tann hat am 10. einen Theil der Loire-Armee bei Orleans geschlagen, 1000 Gefangene gemacht und 3 Geschütze erobert. Feind in regelloser Flucht. v. Gottberg.

62. Depesche.

Versailles, den 11. October.

Bayerisches Corps von der Tann, Cavallerie-Divisionen Prinz Albrecht Vater, Graf Stolberg schlugen am 10. eine feindliche Division bei Artenay, nahmen 3 Geschütze und machten 1000 Gefangene. Diesseitiger Verlust circa 110 Mann. Feind floh in voller Auflösung. Verfolgung wird fortgesetzt. Die Einnahme von Orleans steht bevor. Cavallerie-Division Rheinbaben trieb am 10. 4000 Mobilgarden bei Cherisy über die Eure zurück, wobei letztere erhebliche Verluste erlitten. — Vor Paris nichts Neues. v. Podbielski.

63. Depesche.

Versailles, den 12. October.

Am 11. nach neunstündigem Kampfe die Loire-Armee auf Orleans und über die Loire zurück geworfen. Orleans erstürmt. Mehrere 1000 Gefangene gemacht. Diesseitiger Verlust verhältnißmäßig gering. Diesseits engagirt 1. bairisches Corps, 22. Infanterie- und Cavallerie-Division.

v. Podbielski.

64. Depesche.

Versailles, den 13. October.

Die Franzosen haben das Schloß St. Cloud, welches diesseits verschont wurde, ohne jede Veranlassung in Brand geschossen. 10 Bataillone derselben machten einen Ausfall, welcher vom 2. bayerischen Corps mit Leichtigkeit abgewiesen wurde. Diesseitiger Verlust 19 Mann. v. Podbielski.

65. Depesche.

Venizel, den 16. October 3 Uhr Morgens.

Soissons hat soeben nach viertägiger hartnäckiger Artillerie-Vertheidigung capitulirt. v. Krenski.

Versailles, den 15. October.

Es ist kaum nöthig zu erwähnen, daß die von Tours aus verbreiteten Gerüchte über siegreiche Gefechte der Franzosen vor Paris erfunden und nur auf Stärkung der schwachen Gemüther in Frankreich berechnet sind. Unsere Cernirungs-Truppen halten genau die Stellungen inne, welche sie am 19. September erreicht haben. Am 14. und 15. kleine Patrouillen-Gefechte vor Paris.

v. Podbielski.

66. Depesche.

Venizel, den 16. October.

Heute 3 Uhr Einzug des Großherzogs von Mecklenburg in Soissons an der Spitze Pommerscher, Magdeburgischer u. Hessischer Festungs-Artillerie, Schleswigscher Pioniere, der Landwehr-Bataillone Frankfurt, Cüstrin, Landsberg, Woldenberg, Brandenburg, Ruppin, Prenzlau, Jüterbogk und der Halberstädter schweren Reiter. Unsere Verluste während der dreiwöchentlichen Cernirung, bei täglichen Vorposten-Gefechten und viertägigen Beschießung gering. 4000 Gefangenen und 132 Geschütze. v. Krenski.

67. Depesche.

Versailles, den 17. October.

(Verspätet durch Störung der Telegraphenlinie.)

General Senfft von Pilsach vertrieb am 12. October 3000 Mobilgarden aus Bretenil. Vor Paris am 14. ein Ausfall mehrerer französischer Bataillone; durch die Feldwachen und einige Geschütze des zwölften Corps abgewiesen. Am 15. arbeitete der Feind an Verschanzungen bei Villejuif, das Feld-Artillerie des sechsten Corps vertrieb ihn. Kein Verlust. v. Podbielski.

Versailles, den 18. October.

Vor Paris nichts Neues. General von Werder meldet: Der vor mir befindliche Feind zog sich bei Annäherung der diesseitigen Truppen fluchtartig auf Belfort und per Bahn auf Dijon zurück. Die Eisenbahn Besoul-Belfort ist diesseits unterbrochen. Die Einwohner, vom Terrorismus befreit, zeigen sich sehr entgegenkommend. — Circa 500 gefangenen Mobilgarden gelang es, in der Gegend von Chateau Thierry am 16. während eines Angriffs von Francstireurs zu entkommen. v. Podbielski.

68. Depesche.

Versailles, den 19. October 1870.

Die 22. Division von der Armee des Kronprinzen hat gestern den etwa 4000 Mann starken Feind bei Chateaubun angegriffen, geschlagen und die barrikadirte Stadt erstürmt. Viele Gefangene gemacht. Diesseitiger Verlust gering.

v. Blumenthal.

69. Depesche.

Versailles, den 20. October.

In der Nacht vom 19. zum 20. allarmirte vor Paris der Feind durch heftige Kanonade aus den Forts und wiederholte Vorstöße von Infanterie die preußischen Vorposten in der Gegend von Chevilly ohne diesseitige Verluste. Am 17. wurde durch ein Detachement der Maas-Armee Montdidier besetzt, wobei 4 Offiziere, 178 Mobilgarden in Gefangenschaft fielen. Am 11. ist das Etappen-Commando in Stenay durch einen Ausfall von Montmedy aufgehoben worden. v. Podbielski.

70. Depesche.

Versailles, den 21. October.

Der Königin Augusta in Homburg.

Ich komme so eben von einem kleinen Gefechte bei La Malmaison; 12 Bataillone waren vom Mont-Valérien mit 40 Geschützen ausgefallen, und wurden nach dreistündigem Gefechte zurückgeworfen. Wir sahen von dem Marly-Viaducte dem Gefechte zu. Ganz Versailles wurde alarmirt.

Wilhelm.

Versailles, den 21. October.

Am 21. October 1 Uhr Mittags französischer Ausfall mit bedeutenden Kräften vom Mont-Valérien aus, wobei etwa 40 Feldgeschütze, durch die weiteren Abtheilungen der 9. 10. Infanterie-Division, sowie des 1. Garde-Landwehr-Regiments, zuletzt unterstützt durch Artilleriefeuer des vierten Corps vom rechten Seine-Ufer unter den Augen Seiner Majestät des Königs siegreich zurückgeschlagen. Bis jetzt constatirt: über 100 Gefangene und 2 Feldgeschütze in unseren Händen. Diesseitiger Verlust verhältnißmäßig gering. — Wenn über dieses Gefecht, wie nicht zu bezweifeln, ein neuer französischer Siegesbericht erscheint, so wird dies der beste Beweis für die außerordentliche Genügsamkeit unserer Gegner sein.

v. Podbielski.

Ein Telegramm des General-Lieutenants von Blumenthal behandelt dasselbe Gefecht und fügt hinzu, daß die 2 Geschütze durch das 50. Infanterie-Regiment erobert wurden.

Rheims, den 21. October.

In Soissons sind in Gefangenschaft gerathen: 99 Offiziere, 4633 Mann. Erbeutet wurden: 128 Geschütze, 70000 Granaten, 3000 Centner Pulver, eine Kriegskasse von 92000 Frcs., ein reich ausgestattetes Magazin für eine Division auf 3 Monate, sehr viel Bekleidungs-Gegenstände ꝛc.

v. Krenski.

71. Depesche.

Kinzheim, den 24. October.

Schlettstadt heute kapitulirt.

2400 Gefangene gemacht, 120 Geschütze genommen. v. Schmeling.

72. Depesche.

Versailles, den 25. October.

General von Werder warf den 22. die aus 2 Divisionen bestehende sogenannte Ost-Armee unter General Cambriels, welche sich bei Rioz und Etuz stellte, in hitzigem Gefechte über den Ognon und aus Auxon-Dessus gegen Besancon zurück. Diesseits im Gefechte: Brigade Degenfeld, Truppen der Brigade Prinz Wilhelm und Keller, und 2 Bataillone Regiments Nr. 30. Unser Verlust 3 Offiziere, etwa 100 Mann. Der Feind hatte bedeutendere Verluste, dabei 2 Stabsoffiziere, 13 Offiziere, 180 Mann Gefangene und zog sich in größter Unordnung zurück. v. Podbielski.

73. Depesche.

Der Königin Augusta in Homburg.

Den 27. October.

Diesen Morgen hat die Armee Bazaine und Festung Metz kapitulirt. 150,000 Gefangene incl. 30,000 Blessirte und Kranke. Heute Nachmittag wird die Armee und Garnison das Gewehr strecken.

Das ist eines der wichtigsten Ereignisse in diesem Momnet. Dank der Vorsehung! Wilhelm.

74. Depesche.

Versailles, den

Gestern Abend ist die Capitulation und das Victoriaschießen direct in B Am 29., also nicht am 27., werden d. Forts besetzt. — Gefangene sind 173,000 Schälle, über 6000 Offiziere. Wilhe

75. Depesche.

Der Königin Augusta. Homburg.

29. October.

Das große Ereigniß, daß nun die beiden feindlichen Armeen, welche im Juli uns gegenüber traten, in Gefangenschaft sich befinden, veranlaßte Mich, die beiden Commandirenden Unserer Armeen, Fritz und Friedrich Carl, gestern zu Feldmarschällen zu ernennen. Der erste Fall der Art in Unserem Hause. Wilhelm.

76. Depesche.

Versailles, den 28. October.

Verspätet und per Post eingegangen.

Seine Majestät der König haben den General Freiherrn von Moltke in den Grafenstand zu erheben geruht. Bei der im gestrigen Telegramme erwähnten Würtembergischen Expedition wurden 5 Offiziere, 297 Mobilgarden unverwundet gefangen; außerdem in Montereau 300 Nationalgarden entwaffnet. Diesseitiger Verlust: 1 Fähnrich 9 Mann todt, 1 Stabsoffizier, 1 Lieutenant, 40 Mann verwundet. Vor Paris Alles unverändert.

von Podbielski.

Das gestrige Telegramm, von welchem die Depesche redet, ist hier nicht eingegangen.

77. Depesche.

Versailles, den 27. October.

Verspätet und per Post eingegangen.

Württemberg'sches Streif-Commando nach siegreichen Gefechten bei Montereau und Nangis Francstireurs gesprengt und Mobilgarden aufgelöst. Feind verlor eine Mitrailleuse, eine Kanone und über 100 Mann an Todten und Verwundeten. Diesseitiger Verlust 1 Fähnrich, 9 Mann.

von Podbielski.

Bemerkung: Dies ist somit die in dem Telegramm vom 28. erwähnte gestrige Depesche.

78. Depesche.

Versailles, den 30. Januar.

Seitens der Maas-Armee wird gemeldet:

Am 28. vertrieb der Feind die in Le Bourget, östlich St. Denis, stehenden diesseitigen Vorposten. Gegen Abend durch Recognoscirung der zunächst stehenden Reptis constatirt, daß der Feind der Ort mit sehr starken Kräften besetzt hielt. In Folge dessen griff die 2. Garde-Infanterie-Division am 30. an und warf nach heftigem und glänzendem Gefechte den Gegner aus der von ihm inzwischen befestigten Position. Bis jetzt über 30 Offiziere, 1200 Gefangene in unseren Händen. Diesseitiger Verlust noch nicht festgestellt, aber nicht unbedeutend.

v. Podbielski.

79. Depesche.

Versailles, den 31. October.

Prinz Friedrich Carl meldet, daß bei Metz 53 Adler mit Fahnen abgeliefert worden sind. Thiers heute Mittag aus Paris zurückgekehrt. Sonst vor Paris nichts vorgefallen. Die Vorposten des Generals von Werder trafen am 27. in der Umgegend von Gray auf feindliche Truppen, schlugen dieselben überall in die Flucht und nahmen 15 Offiziere und 500 Mann gefangen. v. Podbielski.

Versailles, den 1. November.

Verlust der 2. Garde-Infanterie-Division im Gefechte den 30 October 34 Offiziere, 449 Mann. Fort Valérien feuerte am 31. Abends und 1. früh sehr lebhaft, ohne daß diesseits irgend welcher Verlust. v. Podbielski.

80. Depesche.

Versailles, den 2. November.

General von Werder meldet, daß General von Beyer am 30. vor Dijon hartnäckigen Widerstand fand. Prinz Wilhelm von Baden nahm die Höhen von St. Apollinari und die Vorstädte, worauf der Feind abzog. Am 31. früh wurde die Stadt von der Mairie übergeben. Diesseits 5 Offiziere verwundet, 250 Mann todt und verwundet. Feindlicher Verlust sehr bedeutend. Vor Paris nichts Besonderes gemeldet. v. Podbielski.

Kühnheim, den 2. November.

Seit heute früh Feuer auf Neu-Breisach aus 3 Batterien bei Biesheim resp. Wolfgantzen, auf Fort Mortier aus drei Batterien bei Alt-Breisach eröffnet. v. Schmeling.

81. Depesche.

Versailles, den 4. November.

Die Festung Belfort ist nach mehreren kleinen siegreichen Gefechten seit dem 3. von diesseitigen Truppen cernirt. v. Podbielski.

Aus einer Mittheilung des commandirenden Generals von Zastrow ergiebt sich, daß bis jetzt in Metz vorgefunden sind: 53 Adler und Fahnen, 541 Feldgeschütze, das Material für mehr als 85 Batterien, gegen 800 Festungsgeschütze, 66 Mitrailleusen, gegen 300,000 Gewehre, Küraße, Säbel ꝛc. in größter Anzahl, gegen 2000 Militair-Fahrzeuge, sowie nicht verarbeitetes Holz, Blei, Bronce in großen Massen, eine vollständig eingerichtete werthvolle Pulver-Fabrik ꝛc.

82. Depesche.

Rüthheim, den 7. November.

Mo Fort Mortier hat heute capitulirt — 220 Gefangene gemacht, 5 Geschütze genommen.

v. Schmeling.

Versailles, den 6. November.

Am 6. keine Engagements gemeldet.

v. Podbielski.

83. Depesche.

General von Treskow meldet aus Les Errues vor Belfort vom 6. November, daß die Division zwischen Colmar und Belfort in mehreren kleinen Gefechten Franctireurs vertrieben hat. Am 2. fanden Gefechte gegen Mobilgarde bei Les Errues, bei Rougemont und Petit-Magny statt; in letzteren ließ der Feind allein 5 Offiziere und 103 Mann todt zurück. Am 3. wurde Belfort cernirt und die Verbindung mit General von Werder hergestellt.

Berlin, den 8. November 1870.

Königliches Polizei-Präsidium.
von Wurmb.

84. Depesche.

Charny, der 8. November.

Verdun hat kapitulirt.

von Gayl.

85. Depesche.

Versailles, den 8. November.

Die Festung Verdun hat am 8. November kapitulirt. Bei Bretenay, zwischen Bologne und Chaumont, stießen am 7. Abtheilungen der 9. Infanterie-Brigade auf Mobilgarden; Verluste des Feindes 70 Mann todt und verwundet, 40 Gefangene; diesseits 2 Verwundete.

v. Podbielski.

Colmar, den 9. November.

Montbéliard zur Sicherung der Cernirung von Belfort ohne Widerstand heute besetzt, und zur Vertheidigung eingerichtet. v. Treskow.

86. Depesche.

Rüthheim, den 10. November.

Neu-Breisach hat soeben kapitulirt: etwa 100 Offiziere und 5000 Mann sind kriegsgefangen, 100 Geschütze erobert. Die Uebergabe erfolgt morgen Vormittag 10 Uhr. v. Schmeling.

Versailles, den 10. November.

Beim Verrücken der Loire-Armee auf dem rechten Ufer der Loire über Beaugency hat General von der Tann, außerhalb Orleans, am 9. gegen dieselbe Stellung genommen und nach konstatirter Stärke des Gegners sich unter Gefecht auf St. Péravy abgezogen. v. Podbielski.

Versailles, den 10. November.

General von der Tann, welcher Orleans räumte, meldet, daß am 10. keine Vorbewegung des Feindes bemerkbar war. v. Podbielski.

87. Depesche.

Versailles, den 11. November.

Der Königin Augusta in Homburg.

Vorgestern hat sich General von der Tann fechtend vor Uebermacht von Orleans nach Toury zurückgezogen, wo er sich gestern mit General Wittich und Prinz Albrecht (Vater), von Chartres kommend, vereinigt hat. Großherzog von Mecklenburg stößt heute zu ihnen. Wilhelm.

88. Depesche.

Versailles, den 11. November.

General von der Tann hat am 11. kein weiteres Verrücken des vor ihm befindlichen Feindes gemeldet. v. Podbielski.

Berdun, den 11. November.

Bei Capitulation von Berdun zu Gefangenen gemacht: 2 Generale, 11 Stabsoffiziere, 150 Offiziere und etwa 4000 Mann. An Geschützen vorgefunden 136 verschiedenen Calibers, außerdem etwa 23,000 Infanterie-Gewehre, sowie bedeutende Bestände an verschiedenem Kriegs-Material.

v. Gayl.

89. Depesche.

Versailles, den 12. November.

Im Gefechte des Generals von der Tann am 9. d. Mts. wurden sämmtliche Angriffe des Feindes mit großem Verlust für denselben zurückgewiesen und erst hierauf der Abmarsch angetreten. Am 10. Mittags verirrte sich eine Abtheilung der bayerischen Munitions-Reserve, bei welcher sich 2 Reserve-Geschütze befanden, und fiel in die Hände des Feindes. Am 12. sind keine Bewegungen der Loire-Armee gemeldet worden, auch vor Paris ist nichts vorgefallen. v. Podbielski.

90. Depesche.

Versailles, den 13. November.

General von der Tann meldet, daß sein Verlust am 9. 42 Offiziere und 667 Mann todt und verwundet beträgt. Der Feind giebt in einer offiziellen Nachricht seinen Verlust auf 2000 Mann an. v. Podbielski.

Les Errues, vor Belfort, den 13. November.

L'Isle sur Doubs und Clerval nach 2 kleinen Gefechten am 12. besetzt. Die Mobilgarden sind nach Süden abgezogen. Unterminirte Brücke entladen. Von Franctireurs nichts zu sehen. Seit 2 Tagen Schnee. v. Treskow.

91. Depesche.

Am 12. November siegreiches Gefecht zwischen S. M. Kanonenboot Meteor, Capitain-Lieutenant Knorr, und dem Französischen Aviso Bouvet; Letzterer, stark beschädigt, flüchtete nach Havanna, wohin von Meteor verfolgt. Verluste des Meteor zwei Todte, ein Verwundeter.

Berlin, den 15. November 1870.

Königliches Polizei-Präsidium.
von Wurmb.

92. Depesche.

Les Errues, vor Belfort, den 16. November.

Heute früh machten 3 Bataillone mit 6 Geschützen einen Ausfall aus Belfort gegen Besoncourt. Der Feind wurde mit Verlust von 200 Todten und Verwundeten und 58 Gefangenen zurückgewiesen. von Treskow.

93. Depesche.

Versailles, den 18. November.

Der Königin Augusta in Coblenz.

Der Großherzog von Mecklenburg hat gestern den Feind auf seiner ganzen Linie bei Dreux zurückgeworfen, General-Adjutant von Treskow, der momentan die 17. Division kommandirt, mit geringem Verlust Dreux genommen. Viele Gefangene gemacht. Verfolgung in der Richtung von Le Mans. Wilhelm.

94. Depesche.

Metz, den 19. November.

Die Cernirung von Montmedy durch ein Detachement unter Oberst von Pannewitz am 16. d. M. erfolgt, wobei siegreiche kleine Gefechte des ersten und zweiten Bataillons 74. Regiments bei Chauvency und Thonelle gegen die Besatzung von Montmedy. 47 unverwundete Gefangene.

v. Zastrow.

Versailles, den 19. November.

Im Gefecht bei Dreux am 17. betrug der diesseitige Verlust 3 Mann todt, 35 verwundet.

Am 18. siegreiches Gefecht der 22. Division bei Chateauneuf. Diesseitiger Verlust 1 Offizier und circa 100 Mann, der des Feindes über 300 Todte und Verwundete und 200 Gefangene.

v. Podbielski.

95. Depesche.

Versailles, den 20. November.

Feind versuchte am 20. mit 6 Compagnien und vier Geschützen [illegible] Fère zu entsetzen, wurde am rechten Oise-Ufer durch ein Bataillon Regiments Nr. 5 mit bedeutendem Verluste zurückgewiesen, desgleichen auch darauf erfolgter Ausfall aus der Festung. v. Podbielski.

96. Depesche.

Metz, den 21. November.

Im Fort Plappeville ist heute früh 9¼ Uhr ein Munitionsmagazin in die Luft geflogen. Einige Todte und 40 Verwundete. Ursache und Details bis jetzt noch unbekannt v. Löwenfeld.

Versailles, den 21. November.

Die bei Dreux und Chateauneuf geschlagenen Mobilgarden flüchten nach Westen und Nordwesten. Landwehr-Bataillon Unna und zwei Escadrons 5. Reserve-Husaren-Regiments am 19. in Chatillon angegriffen, haben sich mit Verlust von 120 Mann und 70 Pferden auf Chateau-Bilain zurückgezogen. Von den Armeen liegen sonst keine Meldungen von Bedeutung vor. v. Podbielski.

97. Depesche.

Versailles, den 22. November.

Am 21. verschiedene kleine siegreiche Gefechte südlich La Loupe, wobei Regiment Nr. 83 ein Geschütz nahm. Am 22. ist Nogent le Retrou ohne Widerstand von diesseitigen Truppen besetzt worden.

v. Podbielski.

98. Depesche

Versailles, den 23. November.

Am 22. hat die Beschießung von Thionville begonnen. Am 23. setzte Großherzog von Mecklenburg seinen Vormarsch weiter fort.

Vor Paris sind die Verhältnisse unverändert.

v. Podbielski.

99. Depesche.

Bangy, den 24. November.

Belagerung von Thionville hat vorgestern begonnen, Festung wird aus 76 Geschützen beschossen. Statt brennt seit vorgestern Nachmittag. Die Avantgarde der Kavallerie-Division Graf Goeben unter Oberst v. Lüderitz hat gestern Nachmittag bei Le Duesnel ein glückliches Gefecht gegen französische Mobilgarden aus Amiens bestanden, welche in wilder Flucht zurückgetrieben wurden.

Graf Wartensleben.

Versailles, den 24. November.

Großherzog von Mecklenburg setzt heute seinen Vormarsch fort. Recognoscirungs-Gefechte haben bei Neuville Bois Commun und Maizieres stattgefunden. v. Podbielski.

Metz, den 24. November.

So eben hat Thionville capitulirt. Die Uebergabe erfolgt morgen um 11 Uhr früh.

v. Kameke.

100. Depesche.

Havange, den 25. November.

Heute Morgen um 11 Uhr ist Thionville von unsern Truppen besetzt worden. 200 Geschütze genommen und 4000 Gefangene gemacht. Diesseitiger Verlust während des Bombardements gering. v. Kameke.

Versailles, den 25. November.

Am 24. vertrieb Oberst von Lüderitz halbwegs zwischen Roye und Amiens Mobilgarden, welche mit Zurücklassung ihres Gepäckes gegen Bray entflohen. Eine spätere Recognoscirung desselben mit 2 Compagnien, 4 Escadrons und 2 Geschützen stieß bei Mezieres auf 6 feindliche Bataillone mit Artillerie, und brachte denselben nicht unbeträchtlichen Verlust bei. Diesseitiger Verlust gering.

v. Podbielski.

101. Depesche.

Versailles, den 27. November.

La Fère hat nach 2tägiger Beschießung capitulirt mit 2000 Mann und etwa 70 Geschützen. — In der Nacht vom 26. zum 27. heftiges Feuer der Forts in der Südfront von Paris. — Bei den Recognoscirungs-Gefechten vor Orleans am 24. stießen 2 Brigaden des 10. Corps auf das vormarschirende französische 20. Corps, warfen dasselbe aus Ladon und Maizières und brachten ihm nicht unbeträchtliche Verluste bei. 146 Gefangene fielen in unsere Hände; diesseitiger Verlust etwa 200 Mann. — Am 26. gingen mehrere feindliche Compagnien gegen das 10. Corps vor, wurden abgewiesen, wobei sie allein 40 Todte liegen ließen. Unter den Gefangenen befindet sich ein General. Diesseitiger Verlust 3 Offiziere, 13 Mann. gez. v. Podbielski.

Dijon, den 27. November.

Eine Recognoscirung am 26. ergab, daß Garibaldi mit seinem Corps von Pasques in Anmarsch sei. Bei einbrechender Nacht wurden die Vorposten Füsilier-Bataillons 3. Regiments heftig angegriffen und vom Bataillon Ungar aufgenommen. Dieses wies 3 Angriffe auf 50 Schritt zurück, der Feind floh in Unordnung, warf Gepäck und Waffen fort. Heute, am 27., ging ich mit 3 Brigaden zum Angriffe vor, und erreichte die feindliche Arrieregarde bei Pasques durch Umgehung von Plombières. Der Feind verlor 3 — 400 Mann an Todten und Verwundeten. Diesseitiger Verlust an beiden Tagen etwa 50 Mann. Mencuy Garibaldi soll am 26. commandirt haben. v. Werder.

102. Depesche.

Morgny, den 28. November.

Gestern bis nach Eintritt der Dunkelheit siegreiche Schlacht der I. Armee gegen die im Vorrücken begriffene feindliche Nord-Armee. Der an Zahl überlegene gut bewaffnete Feind mit Verlust von mehreren Tausend Mann gegen die Somme und auf seine verschanzte Stellung vor Amiens zurückgeworfen. Ein feindliches Marine-Bataillon vom 9. Husaren-Regiment niedergeritten. Eigener Verlust nicht unbeträchtlich.

Graf Wartensleben.

103. Depesche.

Versailles, den 28. November.

Der Königin Augusta in Berlin.

Gestern siegreiches Treffen südlich von Amiens durch General Manteuffel mit einem Theile der I. Armee. Einige Tausend Mann feindlicher Verlust, 700 Gefangene, 1 Fahne der Mobilgarde. 9. Husaren-Regiment ritt ein Marine-Bataillon nieder. Unser Verlust nicht unbedeutend.

Wilhelm.

Versailles, den 28. November.

General-Feldmarschall Prinz Friedrich Carl meldet: Am 28. wurde X. Armee-Corps durch bedeutend überlegene Kräfte des Gegners angegriffen. Es concentrirte sich bei Beaune la Rolande, woselbst er sich siegreich behauptete, und am Nachmittage in meinem Beisein durch 5. Division und 1. Cavallerie-Division unterstützt wurde. Unser Verlust etwa 1000 Mann. Feindlicher Verlust sehr bedeutend, viele Hundert Gefangene in unseren Händen. Kampf endete nach 5 Uhr.

Ferner ist von der I. Armee Meldung eingegangen: In Folge der siegreichen Schlacht am 27. ist Amiens am 28. vom General Goeben besetzt worden. v. Podbielski.

104. Depesche.

Versailles, den 29. November.

Der Königin Augusta in Berlin.

Prinz Friedrich Carl meldet: das gestrige Gefecht eine wahre Niederlage des größten Theiles der Loire-Armee, von der das ganze 20. Corps und wahrscheinlich auch 18. und Theile des 15. und 16. da waren. Nach französischen Angaben 70,000 Mann. Das 20. focht ganz, die anderen theilweise. Der Feind ließ 1000 Todte auf dem Schlachtfelde und soll über 4000 Blessirte haben, 1600 gesunde Gefangene, die sich stündlich mehren. Gesammt-Verlust wohl 7000 Mann. General d'Aurelles soll blessirt sein. Unser Verlust 1000 Mann, wenig Offiziere. Wilhelm.

Versailles, den 29. November.

Der bei Amiens geschlagene Feind flieht in voller Auflösung, von den diesseitigen Truppen verfolgt gegen Norden. In seinen Verschanzungen wurden noch 4 Geschütze vorgefunden. In Folge des siegreichen Kampfes des 10. Armee-Corps am 28. hat der vor demselben befindliche Gegner den Rückzug weiter fortgesetzt.

In der Nacht vom 28. zum 29., sowie am Morgen des 29. heftiges Geschützfeuer aus den Forts um Paris, demnächst stärkerer Ausfall, unterstützt durch Kanonenboote auf der Seine, gegen L'Hay und 6. Armee-Corps; gleichzeitig kleinere Ausfälle, unter andern gegen 5. Armee-Corps und Demonstrationen an verschiedenen Stellen. Feind überall siegreich zurückgeschlagen. Mehrere hundert Gefangene in unsern Händen. Diesseitiger Verlust 7 Offiziere und etwa 100 Mann. v. Podbielski.

Versailles, den 29. November.

Die ganze Bedeutung des von Theilen der 2. Armee, besonders vom 10. Armee-Corps gestern bis nach Eintritt der Dunkelheit gelieferten Gefechts hat erst heute mit Sicherheit festgestellt werden können. Der größte Theil der feindlichen Loire-Armee hat eine vollständige Niederlage erlitten. Der Feind ließ gegen 1000 Todte auf dem Schlachtfelde. 1600 unverwundete Gefangene, die sich stündlich mehren, sind in unsern Händen. Wir verloren 1 Geschütz, nachdem Pferde und Bedienung desselben todt, und nicht ganz 1000 Mann an Todten und Verwundeten, worunter verhältnißmäßig wenig Offiziere. v. Podbielski.

105. Depesche

Versailles, den 30. November.

Der Königin Augusta in Berlin.

Gestern schlug das 6. Corps einen Ausfall südlich bei L'Hay siegreich zurück, über hundert Gefangene, viele Hundert Blessirte und Todte. Wir 100 Mann Verlust. Heute bedeutender Ausfall nach Osten gegen Württemberger und Sachsen bei Bonneuil jur Marne, Champigny, Villiers, die genommen und bis zur Dunkelheit mit Hülfe unserer 7. Brigade wiedergenommen wurden. — Gleichzeitig nach Nordost bei St. Denis gegen Garde und 4. Corps nur leichte Ausfälle. Ich konnte Versailles nicht verlassen, um im Centrum zu bleiben. Es scheint der Feind auf einen Sieg bei Orleans gerechnet zu haben, um dem Sieger entgegen zu gehen, was mißglückte. Wilhelm.

Versailles, den 30. November.

Nachdem gestern das 6. Armeecorps mehrfache Angriffe des 1. Corps der II. Armee von Paris siegreich zurückgewiesen, wurde während der ganzen Nacht von den Forts ein ungewöhnlich heftiges Feuer unterhalten. — Heute Morgen entwickelte der Feind, unter gleichzeitiger Demonstration auf verschiedenen Punkten der Enceinte von Paris, sehr bedeutende Streitkräfte zwischen Seine u. Marne, u. griff mit denselben um 11 Uhr unsere dortigen Positionen an. Es entspann sich ein sehr heftiger Kampf, von unserer Seite hauptsächlich geführt durch die Württembergische Division und den größten Theil des 12. (Königlich Sächsischen) sowie durch Theile des 2. und 6. Armee-Corps. Der Kampf dauerte bis 6 Uhr Abends, zu welcher Stunde unsere siegreichen Truppen den Feind auf der ganzen Linie zurückgeworfen hatten. Weitere Details noch nicht bekannt.

Unsere Verluste in der Schlacht von Amiens beziffern sich auf 74 Offiziere und 1300 Mann an Todten und Verwundeten. Die feindliche Nord-Armee befindet sich in vollständiger Deroute. Die Citadelle von Amiens hat heute nach kurzem Gefechte, in welchem der Commandant gefallen, capitulirt. 400 Kriegsgefangene mit 11 Offizieren, sowie 30 Geschütze in unsere Hände gefallen.

General Werder meldet: Garibaldis Rückzug ist in Flucht ausgeartet. v. Podbielski.

106. Depesche.

Versailles, den 1. December.

Der Verlust der Franzosen bei dem gestrigen mißglückten Ausfalle auf der Südostfront von Paris an Todten, Verwundeten und Gefangenen ist sehr bedeutend. Heute wurde von ihnen zur Beerdigung ihrer Gefallenen ein mehrstündiger Waffenstillstand erbeten. Auf unserer Seite beträgt der Verlust bei der Württembergischen Division etwa 40 Offiziere und 800 Mann, bei der Brigade du Trossel des zweiten Armee-Corps 2 Offiziere und etwa 70 Mann. Sächsischer Verlust noch nicht constatirt. Heute verhielt sich der Feind vollständig ruhig.

v. Podbielski.

Fortsetzung der Depeschen in Nr. 2.

CV R

82. Depesche. 91. Depesche. 100. Depesche.

2 Essential WW-II following wars (as member, text parts were collected from Wikipedia)

Cold War (1945-1991): a global confrontation that did not directly lead to a major war between the superpowers, but to numerous deputy wars.

Except for the fact that, against explicit orders from Moscow not to shoot down American aircraft, the unarmed high-altitude reconnaissance aircraft U-2 was shot down by the Soviets on May 1, 1960. Captain Powers survived, but was captured and sentenced to 10 years in a Soviet prison for espionage.



Frei — und doch nicht nach Hause?

1961

rb./sad. Moskau, 13. April

Wird Moskau den US-Piloten Gary Francis Powers (31), der am 1. Mai 1960 mit seiner Aufklärungsmaschine U2 über Swerdlowsk abgeschossen wurde, freilassen? Diese Vermutung haben westliche Korrespondenten in der sowjetischen Hauptstadt.

Wahrscheinlich sollen sich auch genau am 1. Mai für ihn die Gefängnistore öffnen. Zu 10 Jahren Haft war er unter großem Propagandaaufwand von einem sowjetischen Gerichtshof verurteilt worden.

Beobachter aber befürchten, daß Powers nicht, wie die Sowjets sagen, „die Freiheit wiedergegeben" wird. Denn überraschend soll Powers erklärt haben, nach seiner Entlassung wolle er in der Sowjetunion bleiben. Heißt das, daß er nur dann das Wladimir-Gefängnis in Moskau verlassen kann, wenn er sich verpflichtet, im Lande zu bleiben?

Powers Frau Barbara erklärte: „Ja, auch ich habe gehört, daß Gary freigelassen werden soll. Ich würde zu ihm fahren, auch wenn er in ein Arbeitslager geschickt werden sollte."

Nach dem Urteil in Moskau: U-2-Pilot Francis Powers und Frau

Carmol macht Frühjahrsmüde munter

Äußerlich haben wir den Winterballast in Form von Mantel und Pelz abgeworfen. Innerlich läßt sich dieser Wechsel nicht so schnell vollziehen. Deshalb jetzt regelmäßig einige Tropfen Carmol auf Zucker einnehmen, oder Stirn und Schläfen mit Carmol einreiben, denn Carmol hilft bei Frühjahrsmüdigkeit.

Carmol tut wohl

2.1 Vietnam (1946-1975)

The four countries Vietnam (Saigon), Cambodia (Pnom Penh), Laos (Vientiane), and Myanmar (Ranghun) only gradually opened up to international tourism. Cambodia slowly reopened to the outside world after the Paris Peace Accords in October 1991 and the end of the civil war. Vietnam also began cautious economic and tourist openings in the early 1990s.

In 1919, at the Versailles Peace Conference, the Vietnamese nationalist Ho Chi Minh proposed an independent, unified, and democratic Vietnam to US President Woodrow Wilson. Wilson rejected this proposal. In 1920, Ho became a follower of Lenin's theory of imperialism, according to which capitalism had entered its final stage worldwide and its dominance could best be broken and ultimately overcome through popular uprisings in industrially underdeveloped countries. Ho wanted to implement this theory in Vietnam, independent of Soviet or Chinese dominance.

The Indochina War (1946–1954) was fought between the French Union and the Vietnamese independence movement of the Viet Minh. Due to the direct and indirect involvement of the superpowers, the Indochina War is considered a deputy war of the Cold War. It ended with the conquest of South Vietnam by North Vietnam and the reunification of Vietnam. The division of Vietnam in 1954 following the defeat of France was a temporary measure of the Geneva Conference, which split the country along the 17th parallel into a communist North Vietnam (Ho Chi Minh) and an anti-communist South Vietnam (Ngo Dinh Diem, US-backed), with the intention of holding nationwide elections for reunification in 1956. These elections never took place, leading to the Vietnam War. The Viet Minh, or Viet Cong, from whom the National Liberation Front (NLF) emerged in 1960, aimed to overthrow the anti-communist government of South Vietnam and reunify it with the North. The NLF was supported by communist-ruled North Vietnam under Ho Chi Minh and Le Duan, while South Vietnam increasingly received support from the United States. Successive US administrations under Presidents Eisenhower, Kennedy, Johnson, and Nixon feared that with Vietnam, all of Southeast Asia might fall under the control of communist regimes.

The Vietnam War, which began in 1955, followed directly after the Indochina War. In February 1965, President Lyndon B. Johnson ordered the first direct bombing of North Vietnam. Starting in March, he deployed increasing numbers of ground troops to South Vietnam to fight the NLF. Subsequently, the Soviet Union and the People's Republic of China supported North Vietnam. Six countries participated in the conflict with their own troop contingents, supporting both the US and South Vietnam. From 1964 onward, the fighting spread to Laos. His successor, Richard Nixon, gradually withdrew US troops from South Vietnam beginning in 1969, but simultaneously extended the war to Cambodia in 1970. After another bombing campaign in December 1972, which proved militarily ineffective, his administration

concluded a ceasefire with North Vietnam in January 1973. By March 29 of that year, all US troops had withdrawn, and North Vietnam released all American prisoners of war. On April 30, 1975, the war ended with the capture of the South Vietnamese capital, Saigon. In 1976, Vietnam was officially reunified under a communist government. The number of Vietnamese war casualties is estimated at between 1 and 3 million. In addition, nearly 60,000 US soldiers and more than 5,000 soldiers from their allies died. Furthermore, many were exposed to the toxic defoliant Agent Orange used by the US, which, according to the Red Cross, resulted in up to one million Vietnamese suffering disabilities or health problems after the war. The US lost the Vietnam War militarily and politically. Despite its technological superiority, it could not win the guerrilla war and faced enormous losses and political headwinds.

I was able to take advantage of the opportunity to travel there immediately after the four Southeast Asian countries reopened. Unfortunately, in Laos, I could just visit the tourist spots Vientiane and the Mekong River.

2.2 Africa (1948-???)

There have always been numerous large civil wars, such as Nigeria (Biafra-war), Ruanda (a genocide), Kongo or Somalia and ongoing in South-Sudan. Too much content. Hopeless.

(Here, too, typical of the reporting): far less is reported about the vast continent of Africa than about Netanyahu's Israel.

2.3 Corea (1950-1953)

At the end of World War II in 1945, Korea was liberated from Japanese occupation and divided into two occupation zones by the victorious allied powers. The Soviet Union occupied the territory north of the 38th latitude, and the United States occupied the southern region. Reunification talks failed, and the 38th latitude became the demarcation line. The United Nations issued a mandate for reunification in 1947. Syngman Rhee assumed power from the United States and proclaimed the Republic of Korea on August 15. In response, Kim Il-sung proclaimed the Democratic People's Republic of Korea.
The war began with a surprise attack by the stronger North Korea on the much weaker South Korea (*the US did not allow tanks)* on June 25, 1950, without a declaration of war. The militarily overwhelming North Korean army captured Seoul on June 28. In response to the attack, the UN Security Council recommended that South Korea should get the necessary assistance to repel North Korea's armed attack and restore peace. On September 15, a large-scale UN counter-offensive began, reaching Pyongyang and the Amnok River on the border with the People's Republic of China on October 10. However, the Chinese ‘People's Volunteer Army’ intervened on the side of North Korea in November, once again turning the tide of the war. As a result, Seoul changed hands again on January 4, 1951. South Korean and UN troops recaptured Seoul on March 15. A costly war of attrition then ensued along the 38th parallel. After two years of negotiations, an armistice agreement was signed in 1953, largely restoring the status quo ante. By then, 940,000 soldiers and approximately three million civilians had been killed. Almost the entire industry of the country was destroyed. Chinese troops remained in North Korea until 1958, and US troops remain stationed in South Korea. To this day, no peace treaty has been signed.

Particularly in Germany, the conflict sparked fears that it could lead to WW-III.
As a country that was also formerly divided, North Korea and South Korea were of paramount interest to me (*see Korea photo chapter*), and I was able to visit them — relatively freely — as part of a tour group during the transition to Kim-il-Sung’s brutal grandson.

2.4 Israel (1948-2025 ??)

There have always been wars between Israel and its Arab neighbors (such as 1948, 1956, 1967, 1973) and ongoing conflicts with Hisbollah and Hamas until the destruction of the Hamas-controlled Gaza Strip in 2025.
The Hamas terrorist attack on Israel on October 7, 2023- with 1,195 predominantly Jewish victims - constituted the largest massacre and crime against humanity committed against Jews since the Holocaust. The assault was launched from the Gaza Strip under the leadership of the radical Islamist terrorist organization Hamas, in conjunction with Palestinian Islamic Jihad.

Continuous strikes against the Palestinian terrorists-supporting Iran (2026).

As early as 1987, an Israeli guide told me, quite worried, that living together with the Arab neighbors in the town was becoming increasingly difficult since more and more Orthodox Jews had immigrated.

2.5 Cuba Crisis (October 1962) and Red Telephone, averted Atomic War

The Cuban Missile Crisis (October 1962) = Cuba Crisis was the most dangerous climax of the Cold War, when the Soviet Union deployed nuclear missiles to Cuba, threatening the United States. A naval blockade and intensive negotiations between Kennedy (USA) and Khrushchev (USSR) averted nuclear war; the missiles were withdrawn, and in return, the US gave Cuba a non-aggression guarantee and secretly withdrew missiles from Turkey. The crisis led to increased communication between the superpowers (the hotline) and marked the beginning of a period of détente. The immediate outcome of the Cuban Missile Crisis was a tactical success for the Soviet Union. The Soviet Union dismantled the missiles in Cuba and shipped them back. The US withdrew its missiles from Turkey and Italy and promised not to invade.

The "Hotline," a direct communication line between Washington and Moscow, was established on August 30, 1963, with the installation of the so-called "Red Telephone" between the two countries. The connection was established based on the lessons learned from the Cuba Crisis. It runs via London, Copenhagen, Stockholm, Helsinki, and later through a US connection with France and Great Britain. The line was intended to prevent threats to peace caused by errors, misunderstandings, or delays in communication.

The existence of this danger is demonstrated by the nuclear false alarm of September 1983: A Soviet satellite-based optical early warning system initially reported the launch of one, and later four, intercontinental ballistic missiles from bases in the United States. Stanislav Petrov, an officer in the Soviet Air Defense Forces who served in the early warning system's command center, considered these warnings to be false alarms. He decided to wait for confirmatory evidence instead of immediately relaying the warning up the chain of command. His decision prevented a potential nuclear attack on the United States and its NATO allies, which could likely have escalated into a full-blown nuclear war. The crisis led to a policy of détente and the first disarmament treaties.

Reminders:

* My friend Russian Anatol was later sent to Cuba for further support. This enabled him to buy a car at Moscow.
* The Grateful Averting of a Nuclear War by a Logically Thinking Russian Officer !!

2.6 Myanmar (1948-??) and Cambodia (1975-1979)

Cambodia

Under Pol Pot's leadership, the Khmer Rouge communists exterminated almost a quarter of Cambodia's population between 1975 and 1979. Nearly two million people starved to death, died of overwork, or were brutally executed. Intellectuals, in particular, were wiped out; almost the entire intellectual elite of Cambodia was eradicated. Within a matter of days, his Khmer Rouge drove the city's population to the rice paddies – Phnom Penh became a ghost town. Thousands died of hunger and exhaustion on these long marches into the countryside. Factories, schools, clinics, and banks were closed, money was abolished, books were burned, and all state infrastructure was destroyed. Cambodia still suffers from the consequences today and is considered one of the least developed countries in the world. When the Vietnamese army ended the nightmare after four years, the population was impoverished, poorly educated, and had extremely inadequate healthcare.

Corruption is commonplace: We almost didn't make it across the border into Cambodia because the tour guide accidentally gave the money to the deputy manager. He refused to pass it on.

A particularly memorable moment from visiting these four countries is that we were there early on, just after they had opened up, when the UN was moving into Angkor Wat. Our itinerary included a visit to the enormous temple complex. We were completely alone there, but were warned about venomous snakes and told to only take certain paths. There wasn't a hotel yet, so we were put up in private, very basic accommodations. There was no front

door, and at 10 p.m. the lights went out and the ceiling fan stopped spinning, which made sleeping under the mosquito net less than enjoyable. Lunch was supposed to be at the Grand Hotel d'Angkor, where famous guests had once stayed. The food was very simple, but the table was set with the napkins of previous female guests, whose different lipsticks added a splash of color to the table.
In Vientiane and Phnom Penh, the lights also went out at 10 p.m. While pedestrians and cyclists were out and about in Vientiane in the evening, Phnom Penh was already teeming with cyclists. In Saigon, the food was excellent, and many mopeds were already on the streets.

Myanmar

Since 1948, the country has no longer been part of the British Indian Empire and has been de facto under military rule since 1962, which only had some democratic elements from 2011 to 2021. And since the military coup in 2021, Myanmar has been embroiled in civil war and might collapse. Tourism has collapsed after democratic reforms were finally initiated under the government of Nobel Peace Prize laureate Aung San Suu Kyi. In this Buddhist country, where tensions had long been simmering, chaos, fear, and violence have since defined daily life for its people.
Yangon (formerly Rangoon) is the largest city in Myanmar (formerly Burma). Its cityscape is characterized by a blend of British colonial architecture, modern high-rises, and gilded Buddhist pagodas. The famous, enormous, shimmering about 100 m high , 2500 years old Shwedagon Pagoda complex with its attracts thousands of pilgrims every year.
Mandalay is a city and former royal capital in northern Myanmar (formerly Burma) on the Irrawaddy River. At its center is a palace surrounded by a moat.
The name Bagan conjures up images for me: here and there, one of the whitewashed stupas or golden pagodas flashes into view. More than 2,200 temples are scattered across an area of just 40 square kilometers, the still spectacular remnant of a complex that, at the height of its builders' power, comprised a staggering 13,000 sacred structures. Since 2019, the city and its stupa landscape have been a UNESCO World Heritage Site.

Memories of a visit immediately after the country opened up in the nineties:

Instead of flying, we first had to squeeze through a huge crowd and then take the train from Thailand to Rangoon in a special tourist carriage. A particularly memorable experience: *Instead of the booked flight to the famous Inle Lake, we had a very pleasant river trip on the Ihrawaddi near Mandalay. * Exchange rate for foreigners 1:12, which, of course, had to be officially observed; however, the hotel didn't seem to care. This allowed me to invite the whole group for a drink and a snack for the same price as a single Coca-Cola at a hut near the temple later cost. * Gold leaf beaters: Gold leaf is genuine gold, painstakingly beaten extremely thin by coordinated beaters using a double beat technique. It is often made from 24-karat gold (pure gold) or high-karat alloys for slightly different coloring and is used to decorate art, objects, and food. Pure gold leaf retains its golden color. * Lacquerware: Lacquer art around Bagan has a centuries-old tradition. Art objects and everyday items are coated in many layers with lacquer from the so-called lacquer tree and then decorated. Bowls, plates, and boxes are produced in this way. My cup is still quite flexible; it hasn't become brittle in the usual way!
The supply situation in Myanmar was not good.

2.7 Afghanistan (1979-1989 and later)

There were the Soviet invasion (1979-1989), the subsequent Mujahedeen civil war (1989-2001), the US-led intervention against the Taliban (2001-2021) (*following the attacks of September 11, 2001, when two hijacked planes crashed into the Twin Towers of the World Trade Center in a terrorist attack. The Islamist terrorist organization Al-Qaeda, led by Osama bin Laden, claimed responsibility for the attack, which killed approximately 3,000 people*), and the subsequent Taliban takeover, which has led to continued instability, human rights violations, and humanitarian crises.

It’s shameful for us Germans:
Afghanistans at risk from Taliban involvement, who had supported German UN soldiers, received a contractual promise to be brought to Germany, but this agreement was not fulfilled even in 2025.

2001, New York, 11. September



New York/Washington: Terroranschläge schockieren die Welt – Rückkehr zur Normalität für US-Bürger in weiter Ferne – Experten erwarten Vergeltungsschlag der USA

Empörung, Wut, Trauer, Angst

„Es werden mehr Tote sein, als wir ertragen können", sagte New Yorks Bürgermeister Rudolph Giuliani am Tag nach den Terroranschlägen auf das World Trade Center und das Pentagon. Nach dem ersten Schock bekam das Grauen ein Gesicht durch Berichte von Überlebenden, Helfern und Zeugen.

In der Hoffnung auf Überlebende tragen Retter vorsichtig die Trümmer ab

Chronik der Ereignisse

Dienstag, 11.9.01

Afghanistan, 2001

Süddeutsche Zeitung

MÜNCHNER NEUESTE NACHRICHTEN AUS POLITIK, KULTUR, WIRTSCHAFT UND SPORT

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Das Streiflicht

(SZ) Kleider machen Leute, keine Frage. Wer alle Damen duzen will – Lolo, Dodo, Jou-Jou, / Cha-Cha, Margot, Frou-Frou –, der muss Frack tragen und einen weißen Schal um den Hals, um es den Maurice Chevaliers dieser Welt gleich zu tun. Heut' geh ich zum Maxim, / Dort bin ich sehr intim. Dumm des Kaisers bunter Rock! Lange Zeit galt ein Mann doch erst in Uniform als schön, selbst wenn er zuvor überhaupt nichts anzuziehen gehabt hatte. Jetzt aber ein Herr Leutenant, schmuck und fesch: Küss' die Hand, Madame.

Nun lässt sich die Uniform im Gegensatz zum Gral-Dandy-Frack durchaus als Berufskleidung auffassen, sagen wir ähnlich der Priestergewandung oder dem Königsornat mit Szepter, Reichsapfel, Krone und Hermelinmantel. Seit dem Mittelalter hatten sich die weltlichen Fürsten den weißen Winterpelz des Großen Wiesels als besondere Auszeichnung vorbehalten für die Feierlichkeiten, auf denen man was hermachen wollte. Nun, die Zeiten ändern sich bekanntlich. Während Könige heute bei offiziellen Anlässen gerne in Uniform mit Schärpe und Orden *bella figura* machen, ist das keineswegs seltene, dennoch sehr schöne Hermelinfell unter die Leute gekommen, die sich's leisten können, beziehungsweise und *à la mode* an deren Hüte, Säume und Krägen. Die österreichische Richterschaft hat sich allerdings seit 1867 vom einst exklusiven Fürstenpelz einen Kragenbesatz an der Robe geleistet, als Zeichen ihrer Unabhängigkeit: für die höheren Herren zwölf Zentimeter, für die nächsten Ränge nur sechs Zentimeter. Nun ist das Wiesel vor allem wegen seiner „Behändigkeit, Gewandtheit und Zierlichkeit" berühmt, Tugenden, die bei der Urteilsfindung nicht schaden können. Es besitzt aber auch, wie der alte Brehm mit Schaudern feststellt, „eine nicht zu bändigende Mordlust, verbunden mit dem Blutdurste seiner Gattung". Jedoch nicht diese wenig erbaulichen, einem Rechtsstaat geradezu furchterlichen Eigenschaften haben dem Hermelin als Schmuckborte das Ende bereitet, sondern eine parlamentarische Anfrage „der Abgeordneten Petrovic, Freundinnen und Freunde" an den Justizminister, ob im dritten Jahrtausend das Tragen von Pelzbesatz an Amtskleidern noch zeitgemäß sei. Die Klagen der nimmermüden Tierschützer über das Jagen mit Tellereisen und anderen Fallen taten ein Übriges: Das Justizministerium verordnete jetzt statt Hermelin Kaninchen.

Das hat Vorteile, denn Stallhasen kann der Gerichtspräsident zur Not selber halten und schlachten. Aus dem Fell ein hübsches Stück auf den Talar, das Fleisch als Sonntagsbraten auf den Tisch. Aber wofür ist dieses Fell jetzt Symbol? Vielleicht so: Kaninchen vermehren sich leidenschaftlich gern, und das tun, wenn schon nicht die Richter, so jedenfalls die Prozesse.

„Aufklärungs- und Transportflugzeuge stehen bereit"

Berlin erwägt direkten Einsatz in Afghanistan

Bisher noch keine Anforderung Washingtons / Deutsche „Fuchs"-Panzer könnten Biowaffen aufspüren

Berlin – Die Überlegungen der Bundesregierung, in welcher Form Deutschland sich an der Seite der USA an militärischen Aktionen gegen den internationalen Terrorismus beteiligen könnte, nehmen konkrete Formen an. In Regierungskreisen wurde bestätigt, dass unter anderem der Einsatz von Aufklärungs- und Transportflugzeugen in Afghanistan erwogen werde. Bundeskanzler Gerhard Schröder (SPD) versicherte dem amerikanischen Präsidenten George W. Bush die Bereitschaft Deutschlands, sich über das bisherige Maß hinaus militärisch zu engagieren. Über Details sei aber noch nicht gesprochen worden, hieß es.

Von Nico Fried

Für einen Einsatz der Bundeswehr kommen nach Angaben aus Regierungskreisen Aufklärungsflugzeuge des Typs *Brégeut Atlantic* sowie Militärtransporter vom Typ *Transall* für den Abwurf von Lebensmitteln infrage. Zum Schutz gegen biologische und chemische Waffen könnten den USA *Fuchs*-Spürpanzer bereitgestellt werden. Berichte, wonach auch die Verlegung von deutschen U-Booten ins Mittelmeer geplant sei, wurden hingegen als nicht realistisch bezeichnet. Schröder selbst hatte erklärt, es mache keinen Sinn, öffentlich zu spekulieren. Über Einzelheiten einer erweiterten deutschen Beteiligung werde „zu gegebener Zeit" geredet und entschieden. Ein Regierungssprecher dementierte zudem am Mittwoch einen Bericht der *Bild*-Zeitung, wonach Schröder bei seinem Kurzbesuch in den USA dem amerikanischen Präsidenten den Einsatz des militärischen Geräts angeboten habe.

In Regierungskreisen hieß es, das genannte militärische Gerät entspreche weitgehend den Überlegungen, die von der Bundesregierung angestellt wurden. Es gebe aber nach wie vor keine konkrete Anforderung der USA. Bei der Auswahl der Beteiligungsoptionen spielt auch die Frage eine Rolle, ob diese mit einer rot-grünen Mehrheit im Bundestag durchsetzbar sind. Aufklärungsflüge über Afghanistan sowie die Entlastung der US-Armee gelten als in den Koalitionsfraktionen vermittelbar. Der Einsatz von Flugzeugen zur Versorgung der Bevölkerung wäre ohnehin eher als humanitärer denn als militärischer Einsatz zu werten. Die *Fuchs*-Panzer sollen von Deutschland nur bereitgestellt, jedoch nicht von Bundeswehr-Soldaten geführt werden.

Dass die Liste mit militärischem Gerät an die Öffentlichkeit kam, sorgte in der Bundesregierung offenbar für Verärgerung. Verschiedenenorts wurde die Spur für die Indiskretion im Verteidigungsministerium gelegt. Verteidigungsminister Rudolf Scharping (SPD) geriet zudem unter Druck, nachdem eine Umfrage bekannt wurde, wonach nur 25 Prozent der Deutschen großes oder sehr großes Vertrauen in seine Amtsführung hätten, während der Wert für Schröder bei 64 Prozent lag. Der parlamentarische Geschäftsführer der SPD-Fraktion, Wilhelm Schmidt, sagte, er „registriere das mit Sorge". Gegen Scharping war zuletzt weil er wiederholt öffentlich über Einsatzmöglichkeiten der Bundeswehr spekuliert hatte. Schmidt sagte, Schröder habe darüber ein Gespräch mit Scharping geführt. Dies wurde jedoch von Regierungssprecher Uwe-Karsten Heye dementiert. Allerdings hatte Schröder bereits vor einigen Tagen vor abstrakten Diskussionen über mögliche Einsätze der Bundeswehr gewarnt, was als indirekter Verweis gegen Scharping interpretiert worden war. Auf dem Rückflug aus den USA sagte Schröder dem Fernsehender n-tv zu Spekulationen über deutsche Einsätze: „Diejenigen, die darauf drängen, müssen sich mal überlegen, ob sie es sind, die dann den Kopf hinhalten müssen. Meine Linie ist das nicht."

Schröder war nach dem Treffen mit Bush nach New York geflogen, wo er mit Bürgermeister Rudolph Giuliani die Ruinen des World Trade Centers besuchte. Schröder traf auch UN-Generalsekretär Kofi Annan, dem er weitere humanitäre Hilfe für Afghanistan zusagte. Details dazu werden von einer Regierungserklärung erwartet, die Schröder heute im Bundestag halten will. (Seiten 3 und 4)



„Gott ist groß – verflucht die USA!": Hunderte Indonesier protestierten in Jakarta gegen die Angriffe auf Afghanistan und forderten von ihrer Regierung, die diplomatischen Beziehungen zu den USA abzubrechen. (Bericht unten) Foto AP

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Rückkehr ans Licht

Die Bergung der „Kursk" war für Russland eine patriotische Pflicht

Im Nordpolarmeer Russlands geht ein Drama seinem Höhepunkt zu. Am Mittwoch hat das Atom-U-Boot *Kursk* unter dem Bauch des Pontonriesen *Giant 4* hängend seine Nerven anspannende Reise durch die enge Kola-Bucht beendet und ist bei der Reparaturwerft in Roslajkowo bei Murmansk eingelaufen. In den nächsten Tagen soll das Wrack, das nach zwei Explosionen im August 2000 gesunken war, wieder ans Tageslicht kommen. Gigantische Pontons werden die *Kursk* in einer mehrtägigen Prozedur nach oben drücken in ein schwimmendes Trockendock. Der Kommandeur der Nordflotte, Admiral Wjatscheslaw Popow, nannte den kommenden Samstag als möglichen Termin.

Bei den Verantwortlichen dieser einmaligen Bergungsaktion und den Zuschauern macht sich Erleichterung breit – und Begeisterung. Obwohl es sich um die Bergung eines Sarges handelt, weil von den 118 Toten im vorigen Jahr nur 12 geborgen werden konnten, steht doch der technologische Erfolg der teuren und riskanten Aktion für sich. Viele erwartete Probleme blieben aus: Das Sturm machte eine Pause. Die 26 Stahltrossen konnten von Tauchern im U-Boot verankert werden. Der mehr als 10 000 Tonnen schwere Schiffskörper, dessen Bug abgesägt worden war, löste sich unerwartet leicht vom Meeresboden. Er geriet nicht aus der Balance und zerbrach nicht, als er unter das Pontonschiff gezogen wurde. Auch die in ihrer Langsamkeit ernst und feierlich wirkende letzte Fahrt, 150 Kilometer über die Barentssee und durch die Kola-Bucht, verlief ohne Zwischenfall.

Die Behörden im nahen Murmansk hatten Evakuierungspläne vorbereitet und den Anwohnern ist mulmig, wenn sie an die beiden Atomreaktoren auf der *Kursk* denken. Die russische Regierung aber betont ständig, die Reaktoren seien sicher in ihren Stahlcontainern versiegelt. Regelmäßig würden Wasserproben entnommen und auf Radioaktivität untersucht. Nicht „ein Millionstel eines Zweifels" bestehe daran, dass die Reaktoren in Ordnung seien, versicherte Vizepremier Ilja Klebanow, Leiter der staatlichen Untersuchungskommission zur Aufklärung des *Kursk*-Unglücks.

Unter welcher Abspannung die Beteiligten gestanden hatten, wurde in einer kurzen Szene der Nation schlagartig bewusst. Nach dem erfolgreichen Hebungsmanöver kamen Igor Spasskij, dem 75 Jahre alten Konstrukteur der *Kursk*, die Tränen. Er konnte bei einem Interview nur noch sagen: „Jolle Burschen" Gemeint waren Hunderte von Mitarbeitern der niederländischen Bergungsgesellschaft Mammoet und des russischen U-Boot-Konstrukteurs Rubin, welche die Bergung technisch zu verantworten haben. Entspannt haben sich auch die Mienen von Politikern und Militärs. Die *Kursk* war der Stolz der Nordmeerflotte gewesen und hatte als unsinkbar gegolten. Bei ihrer Bergung geht es um politische Verantwortung und um so etwas wie die Erfüllung einer patriotischen Pflicht.

Dies gilt vor allem für Präsident Wladimir Putin. Er hatte den Angehörigen die Bergung der Toten versprochen. Am Mittwoch nahm er nur knapp den Abschluss der Transportetappe zur Kenntnis. „Wir hoffen, dass die Hebung in das Dock erfolgreich beendet wird", sagte er ernst. Vertreter der Generalstaatsanwaltschaft und Gerichtsärzte werden als erste an Bord der *Kursk* gehen. Es geht um die Untersuchung des geschundenen U-Boot-Körpers und das Auffinden der Toten. *Miriam Neubert*

Al-Qaida kündigt weitere Flugzeug-Entführungen an

Taliban unterstützen bin Ladens neue Terror-Drohung

Blair: Das ist der Beweis, dass die Angriffe gegen Afghanistan gerechtfertigt sind / USA planen Hubschrauber-Einsatz

München (SZ) – Die afghanische Taliban-Regierung hat sich demonstrativ hinter die neuen Drohungen des muslimischen Extremisten Osama bin Laden gestellt und ihm freie Hand für jegliche Erklärungen gegeben. Wie die afghanische Nachrichtenagentur AIP meldete, wiesen die Taliban jedoch Darstellungen zurück, wonach jegliche Beschränkungen gegen bin Laden aufgehoben seien. „Osama hat nach wie vor die Auflage, dass er afghanisches Territorium nicht gegen irgendjemanden nutzen darf", sagte ein Sprecher von Taliban-Anführer Mullah Mohammed Omar in Kabul laut AIP. Bin Ladens Organisation al-Qaida hatte zuvor angekündigt, dass es weitere Anschläge mit Flugzeugen geben werde.

Der britische Premierminister Tony Blair sagte in Oman, die neue Drohung von al-Qaida sei der beste Beweis dafür, dass die Militäraktionen gegen Afghanistan gerechtfertigt seien. „Wir haben schon immer gesagt, dass die Taliban und Osama bin Laden Hand in Hand arbeiten. Dies ist der Beweis."

Die Bundesregierung will nach der Androhung weiterer Attentate mit entführten Flugzeugen die Sicherheitsvorkehrungen weiter verschärfen. Nötig sei ein gestaffeltes System von der Gepäckkontrolle bis zu Sicherheitsbeamten in den Flugzeugen, sagte Bundesinnenminister Otto Schily in Berlin. Den Abschuss entführter Passagiermaschinen, wie er in den USA möglich ist, lehnte Schily ab.

In Afghanistan bombardierten US-Kampfjets am Mittwoch bereits den vierten Tag in Folge mutmaßliche Stellungen der Taliban und bin Ladens, der für die Anschläge in New York und Washington verantwortlich gemacht wird. Die neuen Angriffe gelten als die bisher schwersten, zahlreiche Bomben detonierten am östlichen Stadtrand von Kabul. Auch in der Nähe des Flughafens waren heftige Explosionen zu hören. Nach Berichten von AIP zielten die US-Militärschläge auch auf den Flughafen der Taliban-Hochburg Kandahar. Amerikanische Medien berichteten, dass die USA nun den Einsatz tief fliegender Kampfhubschrauber über Afghanistan planten. Laut AIP wurden bei den seit Sonntag dauernden Angriffen bisher mindestens 70 Zivilisten getötet und mehr als 100 verletzt.

Die US-Bundespolizei veröffentlichte eine neue Liste mit den Namen der 22 „meistgesuchten Terroristen", an deren Spitze bin Laden steht. An seiner Seite werden dessen bekannteste Gehilfen, der Ägypter Ayman el-Zawahiri und der aus Saudi-Arabien stammende Abdel Karim Hussein Mohammed el Nasser gezeigt.

Die Arabische Liga signalisierte den USA im Kampf gegen den Terrorismus Unterstützung. Generalsekretär Amr Mussa sagte, „Wir werden nicht dulden, dass Terrorismus mit Islam in Verbindung gebracht wird." Zugleich warnte er aber die USA vor einer Ausweitung der Angriffe auf andere Länder.

Dem in Afghanistan festgenommenen französischen Foto-Reporter Michel Peyrard droht derweil eine Verurteilung zum Tode wegen Spionage. Der Geheimdienstchef der Taliban, Mullah Tadsch Meer, sagte laut AIP, Peyrard und seine beiden pakistanischen Begleiter würden vor ein Sondergericht gestellt.

HEUTE AUF 12 SEITEN SERVICE

SZ Extra

Kultur und Freizeit in München und im Umland. Tipps und Termine für die Woche vom 11. bis 17. Oktober 2001

Belastung für den Bundeshaushalt

Zusätzlich drei Milliarden Mark für Arbeitslose

ahm **Berlin** – Die unerwartet hohe Arbeitslosigkeit wird den Bundeshaushalt allein im Jahr 2001 mit zusätzlich etwa drei Milliarden Mark belasten. Nach Informationen der *Süddeutschen Zeitung* wird dieses Geld benötigt, um die staatlichen Verpflichtungen bei der Arbeitslosenhilfe sowie im Hinblick auf die Bundesanstalt für Arbeit zu erfüllen. Im kommenden Jahr erwarten Koalitionskreise sogar noch höhere Lasten. (Wirtschaft)

Islamisten in München und Mailand gefasst

rabe **Mailand/München** – Deutsche und italienische Polizisten haben eine Gruppe islamistischer Extremisten ausgehoben und Personen in Mailand und München festgenommen. Bei dem Münchner Verdächtigen handelt es sich um einen 32 Jahre alten Libyer, der Kontakt zu Attentätern haben soll, die einen Anschlag auf den Weihnachtsmarkt von Straßburg geplant hatten. (Seite 2)

Drei Forscher teilen sich den Chemie-Nobelpreis

Stockholm (AP) – Der diesjährige Nobelpreis für Chemie geht an zwei Amerikaner und einen Japaner für ihre Forschungen zur Kontrolle chemischer Reaktionen. William Knowles, Barry Sharpless und Ryoji Noyori erhielten die Auszeichnung für Grundlagen-Untersuchungen, die den Weg für die Herstellung wichtiger Medikamente ebnen. (Seite 11)

Wirtschafts-Nobelpreis für US-Wissenschaftler

Stockholm (dpa) – Der Nobelpreis für Wirtschaftswissenschaften ist an die drei US-Forscher George Akerlof, Michael Spence und Joseph Stiglitz vergeben worden. Die schwedische Akademie der Wissenschaften würdigte deren Leistungen bei der „Marktanalyse mit asymmetrischen Informationen". (Wirtschaft)

Millionen-Strafe gegen DaimlerChrysler verhängt

Brüssel (SZ) – Die EU-Kommission hat ein Bußgeld von etwa 140 Millionen Mark gegen den Autohersteller DaimlerChrysler verhängt. Der Stuttgarter Konzern habe grenzüberschreitende Autokäufe behindert, erklärte die Brüsseler Behörde. DaimlerChrysler will die Strafe nicht hinnehmen. (Wirtschaft)

FC Bayern erreicht ein 2:2 in Rotterdam

Rotterdam (SZ) – Der FC Bayern München hat im Nachholspiel der Champions League bei Feyenoord Rotterdam ein 2:2-Unentschieden erreicht. Die Treffer für die Münchner erzielte Giovane Elber. Bayer Leverkusen gewann gegen Fenerbahce Istanbul durch die Tore von Lucio und Michael Ballack mit 2:1. (Sport)

Dax steigt stark

München (SZ) – An den deutschen Börsen ging es Mittwoch deutlich aufwärts. Der Dax endete mit einem Plus von 3,1 Prozent bei 4613,19 Punkten. Damit erreichte er den höchsten Stand seit den Attentaten in den USA. Der Euro verharrte auf dem Niveau, auf das er am Vorabend gefallen war. Um 22 Uhr notierte er bei 0,9104/09 Dollar. (Wirtschaft)

Sonnig und warm

München (SZ) – Der Herbst zeigt sich in den nächsten Tagen von seiner schönen Seite. Vorhersage: Zunächst Nebelfelder, im Tagesverlauf zunehmend sonnig. Temperaturen 14 bis 21 Grad. (Wetterbericht Seite 2 und Bayern)

Mittwoch-Lotto (10.10.2001)
Gewinnzahlen: 7, 33, 37, 41, 47, 49;
Zusatzzahl: 17
Superzahl: 1
Spiel 77: 6 4 7 2 7 7 3
Super 6: 1 5 7 4 0 8

(Ohne Gewähr)

3 Era Adolf Hitler (1933 → 1945, " Das Reich")

3.1 Takeover of Power by Adolf Hitler (March 1933)

Berliner Ausgabe
83. Ausg. * 46. Jahrg. * Einzelpreis 15 Pf.

Freiheit und Brot

Berliner Ausgabe
Berlin, Freitag, 24. März 1933

VÖLKISCHER BEOBACHTER

Herausgeber Adolf Hitler

Kampfblatt der national-sozialistischen Bewegung Großdeutschlands



Der Führer gibt die Regierungserklärung bekannt

Der Wille des deutschen Volkes erfüllt:

Der Reichstag übergibt Adolf Hitler die Herrschaft

Annahme des Ermächtigungsgesetzes mit der überwältigenden Mehrheit von 441 gegen 94 Stimmen der S.P.D. / Einstimmige Annahme auch im Reichsrat / Hitlers historische Abrechnung mit den Novembermännern

Freie Bahn für die Regierung der nationalen Revolution!

Berlin, 23. März.

Der Reichstag nahm am Donnerstag abend das Ermächtigungsgesetz für das Kabinett Hitler in namentlicher Schlußabstimmung mit 441 gegen 94 Stimmen der Sozialdemokratie, also mit mehr als Zweidrittel-Mehrheit, an. Vorher hatte Reichskanzler Adolf Hitler seine denkwürdige Regierungserklärung, die wir nebenstehend im Wortlaut veröffentlichen, zu dem Ermächtigungsgesetz abgegeben. Nach der Erklärung wurde die Reichstagssitzung um drei Stunden ausgesetzt. Nach der Neueröffnung der Sitzung fand eine Aussprache statt, die der Abgeordnete Wels (Soz.) mit einer Erklärung namens der sozialdemokratischen Fraktion eröffnete. Diese Erklärung veranlaßte den Reichskanzler Adolf Hitler zu einer beispiellosen niederschmetternden Abrechnung mit der schuldbeladenen Sozialdemokratie. Danach gab der Abgeordnete Kaas für das Zentrum eine Erklärung ab, nach der die deutsche Zentrumspartei dem Ermächtigungsgesetz ihre Zustimmung erteilt. Für die Bayerische Volkspartei stimmte Ritter von Lex, für die Staatspartei Mayer-Württemberg und für den Christlich-Sozialen Volksdienst Abgeordneter Wimpffendorfer dem Ermächtigungsgesetz zu. Nachdem Reichstagspräsident Goering das Präsidium dem Vizepräsidenten Pg. Zoerner übergeben hatte, nahm er noch einmal zur Rede des Sozialdemokraten Wels Stellung und wandte sich besonders gegen die schamlose Greuelhetze der internationalen Sozialdemokratie im Auslande. Kurz und bündig wurden die drei Lesungen durchgeführt, die mit dem oben mitgeteilten Ergebnis endeten. Ein dreifaches Heil auf den Reichskanzler Adolf Hitler und der Gesang des Horst-Wessel-Liedes beendeten die historischen Stunden im Reichstag.

Der Reichsrat, der unmittelbar nach dem Abschluß der Reichstagssitzung unter dem Vorsitz des Reichsinnenministers Dr. Frick im Gebäude des Reichsinnenministeriums zusammentrat, beschloß ohne Aussprache einstimmig, das vom Reichstag angenommene Ermächtigungsgesetz zur Kenntnis zu nehmen, ohne Einspruch zu erheben.

Der Führer verpflichtet S.A. und S.S. zu weiterer treuer Gefolgschaft

Nachdem das Ermächtigungsgesetz angenommen und das Horst-Wessel-Lied gesungen war, trat der Führer auf den Balkon der Kroll-Oper. Draußen auf der Straße hatten sich inzwischen Tausende von S.A.- und S.S.-Männern und Parteigenossen angesammelt. Der Führer hielt von dort aus noch eine kurze Ansprache. Er führte aus:

„S.A.- und S.S.-Kameraden! Das Ermächtigungsgesetz ist soeben mit überwältigender Mehrheit angenommen worden. Die erste Etappe unseres Kampfes ist damit abgeschlossen, die zweite der Arbeit beginnt. Ich bitte Euch, daß Ihr Euch in Zukunft genau so in Treue hinter mich stellt, wie bisher. Es wird dann auch der zweite Teil unseres Kampfes gelingen: unserm Volk die Freiheit und Größe und Ehre wieder zu bringen."

Am Anschluß daran fand noch eine kurze Kabinettssitzung statt.

Die Regierungserklärung:

Für Freiheit und Ehre der deutschen Nation! Gegen die Scheidung der Völker in „Sieger und Besiegte"!

Ein stolzes Programm des Wiederaufbaues

Berlin, 23. März.

Reichskanzler Adolf Hitler gab, gleichzeitig zur Begründung des Ermächtigungsgesetzes, das angenommen worden ist, im Reichstag folgende großangelegte Regierungserklärung ab, deren Wortlaut durch den Rundfunk übertragen wurde. Reichskanzler Adolf Hitler wurde immer wieder von dem Beifall des Reichstages und seiner zahlreichen Zuhörer unterbrochen. Adolf Hitler führte aus:

Männer und Frauen
des Deutschen Reichstags!

Im Einvernehmen mit der Reichsregierung haben die Nationalsozialisten und die Deutschnationale Volkspartei Ihnen durch einen Initiativantrag ein Gesetz zur Behebung der Not von Volk und Reich zur Beschlußfassung unterbreitet. Die Gründe für diesen außerordentlichen Vorgang sind folgende: Im November 1918 rissen marxistische Organisationen durch eine Revolution die vollziehende Gewalt an sich. Die Monarchen wurden entthront, die Reichs- und Landesbehörden abgesetzt und damit die Verfassung gebrochen. Das Gelingen der Revolution in materiellem Sinne sicherte die Attentäter vor dem Zugriff der Justiz. **Die moralische Legitimierung suchten sie in der Behauptung,**

Deutschland bzw. seine Regierung trage die Schuld am Ausbruch des Krieges. Diese Behauptung war wissentlich und sachlich falsch.

In der Folge führte aber diese im Interesse unserer damaligen Feinde liegende unwahre Anschuldigung zu schwersten Unterdrückungen des gesamten deutschen Volkes.

Unter Bruch der uns in den vierzehn Punkten Wilsons gemachten Zusicherungen begann für Deutschland, d. h. für das schaffende deutsche Volk, eine Zeit grenzenlosen Unglücks.

Alle die von den Männern des November 1918 gemachten Versprechungen erwiesen sich, wenn schon nicht als bewußte Irreführungen, so doch als nicht minder verdammenswerte Illusionen. Die Errungenschaften der Revolution waren, insgesamt genommen, nur für kleinste Teile unseres Volkes angenehm, für die lebendige Mehrzahl aber, zum mindesten soweit sie sich durch tätige Arbeit ihr täglich Brot verdienen mußte, unendlich traurig.

Daß der Selbsterhaltungstrieb der Schuldigen tausend Beschönigungen und Ausreden findet, ist selbstverständlich. Der nüchterne Vergleich der durchschnittlichen Ergebnisse der letzten vierzehn Jahre mit den einst proklamierten Versprechungen fällt für diese, fällt für die verantwortlichen Männer jenes in der deutschen Geschichte beispiellosen Verbrechens vernichtend aus.

Unser Volk hat in den vergangenen vierzehn Jahren auf allen Gebieten seines Lebens einen Verfall erlitten, der in seiner Größe kaum vorstellbar ist. Die Frage, was überhaupt Schlimmeres hätte kommen können, ist unter Berücksichtigung der Grundwerte unseres deutschen Volkes sowie der einst vorhandenen politischen und wirtschaftlichen Erbmasse nicht zu beantworten.

Das deutsche Volk hat sich trotz seiner schweren Beweglichkeit in politischen Empfindungen und Stellungnahmen steigend von den in seinen Augen für diese Zustände verantwortlichen Auffassungen, Parteien und Verbänden abgewandt. Die Zahl der innerlich auf dem Boden der Weimarer Verfassung stehenden Deutschen war trotz günstigster Bedingungen und rücksichtsloser Ausnutzung der Regierungsgewalt am Ende nur mehr ein Bruchteil der gesamten Nation.

Es ist weiter das charakteristische Merkmal dieser vierzehn Jahre gewesen, daß, abgesehen von natürlichen Schwankungen, die wirtschaftliche Entwicklung konstant nach unten führte.

Diese deprimierende Erkenntnis war mit eine der Ursachen der allgemeinen Verzweiflung. Sie stärkte aber auch die Einsicht von der Notwendigkeit einer gründlichen Abkehr von Ideen, Organisationen und Männern, in denen man allmählich die tieferen Ursachen des Verfalls zu erkennen begann.

Die nationalsozialistische Bewegung vermochte infolgedessen immer größere Teile zum Abwehrkampf zu erfassen. Sie hat mit anderen nationalen Verbänden in wenigen Wochen die seit 1918 herrschenden Mächte beseitigt und in einer Revolution die Gewalt in die Hände der nationalen Regierung gelegt. Am 5. März hat das deutsche Volk diesem Akt seine Zustimmung erteilt.

Das Programm des Wiederaufbaues von Volk und Reich

ergibt sich aus der Größe der Not unseres politischen, moralischen und wirtschaftlichen Lebens. Erfüllt von der Überzeugung, daß dieser Zusammenbruch seine Ursachen im inneren Zentrum des Volkskörpers hat, ist es das Ziel der Regierung der nationalen Revolution, diejenigen Gebrechen aus unserem völkischen Leben zu beseitigen, die auch in Zukunft jeden tatsächlichen Wiederaufstieg verhindern.

Der systematisch herbeigeführte Verfall der Nation in weltanschaulich unvereinbare Gegensätze bedeutet die Vernichtung der Basis eines möglichen Gemeinschaftslebens.

Die Auflösung ergreift alle Grundlagen der Gesellschaftsordnung. Die völlig gegensätzliche Einstellung des einzelnen zu den Begriffen Staat, Gesellschaft, Religion, Moral, Familie, Wirtschaft reißt Differenzen auf, die zum Krieg aller gegen alle führen müssen.

Ausgehend vom Liberalismus des vergangenen Jahrhunderts findet diese Entwicklung naturgesetzlich ihr Ende im kommunistischen Chaos. Die Mobilisierung primitivster Instinkte führt zu einer Verbindung zwischen den Auffassungen einer politischen Ober- und den Handlungen wirklicher Verbrecher. Angefangen von Plünderungen, Brandstiftungen, Eisenbahnanschlägen, Attentaten und so fort erhält alles in der kommunistischen Idee seine moralische Sanktion. Allein die Methode des individuellen Massenterrors hat die nationalsozialistische Bewegung im Laufe weniger Jahre über 300 Tote und Zehntausende von Verletzten gekostet.

Die Brandstiftung im Reichstag als mißglückter Versuch einer großangelegten Aktion ist nur ein Zeichen dessen, was Europa vom Siege dieser teuflischen Lehre zu erwarten hätte.

Wenn eine bestimmte Presse, besonders außerhalb Deutschlands, heute versucht, entsprechend der durch den Kommunismus zum Prinzip erhobenen politischen Unwahrheit die nationale Erhebung Deutschlands mit dieser Schandtat zu identifizieren, so kann mich das nur in meinem Beschluß bestärken, nichts unversucht zu lassen, um in kürzester Zeit dieses Verbrechen durch die öffentliche Hinrichtung des schuldigen Brandstifters und seiner Komplicen zu sühnen! (Stürm. Händeklatschen bei den Reg.-Part.)

Der ganze Umfang der beabsichtigten Aktionen dieser Organisation ist weder dem deutschen Volk noch der übrigen Welt genügend zum Bewußtsein gekommen. Nur durch ihr blitzschnelles Zuschlagen hat die Regierung eine Entwicklung verhindert, die bei einem katastrophalen Ausgang ganz Europa erschüttert haben würde.

Manche von denen, die sich heute aus Haß gegen die nationale Erhebung innerhalb und außerhalb Deutschlands mit den Interessen des Kommunismus verbrüdern, würden selbst die Opfer einer solchen Entwicklung geworden sein. (Sehr wahr! b. d. Nat.Soz.) Es wird die oberste Aufgabe der nationalen Regierung sein, diese Erscheinung nicht nur im

Interesse Deutschlands, sondern auch im Interesse des übrigen Europas in unserem Lande restlos auszurotten und zu beseitigen. (Stürm. Beif. b. d. Reg.Part.)

Sie wird nicht die Erkenntnis aus dem Auge verlieren, daß es sich dabei nicht um das negative Problem dieser Organisationen handelt, sondern um die Durchführung der positiven Aufgabe der Gewinnung des deutschen Arbeiters für den nationalen Staat (Beifall). Nur die Herstellung einer wirklichen Volksgemeinschaft, die sich über die Interessen und Gegensätze der Stände und Klassen erhebt, vermag allein auf die Dauer diesen Verirrungen des menschlichen Geistes den Nährboden zu entziehen. Die Errichtung einer solchen weltanschaulichen Geschlossenheit des deutschen Volkskörpers ist um so wichtiger, als nur durch sie die Möglichkeit der Aufrechterhaltung freundschaftlicher Beziehungen zu den außerdeutschen Mächten ohne Rücksicht auf die sie beherrschenden Tendenzen oder weltanschaulichen Grundsätze gegeben ist, denn die

Beseitigung des Kommunismus in Deutschland ist nur eine innerdeutsche Angelegenheit

Die übrige Welt mag daran ebensosehr interessiert sein, da der Ausbruch eines kommunistischen Chaos in dem dicht besiedelten Deutschen Reiche zu politischen und wirtschaftlichen Folgeerscheinungen besonders im übrigen westlichen Europa führen würde, deren Ausmaße unvorstellbar sind.

Der innere Zerfall unserer Volksgemeinschaft führt zwangsläufig zu einer immer bedenklicher werdenden Schwächung der Autorität der obersten Staatsführung. Das Sinken des Ansehens der Reichsregierung, das sich aus solchen unsicheren inneren Verhältnissen zwangsläufig ergeben mußte, führte bei verschiedenen Parteien in einzelnen Ländern zu Vorstellungen, die mit der Einheit des Reiches unverträglich sind. Alle Rücksichtnahme auf die Traditionen der Länder kann die bittere Erkenntnis nicht beseitigen, daß das Ausmaß der Zersplitterung des staatlichen Lebens in der Vergangenheit der Welt- und Lebensstellung unseres Volkes nicht nur nicht nützlich, sondern wahrhaft abträglich war. (Lebhafte Zustimmung).

Es ist nicht die Aufgabe einer überlegenen Staatsführung, nachträglich das organisch Gewachsene nun dem theoretischen Prinzip einer zügellosen Unitarisierung auszuliefern.

Es ist aber ihre Pflicht, diese geistige willensmäßige Einheit der Führung der Nation und damit den Reichsgedanken an sich über jeden Zweifel zu erheben. Die Wohlfahrt unserer Kommunen und Länder bedarf genau so wie die Existenz des einzelnen deutschen Menschen des staatlichen Schutzes. Die Reichsregierung beabsichtigt daher nicht durch Ermächtigungsgesetz die Länder aufzugeben. Wohl aber wird sie diejenigen Maßnahmen treffen, die von nun ab und für immer eine Gleichmäßigkeit der politischen Intentionen in Reich und Ländern gewährleisten. Je größer die geistige und willensmäßige Übereinstimmung ist, umso weniger Interesse kann für alle Zukunft für das Reich bestehen, das kulturelle und wirtschaftliche Eigenleben der einzelnen Länder zu vergewaltigen. (Erneute Zustimmung.)

Vollends unmöglich ist der in letzter Zeit eingerissene Zustand einer gegenseitigen Herabsetzung von Länder- und Reichsregierungen unter Zuhilfenahme der modernen Mittel der Volkspropaganda. Ich werde unter keinen Umständen hinnehmen, und die Reichsregierung wird alle Maßnahmen dagegen treffen, daß in Zukunft jemals noch Minister deutscher Regierungen vor der Welt in öffentlichen Massenversammlungen, ja sogar unter Verwendung des Rundfunks, sich gegenseitig anklagen oder heruntersetzen. (Beifall.)

Es führt weiter zu einer völligen Entwertung der gesetzgebenden Körperschaften in den Augen des Volkes, wenn selbst unter Annahme normaler Zeiten innerhalb von vier Jahren entweder im Reich oder den einzelnen Ländern das Volk an die 20 Mal an die Wahlurne getrieben wird. Die Reichsregierung wird den Weg dazu finden, der das Ziel erreicht, daß die einmal gegebene Willensäußerung der Nation für Reich und Länder zu einheitlichen Konsequenzen führt.

Eine weitergehende Reform des Reiches wird sich nur aus der lebendigen Entwicklung ergeben können. Ihr Ziel muß

die Konstruktion einer Verfassung sein, die den Willen des Volkes mit der Autorität einer wirklichen Führung

verbindet.

Die gesetzliche Legalisierung einer solchen Verfassungsreform wird dem Volke selbst zugebilligt werden.

Die Regierung der nationalen Revolution sieht es grundsätzlich als ihre Pflicht an, entsprechend dem Sinne des ihr gegebenen Vertrauensvotums des Volkes diejenigen Elemente von der Einflußnahme auf die Gestaltung des Lebens der Nation fernzuhalten, die bewußt und mit Absicht dieses Leben negieren. Die theoretische Gleichheit vor dem Gesetz kann nicht dazu führen, grundsätzliche Verächter der Gesetze unter Gleichheit zu tolerieren, ja aus demokratischen Doktrinen heraus die Freiheit der Nation ihnen auszuliefern.

Die Regierung wird die Gleichheit aber allen denen zubilligen, die in der Frontrichtung unseres Volkes vor dieser Gefahr sich hinter die nationalen Interessen stellen und der Regierung ihre Unterstützung nicht versagen. Überhaupt soll unsere nächste Aufgabe sein, die geistigen Führer dieser Vernichtungstendenzen zur Verantwortung zu ziehen, die verführten Opfer aber zu retten.

Sie sind insbesondere die Millionen deutscher Arbeiter, die diesen Ideen des Wahnsinns und der Selbstvernichtung huldigen, nur die Ergebnisse einer unverzeihlichen Schwäche der früheren Regierungen, die die Verbreitung der Ideen nicht verhinderten, deren praktische Verwirklichung sie selbst unter Strafe stellen mußten. Die Regierung wird sich in der Entschlossenheit, diese Frage zu lösen, von niemandem beirren lassen. Jetzt ist es Sache des Reichstages, seinerseits eine klare Stellung einzunehmen. Am Schicksal des Kommunismus und der sich mit ihm verbrüdernden anderen Organisationen ändert dies nichts. (Beifall.)

Die Nationale Regierung trifft dabei ihre Maßnahmen unter keinem anderen Gesichtspunkt, als dem, das deutsche Volk und insbesondere die Millionenmassen seiner arbeitenden Menschen vor namenlosem Elend zu bewahren. Sie sieht daher die Frage einer monarchischen Restauration schon aus dem Grunde des Vorhandenseins dieser Zustände jetzt als undiskutabel an. Sie würde jeden Versuch, dieses Problem auf eigene Faust in einzelnen Ländern zu lösen, als Angriff gegen die Reichseinheit ansehen müssen und demgemäß ihr Verhalten einrichten.

Gleichlaufend mit dieser politischen Entgiftung unseres öffentlichen Lebens wird die Reichsregierung eine

durchgreifende moralische Sanierung des Volkskörpers

vornehmen. Das gesamte Erziehungswesen, Theater, Film, Literatur, Presse, Rundfunk, sie werden alle Mittel zu diesem Zweck sein und demgemäß gewürdigt. Sie haben alle der Erhaltung der im Wesen unseres Volkstums lebenden Ewigkeitswerte zu dienen.

Die Kunst wird stets Ausdruck und Spiegel der Sehnsucht und der Wirklichkeit einer Zeit sein. Die weltbürgerliche Beschaulichkeit ist im raschen Entschwinden begriffen. Der Heroismus erhebt sich leidenschaftlich als kommender Gestalter und Führer politischer Schicksale. Es ist Aufgabe der Kunst, Ausdruck dieses bestimmenden Zeitgeistes zu sein. Blut und Rasse werden wieder zur Quelle der künstlerischen Intuition werden. Es ist Aufgabe der Regierung, dafür zu sorgen, daß gerade in einer Zeit beschränkter politischer Macht der innere Lebenswert und der Lebenswille der Nation einen um so gewaltigeren kulturellen Auftrieb findet.

Dieser Entschluß verpflichtet zur dankbaren Bewunderung unserer großen Vergangenheit. Auf allen Gebieten unseres geschichtlichen und kulturellen Lebens muß die Brücke von dieser Vergangenheit zur Zukunft geschlagen werden. Die Ehrfurcht vor den großen Männern muß der deutschen Jugend wieder als heiliges Vermächtnis eingehämmert werden. Indem die Regierung entschlossen ist, die politische und moralische Entgiftung unseres öffentlichen Lebens vor sich zu nehmen, schafft und sichert sie die Voraussetzungen für eine wirklich

tiefe Einkehr religiösen Lebens

Die Vorteile personalpolitischer Art, die sich aus Kompromissen mit atheistischen Organisationen ergeben mögen, wiegen nicht annähernd die Folgen auf, die in der Zerstörung allgemeiner sittlicher Grundwerte sichtbar werden.

Die Nationale Regierung sieht in den beiden christlichen Konfessionen die wichtigsten Faktoren zur Erhaltung unseres Volkstums. Sie wird die zwischen ihnen und den Ländern abgeschlossenen Verträge respektieren. Ihre Rechte sollen nicht angetastet werden. Sie erwartet aber und hofft, daß die Arbeit an der nationalen und sittlichen Erneuerung unseres Volkes, die sich die Regierung zur Aufgabe gestellt hat, umgekehrt die gleiche Würdigung erfährt. (Beifall). Sie wird allen anderen Konfessionen in objektiver Gerechtigkeit gegenübertreten. Sie kann aber nicht dulden, daß die Zugehörigkeit zu einer bestimmten Konfession oder einer bestimmten Rasse eine Entbindung von allgemeinen gesetzlichen Verpflichtungen sein könnte oder gar ein Freibrief für straflose Begehung oder Tolerierung von Verbrechen.

Die Nationale Regierung wird in Schule und Erziehung den christlichen Konfessionen den ihnen zukommenden Einfluß einräumen und sicherstellen. Ihre Sorge gilt dem aufrichtigen Zusammenleben zwischen Staat und Kirche.

Der Kampf gegen eine materialistische Weltauffassung und für die Herstellung einer wirklichen Volksgemeinschaft dient ebenso sehr den Interessen der deutschen Nation, wie denen unseres christlichen Glaubens.

Unser Rechtswesen muß in erster Linie der Erhaltung dieser Volksgemeinschaft dienen. Der Unabsetzbarkeit der Richter auf der einen Seite muß die Elastizität der Urteilsfindung zum Zweck der Erhaltung der Gesellschaft entsprechen. Nicht das Individuum kann der Mittelpunkt der gesetzlichen Sorge sein, sondern das Volk.

Landes- und Volksverrat sollen künftig mit barbarischer Rücksichtslosigkeit ausgebrannt werden

Der Boden der Existenz der Justiz kann kein anderer sein, als der Boden der Existenz der Nation. Möge diese daher auch stets die Schwere der Entscheidungen derer berücksichtigen, die unter dem harten Zwang der Wirklichkeit das Leben der Nation verantwortlich zu gestalten haben.

Groß sind die Aufgaben der Nationalen Regierung auf den Gebieten des wirtschaftlichen Lebens.

Hier wird ein Gesetz alles Handeln bestimmen: Das Volk lebt nicht für die Wirtschaft, und die Wirtschaft existiert nicht für das Kapital, sondern das Kapital dient der Wirtschaft, und die Wirtschaft dem Volk.

Grundsätzlich wird die Regierung die Wahrnehmung der wirtschaftlichen Interessen des deutschen Volkes nicht über den Umweg einer staatlich zu organisierenden Wirtschaftsbürokratie betreiben, sondern durch stärkste Förderung der Privatinitiative unter Anerkennung des Privateigentums. Allein zwischen der produktiven Intention einerseits und der produktiven Arbeit andererseits muß ein gerechter Ausgleich hergestellt werden. Und die Verwaltung soll die Ergebnisse der Fähigkeit des Fleißes und der Arbeit durch Sparsamkeit respektieren. Auch das Problem unserer öffentlichen Finanzen ist nicht zuletzt das Problem einer sparsamen Verwaltung.

Die Reform unseres Steuerwesens, die unausbleiblich ist, muß zu einer Vereinfachung der Veranlagung, der Durchführung und in der Folge zu einer Minderung der Selbstkosten führen. Grundsätzlich soll die Steuermühle in den Strom gebaut werden und nicht an die Quellen.

Im Zuge einer gesamten Vereinfachung unserer Verwaltung muß eine

Verminderung unserer öffentlichen Lasten

eintreten.

Diese langsame Entbürokratisierung und Vereinfachung der Staatsverwaltung, im Reich und in den Ländern, sowie die Durchführung einer Reform unseres Steuerwesens sind nicht Fragen des Augenblicks, sondern einer nach den Erfordernissen zu bemessenden Zeit.

Die Regierung wird grundsätzlich Währungsexperimente vermeiden.

Über allem aber stehen zwei Wirtschaftsaufgaben erster Ordnung:

Die Rettung des deutschen Bauern muß unter allen Umständen durchgeführt werden

Die Vernichtung dieses Standes in unserem Volke würde zu den denkbar schwersten Konsequenzen führen. Die Wiederherstellung der Rentabilität der landwirtschaftlichen Betriebe mag für den Konsumenten hart sein, das Schicksal aber, das das ganze Volk träfe, wenn der deutsche Bauer zugrunde ginge, wäre mit dieser Härte gar nicht zu vergleichen. Nur im Zusammenhang mit der unter allen Umständen zu erreichenden Rentabilität unserer Landwirtschaft kann die Frage eines Vollstreckungsschutzes bzw. einer Entschuldung gelöst werden.

Würde dies nicht gelingen, müßte die Vernichtung unserer Bauern nicht nur zum Zusammenbruch der deutschen Wirtschaft überhaupt, sondern vor allem zum Zusammenbruch des deutschen Volkskörpers führen. Seine gesunde Erhaltung ist aber auch die erste Voraussetzung für das Blühen und Gedeihen unserer Industrie, für den deutschen Binnenhandel und für den deutschen Export.

Ohne das Gegengewicht des deutschen Bauerntums hätte der kommunistische Wahnsinn schon jetzt Deutschland überrannt und damit die deutsche Wirtschaft endgültig vernichtet. Was die Gesamtwirtschaft einschließlich unserer Exportwirtschaft dem gesunden Sinn des deutschen Bauern verdanken, kann überhaupt durch kein Opfer geschäftlicher Art irgendwie abgegolten werden. Es muß daher auch der

weiteren Besiedlung des deutschen Bodens

in Zukunft die höchste Sorge gelten.

Im übrigen ist sich die Nationale Regierung darüber im klaren, daß die endgültige Behebung der Not sowohl unserer bäuerlichen, als auch unserer städtischen Wirtschaft abhängt von der Eingliederung der Arbeitslosenarmee in den Produktionsprozeß.

Sie kann nur gelöst werden im Zusammenhang mit der allgemeinen politischen Befriedung, mit der Wiederherstellung der Autorität eines Regiments, der Durchsetzung gesunder, weil natürlicher wirtschaftlicher Grundsätze, sowie der Ergreifung all derjenigen Maßnahmen, die notwendig sind, auch wenn sie, im Augenblick gesehen, auf keine Popularität rechnen können. Arbeitsbeschaffung und Arbeitsdienstpflicht sind hierbei nur Einzelmaßnahmen im Rahmen eines Gesamtangriffs.

Ähnlich ihrer Einstellung zum deutschen Bauern ist die Einstellung der Nationalen Regierung gegenüber unserem Mittelstand. Auch seine Rettung kann nur im Zuge der allgemeinen wirtschaftlichen Aktion erfolgen. Die Regierung ist entschlossen, diese Fragen grundsätzlich und durchgreifend zu lösen.

Sie erkennt hierbei die geschichtliche Aufgabe, die Millionenmassen der deutschen Arbeiter im Daseinskampf um ihre Lebensrechte zu stützen und zu fördern. Als Kanzler und als Nationalsozialist fühle ich mich selbst mit ihnen als den einstigen Gefährten meiner Jugend verbunden. Die Steigerung der Konsumkraft dieser Massen wird ein wesentliches Mittel zur wirtschaftlichen Belebung sein.

Unter Aufrechterhaltung unserer sozialen Gesetzgebung wird durch Vereinfachung und Verbilligung der Verwaltung der erste Schritt zu einer Reform stattfinden müssen. Grundsätzlich soll aber die Nutzbarmachung jeder Arbeitskraft im Dienste der gesamten Gemeinschaft vertreten werden.

Das Brachliegenlassen von Milliarden menschlicher Arbeitsstunden ist ein Wahnsinn und ein Verbrechen,

das zu einer Verarmung aller führen muß. Ganz gleich welche Werte durch eine Verwendung unserer überschüssigen Arbeitskraft geschaffen worden wären, sie würden für Millionen Menschen, die heute in Not und Elend verkommen, unentbehrliche Lebensgüter darstellen können. Es muß und wird der organisatorischen Fähigkeit unseres Volkes gelingen, diese Frage zu lösen.

Wir wissen, daß die geographische Lage des rohstoffarmen Deutschlands eine Autarkie für unser Reich nicht zuläßt. Es muß immer wieder betont werden, daß der Reichsregierung nichts ferner liegt, als Exportfeindlichkeit. Wir wissen, daß wir die Verbindung mit der Welt nötig haben und daß die Arbeit für den Ablauf der deutschen Waren in der Welt viele Millionen deutscher Volksgenossen ernährt. Wir wissen aber auch, welcher Art die Voraussetzungen für den gesunden Leistungsaustausch zwischen den Völkern der Erde sind. Deutschland war Jahre hindurch gezwungen, Leistungen ohne Gegenleistungen zu machen. Daraus ergibt sich heute, daß im tiefsten Grunde die Aufgabe, Deutschland als tätiges Glied im Warenaustausch zwischen den Völkern zu erhalten, weniger eine handelspolitische als eine finanzpolitische ist.

Solange man uns eine sachgemäße und unserer Kraft entsprechende Regelung der Auslandsschulden nicht zugebilligt hat, sind wir leider auch zur Aufrechterhaltung der Devisenzwangswirtschaft gezwungen.

Die Reichsregierung ist auch um deswillen verpflichtet, gegen den Abfluß des Kapitals über die Grenzen einen Damm aufzurichten, weil sie in der Erhaltung des Wertes der Reichsmark eine wesentliche Aufgabe erblickt.

Wenn die Reichsregierung sich in ihrer Wirtschaftspolitik von diesen Grundsätzen leiten läßt, so ist mit Bestimmtheit zu erwarten, daß das wachsende Verständnis des Auslandes für Deutschlands Lage und für die Notwendigkeit der ergriffenen Maßnahmen die Eingliederung unseres Reiches in den friedlichen Wettbewerb der Nationen erleichtert.

Die Förderung des Verkehrs muß zu einem vernünftigen Ausgleich der Interessen der verschiedenen Verkehrsmittel führen. Schon zu Beginn des kommenden Monats wird durch die Reform der Kraftfahrzeugsteuer ein erster Schritt in dieser Richtung getan. Die Erhaltung der Reichsbahn und ihre möglichst schnelle Zurückführung in den Besitz des Reiches ist eine Aufgabe, die uns nicht nur wirtschaftlich, sondern auch moralisch verpflichtet. Die Entwicklung des Luftverkehrs als ein Mittel friedlicher Verbindung der Völker untereinander wird die Nationale Regierung mit Eifer pflegen.

Bei all dieser ihrer Tätigkeit bedarf die Regierung der Unterstützung nicht nur der allgemeinen Kräfte in unserem Volke, die im weitesten Umfang heranzuziehen sie gewillt und entschlossen ist, sondern besonders der hingebenden Treue und Arbeit unseres Berufsbeamtentums. Nur bei zwingendster Not angesichts der Lage der öffentlichen Finanzen sollen hier Eingriffe stattfinden. Allein auch dann wird strenge Gerechtigkeit das oberste Gesetz des Handelns sein.

Der Schutz der Grenzen des Reiches und damit des Lebens unseres Volkes und der Existenz unserer Wirtschaft liegt heute bei unserer Reichswehr,

die entsprechend den uns im Versailler Vertrag auferlegten Bedingungen als einzig wirklich abgerüstete Armee der Welt anzusehen ist. Trotz der dadurch bedingten Kleinheit und gänzlich ungenügenden Bewaffnung dieses Heeres darf das deutsche Volk mit stolzer Befriedigung auf seine Reichswehr sehen. Unter schwersten Verhältnissen ist dieses kleine Instrument unserer nationalen Selbstverteidigung entstanden und entwickelt worden. In seinem Geiste ist es der Träger unserer besten soldatischen Tradition.

In peinlicher Gewissenhaftigkeit hat das deutsche Volk aber damit seine ihm im Friedensvertrag auferlegten Pflichten erfüllt. Ja selbst der uns genehmigte Ersatz der Schiffe unserer Flotte ist — ich darf wohl sagen leider — nur zu einem kleinen Teil vollzogen worden. Deutschland wartet nun seit Jahren auf die Einlösung des Versprechens der übrigen Welt, dieser unserer Abrüstung zu folgen. Es ist der aufrichtige Wunsch der Nationalen Regierung, von einer Vermehrung des deutschen Heeres und unserer Waffen absehen zu können, sofern endlich die andere Welt geneigt ist, auch ihre Verpflichtung zu einer radikalen Abrüstung zu vollziehen. Denn Deutschland will nichts, als gleiche Lebensrechte und die gleiche Freiheit.

Für diesen Geist des Freiheitswillens allerdings wird die Nationale Regierung das deutsche Volk erziehen. Die Ehre der Nation, die Ehre unserer Armee, das Ideal der Freiheit, sie müssen dem deutschen Volke wieder heilig werden.

Das deutsche Volk will mit der Welt im Frieden leben. Die Regierung wird aber gerade deshalb mit allen Mitteln für die endgültige Beseitigung einer Scheidung der Völker der Erde in zwei Kategorien eintreten.

Die Begriffe von Siegernationen und von Besiegten können nicht als eine dauernde Basis freundschaftlicher Beziehungen der Völker untereinander gelten

Die ewige Offenhaltung dieser Wunde führt den einen zum Mißtrauen, den anderen zum Haß und damit zu einer allgemeinen Unsicherheit.

Die nationale Regierung ist bereit, jedem Volke die Hand zu einer aufrichtigen Verständigung zu reichen, das gewillt ist, die traurige Vergangenheit endlich einmal grundsätzlich abzuschließen. Die Not der Welt kann nur vergehen, wenn innerhalb der Völker und untereinander durch stabile Verhältnisse wieder Vertrauen geschaffen wird. Denn folgende Voraussetzungen sieht die nationale Regierung für die Behebung der allgemeinen Wirtschaftskatastrophe als notwendig an:

1. Eine unbedingte Autorität der politischen Führung im Innern zur Herstellung des Vertrauens in die Stabilität der Verhältnisse.

2. Eine Sicherstellung des Friedens durch die wirklich großen Nationen auf lange Sicht zur Wiederherstellung des Vertrauens der Völker untereinander.

3. Den endlichen Sieg der Grundsätze der Vernunft in der Organisation und Führung der Wirtschaft, sowie eine allgemeine internationale Entlastung von Reparationen und unmöglichen Schuld- und Zinsverpflichtungen.

Leider stehen wir vor der Tatsache, daß die Genfer Konferenz trotz langer Verhandlungen bisher kein praktisches Ergebnis erzielt hat. Die Entscheidung über die Herbeiführung wirklicher Abrüstungsmaßnahmen ist immer wieder durch das Aufwerfen technischer Einzelfragen und das Hereinziehen von Problemen, die mit Abrüstung nichts zu tun haben, verzögert worden. Dieses Verfahren ist untauglich.

Der rechtswidrige Zustand einer einseitigen Abrüstung und der daraus resultierenden nationalen Unsicherheit Deutschlands kann nicht länger dauern,

Als ein Zeichen des Gefühls der Verantwortung und des guten Willens erkennen wir es an, daß

die britische Regierung

in ihren letzten Vorschlägen in Genf den Versuch gemacht hat, die Konferenz endlich zu schnellen Entscheidungen zu bringen. Die Reichsregierung wird jede Bemühung unterstützen, die darauf gerichtet ist, einer allgemeinen Abrüstung wirksam zu dienen und den dabei schon längst fälligen Anspruch Deutschlands auf Gleichberechtigung sicherzustellen. Allein seit vierzehn Jahren sind wir abgerüstet und seit vierzehn Monaten warten wir auf ein Ergebnis der Abrüstungsverhandlungen!

Umfassender ist noch der Plan des

Chefs der italienischen Regierung,

der großzügig und weitblickend versucht, der gesamteuropäischen Politik eine ruhige und folgerichtige Entwicklung zu sichern. Wir messen diesem Plane die ernsteste Bedeutung bei. Wir sind bereit, auf dieser Grundlage in voller Aufrichtigkeit mitzuarbeiten an dem Versuch, die vier Mächte Deutschland, Italien, England und Frankreich zu einer friedlichen politischen Zusammenarbeit zusammenzuschließen, die mutig und entschlossen an die Aufgaben herangeht, von denen das Schicksal Europas abhängt.

Aus diesem Anlaße empfinden wir besonders dankbar die verständnisvolle Herzlichkeit, mit der die nationale Erhebung Deutschlands in Italien begrüßt worden ist. Wir wünschen und hoffen, daß die Gleichheit der geistigen Ideale die Grundlage für eine stetige Vertiefung der freundschaftlichen Beziehungen zwischen den beiden Ländern sein wird.

Ebenso legt die Reichsregierung, die im Christentum die unerschütterlichen Fundamente des sittlichen und moralischen Lebens unseres Volkes sieht, den größten Wert darauf, die freundschaftlichen Beziehungen zum Heiligen Stuhle weiter zu pflegen und auszugestalten. Gegenüber unserem Brudervolk in Österreich empfinden wir alle das Gefühl der innersten Anteilnahme an seinen Sorgen und Nöten. Die Reichsregierung ist sich in ihrem Handeln der Verbundenheit des Schicksals aller deutschen Stämme bewußt.

Die Einstellung zu den übrigen einzelnen fremden Mächten ergibt sich aus dem bereits Erwähnten. Aber auch da, wo die gegenseitigen Beziehungen heute noch von Schwierigkeiten belastet sind, wollen wir uns ehrlich bemühen, einen Ausgleich zu finden.

Allerdings kann die Grundlage einer Verständigung niemals die Aufrechterhaltung der Unterscheidung in Sieger und Besiegte sein.

Wir sind denn auch der Überzeugung, daß ein solcher Ausgleich in unserem Verhältnis zu Frankreich möglich ist, wenn die Regie-

(Fortsetzung: Seite 3 des Hauptblattes.)

Aus technischen Gründen mußte die Romanfortsetzung ausfallen.

Hauptschriftleiter: Alfred Rosenberg. Chef vom Dienst: Wilhelm Weiß. Verantwortlich für die Schriftleitung der Berliner und Norddeutschen Ausgabe: Wilhelm Weiß, Berlin. Verantwortlich für die Schriftleitung der Münchener und Süddeutschen Ausgabe: Joseph Berchtold, München. Verantwortlich für die Anzeigen der vorliegenden Ausgabe: Edmund Lewandowski. — Verlag: Frz. Eher Nachf. GmbH, Zweigniederlassung Berlin. Druck: M. Müller u. Sohn, München, Zweigniederlassung Berlin.

rungen die sie betreffenden Probleme beiderseits wirklich weitschauend in Angriff nehmen.

Gegenüber der

Sowjet-Union

ist die Reichsregierung gewillt, freundschaftliche, für beide Teile nutzbringende Beziehungen zu pflegen. Gerade die Regierung der nationalen Revolution sieht sich zu einer solchen positiven Politik gegenüber Sowjet-Rußland in der Lage.

Der Kampf gegen den Kommunismus in Deutschland ist unsere innere Angelegenheit, in den wir Einmischungen von außen niemals dulden werden. Die staatspolitischen Beziehungen zu anderen Mächten, mit denen uns wichtige gemeinsame Interessen verbinden, werden davon nicht berührt.

Das Verhältnis zu den übrigen Ländern verdient auch in der Zukunft unsere ernsteste Aufmerksamkeit. Insbesonders die großen überseeischen Staaten, mit denen Deutschland seit langem durch Freundschaft und wichtigste wirtschaftliche Interessen verbunden ist.

Das Schicksal der Deutschen außerhalb der Grenzen des Reichs, die als besondere Volksgruppen innerhalb fremder Völker um die Wahrung ihrer Sprache, Kultur, Sitte und Religion kämpfen, wird uns stets bewegen, mit allen zu Gebote stehenden Mitteln für die den deutschen Minderheiten garantierten internationalen Rechte einzutreten.

Wir begrüßen den Plan einer Weltwirtschaftskonferenz und sind mit ihrem baldigen Zusammentritt einverstanden. Die Reichsregierung ist bereit, mitzuarbeiten, um endlich positive Ergebnisse zu erlangen. Die wichtigste Frage ist das Problem unserer privaten kurzfristigen und langfristigen äußeren Verschuldung. Die völlige Veränderung des Verhältnisses der Warenwerte erfordert eine Anpassung der privaten Schulden an diese veränderten Verhältnisse im Interesse der Gläubiger sowohl als der Schuldner. Nur aus einer vertrauensvollen Zusammenarbeit kann eine wirkliche Behebung der allgemeinen Sorgen erwachsen.

Zehn Jahre eines aufrichtigen Friedens werden für die Wohlfahrt aller Nationen nützlicher sein, als eine dreißig Jahre lange Verrennung in die Begriffe von Sieger und besiegten Nationen.

Um die Regierung in die Lage zu versetzen, die Aufgaben zu erfüllen, die innerhalb dieses allgemein gekennzeichneten Rahmens liegen, hat sie im Reichstag durch die beiden Parteien der Nationalsozialisten und der Deutschnationalen

das Ermächtigungsgesetz

einbringen lassen. Ein Teil der beabsichtigten Maßnahmen erfordert die verfassungsändernde Mehrheit. Die Durchführung dieser Aufgaben bzw. ihre Lösung ist notwendig. Es würde dem Sinn der nationalen Erhebung widersprechen und dem beabsichtigten Zweck nicht genügen, wollte die Regierung sich für ihre Maßnahmen von Fall zu Fall die Genehmigung des Reichstages erhandeln und erbitten.

Die Regierung wird dabei nicht von der Absicht getrieben, den Reichstag als solchen aufzuheben. Im Gegenteil, sie behält sich auch für die Zukunft vor, ihn von Zeit zu Zeit über ihre Maßnahmen zu unterrichten oder aus bestimmten Gründen, wenn zweckmäßig, auch seine Zustimmung einzuholen.

Die Autorität und damit die Erfüllung der Aufgaben der Regierung würden aber leiden, wenn im Volke Zweifel an der Stabilität des neuen Regiments entstehen könnten. Sie hält vor allem eine weitere Tagung des Reichstages im heutigen Zustande der tiefgehenden Erregung der Nation für unmöglich.

Es ist kaum eine Revolution von so großem Ausmaß so diszipliniert und unblutig verlaufen, wie die der Erhebung des deutschen Volkes in diesen Wochen. Es ist meine feste Absicht, für diese ruhige Entwicklung auch in Zukunft zu sorgen. **Allein um so nötiger ist es, daß der Nationalen Regierung jene souveräne Stellung gegeben wird, die in einer solchen Zeit allein geeignet ist, eine andere Entwicklung zu verhindern.** Die Regierung beabsichtigt dabei, von diesem Gesetz nur insoweit Gebrauch zu machen, als es zur Durchführung der lebensnotwendigen Maßnahmen erforderlich ist. Weder die Existenz des Reichstages noch des Reichsrats soll dadurch bedroht sein. Die Stellung und die Rechte des Herrn Reichspräsidenten bleiben unberührt. Die innere Übereinstimmung mit seinem Willen herbeizuführen wird stets die oberste Aufgabe der Regierung sein. Der Bestand der Länder wird nicht beseitigt, die Rechte der Kirchen nicht geschmälert, ihre Stellung zum Staate nicht geändert.

Da die Regierung an sich über eine klare Mehrheit verfügt, ist die Zahl der Fälle, in denen eine innere Notwendigkeit vorliegt, zu einem solchen Gesetze die Zuflucht zu nehmen, an sich begrenzt.

Um so mehr aber besteht die Regierung der nationalen Erhebung auf der Verabschiedung dieses Gesetzes. Sie zieht in jedem Falle eine klare Entscheidung vor.

Sie bietet den Parteien des Reichstags die Möglichkeit einer ruhigen deutschen Entwicklung und einer sich daraus in der Zukunft anbahnenden Verständigung, und sie ist aber ebenso entschlossen und bereit, die Bekundung der Ablehnung und damit die Ansage des Widerstandes entgegenzunehmen.

Mögen Sie, meine Herren Abgeordneten, nunmehr selbst die Entscheidung treffen über Frieden oder Krieg.

Unerwartetes Zwischenspiel

Doch Debatte über MacDonalds Abrüstungsplan

Offensive Polens und der Kleinen Entente

(Drahtbericht unseres Genfer Vertreters.)

Genf, 23. März.

Die an Überraschungen aller Art wahrlich nicht arme Chronik der Abrüstungskonferenz ist um einen neuen, richtigen Theatercoup bereichert worden, den man offenbar einem abgekarteten Intrigenspiel des um das Schicksal seiner Konferenz besorgten Präsidenten Henderson mit Machern von der Kleinen Entente zu verdanken hat. Henderson selbst hat gestern geäußert, daß die Konferenz bis zum 25. April unterbrochen werden sollte und daß die heutige Sitzung der Hauptkommission sich im allgemeinen auf diesen Vertagungsbeschluß beschränken werde. In der Tat ist es aber anders gekommen und statt der Konferenz ist ihre Vertagung vertagt worden.

Die Sitzung begann mit einem kurzen Bericht des Generalberichterstatters Benesch, über den am Dienstag erfolgten Empfang von Kriegsbeschädigtenverbänden durch das Konferenzpräsidium. Dann legte Henderson der Kommission die alternative Frage vor, ob sie sich sofort in die Osterferien begeben wolle, oder ob sie vorher noch mit der Aussprache über MacDonalds neuen Abrüstungsplan beginnen wolle, ohne daß er auf die englisch-italienische Aussprache in Rom und die geplante Viermächte-Konferenz auch nur mit einem Wort zu sprechen gekommen wäre.

Seine Frage wurde mit allgemeinem Schweigen beantwortet. Niemand meldete sich zum Wort, selbst nicht der Vertreter Englands, von dem man angenommen hatte, daß er die Vertagung der Konferenz bis zu Ostern beantragen würde. Auf die weitere Frage Hendersons, ob er dieses Schweigen so auslegen dürfe, daß die Kommission ihre Arbeiten fortsetzen wolle, sprach sich der rumänische Außenminister Titulescu mit Begeisterung für diese Auslegung aus. Als Henderson dann tatsächlich abstimmen ließ, sprach sich die Kommission in der Mehrzahl, wenn auch sichtlich lustlos, und verlegen für die im Grunde ungewollte Aufnahme der Debatte über den englischen Vorschlag aus, die nun morgen nachmittag beginnen wird.

Diese überraschende Programmänderung ist, wie auch der Sitzung durchsickerte, dem Sturmlauf der Kleinen Entente und Polen gegen die Ministertagung in Rom, gegen die geplante Viermächtekonferenz und gegen die Beurlaubung der Abrüstungskonferenz zu verdanken.

Henderson war dafür nicht schwer zu gewinnen und die Engländer, die in Paris auf zähen Widerstand gestoßen sind, scheinen es für opportun zu halten, den französischen Widersachern dieses verhältnismäßig kleine Opfer zu bringen, da sie annehmen, daß die Aussprache über ihren Plan ohnehin nicht länger als einige wenige Tage dauern wird.

In der deutschen Delegation steht man diesem plötzlichen Arbeitseifer gelassen gegenüber, doch weigert sich Botschafter Nadolny, Hendersons Wunsch zu erfüllen und morgen als erster zu sprechen.

Man ist allgemein der Ansicht, daß sich nicht allzu viel Redner finden werden. Doch verlautet, daß Sir John Simon und wahrscheinlich auch Paul-Boncour am Sonnabend nach Genf kommen werden.

Maßnahmen gegen die Verbreitung von Greuelnachrichten

Berlin, 23. März.

Zu den immer wieder von gewissen ausländischen Kreisen verbreiteten falschen Greuelnachrichten über Deutschland wird von unterrichteter Seite darauf hingewiesen, daß die verantwortlichen Regierungskreisen mit allem Nachdruck Maßnahmen gegen derartige Lügenmeldungen ergriffen haben und auch weiterhin ergreifen werden.

Die deutschen Botschafter und Gesandten sind angewiesen worden, in jedem einzelnen Falle eine Demarche zu unternehmen. Wiederholt sind auch bei den hiesigen Vertretungen der betreffenden Länder, deren Zeitungen derartige Nachrichten verbreiteten, Vorstellungen erhoben worden.

Weiter ist man entschlossen, auch Maßnahmen gegen die beteiligten Zeitungen selbst zu ergreifen und ihnen das Post-Debit zu entziehen und außerdem auch gegen ihre hiesigen Vertreter vorzugehen.

Wenn im übrigen, wie es wiederholt in Äußerungen aus amerikanischen Kreisen zum Ausdruck gekommen ist, mit einem

Wirtschaftsboykott

gegen Deutschland gedroht wird, so mögen die betreffenden Kreise sich vor Augen halten, daß wir gerade gegenüber Amerika eine passive Handelsbilanz haben, also vielmehr kaufen als verkaufen, und das man sich demzufolge mit einem Wirtschaftsboykott ins eigene Fleisch schneiden würde.

Außerdem dürfte man sich dann auch ruhig die Frage vorlegen, wie eine geordnete Regelung der privaten Schulden erfolgen solle, wenn man wirklich einen Boykott gegen Deutschland verhängen wollte.

Schnell entlarvt

Berlin, 23. März.

Zu der Lügenmeldung der „New York American“, daß in den letzten drei Nächten vor dem jüdischen Friedhof in Berlin-Weißensee verstümmelte Judenleichen gefunden worden seien, erklärt der Friedhofsinspektor Saberski der Telegraphen-Union auf Anfrage, daß es sich hier um eine empörende Lüge handele, für die auch nicht der Schatten eines Wahrheitskerns vorhanden sei. Der Friedhofsverwaltung Weißensee ist von derartigen Vorfällen nicht das Geringste bekannt.

Ein „zu Tode Gequälter“ wohlauf

Berlin, 23. März.

Der nach Neuyorker Hetzmeldungen angeblich zu Tode gequälte Rechtsanwalt Dr. Alfred Apfel erklärt auf telephonische Anfrage, daß er niemals behelligt worden sei; auch während seiner Inhaftierung habe man sich ihm gegenüber sehr entgegenkommend verhalten. Dr. Apfel befindet sich seit 14 Tagen wieder auf freiem Fuß.

Die Väter der Lüge

Die alljüdische Hetz- und Greuelpropaganda gegen Deutschland

„Kindermißhandlungen“ – „Verstümmelte Judenleichen“ – „Feilbietung jüdischer Mädchen auf öffentlichen Plätzen“

Berlin, 23. März.

Die von gewissen ausländischen Kreisen gegen Deutschland betriebene Hetz- und Wühlarbeit, die schon vor Tagen einsetzte, dauert in unverminderter Heftigkeit an.

Hauptausgangspunkt der antideutschen Propaganda ist zweifellos Neuyork, wo eine Reihe von Zeitungen tagtäglich über angebliche Vorgänge in Deutschland Nachrichten veröffentlicht, die den während des Krieges von einer gewissen ausländischen Presse veröffentlichten Schauermärchen über Grausamkeiten deutscher Soldaten usw. in nichts mehr nachstehen.

Es darf als sicher gelten, daß die deutsche Regierung die Betriebsamkeit der eingangs erwähnten Kreise mit großer Aufmerksamkeit verfolgt und, wenn die Dinge reif sind, keine Maßnahme unterlassen wird, die geeignet ist, Deutschland auch im Auslande eine gerechte Beurteilung widerfahren zu lassen.

Damit man sich aber ein Bild über die Schamlosigkeit der in einem Teil des Auslandes betriebenen Hetze machen kann, seien nachfolgend einige Blüten maßloser, aus dem Geist der weltanschaulichen Verzweiflung und des Hasses geborener Veröffentlichungen wiedergegeben:

Der „New York American“ meldete am Donnerstag aus Berlin, daß der Wärter des jüdischen Friedhofes in Berlin-Weißensee in den letzten drei Nächten von Nationalsozialisten herausgeklingelt worden sei und nach Öffnen der Haustür auf den Stufen regelmäßig

verstümmelte Judenleichen

vorgefunden habe. Zahlreiche deutsche Juden seien von Nationalsozialisten entführt, ihre von Kugeln durchlöcherten Leichen seien später aufgefunden worden.

Ähnliche Greuel propagiert der Neuyorker „Daily Mirror“, der schon am Vortage die Schamlosigkeit aufbrachte, zu behaupten, daß

jüdische Mädchen auf öffentlichen Plätzen zusammengetrieben würden

und daß sich die älteren Jüdinnen schützend vor sie stellten, um sie vor Vergewaltigungen zu schützen. Das will das Blatt von seinem englischen Chefkorrespondenten in Genf gehört haben, dem es wieder Juden erzählt haben sollen, die aus Belgien und Holland kommen, weil Belgien und Holland sich offenbar selbst gegen den Zuzug solcher unerwünschten Flüchtlinge aus Deutschland verwahrt hätten. Neuerdings meldet dieser dreiste Ehrenmann aus Genf, dort seien weitere Hunderte von deutschen Juden eingetroffen, von denen neun Zehntel, darunter zahlreiche Kinder, schwer mißhandelt worden seien.

Es nimmt angesichts der frivolen Hetzarbeit, die in Neuyork geleistet wird, nicht wunder, daß sich auch schon die englische Presse mit den Dingen zu beschäftigen beginnt, obwohl sich der sozialistische „Daily Herald“ schon vorher auf diesem Gebiet hervorgetan hatte. Die Londoner Blätter widmen jetzt den jüdischen und anderen Protestkundgebungen in Amerika wegen der angeblichen Judenverfolgungen in Deutschland sowie der Boykottdrohung gegen deutsche Waren erhöhte Aufmerksamkeit.

Der „Daily Expreß“ schreibt: Dr. Luther werde bei seinem Amtsantritt in Washington feststellen, daß die Feindseligkeiten gegen Deutschland in Amerika wie Pilze aus dem Boden geschossen seien.

Der Abgeordnete der Arbeiterpartei, Wedgewood, hat im Unterhaus einen Antrag eingebracht, in dem es heißt, daß „nach der Meinung dieses Hauses alle Verhandlungen mit Deutschland über die Revision der Friedensverträge abgebrochen werden sollen, bis Gesetzlichkeit, Ruhe und anständige Behandlung der Gefangenen aller Klassen wieder hergestellt worden sind“.

Das Organ der Arbeiterpartei, der „Daily Herald“, hat dafür gesorgt, daß die Judenfrage in der Sitzung des englischen Gewerkschaftskongresses am Mittwoch behandelt wurde. Dort wurde ein Brief der englischen Schneidergewerkschaft erörtert, in dem der Kongreß aufgefordert wird, durch den internationalen Gewerkschaftsverband Maßnahmen ergreifen zu lassen, um die Angriffe auf Gut und Leben der jüdischen Bevölkerung in Deutschland zu verhindern. Die jüdischen Mitglieder der Gewerkschaft hätten mit Schrecken die Berichte des „Daily Herald“ gelesen und mit größter Besorgnis die Möglichkeit judenfeindlicher Ausschreitungen ins Auge gefaßt.

Jüdische Boykottbestrebungen gegen deutsche Waren

Neuyork, 23. März.

20 000 Neuyorker jüdische Kriegs- und Etappenkämpfer veranstalten am heutigen Donnerstag einen Protestumzug zum Rathaus, um dem Oberbürgermeister eine Protestentschließung zu überreichen, die sich gegen die angeblichen deutschen Greuel richtet. Anschließend soll im britischen Generalkonsulat gefordert werden, die aus Deutschland geflüchteten amerikanischen Juden in Palästina aufzunehmen.

Die amerikanischen Rabbiner haben für den kommenden Montag einen allgemeinen Fast- und Bettag angeordnet. Am Montag nachmittag soll ein Protestumzug stattfinden mit anschließender Versammlung im Madison Square Garden, einem der größten Plätze Neuyorks, wo außer jüdischen Vertretern auch der katholische frühere Gouverneur von Neuyork, Smith, der evangelische Bischof Manning, der Gewerkschaftsführer Green, der jüdische Neuyorker Gouverneur Lehmann sowie Senator Borah und der Präsident der Columbia-Universität und Direktor der Carnegie-Friedensstiftung, Murray Butler, sprechen werden.

Die christlichen Kirchenverbände haben eine Protestentschließung an das Staatsdepartement entworfen. Die jüdischen Geschäfte werden am Montag geschlossen halten.

Der von zahlreichen, meistens jüdischen Einfuhrhändlern befürwortete

Boykott

deutscher Waren hat sich als nicht ohne weiteres durchführbar erwiesen, weil die amerikanische Ausfuhr von Fertigwaren nach Deutschland größer ist, als umgekehrt.

Die deutschen Lichtspielhäuser befürchten für den kommenden Montag jüdische Gewalttaten. Der amerikanische Rundfunk wird den ganzen kommenden Montag völlig der jüdischen Propaganda gewidmet sein.

Der ewige Hetzapostel

Lion Feuchtwanger

(Von unserem Londoner Korrespondenten.)

London, 23. März.

Der mit großem Tam-Tam angekündigte Artikel des aus Deutschland geflüchteten Literatur-Juden Feuchtwanger ist soeben im „Evening Standard“ erschienen. Der Hetzer wärmt die schlimmsten Lügen gegen die Hitlerbewegung und gegen Deutschland auf, die je während des Weltkrieges von der feindlichen Propaganda erfunden wurden.

Sechshunderttausend zum Haß gegen Juden und Arbeiter erzogene junge Männer übten einen Terror über Deutschland aus, wie man ihn seit Jahrhunderten Europa nicht erlebt hätte. Was er in Paris von zuverlässigen Flüchtlingen gehört hätte, sei so grauenvoll, daß er es selbst nicht glauben wollte, er sei aber jetzt von der Wahrheit überzeugt.

Jeden Tag finde man in der Umgebung Berlins Leichen von der S.A. gemordeter Juden, die aus der fahrenden Untergrundbahn geworfen worden seien.

Wo sei der Vizepolizeipräsident Bernhard Weiß jetzt? Die sechshunderttausend Mann würden selbst Hitler und Goering nicht mehr gehorchen, sondern terrorisierten Deutschland. Die Arbeiterbevölkerung schwiege jetzt noch dazu, aber sie werde, beraubt ihrer Führer, die einen mäßigenden Einfluß auf sie ausüben können, Rache nehmen und das werde den blutigsten Bürgerkrieg, den Deutschland je gesehen habe, entfesseln. Es sei Zeit, daß die Reichsregierung dem

Foltern

von Sozialisten, Juden und Katholiken ein Ende bereite.

Diese maßlose, verlogene Hetze zeigt die jüdische „Arbeit“ im Ausland im grellsten Licht. Was England anbetrifft, so sind es nur kleine Kreise, die an solche Lügen glauben. Es ist einmal ein Beispiel demonstriert worden: der marxistisch denkende Abgeordnete Wedgwood fragte im Unterhaus nach dem Schicksal von Breitscheid und Wels, wohl auf Grund der Lügenberichte glaubend, daß sie „ermordet“ worden seien. Heute meldet die englische Presse, daß man Breitscheid und Wels friedlich plaudernd im Reichstagsrestaurant gesehen habe. Wer einmal lügt, dem glaubt man nicht, und wenn er noch so viel Lügen spricht!

Eine Stimme der Wahrheit

Stockholm, 23. März.

Die schwedische Zeitung „Nya Dagligt Allehanda“ bringt einen Bericht des schwedischen Forschungsreisenden Grafen Erik Rosen, der soeben aus Deutschland zurückgekehrt ist. Rosen hatte Gelegenheit erhalten, deutsche politische Gefangene zu sehen und zu sprechen. Er schreibt darüber folgendes:

„Auf ausdrückliches Verlangen erhielt ich Sonnabend mittag Zutritt zu den Gefängnissen in Berlin, in denen sich jetzt die politischen Gefangenen befinden. Ich konnte sowohl mit Thälmann als mit anderen kommunistischen Führern und sonstigen wegen Propaganda Internierten frei sprechen. Ich kann als guter und echter Schwede erklären, daß keiner der Gefangenen zu diesem Zeitpunkt irgendeine Spur von Mißhandlung zeigte. Es schien ihnen auch nicht an zum Leben Erforderlichem zu fehlen. Ihre Aufenthaltsräume waren warm, und sie klagten nicht über das Essen. Alle Gefangenen schienen guten Mutes zu sein und die Sache mit Resignation hinzunehmen, außer Thälmann. Mit Thälmann sprach ich lange, und er schien gedrückt und sorgenvoll, jedoch sicher nur, weil die Revolution in Deutschland, für die er Fahnenträger war, nun vollkommen zu Boden geschlagen ist. Aber auch Thälmann wollte in keiner Weise geltend machen, daß er schlecht behandelt oder gar mißhandelt oder gefoltert worden sei“.

Bei rheumatischen Schmerzen aller Art haben sich Togal-Tabletten ganz hervorragend bewährt. Zahlreiche Dankschreiben über Togal bei veralteten Leiden, bei denen kein anderes Mittel half! Togal ist stark harnsäurelösend, bakterientötend! Ein Versuch überzeugt! In all. Apoth. M. 1.29. 12,6 Lith., 0,46 Chin., 74,3 Acid. acet. salic.



Zehntausende von Automobilisten vertrauten in diesem Winter dem neuen Arctic die Sicherheit und ständige Startbereitschaft ihrer Fahrzeuge an. Arctic, verkörpert durch den Eisbär, war für sie das Symbol für das Winteroel in höchster Vollendung. Seine hervorragenden Doppeleigenschaften – Startschnelligkeit plus höchste Schmierleistung – ersparten ihnen ausserdem die Verwendung eines Übergangsoeles.

Der Fahrsommer steht vor der Tür.
Das ideale Sommeroel muss Leistung und Lebensdauer sowie Betriebssicherheit und niedrigen Verbrauch an Oel und Kraftstoff garantieren. Für diese Forderungen schufen wir unter Heranziehung der feinsten Rohstoffe und unserer unübertroffenen Erfahrungen und fabrikatorischen Fähigkeiten

das neue Gargoyle Mobiloel
AF

Was Arctic im Winter war, ist Gargoyle Mobiloel AF für den Sommer. Kein besseres Sinnbild für seine Eigenschaften liesse sich finden, als der Büffel – der Ausdruck von Urkraft, Schnelligkeit und Ausdauer.



urkräftig und schnell

Beim nächsten Oelwechsel das neue Gargoyle Mobiloel AF
das ideale Sommeroel
DEUTSCHE VACUUM OELAKTIENGESELLSCHAFT

Udet in Italien verhaftet und wieder freigelassen

Bei einem Rettungsflug notgelandet / Die drei vermißten deutschen Touristen geborgen

Aprica, 23. März.

Der deutsche Flieger **Udet**, der zu einem Rettungsflug von St. Moritz aufgestiegen war, um drei deutsche Touristen, die seit Freitag voriger Woche vermißt werden, zu suchen, mußte infolge **Brennstoffmangels in Aprica** notlanden. Da Udet keine Ausweispapiere bei sich trug, wurde er vorübergehend in Haft genommen. Eine Schweizer Rettungskolonne fand die drei vermißten Touristen in der Marltha-Rose-Hütte erschöpft auf. Die Touristen waren bei schlechtem Wetter von dem Crasta Guezza-Sattel in die Martha-Rose-Hütte zurückgekehrt. Sie blieben dort, bis sie von der Rettungskolonne aufgefunden wurden.

*

Auf Veranlassung der **italienischen Regierung** ist der deutsche Flieger Udet am Donnerstag vormittag 11 Uhr wieder auf freien Fuß gesetzt worden. Udet wird nun versuchen, mit dem Flugzeug, das bei der Landung nicht beschädigt wurde, den Rückflug nach St. Moritz anzutreten.

Seine rasche Freilassung verdankt der Flieger dem gegenwärtig gleichfalls in St. Moritz befindlichen **Fritz von Opel**, der auch nach vieler Mühe seinen Aufenthalt ausfindig machte. Udet wurde durch den **furchtbaren Sturm** südwärts abgetrieben. Wie Augenzeugen beobachteten, mußte er sogar zeitweilig auf dem **Rücken fliegen**. Da er nur für zwei Stunden Brennstoff mit sich führte, blieb ihm nichts anderes übrig, als niederzugehen. Fritz von Opel, der über das Ausbleiben seines Freundes sehr in Sorge war, verständigte sich zunächst am Mittwoch mit dem schweizerischen Militärflugplatz Dübendorf. Aber auch die von hier aufgestiegenen Militärflieger konnten keine Spur von Udet entdecken. Darauf zog von Opel an Hand der Karten bei allen Orten, die Udet etwa überflogen haben konnte, **telephonisch Erkundigungen** ein. Schließlich gab der Ort Aprica zögernd zu, daß man dort den Flieger gefangen halte. An eine Freilassung war nicht zu denken. Fritz von Opel bemühte sich nun bei der Präfektur in Mailand und erst, als die obersten italienischen Behörden von dem Vorgehen der Ortsbehörde von Aprica erfuhren, wurde die Freilassung verfügt.

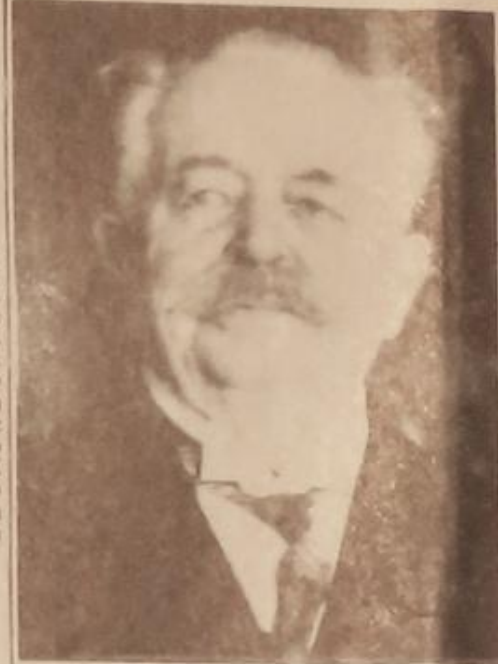
2000 Kilometer über Afrika

Juba, 23. März.

Der deutsche Jungflieger Karl **Schwabe**, Partenkirchen, der sich mit einem deutschen Sportflugzeug mit Siemensmotor ganz allein auf einem Flug nach Kapstadt befindet, hat in einem **zweitägigen Fluge** von Khartum entlang am Weißen Nil über Kosti Malakal erreicht und trotz der **fürchterlichen Hitze** nur nach kurzer Übernachtung die gefährliche Strecke von Suenipt nach Juba am nächsten Tage bewältigt. Die an beiden Tagen durchflogene Strecke beträgt 2000 Kilometer.

Der Flieger teilt in einem Privattelegramm mit, daß die letzte Strecke wegen der zu überfliegenden Gebiete besondere Schwierigkeiten und Anstrengungen bereitet hat. Die Jahreszeit ist für einen Flug durch Afrika schon sehr weit fortgeschritten, so daß die dort herrschende große Hitze erhebliche Schwierigkeiten bereitet.

Die englischen Flieger brachten ihre Überraschung zum Ausdruck über das ausgezeichnete Arbeiten des deutschen **luftgekühlten Siemensmotors** und ließen auch dem deutschen Klemm-Flugzeug alle Anerkennung zuteil werden.





Der älteste und jüngste Reichstagsabgeordnete.
Die nationalsozialistische Fraktion des neugewählten Reichstags stellt den ältesten und den jüngsten Abgeordneten. Der Senior ist **General Litzmann** (links) mit 83 Jahren. Der jüngste Abgeordnete ist der nationalsozialistische **Kreisleiter** des Kreises Lauenburg, Hans Gewecke (rechts), der im Jahre 1906 geboren wurde.



Wo Neuyorks Arbeitslose schlafen.
Ein dumpfer unterirdischer Keller an der Park Avenue und 33. Straße ist die Schlafstätte der heimat- und arbeitslosen Menschen, die zu beiden Seiten des Bürgersteiges ihr Dasein fristen. Die Kältewelle, die Neuyork für mehrere Tage in ihren unbarmherzigen Fängen hielt, hat schreckliche Leiden und Entbehrungen über diese Heimatlosen gebracht. Einige der Schläfer benutzen Papierkörbe, um sich vor dem eisigen Wind, der durch den Raum fegt, zu schützen.



Die Taufe des größten Luftschiffes der Welt.
In Akron fand die Taufe des amerikanischen Riesenluftschiffes „Macon" statt, das voraussichtlich am 31. März zu seiner ersten Probefahrt starten wird. Bei der feierlichen Taufe wurden 48 Tauben in Freiheit gesetzt.

Aus aller Welt

Zeppelin-Ankermast bei Barcelona.

Auf Grund von Verhandlungen zwischen der Regierung von Katalonien, dem Gemeinderat von Barcelona und Dr. Eckener hat die katalonische Regierung die Errichtung eines **Ankermastes für Zeppelin-Luftschiffe** bei Barcelona beschlossen, jedoch vorläufig die Frage zurückgestellt, ob auch ein **Flughafen** geschaffen werden soll. Die **Kosten** für den Bau eines Ankermastes sollen sich auf 600 000 Peseten belaufen.

*

Bergwerkskatastrophe in Ungarn.

Großwardein, 23. März. In den Kohlenbergwerken von Petroszeny ereignete sich ein Einsturzunglück, dem fünf Menschen zum Opfer fielen. Drei Bergleute wurden in schwerverletztem Zustand geborgen.

*

Sechs Todesopfer eines Schiffsunglücks.

Stockholm, 23. März. Der seit fünf Wochen überfällige schwedische Fischdampfer „**Aine**" ist höchstwahrscheinlich mit sechs Mann Besatzung, darunter den drei Söhnen des Kapitäns, untergegangen. An der schottischen Küste sind **Wrackteile aufgefunden** worden, die von dem Dampfer herrühren.

Ab 9. April Sommerzeit in England.

London, 23. März. Die Sommerzeit in England beginnt am 9. **April**, d. h. zwei Wochen nach dem Beginn der Sommerzeit in Frankreich und Belgien.

*

Große Überschwemmungen auf Neuseeland.

Wellington (Neuseeland), 23. März. Riesige Überschwemmungen haben auf der Nordinsel Neuseelands großen Schaden angerichtet. Die Stadt **Taumartui** steht zum großen Teil unter Wasser. 200 Häuser mußten geräumt werden. Die Eisenbahnlinie Auckland-Wellington ist auf weite Strecken durch Unterspülung des Damms und durch **Erdrutsche** beschädigt worden. Große Mengen Vieh sind in den Fluten umgekommen.

*

Erdstöße in Griechenland.

Athen, 23. März. In der Umgebung von Pyrgos, im Peloponnes sowie auf der Insel Zante und in Kephalonien wurden **starke Erdstöße** verspürt. Die erschrockenen Bewohner verblieben bis in die späte Nacht unter freiem Himmel. Über schwerere Schäden ist bisher nichts bekannt geworden. Aus Mazedonien wird **starke Kälte** bei heftigem Schneefall gemeldet.

*

Fischdampfer „Lappland" wieder freigelassen.

Vardoe, 23. März. Der im Varanger Fjord wegen widerrechtlicher Fischerei aufgebrachte Fischdampfer „Lappland" aus Wesermünde ist freigelassen worden, da sich die gegen ihn erhobene Anschuldigung nicht aufrecht erhalten ließ.

*

Ausschreitungen streikender Seeleute in Göteborg

Stockholm, 23. März. In **Göteborg** ist es infolge des Seemannsstreiks zu **schweren Ausschreitungen** gekommen. Eine Rotte Streikender überfiel ein im Hafen liegendes Schiff und schleppte eine Anzahl Arbeitswilliger mit sich. Die Polizei traf zu spät ein.



60 Millionen Dollar Schaden durch das kalifornische Erdbeben.
Unser Bild zeigt ein vollständig zerstörtes Haus in Long Beach, dem kalifornischen Badeort, der am schwersten heimgesucht wurde. Der Sachschaden in dem von der Katastrophe betroffenen Gebiet wird auf etwa 60 Millionen Dollar geschätzt.

Nationalsozialistische Monatshefte

Herausgeber Adolf Hitler

Heft 36

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Für eine bekannte u. gut eingeführte deutsche Zeitschrift werden **tüchtige Werber** möglichst m. Kolonne, gegen gute Provision **gesucht**. Ausführliche Angebote mit Beifügung von Zeugnisabschriften unt. J. W. 4822 an den Völkischen Beobachter, Berlin SW 68, Zimmerstraße 88.

Lebensexistenz! Herren u. Damen gesucht, die n. Musterk. für sämtl. Aussteuerartik. u. Kleiderstoffe bei Privat Aufträge entgegennehm. Hohe Provis.! Kaufm. geb. bevorzugt! Angeb. m. Lebensl., Bild, Ref. u. Altersang. einzur. unt. J. U. 4820 a. d. V. B., Berlin SW 68, Zimmerstraße 88.

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Biete Parteigenossen und -genossinnen **Verdienstmöglichk.** an ihrem Wohnsitz. Für ganz Deutschland Vertretungen gesucht. Meld. Sie sich sofort! E. Siebert, Gr.-Bieznitz (Schlesien), Post Görlitz-Land.

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Hitler der Führer

Am Nachmittag des 23. März hörte die ganze Welt die Regierungserklärung des Reichskanzlers. Und alle werden das eine bestimmte Gefühl vor allen andern gehabt haben: Hier spricht ein Mann, der geborener Führer ist, ein Mensch, der Härte im Grundsätzlichen in genialer Weise mit der Vorsicht des staatsmännisch Notwendigen zu verschmelzen versteht. Der unbeirrbar bereit ist, zu vernichten, was vernichtenswert ist und zu versöhnen, was versöhnbar ist. Ein Mensch sprach aber auch, durch dessen Worte der unbändige Wille leuchtete, unter keinen Umständen mehr zu weichen, sondern der fest entschlossen ist, seine Mission der Errettung Deutschlands durchzuführen.

Wie Nilpferdpeitschen schlugen Hitlers Worte auf den Marxismus nieder, nach 14jährigem Kampf stand er dessen Vertretern auch Aug' in Aug' gegenüber und — es blieb denen nichts erspart. Wortlos mußten sie alles hinnehmen, widerspruchslos die Geißelung ihrer Verbrechen am deutschen Volk ertragen. Hier war symbolisch die Ohnmacht verkörpert, jetzt noch etwas gegen Deutschland auszurichten, und die Drohung, ausländische Freundschaftsdienste unschädlich zu machen, werden sie deutlich verspürt haben.

Deutschland lebt — und deshalb stirbt der Marxismus!

Kristallklar sind die Sätze des Kanzlers über alle Fragen der Innen- und Außenpolitik. Abgewogen, aber eindeutig, voll Würde und Stolz die Formulierungen, voll gebändigter Leidenschaft die mehrmalige Betonung, die Einteilung in Sieger und Besiegte nicht mehr hinnehmen zu wollen. Und auch bei Behandlung von Problemen, die das Zentrum besonders interessieren, spürt man unbeirrbare Festigkeit mit Fassungen verbunden, die diese Partei denn auch veranlaßte, für das Ermächtigungsgesetz zu stimmen.

Immer wieder unterbrach stürmische Zustimmung den Kanzler. Wir alle waren an einem neuen Ziel unseres Kampfes angelangt. Unser Führer ist Herr in Deutschland und der Nationalsozialismus läutet die Revolution des 20. Jahrhunderts ein!

*

Revolutionsstimmung herrschte im Reichstag; als der S.P.D.-Führer Wels eine windelweiche Rede hielt, dabei aber doch die Dreistheit besaß, auch für die Sozialdemokratie Kampf um die deutsche Gleichberechtigung und Ehre in Anspruch zu nehmen. Da stand Hitler nochmals auf und hielt Abrechnung mit den vor ihm sitzenden Führern des Marxismus, wie jene sie in solcher Schneidigkeit und verachtungsvoller Überlegenheit noch nie gehört hatten. Sie fühlten wohl jetzt einmal die Pratze des Löwen, als er die Heuchelei von „Menschlichkeit" und „Freiheit" der S.P.D. entlarvte, ihnen klar machte, daß, wenn sie das „Recht" anriefen, diesem ja von ihm, Hitler, durch Wahl und Einberufung des Reichstags Genüge geschehen sei. Wenn er dem Volk und der Macht allein hätte freie Bahn geben wollen, dann wären die Herren der S.P.D. nicht hier im Reichstag.

Das war deutlich! Und die „revolutionäre" Führerschaft saß da, wie ein Rudel angstvoller Hasen, klein und erbärmlich, wie sie in Wirklichkeit immer gewesen war. Ihr „Führer" Braun geflohen, ihr Hetzer Grzesinsky geflohen, sie selbst zusammengehauen, ideenlos, mutlos — am Ende.

Diese Schläge haben das marxistische Gebäude in den Grundfesten erschüttert, so daß selbst ihre Staatspartei für das Ermächtigungsgesetz stimmte. Damit unterwarfen sich die letzten Reste der Weimarer Demokratie der Herrschaft Hitlers.

Die Widerstände sind alle gebrochen, die Welle der deutschen Erhebung hat alle Dämme niedergelegt, das Volk wollte Hitler an der wirklichen Macht sehen, das Parlament beugte sich, das Zentrum stimmte der Herrschaft des Nationalsozialismus zu.

Für vier Jahre kann Hitler alles tun, was notwendig ist für die Rettung Deutschlands. Negativ in der Ausrottung der volkszerstörenden marxistischen Gewalten, positiv im Aufbau einer neuen Volksgemeinschaft, um so die Grundlagen zu legen für den ersten echten Deutschen Nationalstaat als Erfüllung der deutschen Sehnsucht vieler Jahrhunderte.

Und mit ihm geht in unverbrüchlicher Treue seine gesamte alte Kämpferschar, marschiert die braune Armee als politische Stütze, um die Durchführung alles Notwendigen sicherzustellen, um jeden Gedanken eines Widerstandes unmöglich zu machen.

„Hitler an die Macht!" Dieser Ruf der Nation wurde am 23. März 1933 zur Tat.

Deutschland ist erwacht, die große Arbeit beginnt, der Tag des Dritten Reiches ist gekommen.
A. R.

Ein geschichtlicher Tag im deutschen Reichstag:

Die Kapitulation des parlamentarischen Systems vor dem neuen Deutschland

Die vernichtende Abfuhr des S.P.D.-Vorsitzenden Wels durch Adolf Hitler

Berlin, 23. März.

Hitler-Wetter über Berlin! Strahlend blauer Himmel und Frühlingssonnenschein leiten einen Entscheidungstag erster Ordnung in Deutschlands bewegter Geschichte ein. Ein gutes Vorzeichen. Heute soll dem deutschen Volkskanzler für Jahre hinaus von der gewählten Volksvertretung Vollmacht gegeben werden, das Werk der Rettung und Befreiung Deutschlands durchzuführen und ungestört von parlamentarischen Zerstörern zu vollenden. Ringsum in weitem Umkreis ballen sich schon Stunden vorher Menschenmassen zusammen, den Führer des Volkes zu sehen und dem Kommen der Abgeordneten beizuwohnen. Scharfe Kontrolle übt die Polizei, verstärkt durch Hilfspolizei der S.A. und S.S. Niemand kann sich der Krolloper nähern, es sei denn mit hart erkämpfter Karte.

*

Das ganze Haus steht wieder im Zeichen der braunen Farbe. Nicht nur die nationalsozialistische Fraktion ist wieder geschlossen in der braunen Uniform erschienen, nicht nur sie beherrscht das Plenum, sondern auch auf den Rängen, auf den Sitzen der Presse und auf den Zuschauertribünen herrschen die Farben der deutschen Erhebung.

Der würdige Eindruck des Raumes, beherrscht von dem großen leuchtenden Hakenkreuz, schafft erneut dieselbe feierlich ernste Stimmung der ersten Sitzung, die der alte Reichstag nie gekannt hat.

Auf der Regierungsbank haben die Reichsminister Dr. Hugenberg, Graf Schwerin-Krosigk, Frhr. v. Neurath und Eltz v. Rübenach Platz genommen. Auch der Staatssekretär des Reichspräsidenten, Dr. Meißner, sitzt am Regierungstisch. In der Diplomatenloge bemerkt man den französischen Botschafter Poncet.

Als der Reichskanzler Adolf Hitler im schlichten braunen Hemd und in den hohen Marschstiefeln der S.A. erscheint, begleitet vom Reichsinnenminister Dr. Frick und Reichsminister Dr. Goebbels, erheben sich die Regierungsparteien, die Ränge, die Tribünen, die Diplomatenloge schweigend zur Ehrung des Kanzlers. Tausend hochgereckte braune Arme grüßen ihn, von den Abgeordnetensitzen bis hinauf unter das Dach der Tribünen.

An den Eingängen zum Plenum stehen wieder S.S.- und S.A.-Hilfspolizisten.

Die sozialdemokratische Fraktion weist diesmal offensichtlich ziemliche Lücken auf. Verschiedene Abgeordnete fehlen, bezeichnenderweise darunter die Abgeordneten Breitscheid und Dr. Hilferding. In vergangenen Zeiten zeichneten sie sich durch besonders vorlautes Benehmen aus. Aber auch die Sozialdemokraten, die erschienen sind, zeigen deutlich durch ihre gedrückte Haltung ihr schlechtes Gewissen, ihre Angst und zeigen, daß auch sie sich dem neuen sachlichen, preußisch-soldatischen Ton, der nichts mehr von der alten parlamentarischen Quassel-Art hat, gehorsam fügen wollen.

Das Zentrum hört aufmerksam den historisch-dokumentarischen, unvergeßlichen Erklärungen des Kanzlers zu, auch dieses ist in den Bann der Stunde geschlagen.

Hin und wieder bei besonders markanten Formulierungen Adolf Hitlers, die sich als fanatische, nationale Bekenntnisse und Forderungen an das Ausland richten, fallen die Ehrlichen der Zentrumsfraktion in den brausenden, tosenden Beifall das ganzen Hauses durch Händeklatschen ein. In der Diplomatenloge wurde der Beifall einiger Zentrumsmitglieder bemerkt, man wies offen auf die beifallspendenden Zentrumsabgeordneten hin.

Als dem Kanzler das Wort erteilt wurde, und er an das Rednerpult trat, wurde er mit dreifachem Heilgruß begrüßt.

Als sich Adolf Hitler dem Ende seiner Ausführungen näherte, wuchs die erregte Spannung ins Ungemessene. Man wußte, hier kann nur eins kommen, das Kabinett der nationalen Erhebung bietet zum letzten Male den letzten Vertretern und Anhängern eines untergegangenen Parlamentarismus die Gelegenheit zu einem würdigen Abschluß und zu einer positiven Handlung für die Neugestaltung der Nation oder er zeigt das Schwert.

Und als der Kanzler seine Erklärung mit den Worten beendete: „Mögen Sie, meine Herren, nunmehr selbst entscheiden über Frieden oder Krieg!", da brachen die Vertreter der Regierungsparteien, die Besucher der Ränge und Tribünen in ein gewaltiges, leidenschaftliches Bekenntnis aus. Das Deutschlandlied braust, spontan angestimmt, in feierlichen Klängen empor. Die Vertreter der Mehrheit des Volkes zeigten, daß sie bereit waren, die nationale Revolution um jeden Preis nicht nur zu sichern, sondern auch gegen jeden Widerstand unter der Führung Adolf Hitlers zu vollenden.

*

Reichstagspräsident Goering eröffnete die Reichstagssitzung mit einer Ansprache, in der er des Geburtstages des Dichters der nationalen Freiheitsbewegung Dietrich Eckart gedenkt. Die Mitglieder der nationalsozialistischen Fraktion und der Kampffront Schwarz-weiß-rot erheben sich von den Sitzen bei dieser Ansprache, die der Präsident mit dem Vortrag eines Verses aus dem Lied „Deutschland erwache" schließt.

Der Präsident macht dann Mitteilung von der Konstituierung der Ausschüsse.

Als erster Gegenstand steht auf der Tagesordnung die von den Regierungsparteien beantragte

Änderung der Geschäftsordnung

die im Geschäftsordnungsausschuß bereits angenommen wurde.

Präsident Goering erteilt dem Ausschußberichterstatter Abg. Stöhr (Nat.-Soz.) das Wort. Dabei hebt der Präsident hervor, daß gerade der Abg. Stöhr jahrelang sorgfältig die Geschäftsordnungsmaterie studiert habe und deshalb der geeignetste Berichterstatter sei. Er dankt dem Berichterstatter besonders für die klaren Worte, mit denen er im Ausschuß Sinn und Ziel der Neuordnung dargelegt habe.

Ausschußberichterstatter Abg. Stöhr (Nat.-Soz.) weist zunächst darauf hin, daß die Ausschußmehrheit den sozialdemokratischen Antrag auf Haftentlassung der in Schutzhaft befindlichen sozialdemokratischen Reichstagsabgeordneten abgelehnt habe. Die Ausschußmehrheit, so sagt der Berichterstatter, ist der Meinung, es sei unzweckmäßig, diese Herren des Schutzes zu berauben, der ihnen durch die Verhängung der Schutzhaft widerfährt. (Heiterkeit und Zustimmung rechts.) Dabei wird durchaus individuell verfahren. So ist die sozialdemokratische Abg. Frau Agnes inzwischen bereits aus der Schutzhaft entlassen worden.

Hinsichtlich der Geschäftsordnungsänderung betont der Berichterstatter, Obstruktionsmaßnahmen, wie sie die Nationalsozialisten und die Deutschnationalen in der Vergangenheit durchführten, seien damals eine sittliche Notwendigkeit gewesen.

Heute, unter den völlig veränderten Umständen, würde jedoch eine Obstruktion gegen die Absichten der Reichsregierung als eine grobe Pflichtwidrigkeit betrachtet werden müssen, gegen die die schärfsten Maßnahmen notwendig sind. (Zustimmung rechts.) Die Geschäftsordnungsänderung will die ordnungsmäßige Wahrnehmung der Geschäfte sichern, die im Interesse des deutschen Volkes durchgeführt werden müssen. Die Behauptung der Opposition, daß die Geschäftsordnungsänderung verfassungswidrig sei, ist von der Ausschußmehrheit als falsch zurückgewiesen worden.

Der Antrag wird hierauf mit den Stimmen des Regierungsblocks und der beiden katholischen Parteien angenommen.

Vor der Abstimmung über den sozialdemokratischen Antrag auf Haftentlassung verschiedener Abgeordneter erklärt Abg. Dr. Bell (Ztr.), das Zentrum habe im Ausschuß eine Unterscheidung in dem Sinne beantragt, daß die in Schutzhaft befindlichen Abgeordneten entlassen werden sollten, nicht aber die in Strafhaft befindlichen. Dieser Antrag habe leider nur die Unterstützung der Bayerischen Volkspartei gefunden, während alle übrigen Parteien, auch die Sozialdemokratie, ihn abgelehnt hätten. Unter diesen Umständen müsse sich das Zentrum jetzt bei der Abstimmung des Hauptantrages der Stimme enthalten.

Der Antrag auf Haftentlassung der sozialdemokratischen Abgeordneten wird darauf mit den Stimmen des Regierungsblocks bei Stimmenthaltung der katholischen Parteien abgelehnt.

Es folgt nun als zweiter Punkt der Tagesordnung die Entgegennahme einer Erklärung der Reichsregierung. Reichskanzler Adolf Hitler, in brauner Uniform, nimmt seinen Platz an der Spitze des Regierungstisches ein und wird mit einem dreifachen Heil-Ruf von den Nationalsozialisten begrüßt.

Sodann begab sich der Kanzler zum Rednerpult, um in seiner Regierungserklärung das von den Reichstagsparteien geforderte Ermächtigungsgesetz eingehend zu begründen.

Präsident Goering ordnet nach der Ansprache Adolf Hitlers eine Unterbrechung von dreistündiger Dauer an, die damit eintritt.

Nach Schluß der Sitzung bringt die nationalsozialistische Fraktion zusammen mit dem größten Teil der Tribünenbesucher nochmals ein dreifaches Heil auf Hitler aus. Spontan wird das Deutschlandlied angestimmt, dessen ersten Vers das ganze Haus stehend singt.

Die Erklärungen der Parteien

Berlin, 23. März.

Am Nachmittag um 6.15 Uhr wurde die Reichstagssitzung aufs neue eröffnet. Der Reichskanzler hatte diesmal mit dem gesamten Kabinett am Regierungstisch Platz genommen.

Bei den Sozialdemokraten war sogar Herr Severing wieder erschienen, nachdem er von der Polizei vorübergehend festgenommen war, da er als Innenminister der unrühmlichst verflossenen Preußenregierung Polizeikostenzuschüsse zu politischen Propagandazwecken der alten Regierung mißbräuchlich verwendet haben soll. Als er den Reichstag betreten wollte, wurde er von Beamten der Abt. IA der Kriminalpolizei verhaftet. Ebenfalls wurde beim Betreten des Reichstagsgebäudes der sozialdemokratische jüdische Reichstagsabgeordnete Leber aus Lübeck festgenommen, weil er der Beteiligung an der Mordtat an dem S.A.-Mann Brüggemann verdächtig ist. Aus den Reihen dieser Genossen stieg der Abgeordnete Wels zum Rednerpodium, um in einer Erklärung für die sozialdemokratische Fraktion einen kläglichen, fast weinerlichen Versuch zu machen, die Sozialdemokratie von der ungeheuren Schuld am Niederbruch Deutschlands reinzuwaschen. Aber alle scheinheiligen Verstellungskünste halfen ihm nichts, er wurde einfach ausgelacht.

Der Reichskanzler machte sich während der Rede des Abgeordneten Wels Notizen.

Nachdem der Abgeordnete Wels unter dem Hohngelächter rechts und dem schüchternen Klatschen seiner Genossen abtrat, ergriff der Reichskanzler, von lauten Heilrufen begrüßt, das Wort zu einer furchtbaren Abrechnung, der der jubelnde Beifall des Hauses zuteil wurde.

Als einmal bei den Sozialdemokraten sich dreister Widerspruch erhob, wies sie der Reichstagspräsident Goering in erfrischender soldatischer Deutlichkeit mit folgenden Worten zurecht: „Ruhig! Hören Sie sich das jetzt an!" Bis zum bitteren Ende mußten die Genossen das langverdiente, niederschmetternde Gericht des Führers auskosten. Nichts wurde ihnen geschenkt.

Als erster Redner der Parteien gab Prälat Kaas die Erklärung des Zentrums ab. Seine warm gehaltene Zustimmung zu der Regierungserklärung des Kanzlers und zu dem Ermächtigungsgesetz fand lebhaften Beifall bei dem Reichskanzler Hitler und dem Vizekanzler v. Papen und den nationalsozialistischen Abgeordneten.

Allgemeines Erstaunen, lebhafte Bewegung, aber auch spöttisches Gelächter erregte die Zustimmung des staatsparteilichen Abgeordneten Mayer zu dem Ermächtigungsgesetz.

Die temperamentvolle Rede Goerings, die sich besonders gegen die schamlosen Verleumdungen und Lügen der internationalen sozialdemokratischen Genossen über die Lage in Deutschland unter dem Kabinett Hitler wandte, fand allgemeinen lebhaften Beifall und sichtliche Teilnahme in der Diplomatenloge.

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Präsident Goering eröffnete um 6¼ Uhr die Sitzung wieder und erteilte zur Besprechung der Regierungserklärung zunächst das Wort dem sozialdemokratischen Fraktionsführer Wels.

Abg. Weis (Soz.) stimmt der vom Reichskanzler aufgestellten außenpolitischen Forderung deutscher Gleichberechtigung im Namen seiner Fraktion durchaus zu. Er glaubte daran erinnern zu dürfen, daß er schon auf der internationalen Berner Konferenz am 3. Februar 1919 der Behauptung von der Schuld des Deutschen Volkes am Ausbruch des Weltkrieges entgegengetreten sei. Vorbehaltlos sei die Sozialdemokratie auch mit dem Satz aus der Potsdamer Rede des Reichskanzlers einverstanden, in dem er den Aberwitz der Theorie von ewigen Siegern und Besiegten entgegentrat. Dieser Satz sollte aber auch auf die Innenpolitik angewandt werden.

Der in der Nationalversammlung von Weimar gegenüber den außenpolitischen Feinden gesprochene Satz „Wir sind wehrlos, aber nicht ehrlos!", werde jetzt von den Sozialdemokraten auch den innerpolitischen Gegnern gegenüber wiederholt. Man dürfe besiegte Gegner nicht behandeln, als seien sie vogelfrei. Freiheit und Leben kann man uns nehmen, die Ehre nicht! (Beifall bei den Soz.). Nach den Verfolgungen, die die Sozialdemokratische Partei in der letzten Zeit erfahren hat, wird niemand von ihr verlangen können, daß sie für das hier eingebrachte Ermächtigungs-Gesetz stimmt. Niemals sei die Kontrolle der öffentlichen Angelegenheiten durch die Volksvertreter bisher in einem solchen Maße ausgeschaltet worden, wie das jetzt geschieht und nach dem neuen Ermächtigungsgesetz noch mehr geschehen soll. Gegenüber vielfachen Übertreibungen erkläre ich: Wir haben weder in Paris um Intervention gebeten, noch Millionen nach Prag verschoben, noch übertreibende Nachrichten ins Ausland gebracht.

Der Redner wandte sich dann gegen die Nationalsozialisten. Wenn diese Partei sozialistische Taten verrichten wollte, dann brauchte sie dazu kein Ermächtigungs-Gesetz, sondern hätte in diesem Hause eine erdrückende Mehrheit. Das Rechtsbewußtsein des Volkes sei eine politische Macht und an dieses Rechtsbewußtsein würden die Sozialdemokraten immer wieder appellieren. Wir Sozialdemokraten, so schloß der Redner, bekennen uns in diese geschichtlichen Stunde feierlich zu den Grundsätzen der Menschlichkeit, Gerechtigkeit und des Sozialismus.

Als Reichskanzler

Adolf Hitler

nunmehr das Rednerpult betritt, erheben sich die Nationalsozialisten im Hause und auf den Emporen und begrüßen den Kanzler mit jubelnden Zurufen.

Der Reichskanzler weist mit der Hand auf die Sozialdemokratie und sagt: **Spät kommt Ihr, doch Ihr kommt!** (Heiterkeit und Beifall rechts). Die schönen Theorien, so führt der Kanzler fort, die Sie hier gegeben haben (zu den Soz.), sind der Weltgeschichte etwas zu spät mitgeteilt worden (Sehr richtig rechts). **Vielleicht hätten diese Erkenntnisse, praktisch angemeldet vor Jahren, die weiteren Klagen, die Sie heute vorbringen, erspart.**

Sie erklären, daß die Sozialdemokratie unser außenpolitisches Programm unterschreibt, daß sie die Kriegsschuldlüge ablehnt, daß sie gegen die Reparationen sich wendet. Und nun erhebe ich nur die eine Frage: **Wo war dieser Kampf in der Zeit, in der Sie die Macht in Deutschland hatten?** (Sehr richtig! rechts). Sie hatten einst die Möglichkeit, dem Deutschen Volke das Gesetz des inneren Handelns vorzuschreiben.

Es war möglich, der deutschen Revolution, die von Ihnen ausging, denselben Schwung und dieselbe Richtung zu geben, die einst Frankreich seiner Erhebung 1870 gab (Sehr richtig)!

Sie hätten die deutsche Erhebung zu einer wirklich nationalen gestalten können. Und wenn die Fahnen der Deutschen Republik dann nicht siegreich zurückgekommen wären, dann hätten Sie immerhin sagen können: „Wir haben noch das Äußerste getan, um diese Katastrophe durch einen letzten Appell an die Kraft des deutschen Volkes abzuwehren." (Beifall rechts.) **In jener Zeit aber vermieden Sie den Kampf.**

Sie sagen, daß wehrlos nicht ehrlos ist. Nein, das braucht es nicht zu sein. Auch wenn wir wehrlos sein müßten, ich weiß es, würden wir nicht ehrlos sein. Ich glaube, **unsere Bewegung war dank der Unterdrückung durch Ihre Partei jahrelang wehrlos gemacht worden. Ehrlos aber waren wir nie.** (Stürmischer, langanhaltender Beifall b. d. Nat.-Soz.) **Und ich bin der Überzeugung, daß wir dem deutschen Volk den Geist einimpfen werden, der es auch bei seiner heutigen Wehrlosigkeit nicht ehrlos sein lassen wird.** (Erneuter Beifall rechts.)

Auch hier hatte es nur an Ihnen gelegen, wie Sie vierzehn Jahre lang die Macht besaßen, der Welt zu zeigen, daß das deutsche Volk seine Ehre nicht verloren hat.

Sie hatten Gelegenheit, alle Erscheinungen der Entwürdigung des Volkes genau so entschieden zu unterdrücken, wie wir das jetzt tun. **Sie konnten sich gegen den Landesverrat ebenso scharf wenden wie wir es tun.** (Stürmischer Beifall rechts.)

Sie hätten damals, da jede deutsche Revolution, jeder Hochverrat in Tateinheit mit Landesverrat stehen mußte, damals nicht zu dieser Handlung auch nur indirekt

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Ihre Hand bieten dürfen. Sie hätten vermeiden müssen, daß man damals dem deutschen Volke auf Wunsch und Befehl des Auslandes eine neue Verfassung aufoktroyierte.

Das ist nicht ehrenvoll, sich vom Feinde seine innere Gestaltung aufzwingen zu lassen (stürmischer Beifall rechts und auf den Tribünen). Sie hätten damals sich zur deutschen Trikolore bekennen müssen und nicht zu einer Farbe, die der Feind in Flugblättern über unsere Fronten abwarf (Beifall).

Gerade in der Zeit der Not und Unterdrückung durch den Gegner muß man sich erst recht bekennen zu seinem Volk und zu seinen Symbolen. Selbst wenn die Umwelt uns gezwungen hätte, das alles preiszugeben, was uns früher hoch und heilig war, dann hätten Sie wenigstens in der inneren Ausführung die nationale Ehre der Welt gegenüber in Erscheinung treten lassen müssen. (Sehr richtig!) **Sie haben dafür kein Verständnis gehabt.**

Sie verlangen gleiches Recht. **Für dieses gleiche Recht haben wir vierzehn Jahre gekämpft; für dieses gleiche Recht des nationalen Deutschlands Ihnen gegenüber. Vierzehn Jahre lang haben Sie es nicht gekannt, und heute reden Sie vom gleichen Recht.** (Stürmische Zustimmung rechts.)

Sie lagen, man solle den Beiseiten nicht vogelfrei erklären. **Herr Abgeordneter, vogelfrei sind wir gewesen, solange Sie die Macht hatten.** (Beifall rechts und Rufe: Sauerei!) Sie reden jetzt von Verfolgung. **Ich glaube, es sind wenige unter uns, die nicht unter den Verfolgungen von Ihrer Seite aus leiden mußten, unter tausendfältigen Schikanen und Unterdrückungen.** Außerhalb dieses Hauses weiß ich eine Schar von Hunderttausenden, die Ihrem System der Verfolgung ausgesetzt waren.

Sie scheinen ganz vergessen zu haben, daß man jahrelang uns sogar die braunen Hemden vom Leibe gerissen hat. (Lebhafte Zustimmung.) Durch Ihre Verfolgungen sind wir aber gewachsen.

Kritik ist heilsam, gewiß. Wer Deutschland liebt, mag uns kritisieren. Wer eine Internationale anbetet, kann uns nicht kritisieren (stürmischer Beifall rechts und auf den Tribünen).

Die Erkenntnis von der Heilsamkeit der Kritik kommt Ihnen reichlich spät. **Jahrelang haben Sie unsere Presse verboten, unsere Versammlungen verboten und mir das Reden verboten.** Sie beklagen jetzt, daß die Welt nicht die Wahrheit über Deutschland erfährt, und daß man Übertreibungen nicht entgegentreten kann. **Bei Ihren internationalen Beziehungen müßte es doch spielend leicht für Sie sein, die Wahrheit in Ihren auslandshetzerischen Parteiblättern zu verbreiten.** Ich habe Ihre Zeitung im Saargebiet gelesen. **Dieses Blatt treibt nichts anderes als deutschen Landesverrat.** (Pfui-Rufe rechts.) **Es verlangt dauernd, dem Ausland gegenüber Deutschland zu belasten** (Rufe: Gemeinheit! Pfui!), mit Lügen unser Volk vor der Welt in eine schiefe Lage zu bringen.

Sie beklagen sich über mangelnde Rechtssicherheit. **Ich habe die Revolution von 1918 gesehen und muß sagen, wenn wir nicht das Gefühl für das Recht hatten, dann wären wir nicht hier, und Sie säßen auch nicht da.** (Stürmischer Beifall rechts.)

Sie haben 1918 sich gegen die gewendet, die Ihnen nichts getan hatten. Wir beherrschen uns, gegen die uns zu wenden, die uns vierzehn Jahre lang gequält und gepeinigt haben. (Stürmischer Beifall rechts.)

Sie (nach links) sagen, die nationalsozialistische Revolution habe nichts mit Sozialismus zu tun, sondern der Sozialismus dieser Revolution bestände nur darin, daß man die einzige Trägerin des Sozialismus in Deutschland, die S.P.D. (Lachen rechts) verfolge. Sie sind wehleidig, nicht für die heutige Zeit bestimmt, wenn Sie jetzt schon von Verfolgungen sprechen. Was ist Ihnen geschehen? Sie sitzen ja hier. Über hat Sie denn bisher verfolgt? (Sehr richtig! rechts.) **Und was Ihren Sozialismus anlangt, so sind Sie der Träger jenes gemeinsinnlosen Sozialismus gewesen, den das deutsche Volk in der Wirklichkeit niemals zu leben erhielt.** (Starker Beifall rechts.)

Jetzt reden Sie von Ihren Absichten! Aber an den Früchten soll man auch Sie erkennen! (Sehr wahr! und Beifall rechts.) Und die Früchte zeugen gegen Sie (Widerspruch links und Zurufe — Unruhe b. d. Soz.)

Wenn das Deutschland, das Sie in vierzehn Jahren zeigten, das Spiegelbild Ihres sozialistischen Wollens ist, dann geben Sie uns gefälligst vier Jahre Zeit, um Ihnen das Spiegelbild unseres Wollens vorzuzeigen. (Lebhafter Beifall rechts.)

Sie sagen, wir wollen den Reichstag ausschalten, um die Revolution fortzusetzen. Dazu hätten wir es nicht nötig gehabt, zu einer Wahl zu schreiten, noch diesen Reichstag heute einzuberufen, noch diese Vorlage hier einbringen zu lassen. **Den Mut, uns auch anders mit Ihnen auseinanderzusetzen, den hätten wir wahrhaftigen Gott gehabt.** (Sturm-, langanhaltender Beifall rechts.)

Gegenüber der Behauptung des Abgeordneten Wels, daß die Sozialdemokratie auch von der jetzigen Reichsregierung nicht beseitigt werden könne, sagt der Kanzler, daß zu Zeiten des Sozialistengesetzes die Arbeiter von der S.P.D. noch etwas anderes erhielt hätten, als was diese Partei nun gezeigt habe. Und wenn der Abgeordnete Wels behaupte, die S.P.D. habe den Arbeitern den Weg zur Regierung freigemacht, so frage er, **warum Herr Wels diese Gesinnung nicht beizeiten seinen Freunden Grzesinski und Braun und Severing beibrachte, die ihm, dem Kanzler, jahrelang vorgeworfen hätten, er sei doch nur ein Anstreichergeselle.** (Rufe b. d. Soz.: Nicht deshalb haben wir Sie angegriffen! — Stürm. Rufe b. d. Nat.-Soz. — Präsident Goering: **Ich bitte um Ruhe, jetzt rechnet der Kanzler ab!**)

Schließlich hat man mir sogar angeboten, mich mit der Hundepeitsche aus Deutschland zu vertreiben (Stürm. Pfui-Rufe b. d. Nat.-Soz.).

Dem deutschen Arbeiter werden wir Nationalsozialisten von jetzt ab die Bahn freimachen zu dem, was er fordern und verlangen kann. Wir Nationalsozialisten werden seine Fürsprecher sein. Sie, meine Herren (nach links) **sind nicht mehr benötigt.** (Lebhafter Beifall rechts und auf den Tribünen.)

Sie sprachen weiter davon, daß nicht die Macht entscheidend sei, sondern das Rechtsbewußtsein. Dieses Rechtsbewußtsein haben wir vierzehn Jahre lang in unserem Volk zu erwecken versucht, und es ist durch uns erweckt worden. Allerdings glaube ich nun einmal aus dem eigenen politischen Erfahrungen, die ich mit Ihnen gemacht habe, daß das Recht allein leider noch nicht genügt, man muß auch die Macht besitzen (Sehr richtig! rechts).

Verwechseln Sie uns nicht mit einer bürgerlichen Welt! Sie meinen, daß Ihr Stern wieder aufgehen könnte. Meine Herren,

der Stern Deutschlands wird aufgehen und Ihrer wird sinken!

(Stürm. Beifall rechts und auf den Tribünen.)

Sie sagen, daß Ihre Bewegung nicht gebrochen worden sei während der Zeit der Sozialisten-Gesetzgebung. Das war die Zeit, in der die deutsche Arbeiterschaft in Ihnen noch etwas anderes sah, als Sie heute sind. **Warum haben Sie denn aber diese Erkenntnis vergessen uns gegenüber?** (Sehr gut! b. d. Nat.-Soz.)

Was im Völkerleben morsch, alt und gebrechlich wird, das vergeht und kommt nicht wieder. Auch Ihre Stunde hat geschlagen und nur, weil wir Deutschland sehen und seine Not und die Notwendigkeit des nationalen Lebens, appellieren wir in dieser Stunde an den Deutschen Reichstag, uns zu genehmigen, was wir auch ohne dem hätten nehmen können (Sehr gut! rechts).

Des Rechtes wegen tun wir es, nicht weil wir die Macht überschätzen, sondern weil wir am Ende mit denen, die heute vielleicht von uns getrennt sind, aber doch auch an Deutschland glauben, zusammenstehen. Ich möchte nicht in den Fehler verfallen, Gegner bloß zu reizen, statt sie entweder zu vernichten oder zu versöhnen.

Ich möchte denen, die vielleicht auf anderen Wegen auch für ihr Volk empfinden, die Hand reichen und möchte nicht einen ewigen Krieg anfangen; nicht aus Schwäche, sondern aus Liebe zu meinem Volk und, um diesem Volk all das zu ersparen, was in dieser Zeit der Kämpfe mit zugrunde geht. (Beifall.)

Sie wollen mich da aber niemals mißverstehen.

Die Hand gebe ich jedem, der sich für Deutschland verpflichtet, und ich erkenne nicht an das Gebot einer Internationale.

(Erneuter Beifall rechts.) Ich glaube, daß Sie (nach links) für dieses Gesetz nicht stimmen, weil Ihrer innerlichen Mentalität nach die Absicht Ihnen unbegreiflich ist, die uns dabei beseelt. Ich glaube aber, daß Sie das nicht tun würden, wenn mit das wären, was heute Ihre Presse im Ausland über uns verbreitet, und ich kann Ihnen nur sagen: **Ich will auch gar nicht, daß Sie dafür stimmen.**

Deutschland soll frei werden, aber nicht durch Sie!

(Stürmischer Beifall b. d. Nat.-Soz. und auf den Tribünen. Die Nationalsozialisten erheben sich und bringen Heil-Rufe auf den Reichskanzler aus.)

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Abg. Dr. Kaas (Ztr.) gibt namens seiner Fraktion eine formalistische Erklärung ab, in der es u. a. heißt: Die gegenwärtige Stunde kann für uns nicht im Zeichen des Ja oder Nein zu dem vorliegenden Gesetz stehen, das der tiefsten Gegensätze und tiefsten Entzweiung Ausdruck und Gestalt gibt. Diese Tat kann nur gehofft werden in der Sammlung. **Die Deutsche Zentrumspartei, die dem großen Sammlungsgedanken schon seit langem und trotz vorübergehender Entfremdungen dient, setzt sich in dieser Stunde, wo alle kleinen und engen Erwägungen schweigen müssen, aus nationalem Verantwortungsbewußtsein über alle Bedenken hinweg.** Sie gibt ihre letzten Reserven in den Hintergrund treten, die in normalen Zeiten kaum überwindbar wären. Im Angesicht der brennenden Not, in der angesichts Volk und Staat stehen, reichen wir unsere Hand zu dem vorübergehenden Ermächtigungsgesetz.

Abg. Graf Westarp (Dntn.) gibt namens seiner Fraktion eine Erklärung ab, in der es heißt: Wir sind uns bewußt, daß wir mit unserer Zustimmung zu dem Gesetz einen Entschluß von schwerster Tragweite fassen. Wir sind uns bewußt, daß wir damit unsere Hand dazu bieten, daß die Verfassung vom 11. August 1919 für die Dauer außer Kraft gesetzt wird. Wir sind uns bewußt, daß wir damit unsere Hand dazu bieten, daß die Rechte des Reichstags, des Reichsrats, des Reichspräsidenten, der Reichsregierung, der Reichsgerichte, der Länder, der Gemeinden, der Beamten, der Selbstverwaltungskörper, der Kirchen, der Schulen, der Wehrmacht, der Rechtspflege, der Gesetzgebung, der Verwaltung, der Rechtsprechung, der Rechtsgarantien für die Dauer außer Kraft gesetzt werden. Wir sind uns bewußt, daß wir damit unsere Hand dazu bieten, daß die Rechte der Reichsregierung, der Gesetzgebung, der Verwaltung, der Rechtsprechung, der Rechtsgarantien für die Dauer außer Kraft gesetzt werden. Wir sind uns bewußt, daß wir damit unsere Hand dazu bieten, daß die Rechte der Reichsregierung, der Gesetzgebung, der Verwaltung, der Rechtsprechung, der Rechtsgarantien für die Dauer außer Kraft gesetzt werden.

Abg. Dr. Simpfendörfer (Volksdntn.): Der Volksdienst bejaht die inneren und vor allem die außenpolitischen Ziele, die der Reichskanzler vorgetragen hat. Er ist an keinem Teil an der Mitarbeit bereit und gibt deshalb dem Ermächtigungs-Gesetz seine Zustimmung (Beifall).

Das Präsidium übernimmt hierauf der Abgeordnete Jörner (Nat.-Soz.). Er erteilt dem Minister Goering zu seiner Eigenschaft als Abgeordneter das Wort.

Abg. Goering

Abg. Goering: Ich möchte die Gelegenheit benutzen, um zu Vorwürfen Stellung zu nehmen, die von dem Redner der Sozialdemokratie in einigen Punkten erhoben wurden, weil ich mich hierbei persönlich am meisten getroffen fühle, den weiten aber auch an von dieser Stelle aus dem Ausland eine Antwort zu geben auf all die falschen Nachrichten, die man dort heute durch unterirdische Kanäle aus Deutschland herausbringt. Wenn der Redner der Sozialdemokratie gesagt hat, mehr les sei nicht einmal, so möchte ich noch mitteilen, daß gewiß die Worte einer der Ihren (zu den Sozi.) gesprochen hat. Das war der Reichsminister Wissel, derselbe Wissel, der dann von Ihnen selbst wegen seiner Standhaftigkeit, wegen seiner Bestechungen und seiner Korruptheit aus der Partei eine Zeit lang ausgeschlossen war. Wenn Sie sich heute über die Unterdrückung der Presse beschweren, dann, meine Herren, sie gestatten mir, daß ich Sie daran erinnere, daß ich nicht nur an Maßnahmen brauche ich mich nur an das Vorbild des ministeriellen in die Schweiz geflüchteten Herrn Braun zu halten. Sie können aber nicht von einer Unterdrückung der Presse reden, wenn Sie die Presse dazu benutzen wollten, um weiter gegen den Bestand des Staates und der Nation zu hetzen.

Wenn heute im Ausland Greuelnachrichten verbreitet werden, wenn davon die Rede ist, daß täglich Dutzende von Leichen im Landwehrkanal schwimmen, wenn davon die Rede ist, daß ich selbst den Reichstag angezündet hätte, wenn davon die Rede ist, daß dem Abgeordneten Torgler die Ohren abgeschnitten worden seien, wenn davon gesprochen wird, daß hier die Sozialdemokraten erschlagen, mißhandelt und gefoltert worden, so weise ich das von hier aus zurück.

Ich bin bereit, wenn es notwendig ist, jeder ausländischen Kommission all die Gefängnisse vollständig zu zeigen, die längst dort schon alle tot und gefoltert gemeldet worden sind.

Wenn Sie aber gar davon sprechen, daß Sie es ablehnen müssen, daß eine Verbindung wäre von hier zum Ausland, dann werde ich Ihnen die Verbindung beliebig herstellen. Heute noch werden von hier aus diese Greuelnachrichten hinausgesandt und heute noch gehen durch Hunderte unterirdische Kanäle Ihrer Verbindungen diese infamen Nachrichten hinaus. **Heute noch geht durch einen Geheimdienst mit Rücksicht auf der anderen über eine solche Greuelnachrichten ins Ausland, und — es ist eigentümlich — wer bringt im Auslande diese Greuelnachrichten? Sehen Sie sich die sozialdemokratische Presse aller Länder an, das sind diejenigen, die heute über diese Greuelnachrichten berichten.**

Die Männer, die heute das deutsche Volk führen, werden als infame Idioten, als Brutalitäre, als blutige Bestien bezeichnet. Sie reden von Menschlichkeit und ihre Presse in Skandinavien bekommt heute noch meine eigene tote Frau (stürmische Pfui-Rufe rechts).

Sie haben immer so sehr auf die Internationale gepocht, auf die Solidarität Ihrer Parteigenossen. Auf einmal ist diese Solidarität beseitigt. Bewiesen Sie mir doch, daß hier anders gehetzt und Sie werden sehen, daß wir hier gegen Sie auch anders sein können. **Solange aber dort dieser Schmutz, diese Infamie und diese Beleidigungen herauskommen, solange werden Sie sich auch damit abfinden müssen.** (Stürmischer Beifall rechts.)

Wenn Sie so tun, als wollten Sie uns nur helfen, damit ja nicht das Ausland die Greuelnachrichten glaubt, — ich habe nichts dagegen, Ihnen morgen eine Korrespondenz zu gestatten, in der Sie täglich gegen diese Greuelnachrichten Berichtigungen geben können. (Heiterkeit.)

Im übrigen weiß jeder von Ihnen, in Nord und Süd, in Ost und West: **Es gibt keine ausgeplünderten oder zertrümmerten Geschäfte, nicht ein Warenhaus, das zerstört oder beraubt oder das behindert wäre. Gehen Sie doch hier auf die Warenstraße. Sie werden erkennen, daß die Herren auch wie vor Rehbock machen können. Es ist nicht wahr, daß Handel und Wandel gestört wird. Gehen Sie an den Synagogen vorbei, gehen Sie über die jüdischen Friedhöfe; Sie werden sehen, werden Sie wir zeigen können, der beschmutzt wäre. Gehen Sie durch die Gefängnisse, fragen Sie Ihren Torgler oder Ihren Thälmann, ob ihnen das Gefängnis geschehen ist. Man hat Torgler in Zellenschmutz genommen habe; denn die Wut des Volkes über all das, was Sie in den letzten 14 Jahren getan haben, war so gewaltig, daß man das Volk noch seinen Rechtsbegriffen als gerechtfertigt halte, Sie nicht hier sitzen.** (Lebhafte Zustimmung rechts.)

Damit hoffe ich einmal klar ausgesprochen zu haben, gerade als als der Minister, der für diese Dinge in dem größten deutschen Land hier autoritativ ist, **daß alle diese Greuelnachrichten Lüge sind, daß alles, was darüber verbreitet worden ist, erlogen ist.** Greuelnachrichten, die ein Volk mit uns teilnehmen, soll man Gleichen und soll man Stolz zu beobachten. Und das verbanden mit diesen Männern, die jetzt die Leitung der Geschäfte in die Hand genommen haben.

Darum hat die nationalsozialistische Fraktion zum Ermächtigungsgesetz nur eins zu erklären:

Gerade ist jahrelang worden, jetzt haben wir an der Spitze der deutschen Regierung unseren Führer, und jetzt wird nicht mehr geredet, jetzt wird gehandelt! (Beifall b. d. Nat.-Soz.)

Mögen die anderen lügen, wir arbeiten, und unser Führer, der Kanzler des Reiches, kann übersehen sein. **Auch diese Fraktion wird nicht mehr reden, nur arbeiten und wird ihm folgen in treuer Gefolgschaft bis zum Siege Deutschlands.** (Stürmischer Beifall und Heil-Rufe b. d. Nat.-Soz.)

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Darauf übernimmt Präsident Goering wieder den Vorsitz. Weitere Wortmeldungen liegen nicht vor. **Mit einer kleinen redaktionellen Änderung wird ohne weitere Aussprache das Ermächtigungsgesetz in allen drei Lesungen erledigt. In der namentlichen Schluß-Abstimmung stimmen nur die Sozialdemokraten gegen das Gesetz.**

Während der Auszählung erscheint übrigens auch der sozialdemokratische Abgeordnete Severing im Saal, der inzwischen wieder freigelassen worden ist, und gibt nachträglich seine Nein-Karte ab.

Kurz vor 8 Uhr verkündet Präsident Goering das Ergebnis:

Das Gesetz ist mit 441 gegen die 94 Stimmen der Sozialdemokraten angenommen. Unter stürmischem Beifall der Rechten stellt der Präsident ferner fest, daß die Annahme des Gesetzes mit der für Verfassungsänderungen erforderlichen Zweidrittelmehrheit erfolgt ist.

Mit den Stimmen der Nationalsozialisten wird der Präsident ermächtigt, für den Staatsgerichtshof, den Reichsschuldenausschuß und zweiter die Mitglieder zu bestimmen. Ebenso wird er im Einvernehmen mit den Fraktionen die Beisitz bestimmen, der nach Rom zum handelspolitischen Kongreß der Interparlamentarischen Union laden sollen.

Gegen die Stimmen der Sozialdemokraten beschließt das Haus, Zeitpunkt und Tagesordnung der nächsten Sitzung dem Präsidenten zu überlassen.

Reichstagspräsident Goering schließt die Sitzung mit folgender Ansprache:

„Der Deutsche Reichstag des neuen nationalen Deutschlands hat in effektiver Arbeit in wenigen Wochen eine Leistung vollbracht, wie sie vor früher in Jahren nicht imstande gewesen wäre. Ich danke allen Fraktionen, die sich an dieser Aufbauarbeit beteiligt haben, und danke auch für das Vertrauen. Dieses Vertrauen soll die Reichsregierung stärken in ihrer Arbeit. Ich entlasse damit den Reichstag bis zu seiner nächsten Sitzung mit den besten Wünschen."

Von den Nationalsozialisten ertönen stürmische Heilrufe, und die Fraktion singt stehend das Horst-Wessel-Lied.

Schluß gegen 8 Uhr.

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Als der Reichstag geschlossen wurde, stimmte die nationalsozialistische Fraktion die erste Strophe des Horst-Wessel-Liedes an, in die die Tribünenbesucher begeistert einsetzten.

Nochmalige Uebertragung der Regierungserklärung auf alle deutschen Sender

Berlin, 23. März.

Die Regierungserklärung, die Reichskanzler Adolf Hitler im Reichstag abgegeben hat, wird am Freitag, dem 24. März, von 7.20 Uhr bis 8.10 Uhr abends vom Deutschen Rundfunk nochmals auf alle Sender übertragen.

gegebenen Erklärungen die grundsätzliche und die praktische Stellung ein, die Durchführung der zu erwartenden Gesetzgebungsarbeit sein werden, gibt die Deutsche Zentrumspartei dem Ermächtigungs-Gesetz ihre Zustimmung. (Beifall im Zentrum und rechts.)

Abg. Ritter von Lex (Bayer. Vp.) betont, die Bayerische Volkspartei stehe der christlich-nationalen Weltanschauung und Staatsauffassung habe nach der schmachvollen Revolution von 1918 für die Erhaltung und Wiedergewinnung nationaler Gesinnung in allen Ständen und Schichten des Volkes gekämpft. Selbstverständlich sei diese Partei auch in der geschichtlichen Wende dieser Tage zur tatkräftigen Mitarbeit am nationalen Aufbauwerk bereit. Angesichts der Not und des Zerfalls des vorgelegten Ermächtigungs-Gesetzes hätte die Bayerische Volkspartei es für erforderlich erachtet, daß schon im Wortlaut des Gesetzes die Grundrechte eines christlichen und nationalen Staates ausdrücklich gewährleistet seien, den wären, der Bestand der Länder, die Gewährleistung der Rechtssicherheit durch ein unabhängiges Richtertum, die Erhaltung eines auf wohlerworbene Rechte vertrauenden Beamtentums, die freie Betätigung der Kirchen und der christlich-nationalen Weltanschauung zugunsten der Schulen und Erziehung, der Familie, sowie die ausdrückliche Sicherung von Leben und Eigentum. Die Ausführungen des Reichskanzlers in der Regierungserklärung hätten aber diese Bedenken gemildert, die Bayerische Volkspartei sei daher in der Lage, dem Ermächtigungs-Gesetz zuzustimmen. (Beifall.) Der Satz jedoch, daß der Not Gesetz Handlung des Gesetzes sich in den Schranken des christlichen Sittengesetzes halte.

Abg. Dr. Maier-Württemberg (Dt. Staatsp.) erklärt: Das deutsche Volk hat am 5. März eine absolute Mehrheit der Rechten in den Reichstag gewählt und damit seinen Willen bekundet, die Führung des Staates bei der gegenwärtigen Regierung anzuvertrauen. Wir hassen und wünschen, daß das deutsche Volk wieder zu der seelischen Haltung gelangt, zum Frieden und Wiedererstarkung der deutschen Nation erfolgreich zu Ende bringen möge. Wir sahen uns in den großen nationalen Zielen des Kampfes mit der Regierung verbunden, die heute hier vom Reichskanzler vertreten wurde (Lachen rechts). Wir leugnen aufs keinesweges, daß Notzeiten besondere Maßnahmen erfordern.

In dem vorliegenden Gesetzentwurf vermissen wir, daß den verfassungsmäßigen Grundrechten des Volkes und den Grundlagen der bürgerlichen Rechtsordnung eine ausdrückliche Sicherung vor Eingriffen gegeben wurde. Wir diese Grundrechte in der Weimarer Verfassung übernommen worden aus der alten deutschen und preußischen staatlichen Tradition, so dürfen sie auch heute nicht gefährdet werden. Im Interesse von Volk und Vaterland geben wir die Erklärung ab, daß wir in der Erwartung einer Entwicklung unseres ersten Bedenken zurückstellen und dem Ermächtigungs-Gesetz zustimmen (Lachen rechts).

Abg. Dr. Simpfendörfer (Volksdntn.): Der Volksdienst bejaht die inneren und vor allem die außenpolitischen Ziele, die der Reichskanzler vorgetragen hat. Er ist an keinem Teil an der Mitarbeit bereit und gibt deshalb dem Ermächtigungs-Gesetz seine Zustimmung (Beifall).

Das Präsidium übernimmt hierauf der Abgeordnete Jörner (Nat.-Soz.). Er erteilt dem Minister Goering zu seiner Eigenschaft als Abgeordneter das Wort.

Abg. Goering

Abg. Goering: Ich möchte die Gelegenheit benutzen, um zu Vorwürfen Stellung zu nehmen, die von dem Redner der Sozialdemokratie in einigen Punkten erhoben wurden, weil ich mich hierbei persönlich am meisten getroffen fühle, den weiten aber auch an von dieser Stelle aus dem Ausland eine Antwort zu geben auf all die falschen Nachrichten, die man dort heute durch unterirdische Kanäle aus Deutschland herausbringt. Wenn der Redner der Sozialdemokratie gesagt hat, mehr les sei nicht einmal, so möchte ich noch mitteilen, daß gewiß die Worte einer der Ihren (zu den Soz.) gesprochen hat. Das war der Reichsminister Wissel, derselbe Wissel, der dann von Ihnen selbst wegen seiner Standhaftigkeit, wegen seiner Bestechungen und seiner Korruptheit aus der Partei eine Zeit lang ausgeschlossen war. Wenn Sie sich heute über die Unterdrückung der Presse beschweren, dann, meine Herren, sie gestatten mir, daß ich Sie daran erinnere, daß ich nicht nur an Maßnahmen brauche ich mich nur an das Vorbild des ministeriellen in die Schweiz geflüchteten Herrn Braun zu halten. Sie können aber nicht von einer Unterdrückung der Presse reden, wenn Sie die Presse dazu benutzen wollten, um weiter gegen den Bestand des Staates und der Nation zu hetzen.

Wenn heute im Ausland Greuelnachrichten verbreitet werden, wenn davon die Rede ist, daß täglich Dutzende von Leichen im Landwehrkanal schwimmen, wenn davon die Rede ist, daß ich selbst den Reichstag angezündet hätte, wenn davon die Rede ist, daß dem Abgeordneten Torgler die Ohren abgeschnitten worden seien, wenn davon gesprochen wird, daß hier die Sozialdemokraten erschlagen, mißhandelt und gefoltert worden, so weise ich das von hier aus zurück.

Ich bin bereit, wenn es notwendig ist, jeder ausländischen Kommission all die Gefängnisse vollständig zu zeigen, die längst dort schon alle tot und gefoltert gemeldet worden sind.

Wenn Sie aber gar davon sprechen, daß Sie es ablehnen müssen, daß eine Verbindung wäre von hier zum Ausland, dann werde ich Ihnen die Verbindung beliebig herstellen. Heute noch werden von hier aus diese Greuelnachrichten hinausgesandt und heute noch gehen durch Hunderte unterirdische Kanäle Ihrer Verbindungen diese infamen Nachrichten hinaus. **Heute noch geht durch einen Geheimdienst mit Rücksicht auf der anderen über eine solche Greuelnachrichten ins Ausland, und — es ist eigentümlich — wer bringt im Auslande diese Greuelnachrichten? Sehen Sie sich die sozialdemokratische Presse aller Länder an, das sind diejenigen, die heute über diese Greuelnachrichten berichten.**

Die Männer, die heute das deutsche Volk führen, werden als infame Idioten, als Brutalitäre, als blutige Bestien bezeichnet. Sie reden von Menschlichkeit und ihre Presse in Skandinavien bekommt heute noch meine eigene tote Frau (stürmische Pfui-Rufe rechts).

Sie haben immer so sehr auf die Internationale gepocht, auf die Solidarität Ihrer Parteigenossen. Auf einmal ist diese Solidarität beseitigt. Bewiesen Sie mir doch, daß hier anders gehetzt und Sie werden sehen, daß wir hier gegen Sie auch anders sein können. **Solange aber dort dieser Schmutz, diese Infamie und diese Beleidigungen herauskommen, solange werden Sie sich auch damit abfinden müssen.** (Stürmischer Beifall rechts.)

Wenn Sie so tun, als wollten Sie uns nur helfen, damit ja nicht das Ausland die Greuelnachrichten glaubt, — ich habe nichts dagegen, Ihnen morgen eine Korrespondenz zu gestatten, in der Sie täglich gegen diese Greuelnachrichten Berichtigungen geben können. (Heiterkeit.)

Im übrigen weiß jeder von Ihnen, in Nord und Süd, in Ost und West: **Es gibt keine ausgeplünderten oder zertrümmerten Geschäfte, nicht ein Warenhaus, das zerstört oder beraubt oder das behindert wäre. Gehen Sie doch hier auf die Warenstraße. Sie werden erkennen, daß die Herren auch wie vor Rehbock machen können. Es ist nicht wahr, daß Handel und Wandel gestört wird. Gehen Sie an den Synagogen vorbei, gehen Sie über die jüdischen Friedhöfe; Sie werden sehen, werden Sie wir zeigen können, der beschmutzt wäre. Gehen Sie durch die Gefängnisse, fragen Sie Ihren Torgler oder Ihren Thälmann, ob ihnen das Gefängnis geschehen ist. Man hat Torgler in Zellenschmutz genommen habe; denn die Wut des Volkes über all das, was Sie in den letzten 14 Jahren getan haben, war so gewaltig, daß man das Volk noch seinen Rechtsbegriffen als gerechtfertigt halte, Sie nicht hier sitzen.** (Lebhafte Zustimmung rechts.)

Damit hoffe ich einmal klar ausgesprochen zu haben, gerade als als der Minister, der für diese Dinge in dem größten deutschen Land hier autoritativ ist, **daß alle diese Greuelnachrichten Lüge sind, daß alles, was darüber verbreitet worden ist, erlogen ist.** Greuelnachrichten, die ein Volk mit uns teilnehmen, soll man Gleichen und soll man Stolz zu beobachten. Und das verbanden mit diesen Männern, die jetzt die Leitung der Geschäfte in die Hand genommen haben.

Darum hat die nationalsozialistische Fraktion zum Ermächtigungsgesetz nur eins zu erklären:

Gerade ist jahrelang worden, jetzt haben wir an der Spitze der deutschen Regierung unseren Führer, und jetzt wird nicht mehr geredet, jetzt wird gehandelt! (Beifall b. d. Nat.-Soz.)

Mögen die anderen lügen, wir arbeiten, und unser Führer, der Kanzler des Reiches, kann übersehen sein. **Auch diese Fraktion wird nicht mehr reden, nur arbeiten und wird ihm folgen in treuer Gefolgschaft bis zum Siege Deutschlands.** (Stürmischer Beifall und Heil-Rufe b. d. Nat.-Soz.)

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Darauf übernimmt Präsident Goering wieder den Vorsitz. Weitere Wortmeldungen liegen nicht vor. **Mit einer kleinen redaktionellen Änderung wird ohne weitere Aussprache das Ermächtigungsgesetz in allen drei Lesungen erledigt. In der namentlichen Schluß-Abstimmung stimmen nur die Sozialdemokraten gegen das Gesetz.**

Während der Auszählung erscheint übrigens auch der sozialdemokratische Abgeordnete Severing im Saal, der inzwischen wieder freigelassen worden ist, und gibt nachträglich seine Nein-Karte ab.

Kurz vor 8 Uhr verkündet Präsident Goering das Ergebnis:

Das Gesetz ist mit 441 gegen die 94 Stimmen der Sozialdemokraten angenommen. Unter stürmischem Beifall der Rechten stellt der Präsident ferner fest, daß die Annahme des Gesetzes mit der für Verfassungsänderungen erforderlichen Zweidrittelmehrheit erfolgt ist.

Mit den Stimmen der Nationalsozialisten wird der Präsident ermächtigt, für den Staatsgerichtshof, den Reichsschuldenausschuß und zweiter die Mitglieder zu bestimmen. Ebenso wird er im Einvernehmen mit den Fraktionen die Beisitz bestimmen, der nach Rom zum handelspolitischen Kongreß der Interparlamentarischen Union laden sollen.

Gegen die Stimmen der Sozialdemokraten beschließt das Haus, Zeitpunkt und Tagesordnung der nächsten Sitzung dem Präsidenten zu überlassen.

Reichstagspräsident Goering schließt die Sitzung mit folgender Ansprache:

„Der Deutsche Reichstag des neuen nationalen Deutschlands hat in effektiver Arbeit in wenigen Wochen eine Leistung vollbracht, wie sie vor früher in Jahren nicht imstande gewesen wäre. Ich danke allen Fraktionen, die sich an dieser Aufbauarbeit beteiligt haben, und danke auch für das Vertrauen. Dieses Vertrauen soll die Reichsregierung stärken in ihrer Arbeit. Ich entlasse damit den Reichstag bis zu seiner nächsten Sitzung mit den besten Wünschen."

Von den Nationalsozialisten ertönen stürmische Heilrufe, und die Fraktion singt stehend das Horst-Wessel-Lied.

Schluß gegen 8 Uhr.

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Als der Reichstag geschlossen wurde, stimmte die nationalsozialistische Fraktion die erste Strophe des Horst-Wessel-Liedes an, in die die Tribünenbesucher begeistert einsetzten.

Stürmische Begrüßung des Führers vor der Krolloper

Hitler spricht vom Balkon des Hauses zu den Massen

Während der namentlichen Abstimmungen wurde auf der Pressetribüne bekannt, daß sich vor dem Krollgebäude zahlreiche Sturmabteilungen der S.A. und S.S. sowie eine vielhundertköpfige Menschenmenge eingefunden habe, die in Sprechchören riefen: „Wir fordern die Annahme des Ermächtigungsgesetzes!"

Adolf Hitler sprach dann vom Balkon des Krollhauses zu der draußen angetretenen S.A. und S.S. und der zahllosen Menschenmenge. Brausend und nicht enden wollend dankte ihm der stürmische Jubel der Tausende. Mit dem Gesang der alten Kampflieder, die jubelnd zum wolkigen Himmel stiegen, marschierte die S.A. und S.S. geschlossen ab.

Bei seiner Abfahrt, die in Begleitung seines Stabes und des Pressechefs Dr. Dietrich erfolgte, wurde Hitler auf das stürmischste begrüßt. Ebenso wurden die bald danach erscheinenden übrigen Mitglieder des Kabinetts, soweit sie von der Menge erkannt wurden, mit Jubel empfangen, besonders auch Dr. Frick, General v. Epp und Dr. Goebbels.

Dieser Tag erfüllte das Herz eines jeden Deutschen, das in den männlichen, ritterlichen Werten Sagenbes seinen klaren Ausdruck fand: „Nur eines Mannes großer, fester, reiner Wille kann uns helfen, nicht Parlamente, nicht Gesetze, nicht das Streben machtloser Einzelner."

Ueber 110 000 Arbeitslose weniger!

Fühlbare Entlastung der Arbeitslosen-Versicherung

Berlin, 23. März.

Nach dem Bericht der Reichsanstalt für die Zeit vom 1. bis 15. März 1933 hat die Frühjahrsbelebung des Arbeitsmarktes in der ersten Hälfte des Monats März weitere beachtliche Fortschritte gemacht. Bei den Arbeitsämtern waren am 15. März rund 5 935 000 Arbeitslose gemeldet. Demgegenüber ist, daß der Rückgang mit rund 85 000 bereits Ende März also in der zweiten Hälfte Februar; seit Beginn der Frühjahrsentwicklung hat damit die Zahl der eingetragenen Arbeitslosen um über 110 000 abgenommen. Im Vorjahr lag dagegen der Höhepunkt der ersichten Arbeitslosigkeit erst Mitte März, bei rund 6 129 000 Arbeitslosen.

Die Arbeitslosenversicherung erfuhr eine fühlbare Entlastung; die Zahl der Hauptunterstützungsempfänger ging um rund 54 000 auf rund 4 000 000 zurück. Demgegenüber die Belastung der Krisenfürsorge wurde, und zwar auf rund 1 575 000 Hauptunterstützungsempfänger.

Im Freiwilligen Arbeitsdienst wird die Zahl der Arbeitsdienstwilligen von rund 180 000 Ende Februar auf etwa eine Viertelmillionen gestiegen sein.

Pg. Kerrl kommissarischer Justizminister

Berlin, 23. März.

Vizekanzler v. Papen hat in seiner Eigenschaft als Reichskommissar für das Land Preußen nach Vortrag beim Reichspräsidenten den Präsidenten des Preußischen Landtags, Pg. Kerrl, zum Reichskommissar für das Preußische Justizministerium ernannt.

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Der neue kommissarische Justizminister, Landtagspräsident Pg. Hanns Kerrl, ist am 11. Dezember 1887 zu Fallersleben, Kreis Gifhorn, geboren und von lutherischer Konfession. N

Der Wortlaut der Notverordnungen über Amnestie und Sondergerichte

Die Einrichtung der Sondergerichte

Berlin, 23. März.

Die dem Inhalt nach bereits bekannte Verordnung des Reichspräsidenten über die Bildung von Sondergerichten vom 21. März 1933 hat folgenden Wortlaut:

§ 1.

(1) Für den Bezirk jedes Oberlandesgerichts wird ein Sondergericht gebildet.

(2) Die Sondergerichte sind Gerichte des Landes.

(3) Die Landesjustizverwaltung bestimmt den Sitz der Sondergerichte.

§ 2.

Die Sondergerichte sind zuständig für die in der Verordnung des Reichspräsidenten zum Schutz von Volk und Staat vom 28. Februar 1933 (Reichsgesetzbl. I S. 83) und der Verordnung zur Abwehr heimtückischer Angriffe gegen die Regierung der nationalen Erhebung vom 21. März 1933 (Reichsgesetzbl. I S. 135) bezeichneten Verbrechen und Vergehen, soweit nicht die Zuständigkeit des Reichsgerichts oder der Oberlandesgerichte begründet ist.

§ 3.

(1) Die Sondergerichte sind auch dann zuständig, wenn ein zu ihrer Zuständigkeit gehörendes Verbrechen oder Vergehen zugleich den Tatbestand einer anderen strafbaren Handlung erfüllt.

(2) Steht mit einem Verbrechen oder Vergehen, das zur Zuständigkeit der Sondergerichte gehört, eine andere strafbare Handlung in tatsächlichem Zusammenhang, so kann das Verfahren wegen der anderen strafbaren Handlung gegen Täter und Teilnehmer im Wege der Verbindung bei dem Sondergericht anhängig gemacht werden.

(3) Die Erstreckung der Zuständigkeit nach Abs. 1, 2 gilt nicht für Handlungen, die zur Zuständigkeit des Reichsgerichts oder der Oberlandesgerichte gehören.

§ 4.

(1) Die Sondergerichte entscheiden in der Besetzung mit einem Vorsitzenden und zwei Beisitzern. Für jedes Mitglied ist für den Fall seiner Behinderung ein Vertreter zu bestellen.

(2) Die Mitglieder und ihre Vertreter müssen ständig angestellte Richter des Bezirks sein, für den das Sondergericht berufen ist.

(3) Die Berufung der Mitglieder und die Geschäftsverteilung erfolgt durch das Präsidium des Landgerichts, in dessen Bezirk das Sondergericht seinen Sitz hat.

§ 5.

Die Vertreter der Anklagebehörde werden von der Landesjustizverwaltung aus der Zahl der zum Richteramt befähigten Beamten der Staatsanwaltschaft berufen.

§ 6.

Auf das Verfahren finden, soweit nicht etwas anderes bestimmt ist, die Vorschriften der Strafprozeßordnung und des Gerichtsverfassungsgesetzes entsprechende Anwendung.

§ 7.

Ein Gerichtsstand ist auch bei dem Sondergericht begründet, in dessen Bezirk der Beschuldigte ergriffen wird oder sich in Haft befindet. Die einmal begründete Zuständigkeit wird durch die Freilassung des Beschuldigten nicht berührt.

§ 8.

Ueber die Ablehnung eines Richters entscheidet das Sondergericht, dem der Abgelehnte angehört; für die Entscheidung tritt an die Stelle des abgelehnten Richters sein Vertreter. Eine Ablehnung des Vertreters ist unzulässig.

§ 9.

1. Eine mündliche Verhandlung über den Haftbefehl findet nicht statt.

2. Die auf die Untersuchungshaft bezüglichen Entscheidungen werden von dem Vorsitzenden des Sondergerichts erlassen. Für die nach §§ 125, 126 der Strafprozeßordnung dem Amtsrichter zustehenden Entscheidungen ist unbeschadet der Zuständigkeit des Amtsrichters auch der Vorsitzende des Sondergerichts zuständig. Ueber Beschwerden gegen die Entscheidungen des Vorsitzenden und des Amtsrichters entscheidet das Sondergericht.

3. Der Vorsitzende des Sondergerichts kann mit seiner Vertretung bei der Vernehmung des Beschuldigten und bei der Entscheidung über den Erlaß des Haftbefehls einen Beisitzer beauftragen. Das Gleiche gilt für die nach §§ 116, 148 der Strafprozeßordnung zutreffenden Entscheidungen.

§ 10.

Dem Angeschuldigten, der noch keinen Verteidiger gewählt hat, ist ein Verteidiger von Amtswegen bei der Anordnung der Hauptverhandlung zu bestellen.

§ 11.

Eine gerichtliche Voruntersuchung findet nicht statt. Ist eine Voruntersuchung beim Inkrafttreten dieser Verordnung anhängig, so sind die Akten alsbald der Anklagebehörde bei dem Sondergericht zuzuleiten.

§ 12.

1. In die Anklageschrift sind die wesentlichen Ergebnisse der stattgehabten Ermittlungen aufzunehmen.

2. Eines Beschlusses über die Eröffnung des Hauptverfahrens bedarf es nicht. An die Stelle des Antrags der Staatsanwaltschaft auf Eröffnung des Hauptverfahrens tritt der Antrag der Anklagebehörde auf Anordnung der Hauptverhandlung. Nach Eingang der Anklageschrift ordnet der Vorsitzende, wenn er die gesetzlichen Voraussetzungen für gegeben erachtet, die Hauptverhandlung an. Andernfalls führt er einen gerichtlichen Beschluß herbei. Der Vorsitzende beschließt bei der Anordnung der Hauptverhandlung zugleich über die Anordnung oder Fortdauer der Untersuchungshaft.

3. Die Landesjustizverwaltung kann anordnen, daß die zur Hauptverhandlung erforderlichen Ladungen und die Herbeischaffung der als Beweismaterial dienenden Gegenstände (§ 214, Abs. 1 der Strafprozeßordnung) durch die Geschäftsstelle des Sondergerichts bewirkt werden. Die Landesjustizverwaltung kann diese Befugnis weiter übertragen.

4. Die Ladungsfrist (§ 217 der Strafprozeßordnung) beträgt drei Tage. Sie kann auf 24 Stunden herabgesetzt werden.

5. Die in der Strafprozeßordnung an die Eröffnung des Hauptverfahrens geknüpften Wirkungen treten mit der Einreichung der Anklageschrift ein. Die Wirkungen, die nach der Strafprozeßordnung an die Verlesung des Eröffnungsbeschlusses geknüpft sind, treten mit dem Beginn der Vernehmung des Angeklagten zur Sache ein.

§ 13.

Das Sondergericht kann eine Beweiserhebung ablehnen, wenn es die Überzeugung gewonnen hat, daß die Beweiserhebung für die Aufklärung der Sache nicht erforderlich ist.

§ 14.

Das Sondergericht hat in der Sache auch dann zu erkennen, wenn sich nach dem Ergebnis der Hauptverhandlung die dem Angeklagten zur Last gelegte Tat als eine solche darstellt, für die seine Zuständigkeit nicht begründet ist. Dies gilt nicht, wenn sich die Tat als ein Verbrechen oder Vergehen darstellt, das zur Zuständigkeit des Reichsgerichts oder der Oberlandesgerichte gehört; das Sondergericht hat in diesem Falle nach § 270 Abs. 1, 2 der Strafprozeßordnung zu verfahren.

§ 15.

Die Ergebnisse der Vernehmungen (§ 273 Abs. 2 der Strafprozeßordnung) brauchen in das Protokoll über die Hauptverhandlung nicht aufgenommen werden.

§ 16.

(1) Gegen Entscheidungen der Sondergerichte ist kein Rechtsmittel zulässig.

(2) Über Anträge auf Wiederaufnahme des Verfahrens entscheidet die Strafkammer. Die Wiederaufnahme zugunsten des Verurteilten findet auch dann statt, wenn Umstände vorliegen, die es notwendig erscheinen lassen, die Sache im ordentlichen Verfahren nachzuprüfen. Die Vorschrift des § 363 der Strafprozeßordnung bleibt unberührt. Ist der Antrag auf Wiederaufnahme begründet, so ist die Hauptverhandlung vor dem zuständigen ordentlichen Gericht anzuordnen.

§ 17.

Verfahren, die beim Inkrafttreten dieser Verordnung wegen einer strafbaren Handlung anhängig sind, die zur Zuständigkeit der Sondergerichte gehört, werden, wenn die Hauptverhandlung bereits begonnen hat, nach den allgemeinen Vorschriften weitergeführt. Andernfalls gehen sie in das in der Verordnung geregelte Verfahren über.

§ 18.

(1) Endet die Tätigkeit des Sondergerichts, so gehen die bei ihm anhängigen Sachen in das ordentliche Verfahren über, die nach den Vorschriften der Verordnung eingereichte Anklageschrift verliert ihre Wirkung.

(2) Eine bereits begonnene Hauptverhandlung ist von dem Sondergericht nach den Vorschriften der Verordnung weiterzuführen.

(3) Die Strafvollstreckung geht auf die Strafvollstreckungsbehörde über, in deren Bezirk das Sondergericht seinen Sitz gehabt hat; die bei der Strafvollstreckung notwendig werdenden gerichtlichen Entscheidungen werden von der Strafkammer des Landgerichts ohne mündliche Verhandlung erlassen.

§ 19.

Die Verordnung tritt mit dem zweiten Tage nach der Verkündung in Kraft.

Straffreiheit für politische Vergehen

Berlin, 23. März.

Die bereits dem Inhalt nach bekannte Verordnung des Reichspräsidenten über die Gewährung von Straffreiheit vom 21. März 1933 hat folgenden Wortlaut:

§ 1.

Für Straftaten, die im Kampfe für die nationale Erhebung des deutschen Volkes, zu ihrer Vorbereitung oder im Kampfe für die deutsche Scholle begangen sind, wird Straffreiheit nach Maßgabe der folgenden Bestimmungen gewährt.

§ 2.

Strafen, die beim Inkrafttreten dieser Verordnung rechtskräftig erkannt und noch nicht verbüßt sind, werden erlassen.

Der Straferlaß erstreckt sich auf Nebenstrafen und Sicherungsmaßnahmen, soweit sie noch nicht vollstreckt sind, auf gesetzliche Nebenfolgen, auf rückständige Geldbußen, die in die Kassen des Reichs oder der Länder fließen, und auf rückständige Kosten.

Ist auf Einziehung oder Unbrauchbarmachung erkannt, so behält es dabei sein Bewenden.

§ 3.

Anhängige Verfahren werden eingestellt, wenn die Tat vor dem 21. März 1933 begangen ist; neue Verfahren werden nicht eingeleitet.

§ 4.

Enthält eine Gesamtstrafe, die beim Inkrafttreten dieser Verordnung noch nicht verbüßt ist, eine Einzelstrafe wegen einer Zuwiderhandlung, für die Straffreiheit gewährt wird, oder mehrere derartige Einzelstrafen, so wird der Teil der Gesamtstrafe, der nach dem Verhältnis der verwirkten Einzelstrafen auf die genannte Zuwiderhandlung entfällt, von der Gesamtstrafe abgezogen.

Ist bei der Bildung einer Gesamtstrafe Gefängnisstrafe lediglich deshalb in Zuchthaus umgewandelt worden, weil sie mit Zuchthausstrafe wegen einer Zuwiderhandlung zusammentraf, für die Straffreiheit gewährt wird, so wird die Gesamtstrafe, die nach Abs. 1 gekürzt ist, in Gefängnis von gleicher Dauer umgewandelt.

Gerichtliche Entscheidungen (§ 458 der Strafprozeßordnung) darüber, ob und inwieweit eine Gesamtstrafe nach den Vorschriften der Abs. 1, 2 zu mildern ist, werden von dem Gericht erlassen, das für die Entscheidung über die Einzelstrafe wegen der im Abs. 1 genannten Zuwiderhandlung zuständig ist.

§ 5.

Über die Einstellung anhängiger Verfahren entscheidet auf Antrag der Beteiligten das Gericht. Gegen die Entscheidung findet sofortige Beschwerde statt.

War das Verfahren auf Privatklage eingeleitet, so werden die Kosten des Verfahrens niedergeschlagen. Die dem Privatkläger und dem Beschuldigten erwachsenen notwendigen Auslagen kann das Gericht angemessen verteilen oder einem von ihnen ganz auferlegen.

§ 6.

Die Verordnung findet auf die zur Zuständigkeit der Gerichte des Reichs und der Länder gehörenden Strafsachen Anwendung.

§ 7.

Die Verordnung tritt mit dem auf die Verkündung folgenden Tag in Kraft.

Die Nationalsozialisten in allen Ausschüssen führend

Die Sitzung der nationalsozialistischen Reichstagsfraktion — Minister Dr. Frick über die Aufbauarbeit der Reichsregierung

Berlin, 23. März.

Im Reichstage fand die Konstituierung der drei wichtigsten Reichstagsausschüsse statt. Der Haushaltsausschuß des Reichstages wählte zu seinem Vorsitzenden den Nationalsozialisten Reinhardt. Als Stellvertreter schlugen die Nationalsozialisten den Abgeordneten Dr. Elbrecht (Nat.-Soz.) vor. Auf den Hinweis des Abgeordneten Heinig (Soz.), daß der erste Stellvertreter den Sozialdemokraten zustehe, erwiderte der Vorsitzende, daß er nicht gesonnen sei, die bisherigen Methoden weiterzuführen. Bei Stimmenthaltung des Zentrums und der Bayerischen Volkspartei wurde dann gegen die Sozialdemokraten Abgeordneter Pg. Albrecht zum ersten Stellvertreter bestimmt. Zum zweiten stellvertretenden Vorsitzenden wurde der Abgeordnete Dr. Klöckner (Ztr.) gewählt.

Im Reichstagsausschuß zur Wahrung der Rechte der Volksvertretung wurde der nationalsozialistische Abgeordnete Pg. Dr. Frank II zum Vorsitzenden bestimmt. Zum Stellvertreter wurde auch hier ein Nationalsozialist gewählt, der Abgeordnete Pg. Dreher.

Den Vorsitz im Auswärtigen Ausschuß des Reichstages übernahm wieder Pg. Dr. Frick. Den Stellvertreter stellt das Zentrum in dem Abgeordneten Joos.

Im Haushalts- und im Auswärtigen Ausschuß verfügen die Nationalsozialisten über die absolute Mehrheit, nämlich im Haushaltsausschuß über 19 von 35 Sitzen und im Auswärtigen Ausschuß über 15 von 28 Sitzen; im Überwachungsausschuß haben sie genau die Hälfte der Sitze, nämlich 14 von 28.

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Am Donnerstag, 1½ Stunden vor Beginn der Reichstagssitzung in der Kroll-Oper, versammelte sich im Sitzungssaale des Haushaltsausschusses des Reichstages die nationalsozialistische Reichstagsfraktion zu ihrer ersten geschäftlichen Sitzung. Über dem Stuhl des Vorsitzenden, Reichsministers Doktor Frick, hängt die feuerrote Hakenkreuzfahne.

Von den Seitenwänden grüßen als Zeugen unsterblichen Geschehens Gemälde aus Deutschlands großer Geschichte, drei Episoden darstellend: Karl der Große empfängt auf dem Reichstag zu Paderborn die Gesandten Harun al Raschids, Kaiser Wilhelm I. reitet nach der Schlacht von Sedan, gefolgt von seinen Paladinen, Bismarck, Moltke und Roon, über das Schlachtfeld, die lombardischen Städte und Mailand unterwerfen sich 1158 Friedrich I., Barbarossa.

Angesichts dieser Bilder aus der deutschen Geschichte eröffnet Reichsminister Dr. Frick als Fraktionsvorsitzender die Sitzung und führt aus, es gälte heute, die Reichsregierung instand zu setzen,

die Pläne, die sie zur Befreiung und Rettung des deutschen Volkes hegt, durchzuführen,

und dementsprechend werde der heutige Tag würdig, diszipliniert und eindrucksvoll verlaufen. Der Worte seien genug gewechselt, nun lasse man Taten sehen.

Zunächst werde eine Änderung der Geschäftsordnung im Reichstag vorgelegt, auf dessen Annahme man ohne Aussprache rechnen kann. Der Reichskanzler Adolf Hitler werde dann die Regierungserklärung abgeben, hierzu werde er im Braunhemd erscheinen, um der Bedeutung des Tages den richtigen Nachdruck zu geben. Es sei nicht ausgeschlossen, daß das Zentrum nach der Regierungserklärung eine Vertagung beantrage. Die N.S.D.A.P. sei jedoch dagegen und werde sich nur für eine Unterbrechung von zwei bis drei Stunden bestimmen lassen. Man hoffe, daß Ermächtigungsgesetz gleich hintereinander in drei Lesungen zu Ende führen zu können.

Falls aber eine Partei, so führte Dr. Frick aus, sich gegen die Annahme des Ermächtigungsgesetzes sperren würde, so habe sie auch die Folgen zu verantworten für ein Nichtzustandekommen mit Zweidrittelmehrheit. In diesem Falle aber werde die Reichsregierung nicht mit, sondern gegen den Reichstag regieren. Das deutsche Volk habe dem Nationalsozialismus und seinem Führer einen Auftrag gegeben, den Adolf Hitler auch gegen den Willen der Opposition erfüllen werde.

Nach Übernahme des Ermächtigungsgesetzes werde der Reichstag voraussichtlich auf unbestimmte Zeit vertagt werden. Reichskanzler Adolf Hitler behalte sich dann vor, den Reichstag von Fall zu Fall einzuberufen. Er soll aber nicht etwa auf vier Jahre ausgeschaltet werden, jedoch

soll die Regierung zunächst die Freiheit haben, alles das durchzuführen, was zum Wohle des deutschen Volkes in Angriff genommen worden sei.

Es werden dann noch einige geschäftliche Angelegenheiten besprochen, worauf der Vorsitzende Dr. Frick die Sitzung mit einem dreifachen Heil auf den Führer schließt. Um 13 Uhr trat sodann der Ältestenrat zusammen.

Die Lügen über den K.P.D.-Führer Thälmann

Berlin, 23. März.

Der Leiter der preußischen Politischen Polizei gibt bekannt, daß sowjetrussische Sender durch deutschsprachige Vorträge die Behauptung verbreiten lassen, der Kommunist Thälmann befinde sich in Sowjetrußland in Freiheit und nicht in deutscher Haft. Die sowjetrussischen Sender gehen in ihren Schwindelmanövern so weit, daß sie den angeblichen Thälmann sogar Rundfunkreden halten lassen.

Demgegenüber teilt der Leiter der preußischen Politischen Polizei mit, daß der Kommunist Thälmann sich nach wie vor in Schutzhaft befindet, wo er sich entgegen allen Lügenmärchen körperlich völlig unbeschädigt bester Gesundheit erfreue.

Außerdem habe, worauf der Leiter der preußischen Politischen Polizei noch besonders hinweist, der Reichskommissar für das Preußische Ministerium des Innern, Reichsminister Göring, zur Unterbindung der insbesondere von sozialdemokratischer Seite aus betriebenen Greuel-Propaganda angeordnet, daß die in Betracht kommenden politischen Häftlinge demnächst den Vertretern der ausländischen Presse vorgeführt werden sollten, damit diese sich durch Augenschein von der Verlogenheit jener Greuelpropaganda überzeugen können.

London rechnet mit einem Moratorium für die amerikanischen Schuldenzahlungen

London, 23. März.

Zur Haltung Amerikas in der Kriegsschuldenfrage meldet der Washingtoner Berichterstatter der „Times", alle Äußerungen, die der Staatssekretär Hull der Presse gegenüber machte, ließen den Schluß zu, daß die Schuldnermächte von sich aus mit Plänen zur Regelung herauskommen sollten.

Amtliche Kreise in England hoffen, wie „Daily Mail" sagt, daß Amerika zum mindesten ein Moratorium gewähren wird, falls es sich als unmöglich erweisen sollte, schon vor dem nächsten Zahlungstermin zu einer grundsätzlichen Schuldenregelung zu gelangen.

Das Staatsbegräbnis für Kriminalsekretär Weber

Freiburg/Br., 23. März.

Das zweite Todesopfer der Bluttat des Landtagsabgeordneten Nußbaum, der Kriminalsekretär Weber, wurde in feierlichem Staatsbegräbnis zu Grabe getragen. Ebenso wie bei der Beisetzung seines Kameraden, nahm die Freiburger Bevölkerung außerordentlichen starken Anteil. An der Beerdigung nahmen sämtliche Verbände, die blaue und die Kriminalpolizei und eine Ehrenhundertschaft der Freiburger Polizei, die Vertreter der Staatsregierung, der staatlichen und städtischen Behörden teil. Die Ehrenhundertschaft feuerte über das offene Grab drei Salven.

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Beuthen, 23. März.

Bei dem hier gestorbenen S.A.-Mann, dem Redakteur Joseph Weibinger, wurde die Beerdigung mit kirchlichen Ehren erst nach dem Eingreifen des Vizekanzlers von Papen gestattet. Der Verstorbene, ein gebürtiger Bayer, gehörte seit Jahren dem Sturmbann III/22 an. In der Aufstandszeit kämpfte er beim oberschlesischen Selbstschutz gegen die polnischen Aufständischen. Er wurde mit dem Schlesischen Adler I. und II. Klasse ausgezeichnet.

Adolf-Hitler-Platz auch in Hannover

Hannover, 23. März.

Nach einem vom Magistrat auf Vorschlag des Oberbürgermeisters Dr. Menge gefaßten Beschluß sind mehrere hervorragende Plätze umbenannt worden. Der Platz vor der Stadthalle, der [illegible], wird jetzt Adolf-Hitler-Platz heißen. Der Fischerplatz, das Verkehrszentrum im Norden der Stadt, heißt fortan Hugenberg-Platz. Der Platz am Neuen Hause erhält, nach dem hannoverschen Bürger, General von Emmich, dem Eroberer von Lüttich, den Namen Emmich-Platz und der Platz beim Opernhause bekommt statt des Namens Rathenauplatz seine alte historische Bezeichnung Theaterplatz zurück.

Erfolgreiche Polizeiaktion gegen Marxisten

Augsburg, 23. März.

In der letzten Nacht wurden in Augsburg 21 Personen in Schutzhaft genommen. Es handelt sich dabei u. a. um den Vorsitzenden der sozialdemokratischen Rathausfraktion und Gewerkschaftssekretär Karl Wernthaler, einen Freund des früheren Berliner Polizeipräsidenten Grzesinski, ferner um den leitenden Direktor des Kaufhauses Gebr. Landauer A.-G. Augsburg-Stuttgart, Max Gift, und um die Rechtsanwälte Ludwig Strauß, Dr. Neumark und Oberbrunner. Ferner wurden der zweite Redakteur der sozialdemokratischen „Schwäbischen Volkszeitung", Nikolaus Schiele, und der Chef des künstlerischen Büros des Stadttheaters Augsburg, Kora, verhaftet. Außerdem wurden mehrere Kommunistenführer aus dem Stadtteil Oberhausen ins Gefängnis eingeliefert. Der zweite sozialdemokratische Augsburger Bürgermeister Ackermann ist jetzt vom Staate wegen endgültig beurlaubt worden.

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Köln, 23. März.

Bei der Durchsuchung eines Hauses in Köln-Kalk, das überwiegend von Kommunisten bewohnt wird, wurde eine Anzahl Revolver nebst Munition sowie kommunistisches Schriftenmaterial gefunden. Vier Personen wurden verhaftet. Weiter wurden noch vier Kommunisten wegen Verteilung verbotener kommunistischer Druckschriften in Haft genommen. Eine Person wurde wegen widerrechtlichen Tragens einer S.A.-Uniform und verbotenen Waffenbesitzes festgenommen, ebenso ein polnischer Landarbeiter, der sich aktiv kommunistisch betätigt hat.

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Emden, 23. März.

Die Polizei hat den seit längerer Zeit gesuchten Emdener Kommunistenführer und Bürgervorsteher Gustav Wendt in seiner Wohnung überrascht und festgenommen. Zehn Kommunistenführer und Funktionäre, unter ihnen die Bürgervorsteher Jean de Vries und Wendt, werden mit einem Sammeltransport nach Berlin gebracht werden. Sie sollen in einem Konzentrationslager Aufnahme finden.

Der Truppenübungsplatz Heuberg Konzentrationslager

Stuttgart, 23. März.

In den letzten Tagen ist auf dem Truppenübungsplatz Heuberg ein geschlossenes Konzentrationslager für politische Schutzhäftlinge in Betrieb genommen worden. Das Lager vermag etwa 1500 Gefangene aufzunehmen. Die Gefangenen werden zu geeigneter Arbeit herangezogen. Sie können in beschränktem Umfange Post empfangen und absenden. Die Post unterliegt einer polizeilichen Kontrolle. Besuche sind bis auf weiteres nicht gestattet. Das Lager untersteht der Aufsicht des Landeskriminal-Polizeiamtes.

Zuchthausstrafen für kommunistische Eisenbahnattentäter

Danzig, 23. März.

Wegen vorsätzlicher Gefährdung eines Eisenbahnzuges wurden am Donnerstag von der Großen Strafkammer der Stadt Danzig die beiden kommunistischen Landarbeiter Albert Reich und Felix Omland aus [illegible] im Kreise Danziger Niederung zu je zwei Jahren Zuchthaus verurteilt. Sie hatten vor einem Extrazug, der mit 400 Nationalsozialisten belegt war und aus 20 Waggons bestand, der zu einer Veranstaltung der N.S.D.A.P. von Danzig nach Stutthof im Kreise Danziger Niederung fuhr, einen Stein im Umfange von einem halben Meter auf die Schienen gelegt. Nur einem Zufall war es zu verdanken, daß der Zug nicht entgleiste und rechtzeitig zum halten gebracht werden konnte. Das Gericht ging noch über den Antrag des Staatsanwaltes, der je ein Jahr Zuchthaus beantragt hatte, hinaus, weil die Beweggründe zur Tat rein politischer Art gewesen seien.

Marxisten-Auskehr in München

München, 23. März.

Der kommissarische erste Bürgermeister der Stadt München hat verfügt, daß mit sofortiger Wirkung den sozialdemokratischen Stadtratsmitgliedern die bisherigen Verwaltungsbereiche entzogen werden. Den kommunistischen Stadtratsmitgliedern waren keine zugeteilt worden.

Professor Lüning verhaftet

Braunschweig, 23. März.

Die Hilfspolizei hat eine marxistische Geheimdruckerei ausgehoben und wichtiges Aktenmaterial sichergestellt. Aufgrund dieses Materials wurde bei dem Professor der Technischen Hochschule, Dr. Lüning, eine Haussuchung vorgenommen. Bei ihm, der Mitglied der verbotenen Deutschen Friedensgesellschaft ist, wurde Material über die Reichswehr gefunden, das den Verdacht des Landesverrats aufkommen läßt. Professor Lüning wurde in Schutzhaft genommen. Außerdem wurde der Chefzahnarzt der O.K. Braunschweig, Dr. Levi, genannt [illegible], verhaftet.

In Kürze

Schwarz-weiß-rote Kokarde für die Postbeamten. Berlin, 23. März. Der Reichspostminister hat angeordnet, daß an den Dienstmützen der Postbeamten anstelle des bisherigen Abzeichens die schwarz-weiß-rote Reichskokarde anzubringen ist.

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Landesverband Ostpreußen der D.V.P. aufgelöst. Königsberg, 23. März. Der Landesverband Ostpreußen der Deutschen Volks-Partei hat beschlossen, den Landesverband aufzulösen.

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Kommunistische Flugblätter in den Räumen einer jüdischen Loge. Allenstein, 23. März. Bei einer Haussuchung in den Räumen der hiesigen jüdischen Loge wurden kommunistische Flugblätter und vierzehn Patronen gefunden. Daraufhin ist die Schließung der Loge veranlaßt worden.

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Hamburger K.P.D.-Funktionär sollte Sprengstoff-Diebstähle organisieren. Flensburg, 23. März. Nach einer Mitteilung der Pressestelle der Regierung in Schleswig ist es gelungen, in Flensburg einen schon lange gesuchten Hamburger K.P.D.-Funktionär festzunehmen, der als Kurier zwischen der illegalen Bezirksleitung der K.P.D. in Hamburg und aktiven Gruppen in der Provinz Schleswig-Holstein Verwendung fand. Der Kommunist hatte u. a. den Auftrag, einen großen Sprengstoffdiebstahl in der Provinz zu organisieren.

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Wienbeck Reichskommissar für Handel und Gewerbe. Berlin, 23. März. Der deutschnationale Reichstagsabgeordnete Wienbeck ist zum Reichskommissar für Handel und Gewerbe ernannt worden. Er übernimmt dabei das Amt eines Ministerialdirektors im Preußischen Ministerium für Wirtschaft und Arbeit.

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Austritt der Gewerkschaft deutscher Eisenbahner aus dem Deutschen Beamtenbund. Berlin, 23. März. Die Gewerkschaft deutscher Eisenbahner e.V. teilt mit, daß sie aus dem Deutschen Beamtenbund ausgetreten sei, da sie seit Jahr und Tag immer wieder Veranlassung gehabt hat, mit der Politik des Deutschen Beamtenbundes unzufrieden zu sein. Namentlich, nachdem der Deutsche Beamtenbund in der letzten Zeit einer immer größeren Passivität verfiel und sich als unfähig erwiesen hat, sich der Entwicklung anzupassen.

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Generaldirektor Lehmann vom Hauptverband Deutscher Krankenkassen verhaftet. Berlin, 23. März. Generaldirektor Lehmann vom Hauptverband Deutscher Krankenkassen E.V. wurde in Schutzhaft genommen. Generaldirektor Lehmann ist Mitglied der S.P.D.

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Englische Kolonialgebiete für Italien? Paris, 23. März. Der Sonderberichterstatter des „Echo de Paris" meldet auf Grund einer Information aus guter Quelle aus London, Mussolini und MacDonald hätten sich geeinigt, daß England an Italien gewisse Gebiete in Ostafrika, und zwar von Kenya und Tanganjika abtreten werde. Diese Maßnahme sei eine Ergänzung der Gebietsabtretung, die die englische Regierung vor einigen Jahren der italienischen Regierung zugestanden hatte.

Letzte Sportnachrichten

„Alle Kraft der nationalen Erhebung"

Eine Entschließung der Deutschen Turnerschaft.

Der Vorstand der Deutschen Turnerschaft hat in seiner gestrigen Sitzung folgende Entschließung gefaßt:

Der Vorstand der Deutschen Turnerschaft begrüßt aus vollem Herzen die Welle der nationalen Erhebung, die zur Zeit durch das deutsche Volk hindurchgeht. Wenn je ein Volk in der Geschichte, so hat das deutsche es in der Gegenwart nötig, sich auf die eigene Kraft zu besinnen und mit Würde und Stolz die Werte zu betonen, die aus dem deutschen Volkstum im Laufe der Jahrtausende sich ergeben haben.

Seit ihrer Gründung ist es Aufgabe der Deutschen Turnerschaft gewesen, dem ganzen deutschen Volk und dem Vaterlande zu dienen. Die Pflege deutschen Volksbewußtseins und vaterländischer Gesinnung ist die Grundlage ihrer Arbeit und daher auch in der Satzung der Deutschen Turnerschaft verankert. Jederzeit hat die Deutsche Turnerschaft auf der Grundlage nationaler und sozialer Gesinnung gearbeitet nach dem Umsturz des November 1918, auch um den Preis zahlreicher Absplitterungen, persönlicher Bedrückungen und behördlicher Bekämpfung aus politischen Gründen.

Aus diesem Geist heraus fordert der Vorstand der Deutschen Turnerschaft alle Vereine der Deutschen Turnerschaft auf, sich mit aller Kraft der nationalen Erhebung des deutschen Volkes und ihren Führern zur Verfügung zu stellen.

Die Berliner Straßenrennen beginnen

Überaus zahlreiche Nennungen. — Eisschnelläufer Barwa am Start.

Eigentlich haben die Radsportverbände bereits mit ihren Querfeldein-Meisterschaften die diesjährige Rennzeit eröffnet, aber die ersten reinen Straßenrennen gelangen doch erst am Sonntag zum Austrag. Sie weisen, sowohl beim B.D.R., wie bei der D.R.U. so überraschend gute Meldezahlen auf, daß es keinem Zweifel unterliegt, daß der Radrennsport, obwohl seine Ausübung mit mancherlei Kosten verbunden ist, immer noch eine große Zugkraft ausübt.

Der Gau Berlin des B.D.R. kann eine Starterliste vorzeigen, die weit über 300 Namen aufweist. Besonders interessant ist sein Werberennen, an dem sich nur Nichtbundesmitglieder beteiligen können. Rund 140 zukünftige Rennfahrer haben sich einschreiben lassen, darunter der Eisläufer Barwa, auf dessen Rennfahrerdebut man gespannt sein darf. Die zwanzig besten Leute erhalten für dieses Jahr kostenlos die Bundesmitgliedskarte. Gestartet wird auf der Falkenhagener Chaussee in Spandau, Wendepunkt ist Fehrbellin, das Ziel befindet sich auf der Schönwalder Chaussee bei Schwanenkrug. Die Strecke ist rund 100 Kilometer lang.

Die Teilnehmer des Wettbewerbs für Bundesmitglieder sind durchweg Fahrer, die im Vorjahre nicht das Glück (vielleicht auch nicht das Können) hatten, es auf einen ersten bis zwanzigsten Platz zu bringen. Auch sie starten in Gruppen, und zwar verläßt die erste morgens 7 Uhr den Start. Ein genauer Maßstab über die Fähigkeiten der Teilnehmer ist kaum vorhanden, bei diesen ersten Wettbewerben der Rennzeit ist meist mit Überraschungen zu rechnen. Das Ziel bei Schwanenkrug dürfte kurz vor 10 Uhr von der Spitzengruppe erreicht werden.

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Am entgegengesetzten Ende der Reichshauptstadt, in Weißensee (ab 7.30 Uhr) läßt die Ortsgruppe Berlin der D.R.U. ihre Fahrer starten. Diese erste diesjährige Berliner Unionsfahrt geht über 110 Kilometer nach Freienwalde, Eberswalde, Werneuchen und zurück nach Weißensee. Mit fast 200 Teilnehmern ist auch hier das Meldeergebnis überraschend gut.

Der interessante Wettbewerb wird mit Vorgaben bestritten, die von der R.D.R.V. erst jetzt neu festgesetzt worden sind. Hierbei haben vor allem die A- und B-Fahrer eine schwierige Aufgabe zu erfüllen, da sie 17, bzw. 14 Minuten aufholen müssen. Bei den Altersfahrern über 40 Jahren sind Säger, v. Bronikowski und Gräben nicht ohne Aussichten. Bei den 35—40jährigen ist die Teilnahme des einst sehr erfolgreichen Amateurs Preuß von Interesse. Dann folgen die „Anfänger" und ein großer Trupp (75 Mann) C-Fahrer.

Die B- und A-Gruppe wird von Anfang an scharf aufs Tempo drücken müssen, wenn sie alle Vorgabeleute einholen will. Als aussichtsreiche Vertreter der Malgruppe seien der Querfeldeinmeister Gruhn, Kolbe, Jänicke, Bretzke, Radde, Wiemer, Lucas, Schneider, Säuberlich, Blank und Pülchel genannt. Bei den mit drei Minuten Vorgabe startenden B-Fahrern ist mit dem jungen Hulske, mit Seibel, König, Jablonski, Haar und Ruh zu rechnen. — Mutmaßliche Ankunft auf der Falkenberger Chaussee hinter Weißensee 11 Uhr.

Gert.

Der „P-Wagen" fährt 280 Stundenkilometer

Der neue deutsche Rennwagen von Dr. Porsche.

Noch vor Beginn des Sommers wird der schon lange erwartete neue deutsche Rennwagen herauskommen. Dr. Porsche, der geniale Schöpfer hochwertiger Qualitätswagen wie beispielsweise des Mercedes-Benz „S.S.K." hat im Auftrage der Hochleistungs-Wagenbau-Gesellschaft einen neuen Rennwagen konstruiert, der gegenwärtig bei Horch in Zwickau gebaut wird und schon im Mai fertig sein soll. Der internationale Ruf, der Dr. Porsche vorausgeht, läßt erwarten, daß der neue „P-Wagen" ein Schlager ersten Ranges sein wird. Es handelt sich bei dieser Neukonstruktion um einen einsitzigen Rennwagen von 16 Zylindern mit mehr als 3 Liter Zylinderinhalt. Der Motor, der bei den Zündapp-Werken gebaut wurde, hat Doppelkompressor und soll eine Spitzengeschwindigkeit von etwa 280 Stundenkilometern entwickeln.

Auch eine Rennmannschaft ist schon beisammen, an der Spitze der internationale Bergmeister Hans Stuck. Ferner sind verpflichtet der bekannte Rennfahrer Hermann Prinz zu Leiningen und Caracciolas alter Mitfahrer Sebastian.

Sport-Allerlei

Die erfolgreichsten Winterbahnfahrer waren in der Saison 1932/33 bei den Dauerfahrern der Franzose Lacquehay mit 10 Siegen vor den beiden deutschen Spitzenfahrern Möller und Sawall, und in den 19 Sechstagerennen schnitt der lange Kanadier Peden mit sechs Siegen am besten ab. Ihm folgt der Holländer Pijnenburg mit vier und der Wiesbadener Schön mit drei Siegen. Je zwei erste Plätze belegten MacNamara, Rudo, Broccardo, Richli, Letourneur, Debaets.

135 Achter-Mannschaften haben zum diesjährigen Head of the River am 25. März gemeldet. Es starten 23 Boote im ersten, 55 im zweiten und 57 im Gig-Achter. London und Thames R.C. werden mit je neun Mannschaften vertreten sein.

THEATER UND VERGNÜGUNGEN.

Staatsoper Unter den Linden — Freitag, d. 24. III. 176. A. V. 20 — 22½ Uhr — Leitg.: Dr. Rich. Strauß — **Idomeneo** — Heidersbach, Perras, Kunstad, Helgers

Schauspielhaus Am Gendarmenmarkt — Freitag, d. 24. III. 176. A. V. 20 — nach 22½ Uhr — **Rosse** — Franck, Körber, Bildt, Leibelt, Granach, Koppenhöfer

Städtische Oper Charlottenbg. Bismarckstraße 34 — C 0 Fraunhofer 0031 — Tucum 19 20 Uhr — Freitag, den 24. März — **Friedemann Bach** (Wohltätigkeitsveranstaltung) — Salvatini a. G. v. Schirach, Friedrich, Ludwig, Hüsch, Baumann, Gombert, Guenter — Dirigent: Hans Udo Müller

DEUTSCHES THEATER Schumannstr. 13a, D 2 Weidendamm 5116 — Täglich 8¼ Uhr — **Das große Welttheater** von Hugo von Hoffmannsthal — Regie: Max Reinhardt — Preise von 0,50 bis 12,00 M.

Großes Schauspielhaus — Rolf Barlow 8 Uhr — Jelly Staffel — Oskar Denes — **Ball im Savoy** — Große Operette v. Paul Abraham — Viktor de Kowa — Trude Berliner, Schröder

Komödienhaus. Schiffbauerdamm 25 — Tägl. 8¼ — D 2 Weidend. 6004/05 — Letzte Vorstellungen! — **Achtung! Feisch gestrichen!** — „Entzückende Aufführung .. Lauter Beifall" (Nachtausgabe)

Schiller-Theater Bismarckstr. - Am Knie - 8¼ Uhr — Letzte Vorstellungen — **Louis Graveure** singt in **„La Vallière"** — Tel.: Steinpl. C 1 8718

Metropol-Theater Tägl. 8¼ — A 1 Jäger 2393 — Letzte 4 Vorstellg. — **Trude Hesterberg** in Eine Frau, die weiss was sie will — ab 30. März „Die Lindenwirtin" — Sonntag 3 Uhr: Land des Lächelns

Winter Garten — 8 Uhr 16, Flora 3434, Rauchen erlaubt — Dinah Grace — Marcelle & Kadasy — 19 Damen an Ebonrädern — Oscar's Eislamien-Revue — Die Barracetta's u.s.w. — Sonnabend und Sonntag auch 4 Uhr zu kleinen Preisen

SCALA — Tägl. 5 u. 8¼ U. Barbarossa 0256 — Die letzten Tage des sensationellen Gastspiels



Hanussen und des großen März-Programmes — LARGE-MORGNER — MAX GRUBER — BEN OMAR — 2 HUGOS — ADOLF GONDRELL u. s. w.

PLAZA Nähe Schles. Bhf. — 5 u. 8.15 Sbds. 2, 5, 8.15 — Tel. E 7 Weichsel 4031 — Das Hollandweibchen

Renaissance-Th. 8¼ — U-Bhf. Knie — C 1, Steinplatz 6780 — Nur noch kurze Zeit! — Das erfolgreichste Lustspiel der Saison — **Ida Wüst** — Mutter muß heiraten — Henckels, Krahn, Hellberg, v. Porembsky — Auch Sonntags 4½ zu kleinen Preisen

Deutsches Künstlertheater — 8¼ Uhr — Barb. 0403 — Nur noch bis Sonntag — **Automatenbüfett** — Musik von E. Emcyner — Agnes Straub — J. Eisbrenna, Gellinger, Görmann

ROSE-THEATER Gr. Frankfurter Straße 132 — U-B. Strausb. Pl. E 7 Weichsel 3422 — 8¼ Uhr — **Hoheit tanzt Walzer** — Und immer wieder ins Rose-Theater, am besten als Abonnent. Beitritt jetzt besonders günstig. — Feste Stammsitze. Freies Programm und Garderobe — Preise: Von RM. 0.30 bis RM. 1.75

Komödie Kurfürstendamm 206/207 — Bismarck 6779/80 — Täglich 8¼ Uhr — **„Für geleistete Dienste"** — Haack, Richard Evers, Unda, Rainer, Hellmann, Loos, Pointner, Sattner, Schroth, Stössel, Wiemann



DIE FRAU IN FAMILIE, HAUS UND BERUF — **AUSSTELLUNG** — BERLIN 1933 · 18. 3.–23. 4. — AUSSTELLUNGSGELÄNDE AM FUNKTURM

Die Frau im deutschen Volk • Die Frau als Gattin und Mutter • Die Frau im Haushalt und Heim • Kleidung und Mode • 150 Jahre Mode • Ernährung • Ausstellung der Frauenverbände • Täglich Veranstaltungen

Geöffnet tägl. von 9 bis 20 Uhr — Eintritt RM 1.-, Jugendl. 0.50

Beim Kauf von Eintrittskarten an den Schaltern der U-Bahn, der Stadt- u. Ringbahn (Nahzone), bei den Schaffnern der Straßenbahnlinien 58, 72, 75 u. 93 sowie des Autobus A 7 wird freie Hinfahrt gewährt.

Theater in der Stresemannstrasse — Bergmann 2131 — Täglich 8¼ — **Konflikt** von Max Alsberg — mit Albert u. Else Bassermann, Tilla Durieux, Paul Morgan, Jakob Tiedtke

Theater in der Behrenstraße — 8¼ **Ralph A. Roberts** — **Fabian der Elefant** — Kom. in 3 Akten von Leo Lenz — Aus der Presse: .. Die feine Komik von Roberts erspielt einen Riesenerfolg .... ein neuer 100%iger Roberts usw.

Kurfürstendamm-Theater — Das Theater ohne Bauwirtschaft — Tel.: J 1 Bismarck 1400 Täglich 8.15 Uhr — Zum 124. Male — **Glückliche Reise** — Operette von Eduard Künneke — Preise von 0.60 RM. bis 6.– RM.

RIORITA — Tauentzienstrasse 12 — INTIME BAR — Die beste Musik — Berliner Nachtleben — nur dort! — Schönste Tanzstätte

CIRO bar restaurant Mustafa — Rankestrasse 31

Bu Bu Bu „Bendows Bunte Bühne" Kottbusser Straße 6 — „Heinrich, mir graut vor Dir!" Faust 7. Teil — Wilhelm Bendow, Lotte Werkmeister, Baby Gray, Carl Carstens

Stettiner Sänger — Reichshallen-Theater — Dir. Meysel — Dönhoffpl. — Im Wald und auf der Heide — Pr. 50 Pfg. b. 2,25 RM. — Vorv. 11-2 u. 5-9 Uhr

Verlangt in allen Gaststätten den **„Völkischen Beobachter"**

Infolge technischer Schwierigkeiten muß der Termin für die Uraufführung **Blutendes Deutschland** verlegt werden

Otto Gebühr — **Der Choral von Leuthen** — REGIE: CARL FROELICH — im Vorprogramm — Ufa-Sinfonie-Orchester — Leitung: Dr. H. Tielerfelden — Täglich 6³⁰ 9⁰ — Sonnabend, Sonntag auch 4⁰⁰ — Jugendliche haben Zutritt — **Ufa-Palast am Zoo** — Vorverkauf Theaterkasse (Barbarossa 8771) u. Wertheim

Hausball der Städtischen Oper — Sonnabend, den 25. März 1933 — Einlaß 22½ (10½) Uhr Beginn 23 (11) Uhr — zugunsten der Unterstützungskassen

Nacht-Vorstellung mit anschließendem Tanz in sämtlichen Foyers und angrenzenden Festsälen

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Spannung auf Spannung. Vision auf Vision jagt an den Augen vorüber... (VÖLKISCHER BEOBACHTER)

ICH BIN EIN ENTFLOHENER KETTENSTRÄFLING

... Selten ist eine schwierige Rolle so gemeistert worden, wie dies Paul Muni gelang ... (NACHTAUSGABE 18. 3.)

... Ein wilder, aus der Kamera herausgeschossener Reißer ... Virtuose Technik. Klare, unverschleiert scharfe Darstellung .. (B. Z. AM MITTAG 18. 3.)

... die zu einer Kette der tollsten Sensationen werden, bei deren filmischer Wiedergabe den Zuschauern vor Aufregung der Atem stockt ... (DER MONTAG 20. 3.)

... sehr gut und sehr menschlich gemacht. Daher bekommt der Film seinen echten Atem, Spannung und Beteiligung ... (DEUTSCHE ALLGEM. ZTG. 18. 3.)

... Der Film fesselte ungemein und wurde mit stürmischem Beifall empfangen. (BERLINER TAGEBLATT 18. 3.)

MOZARTSAAL AM NOLLENDORFPLATZ — 2. Woche — TÄGLICH 5⁰⁰ 7⁰⁰ 9¹⁵ — Vorverkauf 11—2 und ab 4 Uhr

Bombenprogramm — Felicia Mon · Geo Eschenbach — Conny Magdanz · Hans Köhler — und die billigen Preise — in der lustigen **Greifi-Bar** — Joachimsthaler Straße 41

CIRCUS BUSCH — Die tolle Wasser-Posse — **Husch, Husch zu Busch** — Täglich 8¼ Uhr. Nachm. halbe Preise

9³⁰ Frühlings-Programm — **Katakombe** — Lutherstraße 22 im Hause der „Scala" — Vorverkauf ab 12 Uhr

EUROPA-PAVILLON — Zum Tanz ab 15. März — **Adalbert Lutter** — nachmittags und abends — Bruno Wiesner / Jean und Jane / Peter Kaule / Ilo und Matra / Valentine Alleel / Lo und Jerome / Eric Loo und Will / Dela Peiras / Raja und Ranjo / Sise Braff — 4 Uhr Tanz 1.- Mk.

Planetarium am Zoo — Täglich außer Montags, um 3, 5, 7, 9 Uhr — **Abenteuer im Engadin** — Vorprogramm: „Frühling im Kalender" — „Glühende Ströme"

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Ein deutsches Fabrikat! — Verlangen Sie Angebot mit günstigen Zahlungsbedingungen durch die Generalvertretung — Carl E. Halbarth, Inh.: Ernst Fuhrmann, Berlin W 8, Mauerstraße 80—83 — Verkaufslokal: Friedrichstr. 50—59 — Telephon A 3 Flora 6656

Wir suchen zum 1. April d. Jahres für neue Zweigstellen innerhalb Groß-Berlins erfahrene, zuverlässige und gewissenhafte Frauen zum Austragen unserer Morgen- und Abendzeitungen.

Nur kurze **schriftliche** Angebote von solchen Kräften erbeten, die gleiche oder ähnliche Tätigkeit bereits ausgeübt haben.

N.S.-Zeitungs-Vertrieb — Filial-Verwaltung — SW 48, Wilhelmstraße 106

ACHTUNG! WERBER! — Für alle Bezirke Groß-Berlins werden noch **tüchtige Werber(innen)** für unsere Zeitungen **Völkischer Beobachter** und **Der Angriff** sofort **gesucht.** — Tüchtige Kräfte finden dauernd Beschäftigung. Meldungen von 10—5 Uhr im Verlag des „Angriff", Wilhelmstr. 106, erbeten

Druckerei-Fachmann als tätiger Teilhaber mit RM. ... Einlage für gutgehende Druckerei gesucht. Angebote unter J. R. 4817 an den V. B. Berlin SW 68, Zimmerstraße 88

Chemisch-technischer Massenkonsumartikel, glänzend begutachtet, soll eingeführt werden. Kapitalkräftiger Geschäftsmann zum Generalvertrieb gesucht. ...

4½ Zimmer am Meraner Platz 1 und Badensche Str. 8 zum 1. April zu vermieten — Auskunft: dortselbst oder A 6 Merkur 4041



Neuheit — Couch mit 3 losen Kissen und Bettkasten — 118.- — **Freiwald**

1933 should not happen again.

In this context not to forget:

The term "Sportpalast Speech" refers to the address delivered by the National Socialist Reich Minister of Propaganda, Joseph Goebbels, on February 18, 1943, at the Berlin Sportpalast, in which he called for the intensification of "total war" following the defeat at Stalingrad. Lasting just under 108 minutes, the speech is considered a prime example of rhetoric. The audience of ten thousand was hand-picked from among the party's most loyal supporters.

This speech is renowned for the questions—cheered on with fanaticism—regarding "total war" and full support for Hitler.

3.2 First Newspaper after Takeover of Power by the US Army (April 1945) ►

The *Hersfelder Nachrichten* within a Military Government Gazette prove life was going on still after the allies conquered Bad Hersfeld 6 days before:

MILITARY GOVERNMENT GAZETTE - GERMANY

Amtsblatt der Militär-Regierung Deutschland für die Landkreise Hersfeld-Rotenburg

Hersfeld — Freitag, den 5. April 1946 — Nr. 49

Anordnung 9/46

Schuhbewirtschaftung

Der außerordentlich große Bedarf an Schuhwaren bedingt vorübergehend eine besonders strenge Lenkung der in Großhessen vorhandenen und künftig dort anfallenden Bestände.

Auf Grund der Verordnung über wirtschaftliche Lenkungsmaßnahmen des Großhessischen Staatsministeriums vom 18. 12. 45 ordne ich daher folgendes an:

§ 1

Die Fabrikanten reichen dem Landeswirtschaftsamt für Großhessen, Wiesbaden, zusammen mit der am 20. eines jeden Monats fälligen Produktionsmeldung eine Aufstellung über die im vergangenen Monat fertiggestellte und im laufenden Monat zu erwartende Produktion, aufgeteilt nach den folgenden Schuharten, in zweifacher Ausfertigung ein:

Männerstraßenschuhe
Frauenstraßenschuhe
Kinderstraßenschuhe
Leichte Straßenschuhe für Männer
Leichte Straßenschuhe für Frauen
Leichte Straßenschuhe für Kinder
Arbeitsschuhe mit Ledersohle für Männer
Arbeitsschuhe mit Ledersohle für Frauen
Arbeitsschuhe mit Gummisohle für Männer
Arbeitsschuhe mit Gummisohle für Frauen
Arbeitsholzschuhe
Hausschuhe

§ 2

Die am 1. 4. 46 bei Fabrikanten und Großhändlern vorhandenen Lagerbestände und die zukünftige Produktion dürfen von diesem Tage an nur noch gegen die von dem Landeswirtschaftsamt für Großhessen, Wiesbaden, ausgegebenen Bestellscheine verkauft und gekauft werden.

§ 3

Die bisher von dem Landeswirtschaftsamt für Großhessen, Wiesbaden, den Bezirkswirtschaftsstellen Kassel, Wiesbaden und Darmstadt und den Wirtschaftsämtern ausgegebenen Ueberbrückungsscheine und Wiederbezugsberechtigungsscheine treten am 1. 4. 46 außer Kraft, gleichgültig, ob sie sich in Händen des Groß- und Einzelhandels oder der Fabrikanten befinden.

§ 4

Sämtliche bisher im Umlauf befindlichen Bezugsmarken und Bezugsscheine für die in § 1 genannten Schuharten der Letztverbraucher verlieren am 1. 4. 46 ihre Gültigkeit.

Die Belieferung der Schuhabschnitte auf den Kinderkleiderkarten ist ab 1. 4. 46 unstatthaft.

§ 5

Neue Bezugsmarken werden auf Antrag von den Wirtschaftsämtern an die Letztverbraucher ausgegeben.

§ 6

An den Letztverbraucher dürfen Schuhe nur gegen gleichzeitige Entgegennahme von Bezugsmarken verkauft und von diesem nur gegen gleichzeitige Abgabe von Bezugsmarken erworben werden.

§ 7

An den Groß- und Einzelhandel dürfen Schuhe nur gegen gleichzeitige Entgegennahme von Bestellscheinen verkauft und von diesen nur gegen gleichzeitige Abgabe von Bestellscheinen erworben werden, es sei denn, es liegt eine besondere Anweisung des Landeswirtschaftsamtes für Großhessen, Wiesbaden, vor.

§ 8

Die Einzelhändler rechnen ihre von den Letztverbrauchern eingenommenen Bezugsmarken spätestens am 5. eines jeden Monats auf dem bei dem Wirtschaftsamt erhältlichen „Bezugsmarkennachweis für Schuhwaren" bei dem für sie zuständigen Wirtschaftsamt ab und beantragen die Ausgabe von Bestellscheinen auf dem ebenfalls bei dem Wirtschaftsamt zu erhaltenden „Antrag auf Zuteilung von Bestellscheinen".

Im Rahmen der Produktion und unter Berücksichtigung der abgerechneten Bezugsmarken erhalten die Einzelhändler Bestellscheine, die zum Wiederbezug bei Fabrikanten und Großhändler berechtigen.

§ 9

Die Großhändler rechnen die eingenommenen Bestellscheine bis zum 5. eines jeden Monats auf dem „Bezugsmarken-Nachweis für Schuhwaren" bei ihrem zuständigen Wirtschaftsamt ab und beantragen gleichzeitig die Ausgabe von Bestellscheinen auf dem „Antrag auf Zuteilung von Bestellscheinen".

Im Rahmen der Produktion und unter Zugrundelegung der abgerechneten Bestellscheine erhalten die Großhändler Bestellscheine zurück, die zum Wiederbezug bei den Fabrikanten berechtigen.

§ 10

Die in Großhessen hergestellten Schuhwaren dürfen nur innerhalb Großhessens verkauft werden.

Eine Lieferung nach Gebieten außerhalb Großhessens ist nur mit Genehmigung des Landeswirtschaftsamtes für Großhessen, Wiesbaden, zulässig.

§ 11

Jeder Groß- und Einzelhändler, der seinen Sitz in Großhessen hat und von dem Landeswirtschaftsamt für Großhessen, Wiesbaden, ausgestellte Bestellscheine vorlegt, ist im Rahmen der Produktion zu beliefern.

§ 12

Zuwiderhandlungen gegen die Anordnung werden gemäß §§ 7—9 der Verordnung über wirtschaftliche Lenkungsmaßnahmen des Großhessischen Staatsministeriums vom 18. 12. 45 und der Verbrauchsregelungsstrafverordnung in der Fassung vom 26. 11. 41 (RGBl. I S. 734) bestraft.

§ 13

Die Anordnung tritt am 1. 4. 1946 in Kraft.

Wiesbaden, den 6. März 1946.

Das Landeswirtschaftsamt für Großhessen
gez. Kassner, Präsident.

Bekanntmachungen der Militär-Regierung

Während der Wintermonate haben die amerikanischen Truppen auf die Durchführung der Anordnung Nr. 4 der Militär-Regierung „Verbot des Tragens deutscher Uniformstücke" nicht scharf geachtet. Bei dem Herannahen der wärmeren Jahreszeit wird die Anordnung Nr. 4 strikt durchgeführt werden. In Zukunft müssen alle deutschen Uniformteile gefärbt oder umgearbeitet werden, so daß sie nicht ohne weiteres als Uniform erkennbar sind.

Es wird erneut darauf hingewiesen, daß der Artikel 3 des Militär-Regierungsgesetzes Nr. 1 über Besitz oder Tragen von amerikanischen Ausrüstungsteilen oder Uniformen mit allem Nachdruck in Kraft gesetzt wird. Danach ist es deutschen Zivilisten absolut verboten, Ausrüstungsgegenstände oder Uniformen bzw. Uniformteile der amerikanischen Armee zu tragen oder zu besitzen. Polizeistreifen werden stichprobenartige Feststellungen treffen, inwieweit diesem Befehl Folge geleistet wird oder nicht. Ausgenommen von diesem Befehl sind ausschließl. zwangsverschleppte Personen, wenn die Uniformteile und Gegenstände gefärbt sind. Zuwiderhandlungen werden strengstens bestraft.

Es ist deutschen Zivilisten grundsätzlich untersagt, Paßanträge zur Unterschrift in Kassel persönlich vorzulegen. Paßanträge müssen vom Heimatort auf dem Dienstwege nach Kassel geschickt und auf dem gleichen Wege zurückerwartet werden, so daß der unterschriebene Paß im Heimatort in Empfang zu nehmen ist.

Hersfeld, den 4. April 1946.

George S. Iredell, Capt. Cavalry, Mil. Gov. Officer, Commanding

Verlegung der Fulda am Peterstor

Weiterführung des Geislaufes in südlicher Richtung

Der Regierungspräsident in Kassel gibt bekannt:

Der Bürgermeister der Stadt Hersfeld hat beantragt, der Stadt Hersfeld gemäß den §§ 162—170 des Wassergesetzes vom 7. April 1913 (GS. S. 53) das Recht zur Durchführung des Ausbauverfahrens zur Regulierung der Fulda und Verlegung der Geismündung zu verleihen, und zwar:

1. die Verlegung der Fulda in die östliche Talmulde, ungefähr den jetzigen Haunelauf,
2. Vereinigung der Fulda und Haune etwa 100 Meter unterhalb der Eisenbahnbrücke,
3. Weiterführung der Geis in südlicher Richtung und Einmündung in die Fulda kurz unterhalb des Zusammenflusses von Fulda und Haune.

Der Ausbau des Flußlaufes soll für bordvolle Abführung des Sommerhochwassers erfolgen. Das mittlere Wasserspiegelgefälle im alten Flußlauf von der jetzigen Haunemündung bis zur Kreisbahnbrücke von 0,5‰ ist als Sohlengefälle dem neuen Durchstich zugrunde gelegt. Die Sohlenbreite ist zu 8 m gewählt, um eine nachteilige Senkung des Grundwasserstandes zu vermeiden und um Ablagerungen in der Sohle, die bei zu geringer Geschwindigkeit des Wassers entstehen, zu verhindern. Die Böschungsneigung ist zu 1:4 bis zum Mittelwasserspiegel, darüber zu 1:2 gewählt. Die maßgebenden Geschwindigkeiten sind zu 0,85 m bei Mittelwasser und zu 2,72 m als größte bei H.H.W. errechnet worden. Bei der Beschaffenheit des Bodens macht die Geschwindigkeit von 2,72 m umfangreiche Befestigungen der Sohle und Böschungen erforderlich. Die Sohle soll durchgehend mit Spreutlage von 15 cm Stärke bedeckt werden. Auf dem rechten, hohlen Ufer ist bis zur Höhe des Mittelwassers Steinstickung vorgesehen. Die Böschung des linken, erhabenen Ufers soll ebenfalls mit Spreutlage von 15 cm Stärke bis zum Mittelwasserspiegel befestigt werden.

Das Gelände zwischen der Fulda und der Hünfelder Landstraße soll als Baugelände hochwasserfrei eingedeicht werden. Der Deich ist in einem Abstande von 20 m von Uferkante angeordnet, das Gelände rechts bleibt uneingeschränkt für die Ausbreitung des höchsten Hochwassers zur Verfügung. Der Deich erhält zweifache Böschung landseitig, zwei m Kronenbreite und dreifache Böschung flußseitig. Die Deichkrone liegt i. M. 0,5 m über dem errechneten Hochwasserstand.

Wegeverbindung nach Bingartes

Die bestehende Wegeverbindung zur Domäne Bingartes wird durch den neuen Fuldalauf unterbrochen. Eine Wiederherstellung dieser Verbindung kann nicht in Frage kommen, weil eine Brücke über die Fulda ein Hindernis für den Hochwasserabfluß bilden und der Weg die Aufteilung und Bebauung des Geländes beeinträchtigen würde. Es ist deshalb vorgesehen, einen bestehenden Wiesenweg auf dem rechten Ufer der Fulda durch Verbreiterung und Befestigung als neuen Zufuhrweg herzustellen. Die Ueberführung dieses Weges über die Haune soll durch eine neu zu erbauende Holzbrücke von 12 m erfolgen. Mit Rücksicht auf die Hochwasserführung im Haunetal kann auch die neue Wegekrone nicht hochwasserfrei gelegt werden.

Die neue Zuwegung wird um etwa 500 m länger als die alte, bedeutet aber auch eine Verbesserung dadurch, daß die starke Steigung, welche jetzt bei der Auffahrt an sehr unübersichtlicher Stelle auf die Hünfelder Landstraße zu überwinden ist, wegfällt.

Die Regulierungsmaßnahmen machen eine Reihe von Aenderungen an bestehenden Wasserentnahmen, Wassereinleitungen und Gasserentnahmen notwendig. Die Abwässer- und Wasserleitungen notwendig. Die Abwässerleitungen werden durch Rohreinleitungen zu den neuen Flußläufen verlängert, ebenso werden die Wasserentnahmerechte durch Verlegen von Zementrohrleitungen aufrechterhalten.

Aus den durchgeführten Wasserberechnungen geht hervor, daß eine wesentliche Aenderung der Abflußverhältnisse bei H.H.W., insbesondere eine schnellere Abführung des Hochwassers, welche eine Gefährdung der Unterlieger herbeiführen könnte, nicht eintritt.

Die Verlegung der Fulda bedingt auch die Verlegung der Mündungsstrecke der Geis, d. h. die Weiterführung derselben in das neue Fuldabett.

Maßnahmen des Entwurfes

Der vorliegende Entwurf sieht nunmehr die Weiterführung der Geis in südlicher Richtung bis zu dem neuen Fuldalauf vor. Um allzu großen Geländeverlust zu vermeiden, der sich bei Herstellung eines geböschten Profiles und beiderseitiger Eindeichung ergibt, soll die Geis in Ufermauern eingefaßt werden. Die Sohle wird durch Steinstickung gesichert. Von Stat. 5+14 bis 5+40 kreuzt die neue Geis den alten Fuldalauf, dessen Sohle erheblich tiefer liegt als die neue Sohle der Geis. Die Ufermauern werden hier auf aufgeschütteten Kies gegründet; die Tragfähigkeit des Baugrundes muß g. F. durch einzurammende Pfähle erhöht werden. Die Strecke außerhalb des Hochwasserdeiches bleibt offenes Gerinne mit 6 m Sohlenbreite und zweifacher Böschung.

Vor der Geis im Abstande von etwa 50 m parallel laufende Mühlengeis dient bei großen Hochwässern als Entlastung der Geis und leitet das oberhalb der Eisenbahn auf dem rechten Ufer überfallende Wasser ab. Für den Bau der geplanten Unterführung der Hünfelder Landstraße unter der Eisenbahn hindurch bildet die Mühlengeis ein Hindernis. Dieses Bauwerk hat jedoch, wenigstens für die nahe Zukunft, keine Aussicht, ausgeführt zu werden. Da die Mühlengeis auf ihrer unteren Strecke auch noch Abwässer aufnimmt, würden im Falle ihrer Beseitigung andere Maßnahmen für die Hochwasserentlastung bzw. Vergrößerung der Hochwasserabführung der Geis sowie zur Abwässerableitung erforderlich.

Der Entwurf sieht die Herstellung eines Verbindungsgrabens unmittelbar oberhalb des Eisenbahndammes zwischen Geis und Mühlengeis mit einem Ueberfallwehr für eine Wasserführung von 8 bzw. 6 m³ vor.

Erläuterungen und Zeichnungen liegen während der Dienststunden im Geschäftszimmer des Bürgermeisters in Hersfeld zur Einsicht aus.

Widersprüche gegen den Ausbau sowie Ansprüche auf Herstellung und Unterhaltung von Einrichtungen (§ 165 des Wassergesetzes) oder auf Entschädigung, sind schriftlich in zwei Ausfertigungen beim Regierungspräsidenten in Kassel oder mündlich zu Protokoll bei dem Bürgermeister in Hersfeld unter Angabe des Aktenzeichens II/7 Nr. 7/46 anzubringen. Die Frist für die Erhebung von Widersprüchen beträgt 4 Wochen, beginnend mit dem Ablauf des Tages, an dem das letzte, diese Bekanntmachung enthaltende Blatt ausgegeben worden ist. Innerhalb dieser Frist muß der Widerspruch bei einer der genannten Stellen angebracht sein.

In dem Widerspruch ist genau anzugeben, auf welchen Rechtsgrund er sich stützt und auf welchen Teil des geplanten Ausbaus er sich beziehen soll.

Wer innerhalb der obigen Frist keinen Widerspruch gegen den beantragten Ausbau erhoben hat, verliert sein Widerspruchsrecht.

Nach Feststellung des Ausbauplanes können wegen nachteiliger Wirkung nur noch die in § 172 des Wassergesetzes bezeichneten Ansprüche geltend gemacht werden.

Die Kosten, die durch unbegründete Widersprüche entstehen, können demjenigen auferlegt werden, der sie erhoben hat. Die mündliche Erörterung der rechtzeitig erhobenen Widersprüche und Anträge wird später anberaumt werden. Dazu werden der Unternehmer und diejenigen, die Widersprüche oder Anträge erhoben haben, schriftlich geladen werden. Im Falle ihres Ausbleibens wird die Erörterung gleichwohl stattfinden.

Kassel, den 23. März 1946.

Der Regierungspräsident in Kassel
Im Auftrage: gez. Schücking.

Kreistagswahl im Kreise Rotenburg

Der Wahlausschuß für den Kreis Rotenburg (Fulda) setzt sich gem. § 3 der Wahlordnung zu Gesetz über die Kreistagswahl wie folgt zusammen:

Vorsitzender: der Landrat
Beisitzer:
Bürgermeister J. Windemuth, Weiterode (SPD)
Bürgermeister F. Zülch, Sterkelshausen (SPD)
Apotheker Karl Grimme, Rotenburg/F. (CDU)
Vorarb. Otto Zwillenberg, Rotenburg/F. (KPD).
Stellvertreter:
Treuhänder Jak. Heußner, Rotenburg/F. (SPD)
Fotograf Kaspar Lingelbach, Weiterode (SPD)
Berg-Ing. Ferd. Kern, Rotenburg/F., (CDU)
Maurer Georg Köhler, Rotenburg/F. (KPD).

Der Landrat: Waldmann.

Der Landrat gibt bekannt:

Großhändler müssen sich melden

Alle Großhändler haben sich umgehend auf Zimmer 13 des Landratsamtes zu melden. Mitzubringen sind alle Unterlagen, aus denen die Genehmigung des Betriebes hervorgeht.

Neue Anschrift für den Landforstmeister

Mit sofortiger Wirkung hat der bisherige Landforstmeister in Kassel folgende Bezeichnung und Anschrift: An den Herrn Landforstmeister, Bezirksforstamt Kassel, in Kassel-Wilhelmshöhe, Panoramaweg.

Meldung des Punktwertes der Warenbestände des Textil-, Groß- und Einzelhandels

Das Landeswirtschaftsamt für Großhessen benötigt dringend den Punktwert der z. Zt. vorhandenen Warenbestände an Textilwaren. Sämtliche Firmen des Textil-, Groß- und Einzelhandels — einschl. der Vertreter — werden hiermit ersucht, dem Kreiswirtschaftsamt Hersfeld bis spätestens zum 12. 4. 1946 den Gesamtpunktwert der am 1. April 1946 vorhandenen Bestände an Textilwaren in doppelter Ausfertigung zu melden.

Hersfeld, den 4. April 1946.

der k. Landrat: Euler.

Vorauszahlungen von Einkommen- und Körperschaftssteuern

I. Vorauszahlungstermine

Die Vorauszahlungstermine für Einkommen- und Körperschaftssteuervorauszahlungen sind nach dem Gesetz Nr. 12 des Alliierten Kontrollrates auf 10. April, 10. Juli, 10. Oktober und 10. Januar festgesetzt.

Die erste Vorauszahlung ist nach diesen neuen Bestimmungen am 10. April 1946 zu entrichten

II. Erhöhung der Vorauszahlungen

Die Steuersätze für Einkommensteuer und Körperschaftssteuer sind mit Wirkung vom 1. Januar 1946 erhöht worden. Die Erhöhungen ergeben sich aus dem Art. III und Art. IV des Gesetzes Nr. 12 des Alliierten Kontrollrats.

Die am 10. April 1946 fällige Einkommensteuervorauszahlung ist nach dem bisherigen Steuerbescheid zu entrichten. Sie ist um 35 Prozent zu erhöhen.

Für die Körperschaftssteuervorauszahlung gilt dasselbe mit dem Unterschied, daß die Erhöhung der Körperschaftssteuervorauszahlung sich nach der Höhe des körperschaftssteuerpflichtigen Einkommens richtet. (Vergl. Steuersätze im Artikel IV Abs. 1a bis d).

Die bereits am 10. März 1946 entrichteten Einkommen- und Körperschaftssteuervorauszahlungsbeträge sind auf die am 10. April 1946 fälligen Beträge anzurechnen.

III. Vierteljahreserklärung

Einkommen- und Körperschaftssteuerpflichtige, deren Einkommen im Vierteljahr 1000 RM. und mehr beträgt, müssen gleichzeitig mit der Vorauszahlung eine vierteljährliche Erklärung abgeben, in der sie angeben müssen, wie sie die Vorauszahlungen berechnet haben. Wegen der kurzen Zeitspanne zwischen Bekanntgabe der Kontrollratgesetze und dem ersten Abgabetermin (10. April 1946) sind Erklärungen vorläufig nicht abzugeben.

Von der Abgabe dieser Vierteljahreserklärung sind Einkommen- und Körperschaftssteuerpflichtige, deren Einkommen weniger als 1000 RM. beträgt, und nichtbuchführende Land- und Forstwirte nach Gesetz Nr. 12 befreit. Dies entbindet jedoch diese Personenkreise nicht von ihrer bisherigen Vorauszahlungspflicht.

Wiesbaden, den 28. März 1946.

Großhessisches Staatsministerium.

Der Minister der Finanzen: gez. Dr. Mattes.

Die Lebensmittelmengen in der 87. Zuteilungsperiode

Durchführung des Kartensystems vom 1. 4. bis 28. 4. 1946

Die Lebensmittelmengen, die in der 87. Zuteilungsperiode wöchentlich auf Kartengrundlage ausgegeben werden, sind aus der nachstehenden Aufstellung ersichtlich.

	0–1	1–3	3–6	6–10	10–18	Norm. Verbr.	W. u. st. Mß.	Teil-Schw.-Arb.	Schw.-Arb.	Sst.-Arb.
Nährmittel	500	150	150	150	150	150	750	200	500	500
Hülsenfrüchte	—	100	200	200	250	250	—	200	200	200
Kartoffeln	—	1250	3000	3000	3000	3000	500	500	1000	2000
Fett	100	100	100	100	100	100	100	50	100	150
Zucker	312,5	62,5	31,5	0	—	—	31,5	—	—	—
Marmelade	—	—	—	—	—	—	62,5	—	—	—
Fleisch	—	50	100	300	300	200	200	100	200	300
Käse	—	—	31,5	62,5	62,5	46,8	125	—	31,5	62,5
Quark	31,5	31,5	31,5	31,5	31,5	31,5	62,5	—	31,5	62,5
E-Milch	—	—	—	1500	1500	875	—	—	—	—
V-Milch	5250	5250	3500	—	—	—	3800	—	—	—
Kaffee-Ersatz	—	—	—	25	25	50	—	25	25	50
Eier	4 Stück je Versorgungsberechtigten für die Periode.									

Brot

Die auf den Karten aufgedruckten Sätze mit der Maßgabe, daß die Versorgungsberechtigten damit 6 Wochen auskommen müssen. Näheres hierzu wird noch bekanntgegeben.

Weißbrot erhält die Altersstufe 1—3 Jahre (Kst) auf alle Brotabschnitte und auf die 1000-g-Abschnitte. Es wird besonders darauf hingewiesen, daß auf die mit einem kleinen Quadrat versehenen Brotabschnitte der Kleinstkarte 87, der TSV-Karte 8 und 9 für Kinder bis zu 18 Monaten wahlweise Brot oder Getreidenährmittel bezogen werden können. Da bei der gegenwärtigen Versorgungslage Weizenmehl nicht nur zur Herstellung von Weißbrot benötigt wird, sondern auch für die sonstige Brotherstellung herangezogen werden muß, sind bis auf Widerruf die Bezugscheine nicht mehr auf Mehl, sondern im Verhältnis von 50 Teilen Weizenmehl und 50 Teilen Mehl auszustellen. Durch die Begrenzung des Weizenmehlbezuges wird auch eine Begrenzung der Herstellung des Weißbrotes bei den Herstellern erreicht, entsprechend der allgemeinen Brotkürzung sind auch die Bezugscheine über Weizenmehl und Mehl zu kürzen.

Nährmittel und Hülsenfrüchte

Als Ausgleich für die gekürzte Brotration werden die über 200 und 250 g lautenden Nährmittelabschnitte H der Altersstufe 1—3 Jahre, 3—6 Jahre, 6—10 Jahre, 10—18 Jahre, Normalverbraucher über 18 Jahre, TSV 1, 3, 3a, 5, 9, 2, 4, 4a, 6, 8, sowie der Teilschwer-, Schwer- und Schwerstarbeiterkarte mit 200 g bzw. 250 g Hülsenfrüchten beliefert. Für sämtliche obengenannten Altersstufen (außer bei den Teilschwer-, Schwer- und Schwerstarbeitern) erfolgt eine Vorbestellung auf Abschnitt B.

Die Ausgabe erfolgt nach Aufruf durch das örtliche Ernährungsamt. Ein Anspruch auf eine bestimmte Art von Hülsenfrüchten besteht nicht. An Teigwaren dürfen nicht mehr als 300 g auf den Kopf abgegeben werden und dies auch nur auf die mit dem Buchstaben T gekennzeichneten Abschnitte. Da diese Abschnitte jedoch im Ganzen über 400 g lauten, darf der Kleinverteiler auf die mit dem T versehenen Kleinabschnitte zu 25 g Teigwaren nicht abgeben.

Kartoffeln

An Versorgungsberechtigte, die Kartoffeln nicht eingekellert haben, wird wöchentlich an Kartoffeln zugeteilt:

Altersgruppe von 1—3 Jahren 1200 g
3—6 und 6—10, Jgl. von 10—18 Jahren und Normalverbraucher 3000 g

Die werdenden und stillenden Mütter empfangen, auch wenn eingekellert ist, zusätzlich jede Woche 500 g Kartoffeln.

Fett

Die Versorgungsberechtigten haben kein Anrecht auf eine bestimmte Fettart. Sie müssen die Fettart abnehmen, die jeweilig verfügbar ist.

Zucker

Zucker wird nur an die Altersstufe bis zu 6 Jahren (auch die der Teilselbstversorger) und an die werdenden und stillenden Mütter zugeteilt, und zwar in der Menge, die die Lebensmittelkarte anzeigt. Der Zucker ist in der 1. Woche vorzubestellen, und zwar auf folgende Nr.-Abschnitte:

bei der Altersstufe bis zu 1 Jahr auf Nr.-Abschnitt 9
bei der Altersstufe von 1—3 Jahre auf Nr.-Abschnitt 10
bei der Altersstufe von 3—6 Jahre auf Nr.-Abschnitt 11

An Kinder der Vollselbstversorger mit Ausnahme der Säuglinge wird Zucker nicht abgegeben. Als Vorbestellabschnitt für die werdenden und stillenden Mütter ist der Aufdruck Mß 87 des Stammabschnittes der Lebensmittelkarte herauszutrennen. Dieser Vorbestellabschnitt ist auch für Marmelade zu verwenden. Der Zucker kann nach Ablauf der Vorbestellfrist, und zwar nach der ersten Woche der 87. Periode ausgegeben werden.

Marmelade

Marmelade wird in der 87. Zuteilungsperiode auch nicht für Kinder bis zu 3 Jahren zugeteilt. Sämtliche Marmeladenabschnitte außer denen für werdende und stillende Mütter sind ungültig (Vorbestellung für die Mütter siehe Zucker).

Fleisch

Keine Aenderung gegenüber der 86. Zuteilungsperiode.

Käse

Die gleiche Zuteilung wie in der 86. Zuteilungsperiode, außer bei Normalverbrauchern über 18 Jahre, TSV 1 in Butter und TSV 2 in Fleisch- und Schlachtfetten und bei den Vollselbstversorgern. Diese Verbrauchergruppen erhalten in dieser Zuteilungsperiode 187,5 g.

Quark

Die gleiche Zuteilung wie in der 86. Periode.

E- und Vollmilch

Die gleichen Sätze wie in der 86. Periode. Ich weise erneut darauf hin, daß auf den Lebensmittelkarten der Säuglinge von 0—1 Jahr, soweit diese Voll- und Teilselbstversorger in Butter sind, die über Milch lautenden Abschnitte (auch Bestellschein) vor der Ausgabe der Karte zu entwerten sind. Die Kinder empfangen die Milch als Teilnehmer an der Selbstversorgung.

Kaffee-Ersatz

Keine Aenderungen gegenüber der 86. Zuteilungsperiode.

Eier,

und zwar 4 Stück je Versorgungsberechtigten, sind von dem bisherigen Verteiler auf den alten Anmeldeabschnitt A auf die Nr.-Abschnitte 3, 4 5, 6 zu beziehen. Die Ausgabe dieser Eier wird noch bekannt gegeben.

*

Auf den Lebensmittelkarten SV 11 muß das Ernährungsamt, bezw. die Kartenstellen die Abschnitte AB der Altersgr. 1— 3 Jahre (Klst) Abschnitte CD der Altersgr. 3— 6 Jahre (Klk) Abschnitte EF der Altersgr. 6—10 Jahre (K) Abschnitte GH der Altersgr. 10—18 Jahre (Jgd) abstempeln, um eine besondere Versorgung dieser Altersstufen zu ermöglichen.

Die Berechtigungskarte für werdende und stillende Mütter darf an Frauen der Vollselbstversorger erst ausgehändigt werden, nachdem alle Abschnitte mit Ausnahme der Nährmittelabschnitte und 200 g Fettabschnitte entwertet worden sind.

An die Frauen der Teilselbstversorger in Fleisch und Schlachtfetten darf diese Karte erst ausgehändigt werden, nachdem die Fleischabschnitte und 4 Fettabschnitte zu je 50 g entwertet worden sind. An die Frauen der Teilselbstversorger in Butter darf diese Karte erst ausgehändigt werden, nachdem je 2 Abschnitte über Käse und Quark und 4 Abschnitte über Fett sowie der Bestellschein über Milch entwertet worden sind.

Teilselbstversorger in Brot beziehen die ihnen zustehenden Karten für Normalverbraucher oder Teilselbstversorger, nachdem sowohl die Kleinabschnitte als auch die für Brot bestimmten Abschnitte entwertet worden sind.

Wenn für eine einzelne Art der Lebensmittel nur ein einziger oder zwei Abschnitte nach dem Aufdruck bestimmt sind, z. B. bei Quark, Kaffee-Ersatz usw., so können diese Abschnitte schon in der ersten Woche für den ganzen Zuteilungszeitraum beliefert werden. Im übrigen bestimmt sich der Beginn der Gültigkeitsdauer nach der Folge der römischen Ziffern. Diese Ziffern bezeichnen die Wochen des Zuteilungszeitraumes. Kleinabschnitte sind ohne Rücksicht auf eine Frist abtrennbar.

Verteilung von Kandis und Bonbons an Kinder u. Jugendliche von 0—18 Jahren

Aufgrund des noch vorhandenen Bestandes an Kandis und Bonbons ist es möglich, allen Kindern von 0—10 Jahren und den Jugendlichen von 10 bis 18 Jahren (auch denen der Teil- und Vollselbstversorger) eine Zuteilung zu geben. Diese Zuteilung muß vorbestellt werden, und zwar bei den Altersgruppen der Normalverbraucher, Teilselbstversorger in Butter und Teilselbstversorger in Fleisch und Schlachtfetten auf den Nr.-Abschnitt 12, bei den Vollselbstversorgern auf die abgestempelten Abschnitte A bei der Altersgruppe 1— 3 Jahre Abschnitte C bei der Altersgruppe 3— 6 Jahre Abschnitte E bei der Altersgruppe 6—10 Jahre Abschnitte G bei der Altersgruppe 10—18 Jahre

Die Vorbestellung ist sofort vorzunehmen und endet mit Ablauf der 2. Woche der 87. Zuteilungsperiode. Die Vorbestellung erfolgt bei den vom örtlichen Ernährungsamt festzulegenden Konditorelen (nicht Bäckereien) bezw. — soweit vorhanden — Süßwarengeschäften. In den ländl. Gemeinden beim Einzelhandel. Da die zur Verteilung kommenden Bestände außerordentlich gering sind und demzufolge eine weitere Streuung nicht durchführbar ist, bitte ich, in jeder kleineren Gemeinde nur ein Geschäft für die Verteilung festzulegen. Für Orte, die verkehrsmäßig günstig zueinander liegen (nur wenige km Entfernung), ist insgesamt nur ein Verteiler zu bestimmen. Ich bitte, diese Weisungen zu beachten.

Die Einzelverteiler reichen die Vorbestellabschnitte beim Ernährungsamt bezw. bei den Kartenstellen ein. Das Ernährungsamt reicht 3 Listen mit Name und Ort des Einzelverteilers, Zahl der versorgungsberechtigten Kinder und Jugendlichen und die sich ergebende Menge an Kandis bezw. Bonbons durch Kurier bis spätestens 17. April an den Zuckerwirtschaftsverband Kassel, Kunoldstraße 49 ein. Der Zuckerwirtschaftsverband fordert den Großhändler aufgrund der eingereichten Listen zur sofortigen Belieferung der Einzelhändler auf. Die Ausgabe erfolgt nach Aufruf durch die Ernährungsämter für Kinder und Jugendliche der Normalverbraucher, Teilselbstversorger in Butter und Teilselbstversorger in Fleisch und Schlachtfetten auf Abschnitt A der jeweiligen Lebensmittelkarten, für die Altersgruppen 1—3 Jahre der Vollselbstversorger auf abgestempelten Abschnitt B, 3—6 Jahre der VSV auf Abschnitt D, 6—10 Jahre der VSV auf Abschnitt F und 10—18 Jahre der VSV auf Abschnitt H.

Soweit die Lebensmittel pp. Karten bei Eingang dieses Erlasses bereits ausgegeben waren, müssen sie insoweit vorübergehend zurückgefordert werden, als Abstempelung und Ungültigmachung einzelner Abschnitte angeordnet ist.

Einzelhändler der Lebensmittelbranche!

Kandis- und Bonbonvorbestellung

Jeder Einzelhändler kann diese Vorbestellung entgegennehmen. Die Verteiler werden vom Ernährungsamt noch bekanntgegeben.

Achtung Milchhändler!

Ablieferung der Bestellscheine

Es wird Klage darüber geführt, daß die Bezugscheine zu spät bei der Molkerei eingehen. Ich mache nochmals ausdrücklich darauf aufmerksam, daß die Bestellscheine nach Ablauf der 1. Woche in der Periode dem Ernährungsamt eingereicht werden müssen. Einzelabschnitte werden vom Ernährungsamt nicht mehr angenommen.

Eier

Die Eier auf Nr. 1 und 2 können auch in der 87. Zuteilungsperiode noch ausgegeben werden.

Zuteilung von Waschhilfsmitteln

Auf die Seifenkarte N. u. K. der 85./86. Zuteilungsperiode wird 1 Paket Waschhilfsmittel (125 g) auf den Sonderabschnitt A aufgerufen.

Reisegenehmigung und Zulassungskarten

Die Pressestelle der Reichsbahndirektion Kassel teilt mit:

Reisende, die schnellfahrende Züge benutzen wollen, werden erneut darauf hingewiesen, daß die Reisegenehmigung, die durch die Reichsbahn-Verkehrsämter oder ihre Außenstellen sowie durch bestimmte andere Behörden (Polizei, Industrie- und Handelskammer) ausgestellt werden, für die Benutzung von D-Zügen allein nicht genügen. Vielmehr müssen dazu auf Grund der Reisegenehmigungen bei den Fahrkartenausausgaben der Zusteigebahnhöfe noch besondere Zulassungskarten verlangt werden.

Die DUS 623/624 Frankfurt/Main-Ost—Wesermünde (Lehe) über Bebra—Eichenberg—Hannover und zurück und der D 375 Frankfurt/Main Hbhf.—Essen über Gießen dürfen ab 25. 3. 1946 nur mit Reisegenehmigung und Zulassungskarten benutzt werden. Fahrkarten und Zulassungskarten für die DUS 623/624 werden nur in Fulda und Bebra und Fahrkarten und Zulassungskarten für den D 375 nur in Gießen ausgegeben.

Dinkelbach.

Wer sich mit dem gedruckten Wort befaßt

muß hierzu die Genehmigung des Nachrichtenkontrolldienstes haben

Der Nachrichtenkontrolldienst der Militärregierung, Marburg (Information Control Branch, Publications Section, MG Det G-39 Marburg), Am Markt 21, gibt bekannt:

1. Der Kontrollbereich der obigen Dienststelle erstreckt sich auf das Gebiet folgender Stadt- und Landkreise:

Alsfeld, Biedenkopf, Dillenburg, Fulda, Gießen, Hersfeld, Hünfeld, Lauterbach, Marburg, Wetzlar, Ziegenhain.

2. Den Vorschriften und der Kontrolle dieser Dienststelle unterliegen alle Personen und Firmen, die sich in irgendeiner Weise mit dem gedruckten oder vervielfältigten Wort und seinem Vertrieb befassen, also:

Das gesamte Verlagswesen
Druckereien aller Art
Buchhandlungen
Buchantiquariate
Leihbüchereien
Zeitschriften- und Zeitungsverleger
Zeitungs- und Zeitschriftenarchive
Lesezirkel
Musikalienhandel (Noten)
Kartographische Anstalten
Werbedienste und ähnliches

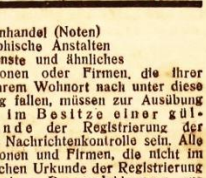
3. Alle Personen oder Firmen, die ihrer Tätigkeit und ihrem Wohnort nach unter diese Bekanntmachung fallen, müssen zur Ausübung ihrer Tätigkeit im Besitze einer gültigen Urkunde der Registrierung der Amerikanischen Nachrichtenkontrolle sein. Alle diejenigen Personen und Firmen, die nicht im Besitz einer solchen Urkunde der Registrierung sind, haben keine Berechtigung zur Ausübung einer der unter 2. genannten Tätigkeiten.

4. Anträge auf Registrierung sind an die obige Dienststelle zu richten.

5. Personen oder Firmen, die zwei Wochen nach dieser Bekanntmachung beim Ausüben einer der unter 2. genannten Tätigkeit ohne ordnungsgemäße Urkunde der Registrierung angetroffen werden, werden sich vor dem Militärgericht zu verantworten haben.

Gerard M. Brandt,
Publications Control Officer.

Lumpen her! Wir schaffen Kleider!



Für 1 Kilo Lumpen gibt es ein Los, womit Sie ein bezugsfertiges Eigenheim im Wert von RM 10000.— und unzählige andere wertvolle Sachpreise gewinnen können.

Wir sammeln vom 1. bis 15. April

Bekanntmachungen des Amtsgerichts Hersfeld

Beschluß!

Gemäß § 39 des Verschollenheitsgesetzes wird festgestellt, daß der am 13. 9. 1916 in Motzfeld, Kreis Hersfeld, geborene Heinrich Götz, Unteroffizier in der 12. Kompanie des Gebirgsjäger-Regiments 98, am 19. April 1945 bei Neudau in Steiermark durch Granatwerfervolltreffer gefallen ist. (B. R. II 2/46).

*

Gemäß § 39 des Verschollenheitsgesetzes wird festgestellt, daß der Bäckergeselle Adam Blumenstiel, geb. am 7. Januar 1909, am 28. Januar 1945 bei Hoscheiderdikt in Luxemburg gefallen ist. (F 5/46).

Hersfeld, den 21. 3. 1946. Amtsgericht.

Gesetz zur Befreiung von Nationalsozialismus und Militarismus

1. Nationalsozialismus und Militarismus haben in Deutschland 12 Jahre die Gewaltherrschaft ausgeübt, schwerste Verbrechen gegen das deutsche Volk und die Welt begangen, Deutschland in Not und Elend gestürzt und das deutsche Reich zerstört. Die Befreiung von Nationalsozialismus und Militarismus ist eine unerläßliche Vorbedingung für den politischen, wirtschaftlichen und kulturellen Wiederaufbau.

2. Während der vergangenen Monate, die der Kapitulation folgten, hat die amerikanische Militärregierung die Entfernung und den Ausschluß von Nationalsozialisten und Militaristen aus der Verwaltung und anderen Stellen durchgeführt.

3. Der Kontrollrat hat am 12. Januar 1946 für ganz Deutschland Richtlinien für diese Entfernung und den Ausschluß in der Anweisung Nr. 24 aufgestellt, die für die deutschen Regierungen und für das deutsche Volk verbindlich sind.

4. Das Gesetz Nr. 8 der Militärregierung einschließlich seiner ersten Ausführungsverordnung hat die Befreiung auf das Gebiet der gewerblichen Wirtschaft ausgedehnt und das Vorstellungsverfahren durch deutsche Prüfungsausschüsse eingeführt.

5. Die amerikanische Militärregierung hat nunmehr entschieden, daß das deutsche Volk die Verantwortung für die Befreiung von Nationalsozialismus und Militarismus auf allen Gebieten mit übernehmen kann. Zur Erfüllung der damit dem deutschen Volk übertragenen Aufgabe dient dieses Gesetz, das sich im Rahmen der Anweisung Nr. 24 des Kontrollrates hält.

6. Zur einheitlichen und gerechten Durchführung dieser Aufgabe wird

gleichzeitig für Bayern, Großhessen und Württemberg-Baden das folgende Gesetz beschlossen und verkündet;

1. Abschnitt. Grundsätze

Artikel 1.

1. Zur Befreiung unseres Volkes von Nationalsozialismus und Militarismus und zur Sicherung dauernder Grundlagen eines deutschen demokratischen Staatslebens in Frieden mit der Welt werden alle, die die nationalsozialistische Gewaltherrschaft aktiv unterstützt oder sich durch Verstöße gegen die Grundsätze der Gerechtigkeit und Menschlichkeit oder durch eigensüchtige Ausnutzung der dadurch geschaffenen Zustände verantwortlich gemacht haben, von der Einflußnahme auf das öffentliche, wirtschaftliche und kulturelle Leben ausgeschlossen und zur Wiedergutmachung verpflichtet.

2. Wer verantwortlich ist, wird zur Rechenschaft gezogen, zugleich wird jedem Gelegenheit zur Rechtfertigung gegeben.

Artikel 2.

1. Die Beurteilung des Einzelnen erfolgt in gerechter Abwägung der individuellen Verantwortlichkeit und der tatsächlichen Gesamthaltung. Danach wird in wohlerwogener Abstufung das Maß der Sühneleistung und der Ausschaltung aus der Teilnahme am öffentlichen, wirtschaftlichen und kulturellen Leben des Volkes bestimmt mit dem Ziel, den Einfluß nationalsozialistischer und militaristischer Haltung und Ideen auf die Dauer zu beseitigen.

2. Aeußere Merkmale wie die Zugehörigkeit zur NSDAP, einer ihrer Gliederungen oder einer sonstigen Organisation sind nach diesem Gesetz für sich allein nicht entscheidend für den Grad der Verantwortlichkeit. Sie können zwar wichtige Beweise für die Gesamthaltung sein, können aber durch Gegenbeweise ganz oder teilweise entkräftet werden. Umgekehrt ist die Nichtzugehörigkeit für sich allein nicht entscheidend für den Ausschluß der Verantwortlichkeit.

Meldeverfahren.

Artikel 3.

1. Zur Aussonderung aller Verantwortlichen und zur Durchführung des Gesetzes wird ein Meldeverfahren eingerichtet.

2. **Jeder Deutsche über 18 Jahren hat einen Meldebogen auszufüllen und einzureichen.**

3. Die näheren Bestimmungen trifft der Minister für politische Befreiung.

Gruppen der Verantwortlichen.

Artikel 4.

Zur gerechten Beurteilung der Verantwortlichkeit und zur Heranziehung zu Sühnemaßnahmen werden folgende Gruppen gebildet:

1. Hauptschuldige,
2. Belastete (Aktivisten, Militaristen, Nutznießer),
3. Minderbelastete (Bewährungsgruppe),
4. Mitläufer,
5. Entlastete.

Hauptschuldige.

Artikel 5.

Hauptschuldiger ist:

1. **Wer aus politischen Beweggründen Verbrechen gegen Opfer oder Gegner des Nationalsozialismus begangen hat.**

2. Wer im Inlande oder in den besetzten Gebieten ausländische Zivilisten oder Kriegsgefangene völkerrechtswidrig behandelt hat.

3. Wer verantwortlich ist für Ausschreitungen, Plünderungen, Verschleppungen oder sonstige Gewalttaten, auch wenn sie bei der Bekämpfung von Widerstandsbewegungen begangen worden sind.

4. Wer sich in einer führenden Stellung der NSDAP, einer ihrer Gliederungen oder eines angeschlossenen Verbandes oder einer anderen nationalsozialistischen oder militaristischen Organisation betätigt hat.

5. Wer sich in der Regierung des Reiches, eines Landes oder in der Verwaltung der früher besetzten Gebiete in einer führenden Stellung betätigt hat, wie sie nur von führenden Nationalsozialisten oder Förderern der nationalsozialistischen Gewaltherrschaft bekleidet werden konnte.

6. Wer sonst der nationalsozialistischen Gewaltherrschaft außerordentliche politische, wirtschaftliche, propagandistische oder sonstige Unterstützung gewährt hat, wer aus einer Verbindung mit der nationalsozialistischen Gewaltherrschaft für sich oder andere sehr erheblichen Nutzen gezogen hat.

7. Wer in der Gestapo, dem SD, der SS, Geheimen Grenz- oder Feldpolizei für die nationalsozialistische Gewaltherrschaft aktiv tätig war.

8. Wer sich in einem Konzentrationslager oder Arbeitslager oder in einer Haft-, Heil- oder Pflegeanstalt an Tötungen, Folterungen oder sonstigen Grausamkeiten in irgend einer Form beteiligt hat.

9. Wer aus Eigennutz oder Gewinnsucht aktiv mit der Gestapo, SS, SD oder ähnlichen Organisationen zusammengearbeitet hat, indem er Gegner der nationalsozialistischen Gewaltherrschaft denunzierte oder sonst zu ihrer Verfolgung beitrug.

Artikel 6.

Bis zur Widerlegung gilt als Hauptschuldiger, wer in Klasse I der dem Gesetz beigefügten Liste aufgeführt ist.

Aktivisten.

Artikel 7.

I. Aktivist ist:

1. Wer durch seine Stellung oder Tätigkeit die Gewaltherrschaft der NSDAP wesentlich gefördert hat.

2. Wer seine Stellung, seinen Einfluß oder seine Beziehungen zu Zwang, Drohung, zu Gewalttätigkeiten, zur Unterdrückung oder sonst zu ungerechten Maßnahmen ausgenützt hat.

3. Wer sich als überzeugter Anhänger der nationalsozialistischen Gewaltherrschaft, insbesondere ihrer Rassenlehre, erwiesen hat.

II. Aktivist, insbesondere, soweit er nicht Hauptschuldiger, ist:

1. Wer durch Wort oder Tat, insbesondere öffentlich durch Reden oder Schriften oder durch freiwillige Zuwendungen aus eigenen oder fremden Vermögen oder durch Einsetzen seines persönlichen Ansehens oder seiner Machtstellung im politischen, wirtschaftlichen oder kulturellen Leben wesentlich zur Begründung, Stärkung oder Erhaltung der nationalsozialistischen Gewaltherrschaft beigetragen hat,

2. wer durch nationalsozialistische Lehre oder Erziehung die Jugend an Geist und Seele vergiftet hat,

3. wer zur Stärkung der nationalsozialistischen Gewaltherrschaft unter Mißachtung anerkannter sittlicher Grundsätze das Familien- oder Eheleben untergraben hat,

4. wer im Dienste des Nationalsozialismus in die Rechtspflege eingegriffen oder sein Amt als Richter oder Staatsanwalt politisch

6. wer im Dienste des Nationalsozialismus Werte der Kunst oder Wissenschaft verhöhnt, beschädigt oder zerstört hat,

7. wer sich führend oder aktiv bei der Zerschlagung der Gewerkschaften, der Unterdrückung der Arbeiterschaft oder der Vergeudung des Gewerkschaftsvermögens beteiligt hat,

8. wer als Provokateur, Spitzel oder Denunziant die Einleitung eines Verfahrens zum Schaden eines anderen wegen seiner Rasse, Religion oder seiner politischen Gegnerschaft gegen den Nationalsozialismus oder wegen Zuwiderhandlungen gegen nationalsozialistische Vorschriften herbeigeführt oder herbeizuführen versucht hat,

9. wer seine Machtstellung unter der nationalsozialistischen Gewaltherrschaft zu Begehen von Straftaten, insbesondere Erpressungen oder Betrügereien ausgenutzt hat,

10. wer durch Wort oder Tat eine gehässige Haltung gegenüber Gegnern der NSDAP im In- oder Ausland, gegen Kriegsgefangene, die Bevölkerung der ehemals besetzten Gebiete, gegen ausländische Zivilarbeiter, Häftlinge oder ähnliche Personen eingenommen hat,

11. wer die Freistellung von Wehrdienst, UK-Stellung oder vom Frontdienst wegen nationalsozialistischer Haltung begünstigt oder die Einziehung zum Wehrdienst oder Versetzung zum Frontdienst wegen Gegnerschaft zum Nationalsozialismus herbeigeführt oder dies versucht hat.

III. Aktivist ist auch, wer nach dem 8. Mai 1945 durch Wirken für den Nationalsozialismus oder Militarismus den Frieden des deutschen Volkes oder der Welt gefährdet.

Militaristen.

Artikel 8

I. Militarist ist:

1. wer das Leben des deutschen Volkes auf eine Politik der militärischen Gewalt auszurichten suchte,

2. wer für die Beherrschung fremder Völker, ihre Ausnutzung und Verschleppung eingetreten oder verantwortlich ist,

3. wer die Aufrüstung zu diesen Zwecken forderte.

II. Militarist ist insbesondere, soweit er nicht Hauptschuldiger ist:

1. wer durch Wort oder Schrift militärische Lehren oder Programme aufstellte oder verbreitete oder außerhalb der Wehrmacht in einer Organisation aktiv tätig war, die der Förderung militaristischer Ideen diente,

2. wer vor 1935 die planmäßige Ausbildung der Jugend für den Krieg organisierte oder an dieser Organisation teilnahm,

3. wer als Inhaber einer Kommandogewalt verantwortlich dafür ist, daß nach dem Einmarsch in Deutschland Stadt und Land sinnlos verwüstet wurden,

4. wer ohne Rücksicht auf seinen Rang als Angehöriger der Wehrmacht, des Reichsarbeitsdienstes, der Organisation Todt (OT) oder der Transportgruppe Speer seine Dienstgewalt zur Erlangung besonderer persönlicher Vorteile oder zu rohen Quälereien seiner Untergebenen mißbrauchte.

Nutznießer.

Artikel 9

Nutznießer ist: wer aus der Gewaltherrschaft der NSDAP, aus der Aufrüstung oder aus dem Kriege durch seine politische Stellung oder seine politischen Beziehungen für sich oder andere persönliche oder wirtschaftliche Vorteile in eigensüchtiger Weise herausgeschlagen hat.

II. Nutznießer ist insbesondere, soweit er nicht Hauptschuldiger ist:

1. wer nur auf Grund seiner Zugehörigkeit zur NSDAP in ein Amt oder eine Stellung berufen oder bevorzugt befördert wurde,

2. wer erhebliche Zuwendungen von der NSDAP, ihren Gliederungen oder angeschlossenen Verbänden erhielt,

3. wer auf Kosten der politisch, religiös oder rassisch Verfolgten unmittelbar oder mittelbar, insbesondere im Zusammenhang mit Enteignungen, Zwangsverkäufen und dergleichen übermäßige Vorteile für sich oder andere erlangte oder erstrebte,

4. wer bei der Aufrüstung oder bei Kriegsgeschäften Gewinne erzielte, die in einem auffallenden Mißverhältnis zu den Leistungen standen,

5. wer sich im Zusammenhang mit der Verwaltung ehemals besetzter Gebiete unbillig bereicherte,

6. wer als Anhänger des Nationalsozialismus durch Ausnützung persönlicher oder politischer Beziehungen oder durch Eintritt in die NSDAP es erreichte, sich dem Wehrdienst oder dem Frontdienst zu entziehen.

Artikel 10

Bis zur Widerlegung gilt als Belasteter (Aktivist, Militarist, Nutznießer), wer in Klasse II der dem Gesetz beigefügten Liste aufgeführt ist.

Bewährungsgruppe.

Artikel 11

I. Minderbelastet ist:

1. wer an sich zur Gruppe der Belasteten gehört, jedoch wegen besonderer Umstände (Art. 39) einer milderen Beurteilung würdig erscheint und nach seiner Persönlichkeit erwarten läßt, daß er nach Bewährung in einer Probezeit seine Pflichten als Bürger eines friedlichen demokratischen Staates erfüllen wird,

2. wer an sich zur Gruppe der Mitläufer gehört, jedoch wegen seines Verhaltens und nach seiner Persönlichkeit sich erst bewähren soll.

II. Die Bewährungsfrist soll mindestens zwei und in der Regel nicht mehr als drei Jahre betragen.

Von dem Verhalten während der Bewährungsfrist hängt es ab, welcher Gruppe der Betroffene endgültig zugewiesen wird (Art. 42)

III. Minderbelastet ist insbesondere:

1. wer nach dem 1. Januar 1919 geboren ist, nicht zur Gruppe der Hauptschuldigen zählte, jedoch als Belasteter erscheint, ohne aber ein verwerfliches oder brutales Verhalten an den Tag gelegt zu haben und nach seiner Persönlichkeit eine Bewährung erwarten läßt,

2. wer, ohne Hauptschuldiger zu sein, zwar als Belasteter erscheint, aber eindeutig und klar erkennbar frühzeitig vom Nationalsozialismus und seinen Methoden abgerückt ist.

Mitläufer.

Artikel 12

I. **Mitläufer ist:** Wer nicht mehr als nominell am Nationalsozialismus teilgenommen oder ihn nur unwesentlich unterstützt und sich auch nicht als Militarist erwiesen hat.

II. Unter dieser Voraussetzung ist Mitläufer insbesondere:

1. wer als Mitglied der NSDAP oder einer ihrer Gliederungen, ausgenommen HJ und BDM, lediglich Mitgliedsbeiträge bezahlte, an Versammlungen, deren Besuch Zwang war, teilnahm, oder unbedeutende oder rein geschäftsmäßige Obliegenheiten wahrnahm, wie sie allen Mitgliedern vorgeschrieben waren,

2. wer Anwärter der NSDAP war und nicht endgültig als Mitglied aufgenommen wurde.

Entlastete.

Artikel 13

Entlastet ist: Wer trotz einer formellen Mitgliedschaft oder Anwartschaft oder eines anderen äußeren Umstandes sich nicht nur passiv verhalten, sondern nach dem Maß seiner Kräfte aktiv Widerstand gegen die nationalsozialistische Gewaltherrschaft geleistet und dadurch Nachteile erlitten hat.

2. Abschnitt. Sühnemaßnahmen

Artikel 14

Nach dem Maß der Verantwortung sind zur Ausschaltung des Nationalsozialismus und Militarismus aus dem Leben unseres Volkes und zur Wiedergutmachung des angerichteten Schadens folgende Sühnemaßnahmen in gerechter Auswahl und Abstufung zu verhängen.

Artikel 15

Gegen Hauptschuldige sind folgende Sühnemaßnahmen zu verhängen:

1. Sie werden auf die Dauer von mindestens zwei und höchstens zehn Jahren in ein Arbeitslager eingewiesen, um Wiedergutmachungs- und Aufbauarbeiten zu verrichten. Politische Haft nach dem 8. Mai 1945 kann angerechnet werden. Körperlich Behinderte sind entsprechend ihrer Leistungsfähigkeit zu Sonderarbeit heranzuziehen.

2. Vermögen ist als Beitrag zur Wiedergutmachung einzuziehen. Es ist nur der Betrag zu belassen, der unter Berücksichtigung der Familienverhältnisse und der Erwerbsfähigkeit zum notdürftigen Lebensunterhalt erforderlich ist. Sie unterliegen laufenden Sonderabgaben zu einem Wiedergutmachungsfond, soweit sie Einkommen beziehen.

3. Sie sind dauernd unfähig, ein öffentliches Amt einschließlich des Notariats und der Anwaltschaft zu bekleiden.

4. Sie verlieren ihre Rechtsansprüche auf eine aus öffentlichen Mitteln zahlbare Pension oder Rente,

5. sie verlieren das Wahlrecht, die Wählbarkeit und das Recht, sich irgendwie politisch zu betätigen und einer politischen Partei als Mitglied anzugehören,

6. sie dürfen weder Mitglieder einer Gewerkschaft noch einer wirtschaftlichen oder beruflichen Vereinigung sein.

7. Es wird ihnen auf die Dauer von mindestens zehn Jahren untersagt: a) in einem freien Beruf oder selbständig in einem Unternehmen oder gewerblichen Betrieb jeglicher Art tätig zu sein, sich daran zu beteiligen oder die Aufsicht oder Kontrolle hierüber auszuüben, b) in nicht selbständiger Stellung anders als in gewöhnlicher Arbeit beschäftigt zu werden, c) als Lehrer, Prediger, Redakteur, Schriftsteller oder Rundfunkkommentator tätig zu sein.

8. Sie unterliegen Wohnungs- und Aufenthaltsbeschränkungen und können zu gemeinnützigen Arbeiten herangezogen werden.

9. sie verlieren alle ihnen erteilten Approbationen, Konzessionen und Berechtigungen sowie das Recht, einen Kraftwagen zu halten

Belastete.

Artikel 16

Sühnemaßnahmen gegen Belastete.

1. Sie können auf die Dauer bis zu fünf Jahren in ein Arbeitslager eingewiesen werden, um Wiedergutmachungs- und Aufbauarbeiten zu verrichten. Politische Haft nach dem 8. Mai 1945 kann angerechnet werden.

2. Sie sind zu Sonderarbeiten für die Allgemeinheit heranzuziehen, sofern sie nicht in ein Arbeitslager eingewiesen werden.

3. Ihr Vermögen ist als Beitrag zur Wiedergutmachung ganz oder teilweise einzuziehen. Bei vollständiger Einziehung ist gemäß Artikel 15, Nr. 2, Satz 2, zu verfahren. Bei teilweiser Einziehung des

4. Sie sind dauernd unfähig, ein öffentliches Amt einschließlich des Notariats und der Anwaltschaft zu bekleiden.

5. Sie verlieren ihre Rechtsansprüche auf eine aus öffentlichen Mitteln zahlbare Pension oder Rente.

6. Sie verlieren das Wahlrecht, die Wählbarkeit und das Recht, sich irgendwie politisch zu betätigen und einer politischen Partei als Mitglied anzugehören.

7. Sie dürfen weder Mitglieder einer Gewerkschaft noch einer wirtschaftlichen oder beruflichen Vereinigung sein

8. Es ist ihnen auf die Dauer von mindestes fünf Jahren untersagt, a) in einem freien Beruf oder selbständig in einem Unternehmen oder gewerblichen Betrieb jeglicher Art tätig zu sein, sich daran zu beteiligen oder die Aufsicht oder Kontrolle hierüber auszuüben; b) in nicht selbständiger Stellung anders als in gewöhnlicher Arbeit beschäftigt zu sein; c) als Lehrer, Prediger, Redakteure, Schriftsteller oder Rundfunkkommentator tätig zu sein.

9. Sie unterliegen Wohnungs- und Aufenthaltsbeschränkungen.

10. Sie verlieren alle ihnen erteilten Approbationen, Konzessionen und Berechtigungen sowie das Recht, einen Kraftwagen zu halten.

Sühnemaßnahmen gegen Minderbelastete.

Artikel 17.

I. Es ist ihnen während der Dauer der Bewährungsfrist untersagt:

a) ein Unternehmen als Inhaber, Gesellschafter, Vorstandsmitglied oder Geschäftsführer zu leiten oder ein Unternehmen zu beaufsichtigen oder zu kontrollieren, ein Unternehmen oder eine Beteiligung daran ganz oder teilweise zu erwerben; b) in nicht selbständiger Stellung anders als in gewöhnlicher Arbeit beschäftigt zu sein; c) als Lehrer, Prediger, Redakteure, Schriftsteller oder Rundfunkkommentator tätig zu sein

II. Ist der Minderbelastete zur Zeit der Einreihung in die Bewährungsgruppe an einem Unternehmen als Inhaber oder Gesellschafter beteiligt, so wird seine Beteiligung an dem Unternehmen für die Dauer der Bewährung gesperrt und ein Treuhänder bestellt, Die Spruchkammer bestimmt, welcher Teil des von dem Treuhänder erzielten Geschäftseinkommens an den Minderbelasteten auszuzahlen ist. Die endgültige Verfügung über das gesperrte Vermögen wird in dem Zeitpunkt der endgültigen Einreihung des Minderbelasteten getroffen

III. Als Unternehmen im Sinne des Absatzes I a) und II dieses Artikels gelten nicht Kleinbetriebe, insbesondere Handwerksbetriebe, Einzelhandelsgeschäfte, Bauernhöfe und dergl. mit weniger als 10 Arbeitnehmern.

IV. Vermögenswerte, deren Erwerb auf Ausnutzung von politischen Beziehungen oder besonderen nationalsozialistischen Maßnahmen, wie Arisierung und Aufrüstung beruhten, sind einzuziehen.

V. Einmalige oder laufende Sonderbeiträge zu einem Wiedergutmachungsfond sind anzuordnen.

VI. Für die Dauer der Bewährung können zusätzlich einzelne der in Artikel 16 bezeichneten Sühnemaßnahmen in gerechter Auswahl und Milderung verhängt werden, insbesondere: a) Beschränkungen in der Ausübung eines freien Be-

in den Ruhestand oder in ein Amt mit geringerem Rang oder an eine andere Dienststelle unter Kürzung der Bezüge, Rückgängigmachung einer Beförderung, Überführung aus dem Beamtenverhältnis in ein Angestelltenverhältnis; c) in der Wirtschaft, einschließlich Land- und Forstwirtschaft Verbot der Fortführung eines Unternehmens, Verpflichtung zur Veräußerung einer Beteiligung, Erhöhung der Ablieferungspflicht landwirtschaftlicher oder sonstiger Erzeugnisse und Auferlegung besonderer Dienstleistungen

VII. Einweisung in ein Arbeitslager und vollständige Einziehung des Vermögens dürfen nicht angeordnet werden.

Mitläufer.

Artikel 18.

Sühnemaßnahmen gegen Mitläufer.

1. Gegen Mitläufer sind einmalige oder laufende Beiträge zu einem Wiedergutmachungsfond anzuordnen, hierbei sind die Dauer der Mitgliedschaft, die Höhe der Beiträge und sonstigen Zuwendungen sowie die Vermögens-, Erwerbs- und Familienverhältnisse und ähnliche Umstände zu berücksichtigen.

2. Bei Beamten kann zusätzlich Versetzung in den Ruhestand oder ein Amt mit geringerem Rang oder an eine andere Dienststelle, gegebenenfalls unter Kürzung der Bezüge oder Rückgängigmachung einer während der Zugehörigkeit zur NSDAP. eingeleiteten Beförderung angeordnet werden. Bei Personen der Wirtschaft einschließlich Land- und Forstwirtschaft können entsprechende Maßnahmen angeordnet werden.

Mildernde Umstände

Artikel 19

Soweit die Sühnemaßnahmen nach Ermessen festgesetzt werden können, kommen als mildernde Umstände insbesondere in Betracht:

1. Jugend oder Unreife
2. Schwere Körperversehrtheit infolge von Kriegseinwirkung
3. Schwere Dauerbelastung der wirtschaftlichen Leistungsfähigkeit durch Invalidität von Angehörigen, insbesondere auf Grund von Kriegseinwirkung.

Artikel 20

1. Gegen Personen, die nach dem 1. Januar 1919 geboren sind, können Sühnemaßnahmen nach diesem Gesetz nur angeordnet werden, wenn sie Hauptschuldige, Belastete oder Minderbelastete sind.

2. Gegen diese Personen können, sofern sie nicht Hauptschuldige sind, nach Maßgabe besonderer Ausführungbestimmungen die Sühnemaßnahmen gemildert werden.

Artikel 21

Wird auf die Einziehung von Vermögenswerten erkannt, so sind alle Verfügungen und sonstigen Rechtsgeschäfte nichtig, die in der Absicht vorgenommen worden sind oder werden, die Heranziehung des Vermögens zur Wiedergutmachung zu vereiteln oder zu erschweren.

Artikel 22

1. **Strafbare Handlungen von Nationalsozialisten und Militaristen können unabhängig von diesem Gesetz strafrechtlich verfolgt werden. Dies gilt insbesondere von Kriegsverbrechen und sonstigen Straftaten, die unter der nationalsozialistischen Gewaltherrschaft ungesühnt geblieben sind. Die strafrechtliche Verfolgung steht einem Verfahren wegen der gleichen Tat nach diesem Gesetz nicht entgegen. Jedoch können bei der Auferlegung von Sühnemaßnahmen nach diesem Gesetz Strafen, die wegen der gleichen Handlung in einem Strafverfahren verhängt worden sind, berücksichtigt werden.**

Der Minister

Artikel 23

Der Ministerpräsident ernennt einen Minister für die politische Befreiung, der die Aufgabe hat, dieses Gesetz durchzuführen. Er muß seit langem Gegner der nationalsozialistischen Gewaltherrschaft und des Militarismus sein, für die Demokratie eintreten und sich zu den Grundsätzen dieses Gesetzes bekennen.

Die Kammern

Artikel 24

1. **Die Entscheidung über die Einreihung** in die Gruppen Verantwortlicher und Festsetzung der Sühne erfolgt durch Kammern.

2. Für den ersten Rechtszug werden in den Stadt- und Landkreisen Spruchkammern gebildet.

3. Für den zweiten Rechtszug werden Berufungskammern gebildet.

4. Für jede Kammer wird ein öffentlicher Ankläger bestellt.

Artikel 25

1. Die Kammern bestehen aus einem Vorsitzenden und mindestens zwei Beisitzern.

2. die Mitglieder der Kammern müssen mindestens 30 Jahre alt sein

3. Der Vorsitzende der Spruchkammer sowie der Berufungskammer muß die Befähigung zum Richteramt oder zum höheren Verwaltungsdienst haben.

4. Die Mitglieder der Spruchkammern sollen mit den örtlichen Verhältnissen ihres Spruchbereichs vertraut sein. Unter den Beisitzern soll möglichst die Berufsgruppe des Betroffenen oder eine verwandte Gruppe vertreten sein. Diese Beisitzer dürfen jedoch nicht die Mehrheit bilden und nicht geschäftliche Konkurrenten des Betroffenen sein.

Artikel 26

1. Die Vorsitzenden, ihre Vertreter, die Beisitzer der Kammern (Spruch- und Berufungskammern) und die öffentlichen Kläger werden durch den Minister für politische Befreiung aufgestellt. Die Ernennung der Vorsitzenden und ihrer Vertreter erfolgt nach Beratung mit dem Justizminister.

2. Für die Bestellung der Beisitzer sind Vorschläge der im Landesmaßstab zugelassenen demokratischen Parteien einzuholen. Eine einseitige politische Zusammensetzung der Kammern ist zu vermeiden.

3. Die Heranziehung der Beisitzer zu den einzelnen Sitzungen erfolgt in einer vorher festgesetzten Reihenfolge durch den Vorsitzenden.

Artikel 27

1. Die Mitglieder der Kammern sind unabhängig und nur dem Gesetz unterworfen.

2. Sie leisten in öffentlicher Sitzung einen Eid dahin, daß sie niemanden zuliebe und niemanden zuleide nach bestem Wissen und Gewissen unparteiisch und unbefangen Gerechtigkeit gegenüber jedermann üben werden. Die Zufügung einer religiösen Beteuerungsformel ist zulässig.

3. Die Dienstaufsicht über die Kammern übt der Minister für politische Befreiung aus.

Artikel 28

Alle Personen, die mit der Durchführung dieses Gesetzes beauftragt werden, müssen als Gegner des Nationalsozialismus und Militarismus bekannt sein. Sie müssen persönlich unbescholten und gerechtdenkend sein.

Oertliche Zuständigkeit

Artikel 29

Die örtliche Zuständigkeit der Kammer wird begründet durch:

a) den gegenwärtigen oder letzten Wohnsitz oder Aufenthaltsort des Betroffenen, b) den Ort, an dem der Betroffene auf behördliche Anordnung verwahrt wird, c) den Ort, an dem der Betroffene sich zu irgend einem Zeitpunkt betätigt hat, d) den Ort, an dem sich das Vermögen des Betreffenden befindet. Bei Zweifeln über die örtliche Zuständigkeit entscheidet der Minister für politische Befreiung.

Artikel 30

Ist die an sich zuständige Kammer in einem Einzelfall an der Ausübung des Richteramtes rechtlich oder tatsächlich verhindert, so überträgt der Minister für politische Befreiung die Untersuchung und

Sachliche Zuständigkeit

Artikel 31

1. Die Kammern sind zur Entscheidung aller Fälle nach diesem Gesetz berechtigt und verpflichtet ohne Bindung an vorhergegangene Entscheidungen anderer Stellen.

2. Neben dem Verfahren vor den Kammern finden andere Verfahren zur politischen Befreiung nicht mehr statt.

Antragsberechtigte

9.3. 1946

Artikel 32

Antragsberechtigt ist:

1. Der Minister für politische Befreiung und seine Beauftragten.
2. Der öffentliche Kläger.
3. Der Bürgermeister der gegenwärtigen und der früheren Wohngemeinde.
4. Bei Beamten und Angestellten der öffentlichen Verwaltung die oberste im Lande befindliche Dienstbehörde.
5. Der Verletzte, sofern er durch den Betroffenen im Einzelfall unmittelbar geschädigt ist.
6. Die Gewerkschaften, die Berufs- und Standesvertretungen und die im Landesmaßstab zugelassenen politischen Parteien, sowie jede andere zugelassene Organisation.
7. Der Betroffene selbst oder sein gesetzlicher Vertreter.

Der Antrag muß die Person des Betroffenen bezeichnen und kurz begründet sein. Er kann bei jeder Kammer eingereicht werden.

Der öffentliche Kläger.

Artikel 33.

1. Der öffentliche Kläger hat alle Verantwortlichen (Art. 4) zu ermitteln. Er erhält und prüft alle Meldebogen (Art. 3), die Anträge (Art. 32), Anzeigen und sonstigen Hinweise auf Verantwortliche und leitet die Ermittlungen von Amtswegen ein. Er führt die Untersuchung durch, erhebt die Anklage und vertritt sie vor der Kammer. Die Klage muß enthalten: a) die Gruppe der Verantwortlichen, in die der Betroffene eingereiht werden soll; b) die gegen ihn vorliegenden Verdachtsgründe; c) die wesentlichen Beweismittel; d) den Antrag, ob die Entscheidung im schriftlichen Verfahren oder auf Grund mündlicher Verhandlungen erfolgen soll.

2. Soweit in der dem Gesetz angefügten Liste oder in Anweisungen des Ministers für politische Befreiung Personengruppen oder Einzelpersonen als besonders prüfungsbedürftig bezeichnet werden, ist die Untersuchung mit besonderer Sorgfalt zu führen.

3. Gehört der Betroffene in die Klasse I der angefügten Liste, so ist die Untersuchung vordringlich durchzuführen und die Klage mit dem Antrag zu erheben, ihn in die Gruppe der Hauptschuldigen einzureihen. In diesem Falle muß eine mündliche Verhandlung stattfinden.

4. Gehört der Betroffene in die Klasse II der angefügten Liste, so hat der Kläger in der Klage den Antrag auf Einreihung in die Gruppe der Hauptschuldigen oder der Belasteten, oder wenn dies nach dem Ergebnis seiner Untersuchung ihm gerechtfertigt erscheint, in die Bewährungsgruppe zu stellen. Auch in diesem Falle muß eine mündliche Verhandlung stattfinden, wenn der öffentliche Kläger, der Antragsteller oder der Betroffene es beantragt.

5. Gehört der Betroffene in keine der in der Liste aufgeführten Personengruppen, so hat der öffentliche Kläger je nach dem Ergebnis der Untersuchung Antrag auf Einreihung in die Gruppen der Verantwortlichen zu stellen. Gehört der Betroffene in die Gruppe der Hauptschuldigen oder Belasteten, so hat der öffentliche Kläger nach Absatz 3 und 4 zu verfahren. Gehört der Betroffene in die Gruppe der Minderbelasteten oder in die Gruppe der Mitläufer, so beantragt der öffentliche Kläger Entscheidung im schriftlichen Verfahren. Erscheint der Betroffene entlastet oder überhaupt nicht belastet, so stellt der öffentliche Kläger das Verfahren ein.

6. Die Klage, ein Antrag auf Entscheidung im schriftlichen Verfahren und Einstellungsbeschluß sind dem Betroffenen und dem Antragsteller zuzustellen.

7. Falls der öffentliche Kläger Entscheidung im schriftlichen Verfahren beantragt oder das Verfahren einstellt, kann der Antragsteller binnen zwei Wochen die Entscheidung der Kammer anrufen.

Beweislast.

Artikel 34.

I. Gehört der Betroffene in die Klasse I oder II der dem Gesetz angefügten Liste, so hat er in klarer und überzeugender Weise darzutun, daß er in eine für ihn günstige Gruppe fällt. Er hat seine Beweise unverzüglich der Kammer vorzulegen. Gehört der Betroffene in die Klasse I, so sind an die von ihm vorgebrachten Einwendungen besonders strenge Anforderungen zu stellen.

II. Wer behauptet, Mitläufer oder Entlasteter zu sein, hat das im Zweifelsfall zu beweisen.

Verfahren vor der Kammer.

Artikel 35.

1. Die Kammern regeln das Verfahren nach freiem Ermessen. Sie haben von amtswegen alles zu tun, was zur Erforschung der Wahrheit notwendig ist.

2. Sie können Zeugen und Sachverständige eidlich vernehmen oder Versicherungen an Eidesstatt entgegen nehmen, ferner das persönliche Erscheinen des Betroffenen, eines Zeugen oder Sachverständigen durch Vorführungsbefehl oder Ordnungsstrafen erzwingen.

3. Die Verhandlungstermine sind in geeigneter Weise vorher bekannt zu geben.

4. Der Betroffene hat Anspruch auf rechtliches Gehör. Er kann sich eines Rechtsanwaltes oder eines sonst zugelassenen Rechtsbeistandes bedienen.

5. Bei unentschuldigtem Ausbleiben oder Unerreichbarkeit des Betroffenen kann in seiner Abwesenheit verhandelt und entschieden werden.

Artikel 36.

Gegen einen Abwesenden, dessen Aufenthalt unbekannt ist oder der sich außerhalb des Landes aufhält, oder dessen Gestellung vor die zuständige Kammer nicht ausführbar erscheint, findet eine Verhandlung nur auf Antrag des öffentlichen Klägers statt. Der Abwesende ist zu der Verhandlung in geeigneter Weise öffentlich zu laden. Es ist ihm ein Vertreter zu bestellen.

Artikel 37

Ist der Betroffene tot, so kann auf Anordnung des Ministers für politische Befreiung ein Verfahren zur ganzen oder teilweisen Einziehung des im Lande gelegenen Nachlasses ohne Rücksicht auf gesetzliche Erbfolge oder letztwillige Verfügung durchgeführt werden. Das Verfahren soll nur angeordnet werden, wenn der Betroffene als Hauptschuldiger oder Belasteter im Sinne dieses Gesetzes anzusehen ist.

Artikel 38

1. Ueber das Ergebnis der Beweisaufnahme entscheidet die Kammer nach ihrer freien, aus dem Inbegriff der Verhandlungen geschöpften Ueberzeugung, ohne an Anträge gebunden zu sein.

2. Die Kammer entscheidet mit Stimmenmehrheit in geheimer Beratung. Bei der Entscheidung über die Zuweisung des Betroffenen in die Gruppen Verantwortlicher berücksichtigt die Kammer insbesondere:

I. Zu Ungunsten des Betroffenen

1. eifriges persönliches Eintreten für nationalsozialistische Ideen und Maßnahmen.

2. Ausnutzung eines Vorgesetztenverhältnisses zu politischen Zwecken, u. a. Druck auf Abhängige zum Eintritt in die NSDAP oder ihre Gliederungen,

3. Anwendung von politischem Druck zur Erreichung privater Ziele,

4. körperliche Mißhandlungen oder Bedrohung von politischen Gegnern,

5. Unsoziales oder rohes Verhalten gegenüber politischen Gegnern, wirtschaftlich

gegenüber rassischen oder religiösen Minderheiten.

6. Bedrohung von Beamten zur Erzwingung oder Unterlassung von Mißhandlungen.

II. Zu Gunsten des Betroffenen:

Artikel 39.

1. Austritt aus der NSDAP und ihren Gliederungen vor dem 30. Januar 1933 oder später durch persönliche Erklärung unter Verhältnissen, in denen Mut dazu gehörte, und Ausschluß aus der NSDAP und ihren Gliederungen, wenn dieser wegen Widerstandes gegen Parteiforderungen und nicht wegen ehrenrühriger Verhaltens erfolgte. Späterer Wiedereintritt hebt die Wirkung einer solchen Austrittserklärung oder eines Ausschluß auf.

2. Nachweisbare Zusammenarbeit mit einer Widerstandsbewegung oder mit anderen gegen die nationalsozialistische Gewaltherrschaft gerichteten Bewegungen, wenn dieser Widerstand auf antinationalsozialistischen und antimilitaristischen Beweggründen beruhte.

3. Nachweisbare regelmäßige öffentliche Teilnahme an den Veranstaltungen einer anerkannten Religionsgesellschaft, sofern klar erwiesen ist, daß diese Teilnahme eine Ablehnung des Nationalsozialismus bedeutet.

4. Nachweisbare wiederholte Förderung und Unterstützung von Opfern und Gegnern des Nationalsozialismus, sofern sie auf antinationalsozialistischen Beweggründen beruhte.

5. Nachweisbare politische Verfolgung oder Unterdrückung durch die nationalsozialistische Gewaltherrschaft wegen antinationalsozialistischer Tätigkeit oder Haltung trotz der Zugehörigkeit zur NSDAP oder einer ihrer Gliederungen.

III.

Zwangsweise angeordnete Tätigkeit im Gesundheitswesen, auch wenn sie mit einem Rang verbunden war, wird nicht als Belastung zugerechnet.

Artikel 40

1. Die Kammern und bei Dringlichkeit die Vorsitzenden können in jeder Lage des Verfahrens einstweilige Anordnungen treffen.

2. Sie können insbesondere die Festnahme und Festhaltung des Betroffenen verfügen, seine Weiterbeschäftigung verbieten und die Sperre seines Vermögens anordnen.

Artikel 41

Der Spruch der Kammer stellt fest, ob der Betroffene Hauptschuldiger, Minderbelasteter (Bewährungsgruppe), Mitläufer oder Entlasteter ist und ordnet die gebotenen Sühnemaßnahmen an.

Artikel 42

1. Bei der Zuweisung zur Gruppe der Minderbelasteten setzt die Kammer die Dauer der Bewährungsfrist fest. Zugleich werden die während der Dauer der Bewährungsfrist in Kraft tretenden Sühnemaßnahmen angeordnet.

2. Nach Ablauf der Bewährungsfrist hat der öffentliche Kläger auf Grund des Ergebnisses seiner Erhebungen Antrag zu stellen, welcher Gruppe Verantwortlicher der Betroffene zuzuweisen ist. Die Kammer hat mit der Entscheidung hierüber zugleich endgültig über die Sühnemaßnahmen zu bestimmen. Bewährt sich der Betroffene nicht, so ist schon vor Ablauf der Bewährungsfrist auf Antrag des öffentlichen Klägers der Betroffene in einem erneuten Verfahren der Gruppe der Belasteten zuzuweisen. Zugleich sind die Sühnemaßnahmen festzusetzen.

Artikel 43

Erfolgt die Entscheidung im schriftlichen Verfahren, so ist dem Betroffenen ausreichend Gelegenheit zu seiner Verteidigung und zur Vorlage seiner Beweismittel zu geben.

Artikel 44

Der Spruch der Kammer ist schriftlich niederzulegen, unter Hervorhebung der zu Gunsten und der zu Ungunsten des Betroffenen sprechenden Umstände kurz zu begründen und von den Mitgliedern der Kammer zu unterzeichnen.

Artikel 45

Eine Ausfertigung des Spruchs mit Begründung ist zuzustellen:

1. dem öffentlichen Kläger
2. dem Antragsteller
3. dem Betroffenen und seinem gesetzlichen Vertreter.

Artikel 46

Gegen den Spruch der Kammer können die in Art. 45 Genannten Berufung an die Berufungskammer einlegen. Die Berufung muß innerhalb eines Monats nach Zustellung des Spruchs bei der Spruch- oder Berufungskammer eingelegt und schriftlich begründet werden.

Artikel 47

1. Die Berufung kann sich sowohl gegen die Einreihung in eine Gruppe als auch gegen die Festsetzung von Sühnemaßnahmen richten, soweit sie im Ermessen der Kammern liegen.

2. Sie kann nur darauf gestützt werden, daß der festgestellte Tatbestand die Entscheidung der Spruchkammer nicht rechtfertigt oder daß willkürlich oder parteiisch verfahren wurde. Die Berufungskammer kann offensichtlich unbegründete Berufungen verwerfen. Sie kann, wenn es ihr nach ihrem Ermessen zur gerechten Entscheidung des Falles erforderlich erscheint, eine neue Beweisaufnahme selbst vornehmen. Dies gilt insbesondere, wenn wesentliche Tatsachen oder Beweismittel nicht früher geltend gemacht werden konnten.

3. Die Entscheidung kann lauten auf Bestätigung oder Abänderung der angefochtenen Entscheidung oder Zurückweisung an die gleiche oder eine andere Spruchkammer zur neuerlichen Verhandlung.

4. Für das Verfahren vor den Berufungskammern gelten im übrigen die Vorschriften über das Verfahren vor den Spruchkammern entsprechend.

Wiederaufnahme

Artikel 48.

1. Auf Grund neuer wesentlicher Tatsachen oder Beweismittel kann das Verfahren auf Antrag wieder aufgenommen werden.

2. Über die Zulässigkeit der Wiederaufnahme entscheidet die Spruchkammer ohne mündliche Verhandlung. Gegen eine ablehnende Entscheidung ist die Berufung zulässig.

Ausschluß von Rechtsmitteln.

Artikel 49

Andere Rechtsmittel als die Berufung sind nicht zugelassen. Insbesondere sind Beschwerden gegen einstweilige Anordnungen nicht statthaft.

Vollstreckung

Artikel 50

Für die Vollstreckung der angeordneten Maßnahmen erläßt der Minister für politische Befreiung die erforderlichen Ausführungsvorschriften.

Gruppenregister.

Artikel 51

1. Nach rechtskräftiger Entscheidung durch die Kammern werden die Einreihung des Betroffenen und die von ihm verwirkten Sühnemaßnahmen in seinem Personalausweis und in ein hierfür angelegtes Register eingetragen.

2. Das Register steht jedermann zur Einsicht offen.

Ueberprüfung

Artikel 52

1. Der Minister für politische Befreiung kann sich jede Entscheidung zur Nachprüfung vorlegen lassen.

2. Hält der öffentliche Kläger eine rechtskräftige Entscheidung der Kammer für offensichtlich verfehlt oder im Widerspruch mit den Zielen dieses Gesetzes stehend, so hat er sie dem Minister für politische Befreiung zur Nachprüfung vorzulegen.

3. Der Minister kann die Entscheidung aufheben, die erneute Durchführung des Verfahrens anordnen und hierbei den Fall an eine andere Spruchkammer verweisen.

Artikel 53

Wenn der Betroffene während einer wesentlichen Zeitspanne nach rechtskräftiger Entscheidung durch sein Gesamtverhalten bewiesen hat, daß er sich vom Nationalsozialismus völlig abgewandt hat und geeignet und bereit ist, nunmehr an dem Wiederaufbau Deutschlands auf einer friedlichen und demokratischen Grundlage mitzuarbeiten, so kann der öffentliche Kläger nach gründlicher Ueberprüfung des Falles dem Minister für politische Befreiung vorschlagen, die gegen den Betroffenen ergangenen Entscheidungen zu mildern oder aufzuheben. Der Minister trifft seine Entscheidung nach billigem Ermessen unter Berücksichtigung der Grundsätze und Ziele dieses Gesetzes.

Gnadenrecht.

Artikel 54

Das Gnadenrecht wird auf Vorschlag des Ministers für politische Befreiung durch den Ministerpräsidenten ausgeübt.

Rechtshilfe.

Artikel 55

Der öffentliche Kläger und die Kammer dürfen außerhalb ihres Amtsbereichs ohne Zustimmung der örtlichen zuständigen Behörden Amtshandlungen vornehmen.

Artikel 56

1. Alle Behörden des Staates, der Gemeinden und der Polizei-Verwaltung, sowie die Selbst- und Sonderverwaltungen haben den mit dem Vollzug des Gesetzes betrauten Stellen Rechtshilfe zu leisten. Das Ersuchen darf nicht abgelehnt werden. Kosten und Auslagen der Rechtshilfe werden den ersuchten Behörden nicht erstattet.

2. Stempel, Gebühren und öffentliche Abgaben, die nach den Gesetzen des Landes in Verbindung mit Rechtshilfeersuchen zur Erhebung gelangen, bleiben außer Ansatz.

3. Diese Bestimmungen gelten auch, wenn das Rechtshilfeersuchen auf Grund dieses Gesetzes von der Behörde eines anderen deutschen Landes gestellt wird.

Gebühren.

Artikel 57

Das Verfahren auf Grund dieses Gesetzes ist gebührenpflichtig.

3. Abschnitt.

Gesetzliches Tätigkeits- und Beschäftigungsverbot

Artikel 58

1. Mit dem Inkrafttreten dieses Gesetzes dürfen Personen, die in Klasse I oder II der dem Gesetz angefügten Liste aufgeführt oder die sonst Mitglieder der NSDAP oder einer ihrer Glieder (ausgenommen HJ und BDM) waren, in der öffentlichen Verwaltung in Privatunternehmungen, in gemeinnützigen Unternehmen und Wohlfahrtseinrichtungen sowie in freien Berufen nicht anders als in gewöhnlicher Arbeit beschäftigt werden oder tätig sein. Soweit diese Personen in anderer Weise als in gewöhnlicher Arbeit noch tätig sind oder beschäftigt werden, sind sie mit Inkrafttreten dieses Gesetzes aus ihren Stellungen zu entfernen und auszuschließen. Sie dürfen nicht mehr in der gleichen Behörde oder in den gleichen Betrieben tätig sein. An anderer Stelle dürfen sie nur in gewöhnlicher Arbeit beschäftigt werden.

2. Von der Entfernung und dem Ausschluß werden nicht nur solche Personen betroffen, die sich in einem Abhängigkeitsverhältnis befinden, sondern ebenso auch Unternehmer, Geschäftsinhaber und Beteiligte.

3 Diese Bestimmungen gelten nicht für Inhaber und Beschäftigte von Kleinbetrieben, insbesondere Handwerksbetrieben, Einzelhandelsgeschäften, Bauernhöfen und desgleichen mit weniger als 10 Arbeitnehmern. Diese Bestimmungen gelten ferner nicht für Personen, die in freien Berufen tätig sind, vorausgesetzt, daß sie nicht mehr als zwei Hilfsangestellte, wie Büropersonal, Krankenschwestern oder dergl. beschäftigen.

4. Das Beschäftigungs- und Betätigungsverbot gilt bis zur rechtskräftigen Entscheidung durch die Kammer. Nach Entscheidung der Kammer bestimmen sich die Beschränkungen hinsichtlich Beschäftigung oder Betätigung nach den auferlegten Sühnemaßnahmen.

Artikel 59

1. Personen, deren Beschäftigung oder Tätigkeit von der Militärregierung oder auf Grund des Gesetzes Nr. 8 der Militärregierung einstweilen genehmigt worden ist, dürfen bis zur rechtskräftigen Entscheidung durch die Kammer in ihrer Stellung weiter tätig sein oder weiter beschäftigt werden, es sei denn, daß die Militärregierung die Genehmigung vor der Entscheidung widerrufen hat.

2. Wer auf Grund der Anordnung der Militärregierung oder gemäß Gesetz Nr. 8 der Militärregierung von öffentlichen Aemtern und leitenden Stellungen entfernt oder ausgeschlossen ist, darf in diesen nicht wieder beschäftigt werden, bis die Kammer rechtskräftig zu seinen Gunsten entschieden hat.

Einstweilige Befreiungen.

Artikel 60.

Der Minister für politische Befreiung kann die weitere Tätigkeit oder Weiterbeschäftigung unter den folgenden Voraussetzungen zeitweilig widerruflich genehmigen:

a) Die Weiterbeschäftigung oder weitere Tätigkeit muß wegen der Spezialkenntnisse des Betroffenen zur Aufrechterhaltung der öffentlichen Gesundheit oder Sicherheit unbedingt erforderlich sein. b) Es darf keine sachlich geeignete, politisch unbelastete Person verfügbar sein. c) Der Betroffene darf nicht zur Gruppe der Hauptschuldigen zählen. d) Er darf seine Stellung nicht lediglich der NSDAP. verdanken. e) Er darf keinen Einfluß auf die Leitung und Geschäftspolitik des Betriebes, noch auf die Einstellung und Entlassung anderer haben. f) Sein Arbeitseinkommen darf in keinem Falle den Betrag von monatlich 500.— RM. übersteigen. g) Er muß so bald wie möglich durch einen politisch Unbelasteten ersetzt werden.

Gesetzliche Vermögenssperre

Artikel 61.

1. Das Vermögen der nach Artikel 58 entfernten und ausgeschlossenen Personen unterliegt der Sperre.

2. Zur Verwaltung und Sicherung des nach diesem Gesetz gesperrten Vermögens bestellt der Minister für politische Befreiung oder eine von ihm beauftragte Stelle einen Treuhänder.

IV. Abschnitt.

Uebergangsbestimmungen

Artikel 62.

Verfahren auf Grund dieses Gesetzes brauchen durch den öffentlichen Kläger nicht eingeleitet zu werden gegen Personen, deren Beschäftigung durch die Militärregierung auf Grund einer Nachprüfung der betreffenden Person endgültig genehmigt worden ist, es sei denn, daß sie Mitglieder der NSDAP oder einer ihrer Gliederungen (ausschl. HJ. oder BDM.) waren, oder daß neue Tatsachen oder Beweismittel zu ihren Lasten zur Kenntnis des öffentlichen Klägers gelangt sind. Mitglieder der NSDAP oder einer ihrer Gliederungen (ausschl. HJ. oder BDM.), deren Beschäftigung oder Tätigkeit von der Militärregierung auf Grund einer Nachprüfung endgültig genehmigt worden ist, können nicht höher als in die Gruppe der Mitläufer eingereiht werden, es sei denn, daß Beweismittel zu ihren Ungunsten vorliegen.

V. Abschnitt.

Schlußbestimmungen

Artikel 63.

Als gewöhnliche Arbeit im Sinne dieses Gesetzes gilt eine Tätigkeit in gelernter oder ungelernter Arbeit oder als Angestellter in einer Stellung von untergeordneter Bedeutung, in der der Beschäftigte nicht irgendwie in aufsichtsführender, leitender oder organisierender Weise tätig wird, oder an der Einstellung oder Entlassung von Personal und an der sonstigen Personalpolitik beteiligt ist.

Artikel 64

Wird der Betroffene durch die Entscheidung der Kammer als Minderbelasteter, Mitläufer oder Entlasteter erklärt, so kann er deswegen keine Ansprüche auf Wiedereinstellung oder Schadenersatz herleiten.

Artikel 65

1. Mit Gefängnis oder mit Geldstrafe wird bestraft:

a) wer falsche oder irreführende Bescheinigungen oder Erklärungen abgibt oder Tatsachen verschleiert, die für die Anwendung des Gesetzes von Erheblichkeit sind, b) wer nach dem 1. Juni 1946 einem Beschäftigungsverbot zuwiderhandelt oder eine ihm auf Grund dieses Gesetzes untersagte Tätigkeit weiter ausübt, c) wer eine von ihm nach diesem Gesetz verlangte Auskunft nicht erteilt, d) wer seine Meldepflicht nicht erfüllt, e) wer es unternimmt, zur Umgehung dieses Gesetzes oder der auf Grund dieses Gesetzes getroffenen Anordnungen Vermögen beiseite zu schaffen oder zu verheimlichen oder einem anderen dazu Hilfe zu leisten. — In den Fällen a) und e) kann neben Gefängnis auf Verlust der bürgerlichen Ehrenrechte erkannt werden. 2. Im übrigen bleiben die Vorschriften des Strafgesetzbuches unberührt.

Artikel 66

Die Ausführungsvorschriften zu diesem Gesetz erläßt der Minister für politische Befreiung.

Artikel 67

Das Gesetz tritt am 5. März 1946 in Kraft.

Die Anlage zum Gesetz zur Befreiung von Nationalsozialismus und Militarismus bringen wir in unserer Ausgabe am nächsten Mittwoch.

AUS DEN GEWERKSCHAFTEN

Für ein fortschrittliches Betriebsrätegesetz

Im Zusammenhang mit der verflossenen Regierungs-Krise ist für uns Gewerkschaftler das kommende Betriebsräte-Gesetz von besonderem Interesse.

Emil Carlebach behandelt in einem Leitartikel, überschrieben „Wachstumskrisen", in der Frankfurter Rundschau die Hintergründe, die zum Austritt der sozialdemokratischen Minister aus der Großhessischen Regierung führten.

Arbeitsminister Oskar Müller hat sich oftmals gegen Versuche gewandt, das in Vorbereitung befindliche Betriebsräte-Gesetz bereits vor seiner Verabschiedung zu torpedieren. Die Ursache der Torpedierung dürfte wohl in dem Mitbestimmungsrecht, das den Betriebsräten in den Betrieben gegeben werden soll, um so maßgeblich an der Produktion der Wirtschaftslenkung mitzuarbeiten, zu suchen sein.

Das eifrige Bemühen, das Betriebsräte-Gesetz schon vor seiner Verabschiedung zu Fall zu bringen, zeigt klar und deutlich, welche einschneidenden Maßnahmen die Gegenseite von ihm erwartet.

Man hatte dem Minister vorgeschlagen, das alte Betriebsräte-Gesetz wieder in Kraft zu setzen und somit von einem fortschrittlichen Betriebsräte-Gesetz Abstand zu nehmen. Das alte Betriebsrätegesetz regelte drei große Gebiete des sozialen Arbeitsrechtes in gesetzliche Form: 1. den Arbeitsnormen-Vertrag (Tarifverträge); 2. die Arbeitnehmer-Vertretung im Betrieb; 3. die Schlichtung von Arbeitsstreitigkeiten. Die Mitbestimmung der Betriebsräte in den einzelnen Betrieben erstreckte sich bedingt auf die Einstellung und Entlassung, auf die Vertragsschließung mit den Arbeitnehmern, auf die Schlichtung von Streitigkeiten, bei Lohnfragen, bei Festsetzung der Arbeitsordnung, Regelung der Arbeitszeit, Veränderung des Betriebes. (Reichsverfassung Artikel 157—165).

Von einem Mitbestimmungsrecht der Arbeitnehmer an der Produktions- und Wirtschaftslenkung ist in diesem alten Betriebsräte-Gesetz nicht die Rede.

Die politischen und wirtschaftlichen Ereignisse in der Vergangenheit haben gezeigt, daß das Betriebsräte-Gesetz in seiner alten Form in keiner Weise den Forderungen der Werktätigen entspricht. Wenn wir uns daher nicht dazu entschließen können, das alte Betriebsräte-Gesetz in seiner früheren Fassung zu übernehmen, so ist der leitende Gedanke hierzu, daß wir uns allen Ernstes die Frage gestellt haben, ob dieses Gesetz das Fundament für die neu aufzubauende Demokratie sein kann.

Diese Frage mußte klar verneint werden, wollten wir nicht auf halbem Wege stehen bleiben.

Wenn wir verhindern wollen, daß sich eine ähnliche Katastrophe wie die derzeitige in ein oder zwei Generationen wiederholt, dann müssen wir jene Vorkehrungen treffen, die unter allen Umständen und mit aller Sicherheit eine Wiederholung verhindern. Bereits im Jahre 1918 hatten wir einmal die Möglichkeit, Entscheidungen zu treffen, welche eine Wiederholung des ersten Weltkrieges hätte vermeiden können.

Wir hatten damals Gelegenheit, durch ausreichende und umfassende Gesetze eine Kontrolle über Wirtschaft und Produktion zu erreichen.

Anstatt jedoch die schwebenden Probleme in konsequenter Form zu klären, wählten wir damals den Kompromißweg. Hätten damals die Werktätigen ihren Einfluß geltend machen können auf Produktion und Lenkung, wir brauchten uns heute nicht mit diesem fundamentalen Problem zu befassen. Kompromisse sind an und für sich in einem demokratischen Staate erwünscht. Ja, sie sind fast charakteristisch für einen wahrhaft demokratischen Staat. Wo es aber um die elementarsten Belange des größten Teiles eines Volkes, der Werktätigen, geht, um die Sicherstellung der Lebensgrundlage, um Sicherheit in einem demokratischen Staate, da sind allerdings Kompromisse Selbstmord.

Jede Gesetzgebung ist sozial, das heißt gesellschaftlich, insofern sie die Bedingungen des gesellschaftlichen Zusammenlebens regelt. In einem besonderen Sinne wird aber darunter die Gesetzgebung verstanden, die die Interessen der wirtschaftlich schwachen Mitglieder der staatlichen Gesellschaft im Auge hat. Es ist nun einmal oberste Pflicht des Gemeinwesens, diese Interessen ganz besonders wahrzunehmen und den Forderungen der wirtschaftlich Schwächeren in erhöhtem Maße Rechnung zu tragen, zumal diese heute in der Lage sind, mit einem erschütternden Beweismaterial aufzuwarten, welches eine sofortige Abkehr von der vergangenen wirtschaftlichen und sozialen Lebensauffassung zum Gebot der Stunde macht.

Wollen wir Werktätigen uns einen demokratischen Sozialstaat aufbauen, dann muß ein fortschrittliches Betriebsräte-Gesetz zu einem tragenden Pfeiler dieses neuen Staates werden.

Wie in einem Ameisenhaufen wimmelt es auf der Gegenseite — das Unternehmertum will auf jeden Fall eine Verabschiedung des neuen Gesetzes verhindern. So berichtete Arbeitsminister Müller in einer Gewerkschaftsversammlung.

Wir nehmen dies gerne zur [illegible]tnis und werden, sobald jene Kreise, [illegible] aus der Vergangenheit nicht lernen wollen, hinter den Kulissen hervortreten, den Kampf um das neue Gesetz mit ihnen aufnehmen.

Werktätige! Schaffende Menschen! Nur Einigkeit und ein klarer Blick können uns in diesen Tagen den Einfluß auf die wirtschaftliche und soziale Gestaltung unseres Staates bringen, dessen wir bedürfen, um eine neue Aera des gesellschaftlichen Zusammenlebens einzuleiten in einem modernen fortschrittlichen Sozialstaat.

Ueber das Mitbestimmungsrecht wurde an dieser Stelle bereits vom Verbandskollegen Karl Kuba sehr Aufschlußreiches und Aufklärendes berichtet. Sinn und Zweck dieser Zeilen ist das Augenmerk aller Schaffenden auf die wichtigen Entscheidungen unserer Tage zu lenken, handelt es sich doch um Entscheidungen, welche die zukünftige Lebensgrundlage eines jeden Werktätigen bestimmen. Darum darf unsere Parole nur lauten:

Für ein fortschrittliches Betriebsrätegesetz!

E. Kraemer, Betriebsrat
Motorwagen Handelsgesellschaft

Anlage A

Grundtabelle

zur Berechnung der Einkommensteuer in 1946

Veranlagte Einkommensteuer

Jahreseinkommen	Steuerbetrag
RM 0— 600 RM	0
RM 600— 1 200 RM	11 plus 17 Proz. des RM 600 übersteigenden Betrages
RM 1 200— 2 400 RM	113 plus 25 Proz. des RM 1 200 übersteigenden Betrages
RM 2 400— 4 800 RM	413 plus 50 Proz. des RM 2 400 übersteigenden Betrages
RM 4 800— 9 600 RM	1 613 plus 55 Proz. des RM 4 800 übersteigenden Betrages
RM 9 600— 13 200 RM	4 253 plus 60 Proz. des RM 9 600 übersteigenden Betrages
RM 13 200— 15 600 RM	6 413 plus 70 Proz. des RM 13 200 übersteigenden Betrages
RM 15 600— 18 000 RM	8 093 plus 80 Proz. des RM 15 600 übersteigenden Betrages
RM 18 000— 24 000 RM	10 013 plus 85 Proz. des RM 18 000 übersteigenden Betrages
RM 24 000— 60 000 RM	15 113 plus 90 Proz. des RM 24 000 übersteigenden Betrages
RM 60 000—100 000 RM	47 513 plus 95 Proz. des RM 60 000 übersteigenden Betrages
über RM 100 000 RM	85 513 plus 95 Proz. des RM 100 000 übersteigenden Betrages

Bemerkungen.

1. Vor der Anwendung der Tabelle werden die Einkünfte aus Löhnen, Gehälter und freien Berufen entweder um 10 Prozent oder um RM 1000.— gekürzt, wobei jedoch nur die kleinere der beiden Summen abgezogen werden darf.

2. Folgende Steuerbefreiungen werden ferner vor Anwendung der Tabelle gewährt:

Für die Steuerpflichtigen der Steuerklasse II RM 600 im Jahre,
Für die Steuerpflichtigen der Steuerklasse III RM 1000 im Jahre (1 Kind),
Für die Steuerpflichtigen der Steuerklasse III RM 1400 im Jahre (2 Kinder),
Für die Steuerpflichtigen der Steuerklasse III RM 1800 im Jahre (3 Kinder),
Für die Steuerpflichtigen der Steuerklasse III RM 2200 im Jahre (4 Kinder).

Für die anderen Steuerpflichtigen der Klasse III wird der Freibetrag für jedes Kind um RM 400.— im Jahre erhöht, das heißt, daß er bei fünf Kindern RM 2600.— beträgt usw.

3. Die in Bemerkung 2 erwähnten Freibeträge werden nicht gewährt und die Grundtabelle wird nicht angewandt in folgenden Fällen:

Für Steuerpflichtige der Klasse I, deren Einkommen RM 1500 im Jahre nicht übersteigt,
Für Steuerpflichtige der Klasse II, deren Einkommen RM 4400 im Jahre nicht übersteigt,
Für Steuerpflichtige der Klasse III, deren Einkommen RM 2400 im Jahre nicht übersteigt, (1 Kind),
Für Steuerpflichtige der Klasse III, deren Einkommen RM 3200 im Jahre nicht übersteigt, (2 Kinder),
Für Steuerpflichtige der Klasse III, deren Einkommen RM 3200 im Jahre nicht übersteigt, (3 Kinder),
Für Steuerpflichtige der Klasse III, deren Einkommen RM 3200 im Jahre nicht übersteigt, (4 Kinder).

In diesen Fällen wird das ganze Einkommen, nach Vornahme der in Bemerkung 1 erwähnten Kurzung um 10 Proz. (insofern es sich um Einkünfte aus Löhnen, Gehältern und freien Berufen handelt), nach folgenden Sätzen besteuert:

Für die Steuerpflichtigen der Klasse I nach dem Steuersatz von 1945 für die ehemalige Gruppe I
Für die Steuerpflichtigen der Klasse II nach dem Steuersatz von 1945 für die ehemalige Gruppe II
Für die Steuerpflichtigen der Klasse III nach dem Steuersatz von 1945 für die ehemalige Gruppe IV

(Absätze 1, 2, 3 und 4) (Absätze 1, 2, 3 und 4)

Dazu tritt in jedem Falle eine Erhöhung um 35 Prozent.

[illegible] der am 10. Januar, 10. April, 10. Juli und 10. Oktober fälligen [illegible]

Anlage B

Tabelle zur Berechnung der Lohnsteuer für das Jahr 1946

Monatslöhne — Abzuziehende Steuern

Steuerklasse I — Unverheiratete Personen

RM	RM		RM
0— 83	0		
84— 100	0,58	dazu 14 Prozent des Betrages über	84
100— 150	2,82	„ 18 „ „ „ „	100
150— 200	11,82	„ 22 „ „ „ „	150
200— 250	22,82	„ 35 „ „ „ „	200
250— 300	40,82	„ 40 „ „ „ „	250
300— 800	60,32	„ 50 „ „ „ „	300
800—1100	310,32	„ 55 „ „ „ „	800
1100—1200	475,32	„ 60 „ „ „ „	1100
1200—1300	535,32	„ 65 „ „ „ „	1200
1300—1600	600,32	„ 75 „ „ „ „	1300
1600—2000	825,32	„ 80 „ „ „ „	1600

über 2000 57 Prozent des Gesamtlohnes.

Steuerklasse II — Verheiratete Personen ohne Kinder

RM	RM		RM
0— 94	0		
95— 200	0,65	dazu 15 Prozent des Betrages über	95
200— 250	16,60	„ 24 „ „ „ „	200
250— 450	28,60	„ 40 „ „ „ „	250
450— 850	108,60	„ 50 „ „ „ „	450
850—1150	308,60	„ 55 „ „ „ „	850
1150—1250	473,60	„ 60 „ „ „ „	1150
1250—1350	533,60	„ 65 „ „ „ „	1250
1350—1650	598,60	„ 75 „ „ „ „	1350
1650—2000	823,60	„ 80 „ „ „ „	1650

über 2000 55 Prozent des Gesamtlohnes

Steuerklasse III (1) — Personen mit einem Kind

RM	RM		RM
0— 133	0		
133— 150	1,25	dazu 8 Prozent des Betrages über	133
150— 233	2,53	„ 10 „ „ „ „	150
233— 283	10,83	„ 23 „ „ „ „	233
283— 383	22,03	„ 40 „ „ „ „	283
383— 883	62,33	„ 50 „ „ „ „	383
883—1183	312,33	„ 55 „ „ „ „	883
1183—1283	477,23	„ 60 „ „ „ „	1183
1283—1383	537,23	„ 65 „ „ „ „	1283
1383—1683	602,23	„ 75 „ „ „ „	1383
1683—2000	827,23	„ 80 „ „ „ „	1683

über 2000 54 Prozent des Gesamtlohnes

Steuerklasse III (2) — Personen mit zwei Kindern

RM	RM		RM
0— 156	0		
156— 200	0,88	dazu 10 Prozent des Betrages über	157
206— 266	5,10	„ 12 „ „ „ „	200
266— 316	13,10	„ 20 „ „ „ „	266
316— 416	23,10	„ 40 „ „ „ „	316
416— 916	63,10	„ 50 „ „ „ „	416
916—1216	313,10	„ 55 „ „ „ „	916
1216—1316	478,10	„ 60 „ „ „ „	1316
1316—1416	538,10	„ 65 „ „ „ „	1316
1416—1716	608,10	„ 75 „ „ „ „	1416
1716—2000	836,10	„ 80 „ „ „ „	1716

[illegible]

Steuerklasse III (3) — Personen mit drei Kindern

RM	RM		RM
0— 210	0		
211— 300	1,00	dazu 13 Prozent des Betrages über	211
300— 350	12,57	„ 20 „ „ „ „	300
350— 450	22,57	„ 40 „ „ „ „	350
450— 950	62,57	„ 50 „ „ „ „	450
950—1250	312,57	„ 55 „ „ „ „	950
1250—1350	477,57	„ 60 „ „ „ „	1250
1350—1450	537,57	„ 65 „ „ „ „	1350
1450—1750	602,57	„ 75 „ „ „ „	1450
1750—2000	827,57	„ 80 „ „ „ „	1750

über 2000 51 Prozent des Gesamtlohnes

Steuerklasse III (4) — Personen mit vier Kindern

RM	RM		RM
0— 266	0		
267— 283	1,20	dazu 10 Prozent des Betrages über	267
283— 383	2,80	„ 20 „ „ „ „	283
383— 483	22,80	„ 40 „ „ „ „	383
483— 983	62,80	„ 50 „ „ „ „	483
983—1283	312,80	„ 55 „ „ „ „	983
1283—1383	477,80	„ 60 „ „ „ „	1283
1383—1483	537,80	„ 65 „ „ „ „	1383
1483—1783	602,80	„ 75 „ „ „ „	1483
1783—2000	827,80	„ 80 „ „ „ „	1783

über 2000 50 Prozent des Gesamtlohnes

Steuerklasse III (5) — Personen mit fünf Kindern

RM	RM		RM
0— 299	0		
300— 316	0,58	dazu 12 Prozent des Betrages über	300
316— 366	2,50	„ 18 „ „ „ „	316
366— 416	11,50	„ 22 „ „ „ „	366
416— 516	22,50	„ 40 „ „ „ „	416
516—1016	62,50	„ 50 „ „ „ „	516
1016—1316	312,50	„ 55 „ „ „ „	1016
1316—1416	477,50	„ 60 „ „ „ „	1316
1416—1516	537,50	„ 65 „ „ „ „	1416
1516—1816	602,50	„ 75 „ „ „ „	1516
1816—2000	827,50	„ 80 „ „ „ „	1816

über 2000 49 Prozent des Gesamtlohnes

Anlage C

Tabelle zur Berechnung der Körperschaftsteuer

Einkommen	Zu erhebender Steuerbetrag
RM 0— 50 000	35 Prozent des Gesamteinkommens
RM 50 000— 61 110	RM 17 500 und dazu 90 Prozent der RM 50 000 übersteigenden Summe
RM 61 110—100 000	45 Prozent des Gesamteinkommens
RM 100 000—150 000	RM 45 000 und dazu 90 Prozent der RM 100 000 übersteigenden Summe
RM 150 000—500 000	50 Prozent des Gesamteinkommens
RM 500 000—600 000	RM 300 000 und dazu 90 Prozent der RM 500 000 übersteigenden Summe
über RM 600 000	65 Prozent des Gesamteinkommens

Bemerkung:

1. Für Personen mit mehr als fünf Kindern werden alle für Steuerklasse III (5) angegebenen Steuerstufen für jedes Kind vom sechsten ab um RM 33.— erhöht.

Der Betrag des Steuerabzuges für RM 2000.— monatl. übersteigende Löhne wird für jedes Kind vom sechsten ab um 1 Proz. ermäßigt. Für Klasse III (6) gilt also z. B. folgende Tabelle:

RM 0—332
RM 332—349 } usw. Die auf RM 2000.— übersteigende Löhne zu erhebende Steuer beträgt 48 Prozent.
RM 349—399

Wenn es sich um andere als monatliche Zeiträume handelt, wird der Steuersatz folgendermaßen berechnet:

Tagelohn	1/26 der Monatstabelle
Halbtaglohn	1/52 der Monatstabelle
Wochenlohn	6/26 der Monatstabelle
Halbmonatslohn	13/26 der Monatstabelle

Allg. Ortskrankenkasse

Die Dienststunden ab 1. April d. J. sind wie folgt festgesetzt:

Montag bis Freitag von 7.30 bis 13.00 Uhr
und „ 14.30 „ 17.00 „
Sonnabend „ 7.30 „ 12.30 „

Auskünfte jeder Art der Sozialversicherung, Einzahlung freiwilliger Beiträge der Invaliden- und Angestelltenversicherung können nur noch vormittags erfolgen. Die Kassenräume müssen nachmittags für den Publikumsverkehr wegen Terminarbeiten geschlossen bleiben.

Allgem. Ortskrankenkasse für d. Kreis Hersfeld
W. Sauerwein

neue Bezugsmarken für Schuhe

Alte Marken ungültig

Laut der Anordnung 9/46 des LWA Wiesbaden, die am 1. 4. 1946 in Kraft tritt, werden betr. Neubewirtschaftung ab sofort alle im Umlauf befindlichen Bezugscheine über Schuhe aller Art ungültig erklärt. Eine Belieferung der alten Bezugscheine(-marken) darf deshalb durch die Schuhgeschäfte nicht mehr erfolgen. An Stelle der seitherigen Bezugsrechte werden durch das LWA. Wiesbaden neue Bezugsmarken eingeführt, die ohne jede Einschränkung in Großhessen gültig sind.

Da für die Verkaufsstellen mit der Neubewirtschaftung auch gleichzeitig das Bestellscheinverfahren zum Wiederbezug eingeführt wird, hat eine Durchbrechung der Grundsätze in Zukunft die Sperrung der Schuhzuteilung zur Folge.

Die Zahl der dem Kreis zur Verfügung stehenden Bezugsmarken wird vom Landeswirtschaftsamt festgesetzt, ebenfalls die Zuteilung auf Grund des Wiederbezugsverfahrens.

Die Händler erhalten zur Durchführung der neuen Bewirtschaftungsmaßnahmen eine einmalige Ueberbrückung, welche in Kürze durch das LWA Wiesbaden über das Kreiswirtschaftsamt erfolgt.

Da die Zahl der zur Verfügung stehenden Bezugsmarken sehr gering ist, können grundsätzlich nur äußerste Notfälle berücksichtigt werden. In erster Linie sind dies Ostflüchtlinge, im Freien Arbeitende, noch nicht versorgte Fliegergeschädigte und politisch Verfolgte.

Sonderkontingente für Betriebe, Behörden usw. dürfen nicht mehr gewährt werden. Sobald dem Wirtschaftsamt die neuen Bezugsmarken zur Verfügung stehen, finden die vorliegenden Anträge der angeführten Notstandsgruppen im Rahmen der Liefermöglichkeit sofortige Berücksichtigung. Für die ungültig erklärten seitherigen Bezugsrechte müssen von den erwähnten Notstandsgruppen Neuanträge gestellt werden.

Interessengemeinschaft ehem. KZ-Häftlinge sowie pol., rass. und rel. Verfolgter

Um die Betreuung aller im Kreise Hersfeld wohnhaften, von den Nazis verfolgten Personen durchführen zu können, ist eine Erfassung dieser Personen erforderlich. Alle Personen, die im KZ., Zuchthaus, Gefängnis oder in Untersuchungshaft inhaftiert waren, werden zu der am Sonntag, dem 14. 4. 46, 10.00 Uhr, im Lokal Altes Brauhaus, Hersfeld, Kirchplatz„ stattfindenden Gründungsversammlung der Opfer des Faschismus eingeladen.

Tagesordnung: Wahl des Vorstandes - Betreuung - Verschiedenes.

Belege über die verbüßte Haft sowie 2 Lichtbilder zur Ausstellung eines Ausweises sind mitzubringen. Es kommen nur Personen in Frage, die politisch einwandfrei sind. Erscheinen ist Pflicht!

I. A.: Huckemeier, Hersfeld
Sauerwein, Friedlos.

Der Kreislandwirt gibt bekannt:

Anordnung Nr. 67

Auf Grund des § 8 der Satzungen für Viehwirtschaftsverbände vom 5. 3. 35 in der Fassung vom 9. 5. 1936 (RNSTVKl. S. 233) in Verbindung mit § 4 f der Verordnung über die Beförderung von Vieh vom 7. 6. 1937 (RGBl. I S. 621 ordne ich folgendes an:

§ 1

Die Bestimmungen der Anordnung Nr. 5 der Hauptvereinigung der deutschen Viehwirtschaft vom 19. August 1937, sowie der §§ 49 bis 58 der Anordnung Nr. 1 der Hauptvereinigung der deutschen Viehwirtschaft vom 18. 12. 1944 (RNSTVBl. S. 469) werden sinngemäß auf die Voranmelde-, Rückmelde-, sowie Transportbegleitscheinpflicht für die Beförderung von Ziegen einschl. Ziegenlämmer ausgedehnt.

§ 2

In § 1 der Anordnung Nr. 5 der Hauptvereinigung der deutschen Viehwirtschaft wird hinter die Fassung „Rindvieh einschl. Kälber" eingefügt, „Ziegenlämmer einschl. Ziegen".

§ 3

1. Der Versand oder die Beförderung von Ziegen einschl. Ziegenlämmer über das Gebiet des Landesernährungsamtes II Großhessen hinaus ist verboten.

2. Der Versand oder die Beförderung von Ziegen einschl. Ziegenlämmer in einen anderen Kreis innerhalb des Landesernährungsamtes II Großhessen, darf nur mit Genehmigung des für den Herkunftsort zuständigen Sachbearbeiters für Viehwirtschaft bei der Kreisstelle erfolgen.

§ 4

Verstöße gegen diese Anordnung werden nach den geltenden Bestimmungen bestraft.

§ 5

Diese Anordnung tritt mit sofortiger Wirkung in Kraft.

Kassel, den 18. März 1946.

Landesernährungsamt II Großhessen
der Amtsleiter: gez. v. Pappenheim.

Absatzveranstaltung für das Deutsche schwarzköpfige Fleisch-Schaf

Der Landesverband Kurhessischer Schafzüchter e. V. kann im Jahre 1946 nur eine Absatzveranstaltung für das Deutsche schwarzköpfige Fleisch-Schaf abhalten. Diese Auktion findet am 12. April 1946 in Wabern, vormittags 11 Uhr in den Gebäuden des Karshofes statt. Dem Auktionstag geht am 11. April die Prämierung der Zuchtböcke ab 9 Uhr früh voraus.

Hauptkörung

Die Hauptkörung für Bullen, Eber und Ziegenböcke findet am Mittwoch, dem 10., Donnerstag, dem 11. und Freitag dem 12. April 1946 im Kreise Hersfeld statt. Nähere Anweisung über Körtag, Körort und Körzeit erhalten die Vatertierhalter vom zuständigen Bürgermeisteramt.

Müller müssen Getreidebestände melden

Ich weise nochmals darauf hin, daß sämtliche Mühlen des Kreises Hersfeld verpflichtet sind, umgehend die Bestände an Getreide meiner Dienststelle zu melden. Meldepflichtig sind Klein-, Mittel- und Großmühlen.

Vermehrung von Futterrübensamen

Da der benötigte Futterrübensamen auf Grund bestehender Schwierigkeiten nicht beschafft werden kann, empfiehlt es sich, für Betriebe mit fehlendem Runkelrübensamen, Zuckerrübensamen auszusäen. Vor allen Dingen muß darauf hingewiesen werden, daß der noch vorhandene Runkelrübensamen nicht geich auf das Feld gedrillt wird, sondern eine Aussaat möglichst erst im Garten erfolgen soll, um später Einpflanzungen vornehmen zu können. Da der Futterrübensamen überhaupt in unzureichender Menge vorhanden ist, muß unter allen Umständen versucht werden, den Futterrübensamenanbau in weitgehendster Weise zu fördern.

Die Firma Stephan Münch, Kassel, Frankfurter Straße 139 ist in der Lage, noch Elite-Saatgut an roten und gelben Eckendorfern zur Verfügung zu stellen.

Falls irgendwelche Betriebe daran interessiert sind, Futterrübensamen anzubauen, bitte ich um umgehende Meldung, damit die Firma Münch, Kassel, das erforderliche Saatgut zur Verfügung stellt.

Anbau von Zuckerrüben

Der Zuckerwirtschaftsverband legt besonderen Wert darauf, daß der Zuckerrübenanbau wesentlich erweitert wird. Soweit es die klimatischen und Bodenverhältnisse zulassen, kann ich den erweiterten Zuckerrübenanbau empfehlen.

Die Anbauprämie für je 100 dz abgelieferte Rüben wird von 4 kg auf 12 kg Prämienzucker erhöht. Dieses dürfte neben der besonderen Kunstdüngerzuteilung, sowie bei den Zuckerfabriken zur Verfügung stehenden Rübensamen, den anfallenden Rübenblattertrag und die übliche Gratisschnitzelrückgabe und den zusätzlichen Verkauf von Trockenschnitzeln ein wesentlicher Vorteil für die Anbauer sein.

Gottesdienste

Evangel. Gottesdienst. Hersfeld: Sonnabend, 6. April: 20.00 Wochenschlußgottesdienst, Kirchplatz 6, Pfarrer Suhre. — Sonntag, den 7. April (Judika): In der Stadtkirche: 9.30 Pfarrer Noerenberg. 14.00 Prüfung der Konfirmanden des 1. Pfarrbezirks. 17.30 Prüfung der Konfirmanden des 3. Pfarrbezirks. 14.00 in der Kapelle der Baptistengemeinde: Kindergottesdienst. 19.30 im Pfarrhaus Kirchplatz 2: Jahreshauptversammlung des C.V.J.M.

Kalkobes: 9.00 Pfarrer Suhre.

Heenes: 9.15 Kindergottesdienst, 9—13 Jahre; 10.00 Kindergottesdienst, 4—8 Jahre; 20.00 Mütterstunde.

Petersberg: 14.00 Prüfung der Konfirmanden, Pfarrer Noerenberg.

Sorga (Montag): 20.00 Jungmännerabend.

Unterhaun: 9.00 Pfr. Grein Konfirmation.

Wippershain: 14.00 für Wippershain und Eitra Prüfung der Konfirmanden.

Bibelstunden und andere Veranstaltungen: Dienstag und Freitag um 8.15 im 1. Pfarrhaus: Morgenandacht. — Montag 15.00 im 1. Pfarrhaus: Mütterverein, 20.00 Bibelstunde, Dekan Drüner. — Mittwoch von 14.00 ab im 1. Pfarrhaus Näh- und Flicknachmittag für die Innere Mission und Christliches Hilfswerk. — Donnerstag 15.30 im 1. Pfarrhaus Frauenhilfe und Missionsverein. — Freitag 19.30 Heimkehrerabend, Kirchplatz 6.

Katholischer Gottesdienst. Hersfeld: Samstag von 16.00 ab Beichtgel. (fremder Priester), desgl. Sonntag 6.30. — Sonntag (Passionssonntag): 7.15 Betsingmesse mit Kommunion der Männer, 9.30 Hochamt mit Predigt, 17.30 Fastenpredigt (P. Alban-Fulda) und sakr. Segen. — Werktags 7.00 und 8.00 hl. Messe. — Dienstag 4.45 Fastenandacht m. S. — Freitag (Schmerzensfreitag) 8.00 Amt (Mütter), 20.00 Kreuzwegandacht und sakr. Segen. — Montag 20.00 Jungfrauen. — Dienstag 20.00 Kirchenchor. — Donnerstag 20.00 Jungmänner.

Philippsthal: Sonntag 9.00 Amt m. Pred.

Heringen: 10.00 Amt mit Predigt.

Schenklengsfeld: 15.00 Amt mit Pred.

Landeskirchliche Gemeinschaft (Gemeinschaftshaus, Seilerweg 5): Sonntag 11.00 Sonntagsschule; 20.00 Missionsvortrag (Miss. Schmoll); 9.00—12.00 Stundenhalter-Konferenz. — Mittwoch 20.00 EC-Jugendstunde. — Donnerstag 20.00 Bibelstunde.

Ev. Freikirchliche Gemeinde, Hersfeld, Neumarkt 26, Sonntag, 7. April: 9.00 Predigt (Pred. Baumgart), 11.30 Sonntagsschule, 15.30 Predigt (Pred. Bohle), Text Offbg. 1, 4—6. — Dienstag 20.00 Bibelstunde (Pred. Bohle). — Donnerstag 20.00 Jugendstunde.

Neuapostolische Gemeinde Hersfeld, Simon-Haune-Straße 17: Sonntag 13.00 Kindergottesdienst; 14.00 Gottesdienst. — Hausen bei Oberaula: Sonntag 9.30 Gottesdienst. — Kathus: Sonntag 9.30 Gottesdienst. — Wölfershausen bei Heringen: Sonntag 13.30 Gottesdienst.

VOLKS-HOCHSCHULE

Donnerstag, den 11. April, hält Dr. Brühl seinen 5. Vortrag über **„Die Entwicklung der deutschen Arbeiterbewegung".** Der Vortrag findet im Zeichensaal des Lyzeums statt und beginnt um 20 Uhr.

*

Nach Ostern beginnen für Jugendliche **Abendkurse in Englisch und Kurzschrift** (Anfangsunterricht).

Alle Teilnehmer müssen sich bis zum 20. April in die Listen eintragen, die in den Buchhandlungen Conradi, Oertel und in der Stadtbücherei ausliegen.

Für jeden Abend wird ein kleiner Unkostenbeitrag erhoben.

Dr. Fischer.

Osterferien

Letzter Schultag: 13. April 1946.
Erster Schultag: 25. April 1946.

Der k. Schulrat.

Kulturhalle Hersfeld

Spielplan für die Zeit vom 6. bis 14. April

Samstag, 6. April, 19—21 Uhr: **„Ein toller Einfall",** Schwank in vier Akten von Laufs. Inszenierung: Franz Sauer.

Sonntag, 7. April, 19—21 Uhr: Zum letzten Male: **„Ehe in Dosen"** Lustspiel in einem Vorspiel und drei Akten von Leo Lenz und Ralph Arthur Roberts. Inszenierung: Hans Munkel.

Montag, den 8. April, 19.00—21.00 Uhr: Gastspiel **„Das Lettische Ballett".** Künstler der Nationalen Oper Lettlands (Riga), des Libauer Opernhauses und des Riga'schen Volkstheaters tanzen Werke von Brahms, Drdla, Glier, Mattei, Rossini, Fibich, Dvorak, Glasunow, Johann Strauß u. a.

Dienstag, den 9. April, 18.30—21.00 Uhr: **„Der Barbier von Sevilla",** Komische Oper in zwei Aufzügen von Rossini. Musikalische Leitung: Rudolf Ducke; Inszenierung: Hans Müller-Schumann. Gesamtausstattung: Erich Döhler.

Sonntag, den 14. April, 19.00—21.00 Uhr: Neueinstudierung **„Maria Magdalena".** Ein bürgerliches Trauerspiel in drei Akten von Friedrich Hebbel. Inszenierung: Max Nemetz. Gesamtausstattung: Erich Döhler.

Gastspiele: 10. 4. und 11. 4. 46 nachmittags und abends: **„Candida"** in Eschwege; 13. 4. 46 **„Ehe in Dosen"** in Schenklengsfeld.

Vorverkauf jeweils 3 Tage vor der Vorstellung in der Zeit von 11—13 Uhr in der Kulturhalle Hersfeld

Vorbestellte Karten müssen am Tage der Aufführung bis 12.00 Uhr abgeholt werden. Nicht abgeholte Karten werden ausnahmslos anderweitig vergeben.

Versammlung der Bauern und Landwirte der Stadt Hersfeld

Am Montag, 8. April, findet abends 8 Uhr in der Gastwirtschaft Sander, am Bahnhof, eine Versammlung aller Bauern und Landwirte der Stadt Hersfeld statt. Der Ortslandwirt fordert alle Bauern und Landwirte zum Erscheinen auf, da es sich um Kunstdüngerverteilung handelt.

*

Die vornehmste Aufgabe eines jeden Betriebsinhabers ist, seine Ablieferungspflicht in jeder Beziehung zu erfüllen. Ich brauche nicht mehr auf den Ernst der Ernährungslage hinzuweisen, denn jeder pflichtbewußte Bauer und Landwirt ist sich hierüber vollkommen im klaren und tut unter dieser Voraussetzung sein Möglichstes, um die städtische Bevölkerung vor dem Hunger zu schützen. Eine weitere Aufgabe der pflichtbewußten Bauern und Landwirte ist es, die Lauen mitzureißen und diese auch auf die Ablieferungspflicht aufmerksam zu machen.

Kreislandwirt Göbel.

Eheschließungen, Geburten und Sterbefälle

In der Zeit vom 15. bis 31. März 1946 wurden folgende Eheschließungen beurkundet:

Elektroinstallateur Herbert Kittkowske, wohnhaft in Hersfeld, Markt 22, und Krankenpflegerin Ida Schemitzki, wohnhaft in Hersfeld, Neumarkt 9. — Installateur Karl Robert Schmidt, wohnhaft in Hersfeld, Untere Frauenstraße 34 und Verkäuferin Elfriede Zahrndt, wohnhaft in Hersfeld, Untere Frauenstraße 34. — Kraftfahrer Werner Helmut Hirschfeld, wohnhaft in Heenes, Haus Nr. 27, und Arbeiterin Anna Elise Bickel, wohnhaft in Heenes, Nr. 27.

In der Zeit vom 15. bis 31. März 1946 sind in Hersfeld folgende Geburten beurkundet:

Gerhard Höltje, geb. 15. 3. 1946; Eltern: Maschinenschlosser Erich Höltje und Käthe geb. Marder, Am Lax 1. — Monika Lotte Salzmann, geb. 12. 3. 1946; Eltern: Hans Salzmann, ohne Beruf und Else geb. Steisel, Rotenburg, Hausbergstr. 12. — Erna Irmtrud Stock, geb. 18. 3. 1946; Eltern: Sattler Johann Heinrich Stock und Gretchen geb. Daube, Mengshausen, Nr. 33¾. — Heidemarie Buntrock, geb. 16. 3. 1946; Eltern: Kraftfahrer Otto-Buntrock und Magdalene geb. Reul, Hersfeld, Eisfeld 8. — Helga Anneliese Gerda Greß, geb. 19. 3. 1946; Eltern: Angestellter Willi Ernst Greß und Gerda Berta Helene geb. Look, Sorga, Bahnhofstr. 101. — Rita Anna Maria Heine, geb. 20. 3. 1946; Eltern: Reichsbahnarbeiter Hermann Wilhelm Otto Heine und Dorothea Gertrude Elisabeth geb. Gemmer, Hersfeld, Wittastraße 2. — Günther Friedrich Johannes Tschamerznik, geb. 21. 3. 1946; Eltern: Mechaniker Fritz Tschamerznik und Johanna geb. Heukeroth, Philippsthal (Werra), Werk Hattorf. — Ursula Käthe Nehren, geb. 26. 3. 1946; Eltern: kaufm. Angestellter Heinrich Peter Nehren und Anneliese geb. Heller. — Bernd Dieter Scholz, geb. 28. 3. 1946; Eltern: Monteur Alfred Scholz und Edith Margarete Anna geb. Wuttke, Hersfeld, Homberger Straße 27. — Heidemarie Pabst, geb. 27. 3. 1946; Eltern: Kraftfahrer Rudi Karl Wilhelm Pabst und Elfriede geb. Feick, Hersfeld, Schlippental 27a. — Richard Kliszewicz, geb. 25. 3. 1946; Eltern: Dolmetscher Richard Kliszewicz und Alexandra geb. Antonowa, Fürstenwalde bei Kassel. — Jutta Burkowski, geb. 25. 3. 1946; Eltern: Hermann Heinrich Burkowski und Klara Erna geb. Scheer, Oberaula, Kreis Ziegenhain, Nr. 209. — Anita Burghardt, geb. 27. 3. 1946; Eltern Landwirt Hermann Burghardt und Berta Katharina Helderlok, Reckerode, Nr. 5.

In der Zeit vom 15. bis 31. März 1946 wurden folgende Sterbefälle beurkundet:

Renate Margarete Dippel, Hersfeld, Obere Frauenstraße 9, geb. 1. 9. 1945, gest. 16. 3. 1946. — Oberstelger i. R. Georg Rudolph, wohnhaft in Widdershausen, Kreis Hersfeld, Nr. 55, geb. 27. 1. 1879, gest. 16. 3. 1946. — Klaus Wilhelm Schenk, Hersfeld, Neustadt 11, geb. 15. 2. 1931, gest. 16. 3. 1946. — Kurt Alfred Köhne, Hersfeld, Weinstraße 19, geb. 16. 4. 1932, gest. 16. 3. 1946. — Säugling Monika Rödel, Hersfeld, Knottengasse 14, geb. 12. 3. 1946, gest. 17. 3. 1946. — Mädchen Karin Degenhardt, Welterode, Kreis Rotenburg, Mittelgasse 12, geb. 6. 8. 1940, gest. 18. 3. 1946. — Anna Glas geb. Bolender, Hersfeld, Schlippental 44, geb. 4. 7. 1868, gest. 19. 3. 1946. — Säugling Klaus Georg Barth, Hersfeld, Friedloser Straße 12, geb. 20. 3. 1946, gest. 20. 3. 1946. — Antonie Höper geb. Kempa, Offenbach (Main), Bismarckstraße 175, geb. 3. 5. 1885, gest. 20. 3. 1946. — Sabine Elise Pernau geb. Erstmann, Hersfeld, Lullusstraße 3, geb. 11. 11. 1864, gest. 21. 3. 1946. — Pensionär Hermann Max Bauer, Hersfeld, Fritz-Ebert-Straße 11, geb. 27. 2. 1860 gest. 22. 3. 1946. — Kontoristin Edith Violett Gertrud Fraund, Obersuhl, Kreis Rotenburg, Clausmannstraße 7, geb. 5. 3. 1924, gest. 23. 3. 1946. — Ober-Signal-Werkmeister Paul Schweitzer Bebra, Alte Weiteröder Straße 18, geb. 15. 5. 1895, gest. 25. 3. 1946. — Arbeiter Laurentius August Groß, Hersfeld, Johannesstraße 3, geb. 13. 8. 1876, gest. 26. 3. 1946. — Margarete Baum, Postbeamtin in Ruhe, Bebra, Bahnhofstraße 10, geb. 11. 6. 1882, gest. 23. 3. 1946. — Anna Mathilde Groos geb. Berkhahn, Hersfeld, Markt 16, geb. 25. 5. 1871, gest. 25. 3. 1946. — Mittelschullehrerin Margarete Polier, wohnhaft in Hersfeld, Kurpark 37, geb. 25. 11. 1894, gest. 27. 3. 1946. — Anna Margarete Nuhn geb. Becker, Hersfeld, Fritz-Rechbergstraße 16, geb. 6. 8. 1867, gest. 27. 3. 1946. — Margarete Paschen, Hersfeld, Gotzbertstraße 12, geb. 21. 7. 1888, gest. 27. 3. 1946. — Schlosser und Invalide Konrad Funk, Hersfeld, Rosmariengasse 5, geb. 26. 3. 1870, gest. 28. 3. 1946. — Oberfeldwebel Nikodem Johann Freibach, Hersfeld, Friedloser Straße 90, geb. 7. 2. 1917, gest. 6. 12. 1944. — Reichsbahn-Wagenmeister Wilhelm Holzhauer, Weiterode, Südstraße 10, geb. 1. 1. 1897, gest. 29. 3. 1946. — Karoline Fehling geb. Weber, Hersfeld, Weinstraße 15, geb. 10. 5. 1879, gest. 29. 3. 1946. — Landwirt Karl Christian Schmitt, Beenhausen, Kreis Rotenburg (Fulda), geb. 27. 10. 1870, gest. 29. 3. 1946.

Hersfeld, den 4. April 1946.

Der k. Bürgermeister: Sauerwein.

Druck: Hessische Buchdruckerei Karl Büchsteidt (Inh. A. Otto) Hersfeld

4 Popular Uprisings: Berlin (1953), Hungary (1956) and Prague (1968)

4.1 Berlin (1953)

"Befehl!
Über die Stadt Halle ist der Ausnahmezustand verhängt. Demonstrationen, Versammlungen und Zusammenrottungen jeder Art sind verboten.
Jeder Aufenthalt auf den Straßen ist von 21.00 bis 4 Uhr verboten.
Im Falle von Widerstand wird von der **Waffe Gebrauch gemacht!**
Halle, den 17. Juni 1953
Chef der Garnison und Militärkommandant der Stadt Halle (Saale)".

Die genaue Zahl der Opfer ist offiziell nicht bekannt. Nach Berichten aus verschiedenen Teilen Mitteldeutschlands wurden etwa 250 Demonstranten und 100 Volkspolizisten getötet. 17 sowjetische Soldaten werden standrechtlich erschossen, weil sie sich weigerten, auf Arbeiter zu schießen. Mehr als 5.100 Demonstranten sind verhaftet.

Am **23. Juni 1953** erklärt **Bundeskanzler Konrad Adenauer** bei der Trauerfeier vor dem Schöneberger Rathaus:

"Das ganze deutsche Volk hinter dem Eisernen Vorhang ruft uns zu, seiner nicht zu vergessen, und wir schwören ihm in dieser feierlichen Stunde: Wir werden nicht rasten -diesen Schwur lege ich ab für das gesamte deutsche Volk-, bis auch sie wieder Freiheit haben, bis ganz Deutschland wieder vereint ist in Frieden und Freiheit".

Bert Brecht, der kommunistische Schriftsteller, schreibt:

"Nach dem Aufstand des 17. Juni
Ließ der Sekretär des Schriftstellerverbandes
In der Stalinallee Flugblätter verteilen
Auf denen zu lesen war, daß das Volk
Das Vertrauen der Regierung verscherzt habe
Und es nur durch verdoppelte Arbeit
Zurückerobern könne. Wäre es da
Nicht einfacher, die Regierung
Löste das Volk auf und
Wählte ein anderes?"

Am **7. August 1953** hat der Deutsche Bundestag mit den Stimmen aller seiner demokratischen Parteien den 17. Juni zum **Tag der deutschen Einheit** erklärt.

Dreißig Jahre später

Was bedeutet dreißig Jahre danach der Tag der deutschen Einheit dem geteilten deutschen Volk?

Wird der 17. Juni 1953 würdig eingereiht in die Reihe der **deutschen Freiheitsbestrebungen?**

1813 - Befreiungskriege gegen Napoleon I.
1817 - Wartburgfest Eisenach der Studenten
1832 - Hambacher Fest
1848 - Paulskirche, Frankfurt am Main
1943 - Widerstand gegen Hitler - Weiße Rose in München
1944 - Attentat auf Hitler - Graf Stauffenberg

In der DDR hat die Sozialistische Einheitspartei (SED) in fast vier Jahrzehnten mit Lockungen und Drohungen, mit Mauer und Todesstreifen ihre Bürger dahin zu bringen versucht, sich mit dem System abzufinden:

Eine "Abstimmung mit den Füßen" gibt es nicht mehr.
Freizügigkeit -von der DDR in der KSZE-Schlußakte von Helsinki unterschrieben- wird **verwehrt.**
Menschenrechte -von der DDR in den UN-Menschenrechtspakten mitunterzeichnet- sind **nicht verwirklicht.**
Menschliche Kontakte sind -ausgenommen die Menschen im Renten-Alter- praktisch nur durch Besuche in der DDR erlaubt.

Diese inhumane Realität darf nicht daran hindern, immer wieder Begegnungen mit den Landsleuten in der DDR zu suchen, das **Selbstbestimmungsrecht** für alle Deutschen einzufordern.

Im **Grundgesetz** der Bundesrepublik Deutschland heißt es:

"Das gesamte Deutsche Volk bleibt aufgefordert, in freier Selbstbestimmung die Einheit und Freiheit Deutschlands zu vollenden".

Gilt diese Aufforderung unverändert? Auch für künftige Generationen?
Ist der Tag der deutschen Einheit nur ein arbeitsfreier Tag?
Sind Paris, Rom, London näher als Eisenach, Weimar, Dresden, Rostock, Königsberg, Stettin und Breslau?

Am **13. Oktober 1982** sagt **Bundeskanzler Helmut Kohl** in seiner Regierungserklärung:

"Die Überwindung der Teilung ist nur in historischen Zeiträumen denkbar. Das Jahr 1983 erinnert uns an Höhen und Tiefen unserer Geschichte:
Vor 500 Jahren wurde Martin Luther geboren.
Vor 50 Jahren begann die deutsche Diktatur und mit ihr der Weg in die Katastrophe.
Vor 30 Jahren erhoben sich die Arbeiter in Ost-Berlin gegen die kommunistische Gewaltherrschaft.
Mauer, Stacheldraht und Schießbefehl sind nicht das letzte Wort zwischen Ost und West, in Deutschland, in Europa und in der Welt.
Menschlichkeit und Vernunft weigern sich, dies hinzunehmen.
Gedanken sind frei, und Menschen müssen von Deutschland nach Deutschland gehen können ohne Todesgefahr.
Der Brief zur deutschen Einheit vom 12. August 1970 formuliert unzweideutig das Ziel unserer Politik:
"Auf einen Zustand des Friedens in Europa hinzuwirken, in dem das deutsche Volk in freier Selbstbestimmung seine Einheit wiedererlangt".

Ost- und Mitteldeutsche Vereinigung
CDU/CSU



Am **5. März 1953** stirbt der sowjetische Diktator **Stalin.** Fast drei Jahrzehnte hat er -der Nachfolger Lenins- die Völker der Sowjetunion und seit 1945 die Volksdemokratien in Ost- und Mitteleuropa beherrscht. Die sowjetisch besetzte Zone Deutschlands -1949 ohne Wahlen als Deutsche Demokratische Republik deklariert- ist ein Teil davon. Viele der unterdrückten Menschen erhoffen ein wenig mehr Freiheit und wirtschaftliche Verbesserung. Die 18 Millionen in Mitteldeutschland und Berlin-Ost ziehen mehr und mehr Vergleiche zwischen der ihnen aufgezwungenen sozialistischen Ordnung und dem wirtschaftlichen Aufschwung ihrer Landsleute in der Bundesrepublik Deutschland und in Berlin-West. Der im Jahr zuvor auf der 2. SED-Parteikonferenz verkündete **"Aufbau des Sozialismus"** hat zu schweren wirtschaftlichen und gesellschaftlichen Krisen geführt. Ein Ausdruck dafür sind die steigenden Ziffern der **Flüchtlinge** aus Mitteldeutschland.

1952: 182.393
1953: 331.390

Diese Abstimmung mit den Füßen gegen das SED-Regime findet weltweite Beachtung und zeigt die wirkliche Einstellung der Menschen zu einer ihnen aufgezwungenen Regierung.

Am **28. Mai 1953** verordnen die SED-Machthaber der DDR eine zehnprozentige **Erhöhung der Arbeitsnormen:**

"Die Regierung der Deutschen Demokratischen Republik hält ... für erforderlich, daß die Minister, Staatssekretäre sowie Werkleiter alle erforderlichen Maßnahmen zur Überprüfung der Arbeitsnormen durchführen. Das Ziel dieser Maßnahme ist ..., zunächst eine Erhöhung der für die Produktion entscheidenden Arbeitsnormen im Durchschnitt um mindestens zehn Prozent bis zum 30. Juni 1953 sicherzustellen".

Am **16. Juni 1953** schreibt die **"Tribüne",** das Organ des **FDGB:**

"Im Zusammenhang mit der Veröffentlichung des Kommuniqués des Politbüros und des Ministerrates vom 9. bzw. 11. Juni 1953 wird in einigen Fällen die Frage gestellt, inwieweit die Beschlüsse über die Erhöhung der Arbeitsnormen noch richtig sind und aufrechterhalten bleiben. Jawohl, die Beschlüsse über die Erhöhung der Normen sind in vollem Umfang richtig."

Das läuft auf eine Lohnminderung bei verschärften Arbeitsansprüchen hinaus. Die als ein Organ der SED funktionierende Gewerkschaft (FDGB) trägt die arbeiterfeindlichen Beschlüsse der Regierung voll mit. Widerspruch und Unruhe in der Arbeiterschaft der DDR werden immer stärker.

Am **16. Juni 1953** formiert sich in der Berliner Stalin-Allee ein Zug von Bauarbeitern, der innerhalb einer Stunde zu Tausenden anwächst. Vor dem Haus der SED-Ministerien ertönt der Ruf nach Herabsetzung der Arbeitsnormen, aber auch die Forderung nach Rücktritt der Regierung. Für den nächsten Tag wird ein Generalstreik ausgerufen. Das Streikkomitee der **Baustelle Strausberg** verteilt folgendes Flugblatt:

"Solidaritätsstreik der Baustelle Strausberg in Verbindung mit den Ostberliner Bauarbeitern.

Der Streik ist das gewerkschaftliche Kampfmittel zur Durchsetzung berechtigter Forderungen.

Wir fordern:

1. Volle Sicherheit für die Sprecher des Streiks.
2. Freie Rede und Pressefreiheit.
3. Weg mit den Normen.
4. Einen Lohn, der den Preisen in der DDR entspricht, Revidierung des gesamten Preisniveaus für Lebensmittel und Gebrauchsgüter.
5. Freie Wahlen für ganz Deutschland.
6. Weg mit den Zonengrenzen.
7. Abzug aller Besatzungstruppen.
8. Weg mit der kasernierten Volkspolizei.
9. Sofortige Wiedereinführung der 75%igen Ermäßigung bei Arbeiterrückfahrkarten.
10. Freilassung aller politischen Häftlinge, auch der, die zu Strafen über 3 Jahre verurteilt worden sind.
11. Rückführung sämtlicher Kriegsgefangenen.
12. Fortfall der Volkskontrollen".

Am Abend des 16. Juni 1953 spricht **Jakob Kaiser,** der Bundesminister für gesamtdeutsche Fragen, im West-Berliner Rundfunk:

"Die Demonstrationen der Bevölkerung in Ostberlin können niemanden überraschen, der die unhaltbaren Zustände des sowjetzonalen Regimes kennt. Trotzdem richte ich an jeden einzelnen Ostberliner und an jeden Bewohner der Sowjetzone die Mahnung, sich weder durch Not noch durch Provokation zu unbedachten Handlungen hinreißen zu lassen. Niemand soll sich selbst und seine Umgebung in Gefahr bringen".

Die SED-Regierungsfunktionäre der DDR versetzen alle ihre Truppen in Alarmbereitschaft und fordern den Einsatz der in Mitteldeutschland stationierten sowjetischen Truppen. Russische Panzerkolonnen rollen nach Berlin.

Am **17. Juni 1953** marschieren in den Morgenstunden 12.000 Stahlarbeiter des **Walzwerkes Henningsdorf** 27 km nach Ost-Berlin. Zehntausende Berliner Arbeiter versammeln sich in den Straßen des Regierungsviertels. **Sowjetische Panzer** fahren in die Menge. Wie ein Lauffeuer werden in über 300 Orten Mitteldeutschlands die Parolen aus Berlin aufgenommen. Erregte Arbeiter verprügeln Funktionäre, kommunistische Zeitungskioske und Parteilokale gehen in Flammen auf, SED-Parolen werden heruntergerissen und zertrampelt. Sprechchöre fordern **freie und geheime Wahlen** und den Rücktritt der SED-Regierung. In zahlreichen Städten werden Gefängnisse und Zuchthäuser gestürmt und **politische Gefangene befreit.**

11.00 Uhr: Vom Brandenburger Tor wird die rote Fahne heruntergeholt und von der wütenden Menge zerrissen. Unter tosendem Jubel von Tausenden Berlinern hissen Arbeiter auf dem Brandenburger Tor die Berliner Fahne und zwei schwarzrotgoldene Fahnen.

12.00 Uhr: Im Lustgarten und Unter den Linden fahren sowjetische Panzer vom Typ T 34 rücksichtslos in die 50.000 Menschen zählende Menge; dabei wird ein Demonstrant von den Ketten eines Panzers erfaßt und getötet. Arbeiter und Jugendliche gehen mit Steinen und Brechstangen gegen Panzer vor, die Warnschüsse in die Luft abfeuern.

13.00 Uhr: Über den Sowjetsektor von Berlin verhängt der sowjetische Stadtkommandant den Ausnahmezustand. Am Potsdamer Platz wird mit Maschinengewehrfeuer gegen Aufständische vorgegangen. In der Friedrichstraße stürmen Demonstranten das Gebäude des Staatssicherheitsdienstes. Mehrmals versuchen Tausende von demonstrierenden Berlinern in das Volkspolizeipräsidium am Alexanderplatz einzudringen. Das Columbus-Haus am Potsdamer Platz geht in Flammen auf. Soldaten der Sowjetarmee und Volkspolizisten schießen gezielt auf Demonstranten.

Über 100 Verwundete werden aus dem Geschoßhagel nach West-Berlin gerettet. Acht von ihnen sterben in den Krankenhäusern.

Sowjetisches Militär schlägt den Aufstand im Laufe des Tages in Berlin und in Mitteldeutschland blutig mit Waffengewalt nieder, nachdem die örtlichen Militärbefehlshaber die Gewalt übernahmen.

June 17, GDR:Mass protests against the SED government, which were violently suppressed by the Soviet Union,

resulting in over 50 deaths and thousands of arrests: Experiencing this event led my great-uncle and great-aunt to leave Berlin and to move to us in order to live in our neighborhood. June 17th became our national holiday until 1991.

4.2 Hungary (1956)

Hungary's defeat in the war and the subsequent Soviet occupation shaped Hungarian domestic and foreign policy, as well as the country's social and economic development, from 1944 until the end of the 1980s. From 1945 to 1989, Hungary was a Soviet satellite state. [Wikipedia source].

The revolution began on October 23, 1956, with a large, peaceful demonstration by university students in Budapest demanding democratic changes. That evening, the government ordered its troops to fire on the rapidly growing crowd, sparking an armed conflict. Within a few days, the one-party dictatorship was replaced by a government led by Imre Nagy, in which the Hungarian People's Party and the Smallholders' Party also received ministerial posts. Hungary withdrew from the Warsaw Pact, declared its neutrality, and called on the Soviet army to leave the country.
The Hungarian Revolution ended with the invasion of the overwhelmingly powerful Soviet army, reinforced by troops from other regions, which installed a pro-Soviet government under János Kádár on November 4, 1956. The fighting against them lasted a week in Budapest, several weeks in some areas, and even until early 1957 in the mountains. The West verbally supported the insurgents, but NATO refrained from a military confrontation with the Warsaw Pact states. After the suppression of the revolution, hundreds of insurgents—among them Imre Nagy and Pál Maléter—were executed by the communist authorities, and tens of thousands were imprisoned or interned. Hundreds of thousands of Hungarians fled the dictatorship to the West. Since 1989, October 23 has been a national holiday in Hungary.
Orbán rose to prominence in June 1989 when he demanded the withdrawal of the Soviet army from Hungary in a speech! He was Prime Minister of Hungary from 1998 to 2002 and has been again since 2010; in between, he was leader of the opposition. This makes him the longest-serving head of government within the European Union. And what is he doing now?

4.3 ”Prague Spring“ in Czechoslovakia (August 21, 1968)

After Stalin's death in 1953, the period of de-Stalinization began. Starting with Nikita Khrushchev (then General Secretary and thus head of the CPSU), the condemnation of the Stalin personality cult also began in Czechoslovakia in 1956. Antonín Novotny, who had been in office as party and state leader since 1957, eliminated the Stalinists in the early 1960s and opened the door to liberalization and freedom of expression.
In 1967, growing discontent and unrest spread throughout Czechoslovakia, primarily voiced by writers, artists, and intellectuals around Václav Havel. When Novotny opposed the deployment of Soviet missile bases, Brezhnev (now General Secretary of the CPSU) seized the opportunity and initiated Novotny's removal. In January 1968, Novotny was forced to resign. In January 1968, the Communist Party of Czechoslovakia elected a new leader, Alexander Dubček, a Slovak communist who had previously been trained in Moscow. Dubček intended to implement sweeping economic, cultural, and even political changes, for which he found support among the overwhelming majority of the Czech and Slovak populations. On August 17, 1968, the CPSU decided to intervene militarily in Czechoslovakia. As one member of the Soviet leadership commented: “Yugoslavia, China, Albania, Romania have all abandoned us. Should we now let Czechoslovakia secede as well?”
We were surprised by the following during our holiday in Tyrol. On the night of August 20-21, Warsaw Pact troops invaded Czechoslovakia to provide "assistance" to their fraternal country. The first troops landed at Prague Airport that evening, followed by approximately 250 more transport planes carrying weapons and paratroopers via 11 different routes in the hours that followed. In addition, 550 fighter jets were deployed as part of "Operation Danube." During the night, 6,300 tanks advanced into Czechoslovakia from the direction of East Germany, Poland, Hungary, and the Soviet Union. Nearly half a million soldiers were involved in total. Ultimately, the Czechoslovak leadership was forced to

sign an agreement accepting the Soviet ultimatum and reversing all the reforms of the Prague Spring in exchange for the withdrawal of the occupying forces. This largely occurred by the end of October. The Warsaw Pact invasion resulted in 108 Czechoslovak casualties, almost all of them civilians.
Later, in Czechoslovakia, protests against the restriction of civil liberties reignited with Charter 77, a civil rights movement that lasted from 1977 to 1992. The petition, signed by hundreds of intellectuals in 1977, demanded respect for human rights. Václav Havel was the first signatory and spokesperson for the Charter and later sentenced for 5 years. The declaration exposed the injustices in the country and how fundamental rights and freedoms were suppressed in Czechoslovakia. The movement played a crucial role in Czechoslovakia's transformation from a socialist system to a democracy, a process that culminated in the Velvet Revolution of 1989.
Havel served as the last president of Czecho-Slovakia from 1989 until 1992, prior to the dissolution of Czechoslovakia on December 31, before he became the first president of the Czech Republic from 1993 to 2003. He was the first democratically elected president of either country after the fall of communism. As a writer of Czech literature, he is known for his plays, essays and memoirs.

Once, an older friend of mine, executive of the Hamburg publishing house Rowohlt, told me that he smuggled in the eighties Havel ‘letters’ to the west. So he became a very good friend of the heavy smoker Vaclav and his wives, Olga who passed away, and then Dagmar.

5 Some German old 'Year-in-Review' Reports

Rückschau auf 1956: Wir sind

Die Ereignisse in Osteuropa und Ägypten brachten uns an den Rand des Abgrunds

Alle die großen und kleinen Ereignisse bei uns und draußen in der Welt erscheinen bei einem Rückblick auf das Jahr 1956 aus unserer Erinnerung verdrängt durch die zwei großen Themen des letzten Jahresviertels: Ungarn und der Nahe Osten. Wir spürten unser friedliches Dasein bedroht mit einer Plötzlichkeit, an die wir nicht mehr geglaubt hatten. Zurück blieb das Gefühl, am Rande des Abgrunds gestanden zu haben, der Atomweltkrieg heißt, und noch einmal davongekommen zu sein. Die Historiker freilich — jene Leute, die immer 20 Jahre zu spät kommen, als daß man von ihnen etwas lernen könnte — werden wohl anderer Meinung sein. Sie werden uns sar[illegible]: Ihr habt euch umsonst aufgeregt. Das Jahr 1956 hat sich ganz folgerichtig verhalten und mit seinen scheinbaren Kriegsfanalen bestätigt, daß für lange Zeit Friede in der Welt sein wird. Daß das Symbol des Weltfriedens nicht mehr die Taube mit dem Oelzweig ist, sondern die Fernrakete mit der Wasserstoffbombe, daran müßt Ihr euch gewöhnen! Wenn wir weiter auf die Professoren hören, die etwa im Jahre 1976 ihre Bücher schreiben werden, dann war das wichtigste Ereignis von 1956 jener 20. Kommunistische Partei-Kongreß in Moskau, mit dem die Moskauer Unfehlbarkeit für die übrige kommunistische Welt beendet wurde und eine Entwicklung einsetzte, deren Folgen bis heute für Ost und West noch nicht abzusehen sind.

Ein Funken Hoffnung

Von Chefredakteur Dr. Wolfgang Pöschl

In unserer Wunschliste für 1956 vor einem Jahr standen zwei Wünsche oben an: die Sozialreform und die Wiedervereinigung. Während die Sozialreform im eben zu Ende gehenden Jahre nach endlosen Debatten soweit vorangetrieben wurde, daß die Siedlinger des Wirtschaftswunders, wenn auch keineswegs alle, aufatmen dürfen, hat das Jahr 1956 um der Wiedervereinigung keinen Schritt näher gebracht. Auch für 1957 konnte sie der Bundeskanzler in seiner Weihnachtsansprache den Deutschen in Ost und West nicht versprechen, aber seine Zuversicht, ein frischer Wind werde die erstarrten Fronten aufflackern, ließ einen neuen Ton anklingen. Man horchte auf, denn gerade er hatte noch bis vor kurzem in der „Politik der Stärke" und in den Militärallianzen des Westens das Heil auch für unsere Brüder jenseits von Elbe und Werra gesehen.

Die Welle der Verhandlungs- und Kompromißbereitschaft, die sich allerdings im Herbst 1956 am Suezkanal und an den Sowjetpanzern in Budapest brach, hat nun auch die Bundeshauptstadt erreicht. Für das Auswärtige Amt, sogar für Dr. Adenauer, ist der Atlantikpakt nicht mehr das alleinige Instrument zum Aufbrechen des Eisernen Vorhangs. Hat er durch Nehru Einblick in die Kulissen gewonnen, hinter denen Washington und Moskau im geheimen Kontaktgespräch neue Möglichkeiten abtasten? Sieht der Kanzler nunmehr in den Vereinten Nationen das geeignete Forum, wo die Deutschlandfrage besprochen und gelöst werden könnte — die Weltinstanz, deren oberstem Beamten jüngst ein kleiner Mitgliedstaat wie Ungarn die Einreise verweigerte? Schonungsloser konnte die Machtlosigkeit der Weltregierung gegenüber dem Imperialismus der Diktatur nicht enthüllt werden! Ihr Teilerfolg in Aegypten hat zwar das moralische Prestige des Westens wiederhergestellt, ihre Autorität bleibt aber einseitig, solange sich der Ostblock nicht in gleicher Weise den Beschlüssen des Weltparlaments unterwirft.

Und doch gibt die Aufstellung der Polizeitruppe und ihr Ordnungsdienst am Nil einen Funken Hoffnung. Es ist also doch möglich, daß Mitgliedstaaten der UN die Waffen aus der Hand legen, wenn die Weltregierung es befiehlt! Einerlei, wieviel Drohungen und diplomatischer Druck dazu beitragen —, es fallen keine Bomben mehr, unter dem Schutze der kleinen internationalen Streitmacht hat gerade noch vor Jahresende die Räumung des Kanals begonnen, und nun muß das Nahost-Uebel der schwelenden Spannungen, des fanatischen Nationalismus und der brennenden Grenzen an der Wurzel gepackt werden. Der Zeiger der Weltenuhr dreht sich zurück zum Assuan-Projekt, wie er voraussieht auf Abrüstung und militärisch verdünnte Zonen an den Zündstellen des Ost-West-Konflikts.

So ist die Weltpolitik aufs engste mit unseren eigenen Sorgen im zusammengeschrumpften und fast 12 Jahre nach Kriegsende immer noch nicht endgültig abgesteckten Raum unseres Vaterlandes verknüpft. Mit der relativen Selbständigkeit, um die das polnische und das ungarische Volk kämpfen, könnte die deutsche Einheit näherrücken. Mit der Wiedereingliederung Aegyptens in die sittlich geordnete Völkergemeinschaft erhöhen sich die Chancen für eine Dauerlösung in Nahost und für die Normalisierung der internationalen Schiffahrt, von der das reibungslose Funktionieren der europäischen Wirtschaft — auch der unsrigen! — abhängt.

Die Welt ist kleiner geworden, niemand kann sich von Rück- und Fortschritten ausschließen. Nur der Kurzsichtige empfindet noch Schadenfreude über Verluste seines Nachbarn. Und selbst die Genugtuung über Einbrüche in die ideologische und machtpolitische Front der großen Gegenkraft im Osten geht mit der Besorgnis einher, sie könnte die Nerven verlieren und Dummheiten machen. Auf das Donnergrollen der Machtkämpfe muß die moralische Wiedergeburt des Weltgewissens folgen. Wird 1957 der Keim dazu gelegt werden?

JANUAR:

Tausend Heimkehrer fehlen

Nach schwerer Geburt kommt die neue Saar-Regierung zur Welt unter Ney (CDU), der als Anhegen Nummer eins die Rückgliederung an Deutschland bezeichnet — genau zwölf Monate später wird sie Tatsache sein. Am 2. beginnen die ersten freiwilligen Rekruten der Bundeswehr in Andernach und Wilhelmshaven ihre Ausbildung. In England gibt es die ersten Diskussionen um einen Rücktritt Premier Edens, der als Versager bezeichnet wird — dieses Thema wird wie ein roter Faden durchs ganze Jahr gehen.

In Bonn trifft Sowjetbotschafter Sorin an (7.). Der deutsche Botschafter Haas trifft in Moskau erst Anfang März ein. Dafür entdeckt Bonn jetzt, was der große Vermittler Nehru in der Welt bedeutet: Vizekanzler Blücher besucht ihn in Indien (9.).

Der 16. bringt das Ende des Kriegsgefangenen-Entlassungsaktion, die rund 11 000 Spätestheimkehrer aus der Sowjetunion zurückgebracht hat; aber noch etwa tausend nachgewiesene fehlen. Bei den Olympischen Winterspielen in Cortina (26. 1. bis 5. 2.) erringt Ossi Reichert im Slalom für Deutschland eine Goldmedaille. Der letzte Januar-Tag bringt plötzlichen Kälteeinbruch — nachts 20 Grad.

FEBRUAR:

Ein sibirischer Monat

Das war der sibirische Monat mit vierwöchigem Frost, 919 Tote in ganz Europa. Erst am 28. setzt Tauwetter ein. Der neue sozialistische Regierungschef Frankreichs, Mollet, übernimmt mit dem Aufstand in Algerien ein schweres Erbe. Der erste Prozeß gegen den Zahnarzt Dr. Müller, der seine Frau im Auto verbrennen ließ, endet nach Selbstmordversuch des Angeklagten mit Abbruch (4.).

In Nordrhein-Westfalen Rache der FDP für das geplante Wahlgesetz: Arnold (CDU) wird gestürzt und durch SPD-Steinhoff mit SPD-FDP-Koalition abgelöst (20.), womit die Zweidrittelmehrheit der Regierung im Bundesrat dahin ist. Doch das Geschütz ging auch nach hinten los: die FDP spaltet sich (23.), die Rumpfpartei wird von Adenauer aus der Koalition gestoßen (24.), und die Dehler-Gegner bilden später (23. 4.) die neue FVP.

Das wichtigste Ereignis des Monats war der 20. Kongreß der KPdSU in Moskau (14. bis 25.), auf dem Stalin als Tyrann, Mörder und Volksschädling bezeichnet wird. Das befohlene Ende des „Personen-Kults" und der Widerruf früher gültiger Dogmen verwirren die Ostblockländer.



EINES DER WICHTIGSTEN EREIGNISSE war der 20. Parteitag der KPdSU, der zu tiefgreifenden Erschütterungen im Sowjet-Machtbereich führte.

MÄRZ:

Sorgen um Preise und Währung

In Nah-Ost gibt Jordanien dem britischen Schöpfer seiner Armee, Glubb Pascha, den Laufpaß (2.). Die britische Regierung deportiert Erzbischof Makarios von Zypern (9.), Generalstreik auf der Insel. Dagegen Freudenfeiern in Tunis nach Unterzeichnung des Unabhängigkeitsprotokolls für Tunesien (20.).

„Barometer-Wahl" in Baden-Württemberg: FDP behauptet, CDU verbessert, Fortbestand der großen Koalition (4.). Im Bundestag gehen Wehrergänzungsgesetze und Soldatengesetz durch (6.), aber der Bundesrat bewilligt nur 12 Monate Grundwehrdienst (23.).

Neue Sorgen um Preise und Währung: der Diskontsatz wird von 3,5 auf 4,5 Prozent erhöht (7.).

APRIL:

Märchenhochzeit in Monaco

Der Monat beginnt mit dem Wegfall der Notopfer-Marke auf unseren Briefen (das Notopfer selbst fällt erst am 1. 10.) und der Verbilligung von Streichhölzern und Zucker, dafür wird uns die Milch sauer, nein teurer. Chruschtschew und Bulganin, die auf Kriegsschiffen England besuchen (18.), wobei der englische Froschmann Crabb einen rätselhaften und tödlichen Auftrag ausführt), machen sich gründlich unbeliebt und winken mit ihren Atom-Ferngeschossen. Fürst Rainier von Monaco heiratet den amerikanischen Filmliebling Grace Kelly.

Durch den ganzen Monat zieht sich die öffentliche Diskussion, ob die Bundesrepublik mit einem kleinen Berufsheer nicht doch besser fahre als mit der allgemeinen Wehrpflicht. Einen passenden Akzent setzt darauf der Fall des USA-Sergeanten Mc Keon, der auf nächtlichen Strafmarsch sechs Rekruten ertrinken läßt (8.).

Am 4. 8. erhält er dafür neun Monate Zuchthaus. Spanien gibt die Protektoratsherrschaft über Spanisch-Marokko auf (7.).

MAI:

Kabinettskrise um Erhard

Neue Spannung zwischen Athen und London, weil die Briten auf Zypern trotz aller Proteste zwei Zyprioten hinrichten (9.). Bundespräsident Heuss in Griechenland (13.) zieht vorsichtige Parallelen zur Wiedervereinigungssehnsucht auch der Deutschen. Am Pfingstsonntag (20.) werfen die Amerikaner ihre erste im Flugzeug transportable Wasserstoffbombe ab. Die Wahlen in Oesterreich (13.) zwingen die auseinandergefallene Koalition ÖVP/SPÖ wieder zusammen: beide gewinnen gleichmäßig.

Im inflationssüchtigen Bundesfrühling führt die abermalige Diskonterhöhung auf nunmehr 5,5 Prozent (18.) zum Austritt einer wirtschaftspolitischen Kabinettskrise.

An der Seite der Industrie (23. im Kölner Gürzenich) tritt der Kanzler gegen die Hüter der Währung auf. Sein Kampf gegen Erhard und Schäffer endet mit einer Ehrenerklärung für den Bundeswirtschaftsminister (25.).

JUNI:

Der Aufstand von Posen

Moskau ersetzt Außenminister Molotow durch Schepilow (1.).

In Luxemburg fällt zwischen Frankreich und der Bundesrepublik eine der größten Entscheidungen des Jahres: die Saar soll am 1. 1. 57 politisch, später auch wirtschaftlich wieder ein Teil Deutschlands werden, als Preis erhält Frankreich die Moselkanalisierung und die Saar-Kohle (4.).

Adenauer reist nach den USA (8.), aber unter keinem guten Stern, denn einen Tag später kommt Präsident Eisenhower auf den Operationstisch (9.). Die Olympischen Reiterspiele in Stockholm (10. bis 17.) bringen Deutschland gute Erfolge. In Bremen wird für die Metallindustrie die 45-Stunden-Woche vereinbart (13.). Der letzte Brite verläßt die Suezkanal-Zone (13.) — nicht für lange, wie sich zeigen wird.

Die Welt erfährt vom schweren Zwist in der holländischen Königsfamilie, wegen der Beziehungen der Königin zu der Gesundbeterin Greet Hofmans (10. bis 16.), erst viel später (24. 8.) von der angeblichen Aussöhnung. Nach zähem Widerstand zahlt die Bundesrepublik den Westmächten nun doch Stationierungskosten für ihre Truppen — es soll das letzte Mal sein (aber im Dezember werden die Engländer doch wiederkommen). Die Arbeitslosigkeit in der Bundesrepublik sinkt auf den tiefsten Stand (479 000) seit Kriegsende.

Das große Ereignis des Monats ist der Aufstand der Arbeiter von Posen während der dortigen internationalen Messe (28./29.). Das Parteigebäude wird gestürmt und angezündet. Der Aufstand nimmt antisowjetischen Charakter an.

JULI:

Hochwasser in Nordhessen

Dieser kalte und fast sonnenlose Sommermonat bringt ein innen- und ein außenpolitisches Ereignis von größter Tragweite.

Am 7. nimmt der Bundestag die allgemeine Wehrpflicht an, am 20. auch der Bundesrat. Am 27. enteignet der ägyptische Präsident Nasser die britisch-französische Suezkanal-Gesellschaft und verstaatlicht den Kanal.



DIE MÄRCHENHOCHZEIT zwischen Prinz Rainer und der USA-Filmschauspielerin Grace Kelly war ein operettenhaftes Zwischenspiel.

Am Monatsersten stoßen in den USA zwei Verkehrsflugzeuge zusammen, alle 128 Menschen an Bord finden den Tod, es ist das schwerste Unglück der zivilen Luftfahrt. Ein Erdbeben auf der griechischen Insel Santorin fordert 55 Tote (9.).

Die Monatsmitte ist Katastrophenzeit auch in der Bundesrepublik: Hochwassernot, besonders auch in Hessen. Nehru besucht Bonn (13.), Sowjetbotschafter Sorin wird abberufen (14.), im großen deutschen Kriminalprozeß der Nachkriegszeit erhält der Zahnarzt Dr. Müller 6 Jahre Gefängnis (13.). In

Unseren Roman „Vor Reben wird gewarnt" und Rip Korby finden Sie heute auf Seite 4

Ungarn tritt der verhaßte Parteisekretär Rakosi endlich zurück, sein Nachfolger wird der geistesverwandte Gerö (18.).

Der 27. bringt das dramatische Ereignis des Zusammenstoßes zweier Ozeandampfer, „Andrea Doria" (Italien) und „Stockholm" (Schweden) auf hoher See vor der amerikanischen Küste. Es gibt 51 Tote, und das italienische Schiff geht unter.

AUGUST:

In Marcinelle wütet der Tod

Es ist der kälteste Monat seit rund 40 und der nasseste seit über 100 Jahren. In Polen wird der Nationalkommunist Gomulka rehabilitiert (4.), in Marcinelle (Belgien) ein Grubenunglück, das 263 eingeschlossenen Bergleuten den Tod bringt (8.).

In Frankfurt beginnt der Evangelische Kirchentag, auf dem auch ein Streit in der Synode der EKD wegen einer Unterschriftensammlung gegen das Wehrpflichtgesetz beigelegt wird (12.). Schauplatz des Katholikentages ist in der letzten Augustwoche Köln.



Präsident Eisenhower wiedergewählt



Nasser verstaatlicht den Suez-Kanal



Eden stürzt England in Aegypten-Abenteuer



Gomulka will Polens Unabhängigkeit



Nagy kämpft für Ungarns Freiheit

noch einmal davongekommen

Aber die Spannung löste sich, und das dramatische Jahr ging friedlich zu Ende

Das Bundesverfassungsgericht erklärt die KPD für verfassungswidrig (17.). Gegen Otto John wird Anklage wegen Landesverrats erhoben (24.). Die britische Justiz will die russische Diskus-Weltrekordlerin Nina Ponomarewa wegen angeblichen Diebstahls von fünf Hüten belangen. Nina flüchtet in die Sowjetbotschaft und kann erst Wochen später (12.10.) abgeurteilt werden. Die Toten des Monats: Bertold Brecht (13.), der ehemalige Reichsaußenminister v. Neurath.

SEPTEMBER:

Totogewinne werden begrenzt

Am 1. September-Sonntag bringt das Lotto erstmalig über 1 Million DM für 13 Gewinner, am 23. gewinnen sogar drei Mann über 1,5 Millionen. Danach wird der Höchstgewinn in Lotto und Toto auf eine halbe Million begrenzt (28.).

Die britischen und französischen Kanal-Lotsen werden abberufen (11. bis 14.), und man bildet eine Kanalbenutzer-Vereinigung. In Bonn diskutiert man die Wehrdienstdauer weiter, und unter dem Druck der öffentlichen Meinung bekehren sich auch Koalition (16.) und Kabinett (27.). Das griechische Königspaar besucht die Bundesrepublik (17.). Adenauer schließt in Brüssel einen Grenzvertrag, in dem Belgien nach dem Kriege ihm zugesprochenes Gebiet zurückgibt (24.).

Chruschtschew erscheint als Ueberraschungsbesucher in Jugoslawien (19.) und nimmt dessen Präsidenten Tito mit an die Krim (27.), wo in Anwesenheit des ungarischen KP-Chefs Gerö hochwichtige Besprechungen über die Entwicklung in den Ostblockländern stattfinden.

In diesem Monat starben der Dichter Hans Carossa (12.) und Frankfurts Oberbürgermeister Walter Kolb (20.).

sche Rebellenführer in ihre Gewalt bringen (22.). In Schleswig-Holstein beginnen 25 000 bis 30 000 Metallarbeiter einen langanhaltenden Streik (23.). Der bisherige Wiener Sowjetbotschafter Smirnow wird nach Bonn versetzt (26.). Der Pianist Walter Gieseking stirbt in London (26.).

In Luxemburg werden die Saar-Verträge unterzeichnet (27.). Fernost-Reise einer starken Bundestagsdelegation und des SPD-Chefs Ollenhauer in der letzten Oktober-Woche. Bei den Kommunalwahlen (28. in Hessen, Nordrhein-Westfalen, Niedersachsen, 11. 11. in Rheinland-Pfalz, Baden-Württemberg) zeichnet sich ein einheitlicher Trend ab: SPD gewinnt stark, CDU gewinnt mäßig, FDP zahlt die Zeche.

Nagy versucht zu retten

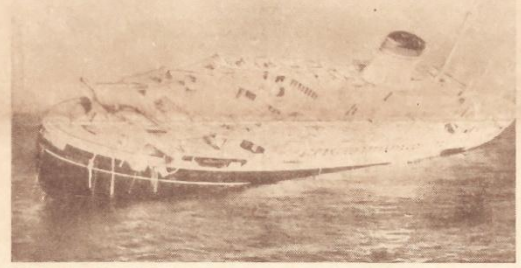
Die weltpolitischen Schauplätze dieses Monats sind Polen, Ungarn und Aegypten. Daß das kommunistische Polen in einer sensationellen Wandlung begriffen ist, zeigen schon die recht milden Urteile im Prozeß gegen die beim Posener Aufstand Verhafteten. Gomulka wird wieder Parteichef (21.). Später wird Sowjetmarschall Rokossowski entlassen.

Was Polens geschmeidiger Führung gelingt, wird in Ungarn zur blutigen Tragödie. Am 23. vereinigten sich Studenten und Arbeiter in Budapest zu Demonstrationen, bei denen der Funke überspringt, als Parteichef Gerö mit sowjetischen Truppen droht. Die Uebernahme der Regierung durch den Nationalkommunisten Nagy (21.) rettet nichts. Sowjetruppen greifen mit Panzern und Flugzeugen ein.

Das Suez-Drama beginnt

Das lässt den Aufstand im ganzen Land aufflammen. Nagy macht ein Zugeständnis nach dem andern an die Freiheitskämpfer, Kardinal Mindszenty wird aus der Haft befreit und kehrt nach Budapest zurück. Die Sowjetunion erklärt (30.); über den Abzug ihrer Truppen lasse sie mit sich reden, über den Bestand der „Volksdemokratie" in diesen Staaten aber nicht.

In diesen Tagen nutzen andere Mächte die Gunst der Stunde. Israel überfällt Aegypten (28./29.). Dem überfallenen Land stellen England und Frankreich ein Ultimatum: Einstellung der Kämpfe oder Besetzung des Suez-Gebietes (30.). Der Ablehnung folgt der Beginn des Interventionskrieges mit Luftangriffen auf Kairo und der Beschießung von Port Said (31.).



DER SCHIFFSZUSAMMENSTOSS zwischen dem italienischen Atlantikdampfer „Andrea Doria" (unser Bild) und dem schwedischen Schiff „Stockholm" beschäftigte wochenlang die Weltöffentlichkeit.

OKTOBER:

Blank muß gehen

Dönitz wird aus dem Spandauer Gefängnis entlassen (1.). Neuer DGB-Vorsitzender wird Willi Richter (6.). Die FDP gibt Kontaktaufnahme mit der Ostzonen-LDP bekannt.

Das Bonner Kabinett, aus dem die vier FVP-Minister der Form nach zurückgetreten sind (6.), wird nach mancherlei Rätselraten umgebildet (16.). Das Wichtigste ist der Verbleib des Eisernen Vizekanzlers Blücher und die Ablösung von Verteidigungsminister Blank durch den bisherigen Atomminister Strauß, ein Vertreter der Parole „Rüste langsam, aber modern."

Der Postminister wird wie üblich später nachgeliefert (Lemmer, 14. 11.). Königin Elizabeth weiht das erste britische Atom-Großkraftwerk Calder Hall ein (17.). Dr. Werner Forssmann ein langverkannter Pionier, erhält den Nobelpreis 1956 für Medizin (18.). Der österreichische Bundeskanzler Raab besucht Bonn.

Aufruhr in der ganzen arabischen Welt über einen Coup der Franzosen, die durch Umdirigieren eines Flugzeuges fünf algeri-

In Ungarn stirbt die Freiheit

In Ungarn tritt der tragische Wendepunkt ein (1.): Nagy kündigt Ungarns Mitgliedschaft im Warschauer Pakt und beantragt Schutz der ungarischen Neutralität durch die Vereinten Nationen. In den gleichen Tagen geht der Interventionskrieg in Aegypten weiter. Frankreich und England wollen nur einer internationalen Polizeitruppe weichen (3.). Da kommt (4.) der Gegenschlag der Sowjets in Ungarn. Sie verhaften die Unterhändler und ersticken die Freiheitsbewegung in Blut. Sie setzen die Gegenregierung Kadar ein, während Nagy und seine Minister in die jugoslawische, Kardinal Mindszenty in die US-Gesandtschaft fliehen.

In schwersten Kämpfen gehen die Hilferufe der Ungarn an die Welt unter. Ein Flüchtlingsstrom ergießt sich nach Oesterreich. In New York beschließen die Vereinten Nationen die Aufstellung einer internationalen Nahost-Streitmacht (4.) und fordern die Sowjets zum Abzug aus Ungarn auf (5.). Gleichzeitig landen entgegen den UN-Beschlüssen die britisch-französischen Truppen im schwer zerstörten Port Said.

Bulganin droht Eden und Mollet mit sowjetischen H-Bomben-Raketen, falls sie den Kampf gegen Aegypten nicht einstellen (5.). Da ergeht der britisch-französische Feuereinstellungsbefehl für Aegypten. Die Waffen schweigen, auch die ungarischen Freiheitssender schweigen.

Wirtschaftsdilemma in Europa

Bei solchen Ereignissen finden die amerikanischen Wahlen, die Eisenhower überlegen gewinnt (6.), nur mäßige Beachtung. Gomulka fährt (14.) „mit bangem Herzen" nach Moskau zu Verhandlungen über das künftige Verhältnis; diese sind erfolgreich. Das sowjetische Verhalten in Ungarn wird auch von Nehru scharf verurteilt (14.). Die UN-Vollversammlung fordert Zulassung von UN-Beobachtern (21.).

Moskau hat durch einen neuen Abrüstungsvorschlag abzulenken versucht, dem es durch eine neue Wasserstoffbombenexplosion Nachdruck verleiht (17.). Mitten im diplomatischen Ringen um den Truppenabzug vom Suez-Kanal wird für das dortige Unternehmen die Rechnung fällig: die britische Regierung kündigt einschneidende Treibstoffrationierungen an — Oel wird auch in anderen Ländern Westeuropas knapp — und Premier Eden muß drei Wochen im fernen Jamaika ausspannen (20.). Im Zeichen verteuerter Benzin- und anderer Preise beschließt der Bundestag die Einführung eines Preistreiberei-Paragraphen (30.).

Indessen finden in Melbourne (22. 11. bis 7. 12.) die Olympischen Sommerspiele statt. Einige Länder haben ihre Meldung zurückgezogen. Dem gesamtdeutschen Sport bringen die Spiele jedoch erfreuliche Erfolge.

DEZEMBER:

Suez-Abenteuer beendet

England und Frankreich geben ihren Entschluß zum endgültigen Abzug ihrer Truppen aus Aegypten ohne Bedingungen bekannt. Er beginnt am 5. und ist am 22. beendet. Erst nach diesem Entschluß lassen die Amerikaner die versprochenen Oel-Ersatzlieferungen fließen. Sie haben sich überhaupt von dem Nah-Ost-Abenteuer ihrer Verbündeten distanziert und dadurch in der farbigen Welt großen Prestigegewinn erzielt. Der damit beschrittene Weg wird bei einem Besuch des indischen Ministerpräsidenten Nehru in den USA unterstrichen: 12 Stunden lang konferierten Eisenhower und Nehru unter vier Augen (17., 18.). Auch der deutsche Bundeskanzler, der Nehru bei dessen Rückflug trifft (27.), ist nun mit dem Sprecher der „Dritten Kraft" in vielen Punkten einig. Die Regierung Kadar in Ungarn versagt UN-Generalsekretär Hammarskjoeld die Einreise und beantwortet einen Streikaufruf mit Auflösung der Arbeiterräte und Verkündung des Standrechtes (9.). Die Zahl der Flüchtlinge aus Ungarn hat inzwischen über 150 000 erreicht.

Eine vorweihnachtliche Konferenzwoche in Paris wird als „wichtigste seit Bestehen der NATO" bezeichnet. Kein Wunder: die Risse im Bündnis müssen gekittet werden. Neuer NATO-Generalsekretär wird der ehemalige belgische Außenminister Spaak (14.).

Ein schönes Symbol deutsch-französischen Ausgleichs ist die Verabschiedung des Saarabkommens mit großer Mehrheit in Paris (12.) und einstimmig in Bonn (14.) durch die Parlamente.

Zwei Tage vor Weihnachten wird der Schlußstrich unter die Affäre John gezogen: das Gericht gibt dem Angeklagten vier Jahre Zuchthaus (22.). Die Sowjetunion beschließt (24., Sitzung des ZK der KPdSU) einen Umbau ihrer Wirtschaftsplanung, der dafür zuständig gewesene Saburow wird durch Perwuchin ersetzt. Mit der Wiederschiffbarmachung des Suezkanals kann nach Ueberwindung letzter Hindernisse begonnen werden. Allerorten lösen sich die politischen Spannungen. Friedlich geht das dramatische Jahr zu Ende.



DER AUFSTAND IN UNGARN gegen die sowjetischen Ausbeuter brachte stärkste Anteilnahme im Westen und Ratlosigkeit in Rußland.



UNO-Truppen in Ägypten

Die Vereinten Nationen errangen unter der Leitung des Generalsekretärs Hammarskjoeld einen großen Erfolg, als es ihnen gelang, den Frieden im Nahen Osten wiederherzustellen. Der Konflikt begann mit der Verstaatlichung des Suezkanals durch Nasser. Er wurde im Oktober zum offenen Krieg, als England, Frankreich und Israel in Aegypten eingriffen. Es kam zu einer Weltkrise, die Sowjets zeigten sich aggressiv, Amerika aber behielt die Nerven. Im Dezember verließen die letzten anglo-französischen Truppen Aegypten. Das Prestige der beiden Westnationen aber war schwer angeschlagen: sie verloren ihre Stellung als Weltmächte.

(Alle Aufn.: Archiv)

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Hammarskjoeld will den Frieden retten



Willi Richter neuer DGB-Vorsitzender



Strauß wird Verteidigungsminister



Der Dichter Bertold Brecht gestorben



Königin Friederike in Deutschland umjubelt

Der Mensch erobert den Weltraum

Welt, aber der Wille zum Ausgleich ist größer als die Angst vor einem neuen Krieg

Bundestag hat wieder einmal einen fleißigen Monat. Er verabschiedet das nach achtjährigem Tauziehen arg verwässerte Kartellgesetz (4.) und die neuen Europa-Verträge (5.). In Moskau beginnen die deutsch-sowjetischen Verhandlungen (23.), die wegen Differenzen in der Repatriierungsfrage aber gleich wieder unterbrochen werden (31.).

Der Tod ereilt in diesem Monat das alljährlich in Gold aufgewogene Haupt der Ismaili-Sekte, Aga Khan (80. am 11.), den italienischen Schriftsteller Malaparte und den französischen Schauspieler Sascha Guitry.

AUGUST:

Die „letzte Waffe"

In diesem Monat platzt die Abrüstungs-Seifenblase unter martialischer Begleitmusik. Die Sowjets geben bekannt, daß sie eine interkontinentale Rakete, die „letzte Waffe", erfolgreich erprobt haben und mit ihr den Atomtod nach jedem Punkt der Erde senden können (26.). Unglaube in den USA, aber tags darauf lehnt der Sowjetdelegierte Sorin in London die westlichen Pläne für eine kontrollierte Abrüstung ohne viel Federlesen ab (27.).

Nun zeigen die Sowjets — im Spannungsfeld Nahost — der Welt ein bißchen, wie man „am Rand des Krieges" spazierengeht. In Syrien kommt es zu einem Putsch der sowjetfreundlichen Armeeführung (14. bis 17.). Der zu tollpatschig unternommene Versuch, die drohende Bildung eines sowjetischen Brückenkopfes in Syrien abzuriegeln, zieht den Amerikanern nur weitere Ungelegenheiten zu.

Der Bundesrepublik aber geht es gut — zu gut, wie andere finden. Während die EZU-Partner über zu hohe deutsche Devisen-Ueberschüsse und unfaire deutsche Gläubigerhaltung klagen und in Frankreich der kranke Franc um ein weiteres Fünftel abgewertet wird (11.), erklärt die Bundesregierung (28.): Die Deutsche Mark wird nicht aufgewertet.

Leider aber hat der Wohlstand auch Sumpfblüten getrieben. Das Koblenzer Bundeswehr-Beschaffungsamt wird als ein Herd der Korruption und Bestechung ruchbar (6.). 52 Firmen und auch Abgeordnete sind in den Skandal verwickelt. Wenig später endet das gerichtliche Nachspiel des Illler-Unglücks in Kempten mit acht Monaten Gefängnis auf Bewährung für den Stabsoberjäger Julitz (23.). Das alles fällt in den beginnenden Bundestags-Wahlkampf.

Im Osten wird es wieder unruhig. Die polnische Regierung macht einem Verkehrsstreik in Lodz (12.) mit Gewalt ein Ende (14.). Der führende Literarhistoriker der Sowjetzone, Prof. Kantorowicz, flieht nach Westberlin (22.).

Einen traurigen Rekord gibt es im alpinen Sport: In der gefährlichen Eiger-Nordwand in der Schweiz haben sich vier tollkühne Bergsteiger in Schnee und Eis verstiegen. In einer von der ganzen Welt verfolgten dramatischen Rettungsaktion wird nur einer von ihnen eine ganze Woche später lebend geborgen (12).

In den letzten Tagen des August stürzt Berlins Regierender Bürgermeister, Dr. Otto Suhr, im Alter von 63 Jahren am Leukämie (30.).

SEPTEMBER:

Wahlsieg der CDU

1957

Der Bundestagswahlkampf entbrennt in voller Schärfe. Der 15. gibt die Antwort: Die deutschen Wähler haben dem 81jährigen Adenauer und seinen Mannen noch mehr Stimmen gegeben als 1953, die SPD hat nur die „Sperr-Minorität" für Verfassungsänderungen erreicht, alle kleinen Parteien, außer der FDP und der durch ihr Bündnis mit der CDU gerettete DP, sind aufgerieben und weggefegt.

Eine zweite, alles überschattende Nachricht bringt der 21. des Monats. Das hauptsächlich mit jungen angeheuerten Seeleuten bemannte Segelschulschiff „Pamir" funkt aus dem Atlantik SOS!

Erst nach bangen Tagen enthüllt sich das ganze Ausmaß der Katastrophe der Viermast-Bark, die unvermutet in einen Wirbelsturm geraten und so schnell gesunken ist, daß die sechs zu Tode erschöpft aus zwei Booten geborgenen Ueberlebenden (von 86) die einzigen bleiben. Ganz Deutschland trauert (28).

Das dritte Ereignis des Monats ist der Rassenkonflikt von Little Rock in Arkansas (USA).

Der Londoner Abrüstungsausschuß vertagt sich nach seiner großen Pleite auf unbestimmte Zeit (6.). Und noch eine große Pleite bringt dieser Monat: Acht Tage nach den Wahlen kündigt der Ruhrbergbau eine erhebliche Verteuerung der Kohle zum 1. 10. an. Verzweifelt stemmt sich der Bundeswirtschaftsminister gegen den nur zu eindeutigen Beginn einer neuen Preiswelle, aber jetzt wird er selber das Opfer „brutaler Maßnahmen", Mitten in den Verhandlungen mit der Ruhrkohlen-Industrie, von dieser brüskiert, muß er kapitulieren. Weitere Preiserhöhungen, darunter die der Bundesbahn, zeichnen sich ab (25.).

Auch im September starben namhafte Persönlichkeiten: Der finnische Tonschöpfer Jan Sibelius (91, am 20.) und der älteste regierende Monarch, König Haakon VII. von Norwegen (83, am 21.).

OKTOBER:

Der Sputnik startet

Am 4., abends, erfährt die Welt, daß der erste künstliche Mond die Erde umkreist, und daß es die Sowjets sind, die ihn mit einer dreistufigen Rakete von offenbar ungeahnter Präzision und Leistung hochgeschossen haben. Der erste „Sputnik" (Gefährte) hat eine maximale Bahnhöhe von 900 km und das respektable Gewicht von 83,6 kg. Für geraume Zeit ist im Kurzwellenband sein „Piep-Piep" zu hören.

Ist der Westen auch militärisch überrundet? Fieberhaft wird nun die Trommel für Amerikas eigene Raketenleistung gerührt. Eisenhower und der britische Premier Macmillan beschließen in Washington eine engere wissenschaftlich-rüstungstechnische Zusammenarbeit (23.—25.).

Am Monatsende eine neue Sensation aus dem Sowjetlande! Der gerade aus Jugoslawien zurückkehrende Marschall Schukow ist als Verteidigungsminister durch Marschall Malinowski abgelöst worden (26.) und wird nach längerem Rätselraten im Westen (bis 2. 11.) auch aus den höchsten Parteigremien ausgestoßen.

Während in der Bundesrepublik an der Kabinettsbildung gebastelt wird, lange und unerfreulich, kündigt Jugoslawien in Bonn die Anerkennung der Sowjetzonenregierung an (14.) und vollzieht sie tags darauf. Bonn rettet sich in die immerhin logische Konsequenz: Abbruch der Beziehungen mit Belgrad (18.).

Nach langem Tauziehen kann nun endlich das neue Bundeskabinett vortreten (24.). Nebenprodukt des Schäfferschen Verwandlungsaktes ist ein neues Schatzministerium (Lindrath), sonst sind um- oder neubesetzt die Finanzen (Etzel), Arbeit (Blank), Wohnungsbau (Lueke), Post (Stücklen) und Gesamtdeutsches (Lemmer). Bundesernährungsminister Lübke ist den Pfeilen der Bauernfunktionäre entgangen.

Mittlerweile macht die SPD etwas zaghafte Wahl-Bilanz — Ollenhauer bleibt als Chef, aber Stellvertreter Mellies scheidet aus dem Fraktionsvorstand, und neue Stellvertreter werden Prof. Carlo Schmid, Erler und Wehner, das attraktive Kleeblatt (26.).

Aus der sonstigen Fülle des Oktober-Geschehens: Hitler-Durchhalte-Generalfeldmarschall Schörner steht in München vor den Richtern und erhält wegen Totschlags 4½ Jahre Gefängnis. Willy Brandt (SPD) wird neuer Regierender Bürgermeister in Berlin (3.), Titos schon zweimal verknackter Ex-Freund Milovan Djilas erhält sieben Jahre Gefängnis (5.), Bundeshilfe rettet die Kasseler Henschel-Werke (11.), schlagartige Banknoten-Umtauschaktion in der Sowjetzone entwertet den kleinen Leuten das Geld im Strumpf (13.), schwere SED-Vorwürfe gegen Bischof Dibelius und Kirche (20.—26.).

Die Ernte des Todes im Oktober: Der deutsche Botschafter in Belgrad Dr. Karl Georg Pfleiderer (58, am 8.), der Pariser Modeschöpfer Christian Dior (52, am 24.).

NOVEMBER:

„Laika" im Weltall

Der 40. Jahrestag der sowjetischen Oktoberrevolution naht heran und zu seiner Feier ein neues Weltraum-Ereignis — da ist es schon am Himmel als sowjetischer Sputnik II (2.). Und der ist nicht von Pappe — fast eine halbe Tonne schwer und dieses Gewicht mehr als 1500 km hochgeschossen auf seine Bahn. Und, Gipfel der Sensation, darin ein lebender Hund: „Laika".

Alarm bei den Tierschutzverbänden, Alarm bei den westlichen Militärs, Alarm in den USA, wo man nach einem „Raketenzaren" ruft und rücksichtslose Beschleunigung des eigenen Satellitenprogramms verlangt.

Die über den Roten Platz gerollten stolzen Raketenwaffen (7.) zeigen, daß die Amerikaner gerade jetzt ihre Verbündeten brauchen wie das liebe Brot. Präsident Eisenhower gibt bekannt, daß auch die USA eine Rakete haben, die Wasserstoff-Sprengladungen heil und zielsicher immerhin über 2500 km verschießt und im verzeihlichen dem Schöpfer der deutschen V 2, (Verrühr- von Braun), zu danken ist. Zu unserer weiteren „Beruhigung" erfahren wir, daß in Europa ständig amerikanische Fernbomber mit (unscharfen) H-Bomben an Bord Patrouille fliegen (12.).

Trotzdem bricht in der NATO eine Krise aus: Gegen Frankreichs Willen haben die USA und Großbritannien mit Waffenlieferungen an Tunesien begonnen, damit dieser junge Staat kein „zweites Syrien" wird (15.). Zu allem Unglück wird Präsident Eisenhower wieder krank (18.), und die Welt erfährt mit Schreck, daß es diesmal ein Schlaganfall war.

In einer Reihe Aufsehen erregender Prozesse werden verurteilt: Die Mannheimer Bank-Raubmörder Schuler und Colwell zu lebenslangem Zuchthaus (12.), der sowjetische Spionage-Chef in den USA, Rudolf Abel, zu 30 Jahren Zuchthaus (15.), der erste Angeklagte vom Koblenzer Beschaffungsamt, Amtsrat Thiede, zu 18 Monaten Zuchthaus (21.), und zu fünf Jahren Zuchthaus der gewiß Unschuldigste von allen, der Leipziger Studentenpfarrer Schmutzler, wegen „Boykott-Hetze" (28.).

Auch sonst bietet der Monat Sensationelles genug: Viermotoriges Flugzeug stürzt bei Düsseldorf ab — acht Tote (2.). Eines gewaltsamen Todes sterben: Frankfurts hochverdienende „Gesellschaftsdame" für Wirtschaftswunderkinder, Rosemarie Nitribitt (24.), (am 1. erwürgt in ihrem Appartement gefunden), Hündin „Laika", erster Weltraumpionier (8., an Gift nach Erfüllung ihrer Aufgabe), beinahe auch der indonesische Staatspräsident Sukarno, gegen den Attentäter vier Handgranaten werfen (30.). Eines natürlichen Todes sterben: Der tschechische Staatspräsident Zapotocky (72, am 13., Nachfolger Parteichef Novotny), der Diamantenkönig Sir Ernest Oppenheimer (77, am 25.) und der Operntenor Benjamino Gigli (67, am 30.).

DEZEMBER

NATO für Verhandeln

Der Weihnachtsmonat beginnt mit einem schweren Schlag für die USA und den Westen: Der amerikanische Satellitenstart, nach 10maligem Aufschub endlich gewagt, (6.), mißlingt unter den Augen der ganzen Welt auf dramatische Weise. Die Trägerrakete explodiert auf der Rampe, und der erste US-Sputnik fliegt nur einige Dutzend Meter weit, bis er — immerhin pflichtgemäß piepend — nach einigem Suchen geborgen wird. Das war nicht das rechte Vorspiel für die herannahende NATO-Gipfelkonferenz, zumal der Kreml noch für ein Weiteres sorgt: Ministerpräsident Bulganin schreibt Briefe an alle 15 Regierungschefs (9./10.), die viele Kostproben eines sowjetischen „Friedensplanes" enthalten.

Als der wiederhergestellte amerikanische Präsident in Paris die „Raketen-Konferenz" der NATO mit dem Aufruf zu „heroischen Anstrengungen" und zum Verzicht auf „falsche Denkgewohnheiten" eröffnet (16.), ist die Bereitschaft der Europäer, sich mit amerikanischen Mittelstrecken-Raketen ausrüsten zu lassen, nur sehr gedämpft.

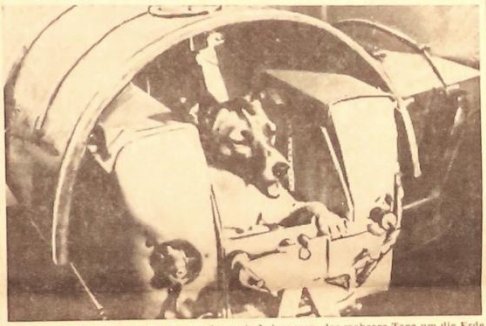
Bundeskanzler Adenauer setzt sich für Verhandlungen mit dem Osten ein. Gleichzeitig mit den Rüstungsanstrengungen soll Bulganin erneut auf den Zahn gefühlt werden. Die Errichtung von Raketen-Basen in Europa soll erst nach eingehender Prüfung der Militärs und im Einverständnis mit den einzelnen Staaten erfolgen.

Auf einer Ost-West-Außenminister-Konferenz soll versucht werden, die Abrüstungsgespräche fortzusetzen.

Kurz vor Jahresende werden die Aussichten auf eine baldige Wiedervereinigung Deutschlands erneut verschlechtert. Die sowjetzonale Volkskammer verabschiedet ein Republikflucht-Gesetz" (11.), das Gefängnis und Geldstrafen schon für die Vorbereitung oder den Versuch eines Ueberganges nach Westdeutschland androht. Das bedeutet noch mehr Stacheldraht an der Grenze zwischen beiden Teilen Deutschlands.



DIE INTERKONTINENTAL-RAKETE der Sowjets wurde bei der Riesenparade am 40. Jahrestag der Oktoberrevolution in Moskau erstmals öffentlich gezeigt. Unser Bild zeigt die „letzte Waffe" auf ihrer fahrbaren Abschußlafette.



DER SPUTNIKHUND „LAIKA" war das erste Lebewesen, das mehrere Tage um die Erde kreiste. Er ließ im Dienste der Wissenschaft sein Leben. Unser Bild zeigt „Laika" in der Druckkabine vor dem Start.



AUF DER PARISER GIPFELKONFERENZ beschlossen die Regierungschefs der 15 NATO-Staaten, die Verteidigungsbemühungen des westlichen Bündnisses fortzusetzen, gleichzeitig aber neue Verhandlungen mit dem Osten einzuleiten. (Alle Aufn.: HN-Archiv)



Gabriele Wülker erste Frau im Kabinett



Benjamino Giglis Stimme ist verklungen



SED-Professor Harich verurteilt



Modeschöpfer Christian Dior gestorben



Feldmarschall Schörner schuldig gesprochen

Rückschau auf das Jahr 1958:

Ueber die Nahostkrise und den Kanonendonner in Fernost zum erbitterten Streit um Berlin

In den ersten sechs Monaten war das weltpolitische Thema der Marsch zur Gipfelkonferenz, bei dem die Teilnehmer aber immer müder wurden und der dann erst zum Jahresende durch Moskaus Gewaltaktion neue Impulse erhielt. Bei uns daheim war die erste Jahreshälfte erfüllt vom Kampf um die atomare Aufrüstung der Bundeswehr. Im zweiten Halbjahr taumelte die Welt von einer Krise in die andere: zuerst in die Nahost-Krise, die glücklich gelöst werden konnte, dann in die fernöstliche, weniger aufregende, schließlich in die bedenklichste und das Jahresende überschattende uns direkt betreffende Krise um den sowjetischen Anschlag auf die Freiheit Berlins. Das Jahr brachte Ende und Neubeginn großer Epochen — die Geburt der V. Republik in Frankreich unter de Gaulle, das Entstehen zahlreicher junger Staatswesen in Afrika und einen Wechsel auf dem Heiligen Stuhl. Für uns Deutsche war ein Merkmal das plötzliche Erscheinen der „Geister von gestern", die sich teils der Gerechtigkeit entziehen konnten (Eisele, Zind) oder vor ihren Richtern standen (Koch, Schubert, Sorge). Es gab wissenschaftliche Großtaten wie z. B. die erste Unterquerung der Arktis durch das U-Boot „Nautilus" oder die Heisenbergsche Formel zur Lösung der physikalischen Grundrätsel. Zwar schossen die Amerikaner einen Vier-Tonnen-Satelliten in den Weltraum, aber die erwartete Sensation blieb aus: Die Mondraketen erreichten wegen kleiner technischer Fehler nicht ihr Ziel.

Der Weg zum Frieden führt über Berlin

Von WILLY BRANDT,
Regierender Bürgermeister von Berlin

Das Hochspielen der Berlin-Frage durch die Noten des sowjetischen Ministerpräsidenten Chruschtschew vom November 1958 an die Westmächte und an die Bundesrepublik hat ein Gutes bewirkt: mit dramatischer Wucht zu zeigen, daß das gespaltene Deutschland und die damit verbundenen Probleme der europäischen Sicherheit immer noch das Gefahrenzentrum Nummer 1 in der Weltpolitik sind.

Nicht wenige, auch einflußreiche Politiker, haben sich in den letzten Jahren bewußt oder unbewußt ein Tuch über die Augen gezogen in dem falschen Glauben, das Problem Deutschland durch Nichtsehenwollen und Nichtstun wegschieben zu können. Manch einer mag auch gehofft haben, dieses Problem löse sich eines Tages so oder so von selbst. Es gibt aber keinen Automatismus, der ohne unser und ohne das Zutun der vier Mächte, deren Truppen in Deutschland stehen, von der gefahrvollen Spaltung zur friedlichen Lösung der deutschen Frage führen würde.

Das Problem Deutschland ist belastet durch die Tatsache, daß unsere Gebiete östlich und westlich von erheblicher militärstrategischer Bedeutung zu sein scheinen; es ist außerdem dadurch belastet, daß die „DDR" zu einer Angelegenheit des Prestiges der Sowjetregierung geworden ist. Keiner verfügt über ein Patentrezept, diesen Stand der Dinge von heute auf morgen zu verändern.

Aber keiner kann sich auch guten Gewissens damit beruhigen, daß man es beim gegenwärtigen Stand der Dinge belassen könnte. Die Spaltung Deutschlands widerspricht nicht nur den berechtigten Interessen unseres Volkes. Ihre Ueberwindung liegt im Interesse aller, denen es um europäische Ordnung und um den Frieden geht.

Auch die Machthaber im Kreml können ernsthaft nicht glauben, daß ihre Deutschland-Politik dem Frieden dient. Sie haben dem Potsdamer Abkommen mindestens seit 1946 zuwidergehandelt. Sie haben es dahin gebracht, daß seit zehn Jahren Tag für Tag Hunderte von Deutschen gegen das ihnen aufgezwungene Zonenregime mit den Füßen abstimmen.

Welcher Weg führt aus der Sackgasse? Sicher nicht der, den Chruschtschew vorschlägt, Westberlin zu einem Experimentierfeld für ein einseitiges Disengagement am untauglichen Objekt und unter unannehmbaren Bedingungen zu machen. Die sogenannte „Freie Stadt" Chruschtschewscher Prägung wäre nach absehbarer Zeit eine kommunistische Stadt Ulbrichtscher Prägung. Es war von vornherein klar, daß die Westmächte 1958/59 auf keinen Fall aufgeben würden, was sie schon während der Blockade 1948/49 mit großem Aufwand verteidigt haben. Niemand sollte sich darüber täuschen, wie bitter ernst dem Westen die Wahrung seiner Stellung in Berlin und die Wahrung der Freiheit in dieser Stadt ist.

Wenn es über die internationale Rechtslage und die westliche Entschlossenheit keinen Zweifel gibt, bleibt doch immer von neuem die Frage zu stellen, welches der politische Ausweg aus dem für den Frieden der Welt gefahrvollen Zustand des zwischen den Machtblöcken geteilten Deutschland sein könnte. Die Krise um Berlin ist nur das Symptom dieser Situation.

Sie sollte zum Anlaß genommen werden — nachdem das Atombomben- und Raketen-Remis zwischen den beiden Weltmächten einmal da ist —, das Sicherheitsproblem in aller Offenheit, und wenn es sein muß mit orientalischer Geduld, zu erläutern und zu analysieren. Aus dem Ergebnis könnten sich vielleicht doch Ansätze für eine neue Politik ergeben, die den Sicherheitsinteressen aller Beteiligten Rechnung zu tragen hätte.

Dies wiederum könnte eine Lösung der deutschen Frage vorbereiten helfen. Hierbei käme es, nach außen wie nach innen, weniger auf eine Politik der Stärke an als auf die Stärke der Politik. Mindestens die ersten Monate des Jahres 1959 werden voller Spannungen und Gefahren sein. Das neue Jahr kann aber auch den Beginn einer Gesundungskrise erkennbar werden lassen.

JANUAR:

Kreml will Gipfelkonferenz

Der Vertrag über die Europäische Wirtschaftsgemeinschaft (EWG) tritt in Kraft — aber bis Jahresende gelingt es noch nicht, für die übrigen europäischen Partner einen angemessenen Ausgleich (Freihandelszone) zu finden (1.). — Hillary erreicht als erster seit Amundsen (1911) zu Lande den Südpol (4.). — Am 9. richtet Chruschtschew an 80 Nationen seine Gipfelkonferenz-Forderung mit Themen wie Rapacki-Plan, Nichtangriffspakt mit der NATO, militärisches Auseinanderrücken. Es setzt ein mehr als halbjähriges Tauziehen ein. Festzuhalten ist für uns Deutsche die bittere Enttäuschung durch Chruschtschew (24.): „Die Wiedervereinigung ist kein Thema mehr für Verhandlungen der Großmächte."

Das Lübecker Seeamt klärt den Untergang der „Pamir": Das Segelschulschiff war nicht richtig beladen und gesichert (20.). — In der außenpolitischen Bundestagsdebatte bricht eine Kluft auf zwischen dem Regierungslager (bedingungslose Westbindung) und der Opposition (Versuch mit dem Rapacki-Plan), wobei Dehler und Heinemann schärfste Angriffe gegen den Kanzler richten (23.).

Die „Nitrit-Skandale" werfen ihre Schatten, was indirekt später zur fast einstimmigen Verabschiedung des Lebensmittelgesetzes durch den Bundestag führen wird (6. 11.).

Es starben der Schriftsteller Paul Ernst, 78 (9.), die Burgtheater-Tragödin Hedwig Bleibtreu, 89 (18.), und der Flugzeug-Pionier Prof. Ernst Heinkel, 70 (30.).

FEBRUAR:

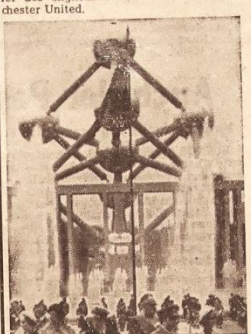
Erster USA-Erdsatellit

Große Erleichterung in den USA, als der erste amerikanische Satellit „Explorer I" mit einer durch Wernher von Braun entwickelten Rakete der US-Armee auf die Bahn gebracht wird. Ein zweites wichtiges Ereignis des Monatsanfangs: der Zusammenschluß Aegyptens und Syriens zur Vereinigten Arabischen Republik.

Französische Flugzeuge bombardieren mit Wissen der Regierung in Paris das tunesische Grenzdorf Sakiet als angebliche Nachschubbasis algerischer Rebellen (8.): 78 tote und 84 verletzte Zivilisten.

Weinpantscher Korn erhält 2½ Jahre Zuchthaus. — Nobelpreisträger Prof. Heisenberg schafft die wissenschaftliche Sensation des Jahres durch seine „Konstante der kleinsten Länge" und die Formel für eine „einheitliche Feldtheorie" (25.).

Der Monat ist reich an Katastrophen — am erschütterndsten das Flugzeugunglück von München, bei dem am 6. von 44 Insassen 23 umkommen, darunter acht Spieler des englischen Fußballmeisters Manchester United.



Von Millionen Menschen besucht wurde in diesem Jahr die Brüsseler Weltausstellung. Unser AP-Bild zeigt die festliche Eröffnung durch den belgischen König, im Hintergrund das Atomium

MÄRZ:

Deutsche Atombewaffnung

Die britische Expedition unter Dr. Fuchs beendet die erste Durchquerung des vereisten Südpolarkontinents (2.). — Bonn übernimmt USA-Matador-Fernraketen, das Stück zu 330 000 DM (5.). — Der Berliner Sensationsprozeß gegen die Apothekerin Burgmann, die verdächtig war, den Sohn ihres Freundes vergiftet zu haben, endet mit Freispruch. (10).

Der Schah von Persien läßt sich nach sieben Ehejahren von Kaiserin Soraya scheiden. Am selben Tag (14.) bringt Gracia Patricia von Monaco einen Thronfolger zur Welt. — Der USA-Luftwaffe gelingt mit einer „Vanguard"-Rakete der Start eines Satelliten, und am 26. startet „Explorer II".

Sanktionierung der Atom-Bewaffnung der Bundeswehr durch die Bundestagsmehrheit nach einer tumultuarisch verlaufenen außenpolitischen Debatte (20.—25.). Die SPD kündigt außerparlamentarische Maßnahmen an.

Aehnlich wie Stalin übernimmt Parteichef Chruschtschew auch die Regierung (27.), der bisherige Ministerpräsident Bulganin wird stufenweise die Treppe hinuntergeworfen. Als weitere Ueberraschung kündigt Moskau (31.) die einseitige Einstellung der Kernwaffenversuche an.

Am 8. starb Carl Ludwig Diehl, 61, der „Gentleman des deutschen Films", und am 22. verunglückte der amerikanische Filmproduzent Mike Todd mit dem Flugzeug.

APRIL:

Weltausstellung beginnt

In Moskau wird das deutsch-sowjetische Handels- und Konsularabkommen endlich paraphiert, die Repatriierungsfrage wird mündlich geregelt (8.). Zur Unterzeichnung erlebt Bonn (25./26.) den ersten offiziellen Besuch eines sowjetischen Regierungsmitglieds in Gestalt des ersten stellvertretenden Ministerpräsidenten Mikojan.

In Frankfurt als erster deutscher Großstadt beschließen SPD und FDP eine Volksbefragung zur Atombewaffnung (10.), und in Hamburg demonstrieren in gleicher Sache 120 000 Menschen. — Der Offenburger Ludwig Zind erhält für antisemitische Aeußerungen ein Jahr Gefängnis (11.).

Adenauer ist Gast von Königin Elizabeth im Buckinghampalast (16.). — Unter dem Wahrzeichen des Atomiums öffnet am 17. (bis zum 19. 10.) die alsbald von Millionen besuchte Brüsseler Weltausstellung ihre Pforten, die erste seit New York von 1939.

Die Sowjetunion protestiert beim Sicherheitsrat wegen amerikanischer H-Bombenflüge über dem arktischen Niemandsland (18.).

Es starb der Dichter Reinhold Schneider, 54.

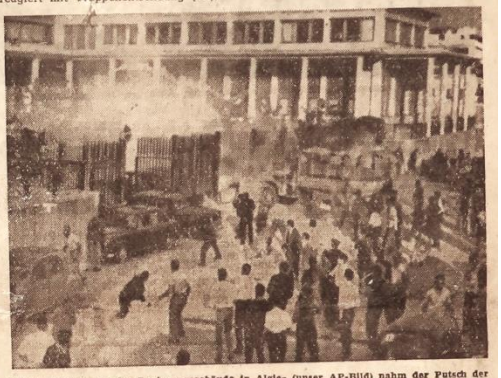
MAI:

Der Putsch in Algerien

Dies war der Monat Frankreichs. In Algier bricht ein Putsch aus, „Ultras" und hohe Militärs übernehmen in Wohlfahrtsausschüssen die vollziehende Gewalt (13.). De Gaulle ist am 19. zur Machtübernahme bereit, wenn ihm als Regierungschef legale Vollmachten eingeräumt werden. Die Insel Korsika putscht am 24. und fällt vom Mutterland ab, große Teile Französisch-Afrikas folgen. Am 28. verliert die Regierung Pflimlin ihre Mehrheit und tritt ab. Am 29. beruft Staatspräsident Coty de Gaulle, der am 31. den Regierungsauftrag annimmt.

In der Bundesrepublik wird um die „Lex Soraya" gekämpft (22./23), mit der das Auswärtige Amt jedem ausländischen Staatsoberhaupt eine Art Zensurrecht über deutsche Zeitungen einräumen wollte; fam 18. 7. durch Ablehnung im Bundesrat begraben). Kampf der Regierung gegen die Volksbefragungs-Absichten zur Atombewaffnung. Die Bundesregierung verklagt Hamburg (16.) und Hessen (22.) beim Bundesverfassungsgericht das (27.) eine Verfügung gegen Hamburg erläßt.

Es rumort in Nahost gegen die prowestliche Regierung Schamun im Libanon (seit 10.), die USA fliegen Kleinwaffen ein (16.). — In Venezuela wird USA-Vizepräsident Nixon mit Steinwürfen traktiert, Amerika reagiert mit Truppenentsendung (13.). — Zu den künstlichen Erdsatelliten gesellt sich ein sowjetischer „Sputnik III" mit dem enormen Gewicht von 1327 kg (15.).



Mit dem Sturm auf das Regierungsgebäude in Algier (unser AP-Bild) nahm der Putsch der „Ultras" in Algerien am 13. Mai unter Führung des Fallschirmjägergenerals Massu seinen Anfang. Von hier aus führte ein direkter Weg zu de Gaulles Machtübernahme in Frankreich.

Die SPD reformiert sich auf ihrem Parteitag zwar nicht am Haupt (Ollenhauer bleibt), doch an den Gliedern (Wehner und und von Knöringen werden stellv. Vorsitzende, 22.). — Bundespräsident Heuss geht für vier Wochen auf Staatsbesuch nach Kanada und USA.

Am 19. starb der stellvertretende SPD-Vorsitzende Wilhelm Mellies, 58.

JUNI:

Schwere Krise im Libanon

Das französische Parlament bestätigt die Regierung de Gaulle (1.), bewilligt dem General außerparlamentarische und verfassungsändernde Vollmachten (2.) und schickt sich selbst für sechs Monate nach Hause (3.). Am 4. fliegt de Gaulle nach Algerien, verkündet dort Gleichberechtigung von Moslems und Franzosen, hat aber Schwierigkeiten mit den Wohlfahrtsausschüssen (10.).

Am 8. beginnt die Fußballweltmeisterschaft in Schweden, bei der am 28. Brasilien mit Abstand Weltmeister und Deutschland hinter Schweden und Frankreich Vierter wird.

Im Libanon geht es „rund": Sicherheitsratsdebatte um angebliche Einmischung der VAR (10./11.), Straßenschlachten in Beirut (14.), Schamun bittet um UN-Polizei (16.), UN-Generalsekretär sieht aber keine Veranlassung dazu, und Moskau warnt vor westlicher Intervention (24.).

In Bayreuth beginnt der Prozeß gegen den einstigen Arrestverwalter des KZ Buchenwald, Martin Sommer (11.), der (3. 7.) mit lebenslänglich Zuchthaus für Sommer wegen 25 nachweislicher Morde endet. — München feiert seinen 800. Geburtstag (14.).

Mitte des Monats verdichten sich Korruptionsverdächtigungen gegen Präsident Eisenhowers „rechte Hand", Sherman Adams; später sieht sich der mächtige Chef der Präsidialkanzlei zum Rücktritt veranlaßt (22. 9.).

Tief erschreckt erfährt die Welt am 17. von der Hinrichtung Imre Nagys, des ungarischen Ministerpräsidenten zur Zeit des Volksaufstandes, und seiner Mitarbeiter nach einem Geheimprozeß (9.—15. in Budapest). Die Empörung macht sich in Demonstrationen gegen sowjetische Botschaftsgebäude Luft, so auch in Bonn (20.) mit Steinwürfen und Tintenschleudern, worauf in Moskau „Zahn um Zahn"-Vergeltung an der deutschen Botschaft geübt wird (23.).

Das Bundesverfassungsgericht erklärt die bisherige Steuerfreiheit von Spenden an politische Parteien für verfassungswidrig (24.). — Alaska wird 49. amerikanischer Bundesstaat (30.).

Es starben der ehemalige DGB-Vorsitzende Walter Freitag, 68 (8.), und der ehemalige Ministerpräsident von NRW, Karl Arnold (29.).

JULI:

Das Blutbad in Bagdad

Der Staatsstreich des Generals Kassem im west-freundlichen Irak (14.) löst die gefährliche Nahost-Krise aus. In Bagdad werden König Feisal und Ministerpräsident Nuri es Said in einem Blutbad hinweggefegt. Die europäische Oelversorgung erscheint gefährdet. Der Westen wird in eine Panikreaktion hineingetrieben: Die USA landen Truppen im Libanon (15.), die Briten werfen Fallschirmjäger nach Jordanien, das um seinen Bestand bangt (17.). Die Sowjetunion warnt Washington und London, sie werde „bei Aggression in ihrer Nähe nicht gleichgültig zusehen" (18.). Bonn möchte nach allen Seiten Frieden halten, wird aber durch die US-Nahostluftbrücke ungefragt hineinverwickelt (23. bis 26.). Aber man arrangiert sich. Der Irak wird anerkannt (30.), und im Libanon geht US-Nothelfer Murphy an die Lagebereinigung.



de Gaulle in Frankreich an der Macht



Wernher v. Braun: Raketen-Held der USA



Soraya muß auf Ehe und Thron verzichten



Prof. Heisenberg entdeckt neue Formel



Bulganin abgesetzt und verdammt

Bewährungsprobe für den Westen

Kampf um Weltraum immer dramatischer / Abbau der europäischen Währungsschranken



Auf dem Höhepunkt der Nahost-Krise landeten die USA Truppen im Libanon. Auf unserem AP-Bild wird ein amerikanischer Panzer von einem Landungsboot der Sechsten Flotte bei Beirut an Land gebracht

1958

Die erste Länderwahl in Nordrhein-Westfalen am 6. entthront die SPD/FDP-Koalition und bringt der CDU die absolute Mehrheit. Am 9. wird ruchbar, daß sich der im Sommer-Prozeß schwer belastete SS-Lagerarzt von Buchenwald, Dr. Eisele, nach Aegypten „abgesetzt" hat. Kairo verweigert die Auslieferung. Am 21. geht die „Hanseatic" auf Jungfernfahrt und am 26. starten die USA ihren Satelliten „Explorer IV" (20 kg). Ende der Anti-Atomtod-Kampagne: Das Bundesverfassungsgericht erklärt die Volksbefragungen für verfassungswidrig (30).

AUGUST:

Tauchfahrt unter dem Nordpol

Die erfolgversprechenden Bemühungen um eine Nahost-Gipfelkonferenz werden von Chruschtschew, der sie selbst gewünscht hatte, plötzlich torpediert. Der sowjetische Ministerpräsident war in Peking (3), wo ihn Mao Tse-tung umgestimmt hatte. Die UN beschließen daraufhin eine Nahost-Sondersitzung (8), die im Zeichen des [illegible] Truppenabzugs der USA aus dem Libanon (13) beginnt und mit einer [illegible] Resolution der arabischen Staaten endet (21). Im Fernen Osten dämmert unterdessen eine neue Krise herauf: Artillerie-Duelle und Luftkämpfe um die [illegible] Quemoy.

Das amerikanische Atom-U-Boot „Nautilus" beendet seine erfolgreiche und historische Tauchfahrt unter der Eiskappe des Nordpols hindurch (8) und stärkt das Prestige der USA, das auch durch das Scheitern des ersten Mondraketen-Versuchs (17) nicht erschüttert werden kann. In Genf einigen sich die Atomexperten über die technische Durchführung eines Atomversuchsstopps (21). Man hofft auf baldige Beendigung der Tests. Bonn hat andere Sorgen. An der Ruhr kündigen Feierschichten die Absatz-Kalamität der Zechen an. Der Bergbau interveniert beim Kanzler mit dem Ziel, die Konkurrenz von Importkohle und Heizöl auszuschalten (6.-7.). In der Sowjetzone wächst der Gesinnungsterror gegen die Intelligenz. Der Jenaer Rektor Prof. Haemel flieht in den Westen (21).

Weitere Ereignisse: Bei Island stürzt eine holländische Verkehrsmaschine in den Atlantik. 99 Menschen finden den Tod. Eine algerische Sabotage-Welle in Frankreich läßt Benzinlager in Flammen aufgehen.

SEPTEMBER:

Nervenkrieg um Quemoy

Zur Freude der meisten bundesdeutschen Verdiener tritt die Steuerreform in Kraft (1). In der NATO gibt es einen neuen Hauskrach um die Ausdehnung der isländischen Hoheitsgewässer: Kabeljaukrieg zwischen Briten und Isländern (1.—13.). Bei Formosa riecht es dagegen nach einem wirklichen Krieg. Eisenhower warnt vor amerikanischem Eingreifen (4) und Chruschtschew fordert den Abzug der US-Flotte (8), die den Nationalchinesen Geleitschutz gibt. Außenminister Dulles' Kritik an der „törichten Stärkeposition" auf Quemoy empört den Verbündeten Tschiang (30). Aber es gelingt, die Kriegsdrohung abzuwenden und den Nervenkrieg einzudämmen.

In Genf tagt vom 1.—13. die zweite Atomenergiekonferenz der Vereinten Nationen mit 1800 Wissenschaftlern aus 63 Ländern. Adenauer und de Gaulle treffen sich erstmalig — der Kanzler reiste dazu nach Colombey (14). Am 28. wird in Frankreich die Fünfte Republik mit der Annahme der von de Gaulle vorgelegten Verfassung geboren. Die Volksabstimmung bringt überall triumphale Mehrheiten, nur das afrikanische Guinea stimmt dagegen und sagt sich von Frankreich los. In Kairo tritt eine algerische Exilregierung unter Ferhat Abbas in Erscheinung (19).

Unerfreuliches hört man aus Bonn: Der ehemalige Kanzler-Referent Kilb sitzt wegen Leihwagen-Bestechlichkeit in Untersuchungshaft (21), und Bundesverteidigungsminister Strauß ficht einen unrühmlichen Strauß mit dem Verkehrspolizisten Hahlbohm, der seinen Fahrer angezeigt hat. — Schweres Zahnradbahnunglück am Drachenfels fordert 17 Tote und 94 Verletzte (14).

Am 18. starb der berühmte Zeichner Prof. Olaf Gulbransson, 85.

OKTOBER:

Trauer um Papst Pius XII.

Ein ereignisreicher Monat erschüttert die Welt vor allem durch den Tod von Papst Pius XII. nach 19jährigem Pontifikat. Am 6. wirft ein Gehirnschlag den 82jährigen Heiligen Vater auf das Krankenlager, die Welt blickt voll Anteilnahme nach Castel Gandolfo. Am 9. früh stirbt der Aristokrat auf dem Stuhle Petri und große Freund der Deutschen nach einem zweiten Gehirnschlag. Das am 26. mit der Wahl des Nachfolgers beginnende Kardinalskonklave kann sich erst im 12. Wahlgang (am 28.) auf den Patriarchen von Venedig, Kardinal Roncalli, einigen, der den Namen Johannes XXIII. annimmt.

Die Nahost-Krise schläft langsam ein. Rotchina gibt gegen Einstellung der US-Geleitfahrten nach Quemoy eine mehrwöchige Feuerpause (6.—19.) und schießt dann nur noch „an ungeraden Monatstagen" (25). Die Sowjetunion beginnt wieder mit Kernwaffenversuchen (1), da die Westmächte die ihrigen einseitig fortgesetzt hätten.



Die Berliner Bevölkerung geht trotz Moskaus Angriff auf die Freiheit der Viersektorenstadt im Vertrauen auf den Schutz der Westmächte zuversichtlich ins neue Jahr! Auf unserem AP-Bild diskutieren Westberliner das letzte Wahlergebnis, das eine deutliche Absage an Chruschtschew darstellte.

In der Bundesrepublik wird die Postzustellung mit Einführung der 45-Stunden-Woche eingeschränkt. — Bundespräsident Heuss macht als erstes deutsches Staatsoberhaupt seit Wilhelm II. einen Staatsbesuch in Großbritannien (20.—23.), er erlebt einen freundlichen Empfang durch das Königspaar und geradezu bösartige britische Pressekommentare.

Kesseltreiben gegen Pasternak

Die Verleihung des Literatur-Nobelpreises 1958 an Boris Pasternak (23), den Dichter des in der Sowjetunion unterdrückten Romans „Dr. Schiwago" (der im Westen prompt zum Bestseller wird), wird von Moskau als „feindseliger Akt" aufgefaßt. Ein übles Kesseltreiben zwingt Pasternak, seine dankende Annahme rückgängig zu machen (29) und sich in einem Brief an Chruschtschew sowie in einer Selbstkritik zu demütigen. Der Physik-Nobelpreis für drei sowjetische Atomforscher (28) erscheint Moskau hingegen „selbstverständlich".

In Afrika proklamiert sich Guinea als unabhängige Republik, die sich später für einen Zusammenschluß mit Ghana ausspricht. De Gaulle reist zum vierten Male nach Algerien, verkündet einen Fünfjahresplan zur Hebung des Lebensstandards (3) und zwingt die Armeeoffiziere, aus den „Wohlfahrtsausschüssen" auszuscheiden (14).

Eine wesentliche Verkürzung der Flugzeit Europa—Amerika bringt die Aufnahme des Düsenluftverkehrs über den Atlantik (4). Am 6. beendet das amerikanische Atom-U-Boot „Seawolf" eine 60tägige Unterwasserfahrt. Der Mondrakete „Pionier" der US-Luftwaffe gelingt es dagegen nicht, die Erdschwere zu überwinden (11).

Das Bundesverfassungsgericht verliert seinen Präsidenten Dr. Josef Wintrich (67) durch Tod (18). Nachfolger Dr. Gebhard Müller. Das Bundesarbeitsgericht in Kassel erklärt den schleswig-holsteinischen Metallarbeiterstreik von 1956/57 für rechtswidrig und verurteilt die IG Metall zu Schadenersatzleistungen an die Arbeitgeber.

NOVEMBER:

Chruschtschew greift Berlin an

Das Ereignis dieses Monats war der Ausbruch der weltpolitischen Krise um Berlin. Chruschtschew löst sie aus, indem er bei einem sowjetisch-polnischen Freundschaftstreffen im Moskauer Lenin-Stadion unvermittelt die Beseitigung des Viermächte-Status Berlins fordert und die Uebergabe der sowjetischen Kontrollfunktionen an die Organe der „DDR" ankündigt (10). Der Ernst der Angelegenheit liegt auf der Hand: Die USA drohen mit militärischem Einsatz, falls die Freiheit Westberlins angetastet werde (11). Aber da Chruschtschew abschwächt, eine Gewaltlösung sei nicht geplant (14), und das von ihm angekündigte „Dokument" auf sich warten läßt, entsteht mancherorts im Westen der trügerische Eindruck, es sei vielleicht halb so schlimm.

So kommt es zu Differenzen zwischen Bonn und seinen Verbündeten über den Grad der Härte des Widerstandes (22) und der unzeitgemäßen Erwägung selbst des USA-Außenministers, man könne eventuell DDR-Kontrollinstanzen als „Erfüllungsgehilfen" der Sowjets akzeptieren (26). Ein jähes Erwachen bringen dann die sowjetischen Berlin-Noten (27). In ultimativer Art setzen sie dem Westen eine sechsmonatige Frist für Verhandlungen über ein vorherbestimmtes Ziel: Westberlin soll von alliierten Truppen geräumt und „entmilitarisierte freie Stadt" unter dem Schutz der fernen Vereinten Nationen werden, die DDR soll die Wege nach Berlin in die Hand bekommen. Verschiedene Verhandlungsauswege werden von vornherein verriegelt. Dieser Druck der Sowjets schließt die Abwehrfront des Westens, aber die Krisenstimmung verschärft sich nun.

Friedenspreis für Pater Pire

Zu Beginn des Monats war die rätselhafte „Bläschenkrankheit" ausgebrochen, die sich jedoch als harmlos herausstellt und bald abklingt. Papst Johannes XXIII. wird am 4. im Petersdom zu Rom gekrönt und ernennt am 15. 23 neue Kardinäle, darunter den Berliner Bischof Dr. Döpfner. Bei den Kongreßwahlen in den USA gibt es einen Erdrutsch für die Demokratische Partei (4). Zwischen Lissabon und Madeira ist ein portugiesisches Flugboot mit 36 Insassen, darunter acht deutschen Reisefachleuten, nach Notwasserung verschollen (9). Der belgische Pater Pire, Schöpfer der „Europa-Dörfer", erhält den Friedens-Nobelpreis 1958.

In der Bonner Leihwagen-Affäre wird Anklage gegen den Exkanzlergehilfen Kilb und zwei Werksdirektoren erhoben (14). Am selben Tag schlägt die Enthüllung des Vopo-Generals Müller, Bundesjustizminister Schäffer habe 1956 in Ostberlin verhandelt, wie eine Bombe ein. Man weiß nicht, ob man sich über Schäffers Alleingang oder über das Leugnen der Bundesregierung bis zum letzten Augenblick mehr wundern soll.

Die Landtagswahlen in Hessen und Bayern stärken die regierenden Parteien (SPD bzw. CDU) auf Kosten der kleineren (23). Am 26. treffen sich Adenauer und de Gaulle zum zweitenmal, in Bad Kreuznach. Der Offenburger Studienrat Zind ist nach Haftbefehl-Erlaß zwecks Strafantritt spurlos verschwunden (29), und bald zeigt sich, daß er zu seinen Gesinnungsfreunden nach Ägypten entweichen konnte.

Es starb am 4. die Berliner Film- und Bühnendarstellerin Ida Wüst, 74.

DEZEMBER:

Feste Haltung des Westens

Mit einer Berlin-Vorkonferenz der drei Westmächte und der Bundesrepublik, zu der auch der Berliner Regierende Bürgermeister hinzugezogen wird, beginnt (14) die Serie der Pariser Besprechungen: Man beschließt, feste Haltung zu zeigen und mit Moskau nicht unter Druck zu verhandeln. Wie die Antwort des Westens auf die Sowjet-Noten aussehen wird, zeichnet sich in der Berlin-Erklärung des NATO-Ministerrates (16) ab: Eine Gefährdung der Freiheit Berlins wird nicht geduldet, eine Lösung des Problems ist nur im Rahmen eines Uebereinkommens mit Moskau über Deutschland als Ganzes möglich.



Den USA gelang es am Ende des Jahres, den sowjetischen Raketenvorsprung durch den Abschuß eines Riesensatelliten aufzuholen. Mit der Jupiter-C-Rakete (unser Keystone-Bild) war im Februar der erste Satellitenstart der USA geglückt.

Nicht so einig endet die Pariser OEEC-Konferenz über die Freihandelszone (15). Frankreich und Großbritannien können sich über die Frage der Zölle und Kontingente nicht einigen. Es kommt zum Krach und ergebnisloser Vertagung bis ins neue Jahr.

In den Berliner Wahlen gewinnt die SPD die absolute Mehrheit, was als persönlicher Erfolg des unorthodoxen Bürgermeisters Willy Brandt gewertet wird. Auch die CDU verbessert sich, aber alle anderen Parteien bleiben unter 5 Prozent.

Zwei erschütternde Brandkatastrophen ereignen sich im Weihnachtsmonat: Bei einem Schulbrand in Chikago kommen 87 Kinder und 3 Lehrerinnen ums Leben, und in Bogota (Kolumbien) werden 84 Menschen beim Brand eines Warenhauses getötet (16).

Stimme aus dem Weltraum

In Bonn endet der Prozeß gegen den schwindlerischen ehemaligen „Chefpsychologen" der Bundeswehr, Dr. „Dr." Robert Schneider, mit drei Jahren und zehn Monaten Gefängnis (10). In Karlsruhe wird der Berliner Arzt Dr. Wohlgemuth, der Otto John die Wege nach Ostberlin ebnete, von der Anklage landesverräterischer Beziehungen freigesprochen, weil Ostkontakte als solche nicht strafbar sind (18).

Im Ostblock gibt es wichtige personelle Veränderungen: In Moskau wird Staatssicherheitschef General Serow abgesägt (9) und durch den Komsomol-Sekretär Schelepin ersetzt. Auf einer Plenarsitzung des ZK übt der ehemalige sowjetische Ministerpräsident Bulganin scharfe Selbstkritik. Chruschtschews Stellvertreter Mikojan bereitet sich indessen auf eine USA-Reise vor. In Peking läßt Mao Tse-tung mitteilen, daß er nur noch Parteichef, nicht mehr Staatsoberhaupt sein will (16).

Die ersten weihnachtlichen Worte tönen mit Eisenhowers Stimme aus dem Weltraum: nämlich aus dem Kopf der zweiten Stufe einer „Atlas"-Interkontinentalrakete, die (seit 19.) als neuer Riesensatellit der USA die Erde umkreist.

Das Jahr klingt mit optimistischen Erwartungen für die wirtschaftliche Entwicklung Europas aus: Zwölf Staaten, darunter auch die Bundesrepublik, sind zur freien Konvertierbarkeit ihrer Währungen übergegangen (27), wovon man sich eine allgemeine Belebung und engere Zusammenarbeit verspricht. Frankreich wertet gleichzeitig den Franc ab und leitet einschneidende Reformen ein.

Im Dezember starben der nordrhein-westfälische Landtagspräsident Josef Gockeln, 58 (6), der Schweizer Nobelpreisträger Prof. Pauly, 58 (15), und der Schriftsteller Lion Feuchtwanger, 74 (21).



Papst Pius XII. gestorben



Pasternak muß Nobelpreis ablehnen



Willy Brandt kämpft für Berlin



Wohlgemuth kein Landesverräter



Dr. Müller Verfassungsgerichtspräsident

Rückblick auf das Jahr 1963

De Gaulles Veto verhindert das größere Europa - Erster Schritt zur Entspannung

Heilsame Erschütterung

Von Wolfgang Pöschl

Das nun zu Ende gehende Jahr hat man das „Jahr der Schocks" genannt. Die Welt wurde durch den Tod großer Vorbilder, die den Zeitgeist zu verwandeln begannen, und durch eine Anhäufung von Katastrophen erschüttert, die in ihrer raschen Folge das Mitleid der Unbeteiligten anschwellen und, als das Maß voll war, abflauen ließen. Die Menschheit erstarrte wie betäubt vor der Majestät der Gewalten, die sich dem planenden Verstand nicht unterordnen.

Die alle Kontinente überspannende Trauer über den Tod von Papst Johannes XXIII. und von Präsident Kennedy war ein untrügliches Zeichen dafür, daß die aufgeklärte Menschheit einen Sinn für Größe ohne Größenwahn, für kühnes Umdenken ohne krankhafte Neuerungssucht entwickelt hat. Zugleich offenbarte die Gemeinschaft im Schmerz, wie sehr sich die Massen daran gewöhnt haben, das eigene Schicksal den gewählten und gesalbten Häuptern zu überlassen und sich durch ungeteilte Zustimmung oder distanzierte Kritik von der Mitverantwortung auszuschließen.

Die geheimnisvolle Wechselwirkung, die zwischen den Empfindungen und Begierden der Menge und ihren Führern auch dann besteht, wenn diese aus höherer Einsicht oder, wie in der Diktatur, aus Machthunger gegen die Interessen ihrer Untertanen handeln, wird blitzartig deutlich, wenn die Macht in neue Hände übergeht. Wenn dem anfänglichen Zweifel über die Fähigkeiten des Nachfolgers die beruhigende Gewißheit folgt, daß die „Kontinuität im Wechsel" gesichert sei, wendet sich der Bürger so schnell wie möglich von den gemeinschaftlichen Problemen ab und wieder seinen privaten Sorgen zu.

So ist es uns im Jahre 1963 gegangen, als große Institutionen wie die katholische Kirche und die amerikanische Demokratie den Wechsel an der Spitze ohne Schwanken überstanden. Von einem so jungen Staatsgebilde, wie es die Bundesrepublik ist, läßt sich Gleiches noch nicht mit Gewißheit voraussagen. Geändert hat sich der Regierungsstil, aber noch sind unverkennbar neue Ansätze nicht zum Durchbruch gekommen. Es wird nicht mehr genügen, sich den Wandlungen in der Weltpolitik anzupassen; von der Bundesregierung als einem der wichtigsten Partner im westlichen Bündnis werden eigene Ideen und Vorschläge erwartet, wie das deutsche Problem anzupacken und der Friede in einem der im Kalten Krieg umstrittensten Gebiete dauerhaft zu sichern sei. Es kann sich heute nicht mehr darum handeln, am Status quo und an papierenen Rechten festzuhalten, denen die Tatsachen nicht mehr entsprechen. Es geht jetzt darum, die vielleicht einmalige Chance wahrzunehmen, die die Auflockerung im Ostblock den entspannungswilligen Staatsmännern im Westen bietet. Wenn die Passierschein-Regelung in Berlin ein Vorzeichen zur Entstalinisierung der Sowjetzone wäre, so könnte der Klimawandel in der Weltpolitik auf Deutschland übergreifen.

Die großen, meist schmerzlichen Ereignisse des Jahres 1963 haben dazu beigetragen, daß immer mehr Menschen in der zusammenwachsenden Völkerfamilie auch an solchen Entwicklungen Anteil nehmen, die sie nicht unmittelbar berühren. Wenn dieses Verständnis für größere Zusammenhänge anhält und sich ein Weltgeist entwickelt, der die hohle Form der Vereinten Nationen mit Sinn erfüllt, so kann von dem ernüchternden und erschütternden Abschied von großen Männern eine heilsame Wirkung ausgehen, die ihren Tod überdauert.

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1963 – das war das Jahr der großen Naturkatastrophen. Es war aber auch ein Jahr, in dem sich das politische Gesicht der Welt veränderte. Der Kalte Krieg zwischen den Vereinigten Staaten und der Sowjetunion, der ihre Züge so lange hatte erstarren lassen, wich einem freundlicheren Klima, während sich zugleich die Kluft zwischen Moskau und Peking sichtbar vor aller Augen auftat. Die Gefahr der radioaktiven Verseuchung des Erdballs durch Kernwaffenversuche wurde durch das Moskauer Abkommen gebannt, die Möglichkeit eines Kriegsausbruchs aus Versehen durch den „heißen Draht" zwischen Moskau und Washington vermindert. Die Welt verlor zwei große Vorkämpfer für den Frieden: Papst Johannes XXIII. und John Fitzgerald Kennedy. Aber was sie erstrebten, war über ihren Tod hinaus wirksam; ihre Nachfolger bekannten sich zu ihren Zielen. In Europa begann das Jahr mit dem Veto de Gaulles gegen den Beitritt Großbritanniens zur EWG und der Besiegelung der deutsch-französischen Freundschaft, aber am Ende des Jahres schienen zeitweilig selbst die Fortschritte, die die kleineuropäische Gemeinschaft in den letzten zwei Jahren gemacht hatte, in Frage gestellt. In Deutschland setzte sich mit dem Ende der Ära Adenauer ein neuer politischer Stil durch. Die zweite deutsche Republik verlor zugleich zwei Männer, die sie mitgeprägt hatten: Theodor Heuss und Erich Ollenhauer. Am Ende des Jahres tat sich zum ersten Male seit ihrer Errichtung die Mauer für die Westberliner auf. Für die Ostberliner blieb der freie Teil der Stadt weiter verschlossen; der Mord an einem jungen Flüchtling an der Mauer überschattete die Freude des Wiedersehens.

JANUAR

de Gaulles Veto in Brüssel

2. General Lemnitzer übernimmt von General Norstad den Oberbefehl über die NATO-Streitkräfte in Europa.
3. 32 Sibirier bitten in der Moskauer US-Botschaft um Schutz vor religiöser Verfolgung. Sie werden den Sowjetbehörden übergeben.
8. Mit einem gemeinsamen Schreiben an UN-Generalsekretär U Thant ziehen die USA und die Sowjetunion einen Schlußstrich unter die Kuba-Krise.
9. Bundesverteidigungsminister v. Hassel übernimmt die Amtsgeschäfte.
13. Präsident Olympio von Togo wird bei einem Staatsstreich ermordet.
15. Katanga-Präsident Tschombe kapituliert vor den UN-Truppen.
17. Frankreich verlangt die unbefristete Vertagung der EWG-Verhandlungen mit Großbritannien. — Bürgermeister Brandt muß auf Drängen der CDU ein Gespräch mit Chruschtschow in Ost-Berlin absagen.
22. de Gaulle und Adenauer unterzeichnen die deutsch-französischen Verträge in Paris, die die alte Gegnerschaft beider Staaten endgültig beenden sollen.
25. Indien nimmt den Vermittlungsvorschlag der Colombo-Staaten im Konflikt mit China an.
29. Die Brüsseler Verhandlungen über den EWG-Beitritt Großbritanniens werden endgültig abgebrochen.

FEBRUAR

Offener Konflikt Moskau–Peking

4. Das Bundesjustizministerium veröffentlicht den Spiegel-Bericht, der eine Reihe von Widersprüchen enthält.
8. Im Irak wird Präsident Kassem von jungen Offizieren ermordet, sein Stellvertreter Aref wird Staatspräsident.
14. Harold Wilson wird neuer Führer der britischen Labour-Party.
15. Die französische Polizei vereitelt ein Attentat auf de Gaulle.
26. Oberst Argoud, Führer der OAS, wird in Paris gefesselt gefunden. Er war aus München entführt worden.
27. China wirft der Sowjet-Union mehrfachen Vertragsbruch und Heimtücke vor.

MÄRZ

Streit um den Ost-Handel

7. Die Bundesrepublik und Polen vereinbaren die Errichtung einer deutschen Handelsmission in Warschau. — Der Schwiegersohn Chruschtschows wird vom Papst in Privataudienz empfangen.
8. In Syrien wird die Regierung von der Armee gestürzt.
16. Ägypten, Syrien und der Irak beschließen die Bildung einer arabischen Föderation. — In Zermatt bricht eine Typhus-Epidemie aus.
18. Die CDU-Fraktion verhindert durch ihren Auszug im Bundestag einen Beschluß über das Röhren-Embargo.

APRIL

Der große Metallarbeiter-Streik

1. Das Zweite Deutsche Fernsehen in Mainz nimmt den Sendebetrieb auf.
5. Der mexikanische Präsident Lopez Mateos besucht die Bundesrepublik. — Die Sowjetunion stimmt der Einrichtung eines direkten „heißen Drahtes" zwischen Washington und Moskau zu.
10. Papst Johannes XXIII. veröffentlicht seine Friedensenzyklika „Pacem in terris". — Das amerikanische Atomunterseeboot „Thresher" geht im Atlantik unter.
23. Die CDU/CSU-Bundestagsfraktion nominiert Ludwig Erhard zu ihrem Kanzlerkandidaten.
29. Mehr als 100 000 Metallarbeiter in Baden-Württemberg treten in den Streik. Die Arbeitgeber beschließen die nahezu totale Aussperrung in Nordwürttemberg-Nordbaden. — Vier Ostberliner durchbrechen mit einem Lastwagen der Zonenarmee die Mauer.

MAI

Rassenkampf in USA

7. In einer Marathon-Sitzung bei Prof. Erhard erzielen die Tarifpartner der Metallindustrie eine Einigung über den neuen



Rassenunruhen in Alabama

Lohntarif. Streik und Aussperrung sind beendet.
13. Nach tagelangen blutigen Rassenunruhen entsendet Präsident Kennedy Luftlandetruppen nach Birmingham in Alabama.
14. Bundespräsident Lübke und König Frederik von Dänemark eröffnen die Vogelfluglinie.
15. Der amerikanische Major Cooper startet zu einem Weltraumflug, der ihn in 24 Stunden 22mal um die Erde führt.
16. Der Bundestag ratifiziert den deutsch-französischen Vertrag.
26. Papst Johannes erleidet eine schwere Magenblutung.
28. Ostpakistan wird von einem schweren Wirbelsturm heimgesucht. 7263 Menschen sterben.

JUNI

Ein neuer Papst

3. Nach langem, schwerem Todeskampf stirbt Papst Johannes XXIII. Am 6. wird er in den Grotten von Sankt Peter beigesetzt. — Ein mit 101 Menschen besetztes amerikanisches Verkehrsflugzeug stürzt in den Golf von Alaska; keine Überlebenden.
5. Der britische Heeresminister Profumo tritt wegen seiner verheimlichten Beziehungen zu dem Fotomodell Christine Keeler zurück und löst damit eine innenpolitische Krise aus. — Blutige Unruhen in Teheran kosten 86 Menschenleben. — In Österreich kommt es zu einer Koalitionskrise wegen der Rückkehr Otto von Habsburgs.
11. In Saigon verbrennt sich ein buddhistischer Mönch aus Protest gegen die Buddhisten-Verfolgungen öffentlich.
12. Der amerikanische Negerführer Edgar Evers wird in Jackson ermordet. — Präsident Kennedy kündigt neue Gesetze zur Rassenintegration an.
14. Der Sowjetastronaut Bykowskij startet mit Wostok V in den Weltraum. Am 16. folgt ihm Valentina Terschkowa als erste Frau in „Wostok VI". Am 19. landen beide kurz hintereinander in Kasachstan. Valentina heiratet am 3. November ihren Raumfahrerkollegen Nikolajew.



Paul VI. wird gekrönt

19. Der ehemalige schwedische Luftwaffen-Oberst Stig Wennerstroem wird verhaftet. Er gesteht, 15 Jahre lang alle Militärgeheimnisse Schwedens verraten zu haben.
20. Unterzeichnung des Abkommens über den „heißen Draht".
21. Kardinal Montini wird zum neuen Papst gewählt. Am 30. wird er als Paul VI. vor dem Petersdom gekrönt.
21. Frankreich entzieht der NATO seine im Ostatlantik stehenden Flottenverbände.
22. Die Sowjetzone errichtet Sperrzonen längs der Westberliner Grenzen.
23. Präsident Kennedy wird bei seiner Ankunft zu einem dreitägigen Deutschland-Besuch in Köln und Bonn begeistert gefeiert. Zehntausende umjubeln ihn am 25. in Frankfurt, wo er in der Paulskirche Europa zur Einigkeit mit Amerika aufruft. Anderthalb Millionen Berliner bereiten ihm am 26. einen triumphalen Empfang. Vor dem Schöneberger Rathaus verkündet Kennedy vor 400 000 Menschen: „Ich bin ein Berliner!"
28. Chruschtschow trifft zu einem sechstägigen Besuch in Ost-Berlin ein. Am 30. kommt es zu einer kleinen Ostblock-Gipfel-Konferenz in Ost-Berlin. — Drei Gefreite der Zonenarmee durchbrechen bei Bad Hersfeld mit einem Panzerspähwagen die Zonengrenze und bitten um Asyl.

JULI

Einigung in Moskau

4. de Gaulle kommt zu einem zweitägigen Arbeitsbesuch nach Bonn.
5. In Moskau beginnen sowjetisch-chinesische Gespräche über die Beilegung der Meinungsverschiedenheiten. Sie enden am 20. erfolglos.
6. Franz Josef Strauß wird mit großer Mehrheit wieder zum CSU-Vorsitzenden gewählt.
15. In Moskau beginnen Verhandlungen über ein Kernwaffenversuchsverbot, die am 25. zu einer Einigung führen.
17. In Südvietnam brechen religiöse Unruhen aus. Eine Verhaftungswelle setzt ein.
23. Der ehemalige Oberregierungsrat Felfe vom Bundesnachrichtendienst und zwei Mitangeklagte werden wegen Landesverrats zu hohen Zuchthausstrafen verurteilt.
26. Die mazedonische Hauptstadt Skopje wird durch ein Erdbeben nahezu völlig zer-



Kennedy besucht Deutschland

(Fotos: AP, dpa, UPI, Keystone)



Papst Johannes: Pacem in terris



Kennedy: Ein Schock für die Welt



Douglas-Home: Verzicht auf Peers-Würde



Heuss: Deutschland trauert ...



Ollenhauer: ... um zwei große Tote

Das Jahr der Katastrophen

Der große Schock: Kennedys Tod - Die große Freude: Berliner feiern Wiedersehen



Skopje zerstört

störd. Unter den Trümmern sterben etwa 2000 Menschen.
31. Der italienische Staatspräsident Segni besucht die Bundesrepublik.

AUGUST

Der große Postraub

1. Vor Hunderten von Menschen erschießen Zonenpolizisten bei Hohegeiß im Harz einen Flüchtling. — Die Grenzgebiete Elten und Selfkant kehren von den Niederlanden zur Bundesrepublik zurück.
5. In Südtirol kommt es zu neuen Terroranschlägen der Extremisten.
5. Die Außenminister der USA, Großbritanniens und der Sowjetunion unterzeichnen in Moskau den Vertrag über die begrenzte Einstellung der Kernwaffenversuche. Fast alle Staaten der Erde treten dem Abkommen bei, China und Frankreich lehnen ab.
6. König Zahir von Afghanistan besucht die Bundesrepublik.
8. Banditen überfallen den Postzug Glasgow-London und erbeuten etwa 28 Millionen DM.
19. Die Bundesrepublik tritt dem Atomteststopp-Vertrag bei.
21. Die vietnamesische Regierung läßt die Pagoden stürmen.
23. Peking bezichtigt Moskau des Verrats am Zonenregime.
27. Altbundespräsident Heuss wird in Stuttgart das linke Bein amputiert.
28. Mehr als 200 000 Farbige demonstrieren in Washington gegen die Rassentrennung.
29. Zehn Carabinieri, die der Folterung von Südtirolern beschuldigt wurden, werden in Trient freigesprochen oder amnestiert.

SEPTEMBER

Die Abhör-Affäre

4. Ein Flugzeug der Swissair stürzt kurz nach dem Start über dem Dorf Dürrenäsch ab. 80 Menschen, darunter 44 Einwohner des Dorfs Humlikon, finden den Tod.
5. Ein Artikel der „Zeit" über die Abhörpraktiken des Verfassungsschutzes löst die Abhör-Affäre aus.
15. Bei einem Sprengstoffanschlag auf eine Kirche in Birmingham (Alabama) kommen vier Negerkinder ums Leben.
16. Die Föderation Malaysia wird proklamiert.
21. Abschiedsbesuch Adenauers bei de Gaulle.
29. Papst Paul VI. eröffnet die zweite Sitzungsperiode des Vatikanischen Konzils. — Ein Oberregierungsrat im Bundeskanzleramt wird wegen des Verdachts des Landesverrats verhaftet.
30. Staatssekretär Globke tritt in den Ruhestand.

OKTOBER

Ende der Ära Adenauer

1. Chruschtschow kündigt umfangreiche Getreideimporte an.
3. Die Regierung der CSSR setzt den internierten Erzbischof von Prag, Beran, auf freien Fuß.
4. Der Hurrikan „Flora" fordert auf Haiti 4000, auf Kuba 1000 Menschenleben.
6. Gustaf Gründgens wird auf einer Weltreise in Manila (Philippinen) tot in seinem Hotelzimmer aufgefunden.
9. Ein Bergrutsch am Vaiont-Stausee in Norditalien führt zur Überflutung des Piavetals. Die Stadt Longarone und mehrere kleine Orte werden zerstört. Rund 2500 Menschen kommen um.
10. Mit dem Anhalten eines US-Militärkonvois auf der Autobahn nach Berlin beginnt eine neue Serie sowjetischer Störmanöver.
11. Bundeskanzler Adenauer erklärt seinen Rücktritt zum 15. Oktober.
13. Prof. Dr. Carl-Friedrich von Weizsäcker erhält den Friedenspreis des Deutschen Buchhandels.
14. An der algerisch-marokkanischen Grenze brechen Kämpfe aus.



16. Professor Ludwig Erhard wird vom Bundestag mit 279 gegen 180 Stimmen bei 24 Enthaltungen zum Bundeskanzler gewählt.
17. Die Bundesrepublik und Rumänien beschließen den Austausch von Handelsvertretungen.
18. Professor Erhard gibt seine Regierungserklärung ab. — Premierminister Macmillan erklärt seinen Rücktritt. Königin Elisabeth beauftragt Lord Home mit der Neubildung der Regierung.



Longarone überflutet

22. Im Rahmen der Operation „Big Lift" werden 15 000 US-Soldaten in 64 Stunden aus Texas nach Europa geflogen.
23. Bundespräsident Lübke tritt eine vierwöchige Asienreise an. — Der Bundestag setzt einen Untersuchungsausschuß in der Abhör-Affäre ein.
24. Auf der Erzgrube Mathilde in Lengede werden 50 Bergleute durch einen Wassereinbruch verschüttet. Sieben werden am 25. lebend geborgen. Am 27. melden sich drei weitere Kumpel über eine Suchbohrung, sie werden am 1. 11. geborgen. Am 3. 11. stellt eine Suchbohrung Kontakt zu elf weiteren Eingeschlossenen her. Sie werden am 7. 11., 14 Tage nach dem Unglück, geborgen.
27. US-Außenminister Rusk dementiert in der Frankfurter Paulskirche alle Berichte über einen Abzug der US-Truppen aus Europa.
31. Die Fallschirmjäger-Ausbildungskompanie 6/9 in Nagold wird wegen schwerer Verstöße gegen die Ausbildungsrichtlinien aufgelöst.

NOVEMBER

Der schwarze Tag von Dallas

1. In fast 400 „weißen" Kreisen wird die Wohnraumbewirtschaftung aufgehoben. — Die südvietnamesische Armee stürzt das Regime Diem. Präsident Diem und sein Bruder Ngo Dinh Nhu finden den Tod.
6. Bundespräsident Lübke in Japan.
9. Bei einem Grubenunglück in Omuta (Japan) verlieren 453 Bergleute das Leben. Wenige Stunden später fordert ein Zugunglück bei Yokohama 164 Menschenleben.
16. Die Sowjets lassen den wegen Spionageverdachts verhafteten amerikanischen Professor Barghoorn wieder frei.
21. Bundeskanzler Erhard bei de Gaulle.
22. Präsident Kennedy fällt in Dallas (Texas) einem Attentat zum Opfer. Noch am gleichen Tage wird Lyndon B. Johnson als neuer Präsident vereidigt. Der mutmaßliche Mörder Kennedys, Lee H. Oswald, wird am 24., ohne die Tat gestanden zu haben, von dem Nachtklubbesitzer Jack Ruby erschossen. Präsident Kennedy wird am 25. auf dem Heldenfriedhof Arlington beigesetzt.



Johnson neuer Präsident

26. Präsident Johnson empfängt in Washington Bundespräsident Lübke und Prof. Erhard.
27. Präsident Johnson verkündet vor dem Kongress die Fortsetzung der Politik Kennedys.

DEZEMBER

Bresche in der Mauer

4. Die zweite Phase des Vatikanischen Konzils wird beendet. — Papst Paul gibt bekannt, daß er im Januar das Heilige Land besuchen wird. — In Italien wird eine Regierung der linken Mitte unter Aldo Moro gebildet.
8. Etwa 18 000 ehemalige Heimkehrer demonstrieren in Bonn für eine bessere Entschädigung der früheren Kriegsgefangenen. — Frank Sinatra jr. wird von Gangstern entführt und am 11. gegen rd. 1 Million DM Lösegeld freigelassen.
9. In Mailand beginnt ein Massenprozeß gegen 84 Südtiroler und Ausländer.
10. Mehr als 35 000 Kriegsopfer protestieren in Bonn gegen den Zwei-Stufen-Plan der Bundesregierung zur Neuordnung der Kriegsopferversorgung. — Sansibar wird unabhängig.



Durchlaß für Westberliner

11. Im ersten Nagold-Prozeß wird der Ausbilder Hans-Dieter Raub zu acht Monaten Gefängnis verurteilt. — Der Bundestag hebt die Immunität der Abgeordneten Strauß, Merten und Jahn auf. — Kenia unabhängig.
12. Altbundespräsident Prof. Heuss stirbt und wird am 17. in Stuttgart feierlich zu Grabe getragen.
14. Der SPD-Vorsitzende Erich Ollenhauer stirbt und wird am 19. in Bonn in einem Staatsbegräbnis beigesetzt.
17. Vertreter aus beiden Teilen Berlins einigen sich über die Ausgabe von Mauer-Passierscheinen für die Zeit bis zum 5. 1.
20. In Frankfurt beginnt der größte Massenmordprozeß der deutschen Justizgeschichte, der Auschwitz-Prozeß.
21. Blutige Zusammenstöße zwischen Griechen und Türken auf Zypern sind der Auftakt für eine neue Welle von Gewalttaten.
23. Einigung im EWG-Ministerrat in Brüssel über die Agrarpolitik und die gemeinsame Konzeption für die Kennedy-Runde. — Der Luxusdampfer „Lakonia" brennt vor Madeira. Ueber 100 Tote.
26. 160 000 Westberliner besuchen bis zum Ende der Weihnachtstage Ostberlin. — Am 25. wird der 18jährige Paul Schultz bei der Flucht über die Mauer erschossen.
28. Bundeskanzler Erhard besucht Präsident Johnson auf seiner Ranch in Texas. Der Komponist Paul Hindemith stirbt.



Grubenkatastrophe in Lengede



Tereschkowa: Erste Frau im Weltraum



Weizsäcker: Friedenspreis



Kesler: Der Minister ging



Gründgens: Tod in Manila



Mme Nhu: Überlebende eines Regimes

Our Mechanics department in Hannover took a trip to Italy, to Milano Marittima. We were out there on the evening of the death of Pope John XXIII: Suddenly all the bells rang and we learned that the Pope had died. The restaurant closed immediately and gave us everything we had eaten and drunk up to that point.

6 Changes in Moscow's policy after WW-II,

6.1 End of Stalin Era Changes in Moscow (1956)

Für mich waren die Verhältnisse in Russland immer sehr wichtig. Daher eine kurze Zusammenfassung zum besseren Verständnis und Einordnung vieler Zeitungsartikel:

Josef Wissarionowitsch Dschugaschwilli, genannt Stalin, wurde 1879 in der georgischen Stadt Gori geboren. Er zählt zu den mächtigsten Politikern aller Zeiten. Seine Herrschaft ist von Gewalt und Terror geprägt und bis zum letzten Atemzug spannend. Am 28. Februar 1953 fuhr Stalin mit den engsten Kampfgenossen Chruschtschow, Malenkow, Bulganin und Berija auf seine Datscha, wo bis vier Uhr morgens gegessen und getrunken wurde. Die Gäste fuhren im Anschluss nach Hause. Acht Stunden später rechneten die Leibwachen damit, dass Stalin aufsteht. Aber es rührte sich auch in den nächsten Stunden nichts. Niemand wagte nachzusehen, denn Stalin zu stören konnte den Tod bedeuten. Stalin hatte nach dem Trinkgelage einen Schlaganfall erlitten und lag in seinen Exkrementen am Boden. Die Ärzte rangen noch um sein Leben aber am 5. März stirbt Josef Stalin. Da kämpfen bereits schon um die Nachfolge die damaligen Mitglieder des Parteibüros Molotow, Malenkow, Andrejew, Bulganin, Kaganowitsch, Chrustchew , Mikojan, Schwernik und der brutale und gefürchtete Geheimdienstchef L. Berija, Chef der Sicherheit (NKWD), der von Stalin mit der Entwicklung der Atomenergie beauftragt worden war (*Dr. Zippe musste ihn als Forschungsgruppenmitglied informieren*).



Links: Molotow, Chrustchow

In Rußland beginnt die Vergangenheitsbewältigung

Berija: Psychogramm eines Terror-Chefs

Der in Berlin ansässige Verlag „Edition q" hat sich in letzter Zeit auf die Herausgabe brisanter russischer Bücher konzentriert. Eines aus dieser Reihe behandelt den „sowjetischen Himmler", Lawrenti P. Berija, berüchtigter Chef des Terrorapparats NKWD, später KGB.

Von Peter Gosztony

Mit Recht erwecken die Bücher der „Edition q" das Interesse politisch versierter Leser unserer Jahre. Es sind Werke, die ursprünglich in Moskau erschienen sind und die sich mit der Zeitgeschichte der kommunistischen Vergangenheit der Ex-Sowjetunion auseinandersetzen.

Die Autoren sind Wissenschaftler, Publizisten oder solche Journalisten wältigung des russischen Volkes beizutragen

Vladimir Nekrassows Buch über Berija gehört zu diesen Werken. Mehr als sechs Millionen Menschen des riesigen sowjetischen Reiches sind dem Terror-Regime Stalins zum Opfer gefallen. Sie wurden hingerichtet oder in Lagern Jahrzehnte hindurch gequält. Der „Archipel Gulag" war ein realer Bestandteil der Sowjetunion, ohne dessen Existenz sie nicht funktionieren hätte können.

Zum Marschall avanciert

An der Spitze dieses Terrorregimes stand von 1938 bis 1953, also 15 Jahre lang, der Georgier Lawrenti P. Berija, ein Landsmann von Stalin also. Während des Zweiten Weltkrieges avancierte er sogar zum „Marschall der Sowjetunion".

die politische Geheimpolizei KGB (Komissariat Gossudarstwennoj Besopastnosti/Kommissariat für Staatssicherheit) herausgelöst wurde. Das Buch beschreibt Berijas Aufstieg aus zwielichtigen georgischen Verhältnissen in den Tagen der sogenannten „Oktoberrevolution" 1917 zunächst an die Spitze der GPU (Gossudarstwennoj Politscheskoje Uprawlenije/Staatliche politische Verwaltung, 1922 aus der Tscheka hervorgegangen) in Tbilissi und dann 1938 im Zentrum der Macht in Moskau.

Aussagen von Zeitzeugen und Opfern, Auszüge aus dem Prozeßprotokoll von 1953 sowie eine umfangreiche biographische Skizze geben



Berija (dritter von links) 1953: Noch auf der Regierungsbank mit Kaganowich, Malenkow, Bulganin, Chruschtschow, Woroschilow und Molotow (von links)

sten FURCHE-Ausgaben in „Zeitgeschichte"), die Vernichtung einzelner Familien der roten Elite, weil sie für Stalin „unbequem" wurden, und zuletzt die authentische und dramatische Darstellung des Sturzes von Berija im Sommer 1953 nach dem Tode seines Gönners Stalin.

zember 1953 wurde ihm der Prozeß gemacht, der im Geheimen geführt wurde. Er endete mit der Verkündung des Todesurteils. Armeeoffiziere vollstreckten es, wobei Berija - nach Augenzeugen, die im Buch zu Wort kommen - bis zuletzt um Gnade flehte.

Professor Nekrassow, Jahrgang

Stalins Nachfolge war nicht geregelt. Zunächst gab es eine Art "Kollektivführung" der Parteielite, die Stalins Gefolgsleute (Molotow, Kaganowitsch) entmachtete, um Machtkämpfe zu beenden. Malenkow trat kurzzeitig die Nachfolge an, aber Chruschtschow übernahm schnell die führende Rolle. Nikita Chruschtschow übernahm zunächst die Parteileitung (erster Sekretär), 1958 wurde er auch Regierungschef. Er triumphierte beim Kampf um die Stalin-Nachfolge und warf insbesondere Berija aus dem Rennen. Er verurteilte Stalins Personenkult in seiner Geheimrede von 1956, was eine "Tauwetter-Periode" mit mehr Freiheit und Reformen einleitete. Aufgrund seiner Reformen und politischen Manöver wurde er 1964 gestürzt. Leonid Breschnew übernahm dann die Führung, wurde ab 1966 Generalsekretär bevor Gorbatschow das System schließlich zu reformieren versuchte.
Die politische Führung der UdSSR war weitgehend erstarrt. Trotz der Missstände gab es in der Bevölkerung aber kaum Widerstand, Oppositionelle waren weitgehend ausgeschaltet. Die Mehrheit der Bevölkerung hatte sich mit den Umständen abgefunden, da öffentliche Kritik ohnehin unterdrückt wurde. Trotzdem konnte es der Bevölkerung kaum entgehen, dass beispielsweise der Einmarsch der Sowjetunion in Afghanistan 1979 sich immer mehr zu einem Fiasko entwickelte. Die Nuklearkatastrophe im Kernkraftwerk Tschernobyl am 26. April 1986 offenbarte das in der UdSSR übliche Ausmaß an Verantwortungslosigkeit und Obrigkeitsdenken und wurde so zu einem Symbol für das Versagen des kommunistischen Systems.
Der Zerfall der Sowjetunion (UdSSR) in fünfzehn unabhängige Staaten begann mit der Unabhängigkeitserklärung Litauens im März 1990, beschleunigte sich nach dem gescheiterten Augustputsch in Moskau 1991. Kurz vor der Unterzeichnung eines Vertrages der Gemeinschaft Unabhängiger Staaten (GUS) lehnten sich nämlich konservative Kräfte aus der Führung gegen diese Zugeständnisse auf. Gennadi Janajew sowie einige Mitverschwörer übernahmen beim Augustputsch die Macht in Moskau und stellten Gorbatschow an seinem Urlaubsort auf der Krim unter Hausarrest. Die Bevölkerung war aber keineswegs bereit, diese konservative Wende hinzunehmen. Es kam zu Massendemonstrationen gegen die Putschisten. Boris Jelzin gelang es, den Widerstand zu organisieren. Als die Armee die Putschisten nicht unterstützte, brach der Aufstand nach drei Tagen zusammen, Gorbatschow konnte nach Moskau zurückkehren. Der eigentliche Gewinner war aber Jelzin, hinter dem sich die Bevölkerung in Moskau versammelt hatte.
Nach dem Putsch musste Gorbatschow dem Verbot der KPdSU zustimmen. Eine Republik nach der anderen trat aus der Sowjetunionunion (UDSSR) aus. Die Souveränitätserklärungen wurden in Referenden mit großer Mehrheit von der Bevölkerung bestätigt. Ein Weiterbestand der UdSSR wurde immer unwahrscheinlicher, der Zerfall endete praktisch am 8. Dezember 1991 mit den Belowescher Vereinbarungen zwischen den Präsidenten von Russland, der Ukraine und Belarus, d.h. von Boris Jelzin, Leonid Krawtschuk und Stanislaus Schuschkewitsch. Die GUS war gegründet. Dieser Beschluss wurde am 21. Dezember 1991 in der Erklärung von Alma-Ata von den Führern der übrigen autonomen Republiken der UdSSR mit Ausnahme der drei baltischen Staaten und Georgiens bestätigt. Die Führer der vormaligen Sowjetrepubliken in Alma-Ata regelten im Vertrag zur Auflösung der UdSSR auch die Grenzziehung zwischen den neuen unabhängigen Staaten. Nach dem Rücktritt des letzten Präsidenten der UdSSR am 25. Dezember 1991 Michail Gorbatschow endete deren offizielle Existenz am 26. Dezember 1991. Die Auflösung des weltgrößten sozialistischen Staates markierte zugleich das Ende des Kalten Krieges.
Die Auflösung der UdSSR im Winter 1991 verlief weitgehend friedlich, da Gorbatschow den Willen der Führer der einzelnen Republiken akzeptierte, insbesondere von Jelzin, Führer der ehemaligen Sowjetrepublik (eigentliches Russland). Als einzige hat Russland keine Unabhängigkeitserklärung abgegeben, sondern direkt den Anspruch erhoben, Rechtsnachfolger der am 26. Dezember 1991 aufgelösten Sowjetunion zu sein und damit auch im UNO-Sicherheitsrat mit Vetostimme. Die Atomwaffen, die sich außer in Russland auch in der Ukraine, Belarus und Kasachstan befanden, sollten ursprünglich von diesen Ländern gemeinsam kontrolliert werden. Auf amerikanischen Druck hin wurden diese entweder vernichtet oder nach Russland gebracht
Während Gorbatschow im Westen weiterhin sehr beliebt war, wurde er in den Staaten der ehemaligen Sowjetunion häufig angefeindet und für deren Scheitern sowie die katastrophalen Verhältnisse am Ende

seiner Amtszeit und den folgenden Jahren verantwortlich gemacht. Als er 1996 bei der Wahl des russischen Präsidenten gegen Boris Jelzin kandidierte, erhielt er weit abgeschlagen gerade einmal 0,5 Prozent der Stimme.
Am 15. März 1996 verabschiedete übrigens die russische Duma eine Resolution, in der die Auflösung der UdSSR - 1991 von Russland erklärt und ratifiziert - für nichtig erklärt wurde, aber ohne rechtliche folgen !!

Führer der Sowjetunion = Union der Sozialistischen Sowjetrepubliken (UdSSR), nach Stalin:

Georgy Malenkov (1953): Nach Stalins Tod war er kurzzeitig sowohl Premier als auch de facto Parteichef, musste aber schnell die Kontrolle über die Kommunistische Partei an Chruschtschow abgeben.

Nikita Chruschtschow (1953–1964): Er setzte sich im Machtkampf durch und wurde Erster Sekretär der Kommunistischen Partei. Er initiierte die "Entstalinisierung" und führte eine weniger repressive Ära ein.

Leonid Breschnew (1964–1982): Nach der Absetzung Chruschtschows übernahm Breschnew als Generalsekretär die Führung, eine Zeit, die von Stabilität und Stagnation geprägt war.

Juri Andropow (1982–1984): Nach Breschnews Tod übernahm der ehemalige KGB-Chef Andropow die Macht.

Konstantin Tschernenko (1984–1985): Nach Andropows kurzem Tod folgte der gesundheitlich ebenfalls stark angeschlagene Tschernenko für nur etwas mehr als ein Jahr.

Michail Gorbatschow (1985–1991): Als letzter Führer der Sowjetunion leitete er mit seinen Reformen ("Glasnost" und "Perestroika") das Ende des Kalten Krieges und den Zerfall der UdSSR ein.

Führer der Russischen Föderation (nach 1991)

Mit der Auflösung der Sowjetunion entstand die Russische Föderation als eigenständiger Staat. Die Russische Föderation (kurz Russland) ist der größte Staat der Erde, ein föderaler Vielvölkerstaat mit einer präsidialen Republik als Regierungsform und Moskau als Hauptstadt. Der Begriff "Föderation" betont die Struktur aus 89 halbautonomen Verwaltungseinheiten, die ein gewisses Maß an Selbstverwaltung haben.

Boris Jelzin (1991–1999): Jelzin war der erste Präsident der unabhängigen Russischen Föderation. Er war bereits zuvor Präsident der Russischen SFSR innerhalb der UdSSR gewesen

Wladimir Putin (seit 1999): Jelzin trat an Silvester 1999 zurück und ernannte den damaligen Premierminister Wladimir Putin zum amtierenden Präsidenten. Putin gewann die anschließenden Wahlen und ist seither, mit einer Unterbrechung als Premierminister (2008-2012, während Dmitri Medwedew Präsident war), der dominierende politische Führer Russlands.

Chruschtschews Kritik an Stalin

Wortlaut der Rede vor dem 20. Parteitag jetzt in USA bekannt

NEW YORK (dpa). Wie die „New York Times" meldet, gehen die Angriffe, die Chruschtschew auf dem letzten Parteitag der sowjetischen KP im Februar gegen Stalin gerichtet hat, in ihrer Schärfe wesentlich über das hinaus, was ursprünglich über diesen Beginn des neuen Anti-Stalin-Kurses bekannt geworden war. Auch die „New York Herald Tribune" berichtet aus französischer diplomatischer Quelle über die Chruschtschew-Rede. Nach der „New York Times" ist der volle Text der Chruschtschew-Rede (50 Schreibmaschinenseiten) bereits seit einigen Tagen im Besitz der amerikanischen Regierung. Die wichtigsten Punkte daraus sind die folgenden:

„Chruschtschew beschuldigt Stalin, die Liquidierung des ehemaligen Außenministers Molotow und des stellvertretenden Ministerpräsidenten Mikojan geplant zu haben. Chruschtschew erklärte vor dem Parteikongreß, daß es heute weder einen Molotow noch einen Mikojan geben würde, wenn Stalin nicht ‚glücklicherweise' am 5. März 1953 gestorben wäre. Stalin wurde vorgeworfen, er habe zur Zeit der deutschen Invasion in der Sowjetunion 1941 persönliche Feigheit und nahezu krankhafte Depressionen gezeigt.

Sinnlose Interventionen

Stalin wurde vorgeworfen, für wahnsinnige militärische Interventionen verantwortlich gewesen zu sein, die Hunderttausenden von sowjetischen Soldaten das Leben kosteten. Die schlimmste dieser Interventionen war der erfolglose Versuch, gegen den Rat des sowjetischen Oberkommandos 1942 bis 1943 Charkow einzukreisen.

Stalin wurde vorgeworfen, absichtlich seinen alten Genossen aus der bolschewistischen Partei Verbrechen angehängt zu haben, die sie niemals begangen haben. Er habe sich geweigert, sie zu begnadigen und die Geheimpolizei angewiesen, sie hinzurichten.

Chruschtschew erklärte, Stalin habe die sowjetische Außenpolitik so exzentrisch und willkürlich geleitet, daß die internationale Stellung der Sowjetunion dadurch wesentlich geschwächt wurde.

Stalin erklärte, er würde Tito beseitigen, wenn er nur seinen kleinen Finger krümmte. Stalin krümmte seinen kleinen Finger, sagte Chruschtschew, aber nichts

- Stalin hat über Marschall Schukow verleumderische Geschichten in Kurs gebracht mit der Absicht, den militärischen Ruf des gegenwärtigen Verteidigungsministers herabzusetzen. Am Ende des zweiten Weltkrieges schickte er ihn in die Provinz, das heißt ins Exil."

Die „New York Times" schreibt hierzu, daß in Washington amtliche Kreise verblüfft waren von der Schärfe der Sprache Chruschtschews und von seinen zügellosen Angriffen auf Stalin. Aus der Rede gehe auch hervor, daß — wie Chruschtschew behauptete — Stalin beinahe den Krieg verloren hätte, weil er die Warnungen des damaligen britischen Premierministers Churchill in den Wind geschlagen habe, desgleichen die des damaligen britischen Botschafters in Moskau, Sir Stafford Cripps.

Unser Wetterbericht

Vorhersage bis Mittwochabend: Unter dem Einfluß von atlantischen Störungen meist stark bewölkt, zeitweise Schauerniederschläge, etwas kühler. Westliche Winde. S.-A.: 4.08 Uhr; S.-U.: 20.32 Uhr.

Wetterwarte Kassel



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Verlagsleitung:
Horst Hausmann und Hermann Ritschel

HN Nummer 48 — Kommentare und Berichte — Samstag, 25. Februar 1956

Eine neue Ära des Kommunismus

Der 20. Parteitag der KPdSU in Moskau wurde zu einem Kongreß der Überraschungen

Als Stalin am 5. März 1953 starb, fragte sich die Welt, welchen Weg Sowjetrußland nunmehr einschlagen werde, aber niemand war in der Lage, Schlüssiges vorauszusagen. Bald gab es jedoch Anzeichen, die auf eine Lockerung der starren Politik der Vergangenheit hindeuteten; für den ausländischen Betrachter blieb es aber schwierig, den neuen Kurs zu fixieren und auf eine einheitliche Linie zu bringen, zumal in den Spitzenstellen des Kremls ein nicht unbeträchtlicher Wandel erfolgte: Malenkow kam, Berija wurde hingerichtet, Bulganin wurde Ministerpräsident, aber Chruschtschew spielte sich nach vorn und brachte in schneller Folge in den Aemtern des Staates und der Partei seine Vertrauensleute unter. Erst seit dem 20. Parteitag der KPdSU, der nach dem bisherigen Ablauf und dem Material, das dem Westen zugänglich wurde, zu den bedeutendsten Kongressen gezählt werden muß, die in der Sowjetunion überhaupt stattfanden, erst seit diesem Parteitag wird das Bild klarer.

Ein neuer Kommunismus zeigt sich der Welt: ein klügeres, besser durchdachtes System, das grobe Fehler der Vergangenheit vermeiden möchte, wurde in Moskau entrollt. Den Parteitag der KPdSU mit billigen Schlagworten abtun zu wollen, von denen der Westen durchaus nicht frei ist, wäre das Verkehrteste, was wir tun könnten; vielmehr sollten wir uns bemühen, die in Moskau gehaltenen Reden sorgfältig zu untersuchen, um zu erfahren, was die eine Hälfte der Welt in Zukunft plant.

Die neuen Männer im Kreml wußten zwar, daß Stalins Politik der brutalen Härte, der rücksichtslose Terror, die Todesurteile und Verbannungen der Machtsicherung eines einzelnen galten und die Möglichkeiten des Bolschewismus einschränkten, aber niemand konnte zu Lebzeiten des Diktators gegen dieses System aufbegehren. Freier denkenden Köpfen Sowjetrußlands war es bekannt, daß Stalins begrenzter Blick, seine Deutung der Welt in billiger Simplizität, das Zurechtbiegen der Geschichte, Wirtschaft und Kultur und nicht zuletzt die Versteinerung der Außenpolitik dem Kommunismus beträchtlichen Schaden zufügten und ihm in Ländern von einiger Stabilität jegliche Werbungskraft nehmen mußten. Doch wer konnte es wagen, diesen egozentrischsten Menschen der Welt, der wie kaum ein anderer Verkörperung des rücksichtslosen Machtprinzips war, zu korrigieren?

Stalins Name verschwand

Bald nach dem Tode des Diktators setzten Wandlungen ein. Schon im April und Mai verschwand der Name Stalins immer mehr aus den Zeitungen; die Lebenden wollten sich von seinem Schatten lösen. Dann wurde die alles durchdringende Macht des Staatssicherheitsdienstes gebrochen, auch die Außenpolitik zeigte gewisse neue Nuancen. Die Wirtschaft wurde umgestaltet, was allerdings Malenkow zum Verhängnis gereichte. Doch die Kritik an der stalinschen Wirtschaftspolitik blieb bestehen; im Juni 1955 bemängelte Bulganin ihre Ueberzentralisation, die auf den roten Diktator zurückging. Tito wurde wieder in Ehren aufgenommen, und manche Namen, bis dahin verbannt, erstrahlten in altem Glanz. Stalins Zuckerbäcker- und Prunkarchitektur wurde verdammt und eine erste Revision der neuesten Geschichte unternommen. Hatte es vorher geheißen, der 1941 von der Roten Armee vorgenommene Rückzug sei ein klug durchdachtes Manöver, so wurde im Mai vorigen Jahres festgestellt, daß dies nicht den Tatsachen entspreche, die Sowjets hätten vielmehr einem übermäßigen Druck weichen müssen.

Bei all dieser Kritik fiel niemals Stalins Name. Auf dem 20. Parteitag der KPdSU war es erstmals anders. Stalin wurde öffentlich verurteilt, mit gewisser Zurückhaltung von Chruschtschew, in aller Schärfe von Mikojan, der auf dem Kongreß nächst dem ersten Parteisekretär anscheinend die bedeutendste Rolle spielte.

Bei der Kritik ließ man auch jene Epoche nicht aus, die zu den blutigsten „Säuberungen" der Geschichte gehört, jene Zeit, in der Zehntausende den Tod fanden oder verbannt wurden und in der Stalin als einer der größten Tyrannen der Weltgeschichte seine Alleindiktatur errichtete; von den 21 Mitgliedern des Zentralkomitees aus dem Jahre 1917 war er der einzige Ueberlebende. Wyschinski blieb es später vorbehalten, die „Aufsässigen" als „nichtswürdige Lakeien der faschistischen Scheusale" und als „Gewürm und Abschaum der Menschheit" zu bezeichnen.

In Moskau setzte man in diesen Tagen die Akzente neu. Aber auch Kommunisten anderer Länder, vordem totgeschwiegen oder als Verräter gebrandmarkt, wurden rehabilitiert. Erinnert sei nur an Bela Kun, der 1919 den proletarischen Aufstand in Ungarn ausrief und später in Rußland hingerichtet wurde. Er wird heute wieder als einer der Pioniere des Kommunismus genannt.

Es ist wirklich erstaunlich, was alles in Moskau vor sich geht, eine Umwertung vieler Werte hat begonnen, und manche Altparteigenossen in Rußland und in der Welt, im Geiste Stalins groß geworden, wissen nicht mehr, woran sie sind.

Schmiegsamer und wendiger

Der Kommunismus bezieht neue Stellungen. Er verbrennt, was früher angebetet wurde, und läßt anbeten, was einst verbrannt wurde. Die Führer im Kreml können es sich erlauben, so radikal vorzugehen, da sie sich ihrer Stellungen sicher wähnen; der interne Machtkampf ist abgeschlossen. So kann eine „Liberalisierung" erfolgen, die man früher für kaum denkbar hielt, deren Grenzen aber sorgfältig abgesteckt sind, um das Regime, das selbstverständlich weiterhin eine Diktatur bleibt, nicht zu gefährden. Aber der Kommunismus ist schmiegsamer geworden und wendiger, psychologisch raffinierter und „publikumswirksamer". Damit hofft er an Sympathien in Rußland und im Ostblock zu gewinnen, und damit glaubt er, verfeinerte Waffen im Kampf mit der westlichen Welt zu schmieden.

Nach den jetzt gehaltenen Reden in Moskau meint Sowjetrußland, auch die These von der Ko-Existenz glaubhafter vortragen zu können. Der Weg ist besser gepflastert, seit Chruschtschew feststellte, daß viele und sehr unterschiedliche Wege zum Sozialismus führen, sei es die Fassung von Tito oder von Mao Tse Tung, sei es der Weg der Bulgaren oder der Polen, die Linie der Labour-Partei oder der deutschen Sozialdemokraten.

Mit solchen Thesen will der Kreml Volksfrontregierungen in der westlichen Welt Hilfestellung geben, und mit der Erklärung Chruschtschews, auch auf parlamentarischem Wege könne sich die sozialistische Entwicklung vollenden, wird die „Versuchung" für die sozialistischen Parteien, mit Rußland zusammenzuarbeiten, noch stärker untermauert.

Unerfüllte Voraussagen

Moskau scheint ferner bemüht zu sein, die westliche Welt nicht mehr nur mit einem Auge zu sehen, sondern mit beiden und damit plastischer, nachdem man einsah, daß das egozentrische Bild dem Kommunismus schadete. Zwar sind nur wenige Sowjets in der Freien Welt gewesen, aber Informationen und Unterlagen konnte der Kreml aus allen Staaten in genügendem Umfang erhalten, und diese standen im offenen Gegensatz zu bisher Gültigem. Die Voraussagen der sowjetischen Wirtschaftler alter Schule waren nicht eingetroffen; so mußte Chruschtschew in Moskau bekennen: „Die Produktion der kapitalistischen Länder ist uns noch überlegen." Mikojan geißelte Stalins Prophezeihungen, wonach die Produktion der westlichen Welt nach dem Kriege zusammenschrumpfen müsse und sagte: „Tatsächlich erfolgte eine Erweiterung der Produktion in vielen kapitalistischen Ländern."

Man ist bemüht, die eklatanten Widersprüche im kommunistischen Weltbild zu beseitigen. Dazu gehört, daß man Geschichte, Politik und Wirtschaft völlig neu schreibt; die Arbeiten hierzu haben bereits begonnen.

Erstaunlich wäre es, wenn man sich gänzlich gelöst hätte von der Selbstüberheblichkeit und den Superlativen, in denen die Vergangenheit zu schwelgen beliebte. Natürlich ist der Sendungsglaube geblieben. Trotz aller Selbstkritik bleibt die Hoffnung, den Westen zu überrunden, und zwar in Kürze. Bulganin führte aus: „Die am stärksten entwickelten kapitalistischen Staaten sollen hinsichtlich ihrer Produktivität in Kürze überholt werden." Im Jahre 1960 will Rußland die USA überflügelt haben, doch bei einem Vergleich der Produktionsziffern ergibt sich rasch, welchen Illusionen man im Kreml immer noch nachhängt. Sowjetrußland kann niemals die USA in vier Jahren eingeholt haben, es sei denn, die Vereinigten Staaten würden von einer schweren Wirtschaftskrise getroffen.

Bemerkenswert war es, daß die Reden auf dem Parteitag relativ gemäßigt waren. Sie klangen vorsichtiger, und Plattheiten wie „Imperialisten" und „Kriegstreiber" waren selten. Molotow sagte: „Seit dem Sturz des Nazitums und der Entstehung der DDR gibt es auf dem europäischen Kontinent keine aggressiven Staaten mehr." Als „schwarzes Schaf" wurden natürlich die USA gestempelt, die Molotow als Urheber von Militärblocks und der internationalen Spannung bezeichnete.

Zurück zu Lenin!

In den Ansprachen wurde immer erneut betont, man wolle zurück zu Lenin, dem wahren Begründer des Bolschewismus. Die Gründe hierfür sind mehrfacher Art, interessant muß jedoch erscheinen, daß zur Zeit Lenins die Partei ausschließlicher Machtfaktor war, wohingegen der Staat ein Schattendasein führte. Das änderte sich unter Stalin, der später die Schwerpunkte auf den Staat verlagerte.


Stalin wurde auf dem Parteitag verdammt, aber Lenin (unser Bild) war das große Vorbild. (Aufn. Archiv)


Auf dem 20. Parteitag der KPdSU traten vor allem der erste Sekretär der Partei, Chruschtschew (rechts), und der erste stellvertretende Ministerpräsident, Mikojan (links), in den Vordergrund. (Aufn. Archiv)

Soll aber nunmehr Lenins Auslegung gültig sein, soll die Partei wieder bestimmen und der Staat zweitrangig sein, dann ist jeder Zweifel darüber beseitigt, wer der gegenwärtige Herrscher Sowjetrußlands ist: nicht Ministerpräsident Bulganin, sondern der erste Sekretär der KPdSU, Nikita Chruschtschew.

Unter seinem Einfluß stand der 20. Parteitag. Die maßgebliche Rede war seine Erklärung der 180 Schreibmaschinenseiten, die eine der längsten Ansprachen darstellt, die jemals in der Welt gehalten wurden. Bulganins Ausführungen waren dagegen farblos und konnten auch darum nicht sonderliches Aufsehen erregen, weil der Fünfjahresplan, den der Ministerpräsident behandelte, bereits früher bekanntgegeben worden war.

Der Meister des Kongresses

Chruschtschew war der Meister des Kongresses. In seiner hemdsärmeligen, burschikosen Art, in seiner Verleugnung des Machtanspruches nach außen hin, zeigte er eine neue, bis dahin unbekannte Art, die Macht auszuüben, die um so eindringlicher wirken mußte, wenn zur gleichen Zeit der Tyrann Stalin entthront wurde, wenn Chruschtschew sich gegen die Vergötterung von Helden und Heroen wandte und keinen Beifall wünschte, dafür aber um so mehr Applaus erhielt.

Chruschtschew predigte das Führungskollektiv — und alle sprachen sie es ihm nach — um die persönlichen Ansprüche dahinter zu verbergen. Niemals noch wurde auf einem kommunistischen Parteitag so hervorragend Regie geführt!

Der Kommunismus tritt in eine neue Ära. Er hat den Ballast über Bord geworfen, er korrigiert offensichtliche Fehler, wird legerer und für manche attraktiver. Er macht kein Hehl daraus, daß er verschiedentlich grausam versagte und bemüht sich, die eigene Geschichte und die westliche Welt klarer zu sehen. Er verwirrt seine Funktionäre wie am 17. Juni, doch werden sie bald neu ausgerichtet sein, so wie Moskau es befiehlt. Er ist in seiner neuen Einsatzbeweglichkeit in Asien, Afrika und Europa gefährlicher als jemals zuvor.

Helmut Berndt





Hauptaktionsraum des 5-Jahres-Planes - Zwischen dem Ural und dem Jenessei liegt der entscheidende Aktionsraum der sowjetischen Industrialisierungspolitik. Die beiden Pole dieses Gebietes bilden die Industrieräume des Urals und des westsibirischen Kusnesk-Rayons. Die Industriewanderung nach dem Osten hat bereits die Küsten des Pazifiks erreicht. Auch in Ostsibirien, am Baikal-See und im Fernost-Territorium sind neue große Produktionsstätten entstanden. (Karte: Dr. WP)

Ein kosmisches Großereignis auf der Sonne

Astronomen maßen Verdreifachung der Ultrastrahlung - Beeinflussen die Eruptionen das Wetter?

HAMBURG (dpa). Eine ungewöhnliche Zunahme der kosmischen Ultrastrahlung in den frühen Morgenstunden des Donnerstags, die bis zum Dreifachen des Normalen ging, wird von den verschiedensten Sternwarten und Sonnenobservatorien der Welt gemeldet. Sie läßt, wie Wissenschaftler erklären, auf ein kosmisches Großereignis, auf eine ungewohnt starke Eruption auf der Sonne schließen. Dieser Schluß stimmt mit den Beobachtungen der Astronomen überein, die in den letzten Tagen eine ungewöhnliche Häufigkeit der Sonnenflecken feststellten. In der Erdatmosphäre machte sich die Zunahme der kosmischen Strahlung durch starke Störungen im Funkverkehr bemerkbar.

Drahtlos übermittelte Telefongespräche zwischen Großbritannien und Frankreich einerseits und den USA und Kanada andererseits wurden vollständig unterbrochen. Gesundheitsstörende Wirkungen auf den Menschen haben die kosmischen Ultrastrahlen nach Ansicht der Wissenschaftler auch bei den am Donnerstag erreichten relativ hohen Werten nicht. Ob Zusammenhänge zwischen den Sonneneruptionen, Sonnenflecken, kosmischen Ultrastrahlen und dem Wetter auf der Erde bestehen, konnte bisher nicht geklärt werden. Die Verstärkung der Ultrastrahlen wurde auch auf dem 1200 m hohen Schauinsland im Schwarzwald gemessen, wo sich eine Meßstelle des Physikalischen Instituts der Universität Freiburg befindet. Ihr Leiter, Dr. Sittkus, wies darauf hin, daß man aus der Steigerung der kosmischen Strahlung allein noch keine exakten Rückschlüsse über die entsprechenden Vorgänge auf der Sonne machen könne. Es mußten erst Beobachtungen der verschiedenen Sonnenobservatorien auf der Erde, vor allem der im Fernen Osten, die zur Zeit des Phänomens die Sonne direkt beobachten konnten, abgewartet werden, ehe man sich ein genaues Bild von diesem Sonnenphänomen machen könne. Auch das deutsche Sonnenobservatorium [illegible]stein ebenso wie das Mou[illegible]vatorium in Kalifornien haben in den letzten Tagen eine außerordentlich verstärkte und für diese Zeit ungewöhnliche Aktivität der Sonne beobachtet.


Das Fernauge des Hauptquartiers soll eine Kamera sein, die, wie wir bereits berichteten, jetzt in Amerika entwickelt wurde. Die Kamera (links) kann als „vorgeschobener Beobachter" montiert werden. Ein Kontrolljeep (rechts) dient als Relaissender zur Uebertragung des Frontbildes in den Gefechtsstand und das Hauptquartier. (AP-Bild)

Gefräßiger Düsenmotor

FLIEGERHORST HILL (Utah, USA) (AP). In letzter Sekunde wurde auf dem Fliegerhorst Hill der Luftwaffensoldat Donald Smith gerettet, nachdem er in einen laufenden Düsenmotor eingesaugt worden war. Smith und zwei andere Soldaten prüften einen Düsenbomber B 57, dessen Maschinen auf voller Kraft liefen. Smith ging vor die Maschine, taumelte vorwärts und wurde mit dem Kopf voran in die Ansaugöffnung gesogen, die etwa zwei Meter über dem Boden liegt. Ein zweiter Soldat sah Smiths Beine aus der Einsaugöffnung baumeln und verständigte den dritten Mann in der Führerkanzel, den Motor abzuschalten. Dieser reagierte sofort und Smith fiel auf den Boden. Er wurde in ein Krankenhaus gebracht, wo man seinen Zustand als gut bezeichnet. Er hatte einige Kratzer am Kopf und an den Schultern, und eine seiner Fingerspitzen war abgeschnitten.

Seit 38 Jahren im Walde

RECKLINGHAUSEN (dpa). Seit 38 Jahren hat Engelbert Lehnert aus Heiden im westfälischen Kreis Borken in den Wäldern des Münsterlandes gelebt. Nur selten schlich er sich in einen Bauernhof, um seinen Hunger zu stillen. Das wurde bekannt, als der 67jährige unlängst vor der Kälte an einen Viehtrog flüchtete, in dem Futter kochte.

Dabei fingen seine Kleider Feuer, und Lehnert erlitt Brandwunden. Der erstaunte Arzt bemerkte, daß sein Patient fünf Hosen, fünf Hemden, drei Jacken und zwei Mäntel trug. Lehnert ist seit Jahrzehnten im Münsterland als „Waldläufer" bekannt, doch nur wenige Bauern bekamen den scheuen, fast stummen Mann je zu Gesicht. Er gilt als guter Mensch, der oft auf einsamen Höfen als Heinzelmännchen wirkte. Wenn sich Menschen näherten, flüchtete er immer wieder in seine Wälder zurück. Lehnert hat vom Kriege fast nichts bemerkt, und Adolf Hitler war ihm kein Begriff. Er liegt jetzt in der kalten Scheune eines Bauern bei Lembeck (Landkreis Recklinghausen), wo er gepflegt wird.

HERSFELDER Nachrichten

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

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Nummer 128 — Samstag, 2. Juni 1956 — 12. Jahrgang

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Streit um Schlüters Nachfolger
Dresden feiert 750. Geburtstag
Andere machen auch Fehler
Wissenschaft ohne Gewissen
Das erste Museum für Kinder
Jede Frau spielt viele Rollen
Der Sportruhm vergeht schnell

Molotow zurückgetreten

Prawda-Chefredakteur Schepilow wurde sowjetischer Außenminister

MOSKAU (AP/dpa). Der sowjetische Außenminister Molotow, der letzte enge Mitarbeiter Stalins in der gegenwärtigen Sowjetregierung, ist am Freitagabend nach einer Meldung der sowjetamtlichen Nachrichtenagentur TASS zurückgetreten. Zu seinem Nachfolger wurde der Chefredakteur der „Prawda", Dimitrij T. Schepilow, ernannt. Schepilow ist Mitglied des Sekretariats der KPdSU und Kandidat des Präsidiums des Zentralkomitees der sowjetischen kommunistischen Partei. Schon während der Genfer Außenministerkonferenz im Herbst vergangenen Jahres war inoffiziell in sowjetischen Kreisen von der Möglichkeit gesprochen worden, daß Schepilow Molotow ablösen könnte. Molotow selbst hatte damals seinen Konferenzpartnern erklärt, daß er alt werde und sich „in Kürze" zur Ruhe setzen wolle.

Schepilow gilt als einer der führenden Parteiideologen der Sowjetunion und als einer der engsten Mitarbeiter Chruschtschews. In Moskau verlautet, daß Schepilow seit geraumer Zeit der persönliche Berater Chruschtschews in außenpolitischen Fragen war. Verschiedentlich wurde auch die Ansicht geäußert, daß Molotow unter den veränderten politischen Umständen eine Belastung der sowjetischen Außenpolitik ist.

Schepilow wurde am 4. November 1905 geboren. Bis 1949 ist über sein Leben nur wenig bekannt. Im März 1949 trat er ans Licht der Oeffentlichkeit, als ihm die Stellung des Leiters der Propaganda- und Agitationsabteilung des Zentralkomitees der sowjetischen KP übertragen wurde. Früher war dieses Amt lange Jahre von Andrej Schdanow, einst einer der mächtigsten Männer der Sowjetunion, bekleidet worden. Oktober 1952 wurde Schepilow Vollmitglied des Zentralkomitees und im Dezember des gleichen Jahres wurde er Chefredakteur des Organs der sowjetischen KP „Prawda".

Westliche diplomatische Kreise in Moskau halten es für möglich, daß der Zeitpunkt für Molotows Rücktritt im Zusammenhang mit dem Besuch des jugoslawischen Präsidenten Tito in Moskau steht. Molotow war eine der wichtigsten Persönlichkeiten beim Bruch der Kominformstaaten mit Tito im Jahre 1948.



Wjatscheslaw M. Molotow (HN-Archivbild)

Warndt-Kohle noch immer umstritten

BONN (HN). Wie am Freitag in Bonn bekannt wird, ist es noch immer nicht zu einer Verständigung über das Warndt-Problem zwischen Deutschland und Frankreich gekommen. In den Sachverständigen-Verhandlungen verlangen die Franzosen 90 Millionen Tonnen Saarkohle, die sie selbst abbauen wollen. Von deutscher Seite wird erklärt, bei den Raubbaumethoden der Franzosen entspreche das etwa 200 Millionen Tonnen Kohle, wenn sie von deutscher Seite abgebaut würden. Die Bundesregierung will nur 60 Millionen Tonnen, die von deutschen Bergleuten gefördert werden sollen, zugestehen. Es besteht nunmehr die Gefahr, daß die am Montag stattfindenden Saargespräche zwischen Bundeskanzler Adenauer und Ministerpräsident Mollet in Luxemburg am Warndt-Problem scheitern. Vier Bundestagsausschüsse, die sich am Freitag in Bonn mit dieser Frage beschäftigten, vertraten übereinstimmend die Auffassung, die Bundesregierung dürfe der Moselkanalisierung nur zustimmen, wenn in der Warndt-Frage eine annehmbare Lösung gefunden sei.

Der rabiate Montgomery

VICTORIA. (AP) Der stellvertretende NATO-Oberbefehlshaber, Feldmarschall Montgomery, erklärte in Victoria (British-Columbia), der Westen solle bei den ersten Anzeichen einer Aggression Atombomben werfen. „Ich würde mich um die Konsequenzen nicht kümmern. Werft die größte Bombe, die ihr habt. Erledigt sie!"

Atomreaktor für Frankfurt

Minister Strauß berichtete über seine US-Informationsreise

BONN. (dpa) Die drei Atomreaktoren, über deren Lieferung der Bundesatomminister in den USA verhandelte, sollen in Frankfurt, München und Hamburg aufgestellt werden. Mit dem Karlsruher Atomprojekt würde die Bundesrepublik dann über vier Reaktoren verfügen. Außerdem wird die Errichtung von zwei weiteren Reaktoren angestrebt. Diese Mitteilung machte Minister Strauß am Freitag vor der Presse in Bonn, als er über die Eindrücke von seiner Informationsreise in den USA berichtete. Strauß warnte in diesem Zusammenhang vor ideologischen Kämpfen auf dem Atomgebiet. In den USA seien die Erfolge in der Atomwissenschaft nur durch freiheitliche Betätigung der Wissenschaftler erreicht worden. Die Errichtung einer zentralen Bundesforschungsstelle müsse nachdrücklich abgelehnt werden.

Es werde in der Bundesrepublik deshalb weder ein kontrolliertes öffentliches, noch ein unkontrolliertes privatwirtschaftliches Monopol geben. Die Forschung dürfe vom Staat nicht reglementiert, sondern dürfe höchstens koordiniert werden, fuhr der Minister fort.

Als das Ziel der deutschen Atomwissenschaft bezeichnete es Strauß, bis 1975 zusätzlich zum herkömmlichen Energieaufkommen eine Erzeugung von 2,8 bis 3 Millionen Kilowattstunden jährlich zu erreichen.

Wie in Washington am Freitag bekannt wurde, will sich die US-Regierung dafür einsetzen, den Sitz der internationalen Atomenergiebehörde nach Wien zu verlegen. Eine endgültige Entscheidung soll im Herbst auf einer 84-Nationen-Konferenz in New York fallen.

Kurz berichtet

Erster Bundeswehrgeneral gestorben. Der Leiter der Annahmeorganisation der Bundeswehr, Generalmajor von Radowitz, verstarb im Alter von 56 Jahren in Bad Wiessee (Obb.).

Zu einem Staatsbesuch nach Italien werden Bundeskanzler Adenauer und Bundesaußenminister von Brentano vom 2. bis 4. Juli nach Rom reisen, wurde in Bonn bekannt.

Ein Eisenbahnunglück verhüteten zwei Jungen in London. Sie rannten einem vollbesetzten Vorortzug entgegen und brachten ihn zum Halten, ehe er eine durch einen Lastwagen zerstörte Brücke erreichte.

Schäden von Hunderten von Millionen Lire verursachten in Norditalien Schneefälle und Unwetter. Die Hagelkörner erreichten zum Teil Walnußgröße, meldet Radio Turin.

Die ersten Deserteure verzeichnete das im Aufbau befindliche österreichische Bundesheer nur wenige Tage nach dem Beginn der Musterung. Aus der Infanterieschule in St. Johann bei Salzburg desertierten ein Korporal und ein Gefreiter. Der Korporal nahm gleich 600 Mark mit.

Weil sie einen Polizisten geohrfeigt haben sollen, der ihnen den Zugang zum Wohnsitz des birmesischen Ministerpräsidenten U Nu verwehrte, wurden zwei deutsche Mädchen, die per „Anhalter" durch die Welt reisen, in Rangun zu zehn Tagen Haft verurteilt. (AP/dpa)

Das lange Warten hört auf

WUPPERTAL (dpa). Das Warten auf verspätete Anschlußzüge soll nach Mitteilung der Bundesbahndirektion Wuppertal künftig nicht mehr so großzügig gehandhabt werden wie bisher, da dieser „Dienst am Kunden" nicht nur zu Lasten anderer Fahrgäste gehe, sondern auch der Bundesbahn viele Sorgen bereite. Der wartende Zug müsse selbst wieder Anschluß haben, so daß sich die Verspätung eines Zuges „wie eine Epidemie" über zahllose Züge und Strecken ausbreiten könne.

Keine generelle Zollsenkung

Auf dem Agrarsektor Ausnahmen und Abstufungen geplant

BONN (HN/AP/dpa). Die von Bundeswirtschaftsminister Erhard geforderte und auch von Bundesfinanzminister Schäffer unterstützte generelle 30prozentige Senkung der Einfuhrzölle wird nicht in Kraft treten. Wie am Freitag in Bonn aus CDU-Kreisen bekannt wurde, sollen auf dem Sektor der Agrarzölle eine ganze Reihe von Abstufungen und Ausnahmen gemacht werden. Vizekanzler Blücher hat bereits Besprechungen eingeleitet, die die Beratungen des Wirtschaftskabinetts über die konjunkturpolitische Vorlage der Minister Schäffer und Erhard vorbereiten. Nachdem im Bundeskabinett dann eine Klärung herbeigeführt worden ist, soll die Konjunkturdebatte im Bundestag am 21. Juni stattfinden. Die CDU/CSU-Bundestagsfraktion hat inzwischen dem Bundeskabinett den Wunsch vorgetragen, daß umgehend Maßnahmen getroffen werden, um die von der Bank Deutscher Länder vorgenommene Diskonterhöhung überflüssig zu machen.

Nach Auffassung der Sachverständigen der CDU/CSU gibt es keine allgemeine Konjunkturüberhitzung. Lediglich bei Kohle und Stahl und auf dem Arbeitsmarkt seien Engpässe aufgetreten, die gewisse Auswirkungen auf den Baumarkt gehabt hätten. Für die Preisanhebungen bei Kohle und Stahl sei der Anstieg der Rohstoffpreise auf den Weltmärkten verantwortlich. Bei der landwirtschaftlichen Produktion spiele die strenge Kalte des vergangenen Winters eine große Rolle.

Wo blieben die 18 Millionen Deutschen?

Gesamterhebung der Regierung über Verluste der Bevölkerung aus den Vertreibungsgebieten läuft an

BONN (AP/dpa). Die Bundesregierung hat am Freitag einen Aufruf zur Gesamterhebung der Verluste der deutschen Bevölkerung aus den Vertreibungsgebieten erlassen. Durch diese Erhebung sollen 1. das Ausmaß und der Umfang der Flucht und Vertreibung der deutschen Bevölkerung festgestellt, 2. das Schicksal und der Verlust der deutschen Bevölkerung in den Vertreibungsgebieten geklärt und 3. Hilfsmaßnahmen für die in den Ostgebieten zurückgebliebenen Deutschen ermöglicht werden. Am Schluß des Aufrufs heißt es wörtlich: „Die Bundesregierung bittet, die Fragen schnell und sorgfältig zu beantworten. Es kommt darauf an, das Wissen eines jeden einzelnen zu erfahren. Die Gesamterhebung ist eine Aufgabe des ganzen deutschen Volkes." Die Erhebung erfolgt im Zusammenhang mit der Bearbeitung der Anträge auf Ausstellung eines Vertriebenen- oder Flüchtlingsausweises. Tausende ehrenamtlicher Helfer des DRK, der Hilfsorganisationen der beiden Kirchen und der Verbände der Heimatvertriebenen (BvD und VDL) werden jedem einzelnen Flüchtling und Vertriebenen einen Erhebungsbogen zustellen und sind auch bei dessen Ausfüllung in Zweifelsfällen behilflich.

In dem Fragebogen werden die Betroffenen in einem Abschnitt über ihr eigenes Schicksal befragt, in einem weiteren Abschnitt über Schicksale und Verluste der Familie und anderer Verwandter. Bei der Befragung soll das alles angegeben werden, was der Befragte von sich selbst, seiner Familie und von anderen Personen zu berichten hat, auch wenn er schon früher einmal irgendwo die gleichen Angaben gemacht haben sollte.

Der Erhebungsbogen fragt schließlich auch noch im Heimatgebiet lebenden bzw. zurückgehaltenen Personen sowie auch nach den in der Sowjetzone oder im Ausland außerhalb des Heimatgebietes lebenden Vertriebenen. Die Bundesregierung hat für die Aktion 4,5 Millionen DM bereitgestellt und rechnet damit, daß die Erhebungsarbeiten in drei Jahren abgeschlossen sein könnten.

Vor dem Krieg lebten in Ostdeutschland — ohne die Sowjetzone — 9,6 Millionen, in der Tschechoslowakei 3,5 Millionen und im übrigen Europa 5,19 Millionen — zusammen also 18,29 Millionen Deutsche. Bisher haben alle Nachforschungen sei-

tens der Behörden und der Verbände nur Teilerfolge gebracht.

Kanzler würdigt Grenzschutz

BONN (AP/dpa). Bundeskanzler Adenauer und Bundesinnenminister Schroder würdigten am Freitag anläßlich des Inkrafttretens des zweiten Bundesgrenzschutzgesetzes in Tagesbefehlen an den Bundesgrenzschutz die bisherigen Leistungen des BGS und seinen Verdienst um die Sicherung der Bundesrepublik. Adenauer erklärte: „Die Männer, die vor Jahren als erste wieder die Uniform anzogen, um Volk und Heimat zu schützen, sind als Träger bester deutscher Tradition und staatsbürgerlicher Gesinnung berufen, bei der Wiedergeburt deutschen Soldatentums an hervorragender Stelle mitzuwirken."

Kein Repatriierungsabkommmen

Wie am Freitag im Bonner Außenministerium erklärt wurde, hat die Bundesregierung nicht die Absicht, sich in Moskau um den Abschluß eines offiziellen Repatriierungsabkommens zu bemühen. Auch seitens der Sowjetunion sei man bisher nicht wegen eines solchen Abkommens an die Bundesregierung herangetreten. Ueber die Rückführung von Deutschen aus der Sowjetunion spiele nach wie vor die im Vorjahr in Moskau getroffene Vereinbarung. Mit dieser Erklärung nahm das AA zu anderslautenden Berichten aus Moskau Stellung.

250 Zigaretten zollfrei

Dem Bundestag liegt jetzt ein internationales Abkommen über Zollerleichterungen im Touristenverkehr vor, das bereits von 32 Staaten unterzeichnet worden ist. Nach diesem Abkommen darf jeder Tourist folgende Waren oder persönlichen Gegenstände zollfrei ein- und ausführen: 250 Zigaretten oder 50 Zigarren oder 250 Gramm Tabak, eine Flasche Wein, ¾ Liter Spirituosen. Reiseandenken im Höchstwert von 100 Dollar, Schmuck, Fotoapparat, Musikinstrument, Rundfunkgerät, Kinderwagen, Sportwaffe, Kanu oder Kajak unter fünfeinhalb Meter Länge. Kaffee gehört nicht zu den im Abkommen bevorzugten Artikeln.

Höhere Zinsen für Sparer

Der Zentrale Kreditausschuß, dem alle Bank- und Sparkassenorganisationen angehören, hat am Freitag in Bonn eine Erhöhung der Zinsen für Sparguthaben mit gesetzlicher Kündigungsfrist von 3 auf 3½ Prozent beschlossen. Die Einlagen mit sechsmonatiger Kündigungsfrist sollen künftig mit 4½ und die Einlagen mit zwölfmonatiger Kündigungsfrist mit 5½ Prozent verzinst werden. Postsparer sollen 3¼ Prozent statt bisher 2¼ Prozent Zinsen erhalten. Diese Beschlüsse bedürfen noch der Billigung der Bankenaufsichtsbehörde, die am 7. und 8. Juni in Frankfurt tagt.

‚Besatzungskinder' beschäftigen UN

Es geht um Unterhaltszahlungen - aber die USA nehmen nicht teil

NEW YORK (AP). Auf einer von den UN einberufenen Konferenz zur Ausarbeitung einer internationalen Konvention über Unterhaltszahlungen hat der deutsche Delegierte Arthur Buelow vorgeschlagen, daß Unterhaltsberechtigte zur Durchsetzung ihrer Forderungen in anderen Ländern kostenlose Rechtshilfe erhalten. Buelow wies auf die hohe Zahl der „Besatzungskinder" in Deutschland hin, deren Väter das Land verließen ohne für den Unterhalt ihrer Kinder zu sorgen.

Vertreter von etwa einem Dutzend Ländern unterstützten den Gedanken einer internationalen Konvention, die es einem Unterhaltsberechtigten in dem einen Lande ermöglichen würde, den Unterhaltspflichtigen in dem anderen Lande gerichtlich zur Zahlung zu zwingen.

Die USA und Großbritannien nehmen an der Konferenz aber nicht teil. Von amerikanischer Seite wurde erklärt, diese Angelegenheit ließe sich besser durch zweiseitige Abkommen regeln und zudem wäre eine internationale Organisation zur Regelung von Unterhaltszahlungen zu schwerfällig.

DP-Lager werden 1958 geschlossen

GENF (dpa). Das Exekutivkomitee des UN-Hochkommissariats für das Flüchtlingswesen in Genf hat einer australischen Entschließung zugestimmt, wonach sich der UN-Flüchtlingskommissar mit den Regierungen Oesterreichs, Griechenlands, Italiens und der Deutschen Bundesrepublik in Verbindung setzen soll, um Maßnahmen zur schrittweisen Schließung der internationalen Flüchtlingslager bis Ende 1958 zu erortern und rechtzeitig angemessene Lösungen für die Flüchtlinge in diesen Lagern zu planen.

Tauziehen um Wehrpflicht

BONN. (AP) Der Aeltestenrat des Bundestages konnte sich am Freitag nicht über den Termin für die Verabschiedung des Wehrpflichtgesetzes einigen. Der Wunsch der Koalition, das Gesetz am 20. und 22. Juni im Bundestag in zweiter und dritter Lesung zu behandeln, stieß auf den energischen Widerspruch der SPD. Die Koalition kann ihren Zeitplan jetzt erst im Plenum selbst durchsetzen.

Inzwischen wurden von einem SPD-Sprecher die Aeußerungen maßgebender CDU-Politiker als „Illusion" bezeichnet, daß sich auch für das Wehrpflichtgesetz eine breite parlamentarische Mehrheit finden werde. Die Opposition wurde dem Gesetz in der Schlußabstimmung niemals zustimmen.

Auch Franzosen eingeladen

Internationales Generalstreffen zur Luftparade in Moskau

PARIS (AP/dpa) Hohe Offiziere der westlichen Mächte werden sich am 24. Juni anläßlich der großen sowjetischen Luftparade in Moskau ein Stelldichein geben. Nach General Twining (USA) und General Birch (Großbritannien) erhielt jetzt als dritter der Stabschef der französischen Luftstreitkräfte, General Bailly, eine Einladung nach Moskau. Auch General Bailly nahm sie an.

Am Freitag begrüßte Radio Moskau die Annahme der Einladung durch die USA. Dies zeige, daß in den sowjetisch-amerikanischen Beziehungen Veränderungen zum Besseren hin Platz greifen. „Wir möchten gute Freunde der Amerikaner sein und nicht Seite an Seite mit ihnen in einer eisigen Atmosphäre leben."

Schwierigkeiten bereitet inzwischen in Rom die Behandlung einer für die nächste Zeit erwartete Einladung des italienischen Ministerpräsidenten Segni nach Moskau. Eine Annahme der Einladung würde notwendigerweise einen Gegenbesuch der sowjetischen Staatsmänner in Rom nach sich ziehen. Ein solcher Besuch wird in Kreisen des Vatikans jedoch als „äußerst unerwünscht, aus allen nur denkbaren Gründen" bezeichnet. Einen Ausweg sieht man nur darin, daß sich der Papst, ähnlich wie beim Hitlerbesuch 1938 in Rom, vorzeitig auf seine Sommerresidenz Castel Gandolfo zurückzieht.

Wie aus London bekannt wurde, soll auch der einflußreichste jüdische Politiker, der Präsident des Jüdischen Weltkongresses, Dr. Goldmann, von dem Moskauer Oberrabbiner Schliefen zu einem Besuch der Sowjetunion eingeladen worden sein. (Siehe auch Leitartikel Seite 2).

HERSFELDER Nachrichten

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Überparteiliche Tageszeitung für Bad und Kreis Hersfeld

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Moskau hat Berlin-Status aufgekündigt

Während der nächsten sechs Monate ist der Kreml aber noch bereit, mit den Westmächten über die Folgen zu verhandeln

MOSKAU (HN/AP/dpa). Die Sowjetunion hat am Donnerstag das Viermächte-Abkommen über Berlin und alle anderen Verträge der vier Großmächte über die Besatzungszonen in Deutschland für ungültig erklärt und den Westmächten gleichzeitig eine Frist von sechs Monaten gestellt, in der alle sich aus dieser Ungültigkeitserklärung ergebenden Fragen — insbesondere hinsichtlich ihrer Stellung in Berlin — in Verhandlungen geregelt werden sollen. Außerdem wurde von Moskau vorgeschlagen, Westberlin zu einer „freien entmilitarisierten Stadt" zu machen, in deren Angelegenheiten sich kein anderer Staat — auch nicht die beiden deutschen Staaten — einzumischen hätte. Die Vereinten Nationen sollen gegebenenfalls an der Wahrung des neuen Status von Westberlin beteiligt werden. Die Sowjetunion begründet ihren Schritt in erster Linie mit der Notwendigkeit, einen „gegen das sozialistische Lager gerichteten Spionage- und Sabotagebrückenkopf" (Berlin) zu beseitigen. Falls die vorgeschlagenen Verhandlungen Moskaus mit dem Westen scheitern, will die Sowjetunion nach Ablauf der sechsmonatigen Frist ihre Funktionen den Sowjetzonenbehörden übergeben, die sowjetische Militärkommandantur in Ostberlin aufgeben und ihre Wachtruppen abziehen. Die DDR soll ihre volle Souveränität zu Lande, zu Wasser und in der Luft erhalten. Für den Fall, daß die Westmächte mit der Beseitigung ihrer Besatzungsbefugnisse und der Umbildung Westberlins zu einer freien Stadt einverstanden sein sollten, erklärt sich die Sowjetunion bereit, im Namen der vier Großmächte die erforderlichen Kontakte mit Pankow in den Westberlin betreffenden Fragen wahrzunehmen.

Der sowjetische Standpunkt ist in drei nahezu gleichlautenden Noten an die USA, Großbritannien und Frankreich sowie in zwei verschiedenen Noten an die Bundesrepublik und die Sowjetzone enthalten. Allen Mitgliedstaaten der Vereinten Nationen gingen außerdem Abschriften der Noten zu, die am Donnerstagvormittag im sowjetischen Außenministerium an die Vertreter der drei Westmächte und der Bundesrepublik in Moskau übergeben wurden.

Die Note an die Sowjetzone übergab in Ostberlin Botschafter Perwuchin dem Sowjetzonen-Ministerpräsidenten Grotewohl. In dieser Note wird versichert, daß die Liquidierung des Besatzungsregimes in Berlin „ohne schmerzhaften Druck" für die Westberliner erfolgen solle. Die Mitwirkung der Zone bei der Verwirklichung der sowjetischen Vorschläge sei besonders beim Waren- und Personenverkehr von und nach Westberlin erforderlich. Zur eingehenden Prüfung aller damit verbundenen Fragen beabsichtigte die Sowjetunion in Verhandlungen mit der Sowjetzone einzutreten.

Zu Garantie-Erklärung bereit

Schließlich verspricht die sowjetische Regierung, Westberlin wirtschaftlich zu unterstützen und seinen neuen Status „strengstens" zu respektieren. Westberlin müsse seinerseits die Verpflichtung übernehmen, auf seinem Gebiet keine Wühlarbeit gegen den Ostblock zuzulassen. Es wird die Möglichkeit einer Garantie des angestrebten Status von Berlin durch die vier Großmächte sowie die Regierungen beider Teile Deutschlands angedeutet. Gleichzeitig garantiert Moskau der DDR erneut ihr Staatsgebiet.

„Unrealistische Politik" Bonns

In der Note an Bonn stellt Moskau schließlich fest, die Bundesrepublik habe zwar keine direkten Beziehungen zum Berlin-Status, sie möge die Motive der neuen sowjetischen Berlin-Vorschläge aber trotzdem richtig würdigen und verstehen. Erneut werden die Westmächte und die Bundesrepublik beschuldigt, für die unbefriedigende Entwicklung in Berlin verantwortlich zu sein. Die Westmächte hätten Westberlin die Rolle eines „zweiten Sarajewo" zugedacht. Die Bundesregierung betriebe eine „unrealistische Politik der Stärke."

Ausdrücklich wird in dieser Note betont, die Sowjetunion habe nicht die Absicht, die beiden Teile Berlins zwangsweise zu vereinigen. Die Sowjetunion erkenne die beiderseits des Brandenburger Tores existierenden Gesellschaftssysteme als Tatsachen an.

Auszüge aus der Sowjetnote bringen wir heute im Wortlaut auf den Seiten 2 und 3, außerdem einen Leitartikel zu diesem Thema auf Seite 2.



Auf die Frage, ob die Sowjetunion nach Ablauf von sechs Monaten und bei Ablehnung ihrer Vorschläge durch die USA nie mehr bereit sein würde, über die Berliner Frage zu verhandeln, antwortete Chruschtschew (unser AP-Bild), das hänge davon ab, ob die USA seine Vorschläge vollständig oder nur zum Teil ablehnen. Im letzteren Falle seien Verhandlungen über Einzelheiten durchaus natürlich und „wir wären zu Konferenzen und Zusammenkünften bereit".

Brandt: Plan untragbar

Eingliederung von ganz Berlin in die Zone nach seiner Ansicht das Ziel

BERLIN/BONN (AP/dpa). Der Regierende Bürgermeister von Berlin, Willy Brandt, bezeichnete in einer ersten Stellungnahme die sowjetischen Berlin-Vorschläge als „untragbar". Der Plan, aus Westberlin eine entmilitarisierte freie Stadt zu machen, laufe darauf hinaus, daß Westberlin von alliierten Truppen geräumt werde, jedoch von sowjetischen Divisionen umgeben bleibe. Die rechtliche, finanzielle und wirtschaftliche Zugehörigkeit Berlins zur Bundesrepublik würde zerschnitten und durch eine einseitige Abhängigkeit vom Ostblock ersetzt werden. Es sei das erkennbare Ziel der kommunistischen Politik, ganz Berlin in die Sowjetzone einzugliedern. Alles Gerede könne nicht davon ablenken. Die Berliner ließen sich deshalb auch jetzt nicht verwirren.

Dem sowjetischen Plan steht nach Ansicht Brandts die Tatsache entgegen, daß die Westmächte wiederholt feierlich versichert haben, sie wollten ihre Rechte und Pflichten in Berlin bis zur Ueberwindung der Spaltung Deutschlands ausüben. Deshalb gebe es keine isolierte Lösung der Berliner Frage. Es müsse über die Ueberwindung der Spaltung Deutschlands verhandelt werden und nicht über die Aenderung des Status quo von Berlin.

Wie in Berlin verlautet, erwägt Brandt, nach den USA zu fliegen und sich dort mit führenden Politikern Amerikas über die Sowjetnote und die dadurch entstandene politische Situation für die Stadt zu unterhalten.

Bonn verspricht Hilfe

Bundesregierung und Opposition haben sich in Bonn wenige Stunden nach dem Bekanntwerden der Sowjetnote mit Nachdruck hinter Berlin gestellt und der dortigen Bevölkerung jede nur erdenkliche Hilfe zugesichert. Bundeskanzler Adenauer und der SPD-Vorsitzende Ollenhauer forderten am Donnerstagabend, daß die Freiheit Berlins unter allen Umständen erhalten werden müsse. Adenauer gab der Ueberzeugung Ausdruck, daß der Westen „jeden Vorschlag zurückweist, der darauf abzielt, Berlin schutzlos zu machen und seine Freiheit zu gefährden".

Bundesminister Lemmer stellte fest, Berlin werde sich niemals in ein Niemandsland im Herzen Deutschlands und Europas verwandeln lassen. Bundespressechef v. Eckardt schließlich meinte, daß mit der sowjetischen Forderung auf eine befristete Verhandlungszeit eine schwerwiegende Lage entstanden sei. Dieser Umstand überschatte auch die sowjetische Bereitschaft, mit den drei Westmächten zu verhandeln. Die Bundesrepublik werde mit den Westmächten über die weitere Behandlung der Note beraten.

Beruhigung an der Börse

Die Bereitschaft der Sowjets, mit den Westmächten in den nächsten sechs Monaten über den Status von Berlin zu verhandeln, hat zu einer wesentlichen Beruhigung der Lage an den Effektenmärkten in der Bundesrepublik geführt. Sofort nach Veröffentlichung der Noten setzte lebhafte Nachfrage ein, die im allgemeinen auf so geringe Angebote traf, daß die Notierungen um fünf, ja verschiedentlich bis zu zehn Punkte gegenüber dem Vortagskurs heraufgesetzt werden mußten.

Fernschreiber standen still

FRANKFURT (AP). Ausgerechnet in der entscheidenden halben Stunde am Donnerstagvormittag, als in Ostberlin die ersten Informationen über die mit Spannung erwartete sowjetische Note zur Aufkündigung des Berliner Viermächtestatus bekannt wurden, brach in Frankfurt durch einen Kurzschluß in einem Umspannungswerk die gesamte Stromversorgung für eine halbe Stunde zusammen. Dadurch verzögerte sich die Weitergabe der Meldungen von den in Frankfurt ansässigen Zentralredaktionen, Verkehrsampeln verlöschten und lösten schwere Verkehrsstockungen aus. Die Fahrstühle blieben mit ihren Insassen teilweise zwischen den einzelnen Stockwerken stekken.

Kreml: Kein Ultimatum

Chruschtschew deutet Annullierung weiterer Verträge über Deutschland an

MOSKAU (AP/dpa). Wenige Stunden nach Ueberreichung der sowjetischen Noten stellte sich Ministerpräsident und Parteichef Chruschtschew im Kreml der internationalen Presse für Fragen zur Verfügung. Er betonte ausdrücklich, daß die sowjetischen Berlin-Vorschläge kein Ultimatum an den Westen darstellten. Hinter ihnen stehe lediglich der Wunsch, die Welt von einem „Krebsgeschwür" zu befreien und „einen wichtigen Schritt zur Entspannung in Europa zu tun". In den nächsten sechs Monaten werde die sowjetische Regierung nichts unternehmen, um den Status Westberlins zu ändern, es sei denn, der Westen unternehme „unerwünschte Schritte". Diese Frist solle dazu dienen, Zeit für Verhandlungen und Gespräche über das Problem zu gewähren.

Zu der Möglichkeit einer Ablehnung der sowjetischen Vorschläge durch die USA meinte Chruschtschew, er würde dies sehr bedauern, rechne aber als Realist auch nicht mit einem sofortigen Einverständnis. Als die Westmächte das Potsdamer Abkommen gebrochen und die Bundesrepublik aufgerüstet hätten, habe die Sowjetunion ohne Erfolg protestiert.

Jetzt würde sie ihrerseits die Potsdamer Abkommen und alle aus der Niederlage Hitler-Deutschlands resultierenden Abmachungen außer Kraft setzen, ganz gleich, wie die Westmächte sich dazu stellen.

Als der sowjetische Ministerpräsident daraufhin gefragt wurde, ob die sowjetische Note eine Kündigung des Potsdamer Abkommens darstellen solle, rief er: „Glauben Sie, daß das Potsdamer Abkommen noch existiert?" Allerdings erklärte er auf eine andere Frage, ob die sowjetische Berlin-Politik geändert würde, wenn die Bundesrepublik auf eine Aufrüstung verzichte, nach einem klaren „Nein", nach dem Potsdamer Abkommen hätte Deutschland sowieso kein Recht zur Bewaffnung. Ein Verzicht darauf wäre somit keine Konzession, auf die ein sowjetisches Zugeständnis folgen müßte.

Chruschtschew bestätigte ausdrücklich, daß eine „Freie Stadt Berlin" Korridore für den Waren- und Personenverkehr nach beiden Richtungen haben müsse. Sie könnten den Korridoren ähneln, die seinerzeit Danzig besessen habe.

London erwartet Ablehnung

Beobachter in London halten es für sehr wahrscheinlich, daß der Westen die sowjetischen Vorschläge nicht akzeptieren wird. Ein Sprecher des britischen Außenministeriums betonte am Donnerstagnachmittag, kein Land könne einseitig die Verpflichtungen abwerfen, die von den vier Mächten hinsichtlich Berlins übernommen worden seien.

Erleichterung in Washington

In Washington war die erste Reaktion auf das sowjetische Vorgehen ein Gefühl der Erleichterung, da nach amerikanischer Auffassung die unmittelbare Gefahr eines Konfliktes nun nicht mehr gegeben sei und die Sowjets anscheinend auch nicht beabsichtigten, die Berlin-Krise zu verschärfen. Besondere Beachtung findet in den USA die Anregung Chruschtschews, die Vereinten Nationen in die Berlin-Frage einzuschalten.

Bonn interpretiert Dulles

Nur die Grenzkontrolle durch „Hilfsorgane" der Sowjets wird anerkannt

BONN (AP). Nach Auffassung der Bundesregierung können die drei Westmächte eine sowjetzonale Kontrolle auf den Zufahrtswegen nach Berlin nur dann akzeptieren, wenn sie ausdrücklich im Auftrage der Sowjetunion geschieht.

In diesem Sinne legt die Bundesregierung, wie Bundespressechef von Eckardt am Donnerstag vor der Presse in Bonn erläuterte, auch die Aeußerungen des amerikanischen Außenministers Dulles vom Vortage zur Berlin-Frage aus.

Aus dem Stenogramm der Dulles-Pressekonferenz, das auf Anforderung in Bonn eingegangen sei, sei klar ersichtlich, daß die Amerikaner die Kontrolle auf den Zugangswegen nach Berlin nur dann dulden würden, wenn die Volkspolizisten oder andere Stellen als „Hilfsorgane" der Sowjets angesehen werden könnten. Es sei falsch, daß in dieser Frage eine Absprache mit Dulles getroffen worden sei.

Ein Sprecher des SPD-Vorstandes erklärte zu den Auskünften der Bundesregierung, sie hätten „keinerlei Klarheit" darüber ergeben, ob zwischen der Bundesregierung und der US-Regierung oder den Westmächten ein Uebereinkommen, eine Uebereinkunft oder ein Einverständnis erzielt worden sei.

Zwei Millionen Opfer der Ostvertreibung

WIESBADEN (dpa). Nach einer Untersuchung des Statistischen Bundesamtes über die deutschen Vertreibungsverluste muß damit gerechnet werden, daß 1,2 Millionen Bewohner aus den zur Zeit unter fremder Verwaltung stehenden Ostgebieten des Deutschen Reiches Opfer von Kämpfen, Flucht, Vertreibung und anderen Gewaltmaßnahmen geworden sind. Hinzu kommen rund 890 000 Deutsche aus Danzig, dem Memelgebiet, den baltischen Staaten, Polen, der Tschechoslowakei, Ungarn, Jugoslawien, Rumänien und Bulgarien.

Aufruf: Macht das Tor auf!

Kuratorium „Unteilbares Deutschland" fordert Freiheit für das ganze Volk

BONN/BERLIN (AP). Führende Persönlichkeiten der Bundesrepublik und Westberlins forderten am Donnerstag in einem Aufruf freies Reisen, freie Wahl des Wohnortes und des Arbeitsplatzes und das freie Wort in ganz Deutschland.

Der Aufruf erging anläßlich einer Aktion „Macht das Tor auf!", die das Kuratorium „Unteilbares Deutschland" am Donnerstag mit Kundgebungen in Bonn und Berlin als Bekenntnis zur Wiedervereinigung Deutschlands eröffnete. In dem Aufruf, der von den führenden Persönlichkeiten aus Politik und Wirtschaft unterzeichnet ist, heißt es: „Gebt uns das heilige Recht der Selbstbestimmung, beseitigt als erstes die Schranken, die uns trennen!"

Der geschäftsführende Vorsitzende des Kuratoriums, Dr. Schütz, erklärte zu der Aktion seines Verbandes, sie solle plebiszitären Charakter annehmen und Ost und West beweisen, daß „alle Teile unseres zerrissenen Vaterlandes mit unserer Hauptstadt Berlin als Mittelpunkt unlösbar zusammengehören".

Im Rahmen dieser Aktion sollen Ende Februar und Anfang März 1959 in Straßensammlungen silberne Abzeichen verkauft werden, die das Brandenburger Tor darstellen. Der Reinerlös der Sammlungen wird einem Fonds zugeführt, der der Förderung der menschlichen und kulturellen Beziehungen im geteilten Deutschland dienen soll.

Demokraten gewannen die Wahlen in Alaska

JUNEAU (dpa). Die ersten Wahlen in Alaska, dem neuen 49. Staat der Vereinigten Staaten von Amerika, haben einen überwältigenden Sieg der Demokratischen Partei gebracht. Nach den jetzt vorliegenden Endergebnissen gewannen die Demokraten die beiden Senatssitze und das Mandat im Repräsentantenhaus, den Gouverneursposten und die Kontrolle im Staatsparlament von Alaska, dem 60 Abgeordnete angehören. Nach dem Wahlergebnis von Alaska setzt sich der amerikanische Kongreß jetzt aus 64 Demokraten und 34 Republikanern im Senat und aus 283 Demokraten und 153 Republikanern im Repräsentantenhaus zusammen.

Weltgeschehen kurz berichtet

Sehr zufrieden äußerte sich Bundeskanzler Adenauer vor dem CDU-Bundesvorstand in Bonn über seine Konferenz mit dem französischen Ministerpräsidenten de Gaulle, die in außerordentlich freundschaftlicher Atmosphäre stattgefunden habe.

Zurückgetreten ist der ehemalige französische Ministerpräsident Daladier, der am vergangenen Sonntag eine Wahlniederlage einstecken mußte und auf eine weitere Kandidatur für das französische Parlament verzichtet hat, auch von seinem Amt als Bürgermeister von Avignon. Inzwischen hat auch Pierre Mendes-France seinen Posten als Bürgermeister des Stadt Louviers im Departement Eure niedergelegt.

Einberufen wurden beide Häuser des Obersten Sowjets, des sowjetischen Parlaments, zu einer ordentlichen Sitzung am 22. Dezember. (AP/dpa)

Neuer Rapacki-Plan beeindruckt London

LONDON (AP). Der Staatsminister im britischen Außenministerium Ormsby Gore erklärte in London im Unterhaus, daß Großbritannien den revidierten Rapacki-Plan in sehr ernsthafte Erwägungen ziehen werde. Polen habe sich mit Großbritannien allerdings noch nicht über den Plan in Verbindung gesetzt und deshalb sei es auch vorläufig nicht angebracht, Besprechungen vorzuschlagen.

Die deutsche Nationalelf schlug in Augsburg Bulgarien klar 3:0

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De Gaulle Staatschef

Schon im ersten Wahlgang erzielte er die absolute Mehrheit

PARIS (AP/dpa). Der neue französische Staatspräsident heißt erwartungsgemäß Charles de Gaulle. Die am Sonntag in Frankreich und seinen überseeischen Gebieten abgehaltenen Präsidentenwahlen erbrachten einen überwältigenden Sieg für den derzeitigen Ministerpräsidenten, der sich nach dem Putsch der französischen Siedler in Algerien im Mai dieses Jahres nach mehrjähriger Pause wieder in das politische Leben Frankreichs einschaltete und als „Retter der Nation" gilt.

De Gaulle erreichte bereits im ersten Wahlgang die erforderliche absolute Mehrheit der rund 80 000 Wahlmänner-Stimmen. Schon am späten Sonntagnachmittag stand dieses Ergebnis fest, nachdem von den 74 927 Wahlmännern des Mutterlandes 58 161 und damit weit mehr als die absolute Mehrheit für den General gestimmt hatten. Auf den Kommunisten Georges Marrane entfielen 10 113 und auf Prof. Chatelet von der Union der Demokratischen Kräfte 6656 Stimmen. Einschließlich der Voten aus Uebersee konnte de Gaulle 62 319 Stimmen, das sind rund 78,49 Prozent, erringen.

Dem Wahlkollegium gehörten verfassungsgemäß die Abgeordneten der Nationalversammlung, die Mitglieder der Generalräte und der Versammlung der überseeischen Gebiete, die Bürgermeister und die Gemeinderäte, sowie in Orten mit über 30 000 Einwohnern zusätzliche Delegierte an, die von den Parteien nach ihrem Stärkeverhältnis nominiert wurden.



Alle Macht

ist nun in den Händen de Gaulles, nachdem der General Staatspräsident geworden ist und die neue, schon früher angenommene Verfassung ihm praktisch das Recht einräumt, ohne Parlament mit einer Regierung nach seinen Wünschen zu herrschen. (dpa-Bild)

Coty gratulierte telefonisch

Sofort nach Bekanntwerden des Wahlsieges beglückwünschte der derzeitige Staatspräsident René Coty General de Gaulle telefonisch zu seinem Erfolg. Coty wird den Amtssitz des französischen Staatspräsidenten, den Elysée-Palast, bereits am Mittwoch verlassen, während de Gaulle Sitz und Amt offiziell erst am 8. Januar übernimmt. Die traditionellen Neujahrsempfänge will Coty bereits am heutigen Montag und am Dienstag abhalten.

Wer am 8. Januar neuer Regierungschef wird, ist bis zur Stunde noch völlig ungewiß. Während bisher in Paris die Auffassung vertreten wurde, de Gaulle werde seine Amtszeit als Ministerpräsident noch etwas verlängern, soll der General nach letzten Berichten entschlossen sein, den neuen Premierminister am Tage seines Amtsantritts zu ernennen. An diesem Tage erlöschen auch sämtliche Sondervollmachten, die das inzwischen abgewählte französische Parlament dem General vor sechs Monaten einräumte. (Siehe auch Kommentar Seite 2).

Kleinaktien im Kommen

Bonn beginnt mit Reprivatisierung des Bundesvermögens bei der Preussag

BONN (AP). In den ersten Monaten des nächsten Jahres werden wahrscheinlich die ersten Kleinaktien auf den Markt kommen, die zur schrittweisen Privatisierung von Bundesvermögen ausgegeben werden. Auf Beschluß des Bundeskabinetts beginnt die schon seit langem angekündigte Ueberführung von Bundesvermögen in Privathand bei der „Preußischen Bergwerks- und Hütten-AG" (Preussag).

Das Kabinett hat inzwischen dem Vorschlag von Bundesschatzminister Dr. Lindrath zugestimmt, das Kapital der Preussag von 75 auf 105 Millionen D-Mark durch Ausgabe von Kleinaktien zu erhöhen. Die jungen Aktien sollen ausschließlich den einkommensschwächeren Bevölkerungsschichten und der Belegschaft der Preussag angeboten werden.

Unter einkommensschwächeren Bevölkerungsschichten werden dabei nach Mitteilung des Ministeriums Personen mit einem Jahreseinkommen bis zu 16 000 D-Mark (einem Monatseinkommen bis zu 1333 DM) verstanden. Insgesamt werden 300 000 neue Preussagaktien zu je 100 D-Mark ausgegeben (Gesamtwert 30 Millionen DM). Belegschaftsmitglieder der Preussag können eine unbeschränkte Zahl dieser Aktien erwerben.

Die Ausgabe von Kleinaktien zur breiten Streuung des Eigentums sollte eigentlich mit der Privatisierung des Volkswagenwerks beginnen. Das entsprechende Gesetz ist aber vom Bundestag noch nicht verabschiedet worden.

Oberster Sowjet tagt

MOSKAU (dpa). Der Oberste Sowjet, das Parlament der Sowjetunion, tritt heute vormittag in Moskau zu einer Tagung zusammen, bei der sich das Hauptinteresse ausländischer Beobachter auf außenpolitische Fragen konzentriert. Möglicherweise werden Ministerpräsident Chruschtschew oder Außenminister Gromyko eine außenpolitische Erklärung abgeben, in der sie zu aktuellen Themen wie Berlin, deutsche Aufrüstung, Verbot der Atomwaffen und Verhinderung von Überraschungsangriffen Stellung nehmen.

Ermittlungsverfahren im Taunus

BAD HOMBURG (AP). Das Kriminalkommissariat Bad Homburg hat ein Ermittlungsverfahren gegen 13 Einwohner der Taunusgemeinden Friedrichsdorf und Köppern eingeleitet, die von dem Pächter eines Cafés in Köppern wegen Hausfriedensbruchs, Sachbeschädigung und antisemitischer Aeußerungen in der Oeffentlichkeit angezeigt worden waren. Der Pächter wurde nach seinen eigenen Angaben in seinem Café wiederholt wegen seines jüdischen Glaubens beschimpft. Einmal soll sogar ein Schuß auf ihn abgegeben worden sein.

Luftkampf über dem Negev

Israelische Düsenjäger schossen eine eingedrungene Maschine der VAR ab

TEL AVIV (AP). Israelische Düsenjäger haben am Samstag über der Negev-Wüste einen von acht in den israelischen Luftraum eingedrungenen Mig-17-Jägern der Vereinigten Arabischen Republik (VAR) abgeschossen.

Ein Sprecher der Armee erklärte in Tel Aviv, die VAR-Maschinen seien 40 Kilometer tief über israelisches Gebiet vorgedrungen. Sofort aufgestiegene Jäger hätten bei einem Luftkampf in 1000 Meter Höhe eine der arabischen Maschinen getroffen und zum Abdrehen gezwungen. Der Mig-Düsenjäger habe dann ständig an Höhe verloren und sei jenseits der Grenze in die Sinai-Wüste abgestürzt. Der ägyptische Pilot sei rechtzeitig mit dem Fallschirm abgesprungen.

Radio Kairo berichtete am Samstag ebenfalls, daß es über der Sinai-Wüste zu einem Luftkampf zwischen Einheiten der VAR-Luftstreitkräfte und vier eingedrungenen israelischen Düsenjägern gekommen sei. Die feindlichen Maschinen seien im Verlauf des Gefechts in die Flucht geschlagen worden.

Staatsstreich in Ghana vereitelt

ACCRA (AP). In der Hauptstadt des westafrikanischen Staates Ghana ist ein Staatsstreich aufgedeckt worden, bei dem angeblich zwei führende Parlamentsmitglieder die Ermordung von Ministerpräsident Kwame Nkrumah geplant haben sollen. Der Generalsekretär der zur Regierungsopposition gehörenden Vereinigten Partei, Amponsah, und der maßgebende Finanzexperte der Partei, Apaloo, sind festgenommen worden.

Regierungskrise dauert an

HELSINKI (dpa). Die Lösung der jetzt drei Wochen andauernden finnischen Regierungskrise ist bis nach Neujahr vertagt worden. Der von Staatspräsident Kekkonen mit der Regierungsbildung beauftragte Fraktionsführer der Bauernpartei, Kleemola, hat nach vergeblichen Bemühungen, eine Mehrheits- oder Minderheitsregierung zustande zu bringen, seinen Auftrag an den Staatspräsidenten zurückgegeben.

Ingrid Bergman heiratete wieder

LONDON (AP/dpa). Die Filmschauspielerin Ingrid Bergman und der schwedische Bühnenverleger und Theaterexperte Lars Schmidt haben am Sonntag in London in aller Stille geheiratet. Nach Ehen mit Dr. Peter Lindström und dem italienischen Filmproduzenten Roberto Rossellini ist die Bergman zum dritten Male verheiratet. Wenige Stunden nach der Trauung flog das jungvermählte Paar nach Paris.

Berlin-Drohung stellt sowjetische Position in Frage:

USA bieten Moskau Schach

Forderung auf Rückgabe Thüringens, Sachsens und Mecklenburgs angedeutet

WASHINGTON (HN/AP/dpa). Die Vereinigten Staaten haben am Sonntag in einem ausführlichen Memorandum des amerikanischen Außenministeriums die Sowjetunion darauf hingewiesen, daß die Forderung auf einen Abzug der USA, Großbritanniens und Frankreichs aus Berlin auch das Recht der Sowjetunion gefährde, einen Teil Mitteldeutschlands besetzt zu halten. Mit Nachdruck stellte Washington in diesem Zusammenhang fest, daß nicht die geringsten „rechtlichen oder moralischen Zweifel" am Recht des Westens bestehen könnten, in Berlin zu verbleiben. Die bei Kriegsende von den amerikanischen Truppen besetzten Gebiete Mecklenburgs, Thüringens und Sachsens, die später den Sowjets übergeben wurden, könnten von den USA wieder beansprucht werden, wenn der Grundsatz gemeinsamer und gleicher Rechte der Besatzungsmächte auf Grund der Vereinbarungen über die Zone und über den Status von Berlin nicht mehr gültig sei. Eine historische Rückschau ergebe ohne Zweifel, daß die Rechte der Vereinigten Staaten in Deutschland und in Berlin in keiner Weise von der Duldung oder Einwilligung der Sowjetunion abhingen. Diese Rechte rührten vielmehr aus der totalen Niederlage des Dritten Reiches und der folgenden Uebernahme der Macht durch eine oberste Behörde in Deutschland her und hätten nach wie vor volle Gültigkeit.

Zur Untermauerung dieses Standpunktes stellt die amerikanische Regierung in ihrem Memorandum fest:

- daß sich die Rechte der Westmächte zur Stationierung von Besatzungstruppen in Berlin auf die gleichen Abmachungen vom 12. September 1944 stützen, wie die sowjetischen Rechte auf Eingliederung Mecklenburgs, Thüringens und Sachsens in die Sowjetzone,
- daß diese Vereinbarungen über die Besatzungszonen entgegen den sowjetischen Behauptungen nicht auf die ersten Jahre nach der Kapitulation Deutschlands begrenzt waren, sondern bis zu einer Friedensregelung gelten sollten,
- daß die Vereinbarungen über die Zonen und über den Status von Berlin bereits sechs Monate vor der Potsdamer Konferenz in Kraft traten und
- daß daher die sowjetischen Behauptungen über Verletzungen des Potsdamer Abkommens durch die Westmächte keinen Einfluß auf die Gültigkeit der Vereinbarungen haben können. Abgesehen davon sei das Potsdamer Abkommen durch die Sowjets gebrochen worden, weil sie sich geweigert hätten, die wirtschaftliche Einheit Deutschlands herzustellen und weil sie ihnen nicht zustehende Reparationszahlungen beanspruchten.

Zu freiem Zugang verpflichtet

Das Recht auf freien Zugang nach Berlin ist nach dem amerikanischen Memorandum die natürliche Folge des dort ausgeübten Besatzungsrechts. Die Sowjetunion habe den drei Westmächten das Recht auf freien Zugang nach Berlin nicht verliehen. Vielmehr haben sie ihre Besatzungszone mit der Verpflichtung übernommen, diesen Zugang zu gewähren. Das ostdeutsche Regime könne daher in der sowjetischen Besatzungszone keine Machtbefugnisse erwerben, die abzutreten gar nicht in der Macht der Sowjets liegen.

Beifall aus Bonn

Schließlich wird der Sowjetunion von den Amerikanern vorgeworfen, die Teilung Deutschlands zu verlängern und einen Friedensvertrag zu verhindern, indem sie auf der gleichberechtigten Mitwirkung der von ihr ausgewählten sowjetzonalen Vertreter an der Lösung der deutschen Frage bestehe. — In Bonner Regierungskreisen ist das Memorandum noch am gleichen Tag als „dankenswerte Klarstellung des amerikanischen Rechtsstandpunktes" begrüßt worden. (Siehe auch Kommentar Seite 2.)

Vor Garantie-Angebot

Der Kreml soll dafür freien Wahlen in Deutschland zustimmen

WASHINGTON / PARIS / BONN (HN/AP/dpa). Nach Informationen aus Washington ist das obenstehende Memorandum als „Vorbote" der in Kürze zu erwartenden westlichen Antwortnoten an Moskau anzusehen. Als Hauptpunkt dieser, derzeit in Ausarbeitung befindlichen Noten der drei Westmächte soll Moskau sicherem Vernehmen nach eine Sicherheitsgarantie gegen jede zukünftige deutsche Aggression angeboten werden. Voraussetzung für eine derartige Garantie soll allerdings das Einverständnis des Kremls mit einer deutschen Wiedervereinigung durch freie Wahlen sein. Wie in Washington weiter bekannt wurde, soll der sowjetische Ministerpräsident Chruschtschew in den Noten aufgefordert werden, sein auf sechs Monate befristetes Berlin-Ultimatum zurückzunehmen, da erst dadurch die Voraussetzungen für Verhandlungen der Großmächte zur Lösung der deutschen Frage gegeben würden.

Mit Nachdruck wollen die Westmächte den sowjetischen Berlin-Plan einer „freien Stadt" oder jeden anderen Plan, der einen angemessenen Schutz Westberlins versagt, zurückweisen. Gleichzeitig wollen sie sich aber damit einverstanden erklären, daß die NATO-Streitkräfte das Gebiet der jetzigen Sowjetzone nicht besetzen, falls sich Deutschland nach einer Wiedervereinigung durch freie Wahlen für den Verbleib in der NATO entscheiden sollte.

Wehner gegen General Norstad

Im Gegensatz zu den Erklärungen des NATO-Oberkommandierenden General Norstad (siehe HN vom Samstag) forderte der stellvertretende SPD-Vorsitzende Wehner namens seiner Partei am Samstag, daß bei den geplanten West-Ost-Verhandlungen über eine internationale Entspannung die Schaffung einer kontrollierten, militärisch verdünnten Zone und das damit verbundene Auseinanderrücken der beiden Machtblöcke eine entscheidende Rolle spielen müsse. Wenn Norstad meine, bei einer Realisierung des Rapacki-Plans seine Aufgabe nicht mehr erfüllen zu können, dann sei er fehl am Platze und sollte zurücktreten.

Von der Bundesregierung verlangte Wehner, daß sie ihre Bereitschaft zum Ausdruck bringe, das Notwendige zu tun, damit eine militärisch verdünnte Zone einschließlich Deutschlands zustande komme. Die Bundesregierung müsse ferner klar machen, daß sie gewillt sei, bei allen Vorbehalten in Verhandlungen über die Vorbereitungen eines Friedensvertrages mit Deutschland einzutreten.

Spaak: Rapacki-Plan sinnlos

Demgegenüber erklärte NATO-Generalsekretär Spaak am Samstag auf der Schlußsitzung des Parlaments der Westeuropäischen Union (WEU), eine atomwaffenfreie Zone in Mitteleuropa habe wenig Sinn, da sowohl die Sowjetunion als auch die USA über interkontinentale Ferngeschosse verfügten.

600 „Toxis" pro Jahr

HAMBURG (dpa). In der Bundesrepublik werden gegenwärtig jährlich rund 600 Negermischlingskinder geboren. Nach Angaben des Psychologischen Instituts der Universität Hamburg gibt es heute insgesamt etwa 6000 „Toxis", von denen die meisten in Süddeutschland leben. Ein Jahr nach Kriegsende wurde die größte Zahl farbiger Kinder in Westdeutschland geboren, nämlich etwa 1500. Bis 1951 sank die Zahl der Geburten auf 215 im Jahr, um später wieder anzusteigen.



Prof. Dr. Ernst Schütte

ist — wie bereits berichtet — an Stelle von Arno Hennig zum neuen hessischen Kultusminister berufen worden. Prof. Schütte war bisher Ministerialdirigent im Kultusministerium von Nordrhein-Westfalen. (dpa-Bild)

Schwere Krawalle in Halle

Jugendliche bedachten Gefreiten der Volksarmee mit „Morddrohungen"

BERLIN (AP). Zu schweren Krawallen zwischen einer großen Zahl Jugendlicher, einer Hundertschaft von Volkspolizisten und einem Gefreiten der sowjetzonalen Volksarmee ist es vor fünf Tagen auf dem Hallmarkt in Halle gekommen.

Wie erst am Sonntag durch eine SED-Zeitung in Berlin bekannt wurde, sollen einzelne Jugendliche den Gefreiten der „Nationalen Volksarmee" provoziert haben. Als dieser sich zur Wehr setzte, wandte sich eine „große Menge Halbwüchsiger" gegen den Soldaten und stieß „Morddrohungen" aus.

Nachdem eine Streife der Volkspolizei sowohl den Gefreiten als auch den „Hauptschreier" auf das Volkspolizei-Kreisamt mitgenommen hatten, sei es auf dem Marktplatz zu „tumultartigen Szenen" gekommen. Die Volkspolizei habe den Platz durch eine Hundertschaft räumen lassen müssen.

Wie das Blatt berichtet, wurde eine größere Zahl der „Rock'n'Roll-Anhänger", die Schallplatten Elvis Presleys und „Schmutz und Schundliteratur" aus Westberlin bezogen hatten, festgenommen und ein Teil von ihnen in Haft behalten. Sie müssen sich vor dem Jugendrichter verantworten.

Kurz berichtet

Eine **Weihnachtsbescherung** mit Kaffee und Kuchen veranstaltete das Hilfswerk Berlin für 3000 bedürftige Westberliner Kinder.

Vorläufig festgenommen worden sind weitere fünf Dortmunder Abbruchunternehmer im Zusammenhang mit dem Bestechungsskandal, in den mehrere Bedienstete der Dortmunder Stadtverwaltung verwickelt sind.

Vom Stapel gelaufen ist auf der bundeseigenen Kieler Howaldts-Werft der Supertanker „Olympic Challenger" des griechischen Tankerkönigs Onassis, mit 65 790 Tonnen Fassungsvermögen eines der größten Tankschiffe der Welt.

Mit Zuchthaus- und Gefängnisstrafen endete der dreitägige Prozeß gegen vier Jesuitenpatres vor dem Bezirksgericht in Frankfurt/Oder, die wegen „Spionage, Abwerbung und staatsgefährdender Hetze" angeklagt worden waren. Bei ihnen waren religiöse Zeitschriften aus Westdeutschland gefunden worden.

Beauftragt hat Königin Juliana der Niederlande Professor Louis Joseph Maria Beel von der römisch-katholischen Volkspartei mit der Bildung der neuen niederländischen Regierung.

Nach Budapest zurückgekehrt ist aus Rumänien die Witwe des hingerichteten ehemaligen Ministerpräsidenten Imre Nagy zusammen mit ihrer Tochter. (AP/dpa)

So hätten Sie tippen müssen

(Ohne Gewähr)

Deutscher Totoblock: 1 1 1 1 2 1 2 0 1 2 1
Punktausschüttung: Folgende Spiele wurden gewertet: 8 15 17 21 24 27 28.
Deutscher Lotteblock: 6 9 15 17 40 45 (Zusatzzahl 16.

HERSFELDER Nachrichten

Überparteiliche Tageszeitung für Bad und Kreis Hersfeld

Einzelpreis 30 Pfennig

Redaktion u. Geschäftsstelle: Bad Hersfeld, Johannesstr. 8, Ruf: 2947
Monatsbezugspreis: 3,45 DM zuzüglich 0,55 DM Zustellgebühren. Im Postbezug 3,46 DM einschl. Postzeitungsgebühren zuzügl. 0,54 DM Zustellgebühren. Im Streifbandversand 3,45 DM zuzüglich Porto. Postscheckkonto Frankfurt/M. Nr. 32165. Anzeigenpreis: Jeder Millimeter der 1m Betrieben bezw. auf dem Versandwege, bei Streik, Verbot usw besteht kein Anspruch auf Kürzung bezw. Erstattung des Bezugsgeldes. Postverlagsort Kassel.

Nummer 304 — Mittwoch, 31. Dezember 1958 — 14. Jahrgang

Unser Wunschtraum für 1959: Fünf Staatsmänner stoßen auf den Weltfrieden an



Unsere dpa-Photomontage zeigt (von links) Eisenhower, Adenauer, Macmillan, de Gaulle und Chruschtschew, wie sie auf ein gerade unterzeichnetes Abkommen zur Beseitigung aller Spannungen in der Welt anstoßen. Schön wärs!

Bekannter Berliner Bauexperte verhaftet

BERLIN (AP). Auf Ersuchen der Staatsanwaltschaft in Frankfurt hat die Westberliner Kriminalpolizei, wie erst jetzt bekannt wird, den früheren Direktor der „Aufbau AG" für das Berliner Hansaviertel, Helmut Klawonn, kurz vor den Weihnachtsfeiertagen verhaftet.

Gründe für die Verhaftung wurden von der Westberliner Polizei nicht bekanntgegeben. Auch Westberlins Bausenator Rolf Schwedler erklärte vor der Presse, Gründe für die Festnahme Klawonns seien ihm nicht bekannt. Die Festnahme stehe aber auf jeden Fall nicht im Zusammenhang mit der Tätigkeit des Verhafteten bei den Berliner Baugesellschaften „Hansa AG" und „DEGEWO", deren Vorstanden Klawonn früher angehörte.

Der Bundeswohnungsbauminister habe ihm — Schwedler — bereits vor Weihnachten in einem Gespräch mitgeteilt, daß die Verhaftung im Zusammenhang mit der Tätigkeit Klawonns in der dem Ministerium unterstehenden Wohnungsbaugesellschaft „Deutschbau" stehe. Näher habe sich aber auch der Minister nicht geäußert.

Der Europa-Markt beginnt

Erster Schritt zur Bildung des drittgrößten Wirtschaftsgebiets der Welt

BONN (HN/AP/dpa). In einer Zeit wirtschaftlicher und politischer Hochspannung rücken die Bundesrepublik, Frankreich, Italien und die drei Beneluxstaaten am morgigen 1. Januar noch enger zusammen: Mit einer zehnprozentigen Senkung der Einfuhrzölle wird an diesem Tag der erste konkrete Schritt zur Verwirklichung des Gemeinsamen Europäischen Marktes getan. Weiter treten an diesem Tage neue Bestimmungen für jepe Warengruppen in Kraft, deren Einfuhr noch an bestimmte Kontingente gebunden ist. Die Kontingente müssen für Einfuhren aus den Ländern dieser Europäischen Wirtschaftsgemeinschaft um jeweils mindestens zehn Prozent erhöht werden. Der deutsche Verbraucher wird zunächst von der beginnenden Verwirklichung des Gemeinsamen Marktes nicht viel merken. Als Ausgangspunkt für die Zollsenkung gilt der Stand vom 1. Januar 1957. Durch eine Reihe von konjunkturpolitischen Zollsenkungen für gewerbliche Waren hat die Bundesrepublik diese Zollsenkung bereits vorweggenommen. Nur auf dem Gebiet der Agrarerzeugnisse tritt sie daher neu in Kraft. Hier wird sich auch die Aufstockung der Kontingente bemerkbar machen, da die Einfuhr landwirtschaftlicher Erzeugnisse im Gegensatz zu derjenigen der meisten gewerblichen Güter noch kontingentiert ist. Die Zollsenkung bei Kaffee und Tee, die normalerweise für den Verbraucher zu einer Preisermäßigung geführt hätte, wurde von der Bundesregierung durch eine Steuererhöhung abgelangen, um einem Einnahmeverlust des Bundes aus dem Wege zu gehen. Die Preise für Kaffee und Tee werden sich daher nicht ändern.

Mit den oben angekündigten Maßnahmen beginnt die erste Etappe auf dem Wege zur Aufhebung der Zölle zwischen den sechs EWG-Staaten. Am Ende der Übergangszeit, das heißt zwischen 1970 und 1973, soll aus der Europäischen Wirtschaftsgemeinschaft ein einheitliches Wirtschaftsgebiet ohne Binnenzölle und Handelsbeschränkungen geworden sein.

Waren, Menschen und Kapital sollen sich dann in diesem Wirtschaftsraum von 1,175 Millionen Quadratkilometern mit einer Einwohnerzahl von 165 Millionen völlig frei bewegen können. Dann wird dieser Raum seinen Wirtschaftspotential nach als einheitliches Wirtschaftsgebiet nur noch von den USA und der Sowjetunion übertroffen werden.

Neue Chance für Freihandelszone

Der in den letzten Monaten so oft beschworene Termin des 1. Januar 1959 hat für die europäische Integration noch eine zweite Bedeutung: Es ist nicht gelungen, die von den sechs EWG-Partnern und den elf übrigen OEEC-Staaten grundsätzlich befürwortete Freihandelszone in Gang zu bringen. Der letzte Versuch mißlang kurz vor Weihnachten auf der Pariser OEEC-Konferenz, als sich die alten Gegensätze vor allem zwischen England und Frankreich erneut entzündeten. Die Beratungen wurden auf den 15. Januar vertagt. Die Bundesregierung hofft allerdings, daß sich durch die letzten finanzpolitischen Maßnahmen in Westeuropa das Verhandlungsklima gebessert hat und so das Gespenst eines Handelskrieges aus Westeuropa verbannt bleibt.

Bonner Antwort verzögert

Schnelle Billigung der Berlin-Noten im NATO-Rat überraschte v. Brentano

BONN (HN/AP/dpa). Während die drei Westmächte bereits am heutigen Mittwoch in Noten auf die sowjetische Bedrohung Berlins antworten werden, wird die Bundesregierung ihre Note erst nach der Sitzung des Auswärtigen Ausschusses des Bundestags am Samstag in Moskau überreichen. Zu dieser Kuriosität im diplomatisch-politischen Notenwechsel zwischen Ost und West ist es dadurch gekommen, daß die Entwürfe der Noten im NATO-Rat am Vortage überraschend schnell gebilligt wurden. Während das Bundesaußenministerium mit einer zweitägigen Konierenz über diese Entwürfe gerechnet hatte, dauerten diese Besprechungen tatsächlich nur wenige Stunden. Eine ursprünglich für Dienstag anberaumte Sitzung des Auswärtigen Ausschusses des Bundestages war aber schon vorher auf das Wochenende verschoben worden, so daß die Uebergabe der deutschen Antwortnoten nun verzögert wird. Bundesaußenminister v. Brentano versicherte allerdings, daß am Inhalt der Note nichts geändert wird.

„Selbst unter Opfern"

Bundeskanzler Adenauer stellte im CDU/CSU-Pressedienst zur Jahreswende die Entschlossenheit seiner Regierung heraus, auch im neuen Jahr die Weltöffentlichkeit auf die Bedrückung der Bevölkerung in der Zone hinzuweisen und die Wiederherstellung der Freiheit in diesem Teile Deutschlands zu verlangen. Die Bundesrepublik müsse ihren vollen Beitrag zur NATO leisten, „selbst unter Opfern", denn sie sei mit verantwortlich dafür, daß Einigkeit und Stärke des westlichen Zusammenschlusses erhalten blieben.

„Ohne die Militärs"

Der SPD-Vorsitzende Ollenhauer forderte am Dienstag in einem Artikel im Pressedienst seiner Partei ernsthafte Verhandlungen mit der Sowjetunion über eine militärisch verdünnte Zone und einen deutschen Friedensvertrag. Man dürfe nicht wieder dort anfangen, wo man 1955 in Genf aufgehört habe. Außerdem müßten bei den bevorstehenden Verhandlungen die Politiker und nicht die Militärs das Wort führen.

Inzwischen betonte Radio Moskau erneut, daß die Sowjetunion bereit sei, jede Ansicht der Westmächte über die Berliner Situation „anzuhören und zu diskutieren". Die Erklärung Gromykos, daß Westberlin eine „neues Sarajewo" werden könne, sei nicht als sowjetische Drohung aufzufassen, einen neuen Weltkrieg zu starten, wenn die sowjetischen Vorschläge nicht angenommen würden.

Straßenkämpfe auf Kuba

HAVANNA (AP). Erbitterte Straßenkämpfe tobten am Dienstag in der kubanischen Provinzhauptstadt Santa Clara, wo die Rebellen Fidel Castros sich zum erstenmal in offenem Kampf gegen die Regierungstruppen des Präsidenten Batista stellten. Diese setzten alle modernen Kampfmittel — Flugzeuge, Panzer, Schützenpanzer und Artillerie — gegen die nur mit Handfeuerwaffen ausgerüsteten Aufständischen ein. Nach unbestätigten Berichten sollen bei den Straßenkämpfen in Santa Clara tausend Soldaten, Rebellen und Zivilisten getötet worden sein.

Heute mit ausführlichem Jahresrückblick und bunter Silvester-Beilage

Pocken nun in Kaiserslautern

Ein Barbesitzer bei seiner Behandlung in Heidelberger Klinik angesteckt

KAISERSLAUTERN (AP). Die Pockenerkrankungen haben sich trotz aller erdenklichen Vorkehrungsmaßnahmen der Gesundheitsämter nicht auf Heidelberg beschränken lassen. Am Dienstag meldete sich in Kaiserslautern der Besitzer zweier Nachtlokale mit allen Symptomen der Seuche bei den Gesundheitsbehörden und wurde sofort in die Heidelberger Ludolf-Krehl-Klinik eingeliefert, wo die Krankheit auch klinisch eindeutig als Pockenerkrankung nachgewiesen wurde.

Der Erkrankte, ein etwa 50jähriger Emigrant polnischer Abstammung, war am 5. Dezember in der Heidelberger Ludolf-Krehl-Klinik zur ambulanten Behandlung gewesen und hat sich allem Anschein nach dabei infiziert. Er ist nach Mitteilung des Gesundheitsamtes in Kaiserslautern als Kind nicht gegen die Pocken geimpft worden.

Von den Gesundheitsbehörden wird die Situation sehr ernst beurteilt, da der Erkrankte als Besitzer einer Bar in Kaiserslautern und einer weiteren Bar in Landstuhl/Pfalz mit vielen Leuten in Berührung kam. Wie es heißt, soll der Erkrankte auch noch an zwei weiteren Vergnügungsetablissements in Kaiserslautern beteiligt sein und diese öfters besucht haben.

Alarm im US-Hauptquartier

Da die Vergnügungslokale zum größten Teil von amerikanischen Soldaten und ihren Mädchen besucht werden, wurde das amerikanische Hauptquartier in Heidelberg sofort von dem Seuchenfall verständigt. Die beiden Bars wurden von der Polizei sofort geschlossen, das Personal geimpft und unter Quarantäne gestellt. Auch die amerikanische Armee hat sofort für ihre in Kaiserslautern und Landstuhl stationierten Truppen die entsprechenden Maßnahmen eingeleitet.

26 000 Heidelberger geimpft

Inzwischen haben sich 26 000 Heidelberger freiwillig gegen Pocken impfen lassen. Von den dort ursprünglich neun Pockenkranken ist einer, wie bereits berichtet, gestorben, zwei weitere sind noch krank, während sich die übrigen lediglich noch im Krankenhaus erholen.

Liberischer Tanker brach auseinander

KAP MAY, New Jersey/USA (AP/dpa). Etwa zehn Meilen vor der Küste des Staates New Jersey lief am Dienstag der unter liberischer Flagge fahrende 13 800 Tonnen große Tanker „African Queen" auf Grund und brach in zwei Teile auseinander. Auf die SOS-Rufe eilten sofort Schiffe und Flugzeuge an die Unglücksstelle. Da die beiden Wrackteile wegen des flachen Wassers nicht sanken, konnten nach den bisher vorliegenden Meldungen alle 47 Besatzungsmitglieder mit Hilfe von Hubschraubern gerettet werden.

Das Schiff war mit einer Ladung Rohöl auf dem Weg von einem Hafen im Süden der USA nach einem Hafen in New Jersey, als es in der Nähe der Mündung des Delaware-Flusses auf Grund lief. Bei mäßigem Wind herrschte an der Unglücksstätte kein hoher Seegang. Der verunglückte Tanker gehört der African Enterprise Ltd. und ist in den Jahren 1954 und 1955 bei den Howaldt-Werken in Kiel gebaut worden.

Auch der Peso abgewertet

Nach Frankreich nun Argentinien von großer Teuerungswelle heimgesucht

BUENOS AIRES (AP/dpa). Dem Beispiel Frankreichs folgend hat nun auch Argentinien mit Wirkung vom 1. Januar 1959 seine Währung — den Peso — abgewertet und gleichzeitig den Wechselkurs freigegeben. Die Abwertung des Peso erfolgt durch die Aufgabe des bisher künstlich festgesetzten Wechselkurses von 18 Pesos für einen Dollar. An dessen Stelle tritt ein Einheitskurs, der auf Grundlage von Angebot und Nachfrage gebildet wird. Argentinische Finanzkreise rechnen damit, daß eine Stabilisierung bei 60 Pesos für einen Dollar eintritt, was einer Abwertung um 333 Prozent entsprechen würde. Zur Unterstützung der argentinischen Wirtschaftsreform haben die USA eine Kredithilfe in Höhe von 329 Millionen Dollar zugesagt. Zur Verhinderung von Spekulationen hat die argentinische Zentralbank alle Geldgeschäfte bis zum 6. Januar untersagt.

Wie der argentinische Staatspräsident Frondizi in einer Rundfunkansprache ankündigte, wird die mit diesen Maßnahmen verknüpfte Wirtschaftsreform dem Land zwei harte Jahre bringen. Als Folge der Abwertung werden fast alle Preise sofort in die Höhe gehen. Die Rindfleisch-Ausfuhr soll als Devisenbringer in voller Höhe fortgesetzt werden, so daß das Fleisch im Lande selbst noch knapper und teurer wird. Die Einfuhr nicht lebenswichtiger Güter soll durch Zusatz-Zolltarife, die bis zu 300 Prozent der normalen Zollsätze betragen, gedrosselt werden.

Aehnlich wie in Frankreich werden auch in Argentinien auf alle Luxusgegenstände neue Steuern erhoben. Die Tarife der öffentlichen Verkehrsmittel werden gleichzeitig erhöht und die öffentlichen Ausgaben drastisch gekürzt. Die Zahl der Beamten und Angestellten bei den staatlichen und kommunalen Betrieben soll außerdem erheblich verringert werden.

Nun auch in Finnland

Am Dienstag hat sich Finnland nun ebenfalls entschlossen, die Finnmark konvertierbar zu machen. Allerdings gilt diese Konvertibilität nicht gegenüber dem französischen Franc. Damit gibt es jetzt in Europa 13 Staaten, deren Währungen frei konvertierbar sind.

Inzwischen hat sich Tunesien dem Beispiel Marokkos folgend vom französischen Franc gelöst. Der tunesische Dinar wird nicht abgewertet. Er war bisher 1000 französische Franc wert und wird künftig mit 1175 Franc notiert.

Ausländer-DM-Konten

BONN (dpa). Die Konten in Deutscher Mark, die von Ausländern unterhalten werden und für die bisher gewisse Beschränkungen bestanden, werden ab sofort in sogenannte „Ausländer-DM-Konten" umgewandelt. Ihre Eigentümer können die Guthaben in jede ausländische Währung umwandeln. Dies bestimmt ein Runderlaß des Bundeswirtschaftsministeriums, der am Dienstag über die Zahlungen zwischen dem Bundesgebiet und dem Ausland nach Herstellung der DM-Konvertibilität veröffentlicht wurde.

Kurz berichtet

Weiter angestiegen ist nach offiziellen Westberliner Angaben in der Weihnachtswoche die Zahl der Flüchtlinge aus der Sowjetzone.

Sechs neue schwere Amphibien-Schützenpanzerwagen vom Typ M-59 hat die amerikanische Garnison in Westberlin in den vergangenen zwei Wochen erhalten.

Gegen die Verallgemeinerung einiger bedauerlicher Vorkommnisse in der Beamtenschaft wandte sich im Bonner CDU/CSU-Pressedienst Bundesinnenminister Schröder.

110 797 Aussiedler kamen im Jahre 1958 in 240 Transporten aus ihrer unter polnischer Verwaltung stehenden ostdeutschen Heimat in die Bundesrepublik.

Zum Erliegen gebracht haben schwere Stürme und ungewöhnlich starke Schneefälle den Verkehr in weiten Teilen von Neu-Mexiko und Texas. (AP/dpa)

Atlas-Satellit fliegt länger

WASHINGTON (AP/dpa). Der jüngste amerikanische Erdsatellit, eine Atlas-Rakete, die seit dem 18. Dezember die Erde umkreist, wird nach den neuesten Berechnungen amerikanischer Wissenschaftler mehr als 40 Tage lang seine Bahn im Weltraum ziehen, bevor er in die Erdatmosphäre eintaucht und verglüht. Wie ein Sprecher des US-Verteidigungsministeriums erklärte, konnte der Satellit auf eine günstigere Bahn gebracht werden als ursprünglich angenommen. Allerdings wird die Rakete schon bald „verstummen", da ihre Batterien nur bis zu den ersten Januartagen arbeiten werden.

Hersfelder ALLGEMEINE

Dienstag, 6. August 1963 Nr. 179 — unabhängig überparteilich — Hessische Allgemeine — Einzelpreis 20 Pfennig — 1 P 3699 A — Ruf: 2947 · 3161 · 597

18 Jahre nach Hiroshima:

Vertrag über Einstellung der Atomversuche in Moskau unterzeichnet

Festakt im Kreml mit Chruschtschow und U Thant

Moskau (eg/AP/dpa). Am Vorabend der 18. Wiederkehr des Tages, an dem die japanische Stadt Hiroshima Ende des zweiten Weltkrieges von der ersten amerikanischen Atombombe in Schutt und Asche gelegt wurde, haben die USA, Großbritannien und die Sowjetunion am Montag in Moskau das Abkommen über die Einstellung aller Kernwaffenversuche in der Atmosphäre, im Weltraum und unter Wasser unterzeichnet. Vor seinem Inkrafttreten muß es nun noch von den Parlamenten der drei vertragschließenden Staaten ratifiziert werden.

In Anwesenheit des Generalsekretärs der Vereinten Nationen, U Thant, des sowjetischen Ministerpräsidenten Chruschtschow und des sowjetischen Staatsoberhaupts Breschnew setzten die Außenminister Rusk, Lord Home und Gromyko um 16.34 Uhr Moskauer Zeit im Katharinensaal des Kremls ihre Unterschriften unter den Vertrag, der als das bedeutsamste West-Ost-Abkommen seit der Unterzeichnung des österreichischen Staatsvertrags im Jahr 1955 gilt. Anschließend stießen alle Anwesenden mit Krimsekt auf „Freundschaft und Frieden" an. Hierüber gibt unser Moskauer Korrespondent auf Seite zwei der heutigen Ausgabe einen Augenzeugenbericht.

Im Text des nunmehr unterzeichneten Abkommens wird nachdrücklich betont, daß das Ziel der drei Atommächte die allgemeine und vollständige Abrüstung ist, und daß der nunmehr abgeschlossene Vertrag in keiner Weise einem Verbot aller Kernwaffenversuche unter Einschluß der (im gegenwärtigen Vertrag ausgeklammerten) unterirdischen Experimente im Wege stehen soll. Die USA, Großbritannien und die Sowjetunion haben alle Nationen der Erde zum Vertragsbeitritt eingeladen. Von Donnerstag an können Beitrittserklärungen anderer Staaten entweder in Washington oder London oder Moskau hinterlegt werden.

Die drei Großmächte behalten sich jedoch bei eventuellen Zusatzanträgen eine Art Veto-Recht vor. Solche Zusätze müssen mit einfacher Stimmenmehrheit sämtlicher Vertragspartner beschlossen werden, doch bedürfen sie der Zustimmung der drei Großmächte. Bisher haben 32 Staaten ihren Beitritt angekündigt. Eine große Mehrheit der übrigen Länder der Welt steht dem Vertragswerk positiv gegenüber. Nach letzten Berichten soll auch Spanien seinen Beitritt erwägen. Ausdrücklich abgelehnt haben bislang nur Frankreich, Rotchina und Albanien. Über die Haltung der Bundesregierung berichten wir in einem getrennten Komplex auf dieser Seite.

In einem nach der Unterzeichnung veröffentlichten Kommuniqué betonten die drei Atommächte, daß das Abkommen einen wichtigen ersten Schritt zur Minderung der internationalen Spannungen und zur Festigung des Friedens darstellt. Sie brachten ferner die Hoffnung zum Ausdruck, daß in dieser Richtung ein weiterer Fortschritt erzielt werden möge.

Wenige Stunden zuvor hatte Chruschtschow sowohl U Thant als auch Rusk und Lord Home zu Gesprächen empfangen, in deren Verlauf der britische Außenminister dem sowjetischen Regierungschef eine persönliche Botschaft von Premierminister Macmillan überreicht hatte. (Siehe auch Leitartikel Seite 2).



In ausgesprochen herzlicher Atmosphäre verlief ein Gespräch zwischen US-Außenminister Rusk und dem sowjetischen Ministerpräsidenten Chruchtschow, das wenige Stunden vor der Unterzeichnung des Vertrags über Teileinstellung der Kernwaffenversuche im Kreml stattfand (unser AP-Bild).

46 Verkehrsunfälle auf Autobahnstrecke Frankfurt–Mannheim

Darmstadt (dpa). Die Rekord-Reisewelle, die am vergangenen Wochenende über die Autobahn Frankfurt—Mannheim brandete, ist auf dem 60 Kilometer langen Abschnitt nicht ohne schwerwiegende Folgen geblieben. Die Polizei zog am Montag die Bilanz: Bei über 125 000 Fahrzeugen, die am Samstag und Sonntag in beiden Richtungen rollten, ereigneten sich 46 Verkehrsunfälle, bei denen es 17 Verletzte und für fast 180 000 DM Sachschaden gab. An den Karambolagen waren 116 Fahrzeuge beteiligt.

Sowjets stellen Störung der Stimme Amerikas ein

Washington (AP/dpa). Als einen sowjetischen Beitrag zur internationalen Entspannung bezeichnete der Leiter der amerikanischen Informationsagentur USIA, Murrow, die Tatsache, daß die Sowjets seit einiger Zeit die Störung der „Stimme Amerikas" und des in München stationierten privaten amerikanischen Informationssenders „Radio freies Europa" eingestellt haben. Rumänien ist dem sowjetischen Beispiel inzwischen gefolgt.

Bundesregierung tritt vorerst nicht bei

Zunächst ausreichende Garantien gegen Mißbrauch des Moskauer Vertrags durch Pankow verlangt

Bonn (Eig. Ber. hg/eg). Die Bundesregierung wird dem am Montag in Moskau unterzeichneten Abkommen über die Einstellung der Atomwaffenversuche vorerst nicht beitreten, im Anschluß an ein rund einein-halbstündiges Gespräch zwischen Bundeskanzler Adenauer und US-Verteidigungsminister McNamara erklärte Bundespressechef v. Hase am Montag in Bonn, die Bundesregierung erwarte zunächst ausreichende Garantien dafür, daß Mißbrauchsmöglichkeiten des Abkommens durch einen Beitritt der Sowjetzone „bis in alle Einzelheiten" ausgeschlossen würden.

Welcher Art diese Garantien sein sollen, sagte der Sprecher der Bundesregierung trotz eindringlicher Fragen nicht. McNamara hatte seinen Rückflug in die USA auf ausdrücklichen Wunsch des Bundeskanzlers verschoben und war noch einmal nach Bonn zurückgekehrt. Im Laufe des Nachmittags flog er dann endgültig nach Washington ab, nachdem er zuvor versichert hatte, er habe mit Adenauer nicht über das Moskauer Abkommen gesprochen und nehme auch keinen Brief des Kanzlers an Präsident Kennedy mit. Diesen Worten, die auch v. Hase unterstützte, wird in Bonn allerdings kein Glauben geschenkt.

Die Haltung der Bundesregierung zum Moskauer Abkommen ist noch am gleichen Tag vom SPD-Vorsitzenden Ollenhauer scharf kritisiert worden. Der Oppositionsführer warf der Bundesregierung vor, sie wolle erneut einer längst fälligen Entscheidung ausweichen. Ihre Entschlußlosigkeit erschwere die deutsche Position in immer größerem Umfang. Die Bundesregierung drohe sich zu isolieren. Von der FDP wird eine umgehende Einberufung des außenpolitischen Ausschusses des Bundestages gewünscht.

Nach Darstellung des Bundespressechefs will die Bundesregierung zunächst den Verlauf der Debatte über das Moskauer Abkommen im amerikanischen Kongreß am 12. August sowie den Fortgang der gegenwärtig in Moskau stattfindenden Gespräche zwischen US-Außenminister Rusk, dem britischen Außenminister Lord Home und Sowjet-Außenminister Gromyko über Fragen eines Nichtangriffspakts und ähnlicher Probleme abwarten.

Schröder unterrichtet Botschafter

Bundesaußenminister Schröder hat am Montagnachmittag in Bonn dem britischen Botschafter Sir Frank Roberts und dem US-Gesandten Hillenbrand dargelegt, die Bundesregierung wünsche von den beiden westlichen Atommächten die offizielle Erklärung, daß ein Beitritt der Sowjetzone zum Moskauer Abkommen keine Aufwertung Pankows bedeute.

CDU/CSU-Fraktionschef v. Brentano stellte sich inzwischen auf den Standpunkt, die Bundesrepublik sei das einzige Land der Welt, das auf die Herstellung atomarer, chemischer und biologischer Waffen ausdrücklich verzichtet habe. „Es bedarf also gar nicht einer neuen zusätzlichen Erklärung und auch nicht des Beitritts der Bundesrepublik zum Moskauer Abkommen, um diese klare und eindeutige Haltung zu bekräftigen." Die Sowjetzone wolle das Moskauer Abkommen möglicherweise nur dazu mißbrauchen, ein „Staat" zu werden.

Scharfe Worte aus den USA

In Washington wurde offiziell jede Stellungnahme zur Haltung der Bundesregierung abgelehnt. Inoffiziell wurde allerdings im US-Außenministerium die Ansicht vertreten, wenn die Bundesregierung weiterhin das Moskauer Vertragswerk nicht beachte, dann werde sie sich in eine Reihe mit Frankreich und Rotchina stellen. Damit hätte sich ein „kleiner Dreierbund" gebildet, der die Beendigung der Kernwaffenversuche in der Atmosphäre ablehne.

„Nebelkerzen"-Bericht gefordert

Bonn (dpa). Das Büro des Wehrbeauftragten des Bundestages, Vizeadmiral a. D. Heye, hat einen Bericht über den Unglücksfall mit Nebelkerzen in Boostedt bei Neumünster angefordert. 20 Bundeswehrsoldaten mußten wegen Atembeschwerden in ein Krankenhaus eingeliefert werden, als bei einem Nachtalarm unter Alkoholeinfluß stehende Ausbilder Nebelkerzen warfen. Der Kompaniechef und ein Unteroffizier sind inzwischen vom Dienst enthoben worden.

*

Einen fast zweistündigen „Höflichkeitsbesuch" stattete der Bonner US-Botschafter McGhee in Ostberlin Sowjetbotschafter Abrasimow ab.

Laufend verschlechtert sich gegenwärtig der Gesundheitszustand des ehemaligen französischen Ministerpräsidenten Robert Schuman, der zu den Vätern der Montan-Union zählt. Schuman, der sich zur Zeit in seinem Haus in Scychazelle bei Metz befindet, hat die letzte Oelung empfangen.

Drei schwere Explosionen schreckten am frühen Morgen die Bozener Bevölkerung aus dem Schlaf. Unbekannte hatten mit Bomben einen Baustellenkran, ein Zollhaus und den Treppenaufgang eines Neubaus zerstört. Verletzt wurde niemand. (AP/dpa)

Der Krim-Sekt floß in Strömen

Ministerpräsident Chruschtschow hat am Montagabend das Moskauer Atomtest-Abkommen als „Dokument von großer internationaler Bedeutung" und als einen großen Erfolg aller Menschen guten Willens bezeichnet.

Auf einem Empfang, den die sowjetische Regierung im George-Saal des Kreml-Palastes für die Delegationen der USA und Großbritanniens sowie für UN-Generalsekretär U Thant gab, und bei dem der Krim-Sekt ausgiebig floß, sagte der sowjetische Regierungschef, er wolle auch den beiden Regierungen der Westmächte Anerkennung zollen, da sie die Bereitschaft gezeigt hätten, zu einer Uebereinkunft über das Verbot von Kernwaffen zu gelangen „und die von der Sowjetunion unterbreiteten Vorschläge angenommen haben".

„Nächster Schritt: Nichtangriffspakt"

Chruschtschow drückte die Hoffnung aus, daß der Vertrag auch einen günstigen Einfluß auf das internationale Klima und die Beziehungen zwischen den Staaten zeitigen werde. Der nächste Schritt sollte nun darin bestehen, einen Nichtangriffspakt zwischen den NATO-Staaten und den Ländern des Warschauer Pakts abzuschließen. Allerdings könne kein Vertrag und kein Abkommen die grundlegenden Widersprüche überwinden, die es zwischen den beiden bestehenden gesellschaftlichen Systemen gebe. Trotzdem stehe die Sowjetunion fest zum Prinzip der friedlichen Koexistenz.

„Wir wollen hoffen, daß alle beitreten"

Im Georgs-Saal herrschte gehobene Stimmung. Amerikaner, Briten und Sowjets unterhielten sich freimütig. Westliche Korrespondenten fragten Chruschtschow, was geschehen würde, wenn ein anderes Land, z. B. China, eine Atomwaffe erprobte. „Darüber wollen wir nicht reden", antwortete der Kreml-Chef, „es ist ein guter Vertrag. Wir wollen hoffen, daß ihm alle anderen beitreten."

Name des Erschossenen bekannt?

Hohegeiß/Oberharz (dpa). Tausende von Menschen haben in den letzten Tagen am Holzkreuz in der Oberharzer Gemeinde Hohegeiß des unbekannten Flüchtlings gedacht, den Grenzwächter der Zonenarmee am vergangenen Donnerstag nur hundert Meter von der Hohegeißer Kurpromenade erschossen haben. Unter den zahlreichen Besuchern fielen am Sonntag zwei Frauen und ein Mann auf, die vor dem Holzkreuz in Tränen ausbrachen. Sie äußerten die Befürchtung, daß der Erschossene ihr Bruder sei. Er habe ihnen für diesen Tag und an dieser Stelle seine Flucht in die Bundesrepublik angekündigt.

Hassel baut Territorial-Verteidigung auf

ersten 10 000 TV-Soldaten bereits 1964 – Bis 1966 rund 50 000 Mann – Uniform im Kleiderschrank

n (Eig. Ber. hg/eg). Die ersten 10 000 der Territorial-Verteidigung (TV) bereits im kommenden Jahr aufgeverden. Dies teilte Bundesverteidiinister v. Hassel am Montag in t und kündigte gleichzeitig an, daß nt der NATO unterstellten) TV-lte 1966 — nach Ende der Aufbau-rund 50 000 Mann umfassen sollen.

Aufgaben der Territorial-Verteihört es in erster Linie, die Opegkeit der NATO-Streitkräfte im erzustellen, für die Sicherheit kwärtigen Gebieten zu sorgen, hubwesen der NATO-Verbände tzen und bei der Zivilverteidifen. Auf keinen Fall soll sie an ngesetzt werden.

Darlegungen des Ministers sollerbataillone zur Bekämpfung leinheiten, Partisanen und upps, bodenständige Sicherungseinheiten zum Schutz wichtiger Objekte sowie Pionier-, Fernmelde-, Feldjäger- und Versorgungseinheiten aufgestellt werden.

Die Ausbildung der TV-Soldaten erfolgt an neun Abenden, vier Wochenenden und im Rahmen einer 13tägigen Uebung im Jahr. Sie werden aus den Ortsbereichen rekrutiert, in denen sie im Ernstfall eingesetzt werden sollen. Die Bewaffnung erstreckt sich auf moderne, auch panzerbrechende Handfeuerwaffen, jedoch nicht auf schwere Waffen. Ihre Uniform (die gleiche wie bei der Bundeswehr) und ihre persönliche Ausrüstung nehmen die TV-Soldaten mit nach Hause. Ihre Waffen werden dagegen griffbereit in Depots gelagert.

Vorerst nur Freiwillige

v. Hassel glaubt, die TV-Verbände auf der Basis von Freiwilligenmeldungen aufstellen zu können, da es in der Bundesrepublik 1964 bereits 400 000 und 1966 sogar 600 000 Bundeswehrreservisten geben wird. Auch kriegsgediente Offiziere und Unteroffiziere können sich melden. Alle diese Freiwilligen müssen sich auf drei Jahre verpflichten.

Während ihrer dreijährigen Dienstzeit haben die TV-Soldaten den gleichen Status wie dienstpflichtige Soldaten während des Wehrdienstes. Sie erhalten dieselben Bezüge wie Wehrdienstpflichtige während einer Reserveübung. Außerdem kann eine Vergütung für etwaigen Verdienstausfall gewährt werden. Die Kosten für die Ausbildung eines TV-Soldaten gab v. Hassel mit 1320 DM pro Jahr an (ein aktiver Bundeswehrsoldat kostet im gleichen Zeitraum 20 000 DM).

1964 sollen etwa 146 TV-Einheiten aufgestellt werden, von denen über die Hälfte nur eine Stärke von 10 bis 14 Mann haben soll. 25 Prozent der Einheiten sollen jeweils bis 100 Mann und nur etwa 15 Prozent über 100 Mann stark sein. Im Verteidigungsfall wird für die TV-Verbände nach dem Bundesleistungsgesetz ziviler Transportraum beschlagnahmt. Mit der Erfassung geeigneter Fahrzeuge muß bereits ab 1964 gerechnet werden.

Der SPD-Wehrexperte Merten hat noch am gleichen Tag die Pläne v. Hassels grundsätzlich begrüßt. Verschiedene Einzelfragen müßten aber noch sorgfältig geprüft werden, so der rechtliche Status der Soldaten und der Rückgriff auf zivile Kraftfahrzeuge. (Siehe auch Beitrag auf Seite 2.)

otto- und Toto-Quoten

ette: I. entfällt, II. 15 400 DM, M. – Auswahlwette: I. 259 000 450 DM, IV. 11,90 DM. v entfällt, II. (5 Richtige und M, III. 4600 DM, IV. 80 DM. (Ohne Gewähr)



Fragen einer noch engeren militärischen Zusammenarbeit zwischen der Bundesrepublik und den USA standen nach Darlegungen offizieller Bonner Stellen im Mittelpunkt des für Montag kurzfristig anberaumten neuen Gesprächs zwischen Bundeskanzler Adenauer und US-Verteidigungsminister McNamara, von dem unser AP-Bild stammt. Angeblich wurden nur militärpolitische Fragen besprochen. Bundesverteidigungsminister v. Hassel, der an der Unterredung nicht teilnahm, versicherte später, McNamara habe keine Forderung gestellt, die personelle Stärke der Bundeswehr über 520 000 Mann zu erhöhen. Von deutscher Seite sei auch nicht verlangt worden, die atomaren Gefechtsfeldwaffen der Bundeswehr zu verstärken. Es bestehe volles Einvernehmen darüber, daß der Moskauer Vertrag kein Abrüstungsabkommen sei, und daß der Westen daher in seinen Verteidigungsanstrengungen nicht nachlassen dürfe.

7 Fighting about Berlin

Kennedy erfüllt Brandts Wünsche

Jubel in Berlin um US-Truppen

Nur noch der HSV ohne Punktverlust

St. Pauli spielte 3:3 in Hildesheim

Bergedorf schlug VfL Osnabrück

Montag, 21. August 1961 – Nummer 193 – 13. Jahrgang

HAMBURGER Morgenpost

10 PFENNIG

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Berlin, 21. August (upi)

Die Berliner sind begeistert: Der amerikanische Vizepräsident Lyndon B. Johnson hat gestern seinen Besuch in Berlin verlängert und 1500 amerikanische Soldaten begrüßt, die zur Verstärkung der westalliierten Garnison nach sechsstündiger demonstrativer Fahrt durch die Sowjetzone in Berlin eingetroffen sind. Der Besuch Johnsons und die Ankunft der amerikanischen Soldaten, die Berlins Regierender Bürgermeister, Willy Brandt, in einem Brief an Kenedy gewünscht hatte, wurden in Berlin mit unbeschreiblichem Jubel, mit Befriedigung und Beruhigung aufgenommen.

Johnson, der am Sonntagabend von über 800 000 Berlinern bei seiner Ankunft begeistert gefeiert worden war, hat dem Regierenden Bürgermeister Willy Brandt gestern eine persönliche Botschaft Präsident Kennedys überbracht.

Brandt erklärte, er sei mit dem Inhalt der Botschaft „sehr zufrieden".

US-Vizepräsident Johnson und seine Begleiter, besonders „Luftbrücken-General" Lucius D. Clay, wurden von den Berlinern stürmisch gefeiert.

Clay und Ostexperte Charles Bohlen besichtigten gestern Ostberlin und die durch Stacheldraht verstärkten Besatzwälle an der Sektorengrenze.

(Lesen Sie Seite 2 und unseren Foto-Sonderbericht Seite 16)





Obwohl die Berliner stundenlang warten mußten, harrten sie auf beiden Seiten des Kudamms in Reihen bis zu fünf hintereinander aus, um der neu eingetroffenen Kampfgruppe ihr Willkommen zu sagen. „Die sind richtig", hörte man allenthalben beim Durchfahren der Truppe. US-Vizepräsident Johnson und General Clay (rechts) nahmen die Parade in der Zehlendorfer „Clayallee" ab. (Morgenpost-Funkfotos)



Eine Million Berliner waren auf den Beinen, um den amerikanischen Vizepräsidenten Johnson stürmisch zu begrüßen. Präsident Kennedy zeigte sich über den herzlichen Empfang seines persönlichen Stellvertreters hocherfreut. Ein netter Zwischenfall: Als Johnson erfuhr, daß das fünfjährige Mädchen, dem er im Bild gerade den rechten Arm entgegenstreckt, nach der Errichtung der Sperrmauern mit seinen Eltern aus der Zone geflüchtet war, umarmte und küßte er es. Rechts neben Johnson Berlins Regierender Willy Brandt.

Ein Sturm der Begeisterung

Johnson: „Wir hatten nie bessere und tapferere Verbündete als die Westberliner"

Berlin, 21. August (dpa, upi, Eig. Ber.)

Die amerikanische Verstärkung für die Westberliner Garnison – 1500 Soldaten der ersten Kampfgruppe des 18. Infanterieregiments – wurde am Sonntagnachmittag bei ihrer Ankunft in Westberlin von der Bevölkerung mit unvorstellbarer Begeisterung empfangen. Hunderttausende von Berlinern waren auf den Beinen, sie jubelten den Soldaten vom Kontrollpunkt Dreilinden an der Stadtgrenze bis zu ihrem Eintreffen in der McNair-Kaserne in Lichterfelde zu. Die Soldaten, die feldmarschmäßig und mit scharfer Munition ausgestattet auf ihren Fahrzeugen saßen, antworteten mit dem weltberühmten V-Zeichen, das Churchill während des zweiten Weltkrieges als Siegeszeichen für die westliche Welt geprägt hat.

1961

Höhepunkt des Empfangs war die Begrüßung der Truppen durch den amerikanischen Vizepräsidenten Lyndon Johnson, den Regierenden Bürgermeister von Berlin, Willy Brandt, und General Lucius D. Clay, Militärgouverneur in Deutschland während der Luftbrücke. Johnson überreichte einem unbekannten Fahrer eines Armeelastzuges einen Strauß bunter Feldblumen. Er sagte: „Ich bin Vizepräsident Johnson. Ich bin stolz, Sie hier begrüßen zu können."

Am Kontrollpunkt Dreilinden hatte der Berliner Innensenator Joachim Lipschitz den Soldaten ein erstes Willkommen zugerufen.

Oberst Glover S. Johns, der Kommandeur der Kampfgruppe, meldete dem Kommandeur der amerikanischen Truppen in Berlin, Brigadegeneral Hartel, das Eintreffen seiner Einheit.

Triumphzug

Die Fahrt der Kampfgruppe zur Kaserne, gefolgt von der Autokolonne Johnsons und Brandts, durch das kilometerlange dichte Spalier jubelnder, Taschentücher schwenkender Berliner glich einem Triumphzug.

Orkanartigen Beifall gab es, als Johnson im offenen Wagen stehend die Ovationen entgegennahm.

Immer wieder flogen Blumensträuße in die Lastwagen der weißen und farbigen amerikanischen Soldaten.

Die Begeisterung der Hunderttausende reichte von Ergriffenheit bis zu frenetischem Jubel.

Kennedy-Brief

Gestern morgen hatte Johnson mit dem Berliner Regierenden Bürgermeister, Willy Brandt, eine erste Stadtrundfahrt unternommen, die ihn auch entlang der Sektorengrenze führte.

Vorher hatte Johnson Brandt im Gästehaus der US-Militärregierung in Berlin-Dahlem, wo der hohe Gast während seines Berlinaufenthalts wohnt, bei einem Gespräch hinter verschlossenen Türen ein persönliches Schreiben Kennedys überreicht.

Dieser Brief ist die Antwort auf ein Schreiben Brandts, in dem der Regierende Bürgermeister Maßnahmen gegen die jüngsten Ostberliner Aktionen gefordert hatte. (Siehe unten)

Im Namen des Präsidenten

US-Vizepräsident Johnson war als persönlicher Vertreter Kennedys am Sonnabend nach einem kurzen Aufenthalt in Bonn in Westberlin angekommen.

In Westberlin versicherte Johnson bei seiner Ankunft auf dem Flugplatz Tempelhof, er sei im Namen Kennedys gekommen, um den Berlinern zu versichern, daß Amerika niemals seine Berlinverpflichtungen vergessen werde.

Vor dem Berliner Abgeordnetenhaus und 800 000 Berlinern, die sich vor dem Rathaus Schöneberg versammelt hatten, fügte Johnson hinzu, Kennedy lasse die Berliner wissen, „daß die Zusage, die er für die Freiheit Westberlins und die Rechte des westlichen Zugangs nach Berlin gegeben hat, fest ist.

Für den Fortbestand und die Zukunft dieser Stadt haben die Amerikaner verbürgt, was sie bei der Gründung der Vereinigten Staaten garantierten: **„Unser Leben, unser Gut und unsere heilige Ehre."**

Für Berlin

Bonn (dpa) — Der SPD-Kanzlerkandidat Willy Brandt wird in Zukunft nur solche Wahlkampfverpflichtungen übernehmen, die ihm die **sofortige Rückkehr nach Berlin gestatten.** Seine wichtigste Aufgabe werde er nicht in der Auseinandersetzung mit dem politischen Gegner sehen, sondern in der **Aufklärung über die Berliner Situation.**

Auch Frankreich

Paris (upi) — Frankreich wird, dem Beispiel der USA und Großbritanniens folgend, seine Garnison in Berlin verstärken. Augenblicklich haben die Franzosen in Berlin etwa 3500 Mann stationiert.



Als dieses Funkbild im Notaufnahmelager Marienfelde geschossen wurde, durchbrach die begeisterte Menge die Polizeisperre um den amerikanischen Vizepräsidenten Johnson. Nach einer Viertelstunde Händeschütteln in lebensgefährlichem Gedränge beendete der persönliche Vertreter Präsident Kennedys eine 70 Kilometer lange Rundfahrt durch Westberlin. Vier Stunden lang wurde er stürmisch gefeiert. Präsident Kennedy war in dieser Zeit durch eine direkte Leitung mit Helmstedt verbunden, um bei Zwischenfällen sofort reagieren zu können.

UNSERE MEINUNG

Überrollt . . .

H. B. Morgen will also Dr. Adenauer nach Berlin fliegen. Wen interessiert das eigentlich noch?

Inzwischen haben nämlich Kennedy und sein Vizepräsident der deutschen Bundesregierung drastisch bewiesen, daß Washington näher an Berlin liegt als Bonn!

Johnson und Brandt haben durch ihre eindrucksvolle Aktion die schicksalhafte Solidarität zwischen den Deutschen und den Amerikanern demonstriert und damit die durch die Ratlosigkeit Bonns hier und dort bereits wackelnde Moral des Westens wieder hergestellt.

Das war das beherrschende politische Ereignis dieses Wochenendes, das weit über Berlin und über Deutschland hinaus Bedeutung und Gewicht für die gesamte Weltpolitik hat.

Das alles überrollte den alten Mann in Bonn, der seit einer Woche mit Erschrecken unter Beweis stellt, daß er anscheinend nicht mehr so schnell begreift, was passiert ist.

Dazu gehört auch, daß er Dienstag abend auf jeden Fall schon wieder in seinem Bett in Bonn schlafen will, während der amerikanische Vizepräsident seinen Berlinaufenthalt sofort verlängerte, als er sah, was hier auf dem Spiel steht.

Wir haben wirklich Verständnis dafür, daß ein 85jähriger den Strapazen der Weltgeschichte nicht mehr gewachsen ist. Aber dann muß er eben schnellstens das Ruder in kräftigere Hände legen.

Auch die letzte große Gelegenheit dieser Woche konnte er nicht mehr nutzen: Die Fernsehrede über alle deutschen Sender!

Nach den starken Bildern aus Berlin wirkte sie doppelt matt, müde, kraft- und ideenlos.

Welch eine Gunst des Schicksals, daß Willy Brandt seit einer Woche praktisch die Initiative der deutschen Politik auch ohne Bundesauftrag bereits übernommen hat.

Hätte er nicht den bewegenden Brief an Kennedy geschrieben, so wären weder Johnson herübergekommen, noch die amerikanischen Truppen in Marsch gesetzt worden.

Bitter an allem ist nur das eine: daß es erst zu den schlimmen Ereignissen in Berlin kommen mußte, damit jedermann klar wurde, daß der greise Adenauer in solchen schweren Stunden sein Amt offenbar nicht ausfüllen kann, sondern bereits resigniert dem Jüngeren und Tatkräftigeren das Handeln überläßt . . .

Das schrieb Brandt an Kennedy

Die wichtigsten Sätze aus dem Appell des Berliner Bürgermeisters an den amerikanischen Präsidenten

„Sehr verehrter Herr Präsident!

Nach den Entwicklungen der letzten drei Tage in meiner Stadt möchte ich Ihnen in diesem persönlichen und informellen Schreiben einige der Gedanken und Gesichtspunkte mitteilen, die mich bewegen.

Die Maßnahmen des Ulbricht-Regimes, gestützt durch die Sowjetunion und den übrigen Ostblock, haben die Reste des Vier-Mächte-Status nahezu völlig zerstört.

Während früher die Kommandanten der alliierten Mächte in Berlin bereits gegen Paraden der sogenannten Volksarmee protestierten, haben sie sich jetzt mit einem verspäteten und nicht sehr kraftvollen Schritt nach der militärischen Besetzung des Ostsektors durch die Volksarmee begnügen müssen.

Die politisch-psychologische Gefahr sehe ich in doppelter Hinsicht:

1. Untätigkeit und reine Defensive könnten eine Vertrauenskrise zu den Westmächten hervorrufen.

2. Untätigkeit und reine Defensive könnten zu einem übersteigerten Selbstbewußtsein des Ost-Berliner Regimes führen, das heute bereits in seinen Zeitungen mit dem Erfolg seiner militärischen Machtdemonstration prahlt.

Außerdem würde ich es für gut halten, wenn der Westen das Berlin-Thema durch eigene Initiative vor die Vereinten Nationen brächte, mindestens mit der Begründung, die Sowjetunion habe in eklatanter Weise die Erklärung der Menschenrechte verletzt.

Es scheint mir besser zu sein, die Sowjetunion in einen Anklagezustand zu versetzen, als dasselbe Thema nach Anträgen anderer Staaten diskutieren zu müssen.

Ich kann nicht ohne Bitterkeit an die Erklärungen denken, die Verhandlungen mit der Begründung abgelehnt haben, man dürfe nicht unter Druck verhandeln.

Wir haben jetzt einen Zustand vollendeter Erpressung, und schon höre ich, daß man Verhandlungen nicht werde ablehnen können.

In einer solchen Lage ist es um so wichtiger, wenigstens politische Initiative zu zeigen, wenn die Möglichkeit der Initiative des Handelns schon so gering ist.

Nach der Hinnahme eines sowjetischen Schrittes, der illegal ist und als illegal bezeichnet worden ist, und angesichts der vielen Tragödien, die sich heute in Ost-Berlin und in der Sowjetzone abspielen, wird uns allen das Risiko letzter Entschlossenheit nicht erspart bleiben.

Es wäre zu begrüßen, wenn die amerikanische Garnison demonstrativ eine gewisse Verstärkung erfahren könnte.

Ich schätze die Lage ernst genug ein, um Ihnen, verehrter Herr Präsident, mit dieser letzten Offenheit zu schreiben, wie sie nur unter Freunden möglich ist, die einander voll vertrauen."

Nachspiel

Bonn/Berlin, 21. August

Der Brief des Regierenden Bürgermeisters von Berlin, Willy Brandt, an den amerikanischen Präsidenten John F. Kennedy wird ein strafrechtliches Nachspiel haben.

Nachdem der Brief in der „Frankfurter Allgemeinen Zeitung" veröffentlicht worden war, **hat der Berliner Senat am Wochenende Anzeige gegen Unbekannt wegen Geheimnisverrates erstattet.**

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Eiserner Vorhang in Berlin





Das Brandenburger Tor, bekanntester Grenzpunkt zwischen Ost und West in Berlin, ist von sowjetzonalen Schützenpanzern, von Einheiten der Volksarmee und Betriebskampfgruppen besetzt. (dpa-Bild)

◀ Bundestagspräsident Gerstenmaier (Mitte) traf am Montag in Berlin ein. Zusammen mit dem Regierenden Bürgermeister Willy Brandt sah er sich die Absperrungen an. (AP-Bild)



Eine Rolle Stacheldraht erbeuteten junge Westberliner von der Volkspolizei. (AP-Bild)



1961

▲ Vergeblich versuchte dieses alte Ehepaar, die Sektorengrenze am Potsdamer Platz zu passieren. Die Volkspolizei nahm die beiden fest und führte sie ab. (AP-Bild)

Die Vopo schloß das Gitter am westlichen Ausgang des U-Bahnhofs Potsdamer Platz. ▶ AP-Bild





Das Gesicht des sowjetzonalen Volksarmisten: Er bewacht seit Sonntag, 13. August 1961, den Berliner Eisernen Vorhang. (AP-Bild)



Mit wütenden Zurufen, einem Pfeifkonzert und großen Transparenten protestierten die Westberliner am Brandenburger Tor gegen die militärischen Maßnahmen entlang der Sektorengrenze. Ihnen gegenüber stehen Panzer und schußbereite Geschütze. (dpa-Bild)

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HERSFELDER Nachrichten

Heute mit drei Seiten Sport

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Nummer 213 | Montag, 10. September 1956 | 12. Jahrgang

Vertriebene gedachten der Heimat

Kundgebung im Bundesgebiet und in Berlin - Kather ruft zu Demonstration in Bonn auf

FRANKFURT (HN/AP/dpa). Auf zahlreichen Kundgebungen und Veranstaltungen anläßlich des „Tages der Heimat" gedachten am Sonntag die Vertriebenen im Bundesgebiet und in Westberlin ihrer alten Heimat und erneuerten ihren Rechtsanspruch auf sie. Der Vorsitzende des Bundes vertriebener Deutscher, der BHE-Bundestagsabgeordnete Linus Kather, rief bei einer Kundgebung in Trier alle Heimatvertriebenen für den 7. Oktober zu einer Demonstration auf den Bonner Marktplatz. Mit diesem „verfassungsmäßig rechtlichen Schritt" solle der Bundesregierung klargemacht werden, „daß wir in der Charta der Vertriebenen auf Rache und Vergeltung, nicht aber auf die Heimat verzichtet haben". Der Bundesregierung warf Kather vor, mangelnde Initiative in der Frage der Wiedervereinigung zu zeigen. Er wies auch die Auffassung zurück, daß das Potsdamer Abkommen und die in ihm vorgesehene Grenzziehung „eine neue Phase der internationalen Neuordnung der europäischen Bevölkerung" bedeuteten. Es könne weder einen Friedensvertrag noch ein geeintes Europa geben, solange nicht „gerechte Friedensgrenzen" beständen und die Vertriebenen wieder in ihre Heimat zurückgekehrt seien.

Vor 30 000 Menschen in der Westberliner Waldbühne nannte Staatssekretär Thedieck vom Bundesministerium für gesamtdeutsche Fragen die Lösung des deutschen Problems durch eine freie Willensäußerung der Bevölkerung eine vorrangige und entscheidende Aufgabe. Die Bundesrepublik werde alles nur Erdenkliche tun, um die Wiedervereinigung zu ermöglichen.

Der Präsident des Berliner Abgeordnetenhauses, Willy Brandt, rief den in der Waldbühne Versammelten zu: „Alle Wege zur deutschen Einheit werden über Berlin führen. Das ‚Ja' zur Hauptstadt Berlin bedeutet das ‚Ja' zum ganzen Deutschland." Bereits am Vorabend waren in Berlin die Landsmannschaften der Vertriebenen in einem langen Fackelzug durch die Stadt gezogen.

Großbotschaft Ollenhauers

In einer Grußbotschaft zum „Tag der Heimat" erklärte der SPD-Vorsitzende Ollenhauer, seine Partei habe stets den Standpunkt vertreten, daß alle Menschen ein Recht auf ihre Heimat, ihr Volkstum, ihre Sprache und ihre Kultur haben. Die SPD werde sich daher auch weiterhin für die Möglichkeit der friedlichen Rückkehr aller Vertriebenen einsetzen, gleichviel, ob sie innerhalb oder außerhalb der Grenzen von 1937 gelebt haben.

Appell an Eisenhower

In Bremen appellierten rund 1500 Teilnehmer einer Kundgebung an Präsident Eisenhower, sich im Geiste der Atlantik-Charta „für die friedliche Beseitigung der Oder-Neiße-Linie einzusetzen". Der sudetendeutsche Pfarrer Reichenberger mahnte, auf Haß und Rachsucht bei der Wiedergewinnung der deutschen Heimat zu verzichten.

Conant kündigt Rücktritt an

Ende des Jahres - „entsprechend einer Gepflogenheit in USA"

DÜSSELDORF (HN/AP). Der amerikanische Botschafter in Bonn, Conant, hat am Sonntag bei seiner Rückkehr von einem sechswöchigen Urlaub in den USA noch auf dem Flugplatz von Düsseldorf erklärt, daß er Ende dieses Jahres in Washington sein Rücktrittsgesuch einreichen werde. Es entspreche einer amerikanischen Gepflogenheit, daß die Missionschefs der USA bei Ablauf einer Regierungsperiode ihr Amt zur Disposition stellten. Auf die Frage, ob er persönlich an einem weiteren Verbleib auf seinem Posten in Bonn interessiert sei, sagte Conant lediglich, er wolle sich zum gegenwärtigen Zeitpunkt nicht über seine eigenen Pläne und die Absichten seiner Regierung äußern. Immer wieder dementierte Gerüchte hatten bereits vor Wochen von dem bevorstehenden Rücktritt des Botschafters gesprochen. Diese Gerüchte faßten vor allem auf der angeblichen „Verärgerung" des Bundeskanzlers darüber, daß ihm die amerikanischen Umrüstungspläne „vorenthalten" worden seien. (Siehe auch Kommentar Seite 2.)

Gab Gromyko schon die Antwort?

Das Echo im In- und Ausland auf den Bonner Vorstoß in Moskau

FRANKFURT (HN/AP/dpa). Nach einem ausführlichen Bericht des Moskauer Rundfunks in seiner Samstagabend-Sendung über die Note der Bundesregierung zur Wiedervereinigung, die Botschafter Haas am Freitag dem sowjetischen Außenministerstellvertreter Gromyko überreicht hatte, veröffentlichten am Sonntag die sowjetischen Zeitungen sowohl die Note wie auch das Memorandum und die Erklärung Gromykos (siehe HN vom Samstag) im Wortlaut. Diese Erklärung Gromykos ist nach Ansicht der Bonner Sozialdemokratie als Vorwegnahme der nun zu erwartenden sowjetischen Antwort anzusehen. Zwischen dem Standpunkt Gromykos und den Auffassungen der Bundesregierung über den zweckmäßigsten und aussichtsreichsten Weg, das Tor zur deutschen Wiedervereinigung aufzuschließen, gebe es „keinen Brückenschlag", schreibt der SPD-Pressedienst.

Der CDU-Bundestagsabgeordnete Dr. Lenz schloß sich mit einer Rundfunkrede am Sonntag dieser Ansicht mit den Worten an, es bestehe wenig Grund zu dem Optimismus, daß die Dinge nun gleich in Fluß kämen. Es wäre aber schon viel, wenn sich Ansätze zu einer Verhandlungsbereitschaft ergeben würden. Das Memorandum enthalte „brauchbare und entwicklungsfähige Vorschläge". Sein Vorzug sei, daß es sich nicht auf ein starres Schema festlege, sondern einen echten Verhandlungsspielraum offen lasse.

In der gleichen Rundfunksendung erklärte der SPD-Abgeordnete Wehner, die Bedeutung des Bonner Vorstoßes liege in der Tatsache, daß es sich um den ersten direkten Schritt bei der Sowjetregierung handele. Wenn die Bundesregierung auch nicht mehr dargelegt habe als das, was bisher die Westmächte in ihren Vorschlägen geboten hätten, so liege

doch vielleicht in der Tatsache der unmittelbaren Fühlungnahme zwischen Bonn und Moskau noch eine Chance, endlich zu den bisher vermiedenen Sondierungen zwischen beiden zu kommen.

FDP: Eine neue Sprache

Die FDP-Bundestagsfraktion hatte bereits am Freitag festgestellt, daß die Bonner Note statt des bisher üblichen Kanzleistils eine neue Sprache enthält. Vor allem dürfe man in der zum ersten Mal betonten Bereitschaft zu einem zweiseitigen Gedankenaustausch über die Wiedervereinigung den Willen der Bundesrepublik erkennen, den toten Punkt von Genf zu überwinden.

In den westlichen Hauptstädten hat der Bonner Schritt in Moskau allgemeine Zustimmung gefunden. Allerdings wiesen diplomatische Kreise in London sofort darauf hin, daß die Bundesregierung zu zweiseitigen Verhandlungen mit Moskau über die Wiedervereinigung nicht berechtigt sei.

SSD-Fälscherring ausgehoben

Er druckte in Westberlin bundesdeutsche Ausweise für Ost-Agenten

BERLIN (AP/dpa). Die Westberliner Kriminalpolizei hat eine Geheimdruckerei ausgehoben, in der etwa 1000 Westberliner und westdeutsche Personalausweise für den sowjetzonalen Staatssicherheitsdienst (SSD) hergestellt worden sind. Nachdem im Laufe der mehrmonatigen Ermittlungen schon sieben Personen verhaftet worden waren, konnten jetzt die Köpfe der Fälscherbande, der 53jährige Buchdrucker Nay und der 30jährige Gebrauchsgraphiker Olbricht, dingfest gemacht werden.

Die Falsifikate wurden in Westberlin hergestellt und nach Ostberlin gebracht. Die Papiere benutzte der SSD, um damit seine in den Westen eingeschleusten Agenten auszustatten. Die Fälschungen wurden entdeckt, als zwei SSD-Agenten mit Westberliner Ausweisen verhaftet wurden und eines der Papiere die Nummer eines Polizeireviers trug, das es gar nicht gibt.

Jetzt Lenin- statt Stalinpreis

MOSKAU (AP/dpa). Das Präsidium des Obersten Sowjet hat in einem Erlaß die Umbenennung des Stalinpreises in „Internationaler Lenin-Preis für die Festigung des Friedens zwischen den Völkern" verfügt. Die bisherigen Träger des Stalinpreises werden eine neue Verleihungsurkunde und eine neue Goldmedaille mit dem Kopfe Lenins erhalten.

So hätten Sie tippen müssen!

(Ohne Gewähr)

West/Südblock: 2, 2, 1, 1, 2, 0, 1, 1, 2, 2, 1.
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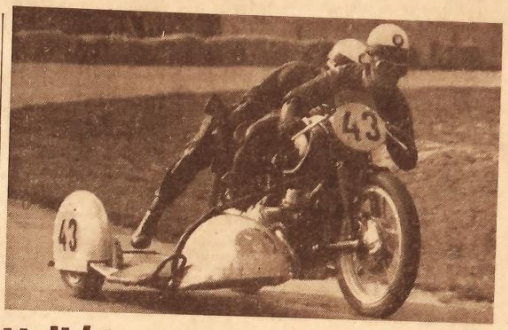

Noll/Cron erneut Weltmeister

Auch der zweite Platz für Deutschland: Hillebrand/Grunewald

Das BMW-Gespann Noll/Cron (Kirchhain) wurde nach dem letzten diesjährigen Rennen in Monza Weltmeister in der Seitenwagenklasse vor den Stallgefährten Hillebrand/Grunewald. Die beiden Kirchhainer, die bereits 1954 Weltmeister waren, holten sich damit den Titel zurück, den sie im Vorjahr an die Fuldaer Faust/Remmert verloren hatten. Obwohl Noll/Cron den Weltmeisterschaftslaufen hatten mußten, genügte ihnen der Punktevorsprung aus den Weltmeisterschaftslaufen, um den Titel. Ihre schärfsten Rivalen, Hillebrand/Grunewald, belegten in Monza nur den dritten Platz.

Menzies Mission gescheitert

„Die Lage ist ernst" - Nasser schlägt wieder scharfe Töne an

KAIRO (AP/dpa). Der von dem australischen Ministerpräsidenten Menzies geleitete Fünf-Mächte-Ausschuß hatte am Sonntagabend in Kairo eine letzte Zusammenkunft mit dem ägyptischen Präsidenten Nasser, die nur 25 Minuten dauerte. Nasser überreichte Menzies dabei eine Note, in der es heißt, daß jeder Versuch, dem Suez-Kanal eine „Kollektivherrschaft" aufzuzwingen, der Auftakt zu einem Streit wäre, dessen Ausmaß nicht abzusehen wäre. Großbritannien, Frankreich und die enteignete Suez-Kanal-Gesellschaft werden von Nasser beschuldigt, künstliche Schwierigkeiten zu schaffen. Menzies wird am heutigen Montag zur Berichterstattung nach London fliegen. Seine Worte beim Verlassen des Präsidentenpalais in Kairo waren: „Die Lage ist sehr ernst." Der schwedische Außenminister Unden, der ihn begleitete, stellte fest: „Es ist alles vorbei, wir reisen morgen ab."

Für den heutigen Montagnachmittag ist eine Aussprache zwischen dem britischen Premierminister Eden und dem französischen Ministerpräsidenten Mollet in London vorgesehen, an der auch die Außenminister der beiden Länder teilnehmen. Mollet sprach am Sonntag im Zusammenhang mit der Ablehnung der von Menzies unterbreiteten Vorschläge durch Nasser von einer „bedrohlichen Situation".

Frankreich hat inzwischen mit umfangreichen Truppenverlegungen nach Französisch-Somaliland am südlichen Eingang des Roten Meeres begonnen. — Die neue ägyptische Suez-Behörde teilte mit, daß seit Ende Juli 53 neue Lotsen eingestellt worden sind. Unter ihnen soll sich der deutsche Lotse Paul Müller befinden. (Siehe auch Kommentar Seite 2.)

Heute im Sportteil

Die Mannschaft für Hannover
KSV Hessen verlor 4:0
CSC 03 siegte in Gießen
Schirmer bester Zehnkämpfer
Rekord durch Christa Stubnick
Harleshausen verlor 9:10

Maria Schell in Venedig die beste Schauspielerin

VENEDIG (AP). Maria Schell wurde auf den 17. Filmfestspielen in Venedig als beste Schauspielerin ausgezeichnet. Sie erhielt die Auszeichnung für ihre Leistung in dem René-Clement-Film „Geröaise". Bester männlicher Darsteller wurde der Franzose Bourvil. Ihm wurde der Preis für seine Rolle in „Traversee de paris" zuerkannt.

Lübke eröffnete DLG-Leistungsschau

3000 Gäste aus Ost und West - Vom Musterhof bis zur Zuchtbiene

HANNOVER (Eig. Ber.). Bundesernährungsminister Lübke eröffnete am Sonntag in Hannover die 44. Wanderausstellung der DeutschenLandwirtschaftsgesellschaft (DLG), die bereits am ersten Tage viele tausend Besucher zählte. An der Eröffnungskundgebung dieser bisher größten und repräsentativsten Leistungsschau der deutschen Landwirtschaft nahmen 300 Ehrengäste aus beiden Teilen Deutschlands und aus dem Ausland teil.



In entzückenden Trachten werben diese jungen Damen vor dem Hauptbahnhof in Hannover für die DLG-Wanderausstellung. (Foto: Landwirtschaftsrat Barchfeld)

Lübke betonte, daß die Agrarpolitik der Bundesregierung wie bisher fortgesetzt werde. In deutlicher Anspielung auf die kritischen Aeußerungen des Bundeswirtschaftsministers vom Freitag erklärte er, die Agrarpolitik könne nicht „von heute auf morgen" geändert werden. Der Vorsitzende des niedersächsischen Landvolks, Rehwinkel, übte ebenfalls scharfe Kritik an Erhards Aeußerungen. Offenbar versuche der Minister, eigenes Versagen auf die Landwirtschaft abzuwälzen.

Die eigentliche Ausstellung bietet in den 10 Messehallen und den 30 Zeltbauten auf einer Gesamtfläche von 64 ha Grundfläche mit fast 10 000 Maschinen und 1200 Tieren ein umfassendes Bild von den Leistungen der deutschen Landwirtschaft. Besondere Beachtung findet der aufgebaute Musterbauernhof, der unter der Devise „Landarbeit leichter gemacht" steht. Er ist mit den modernsten Haus- und Landwirtschaftsmaschinen ausgestattet. 17 Lehrschauen vermitteln darüber hinaus eine Fülle praktischer Anregungen für den Bauern.

In den Zelten ist die Elite der Tierzucht im Bundesgebiet untergebracht. Sie reicht von der Zuchtbiene über die besten Milchkühe bis zur berühmten Celler Hengstparade. Die nächste DLG-Schau findet in Dortmund (Westfalen) statt.

11 Tote um ein Buch

NEU DELHI (AP). Nach der Veröffentlichung eines amerikanischen Buches, das die Person des Propheten Mohammed nach Ansicht seiner Anhänger in verletzender Weise darstellt, kam es in Indien zu tätlichen Auseinandersetzungen zwischen Hindus und Mohammedanern. Dabei wurden elf Personen getötet und 32 schwer verletzt. Die blutigen Unruhen ereigneten sich in zwei Orten des Staates Uttar-Pradesh. Der Gouverneur dieses Staates ist zugleich Gründer des indischen Verlages, in dem das umstrittene Buch veröffentlicht wurde.

Kurz berichtet

Weil er in Ostberlin Kleingeld für einen Westberliner Geschäftsmann einwechselte, der es für seine Ostkundschaft brauchte, wurde ein Ostberliner Einwohner zu sechs Monaten Gefängnis verurteilt.

Hunderte von Kinderlähmungserkrankungen wurden in dem von Polen verwalteten deutschen Südostpreußen registriert. Die polnischen Behörden stünden der Epidemie hilflos gegenüber, schreibt das polnische Blatt in Allenstein.

Seinen Radiumverbrennungen erlag der 71jährige Wissenschaftler Prof. Ponzio in Turin. Trotz 19 Operationen konnte sein Leben nicht gerettet werden. Ponzio arbeitete an der Entwicklung eines Schutzes gegen Röntgenstrahlen.

Zum Posener Prozeß will der Europa-Rat in Straßburg eine Beobachterdelegation schicken. Warschau wurde um Einreisegenehmigung gebeten.

In Prag begannen Verhandlungen zwischen Regierungsdelegationen der Tschechoslowakei und der Sowjetzonenrepublik. — SED-Chef Ulbricht ist nach Peking abgeflogen. (AP/dpa)

Die Eltern erschlagen

LUDWIGSHAFEN (dpa). Schon neun Stunden, nachdem das Zahnarzt-Ehepaar Kronberg am Wochenende in den Praxisräumen in Altrip bei Ludwigshafen ermordet aufgefunden worden war, konnte der 19jährige Sohn Horst als Täter festgenommen werden. Er gestand, seinen Vater und die Stiefmutter mit einem Hammer erschlagen zu haben. Nach der Tat war er mit dem Wagen seines Vaters geflohen. Er wurde dann in Waldshut (Baden) gestellt. Der Junge gab an, er habe mit dem Vater einen Wortwechsel gehabt und wollte sich für eine Ohrfeige rächen.

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Nummer 247 — Freitag, 19. Oktober 1956 — 12. Jahrgang

Streik in der DDR - die Volkspolizei greift ein

Arbeitsniederlegung in Magdeburg, Erfurt, Chemnitz - Sicherheitsdienst alarmiert - Behörden auf dem Rückzug vor den Forderungen der Arbeiter

BERLIN (HN/dpa/AP). Die Protestaktion empörter Arbeiter im Gebiet von Magdeburg, über die das Zentralorgan der Sowjetzonengewerkschaft „Tribüne" am Dienstag berichtete, haben sich in den letzten Tagen verstärkt und führten zu teilweisen Arbeitsniederlegungen. Nach übereinstimmenden Berichten, die inzwischen in Westberlin eintrafen, ist das Zentrum der Protestbewegung das Karl-Marx-Werk in Magdeburg. Sie soll inzwischen jedoch bereits auf vier weitere Magdeburger Großbetriebe und auf Betriebsabschnitte in Erfurt und Chemnitz übergegriffen haben. Die Westberliner Zeitung „Der Tag" berichtete, daß 2000 Mann der kasernierten Volkspolizei nach Ausbruch der Protestbewegung nach Magdeburg verlegt worden sind. Die „Tribüne" hatte bereits berichtet, daß sich in vier Magdeburger Großbetrieben die Arbeiter gegen falsche Methoden der Normung und gegen Einstufungen in falsche Lohngruppen gewandt haben. Als Schauplatz der Unzufriedenheit nannte das Blatt das Ernst-Thälmann-Werk, das Karl-Marx-Werk, das Dimitroff-Werk und das Karl-Liebknecht-Werk.

Das Thälmann-Werk in Magdeburg ist von der Außenwelt abgesperrt. In dem Werk ruht der ganze Betrieb. Im Karl-Marx-Werk arbeiten nur noch einige Abteilungen. Der Staatssicherheitsdienst in Magdeburg ist alarmiert und hat seine Beauftragten in die von den Unruhen betroffenen Werke entsandt. Bisher ist niemand verhaftet worden, doch werden zahlreiche Arbeiter über den Grund ihrer Unzufriedenheit verhört.

Funktionäre finden kein Gehör

Die Sowjetzonen-Gewerkschaft bemüht sich gegenwärtig, durch zusammengerufene Funktionäre die Arbeiterschaft beruhigen zu lassen, doch finden die Sprecher keine Resonanz. Immer mehr setzt sich bei den Arbeitern der Wille durch, auch bei einem Neueintreffen von Material die Arbeit nicht vor Erfüllung der wichtigsten Forderungen wieder aufzunehmen. In einzelnen Betrieben soll die Volkspolizei durch die Abteilungen patrouillieren. Im Karl-Marx-Werk haben verschiedene zur Auszeichnung vorgeschlagene Arbeiter die Ehrenurkunde und in einigen Fällen auch die Geldprämie zurückgewiesen.

Die Ausführungen der Sowjetzeitung „Tribüne" zeigen, daß die DDR-Behörden sich auf dem Rückzug vor den Forderungen der Arbeiter befinden und die Schuld für die schlechte Behandlung der Arbeiter auf die unteren Instanzen abschieben. Anlaß dazu sind die Produktionsausfälle, die durch die Arbeitsniederlegung entstehen. Das Karl-Marx-Werk soll ausschließlich für den Export arbeiten. Ein Produktionsausfall müsse den gesamten Exportplan gefährden.

„Freie Wählergemeinschaft" wird in Kürze verboten

WIESBADEN (AP). Der hessische Innenminister Schneider teilte in Wiesbaden mit, daß noch in dieser Woche mit dem Verbot einiger, für die Kommunalwahlen am 28. Oktober eingereichten Listen zu rechnen sei. Diese Listen enthielten, vor allem in Kassel und Gießen, in erheblichem Umfange Namen ehemaliger kommunistischer Funktionäre oder Mitglieder der verbotenen KPD. Gegenwärtig würden alle Wahlvorschläge derartiger „freier Wählergemeinschaften" individuell überprüft.

Kampfansage gegen neues Kabinett

Ollenhauer: Rüstungsplanung verfehlt - Gefahr einer Isolierung

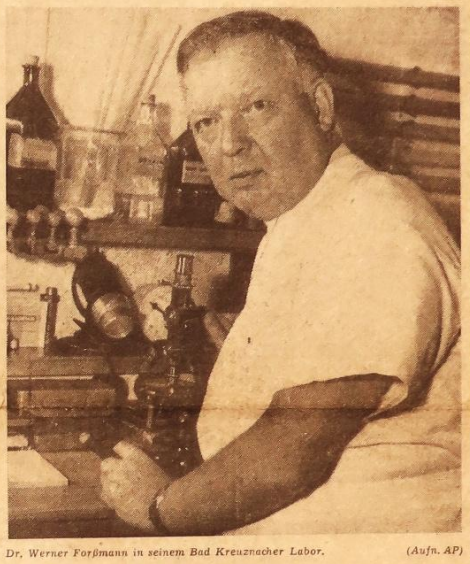
BONN (AP). Eine scharfe Kampfansage richtete der SPD-Vorsitzende Ollenhauer gegen das „dritte Kabinett Adenauer". Die größte Sorge habe die Tatsache hervorgerufen, daß keinerlei Anzeichen für die Bemühungen um neue Verhandlungen für die Wiedervereinigung zu erkennen seien. Die Bundesregierung befinde sich seit Monaten in wachsendem Maße im Zustand der Defensive und Verwirrung. Als Beispiel dafür nannte Ollenhauer das „Chaos in der Wehrpolitik, die Tragödie der Sozialreform und schließlich die Kabinettsumbildung selbst."

Weiter sei offensichtlich, daß die Regierung nicht daran denke, aktive Maßnahmen gegen die Preisentwicklung zu unternehmen. Zum Wechsel im Verteidigungsministerium sagte der Oppositionsführer, es sei offenkundig geworden, daß sich die Rüstungsplanung als verfehlt erwiesen hätte.

Ollenhauer sagte ferner, man dürfe nicht übersehen, daß nach den amerikanischen Wahlen die Entspannung zwischen West und Ost verstärkt würde. Beide USA-Parteien seien entschlossen, mit der Sowjetunion zu einem erträglichen Uebereinkommen zu gelangen. Vor der dann akut werdenden Gefahr einer Isolierung der Bundesrepublik habe die SPD schon vor langem gewarnt.

Nobelpreis für Deutschen

Hohe Auszeichnung für Dr. Forßmann und zwei USA-Ärzte für ihre Verdienste auf dem Gebiet der Herzforschung



Dr. Werner Forßmann in seinem Bad Kreuznacher Labor. (Aufn. AP)

STOCKHOLM (AP). Für ihre Verdienste auf dem Gebiet der Herzforschung wurde der diesjährige Nobelpreis für Medizin zu gleichen Teilen an den deutschen Arzt Dr. Werner Forßmann und an seine amerikanischen Kollegen Dr. Cournand und Dr. Richards verliehen. Die drei Aerzte haben mit ihren Forschungen über Herzkrankheiten eine neue Epoche der Kardiologie eingeleitet. Der heute 52jährige Dr. Forßmann, der in Bad Kreuznach lebt, tat den ersten entscheidenden Schritt zur Erforschung des Herzinneren mit einem kühnen Experiment, das er als 25jähriger Arzt unternahm.

Er stieß sich einen Katheter aus der Achselhöhle direkt ins Herz. Von seinen Kollegen gewarnt, gab er diese gefährlichen Experimente jedoch erst nach verschiedenen Wiederholungen auf. Dann hatte er aber schon die entscheidende Antwort auf die Frage gefunden, was innerhalb des Herzens und im Zentrum des Kreislaufsystems vor sich geht.

Nach mehr als einem Jahrzehnt wurde Dr. Forßmanns Versuch von Dr. Cournand in New York aufgegriffen und verbessert. Zusammen mit Dr. Richards, dem dritten Nobelpreisträger, schloß er Präzisionsinstrumente an den Katheter an. Er führte den Katheter nicht nur ins Herz, sondern auch weiter in die Lungenarterie und selbst in die Lunge ein. Die von den drei Wissenschaftlern erreichten Ergebnisse sind für den Arzt von heute unentbehrlich. (Lesen Sie hierzu auch unseren Bericht „Sonde im eigenen Herz" auf Seite 3.)

Wohlwollendes Schweigen war zugesichert

Zahlreiche Politiker in Traunsteiner Prozeß verwickelt - Auch Erhard und Strauß betroffen

MÜNCHEN (dpa). In dem Traunsteiner Weinschieberprozeß gegen den Weingroßhändler Eutermoser und acht andere Angeklagte erklärte der mitangeklagte CSU-Landtagsabgeordnete Dr. Rindt, 1949 habe er mit dem jetzigen Bundeswirtschaftsminister Erhard über die illegalen Weineinfuhren aus Südtirol gesprochen. Er glaube, daß Erhard über die Hintergründe informiert war, da Erhard ihm wohlwollendes Schweigen zusicherte.



Auf der Anklagebank im Traunsteiner Weinschieberprozeß. Unser dpa-Bild zeigt von links nach rechts: Dr. Rindt; Johann Riedel; Landrat Neumann, Bruder der Therese von Konnersreuth; den ehemaligen Landesgeschäftsführer Plonner und den Weinhändler Eutermoser.

Auch bei einer Sitzung des Landesvorstandes der CSU im Jahre 1950, bei der der jetzige Landtagspräsident Dr. Ehard und der CSU-Landtagsabgeordnete Dr. Hundhammer anwesend waren, sei von den Erlösen der Weinimporte gesprochen worden. Er habe damals angegeben, man könne etwa 500 000 DM als Gewinn erwarten. Diese Zahlen basierten auf Auskünften des damaligen Landesgeschäftsführers der CSU, Plonner, und des heutigen Landrates in Kemnath, Neumann. Die ihm (Rindt) zugedachte Provision habe er in den bayerischen Allunit-Werken investieren wollen, bei denen Dr. Rindt Vorsitzender des Aufsichtsrates war.

Dr. Rindt erhielt aus den Verkäufen einmal 36 000 DM, dann 14 000 DM. Weitere 8000 DM gab er für „politische Zwecke" aus, und 3000 DM erhielt er von Eutermoser zum Kauf eines Autos, das er als Landtagsabgeordneter haben sollte. In der Verhandlung spielten außerdem 20 000 DM eine Rolle, deren Schicksal jedoch nicht geklärt werden konnte. Als Rindt damals mit dem bayrischen Finanzminister Dr. Kraus über diesen Betrag sprach, habe dieser ihm geantwortet: „Beim Finanzministerium ist man in diesen Dingen außerordentlich großzügig."

In der Verhandlung am Vortage hatte der ehemalige Landesgeschäftsführer der CSU, Plonner, gesagt: „Der damalige Justizminister Dr. Müller und der heutige Verteidigungsminister Strauß waren genauestens über die Schiebung mit den Südtiroler Weinen informiert."

Keine Erhöhung der Gas- und Strompreise

FRANKFURT (AP) Die Elektrizitätswerke hoffen, trotz der Preiserhöhung für Ruhrsteinkohle die Stromtarife für Haushaltsabnehmer halten zu können. Für die Industrie wird jedoch eine Preisänderungsklausel wirksam. Der Verband der deutschen Gas- und Wasserwerke teilte mit, daß die Kohlepreiserhöhung kein Anlaß zu einer Erhöhung der Gastarifpreise sein könne. — Demgegenüber wies der deutsche Bauernverband darauf hin, daß die Möglichkeit weiterer Preissteigerungen auf dem Agrarsektor bestehe.

Kurz berichtet

In Kraft getreten ist die für alle Arbeiter und Angestellte des Steinkohlenbergbaus vereinbarte Arbeitszeitverkürzung, verlautete aus Bochum.

Für 5000 Mark bezieht das VW-Werk monatlich 1000 Exemplare des CDU-Dienstes „Wirtschaftsbild", bestätigte Bundesfinanzminister Schäffer in Bonn. Die SPD weist darauf hin, daß es sich bei den 5000 Mark um öffentliches Geld handelt, das für die Finanzierung der CDU ausgegeben wird. Das VW-Werk ist öffentliches Eigentum.

Von ihren Aemtern entbunden wurden der stellvertretende Minister für Bauwesen in der polnischen Regierung, Piotrowski, und der Staatssekretär seines Ministeriums, Wolski.

Eine endgültige Einigung über die Normalisierung ihrer Beziehungen sollen die Sowjetunion und Japan in Moskau erzielt haben. (AP/dpa)

Verhandlungen Rumänien - Bundesrepublik

Botschaften beider Länder in Paris werden über Rückführung von 8432 Volksdeutschen beraten

Von unserer Bonner Redaktion

Zwischen der rumänischen und der deutschen Botschaft in Paris finden in Kürze Verhandlungen über die Rückführung von Volksdeutschen aus Rumänien in die Bundesrepublik im Rahmen der Familienzusammenführung statt. Wie der Präsident des DRK, Dr. Weitz, am Donnerstag in Bonn mitteilte, sind diese Verhandlungen nötig, weil der größte Teil der rückkehrwilligen Volksdeutschen die rumänische Staatsangehörigkeit besitzt. Dr. Weitz gab ferner bekannt, daß er bei seinem Besuch in Bukarest dem Rumänischen Roten Kreuz Listen mit den Namen von 8432 Volksdeutschen übergeben habe, die die Ausreisegenehmigung zu ihren Angehörigen ersten Grades in der Bundesrepublik erbeten haben.

Eine zweite Liste mit etwa 2500 Namen soll nachgereicht werden. Schließlich wurde eine Namensliste von 225 Gefangenen übergeben, die sich noch in Rumänien befinden.

Das Rumänische Rote Kreuz habe die Rückführung auch dieser Personen zugesagt, sobald sie aufgefunden werden.

Am kommenden Mittwoch wird eine Delegation des Ungarischen Roten Kreuzes in Bonn erwartet, mit der rund 3600 Anträge von in Ungarn lebenden Deutschen auf Familienzusammenführung erörtert werden sollen.

Postminister gesucht

BONN (dpa). In Bonn wird gegenwärtig ein neuer Postminister gesucht, da der bisherige Minister Dr. Balke (CSU) nach der Kabinettsumbildung das Atomministerium übernommen hat. Nach den Vorstellungen des Bundeskanzlers muß der neue Postminister aus den Kreisen der christlich-demokratischen Arbeitnehmerschaft kommen und evangelisch sein. In politischen Kreisen wird der Berliner CDU-Politiker Ernst Lemmer genannt.

„Osteuropäische Montanunion"

STRASSBURG (dpa). In der politischen Debatte des Europa-Rates schlug Dr. Becker (Bad Hersfeld) die Bildung einer osteuropäischen Montanunion vor. Diese solle die Wirtschaftsgebiete der deutschen Sowjetzone, Schlesiens und Polen bis zur Weichsel unter Einschluß der Tschechoslowakei zu einem Block zusammenfassen.

Ein solcher Zusammenschluß könne das Mißtrauen des Ostens gegenüber Deutschland beseitigen und für bestimmte Wirtschaftsfragen eine Kompromißmöglichkeit schaffen. Becker betonte, eine derartige Lösung würde nicht bedeuten, daß Deutschland sich vom Westen entferne.

Hoyer Millar abberufen

LONDON (AP/dpa). Der britische Botschafter in Bonn, Sir Frederick Hoyer Millar, verläßt Bonn. Wie das Foreign Office in London bekanntgab, wurde er zum ständigen Staatssekretär im britischen Außenministerium ernannt. Sein Nachfolger in Bonn wird der britische Vertreter bei der NATO, Sir Christopher Steel.

Neuer Mieten-Richtsatz im sozialen Wohnungsbau

BAD NEUENAHR (AP) Nach einer Mietengrenzenverordnung, die die Bundesregierung dem Bundesrat in Kürze zur Zustimmung vorlegen wird, sollen die Höchstmieten für Mindereheimittelte im sozialen Wohnungsbau 1,20 DM pro Quadratmeter künftig nicht überschreiten. Wie Bundeswohnungsbauminister Preusker am Donnerstag vor dem deutschen Landkreistag in Bad Neuenahr mitteilte, haben die Länder dieser Regelung bereits zugestimmt.

HERSFELDER Nachrichten

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Einzelpreis 20 Pfennig

Redaktion und Geschäftsstelle: Bad Hersfeld, Johannesstr. 5, Ruf: 947
Monatsbezugspreis: 3,45 DM zuzüglich 0,35 DM Zustellgebühren. Im Postbezug 3,46 DM einschl. Postzeitungsgebühren zuzügl. 0,54 DM Zustellgebühren. Im Streifbandversand 3,45 DM zuzüglich Porto. Postscheckkonto Frankfurt/M. Nr. 28 166. Anzeigenpreis: Jeder Millimeter der 13spaltigen Seite 0,10 DM. Im Falle höherer Gewalt oder bei Störungen des Betriebes bzw. auf dem Versandwege, bei Streik, Verbot usw. besteht kein Anspruch auf Kürzung bzw. Erstattung des Bezugsgeldes. Postverlagsort Kassel.

Nummer 307 | Montag, 31. Dezember 1956 | 12. Jahrgang

Eine ganze Schulklasse ist nach West-Berlin geflohen

Vom SED-Regime wegen Ungarnkundgebung relegiert - Die Mädchen blieben

BERLIN (AP/dpa). Fast die gesamte Abiturientenklasse der Oberschule in Storkow (Mark Brandenburg) ist in der letzten Woche vor den Maßregelungen und Drohungen des Sowjetzonenregimes nach Westberlin geflohen. Die Klasse hatte Ende Oktober eine Schweigekundgebung zu Ehren der ungarischen Freiheitskämpfer veranstaltet. In wochenlangen Vernehmungen, an denen sich sogar der Volksbildungsminister der DDR, Fritz Lange (SED), beteiligte, versuchte der Staatssicherheitsdienst die „Rädelsführer" zu ermitteln. Die Jungen hielten jedoch zusammen und weigerten sich, den ihnen zugemuteten Verrat zu begehen. Als auch der Ministerbesuch ohne Resultat blieb, wurde die ganze Klasse von der Schule verwiesen und den Schülern mitgeteilt, daß sie in der DDR weder zur Reifeprüfung noch zum Besuch einer Fach- oder Hochschule zugelassen würden. 14 der Jugendlichen flüchteten daraufhin nach Westberlin, während die übrigen sechs, darunter fünf Mädchen, zurückblieben. Den Jungen soll in einem Internat in der Bundesrepublik die Möglichkeit gegeben werden, die Reifeprüfung abzulegen.

Wie die Schüler berichteten, hätten sie sich nach dem ersten sowjetischen Eingreifen in Ungarn während des Unterrichts darüber verständigt, ihrer Sympathie für die Freiheitskämpfer durch ein fünfminütiges Schweigen Ausdruck zu geben. In der Geschichtsstunde hätten sie dann ihre Absicht verwirklicht und auf Fragen des Lehrers keine Antworten gegeben. Diese Demonstration hätten sie am folgenden Tage wiederholt und sich dabei von ihren Plätzen erhoben.

Der Pädagogische Rat der Schule habe nach eingehenden Vernehmungen durch den Direktor und einen SED-Funktionär strenge Rügen für die ganze Klasse erteilt, und man habe geglaubt, daß damit die Sache abgetan sei.

Wenige Tage darauf sei aber der Volksbildungsminister Lange in der Schule erschienen und habe versucht, durch „gutes Zureden" und „Aufklärung über die tatsächlichen Vorgänge in Ungarn" die „Rädelsführer" der Demonstration zu finden. Nach ergebnislosen Verhören habe Lange die Abiturienten beschimpft und gesagt: „Wenn es mal anders in der DDR kommen sollte und ich aufgehängt werde, werdet ihr nicht nur dabeistehen, sondern sogar am Strick mitziehen."

Wie die Schüler weiter berichteten, setzte der Minister der Klasse eine Frist von einer Woche zur Nennung der Rädelsführer.

Telegramm war gefälscht

Am 20. Dezember habe eine Kommission die Relegierung von drei Schülern bekanntgegeben. Die restlichen 17 Schüler und Schülerinnen hätten jedoch dagegen protestiert und erklärt: „Wir waren alle beteiligt und wollen alle die Konsequenzen ziehen." Wutentbrannt habe der Kommissionsvorsitzende dann den Ausschluß der ganzen Klasse von der Schule angeordnet. Einen Tag vor Heiligabend habe man die Flucht verabredet.

Einer der geflüchteten Jungen erhielt in Westberlin ein Telegramm, nach dem seine Mutter schwer erkrankt sei und er sofort nach Hause kommen solle. Er hatte sich schon reisefertig gemacht, als seine Mutter plötzlich in Westberlin erschien und das Telegramm als Fälschung entlarvte.

Heute mit Jahresrückblick und Silvester-Beilagen



Aufnahme: Werner Lengemann

Ein USA-Programm für Nahost

Eisenhower ist ermächtigt, Sowjet-Aktion sofort zu begegnen

WASHINGTON (AP). Die amerikanische Regierung hat ein Aktionsprogramm für den Nahen Osten beschlossen, daß die Bereitstellung zusätzlicher Wirtschaftshilfen in Höhe von 400 Millionen Dollar und die vorsorgliche Ermächtigung für Präsident Eisenhower vorsieht, einem sowjetischen Eingreifen im Nahostraum durch die Entsendung amerikanischer Streitkräfte dorthin sofort entgegenzutreten. Durch den von Außenminister Dulles entworfenen und vom Nationalen Sicherheitsrat gutgeheißenen Plan wollen die USA verhindern, daß im Nahen Osten der sowjetische Einfluß an die Stelle des geschwächten britisch-französischen tritt. Die Sowjetunion soll deutlich gewarnt werden, daß ein Versuch ihrerseits, gewaltsam das Machtvakuum im Nahen Osten auszufüllen, die militärische Macht der USA auf den Plan rufen würde.

Die zusätzlich zur normalen Auslandhilfe in Höhe von 4,4 Milliarden Dollar vom Kongreß bereitzustellenden 400 Mill. Dollar sollen für Projekte wie die Eingliederung von Flüchtlingen, die Nutzung der Jordangewässer und die Verbesserung der Verkehrs- und Anbauverhältnisse im Nahen Osten verwendet werden. Als Empfänger kommen alle arabischen Staaten, auch die in Nordafrika, sowie Israel in Frage.

Aegypten soll an dem Programm nur in beschränktem Umfang und nur unter der Bedingung teilnehmen können, daß Staatspräsident Nasser bessere Beziehungen zu Washington herstellt.

Endgültige Besetzung des Sinai eingeleitet

SUEZ (AP/dpa). Die Räumungsaktion der Vereinten Nationen im Suezkanal, die in den letzten Tagen noch einmal verzögert wurde, hat nun am Samstag endgültig begonnen. Gleichzeitig haben die UN-Polizeitruppen die Besetzung der gesamten Sinai-Halbinsel eingeleitet. In diesem Gebiet befinden sich kolumbianische, dänische, norwegische, indische und jugoslawische Einheiten im Vormarsch auf die ägyptisch-israelische Grenze.

„Der Frieden wurde gefestigt"

Aber schneller Ausbau der Bundeswehr ist nötig, erklärte der Bundeskanzler im Neujahrsaufruf

BONN (AP/dpa). In einem Neujahrsaufruf erklärt Bundeskanzler Dr. Adenauer, in den letzten Wochen sei der Frieden Dank der entschlossenen Haltung der USA wieder gefestigt worden. Das dürfe aber nicht dazu veranlassen, die Herde der Kriegsgefahren unbeachtet zu lassen. Das NATO-Bündnis bedeute für uns eine Sicherung gegen jeden Angriff. Darum müsse durch einen schnellen Ausbau der Bundeswehr auch unser eigener Beitrag für Frieden und Sicherheit geleistet werden. (In diesem Zusammenhang erklärte Bundesverteidigungsminister Strauß, Ende 1957 müßten hochwertige einsatzfähige Verbände zur Verfügung stehen. Mit der Ausbildung der ersten Wehrpflichtigen erwüchsen vielseitige Aufgaben). Der Bundeskanzler wies in seinem Aufruf ferner darauf hin, daß die Rückkehr der Saar ein Ergebnis der 1949 aufgenommenen Außenpolitik sei.

Die Bundesrepublik sei davon ausgegangen, die Aussöhnung mit Frankreich herbeizuführen, Europa zu einigen und die Partnerschaft der großen Mächte im Westen fördern. Nur auf diese Weise sei es möglich gewesen, Sowjetrußland schließlich dahin zu bringen, Bereitschaft zur Verständigung zu zeigen. Dieser Weg wurde auch zur deutschen Wiedervereinigung führen.

„Mit Moskau verhandeln"

BONN (AP). Der SPD-Vorsitzende Ollenhauer hat in einer Erklärung zur Jahreswende nachdrücklich die Stärkung der Vereinten Nationen gefordert und betont, daß die Vereinten Nationen eine alle Völker der Welt umfassende Organisation werden müßten. Ferner sollte die Frage der Abrüstung erneut in Angriff genommen werden. Der Ausweg in Europa könne nur in neuen Verhandlungen zwischen den Westmächten und der Sowjetunion über ein Sicherheitssystem in Europa liegen, das die Wiedervereinigung Deutschlands ermögliche.

Das Jahr 1956 habe gelehrt, daß ein geteiltes Land wie Deutschland in einem militärischen Bündnis weniger als ein halber Partner sei, weil die Angst vor einem Bruderkrieg die Bereitschaft der Deutschen zu einem Militärbeitrag überschatte. Die NATO-Tagung in Paris im Dezember habe ferner die Tatsache nicht aus der Welt schaffen können, daß das eigenmächtige Vorgehen Englands und Frankreichs im Nahen Osten der NATO-Idee einen schweren Schlag versetzt habe. Andererseits sei der Versuch der Sowjetunion gescheitert, mit Gewalt die osteuropäischen Völker in den Warschauer Pakt zu pressen.

Appell an Sowjetzone

DÜSSELDORF (dpa). Der Vorsitzende des DGB, Willi Richter, appellierte zum Jahreswechsel an die Bevölkerung Mitteldeutschlands, den Willen zur Wiedervereinigung in sich wach zu halten. Richter erklärte: „Auch wir haben noch viel an unserer staatlichen und sozialen Ordnung zu verbessern. Wir wollen mit euch gemeinsam eine neue Verfassung schaffen, die das Wirtschafts- und Gesellschaftsleben in Deutschland nach demokratischen Lebensgesetzen neu ordnet."

Der DGB habe vor der Welt den Wunsch auf Wiedervereinigung vertreten. Die Westmächte hätten dazu wiederholt ihre Bereitschaft bekundet, während es die Sowjetunion an gutem Willen habe fehlen lassen. Die ungarische Freiheitsbewegung und die Unruhe in den übrigen Satellitenstaaten habe der SED-Oberschicht gezeigt, auf wie schwachen Füßen ihre Macht stehe.

Kurz berichtet

Der bisher größte Transport mit 320 Aussiedlern aus den deutschen Ostgebieten traf am Samstag in Büchen ein.

Ein Christlicher Gewerkschaftsbund Deutschlands (CGD) ist am Sonntag in Saarbrücken als Dachorganisation aller Berufsverbände der christlichen Gewerkschaften gegründet worden.

Hitlers Tod ist am Freitag vom Standesamt Berlin-Dahlem mit der Eintragung in das „Buch für Todeserklärungen" amtlich beglaubigt worden.

Der erste Botschafter Marokkos in der Bundesrepublik, Dr. Abdelatif Benjamin, ist am Samstag von Tanger nach Bonn abgereist.

Die Gespräche mit der FDP fortsetzen will die Ostzonen-LDP auch im Jahre 1957, erklärte LDP-Vorsitzender Dr. Loch in Ostberlin.

Im Rahmen eines Jugendtouristenaustausches werden im kommenden Jahr 10 000 Jungen und Mädchen aus der Sowjetzone die Sowjetunion besuchen.

Die im Montblanc-Gebiet vermißten Bergsteiger Vincendon und Henry sind am Wochenende gefunden und durch Hubschrauber mit einem Zelt und Proviant versorgt worden.

Dem britischen Teilungsplan für die Insel Zypern hat der türkische Ministerpräsident Menderes in einer Erklärung vor dem türkischen Parlament zugestimmt.

Die Rückgabe des Eigentums von fünf gemeinnützigen deutschen Schul- und Erziehungsvereinigungen in Argentinien hat die Regierung in Buenos Aires jetzt angeordnet.

In einen Hungerstreik trat der bolivianische Staatspräsident Silas Zuazo, um einen von den Gewerkschaften ausgerufenen Streik in den Zinngruben zu verhindern. Unter dem moralischen Druck dieser gewaltlosen Demonstration gaben die Gewerkschaften nach. (AP/dpa)

Wirtschafts-Chaos in Ungarn

Regierung versucht, mit Auslandskrediten Situation zu retten

BUDAPEST (AP/dpa) Ungarn sieht sich zum Jahreswechsel einer Wirtschaftskatastrophe gegenüber. Die ungarische Regierung bemüht sich, der angespannten Lage durch Hauseinsparungen, Aufnahme von Anleihen im Ausland, Reorganisation der Verwaltung, Entlassung von Beamten und Angestellten sowie durch erhöhte Einfuhren Herr zu werden. Der ungarische Finanzminister Kossa erklärte, da die Produktion infolge von Energiemangel und Rohstoffmangel gedrosselt werden müsse und 30 000 Verwaltungsangestellte entlassen würden, müsse man damit rechnen, daß in den nächsten Wochen insgesamt 250 000 Menschen arbeitslos werden.

Die ungarische Regierung hat inzwischen Verhandlungen mit Rumänien, Bulgarien, der Tschechoslowakei und der deutschen Sowjetzone über die Gewährung von Anleihen aufgenommen. Ein Kreditgesuch wurde auch an China gerichtet, Verhandlungen mit Polen und Jugoslawien sollen in Kürze aufgenommen werden. Auch mit westlichen Ländern will Ungarn über Kredite verhandeln. Die Sowjets haben unterdessen weitere Truppenverbände aus Budapest abgezogen. Nur vor dem Parlamentsgebäude, der Sowjetbotschaft und einigen anderen Gebäuden stehen noch Sowjetpanzer.

„Es gibt verschiedene Wege"

WARSCHAU. (dpa) Die kommunistischen Parteien Polens und Jugoslawiens haben mehrtägige Besprechungen in Warschau mit der Feststellung abgeschlossen, daß verschiedene Länder den Sozialismus auf verschiedenen Wegen erreichen können. Sie haben außerdem beschlossen, in Zukunft enger als bisher zusammenzuarbeiten.

Tschu en Lai traf Nehru

NEU DELHI (AP). Der chinesische Ministerpräsident Tschu en Lai ist nach Beendigung seines Besuches in Ost-Pakistan wieder in Neu Delhi eingetroffen, um weitere politische Gespräche mit seinem indischen Kollegen Nehru zu führen, der ihn am Flugplatz begrüßte. Tschu, der am 7. Januar nach Moskau und Warschau reisen wird, will sich vorher noch über die Gespräche unterrichten lassen, die Nehru in Washington und London mit dem amerikanischen Präsidenten und dem britischen Premierminister Eden geführt hat.

Streik-Ende in Sicht

KIEL (dpa). Eine kaum erwartete Neujahrsbotschaft zeichnet sich für Schleswig-Holstein ab: Das Ende des längsten und umfangreichsten Streiks in der Metallindustrie nach Kriegsende ist in Sicht. Beide Sozialpartner rechnen damit, daß die von ihnen gemeinsam angerufene freiwillige Schlichtungsstelle während ihrer dritten Sitzung am Montag einen Vergleichsvorschlag formuliert. Der Kieler Arbeitsrechtler Prof. Nikisch erhofft sogar einen einstimmigen Beschluß der Schlichtungskommission. Bei entsprechendem Ergebnis der Urabstimmung, die Ende der kommenden Woche stattfinden könnte, kann nach Ansicht des Kieler IG-Metall-Vorsitzenden. Willumeit, am 9. Januar die Arbeit wieder aufgenommen werden.

Wetterkapriolen zum Jahresende

Glatteis legte im Bundesgebiet vielfach den Verkehr lahm

HAMBURG (dpa). Der Winter hat zum Jahresende die Bundesrepublik mit einem wenig erfreulichen Silvesterscherz überrascht. Milde Luftmassen drängten in der Nacht zum Samstag plötzlich die Frostgrenze nach Nordosten zurück und führten verbreitet zu Schnee- und Regenfällen. Auf den Straßen bildete sich sofort starkes Glatteis, so daß der Verkehr in vielen Teilen des Bundesgebietes stark gestört oder sogar lahmgelegt wurde.

In kurzer Zeit ereigneten sich zahlreiche Verkehrsunfälle, bei denen erheblicher Sachschaden entstand. Vielfach bildeten sich kilometerlange Autokolonnen, weil Fahrzeuge die Strecke blockierten. Straßenbahn- und Omnibuslinien fielen aus. Polizei und Streukommandos waren pausenlos unterwegs, um den Verkehr wieder in Fluß zu bekommen.

Autobahnen schwer befahrbar

Die Autobahnstrecke Helmstedt — Berlin, die am Samstag von der Volkspolizei wegen Glatteis für jeden Verkehr gesperrt worden war, wurde Sonntag vormittag wieder freigegeben. Vor dem Kontrollpunkt in Helmstedt hatten sich über 100 Fahrzeuge angesammelt. Auch auf fast allen anderen Autobahnstrecken mussen die Fahrer noch sehr vorsichtig sein.

Die Wintersportverhältnisse sind unterschiedlich. Von den höheren Lagen wurden noch bis zu vierzig Zentimeter Schnee gemeldet. Im Sauerland schneite es am Samstag ununterbrochen.

Heute auf Seite 5: Atomwetter über Nordhessen

HERSFELDER Nachrichten

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Einzelpreis 30 Pfennig

Redaktion und Geschäftsstelle: Bad Hersfeld, Johannesstr. 9, Ruf: 947
Monatsbezugspreis: DM 3,75 einschl. DM 0,56 Zustellgeb. Im Postbezug DM 3,25 einschl. Postzeitungsgeb. zuzüglich DM 0,54 Zustellgeb. Im Streifbandversand DM 3,25 zuzüglich Porto. Postscheckkonto: Frankfurt a. M. Nr. 28 168. Anzeigenpreis: Jeder Millimeter der 13spalt. Seite DM 0,10. Im Falle höherer Gewalt oder bei Störungen des Betriebes bzw. auf dem Versandwege, bei Streik, Verbot usw. besteht kein Anspruch auf Kürzung bzw. Erstattung des Bezugsgeldes. Postverlagsort Kassel.

Nummer 176 — Samstag, 28. Juli 1956 — 12. Jahrgang

Suez-Kanal-Enteignung führt zur Weltkrise

Fieberhafte Tätigkeit im Westen – Suez-Zone jetzt Militärgebiet – Wird ein neuer Kanal gebaut? – Oelindustrie befürchtet ähnliche Maßnahmen

LONDON (AP/dpa). Die Verstaatlichung der internationalen Suezkanalgesellschaft durch Aegypten hat über Nacht eine weltpolitische Krise hervorgerufen. In den westlichen Hauptstädten wurde in dringlichen Konsultationen und eiligst anberaumten Konferenzen versucht, gemeinsame Maßnahmen zu vereinbaren, um die bedroht geglaubten Interessen der Weltschiffahrt und der Oelversorgung zu schützen. Großbritannien hat in einer Note energisch Verwahrung eingelegt. Der französische Außenminister Pineau hat in schärfster Form protestiert und das ägyptische Vorgehen als „Raubakt" bezeichnet. In auffälligem Gegensatz dazu hat das amerikanische Außenministerium nur auf die weitreichende Bedeutung der Enteignung hingewiesen. Großbritannien und Frankreich betrachten die Enteignung als einen Willkürakt und verweisen darauf, daß die 99jährige Konzession noch bis zum Jahre 1968 läuft. Meldungen aus Washington ist zu entnehmen, daß Großbritannien sich bemüht, die USA zu gemeinsamem Handeln zu veranlassen. Als wahrscheinliche Maßnahme wird eine Anrufung des Sicherheitsrates angesehen.

Aegypten hat, wie wir bereits im größten Teil unserer Auflage berichteten, die Verstaatlichung der Gesellschaft vollstreckt und inzwischen durch Sonderbeauftragte alle Gebäude der Kanalgesellschaft ohne Zwischenfälle übernommen. Zum neuen Generaldirektor der staatlichen ägyptischen Suezkanal-Gesellschaft wurde der frühere Wirtschaftsminister Dr. Helmi Badawi ernannt. Die Angestellten dürfen vorläufig nicht kündigen und werden von der neuen Gesellschaft — die europäischen Fachkräfte eingeschlossen — übernommen.

Zur Sicherung der Uebernahme und des Schiffsverkehrs, der reibungslos weiterläuft, wurde die Kanalzone zum Militärgebiet erklärt. Handlungen gegen die Gesellschaft werden nach dem Militärstrafgesetzbuch geahndet.

Der ägyptische Handelsminister machte unter dem Hinweis auf die Verstaatlichung der anglo-iranischen Oelgesellschaft geltend, daß eine solche Enteignung im modernen Völkerrecht anerkannt sei. Aegypten habe keinerlei Absicht, den Schiffsverkehr zu behindern. Außerdem sei den Aktionären eine Entschädigung nach dem Börsenkurs einen Tag vor der Verstaatlichung garantiert worden. Er wies jedoch mit Nachdruck darauf hin, daß die Entschädigung nur erfolge, wenn Aegypten Guthaben und Vermögenswerte der Gesellschaft, die mit der Bekanntgabe der Verstaatlichung in aller Welt gesperrt wurden, anstandslos übernommen habe. Damit nahm er zu der Aufforderung der bisherigen Direktoren an alle Banken und Büros der Gesellschaft Stellung, den Weisungen Aegyptens nicht zu folgen.

Schritt zu begegnen. Dabei tauchte der Plan eines zweiten Kanal-Baus auf, der vom Mittelmeer durch Israel an den Golf von Akaba im Roten Meer führen soll. Ferner wurde der Bau neuer Oelleitungen an die Mittelmeerküste, damit auf diesem Weg die Oelversorgung Europas auf dem kürzesten Wege gesichert ist, besprochen.

Kurseinbrüche und Nervosität

LONDON/PARIS/NEW YORK (AP/dpa). Mit spürbarer Nervosität, Unsicherheit und Kurseinbrüchen für die Oelwerte reagierten die internationalen Wertpapierbörsen am Freitag auf die Nachricht von der Verstaatlichung der Suezkanal-Gesellschaft.

An der Wallstreet in New York fielen die Oelwerte um bis zu drei Dollar je Stück, während in London der Wert der zum Handel zugelassenen Aktien der British Petroleum, Burmah Oil und Shell Companies um 60 Millionen Pfund fiel. Die Stammaktien der Gesellschaft fielen in London auf ihren Nennwert, sodaß An- und Verkäufe an der Pariser Börse eröffneten die Suezkanalaktien mit nur 73 000 gegenüber 92 000 Francs vom Vortage. Gleichzeitig zogen die Goldpreise in Paris scharf an. (Siehe auch Seite 2.)



Europa, Asien und Afrika … sich am Suez-Kanal. Die auf 170 km durch öde Wüste führende Kanalstrec… …rt der Seefahrt den bis zu 10 000 km langen Umweg um das Kap der Guten Ho… (Entnommen dem im Hoffmann und Campe Verlag, Hamburg, erschienenen B… „Das Bild der Erde").

Zufahrt zum Nahen Osten bedroht

Die britische und die französische Regierung, die sich im Besitz der Aktienmehrheit der bisherigen Kanalgesellschaft befanden, sind in einer schwierigen Lage. Abgesehen von den vermögensrechtlichen Folgen richtet sich ihre Besorgnis vor allem auf die ungehinderte Zufahrt zu den Oelgebieten des Nahen Ostens, Südasiens und den britischen Dominions.

Daneben müssen sie damit rechnen, daß Präsident Nassers Vorgehen die arabischen Staaten zu ähnlichen Enteignungsmaßnahmen gegenüber der Oelindustrie ermöglicht bzw. dem Nationalgefühl der Araber in Algerien neuen Auftrieb gibt.

Arabische Welt feiert Nasser

Die arabischen Staaten billigten den Schritt Nassers einhellig. Es wurde erklärt, es sei das „gute Recht" Aegyptens, die Gesellschaft zu verstaatlichen. Von der Bevölkerung des Libanon wurde Nasser wie ein „Held" verehrt. Der Parlamentsvorsitzende Osseiran bezeichnete den Schritt als gigantische Tat, der andere arabische Staaten folgen könnten.

In amtlichen Kreisen Israels wurde erklärt, die ägyptischen Maßnahmen leiteten wahrscheinlich eine bedeutende Entwicklung im Nahen Osten ein.

In politischen und Fachkreisen Großbritanniens wurden bereits konkrete Maßnahmen erörtert, um dem ägyptischen



Erschütternde Szenen

spielten sich am Freitag im New Yorker Hafen ab, als die Geretteten von dem am Donnerstag im Atlantik gesunkenen italienischen Luxusdampfer „Andrea Doria" eintrafen. Hier schließt Frau Anna Cappoli ihren 16 Monate alten Luigi vor Freude schluchzend in die Arme. Das Kind war während der Katastrophe verloren gegangen und befand sich im letzten Rettungsschiff. Auch die stark beschädigte „Stockholm" ist inzwischen in New York angekommen. Nach den letzten Zählungen werden noch 46 Personen vermißt. Die Zahl der Todesopfer hat sich auf acht erhöht. (Eine Sonderseite über die Katastrophe heute im Inneren der Ausgabe.) (AP-Bild)

US-Meteorologe: Atombomben beeinflussen das Wetter nicht

WIESBADEN (LH). „Das einzige Normale am Wetter ist, daß es stets irgendwo in der Welt nicht normal ist." Mit dieser Feststellung begegnete der Chef des Wetterdienstes der US-Luftwaffe, General Moorman jr., am Freitag in Frankfurt Fragen nach einem möglichen Einfluß der Kernwaffenversuche auf das Wetter. Der Mensch neige immer dazu, für abnormales Wetter einen Schuldigen zu suchen, aber ein Einfluß der Atomversuche auf das Wetter sei schon deshalb unwahrscheinlich, weil „natürliche Explosionen wie Gewitter wesentlich stärkere Energien entwickelten als die Bomben." — (Zu diesen Fragen finden Sie eine ganze Sonderseite in den heutigen HN.)

Minister Blank wirbt um die „weißen Jahrgänge"

BONN (AP). Die Freiwilligenwerbung des Bundesverteidigungsministeriums konzentriert sich jetzt auf die „weißen Jahrgänge" (1927 bis 1937), damit in der Bundeswehr ein gleichmäßiger Altersaufbau bei Soldaten und Offizieren gesichert wird. Den Angehörigen dieser Jahrgänge werden deshalb bessere Beförderungsmöglichkeiten und bessere Besoldung geboten.

Bauland kann enteignet werden

Preusker erläutert die Grundzüge des neuen Bundesbaugesetzes

Von unserer Bonner Redaktion

BONN (HN). Das Bundeskabinett verabschiedete jetzt den Entwurf eines Bundesbaugesetzes, das Wohnungsbauminister Preusker als einen Markstein auf dem Gebiete der Baugesetzgebung bezeichnete. Das Gesetz soll die Grundlage für die Auswertung des Grund und Bodens in der Bundesrepublik werden. Es regelt einheitlich die gesamte Planung, die Bodenordnung, die Enteignung, das Erschließungsrecht und die Grundstückswertschätzung für das Bundesgebiet.

Das Baugesetz soll Städten und Gemeinden klare gesetzliche Grundlagen geben. Es sieht vor, daß Städte und Gemeinden Bauleitpläne aufstellen. Diese Planung gliedert sich in einen Flächennutzungsplan, der das Gebiet nach den Arten der Bodennutzung gliedert, den Gesamtaufbauplan und den eigentlichen Bebauungsplan, der die Einzelheiten regelt.

Enteignung als letztes Mittel

Es können Veränderungssperren verhängt werden, die den Grundstückseigentümern jede Veränderung ihrer Grundstücke untersagt. Außerdem sind eine Reihe von Maßnahmen vorgesehen, damit die Gemeinden ihre Pläne tatsächlich verwirklichen können. Das letzte Mittel ist die Enteignung. Die Enteignungsbestimmungen ersetzen das Baulandbeschaffungsgesetz. Die Enteigneten werden künftig nach dem Verkehrswert des Grundstückes entschädigt.

Bundesregierung ist über Conant verärgert

Er wird wahrscheinlich abgelöst – Zu späte Informierung Bonns über strategische Pläne der USA

Von unserer Bonner Redaktion

BONN (HN). In Bonn hält man es für möglich, daß der amerikanische Botschafter in Bonn, Conant, nach Beendigung seines jetzigen Urlaubs bald von einem anderen amerikanischen Diplomaten abgelöst wird. Regierungskreise haben vor allem deshalb Kritik an Conant geübt, weil er den Bundeskanzler und die Regierung nicht frühzeitig genug über die amerikanischen Pläne zu einer neuen Strategie und zur Verminderung der Landtruppen informiert habe. In diesem Zusammenhang wird gesagt, nur dadurch hätte es geschehen können, daß sich jetzt in aller Oeffentlichkeit ein zu starker Gegensatz zwischen Bonn einerseits und Washington sowie London andererseits habe entwickeln können. (Auf die Zwangsläufigkeit einer neuen strategischen Entwicklung der USA wurde in den HN bereits am 21. April dieses Jahres ausführlich hingewiesen Red. HN).

Für den Abzug einer britischen Panzerdivision aus der Bundesrepublik setzte sich am Freitag in Bonn der FDP-Vorsitzende Dr. Dehler und der FDP-Wehrexperte Dr. Mende ein.

Es sei töricht, wie es die Bundesregierung bisher tue, sich gegen den Abzug alliierter Truppen zu wenden. Dies liege vor allem im deutschen Interesse, weil dadurch Raum für die neuen Truppen frei werde, der sonst gar nicht mehr vorhanden sei. Die Sicherheit der Bundesrepublik werde nicht geschwächt, wenn Zug um Zug deutsche Soldaten an die Stelle der alliierten Truppen träten.

Dr. Dehler stellte drei Grundforderungen auf:

- Entscheidungsfreiheit des wiedervereinigten Deutschlands über seine militärischen Bindungen.
- Errichtung einer Entspannungszone auf deutschem Boden, die entweder entmilitarisiert oder „militärisch verdünnt" sein müsse und
- Abschluß eines europäischen Sicherheitsbündnisses.

Hilfe für Hochwassergeschädigte

Mittel aus dem Bundesernährungsministerium sind vorgesehen

Von unserer Bonner Redaktion

BONN (HN). Die Bundesregierung werde alles tun, um den durch die Ueberschwemmungskatastrophen geschädigten Bauern in der Bundesrepublik zu helfen und die verursachten Schäden in der Landwirtschaft zu mildern. Diese Versicherung hat Bundesernährungsminister Lübke am Freitag von Bonn aus dem deutschen Bauernverband gegenüber abgegeben. Wie verlautet, will das Bundesernährungsministerium zunächst aus seinem Etat Mittel für besonders betroffene Gebiete bereitstellen, bis ein Hilfsprogramm der Bundesregierung anlaufen kann.

In seinem Schreiben an den Bauernverband erklärte Lübke, bereits jetzt sei eine Verlängerung der Ernteschadenskredite von 1954 für die jetzt wieder schwer geschädigten Gebiete sowie eine Steuerstundung vorgesehen, die allerdings beantragt werden müßte.

Die hessische Regierung stellte zur Beseitigung der Unwetterschäden in Nordhessen dem Regierungspräsidenten von Kassel 3 Millionen DM zur Verfügung. Eine Million wurde außerdem zur Behebung der landwirtschaftlichen Schäden im engeren Sinne bereitgestellt.

Gelsenkirchener Taubendieb gesteht

Das Motiv für seine Tat: Wirtschaftliche Schwierigkeiten

GELSENKIRCHEN (AP/dpa). Nach tagelangen Vernehmungen gestand am Freitag der 35jährige Hilfsarbeiter Schonoff aus Gelsenkirchen, daß er einem Taubenzüchter sechs wertvolle Reisetauben gestohlen und ihn dann zu erpressen versucht habe. Als Motiv für seine Tat gab er wirtschaftliche Schwierigkeiten an, in die er durch Krankheit geraten sei.

Schonoff war am vergangenen Sonntag in einer Großaktion, der Zehntausende von Zuschauern beiwohnten und an der drei Flugzeuge und 14 Streifenwagen teilnahmen, durch eine eigene Taube entlarvt worden. Diese Taube hatte Schonoff dem bestohlenen Züchter zum Transport des Lösegeldes geschickt.

Am Sonntag war die Taube, mit bunten Bändern kenntlich gemacht, freigelassen worden. Sie flog prompt ihren Heimatschlag an. Schonoff wurde dann festgenommen. Aber er leugnete die Tat bis Freitag.

Hanauer Wohnungskrieg beendet

HANAU (AP). Im Hanauer Wohnungskrieg wurde am Freitag ein Kompromiß geschlossen. Die 31jährige Lehrerin Schmitz-Schlagloth räumte den seit Juni von ihr besetzten Keller ihres beschlagnahmten elterlichen Wohnhauses in der Villensiedlung „Hohe Tanne" bei Hanau. Am Montag soll eine amerikanische Familie in das Haus einziehen. Die Lehrerin faßte diesen Entschluß, nachdem ihr von den Amerikanern zugesichert wurde, das beschlagnahmte Haus bis September freizugeben.

Kurz berichtet

An den Grenzen von 1937 hält die Bundesregierung fest. Das wurde in Bonn zu der Aeußerung des sowjetischen Ministerpräsidenten Bulganin in Kattowitz erklärt, Schlesien sei jetzt für immer ein Teil Polens.

Gestorben ist der stellvertretende Vorsitzende der Deutschen Postgewerkschaft, SPD-Bundestagsabgeordneter Ziegler, in einem Hamburger Krankenhaus.

Zurückgegeben wurde das ungarische Flugzeug, mit dem am 13. Juli nach einem dramatischen Kampf in den Lüften eine Gruppe ungarischer Flüchtlinge nach Westdeutschland geflohen war.

In Kraft gesetzt wird am 1. August 1956 im Saargebiet das deutsche Strafgesetzbuch, verlautete aus Saarbrücken.

Eine Einigung zwischen den Gewerkschaften und den Arbeitgebern wurde jetzt in dem seit 27 Tagen andauernden Streik der amerikanischen Stahlarbeiter erzielt. Das formelle Ende des Ausstandes soll Anfang nächster Woche bekanntgegeben werden. (AP/dpa)

HERSFELDER Nachrichten

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Einzelpreis 30 Pfennig

Redaktion und Geschäftsstelle: Bad Hersfeld, Johannesstr. 9, Ruf: 947
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Nummer 194 | Samstag, 18. August 1956 | 12. Jahrgang

Das Bundesverfassungsgericht in Karlsruhe entschied:

Die KPD ist verboten

Die Tarnorganisationen sind von diesem Urteil jedoch nicht direkt berührt

KARLSRUHE (HN/AP/dap). „Im Namen des Volkes" hat der Erste Senat des Bundesverfassungsgerichts in Karlsruhe am Freitagmorgen die seit 1945 wieder bestehende Kommunistische Partei Deutschlands auf Antrag der Bundesregierung für verfassungswidrig erklärt und verboten. Gleichzeitig wurde die Auflösung aller ihrer Organisationen verfügt, die Gründung von Ersatzorganisationen unter Strafe gestellt und das Vermögen der Partei für gemeinnützige Zwecke eingezogen. Das Urteil stellt jedoch ausdrücklich fest, daß sich das Verbot nicht auf die sogenannten Tarnorganisationen erstreckt, da diese nicht unter die Bestimmungen des Grundgesetzartikels 21 fallen. Soweit diese Vereinigungen die verfassungsmäßige Ordnung verletzten, könnten sie nach Artikel 9 des Grundgesetzes verboten werden. Das Verbot der KPD bleibt auch auf Westberlin zumindest zunächst ohne Einfluß, da es dort die KPD nicht gibt. An ihrer Stelle ist in allen drei Westsektoren von den Alliierten die SED zugelassen. Für ein Vorgehen gegen diese Partei sieht der Westberliner Justizsenator jedoch keinen Anlaß. Die KPD ist die zweite Partei, die vom Bundesverfassungsgericht für illegal erklärt wurde, nachdem vor vier Jahren bereits auf Beschluß des Gerichts die rechtsradikale SRP als verfassungswidrige Organisation aufgelöst wurde.

Die Verlesung der 425 Schreibmaschinenseiten umfassenden Urteilsbegründung im Karlsruher KPD-Prozeß dauerte rund zwei Stunden und wurde abwechselnd von dreien der zehn anwesenden Richter des Senats vorgenommen. Darin heißt es u. a., daß weder das Potsdamer Abkommen noch das Gebot der Wiedervereinigung das Verfahren behindern konnte.

Maßgebend für das Urteil sei das Endziel der KPD gewesen, die sozialistisch-kommunistische Gesellschaftsordnung auf dem

Schröder: keine Hexenjagd

Nur Hauptfunktionäre und ihre Hintermänner sind betroffen

In einer Stellungnahme zum Karlsruher Urteil versicherte Bundesinnenminister Dr. Schröder in Bonn, die Bundesregierung beabsichtige nicht, strafrechtlich gegen diejenigen vorzugehen, die sich der KPD angeschlossen haben, ohne deren verfassungsfeindliche Bestrebungen nennenswert zu fördern. Es sei lediglich beabsichtigt, Hauptfunktionäre und die wichtigsten Hintermänner auszuschalten. Es werde keine Hexenjagd auf Kommunisten geben. Die Wiedervereinigung werde nach Ansicht der Bundesregierung durch das Verbot nicht erschwert, denn einem gesamtdeutschen Wahlgesetz bleibe trotz des Urteils vorbehalten, die Kommunistische Partei zu gesamtdeutschen Wahlen wieder zuzulassen. Der Bundesregierung sei aber nun die rechtliche Handhabe gegeben, der kommunistischen Gefahr wirksam zu begegnen. Mit dem Urteil sei auch die Grenze des freiheitlichen Rechtsstaates gegen den Linksradikalismus in der Bundesrepublik abgesteckt, wie dies durch das SRP-Verbot für den Rechtsradikalismus geschehen sei.

Nachteilige Auswirkungen des Urteils auf die deutsch-sowjetischen Beziehungen hält Schröder ebenfalls nicht für wahrschein-

Protestkampagne in der Zone

Schon bevor die Urteilsbegründung in

Was bedeutet TUT - AF 633?

Sie finden die Aufklärung in unserer heutigen Nummer, die auf zwei Sonderseiten ein vollständiges Verzeichnis der neuen amtlichen Kennzeichen für Kraftfahrzeuge in der Bundesrepublik und in der Sowjetzone enthält. Falzen Sie die Seiten bitte an den als 1., 2. und 3. Falz bezeichneten Stellen, und Sie erhalten ein handliches Taschenheft, das Ihnen immer Auskunft gibt, woher ein Kraft-



Vor dem Haus der hessischen KP-Leitung in Frankfurt

rückte Punkt 12 Uhr am Freitag ein kleines Kommando der Schutzpolizei mit etwa 30 Kriminalbeamten an. Das Parteihaus, die Redaktionsräume und der Verlag der kommunistischen „Sozialistischen Volkszeitung" wurden polizeilich geschlossen. (dpa-Bild)

Polizei fand leere Schränke

Nur in Braunschweig wurden noch Mitgliederlisten beschlagnahmt

Schon kurz nach Verkündung des Urteilsspruches in Karlsruhe setzte am Freitagvormittag im gesamten Bundesgebiet schlagartig die Polizeiaktion zur Schließung der KPD-Büros ein. Bereits kurz nachdem aus den Fernschreibern des KPD-Zentralorgans „Freies Volk" in Düsseldorf das Verbotsurteil tickte, verließen die Funktionäre des Parteivorstandes in der Ackerstraße ihre Diensträume. Es handelte sich jedoch nur noch um Angehörige der zweiten Parteigarnitur, Mitglieder des Bundesvorstandes waren schon am Freitagmorgen in Düsseldorf nicht mehr gesehen worden. Trotz des Verbots arbeitete die Belegschaft der Zeitung zunächst weiter. Um elf Uhr wurden aus den Fenstern der KPD-Gebäude demonstrativ rote Fahnen herabgelassen. Quer über die Vorderfront wurde ein breites Transparent mit der Aufschrift „Trotz Verbot — KPD bleibt" gespannt. Erst um elf Uhr waren plötzlich die Telefonanschlüsse der Zentrale tot. Polizei besetzte kurz darauf die Gebäude.

Auch in den anderen Landeshauptstädten wurden die Geschäftsräume der KPD etwa

gaben des Bundesinnenministeriums betrug ihre Mitgliederzahl zuletzt 70 000. Zur

HERSFELDER Nachrichten

Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Einzelpreis 20 Pfennig

Redaktion und Geschäftsstelle: Bad Hersfeld, Johannesstr. 9. Ruf: 947
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Nummer 245 — Mittwoch, 17. Oktober 1956 — 12. Jahrgang

Blücher (FVP) bleibt Vizekanzler

Blank, Neumayer, Schäfer und Kraft erhielten ihren Abschied - Strauß (CSU) Verteidigungsminister

BONN (BN/AP/dpa). Die seit Monaten diskutierte Verkleinerung und Umbildung des Bundeskabinetts ist am Dienstag vollzogen worden. Auf Vorschlag von Bundeskanzler Adenauer hat Bundespräsident Heuss Verteidigungsminister Blank, Justizminister Neumayer, Mittelstandsminister Schäfer und Sonderminister Kraft von ihren Aemtern entbunden. Heuss sprach den scheidenden Ministern dabei Dank und Anerkennung für die dem deutschen Volke geleisteten treuen Dienste aus. Als Nachfolger für Blank ernannte der Bundespräsident den bisherigen Atomminister Strauß zum Verteidigungsminister. Der bisherige Postminister Balke wurde Atomminister, wird dabei aber bis auf weiteres sein altes Ressort beibehalten. An Stelle von Neumayer hat von Merkatz, der gleichzeitig das Bundesratsministerium beibehält, das Justizministerium mit übernommen. Vizekanzler blieb Minister Blücher, der auch sein Ressort für wirtschaftliche Zusammenarbeit behält. Die bis zur letzten Stunde umlaufenden Gerüchte, daß Bundesaußenminister von Brentano diesen Posten übernehmen würde, haben sich damit nicht bestätigt. Diese Entscheidung hat in Bonn allgemein überrascht. Sie wurde dem Vernehmen nach getroffen, da bei den vorangegangenen Besprechungen kein Einvernehmen zwischen den Ressorts Wirtschaft, Finanzen, Ernährung und Wohnungsbau über den bei einem Ausscheiden Blüchers erforderlich werdenden neuen Vorsitz im Wirtschaftskabinett erzielt werden konnte. Den Vorsitz im Verteidigungsrat, den bisher Strauß innehatte, wird wahrscheinlich Bundesinnenminister Dr. Schröder übernehmen. Offen geblieben ist lediglich die Frage, ob und wann Arbeitsminister Storch aus dem Kabinett ausscheidet.

Kurz berichtet

Handelsgespräche zwischen Frankreich und der Sowjetunion finden gegenwärtig in Paris statt. Sie dienen der Vorbereitung eines langfristigen Handelsabkommens zwischen Paris und Moskau.

Protestiert hat die italienische Regierung bei der österreichischen Regierung gegen die Wiener Südtirol-Kundgebung am vergangenen Samstag. Durch solche Kundgebungen werde das diplomatische Gespräch zwischen den beiden Regierungen über die Südtirolfrage gestört.

Die Leiche des britischen Offiziers Hill wurde in den Bergen im Norden Zyperns gefunden. Damit wurde bestätigt, daß die zyprische Untergrundbewegung Eoka im Mai Vergeltung für die Hinrichtung zweier zyprischer Untergrundkämpfer übte. Hill war damals mit seinem Kameraden Shilton in die Hände der Eoka gefallen. Von Shilton fehlt noch jede Spur.

Eine weitgehende Zusammenarbeit vereinbarten die Gewerkschaften Polens und Jugoslawiens, wurde in Warschau bekannt.

Wieder „Genosse" genannt wurde der frühere polnische KP-Chef Gomulka, der 1948 wegen „Titoismus" von Parteifunktionen entbunden wurde, jetzt als er in Warschau an einer Sitzung des Politbüros teilnahm.

Aufgedeckt haben wollen die rotchinesischen Behörden einen geplanten Anschlag von Nationalchinesen in Kanton. Danach sollten am chinesischen Nationalfeiertag, als die Unruhen in Hongkong ausbrachen, alle öffentlichen Gebäude in Kanton in Brand gesetzt und in die Luft gejagt werden. (AP/dpa)

Außer dem Bundeskanzler besteht das Bundeskabinett damit noch aus folgenden 15 Ministern:

Vizekanzler Blücher/FVP (Ministerium für wirtschaftliche Zusammenarbeit)
v. Brentano/CDU (Außenminister)
Schröder/CDU (Innenminister)
v. Merkatz/DP (Justiz- und Bundesratsminister)
Schäffer/CSU (Finanzminister)
Strauß/CSU (Verteidigungsminister)
Erhard/CDU (Wirtschaftsminister)
Lübke/CDU (Ernährungsminister
Storch/CDU (Arbeitsminister)
Seebohm/DP (Verkehrsminister)
Balke/CSU (Post- und Atomminister)
Preusker/FVP (Wohnungsbauminister)
Oberländer/CDU (Vertriebenenminister)
Kaiser/CDU (Minister für gesamtdeutsche Fragen)
Würmeling/CDU (Familienminister)

Kanzler begründet Umbildung

Am gleichen Abend begründete der Bundeskanzler in einer Rundfunkansprache die Umbildung des Bundeskabinetts damit, daß die immer noch steigende Vielfalt der inneren und äußeren Probleme zu einer Straffung der Arbeit des Kabinetts zwinge, damit die Einheit und die Uebersichtlichkeit der Regierungsgeschäfte gewahrt bleibt. Im politischen Leben jedes Volkes drängen unablässig neue Kräfte nach vorn. Sie dem staatlichen Leben zunutze zu machen, gehört zu den wichtigsten Aufgaben der verantwortlichen Regierungschefs".

„Unsere Politik wird fortgeführt"

Der Kanzler betonte gleichzeitig, daß es sich bei der Kabinettsumbildung nicht um eine grundsätzliche Aenderung in den politischen und wirtschaftlichen Zielen handele, sondern „um eine Fortführung unserer gradlinigen Politik mit teilweise erneuerten Kräften". Adenauer dankte den scheidenden Ministern und unterstrich, die Regierungsumbildung würde mißverstanden werden, wenn man glaube, sie sei das Resultat von Verärgerung oder von der Feststellung irgendwelcher tiefgreifender Mißstände oder die Erkenntnis von mangelnden Fähigkeiten.

Neuer Kurs der Wehrpolitik

Ausrichtung auf die Erfordernisse des Atomzeitalters

Wie am Dienstagabend in Bonn bekannt wurde, hat Bundesverteidigungsminister Strauß vor der Uebernahme seines neuen Amtes in einem Brief an den Bundeskanzler eine Umstellung der Verteidigungsplanung der Bundesrepublik angeregt, durch die eine Ausrichtung der Bundeswehr auf die Erfordernisse der modernen Atomkriegführung gewährleistet werden soll. Er will auch die Organisation des Verteidigungsministeriums und der Spitzengliederung der Bundeswehr überprüfen. Aus der Umgebung von Strauß verlautet, der Minister vertrete den Standpunkt, daß man die Einberufung von Freiwilligen zu Beginn des nächsten Jahres stoppen müsse, wenn man zum 1. April 30 000 Wehrpflichtige einziehen wolle. Wenn alle alliierten Zusagen auf Kasernen-Räumungen erfüllt würden, sei es gerade möglich, die 96 000 Freiwilligen, die bis Ende 1956 eingezogen werden sollen, und 30 000 Wehrpflichtige zum 1. April 1957 unterzubringen. Würde man jetzt noch mehr Freiwillige einberufen, werde es nicht möglich sein, später Kasernen für die Wehrpflichtigen zu finden.

In einer Sitzung der CDU/CSU-Fraktion sicherte Blank seinem Amtsnachfolger Strauß am Dienstagabend jede Unterstützung zu, deren er fähig sei. In der Wehrpolitik gehe es nicht um Personen, sondern um die Sache. Er erntete in Gegen- [illegible] Fraktionsmitglieder.

Adenauer selbst begründete auf der gleichen Fraktionssitzung den Wechsel im Verteidigungsministerium mit internationalen und innenpolitischen Gründen. Er — Adenauer — habe in der letzten Zeit die Ueberzeugung gewonnen, daß es Blank nicht mehr gelingen werde, die seit dem Scheitern der EVG sich sowohl international wie innenpolitisch verstärkenden Widerstände gegen die Bundeswehr zu überwinden.

Die Koalition ist zufrieden

Während die Koalitionsparteien mit der Umbildung des Kabinetts zufrieden sind, stellte die SPD fest, es handelte sich um [illegible] fähigkeit der bisherigen Regierung. Die einzige ernsthafte Wechsel sei im Verteidigungsministerium zu verzeichnen. Die FDP nannte die gesamte Umbildung politisch nicht mehr entscheidend und wenig interessant. Der BHE kommentierte, das Schiff gehe weiter auf dem alten Kurs und der Ministerwechsel sei keine Gewähr dafür, daß dieser Kurs erfolgreicher werde als der bisherige. (Siehe auch Leitartikel Seite 2)

Blank versprach zu viel

Der Kanzler soll gleichzeitig mitgeteilt haben, daß Strauß auf der nächsten Sitzung der NATO verständlich machen müsse, daß die Bundesrepublik in ihren bisherigen Zusagen für die Aufstellung der Bundeswehr zu weit gegangen sei. Er hoffe, daß Strauß die NATO überzeugen könne, und daß die neuen Zusagen geringeren Umfangs dann wirklich erfüllt werden.

Zu diesem Punkt Stellung nehmend, erwiderte Blank, daß er glaube, mit Zahlen nachweisen zu können, daß er seiner Pflicht nachgekommen sei.

Bayern und Baden-Württemberg bezahlen Wehrerfassungskosten

MÜNCHEN/STUTTGART. (AP/dpa) Nachdem sich in Bayern und Baden-Württemberg viele Gemeinden und Städte wegen der ungeklärten Kostenfrage geweigert hatten, die Wehrerfassung zu beginnen, beschlossen am Dienstag die Ministerräte in München und Stuttgart, daß die Kosten den Gemeinden vom Land ersetzt werden. Dieser Beschluß entspricht einer gemeinsamen Empfehlung der Länderfinanzminister vom vergangenen Freitag.

Hamann auf freiem Fuß

Pankow vermied das Eingreifen Dehlers als Verteidiger

BONN (AP) Der Generalstaatsanwalt in Ostberlin hat dem FDP-Vorsitzenden Dr. Dehler schriftlich mitgeteilt, daß der ehemalige LDP-Vorsitzende in der Sowjetzone, Dr. Karl Otto Hamann, und dessen Tochter Lies vom Sowjetzonen-Präsidenten Pieck begnadigt und aus der Haft entlassen worden sind. Das gab die FDP am Dienstag in Bonn bekannt. Dehler hatte sich kürzlich in seiner Eigenschaft als Rechtsanwalt bei der sowjetzonalen Generalstaatsanwaltschaft als Verteidiger von politischen Häftlingen gemeldet und dabei angekündigt, daß er sich besonders um die Freilassung Hamanns bemühen wolle. Auch in einem weiteren von der FDP ins Auge gefaßten Falle hat der Sowjetzonen-Generalstaatsanwalt Strafaussetzung gewährt: Es handelt sich dabei um den früheren persönlichen Referenten des Ministerpräsidenten Hübner (Sachsen-Anhalt), Froede.

Hamann war nach zweijähriger Haft 1954 unter Ausschluß der Oeffentlichkeit vom Obersten Gericht der Sowjetzone zu zehn Jahren Zuchthaus verurteilt worden. Im gleichen Verfahren wurden vier seiner Mitarbeiter in seinem Ministerium für Handel und Versorgung für drei bis sechs Jahre ins Zuchthaus geschickt. Dem Minister und seinen Mitarbeitern wurde vorgeworfen, die Versorgung der Bevölkerung „systematisch sabotiert" zu haben.

Gegen Hamann selbst wurde außerdem der Vorwurf erhoben, er habe persönlich und über Mittelsmänner „verbrecherische Beziehungen zu imperialistischen Agenten" unterhalten.

Während Hamanns Tochter Lies gemeinsam mit ihrem Vater verhaftet wurde, gelang es der Ehefrau Helene Hamann, mit den drei übrigen Kindern der Familie nach Westberlin zu flüchten. Sie lebt gegenwärtig in der Bundesrepublik.

'Nur wirtschaftlicher Charakter'

DAMASKUS. (AP) Syrien hat der Bundesrepublik versichert, daß das Sowjetzonenkonsulat, dessen Errichtung in Damaskus vorgesehen ist, lediglich wirtschaftlichen Charakter, aber „keinen diplomatischen Status" haben werde. Syrien beabsichtige auch nicht, seinerseits in Mitteldeutschland ein Konsulat zu errichten. Die Ankündigung, daß ein sowjetzonales Konsulat in Syrien errichtet werden soll, hatte zu Spannungen zwischen Bonn und Damaskus geführt.

Aussiedler kommen einzeln

WARSCHAU. (dpa) Ein Beamter des polnischen Innenministeriums teilte am Dienstag in Warschau mit, daß die großen Aussiedlertransporte mit Deutschen aus den polnisch verwalteten deutschen Ostgebieten zum Jahresende eingestellt werden sollen. Die mit dem DRK vereinbarte Familienzusammenführung solle im nächsten Jahr durch die Ausreise einzelner Personen und Familien fortgesetzt werden.

Suchaktion eingeschränkt

LONDON (AP). Die US-Luftwaffe teilte am Dienstag mit, daß sie die Suchaktion nach der seit Donnerstag über dem Atlantik vermißten US-Transportmaschine mit 59 Soldaten an Bord teilweise einstellen werde. Es soll jetzt nur noch das Gebiet abgekämmt werden, in dem kürzlich zwei Schlauchboote und am Vortage ein Fahrgestell gefunden wurden. Damit scheint die Hoffnung, doch noch einige Ueberlebende der ungeklärten Katastrophe finden zu können, aufgegeben worden zu sein.

Keine Übereinstimmung über Redneraustausch?

BERLIN (AP/dpa). Auf Veranlassung der Ost-LDP traten in Ostberlin die im „Demokratischen Block" vertretenen Parteien und Massenorganisationen zu einer Sondersitzung über die Weimarer Gespräche zwischen FDP und LDP zusammen. An der Sitzung nahmen u. a. Sowjetzonen-Ministerpräsident Grotewohl und der LDP-Vorsitzende Loch teil. Der „Block" billigte einstimmig die Weimarer Gespräche.

Im Gegensatz zu Verlautbarungen aus Kreisen der FDP wurde jedoch festgestellt, es sei noch keine Übereinstimmung über den Redneraustausch zwischen FDP und LDP erzielt worden. Seitens der FDP war bereits von einer grundsätzlichen Uebereinkunft gesprochen worden. Für November sind weitere Besprechungen zwischen FDP und LDP angekündigt.

Neue Suezkonferenz London-Paris

Premierminister Eden überraschend nach Frankreich geflogen

PARIS (AP/dpa). Völlig überraschend flogen der britische Premierminister Eden und sein Außenminister Lloyd am Dienstagabend zu neuen Suez-Besprechungen mit der französischen Regierung nach Paris. Hauptpunkt der Beratungen, die am heutigen Mittwoch abgeschlossen werden sollen, ist die Haltung, die beide Länder nach dem Beschluß des UN-Sicherheitsrates jetzt in diesem Streitfall einnehmen wollen.

Wie der französische Ministerpräsident Mollet bekanntgab, habe sich nach dem Ergebnis der Suez-Debatte im Sicherheitsrat die Gefahr ergeben, daß zu viele Länder ihre Kanalgebühren nicht an die westliche Kanalbenutzerorganisation, sondern an Aegypten weiter zahlen würden. Diese Frage solle vor allem erörtert werden.

Dulles warnt vor Aggression

WASHINGTON (AP/dpa). US-Außenminister Dulles erklärte am Dienstag in Washington, die USA würden in dem israelisch-jordanischen Streitfall jedem Land zu Hilfe kommen, das Opfer einer Aggression wird. Dulles bedauerte ausdrücklich im Namen der US-Regierung die israelischen „Vergeltungsangriffe", die eine Verletzung der auch von Israel bei den UN eingegangenen Verpflichtungen darstellten.

Der Irak wartet noch ab

Wie bereits in einem Teil unserer gestrigen Ausgabe berichtet, wurde in Amman nach zweitägigen jordanisch-irakischen Verhandlungen bekanntgegeben, daß zum „gegenwärtigen Zeitpunkt" keine irakischen Truppen nach Jordanien verlegt werden. Die Truppen würden an der jordanischen Grenze stationiert, um Jordanien im Falle eines israelischen Angriffes zu helfen.

Weiter Auslandshilfe für Tito

WASHINGTON (AP/dpa). Die USA geben jetzt bekannt, daß die Auslandshilfe an Jugoslawien fortgesetzt, die Lieferung schweren militärischen Ausrüstungsmaterials jedoch vorläufig zurückgestellt wird, bis eine „bessere Beurteilung der Lage vorgenommen werden kann". In einem Schreiben an den Kongreß erklärte Präsident Eisenhower, daß „Jugoslawien unabhängig von einer Kontrolle durch die Sowjetunion ist und wünscht, auch weiterhin unabhängig zu bleiben".

Verkehrsflugzeug brach auseinander

Nach Notwasserung im Atlantik - Die 31 Insassen wurden gerettet

SAN FRANZISKO (AP/dpa). Ueber drei Stunden schwebten am Dienstag die 24 Fluggäste und die siebenköpfige Besatzung einer viermotorigen US-Verkehrsmaschine über dem Pazifik 1600 km südwestlich von San Franzisko in höchster Gefahr. Das Flugzeug befand sich auf der letzten Etappe eines Rund-um-die-Welt-Fluges mit Ziel San Franzisko, als plötzlich ein Motor ausfiel und wenig später auch ein zweiter unregelmäßig lief. Der Pilot entschloß sich, nahe der schwimmenden Wetterstation „November" auf das Wasser niederzugehen.

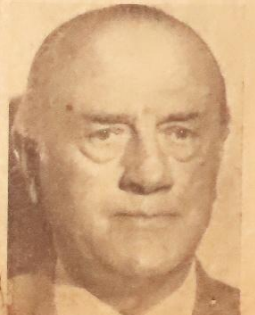
Stunde um Stunde umkreiste das angeschlagene Flugzeug die Wetterstation, bis die Morgendämmerung hereinbrach und eine Landung zuließ. Noch während der Dunkelheit hatte der Pilot zwei Probeanflüge unternommen. Nach drei Stunden bangen Wartens gelang endlich die Notwasserung. Da aber brach die Maschine auseinander. Dennoch gelang es der inzwischen alarmierten Küstenwacht, alle 31 Insassen zu retten.

Wie inzwischen bekannt wurde, erlitten fünf Passagiere leichte Verletzungen.

Sie traten ab:



Verteidigungsminister Blank (CDU)



Justizminister Neumayer (FVP)



Mittelstandsminister Schäfer (FVP)



Sonderminister Kraft (CDU)

(Bilder HN-Archiv)

7.1 *Saarland, a part of Germany, comes back (1957)*

HERSFELDER Nachrichten

Einzelpreis 20 Pfennig

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Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Nummer 130 — Dienstag, 5. Juni 1956 — 12. Jahrgang



Olympisches Feuer für Stockholm

In Olympia in Griechenland wurde am Samstag bei Sonnenaufgang die Olympische Flamme für die am 10. Juni in Stockholm beginnenden Reiterwettkämpfe entzündet. Unser AP-Bild zeigt den ersten Läufer mit der Fackel auf dem Wege nach Athen. Von dort aus wird das Feuer im Flugzeug nach Schweden gebracht.

Hartes Ringen um Saarvertrag

Adenauer nach zehnstündiger Verhandlung mit Mollet: Es ist alles geregelt

LUXEMBURG (AP/dpa). „Es wurde Einigung erzielt. Es ist alles gut verlaufen. Es war ein ermüdender Tag, der viel Geduld erfordert hat, aber jetzt ist alles geregelt." Mit diesen Worten verließ der Bundeskanzler am Montagabend kurz vor 22 Uhr nach über zehnstündigen Besprechungen mit dem französischen Ministerpräsidenten Mollet den Konferenzsaal. Einzelheiten der Direktiven, die jetzt für die Ausarbeitung des Saarvertrages gegeben werden, teilte der Kanzler nicht mit. Staatssekretär Hallstein erklärte lediglich, es seien genaue Instruktionen an die Sachverständigen ergangen, um „in naher Zukunft ein allgemeines Saarabkommen zu erzielen". In der letzten Phase der Besprechungen hatte der Kanzler Rücksprachen mit den in Luxemburg anwesenden saarländischen Ministern Prof. Blind und Conrad. Noch am Vortage hatten sich die Staatssekretäre Hallstein und Faure vergeblich bemüht, eine Einigung über den Kohlenabbau im Warndt-Gebiet, die Moselkanalisierung, den Rhein-Seiten-Kanal und die Währungsumstellung bei der politischen Rückgliederung der Saar zu erreichen. Wie die nun vereinbarte Lösung dieser Probleme aussieht, war bei Redaktionsschluß noch nicht bekannt.

Der Saarrundfunk meldete am späten Abend, Adenauer und Mollet hätten sich in Anwesenheit der saarländischen Regierungsdelegation über die Warndt-Frage dahingehend geeinigt, daß Frankreich noch 70 Millionen t Kohle im Warndt abbauen darf. Frankreich soll außerdem 20 Millionen t Kohle aus dem Warndt von der Saar zum Selbstkostenpreis geliefert bekommen. Die Differenz zwischen dem Selbstkosten- und dem normalen Verkaufspreis erstattet die Bundesregierung der Saar.

Die Konferenz zwischen Adenauer und Mollet hatte bereits am Vormittag mit einer Erörterung der internationalen Lage begonnen, bei der volle Uebereinstimmung erzielt worden war. Im Verlauf der Unterredung hatte Mollet dem Kanzler über seine Reise nach Moskau berichtet und ihm in diesem Zusammenhang mitgeteilt, daß die Sowjetunion nicht bereit sei, unter den gegenwärtigen Umständen der Wiedervereinigung Deutschlands zuzustimmen.

Wie ein deutscher Sprecher später erklärte, hat Mollet betont, die sowjetischen Führer hätten ihn mit einer Offenheit ohnegleichen wissen lassen, daß sie die Existenz zweier deutscher Staaten als Tatsache betrachten und Verhandlungen über die Wiedervereinigung zur Zeit als nutzlos ansehen.

Chruschtschew soll Mollet wörtlich erklärt haben, ihm seien 17 Millionen Deutsche im sowjetischen Machtbereich lieber als 70 Millionen in einem wiedervereinigten, in den Westen integrierten oder günstigstenfalls neutralen Deutschland.

In dieser Haltung sehen sowohl Adenauer als auch Mollet einen neuen Beweis dafür, daß man der sowjetischen „Friedensoffensive" mit Mißtrauen begegnen müsse. Offenbar sei die sowjetische Seite nicht bereit, zu einer echten Entspannung beizutragen.

Toto-Volltreffer in Luxemburg

K..N (AP/dpa). Eine Tippgemeinschaft in L..emburg hat an diesem Wochenende im W..t-Süd-Block einen „Volltreffer" erzielt u.. damit gleichzeitig im Großherzogtum L..emburg eine Sensation hervorgerufen. Die 12 Wetter, die alle in kleineren Verhältn..sen leben, gewannen auf ihren Tippschei.. der auf den Namen des Bankangestellt.. Pierre Henry Klein ausgefüllt war, ein..m im ersten Rang 534 790 DM, ferner 15m.. im zweiten Rang je 8900 DM und schließ..h 102mal im dritten Rang je 700 DM, zus..men also rund 739 700 DM.

Die übrigen Gewinnquoten im West-Süd-Block lauten: ..wölferwette: II. 60 Gew. je 6913.15 DM; III. ..7 Gew. je 606.75 DM. Zehnerwette: I. 18 Gew. je 15 746.95 DM; II. 578 Gew. je 489.95 DM: I.. 6778 Gew. je 41.60 DM. — Siebener-Punkt..ahlwette: I. 21 Punkte: 144 Gew. je 1836.. DM; II. 20 Punkte: 2432 Gewinne je 65.25 DM; III. 19 Punkte: 14 423 Gew. je 7.25 DM.

Nord-Süd-Block: ..lferwette: I. 4 Gew. je 62 638.50 DM; II. 30.. Gew. je 1680 DM; III. 2971 Gew. je 83 DM. Ne..nerwette: I. 12 Gew. je 7840.50 DM; II. 362 Ge.. je 283 DM; III. 3788 Gewinne je 25.30 DM.

(Ohne Gewähr)

Prozeß um Konkordat begann

Verfassungsstreit Bund-Niedersachsen vor dem Bundesgericht

KARLSRUHE. (AP/dpa) Vor dem Bundesverfassungsgericht in Karlsruhe begann am Montag der Verfassungsstreit zwischen derBundesregierung und dem Land Niedersachsen, das von der Landesregierung Hessen und dem Senat der Freien Hansestadt Bremen unterstützt wird, wegen der Rechtsgültigkeit des Reichskonkordates. Dem Verfahren liegt ein Antrag der Bundesregierung zugrunde festzustellen, daß das 1933 zwischen Hitler und dem Vatikan geschlossene Konkordat in der Bundesrepublik fortgeltendes Recht ist und das niedersächsische Schulgesetz, das die Gemeinschaftsschule in den Vordergrund stellt, damit gegen das Recht des Bundes auf Beachtung verbindlicher internationaler Verträge verstoße. Das Schulgesetz verletzte die im Reichskonkordat festgelegte Garantie der Bekenntnisschule. Demgegenüber hat die niedersächsische Regierung die Rechtsgültigkeit des Konkordates bestritten.

Die Montagverhandlungen spitzten sich auf die Frage zu, ob die Anträge nach den Bestimmungen des Grundgesetzes zulässig seien. Als Vertreter Hessens erklärte der Kronjurist der SPD, Dr. Arndt (Bad Hersfeld), die Klage sei nichts anderes als eine verkappte, unzulässige Bundesaufsicht über die Länder. Die Bundesregierung habe einfach auf die Verletzung der Bundestreue geklagt, um den Bundesrat auszuschalten. Nach dem Grundgesetz, Artikel 84, sei aber allein der Bundesrat für die Prüfung der Frage zuständig, ob ein Land ein Bundesgesetz verletzt habe.

Dr. Arndt: Es geht um den Umfang der Bundesaufsicht

Dr. Arndt betonte, daß der gegenwärtige Verfassungsstreit für die ganze künftige Verfassungsentwicklung von großer Bedeutung sei, weil dadurch der Umfang der Bundesaufsicht über die Länder bestimmt werde.

Als Vertreter der Bundesregierung antwortete Prof. Scheuner, daß der Bundesrat nicht über die Gültigkeit des Konkordats entscheiden, sondern nur eine Kontrolle über die Verwaltung ausüben könne. Dr. Arndt stellte dann den Antrag, daß die Bundesregierung ihren gesamten Schriftwechsel mit dem Heiligen Stuhl vorlegt.

Die Interessen der Regierung werden bei dem Verfassungsstreit von Staatssekretär Hallstein, Prof. Greve und Ministerialdirektor Lechner vertreten. Bei dem Verfahren, das etwa acht Tage dauern wird, werden 15 Professoren zu den Rechtsfragen Stellung nehmen. (Siehe auch Leitartikel Seite 2)

Kurz berichtet

Zu 15 Monaten Gefängnis verurteilt wurde in Frankfurt ein Koblenzer Zimmermann für die Beraubung eines öffentlichen Münzfernsprechers. Das Gericht begründete die empfindliche Strafe damit, daß der Apparat unbrauchbar geworden war und von einem Telefonanruf die Rettung eines Menschenlebens abhängen könne.

Mit der Goetheplakette ausgezeichnet wurde der Intendant des Hessischen Rundfunks, Beckmann, wegen seiner Verdienste um das kulturelle Leben des Landes Hessen.

Freigesprochen wurde der Frankfurter Polizeipräsident Littmann in Hanau von der Anklage der fahrlässigen Tötung eines Mopedfahrers.

Noch nicht geklärt sind die Gründe für den Rücktritt des US-Vertreters beim deutsch-alliierten Gnadenausschuß, Upton. Der Ausschuß ist damit nicht mehr funktionsfähig, verlautet aus Bonn. Der Vorgänger Uptons war von seinem Posten zurückgerufen worden, nachdem er die Begnadigung des SS-Generals Sepp Dietrich befürwortet hatte.

Eine Altersgrenze von 68 Jahren schlägt die Bundesregierung für obere Bundesrichter vor, wurde in Bonn bekannt.

Als „Lumpenhaus" hatte ein Bonner Hausmeister das Bundeshaus bezeichnet. Jetzt wurde er zu 300 DM Geldstrafe verurteilt.

Erschossen wurden zwei britische Soldaten von zyprischen Aufständischen, wie in Nicosia bekanntgegeben wurde.

Die Freilassung von 350 japanischen Kriegsgefangenen sagte der chinesische Ministerpräsident Tschou En-lai einer japanischen Delegation in Peking zu. (AP/dpa)

Keinen Blick für Stalin

MOSKAU (AP/dpa). Nach kurzen politischen Besprechungen mit dem sowjetischen Ministerpräsidenten Bulganin und KP-Chef Chruschtschew besuchte der jugoslawische Staatschef Marschall Tito am Montag das Lenin-Stalin-Mausoleum auf dem Roten Platz in Moskau. Ohne den einbalsamierten Leichnam Stalins eines Blickes zu würdigen, ging Tito zum Sarkophag Lenins und legte einen großen Kranz mit Bändern in den jugoslawischen Nationalfarben nieder.

Wie inzwischen in Washington bekannt wurde, hat hier die Erklärung Marschall Titos, die er am Vortage bei seiner Ankunft in Moskau abgegeben hatte, starke Verstimmung ausgelöst. Man spricht bereits davon, daß die US-Finanzhilfe an Jugoslawien gestrichen werden könnte.

Koalition mit Schäffer einig

Steuersenkung ab 1. Oktober um 10 Proz. bei Jahreseinkommen bis 25000 DM – Zustimmung des Bundesrats ist zweifelhaft

Bericht unserer Bonner Redaktion

Die Steuersenkung soll nun doch bereits am 1. Oktober dieses Jahres in Kraft treten. Darauf einigten sich am Montag die Finanz- und Steuersachverständigen von CDU/CSU, DP und FVP mit Bundesfinanzminister Schäffer. Der Bundestag wird diesem Beschluß wahrscheinlich zustimmen, doch ist die Haltung des Bundesrates noch ungewiß. Die Vertreter der Länder hatten bisher immer wieder erklärt, daß eine Steuersenkung vor dem 1. Januar nächsten Jahres nicht in Frage kommt. Wichtigster Punkt des Steuersenkungsprogramms, über das sich die Sachverständigen der Regierungsparteien nunmehr endgültig mit Schäffer geeinigt haben, ist eine Senkung des Tarifs der Einkommensteuer um zehn Prozent bis zu einem Jahreseinkommen von 25 000 DM. Bei höheren Einkommen verringert sich der Steuernachlaß bei jeweils 2500 DM um je ein Prozent, so daß er bei 50 000 DM Jahreseinkommen ganz aufhört.

Weiter wollen die Koalitionsparteien folgende Vorschläge unterbreiten: Die Umsatzsteuer wird für Jahresumsätze bis 36 000 DM von vier auf drei Prozent herabgesetzt, soweit der Gesamtumsatz eines Unternehmens 250 000 DM pro Jahr nicht übersteigt. Alle Steuerzahler können außerdem 7,5 Prozent ihres Einkommens oder ihrer sonstigen Einkünfte steuerfrei lassen, wenn sie 15 Prozent ihrer Einkünfte für fünf Jahre als Spargelder bei einer Kasse festlegen.

Der Steuerfreibetrag für das zweite Kind soll von 720 DM auf 1080 DM pro Jahr erhöht werden. Um 250 auf 1150 DM soll der Jahresfreibetrag für die Ehefrau heraufgesetzt werden. Dies gilt jedoch nur für Hausfrauen, die mindestens ein Kind haben oder im Betrieb ihres Mannes mithelfen.

Schließlich sollen gesetzliche oder tarifliche Zuschläge für Sonn- und Feiertags- sowie Nachtarbeit dann steuerfrei bleiben, wenn der Arbeitslohn 9000 DM nicht übersteigt.

Auto an Lichtmast zerschnitten

Fahrer verlor Gewalt über seinen Wagen: 4 US-Soldaten getötet

MÜNCHEN (AP/dpa). Ein schwerer Verkehrsunfall ereignete sich an der Münchner Ausfahrt der Autobahn Salzburg — München. Ein mit fünf amerikanischen Soldaten besetzter Pkw raste mit hoher Geschwindigkeit gegen einen Lichtmast, nachdem der Fahrer offensichtlich die Gewalt über das Fahrzeug verloren hatte. Der Wagen wurde durch die Wucht des Anpralls von dem eisernen Mast fast bis zur Mitte durchgeschnitten. Vier Insassen fanden bei dem Unglück den Tod. Der fünfte liegt mit lebensgefährlichen Verletzungen im amerikanischen Hospital.

Ein weiterer furchtbarer Verkehrsunfall ereignete sich am Montag auf der Saaruferstraße zwischen Saarbrücken und Völklingen, als auf fast gerader Strecke zwei Personenwagen in voller Fahrt frontal zusammenstießen. Die beiden Insassen des einen Pkws waren auf der Stelle tot, während die drei Insassen des anderen mit schweren Verletzungen ins Krankenhaus gebracht werden mußten. Die Ursache des Unglücks konnte noch nicht geklärt werden.

Ein teurer Brief

KARLSRUHE (dpa). Ein Brief, den die frühere Dienststelle Blank an einen Ostberliner Zahnarzt schickte, wird die Bundesrepublik nun nach einer Entscheidung des Bundesgerichtshofes in Karlsruhe mehrere tausend Mark kosten. Der Zahnarzt, der sich um eine Einstellung in den Sanitätsdienst bewarb, hatte nachdrücklich gebeten, eine Antwort aus Sicherheitsgründen an eine Westberliner Deckadresse zu senden. Ein Bescheid der Dienststelle Blank war aber versehentlich an die Ostberliner Adresse des Arztes gegangen. Unmittelbar danach war der Arzt unter Aufgabe seiner Praxis in den Westen geflüchtet. In seiner Schadenersatzforderung machte er nun geltend, daß der Bescheid erst sieben Tage später bei ihm eingetroffen sei. Er habe annehmen müssen, daß er durch die Hände des SSD ging.

Im Sturm gekentert

KARATSCHI (AP/dpa). Vor der Küste von Ostpakistan ist am Wochenende, wie erst am Montag in Karatschi bekannt wurde, ein Postschiff mit 172 Passagieren und 30 Mann Besatzung an Bord in einem heftigen Sturm gekentert. Bei dem Unglück sollen viele Menschen ums Leben gekommen sein. Eine Anzahl von Ueberlebenden traf inzwischen in Hatia und Chittagong ein. Flugzeuge und Schiffe suchen nach den übrigen Fahrgästen.

Der „Kupferne" entfällt

In dem jahrelangen Streit um den Ladenschluß am Samstagmittag ist eine Vorentscheidung gefallen: Der Bundestagsausschuß für Sonderfragen des Mittelstandes beschloß einstimmig, daß alle Läden in der Bundesrepublik Samstag um 14 Uhr und an Wochentagen um 18 Uhr geschlossen werden müssen. Die Bestimmung über den Samstagsladenschluß soll jedoch erst am 1. Januar 1958 in Kraft treten. Für Apotheken, Milch- und Blumenläden sowie Tankstellen sind Ausnahmeregelungen vorgesehen. Gleichzeitig beschloß der Ausschuß, daß künftig der verkaufsfreie „Kupferne Sonntag" vor Weihnachten entfällt.

Höhere Sozialtarife?

Zur Wiederherstellung der Wirtschaftlichkeit der Bundesbahn hat Bundesfinanzminister Schäffer empfohlen, die sogenannten Sozialtarife bei der Bundesbahn zu erhöhen. Dazu gehören u. a. die Arbeiter-, Wochen-, Monats- und Schülerkarten. Gegen die Vorschläge Schäffers hat die SPD bereits protestiert und betont, ihre Fraktion werde niemals einem solchen Schritt zustimmen.

Sowjets übergaben 25 Heimkehrer

Ungeklärte Staatsangehörigkeit hatte die Entlassung verzögert

BERLIN (AP/dpa). Vertretern des Bonner Auswärtigen Amtes wurde am Montag in der Sowjetbotschaft „Unter den Linden" in Ostberlin eine Gruppe von Heimkehrern übergeben, die bisher wegen ungeklärter Staatsangehörigkeit in der Sowjetunion zurückgehalten worden waren. Es handelte sich um 22 Männer, zwei Frauen und ein einjähriges Kind.

Sechs von ihnen waren Zivilverschleppte, die übrigen Angehörige der ehemaligen deutschen Wehrmacht. Die meisten tragen slawische Namen. Bis auf drei, die in Westberlin blieben, wurden sie in die Bundesrepublik geflogen und zunächst im Lager Friedland untergebracht.

Der Student Wolfgang Natonek, der im November 1948 in Leipzig verhaftet wurde, ist aus dem Sowjetzonenzuchthaus Torgau entlassen worden und dieser Tage über Westberlin in die Bundesrepublik geflogen. Er war unter der Beschuldigung, antisowjetische Hetze getrieben zu haben, von den Sowjets zu 25 Jahren Zuchthaus verurteilt worden.

Inzwischen begann in München im Auftrag des UN-Flüchtlingskommissars die Untersuchung von fünf in einer Irrenanstalt untergebrachten Sowjetrussen durch den Schweizer Professor Max Müller. Sowjetbotschafter Sorin hatte kürzlich behauptet, die fünf seien zu Unrecht in der Anstalt untergebracht.

In fünf Monaten 120177 Flüchtlinge

Bis Ende Mai haben in diesem Jahr insgesamt 120 177 Flüchtlinge aus der Sowjetzone in der Bundesrepublik oder Westberlin das Notaufnahmeverfahren beantragt. Unter ihnen befanden sich, wie aus einer Statistik des Bundesvertriebenenministeriums hervorgeht, 806 Volkspolizisten.

Wenn es um Dollar geht: Kautschuk für Rotchina

SINGAPUR (AP). Ungeachtet der noch bestehenden Embargo-Bestimmungen der UN für den Chinahandel beschlossen die Regierungen von Singapur und des malaiischen Staatenbundes, in „angemessenen Mengen" Kautschuk nach Rotchina zu liefern. Wie ein Sprecher des britischen Außenministeriums dazu erklärte, habe Großbritannien seine Kolonien autorisiert, die Lieferung einiger strategischer Güter nach der Volksrepublik China zu erwägen. Der britische Schritt kommt zu einem Zeitpunkt, an dem die Preise für Kautschuk auf dem Weltmarkt zu fallen beginnen. Der Verkauf von Rohgummi ist eine der größten Dollar-Einnahmequellen des Commonwealth.

Gefängnisstrafen im SDA-Prozeß

Die „Aktion" wollte eine staatsfeindliche Gesinnung organisieren

KARLSRUHE (AP/dpa). Der sechste Strafsenat des Bundesgerichtshofes verurteilte nach mehrwöchiger Verhandlung sechs ehemalige leitende Funktionäre der „Sozialistischen Aktion" (SDA) zu Gefängnisstrafen zwischen 5 und 42 Monaten.

Wegen Staatsgefährdung und Rädelsführerschaft in einer verfassungsfeindlichen Vereinigung sowie Beleidigung von Mitgliedern der Bundesregierung wurden der Redakteur Robert Steigerwald aus Frankfurt zu drei Jahren sechs Monaten, der Journalist Horst Boje aus Hamburg zu drei Jahren und der Schriftsetzer Karl Woelz aus Bremen zu zwei Jahren sechs Monaten Gefängnis verurteilt.

Der Angestellte Herbert Levenhagen aus Hann. Münden und der Angestellte Karl Loewenberg aus München wurden wegen Staatsgefährdung und Rädelsführerschaft in einer verfassungsfeindlichen Vereinigung zu je 15 Monaten Gefängnis verurteilt. Der Angestellte Georg Beckmann aus Lambsheim/Pfalz wurde zu fünf Monaten Gefängnis verurteilt, die durch die erlittene Untersuchungshaft als verbüßt gelten.

In der Urteilsbegründung betonte der Senatspräsident, daß die Angeklagten nicht wegen ihrer Gesinnung verurteilt worden seien, sondern weil sie darauf aus waren, unter Geheimhaltung ihrer wahren Ziele eine staatsfeindliche Gesinnung zu organisieren und die Voraussetzungen für schwere Störungen der freiheitlich-demokratischen Staatsordnung zu schaffen. Bei der Gründung der SDA hätten KPD und SED Pate gestanden.

HERSFELDER Nachrichten

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Unabhängige Tageszeitung für Bad und Kreis Hersfeld

Nummer 1 | Mittwoch, 2. Januar 1957 | 13. Jahrgang

Die Saar wieder deutsch

Heimkehr vollzog sich in festlicher, aber nicht überschwenglicher Form
Adenauer in Saarbrücken: Hoffnung auf ähnliche Lösung mit Sowjetzone

SAARBRÜCKEN (AP). Das Saarland ist wieder deutsch. Mit dem 12. Glockenschlag der Silvesternacht 1956 wurde die Saar das zehnte Land der Bundesrepublik. Die Heimkehr des Saargebietes vollzog sich in einer festlichen, aber keineswegs überschwenglichen Form. Bei einem Staatsakt im Saarbrücker Stadttheater dankte Bundeskanzler Adenauer der Saarbevölkerung für ihre Treue zur Heimat. Auch den Deutschen der Sowjetzone, die an diesem Ereignis innerlich teilnehmen, erwachse aus der Eingliederung des Saarlandes in das Bundesgebiet neue Hoffnung. Die Lösung der Saarfrage werde als eine Tatsache von größter historischer Bedeutung in die Geschichte eingehen, weil mit ihr eine Jahrhunderte währende Zeit der Feindschaft zwischen zwei Völkern überwunden werde. In der friedlosen Welt von heute hätten die Saarbevölkerung, Frankreich und Deutschland gezeigt, wie es möglich sei, unlösbar erscheinende Konflikte im Geiste der Versöhnung zu lösen. Adenauer erklärte weiter: „Ich gebe deshalb die Hoffnung nicht auf, daß auch im Osten Lösungen auf der gleichen friedlichen Basis möglich sind."

Der saarländische Ministerpräsident Dr. Ney betonte, es sei der Glaube aller Saarländer, mit dieser Wiedervereinigung im Westen allen Menschen in Mitteldeutschland die Hoffnung auf eine baldige gesamtdeutsche Wiedervereinigung neu belebt zu haben. Er hoffe und wünsche, daß mit dieser Lösung der Saarfrage die gleiche Grundlage für eine deutsch-französische Aussöhnung gelegt werde, wie sie durch die „Entente cordiale" des Jahres 1904 für die Aussöhnung zwischen Frankreich und Großbritannien geschaffen worden sei.

Ein recht kühler Empfang

Der vor drei Wochen in die Opposition übergegangene Vorsitzende der Demokratischen Partei Saar, Dr. Schneider, war nicht unter den Gästen im Stadttheater. So zeichneten sich auch am Tage der Rückkehr der Saar noch die Risse ab, die in den schweren Entscheidungen der Vergangenheit durch die Saarbevölkerung gingen.

Von Persönlichkeiten aus dem Bundesgebiet wurde mit Ueberraschung bemerkt, daß die Begrüßung des Bundeskanzlers durch die Saarbrücker Bevölkerung recht kühl war. Ein Begleiter aus der Umgebung des Kanzlers bemerkte, die Bevölkerung habe Adenauer einen „gehorsamen, aber doch erstaunlich nüchternen Empfang" bereitet. Die Rede des Kanzlers im Stadttheater wurde allerdings mit herzlichem Beifall aufgenommen. Als Dr. Adenauer dann am Nachmittag wieder zum Bahnhof fuhr, waren die Straßen dichter gesäumt, und die Verabschiedung durch die Bevölkerung gestaltete sich auch wesentlich wärmer.

Begrüßung von Dr. Röchling

Der Bundeskanzler hatte sich am Morgen des Neujahrstages mit einem Sonderzug nach Saarbrücken begeben. „Ich bin gekommen, um sie heimzuholen", erklärte Dr. Adenauer den Vertretern der Saarregierung, die ihn beim Ueberschreiten der bisherigen Grenze willkommen hießen.

An verschiedenen Orten hielt der Zug kurze Zeit an. Am Völklinger Bahnhof beglückwünschte der Bundeskanzler auch den jetzigen Leiter der Röchling-Werke, Dr. Ernst Röchling, zu der vor wenigen Wochen erfolgten Rückkehr in sein Werk.

Der Tag der Heimkehr klang am Abend aus mit einem großen offiziellen Feuerwerk in Saarbrücken und zahlreichen Freudenfeuern und Fackelzügen an verschiedenen Orten des neuen Bundeslandes.



Am Neujahrsmorgen, dem Tag der Wiedervereinigung der Saar mit dem deutschen Staatsverband, betrat Bundeskanzler Dr. Adenauer zum ersten Male den Boden des zehnten deutschen Bundeslandes. Nach seiner Ankunft in Saarbrücken schritt Bundeskanzler Dr. Adenauer auf dem Bahnhofsvorplatz die Front der Polizeihundertschaft ab (unser dpa-Bild). Die Polizisten trugen zum ersten Male ein Tschako. Hinter Dr. Adenauer der Ministerpräsident der Saarregierung, Dr. Ney.

„Wir sind alle Stalinisten"

Chruschtschew: Die Verantwortung für Stalins Fehler teilen

MOSKAU (dpa/AP). Der Parteisekretär der KPdSU, Chruschtschew, erklärte auf dem Neujahrsempfang im Kreml, alle Sowjetführer seien in ihrem Kampfe gegen die Imperialisten Stalinisten. Chruschtschew erhielt großen Beifall, als er Stalin als „großen Kämpfer gegen die Imperialisten und großen Marxisten" feierte. Stalin habe Fehler gemacht, doch sollten alle Sowjetführer die Verantwortung dafür mittragen, da sie mit ihm zusammen arbeiteten. Lenin habe Stalins Fehler gekannt, „aber Männer der Tat machen Fehler, und Stalin hat so viel Gutes getan, daß man seine Fehler übersehen muß."

Die Aeußerung Chruschtschews, daß die sowjetischen Führer die Verantwortung für Stalins Fehler teilen müßten, kam für westliche Beobachter in Moskau völlig überraschend. Zum erstenmal hat damit eine führende sowjetische Persönlichkeit öffentlich eine Verantwortung der Sowjetführung für Stalins „Fehler" zugegeben, die von Chruschtschew auf dem Parteikongreß im Februar 1956 so scharf kritisiert worden waren.

Für Einheitsfront mit Paris

In einer Erklärung zum Jahreswechsel setzte Chruschtschew sich für eine Einheitsfront der Franzosen und der Sowjets angesichts der deutschen Wiederaufrüstung ein. Frankreich und die Sowjetunion seien durch traditionelle Bande der Freundschaft im gemeinsamen Kampf während zweier Weltkriege gegen den gleichen Feind geeinigt.

Sowjetzonen-Delegation überraschend nach Moskau

BERLIN (dpa/AP). Eine Regierungsdelegation der Sowjetzone wird unter Führung von Ministerpräsident Grotewohl zu Verhandlungen über wirtschaftliche und politische Fragen nach Moskau reisen. Die Abreise wurde überraschend vom Ost-Berliner Rundfunk bekanntgegeben. Der verhältnismäßig starken Delegation gehören auch der SED-Sekretär Ulbricht, Außenminister Bolz und die stellvertretenden Ministerpräsidenten Nuschke, Loch, Scholz, Leuschner, Rau und Geissner an.

Auch die Mitglieder des SED-Politbüros, Matern und Schirdewan, der Ost-Berliner SED-Vorsitzende Neumann und der Botschafter der Sowjetzone in Moskau, König, machen die Reise mit. Ein großer Stab von Experten wird die Delegation begleiten.

‚Die Zukunft wird ungarisch'

BUDAPEST (AP). Die ungarische kommunistische Parteizeitung „Nepszabadsag" hat sich am Jahresende zu dem Eingeständnis veranlaßt gesehen, die dauernde Anwesenheit sowjetischer Truppen in Ungarn verletze den Nationalstolz des ungarischen Volkes. Politisch werde die Zukunft nicht nur sozialistisch, sondern auch demokratisch und ungarisch aussehen. Vorerst müßten die Sowjets jedoch noch bleiben.

Ägypten kündigte den Freundschaftsvertrag

KAIRO. (dpa) Der ägyptische Informationsminister Abdelkadir Hatem gab am Dienstagabend über Radio Kairo bekannt, Aegypten habe den ägyptisch-britischen Freundschaftsvertrag vom 19. Oktober 1954 rückwirkend zum 31. Oktober 1956 gekündigt. Der Vertrag war unter der Voraussetzung geschlossen worden, daß die Beziehungen beider Länder auf der Grundlage gegenseitiger Verständigung und Freundschaft geregelt werden sollten. Großbritannien habe diesen Vertrag aber flagrant gebrochen, als es Aegypten angriff.

Schlichtungsspruch im Metallarbeiterstreik

Gewerkschaftsvertreter lehnten ab - Wird der längste Streik der Bundesrepublik bald beendet?

KIEL (AP/dpa). Die freiwillige Schlichtungsstelle der Tarifpartner in der schleswig-holsteinischen Metallindustrie hat am Silvestertag nach dreitägigen Verhandlungen einen Schlichtungsspruch gefällt, um den bisher größten und längsten Streik nach 1945 in der Bundesrepublik zu beenden. Im Falle einer Annahme des Spruches durch beide Tarifpartner kann die Arbeit am 10. Januar wieder aufgenommen werden. Nach fast zehn Streikwochen befanden sich am letzten Tag des Jahres 1956 über 32 000 Metallarbeiter im Ausstand.

Der Kieler Arbeitsrechtler Prof. Nikisch und die vier Vertreter der Arbeitgeberverbände fällten den Schlichtungsspruch gegen die Stimmen der vier Gewerkschaftsvertreter. Prof. Nikisch erklärte, er habe bis zuletzt geglaubt, der Spruch werde einstimmig angenommen, weil er einen echten Kompromiß darstelle. Die Tarifpartner müssen jetzt bis zum Abend des 8. Januar erklären, ob sie den Spruch annehmen oder ablehnen.

Der Einigungsvorschlag

Der Einigungsvorschlag sieht folgende Regelung vor: Jeder Arbeitnehmer erhält im Durchschnitt zwei Tage Urlaub mehr. Das von der Gewerkschaft geforderte zusätzliche Urlaubsgeld wurde abgelehnt. Der Lohn während der Urlaubszeit soll künftig aber nach dem Durchschnittslohn der letzten 13 Wochen vor Urlaubsanfang einschließlich aller Zuschläge berechnet werden. Im Krankheitsfall soll der Lohnempfänger eine zusätzliche Unterstützung in Höhe des Differenzbetrages zwischen dem Krankengeld und 90 Prozent des Nettolohnes erhalten. Bei längerer Krankheit ist eine einmalige Beihilfe vorgesehen.



14 Schüler der Abiturientenklasse in Storkow (Mark Brandenburg) sind, wie bereits berichtet, nach West-Berlin geflüchtet. Die ganze, 20 Schüler zählende Klasse war kurz vor Weihnachten von der Schule verwiesen worden, weil sie mit einer Schweigeminute für Ungarn demonstriert hatte. Unser AP-Bild zeigt acht der geflüchteten 14 Oberschüler in West-Berlin.

Speidel als NATO-General

Wahrscheinlich im Sommer Chef des Oberkommandos Europa-Mitte

BONN (dpa). Ein deutscher General soll voraussichtlich im Sommer 1957 Chef des NATO-Oberkommandos Europa-Mitte für die Landstreitkräfte werden. In Bonn wird hierfür Generalleutnant Speidel genannt, der gegenwärtig Leiter der Abteilung allgemeine Streitkräfte im Bundesverteidigungsministerium ist. Wie verlautet, sind seit einigen Monaten Gespräche im Gange, den im Jahre 1957 ausscheidenden französischen General Carpentier durch einen deutschen General zu ersetzen. Auf deutscher Seite betrachtet man es als einen großen Erfolg, wenn eine derartige Entscheidung fällt, bevor noch die Bundeswehr der NATO kampfkräftige Einheiten zur Verfügung gestellt hat.

Unter dem Kommando Speidels würden amerikanische, englische, belgische, holländische und deutsche Truppen stehen. Mit einer offiziellen Anfrage der NATO an die Bundesregierung wird in Kürze gerechnet.

Musterungen im Januar

BONN (dpa). Im Januar finden im gesamten Bundesgebiet Musterungen für die Wehrpflichtigen vom Jahrgang 1937 statt. Erfaßt worden sind bisher etwa 100 000 Mann, nämlich die im dritten Quartal 1937 geborenen männlichen Deutschen. Am 1. April sollen dann die ersten etwa 15 000 Wehrpflichtigen in die Kasernen einrücken. Bei der Einberufung sollen weitgehend persönliche Wünsche aus familiären, wirtschaftlichen oder beruflichen Gründen berücksichtigt werden.

Die Tauglichkeitsgrade sind tauglich eins bis drei, beschränkt tauglich, vorübergehend untauglich und dauernd untauglich. Bei der Musterung sind auch Anträge auf Kriegsdienstverweigerung zu stellen. Bei der Erfassung sind nur wenig Anträge auf Kriegsdienstverweigerung gestellt worden.

Kurz berichtet

Weitere 320 Aussiedler aus Oberschlesien trafen am Montag mit einem Transport auf dem Zonengrenzbahnhof Büchen ein.

Vom Papst in Privataudienz empfangen wurde Bundesaußenminister von Brentano, der sich gegenwärtig in Rom aufhält, am Neujahrsmorgen.

Mit der Errichtung eines Atomkraftwerkes in der Sowjetzone ist jetzt nach Mitteilung von Prof. Barwich (Dresden) begonnen worden.

Acht Algerier wurden getötet, als in der Silvesternacht in Paris maskierte, mit Maschinenpistolen bewaffnete Männer zwei algerische Cafés überfielen.

Aus der Kommunistischen Partei Italiens ausgeschlossen wurde der Nationalkommunist Eugenio Reale, der den Parteichef Togliatti seit einigen Wochen scharf kritisiert hat.

Ueber 1000 Verkehrstote gab es in den USA an Weihnachten und Neujahr zum erstenmal in der Geschichte des Landes.

Abgestürzt ist am Montagfrüh eine US-Militärmaschine bei dem amerikanischen Flugstützpunkt Dhahran in Saudi-Arabien. 15 Soldaten kamen dabei ums Leben.

Fünflingen schenkte eine 35jährige indische Frau in Pondicherry das Leben. Es sind alles Mädchen. Die Inderin ist bereits Mutter von fünf Mädchen.

Nach Peking zurück reiste der chinesische Ministerpräsident Tschou en Lai am Dienstag von Neu Delhi, wo er mit Ministerpräsident Nehru konferiert hatte.

Den Belagerungszustand hat der indonesische Staatspräsident Sukarno am Montag über die Provinz Südsumatra verhängt, um den Widerstand der Aufständischen zu brechen.

Sieben Japaner fanden den Tod, als eine Lawine am Montag nordwestlich Tokio zwei Lastwagen mit 18 Insassen verschüttete. (AP/dpa)

Halbe Million für Silvestergelage

Öl-Millionär veranstaltete in Hollywood rauschende Ballnacht

HAMBURG (dpa/AP). Ueberall in der Welt wurde die Silvesternacht auch in diesem Jahr lautstark und turbulent gefeiert. In der Bundesrepublik war das nächtliche Feuerwerk der Knallfrösche und Kanonenschläge im allgemeinen jedoch weniger beängstigend als im Vorjahr. In Hollywood stellte der amerikanische Oel-Millionär David Feldman eine Art Silvesterfeier-Rekord auf. Eine Ballnacht, die er für seine Frau im Kronsaal des Hotels „Romanoff" gab, kostete die Kleinigkeit von 525 000 Mark.

Allein für 315 000 Mark war der Saal zu einem Speisesaal im Stil der Jahrhundertwende umgestaltet worden. 260 Gäste kamen teilweise per Flugzeug aus Paris und London. Sie trugen alle historische Kostüme. Feldman ließ Wein und Sekt wie das Oel aus seinen texanischen Bohrfeldern fließen.

200 Fensterscheiben zerstört

Natürlich gab es in der Silvesternacht auch wieder reichlich Scherben. In Berlin zerstörte ein Sprengkörper, den ein 17jähriger Jüngling sich selbst gebastelt hatte, 200 Fensterscheiben und das Trommelfell einer 48jährigen Frau. Der „Sprengmeister" mußte von der Polizei festgenommen werden.

In dem Dorf Westerloh-Lippling bei Paderborn kam es zur „traditionellen" Brandstiftung, die ein Unbekannter seit vier Jahren regelmäßig in der Neujahrsnacht verübt. Bewohner eines Gehöftes bemerkten auf der Diele Feuer, das aus einem mit Benzin gefüllten Eimer schlug. Die Feuerwehr, die den Brand förmlich erwartet hatte, konnte das Feuer sofort ersticken.

Großfeuer in Oberhausen

OBERHAUSEN. (dpa) Ein Großfeuer bei den Hüttenwerken Oberhausen hat am Silvestertag sämtliche Walzstraßen des Betriebes stillgelegt. Der Sachschaden wird vorläufig auf zwei Millionen Mark geschätzt. Das Feuer entstand durch eine Explosion in der Transformatorenstation an der Blockstraße drei.

8 Raumfahrt-Ringen (1957), Mondlandung (1968) und Ariane-Raketen [Google search Raumfahrthistorie]

Hermann Oberth (Deutschland legte 1923 mit "Die Rakete zu den Planetenräumen" wissenschaftliche Grundlagen für interplanetare Reisen, unabhängig von den Arbeiten Konstantin Eduardowitsch Ziolkowskis in Russland und Robert Goddards in den USA und erläutert das Prinzip, mit Raketen in den Weltraum vorzustoßen. Wernher von Braun (Deutschland/USA) entwickelte die V2-Rakete und wurde später eine Schlüsselfigur in der US-Raumfahrt (NASA).

Chronik:

1957: Die Sowjetunion startet Sputnik 1, den ersten künstlichen Satelliten
1961: Juri Gagarin (UdSSR) umrundet als erster Mensch die Erde
1965: Alexei Leonow (UdSSR) macht den ersten Weltraumspaziergang.
1969: Neil Armstrong (USA) betritt als erster Mensch den Mond (Apollo 11)
1971: Start der ersten Raumstation Saljut (UdSSR)
1979 Start der Ariane 1 von Guayana in Südamerika
1981: Start des ersten Space Shuttle (USA)
1993/98: Beginn der Arbeiten an der Internationalen Raumstation (ISS), an der das ESA-Gründungsmitglied Deutschland maßgeblich beteiligt ist, wie dem Columbus-Modul
1996 -2023 Ariane 5
2024 Ariane 6.

Ariane ist eine Serie europäischer Trägerraketen, die im Auftrag der Europäischen Weltraumorganisation (ESA) als Koordinator von einem Tochterunternehmen des europäischen Luft- und Raumfahrtkonzerns Airbus Group (früher EADS) entwickelt wurden und von ArianeSpace gestartet werden. Die Ariane-Raketen starten vom Weltraumbahnhof Kourou in Französisch-Guayana, 5° nördlich des Äquators. Die europäische Trägerrakete Ariane 1 flog erstmals am 24. Dezember 1979.

Im März 1980 wurde die Firma Arianespace gegründet, die seitdem Finanzierung, Produktion, Verkauf und Start der Ariane-Raketen übernimmt. Eigentümer dieser Firma sind verschiedene europäische Raumfahrtunternehmen. Alleiniger Hauptauftragnehmer für die Serienanfertigung der aktuellen Rakete, Ariane 5, ist die Airbus-Group-Tochter Airbus Defence and Space.

Die ursprünglich aus Frankreich stammende Doktrin, den „autonomen Zugang zum All“ (Charles de Gaulle) zu sichern und somit unabhängig von den Vereinigten Staaten und der Sowjetunion Satelliten im Orbit absetzen zu können, führte 1964 in London zur Gründung der European Launcher Development Organisation (ELDO) durch Belgien, Frankreich, Italien, Deutschland, Großbritannien, Niederlande und Australien. Entscheidend daran beteiligt war Hubert Curien, der von 1976 bis 1984 Präsident des Centre national d’études spatiales (Nationales Zentrum für Weltraumforschung kurz CNES) war. Er trug Verantwortung für die französische Weltraumpolitik und besonders die Entwicklung der Rakete. Später wurde er Vater der Ariane genannt. Grund für das australische Engagement war das Raumfahrtgelände in Woomera (Treibstoffseitig ungünstiger als Kourou), das für die Entwicklung sehr von Vorteil war. Die von der ELDO (aufgelöst 1973) entwickelten Raketen erhielten den Namen Europa. Die Modelle Europa I und Europa II wurden nie kommerziell eingesetzt, aus dem Entwurf der Europa III ME ging dann mit den gesammelten Erfahrungen die Ariane 1 hervor.
Das Deutsche Zentrum für Luft- und Raumfahrt (DLR) spielt eine zentrale Rolle in der europäischen Ariane-Raketenentwicklung, insbesondere als Europas führende Forschungs- und Testeinrichtung für Raketenantriebe in Lampoldshausen. Die Deutsche Raumfahrtagentur im DLR koordiniert die deutschen finanziellen Beiträge und industriellen Interessen innerhalb der ESA-Programme, einschließlich der Ariane-Entwicklung. Hier durfte ich 1970 beim Schließen des Standorts Flughafen Mühlheim-Essen die Bibliothek leer räumen, was dann bei MAN-(Neue) Technologie von Vorteil war.

Entwickelt wurden die Ariane-Raketen von Raumfahrtunternehmen aus den ESA-Mitgliedstaaten im Auftrag der ESA. Jeder an dem Projekt beteiligte Mitgliedstaat stellte dabei finanzielle Mittel zur Verfügung. Die Industrie des jeweiligen Staates bekam dann im Gegenzug von der ESA Entwicklungsaufträge im Wert des von dem Staat gezahlten Entwicklungszentrumbeitrags. Seit dem Vertrag über die Serienanfertigung von insgesamt 65 Ariane-5-Trägerraketen wurde die EADS-Tochter EADS Astrium Transportation alleiniger Hauptauftragsnehmer und ist nun zuständig für die Zustellung der Ariane 5 an Arianespace. Zuvor hatte die Startbetreiber-Gesellschaft Arianespace die Einzelteile der Rakete bei verschiedenen Unternehmen bestellen müssen und sie dann von einem weiteren ausgewählten Unternehmen montieren lassen. Ariane ist eine erfolgreiche Serie europäischer Trägerraketen, die im Auftrag der ESA entwickelt wurden, um Satelliten und andere Nutzlasten in den Weltraum zu transportieren, wobei die Ariane 5 lange Zeit das Flaggschiff war und die neue Ariane 6 die europäische Unabhängigkeit und Wettbewerbsfähigkeit im Weltraum sichern soll. Startpunkt ist der Weltraumbahnhof Kourou in Französisch-Guayana. Kann mit zwei oder vier Boostern ausgestattet werden, was die Flexibilität erhöht. Kann bis zu 11,5 Tonnen in den geostationären Transferorbit bringen. Ermöglicht durch eine wiederzündbare Oberstufe, Satelliten präzise in verschiedene Umlaufbahnen zu bringen

Raketenfrühwarnung: Infrarotsensoren im Weltraum können die Hitzesignatur, die von einem Raketenstart ausgeht, erkennen. Sie bilden somit eine Frühwarnkapazität und geben dem Angegriffenen in der Regel mehr Zeit auf Hyperschallraketen zu reagieren als erdbasierte Radarfähigkeiten. Weltraumbasierte Sensorik ermöglicht es außerdem, sich einen globalen Überblick über Raketenstarts zu verschaffen. Derzeit sind die USA der einzige westliche Staat, der ein solches System im Einsatz hat.

Umstritten bleibt bis heute die Namensgebung der neuen Trägerrakete. Richtig ist, dass die Partner einen Namen suchten, der sich in den Sprachen aller beteiligten Länder gleich gut aussprechen lässt und überdies der französischen Vorliebe entgegenkommen sollte, Raketen weibliche Vornamen zu geben. So soll sich der Name Ariane symbolträchtig an die griechische Sagengestalt der Ariadne anlehnen. Hartnäckig hält sich aber auch die Version, dass der damalige französische Technologie-Minister Namenspatron für die Ariane gewesen sei, da er sich zu seinen beiden Söhnen noch eine Tochter gleichen Namens gewünscht habe. Und hierzu kann ich noch addieren, dass bei einem Essen der Chaine-de-Rotisseur in 1974 ich von meinem Dornier-liierten Tischnachbar erfuhr, dass Dornier den Namen Ariane seiner kleinen Tochter vorgeschlagen hatten.



22 SPACENEWS January 28, 2002 www.spacenews.com

Profile

HORST RAUCK, CHIEF EXECUTIVE, MAN TECHNOLOGIE

MAN Searches For Solid Ground in Shaky Times

MAN Technologie is confronting a two-headed challenge this year, forced to squeeze costs out of its Ariane 5 rocket component business while waiting for word from the United States about the future of the international space station.

Based in Augsburg, Germany, the company posted year-2001 sales estimated at about 225 million euros ($199 million), two-thirds of which is related to space-hardware production.

One of the hardware projects critical to the company's future is a significant role in building a crew lifeboat for the station.

However, the future of that project could be affected as NASA struggles to control large cost overruns on the space station program that threaten to delay significantly much of the work on the lifeboat.

MAN recently consolidated several field offices into its main Augsburg site to cut costs. The company also has shut down almost all of its Ariane 4 rocket-production facility.

Horst Rauck, the company's chief executive, hopes the worst is over but concedes it may not be. This year will be the first when Europe's Ariane 5 rocket will compete directly with upgraded U.S. and Russian vehicles, and early indications are that it will be a grim year for commercial launch orders worldwide.

Rauck talked about his company's prospects with *Space News* staff writer Peter B. de Selding.

Your company is heavily involved in Ariane rocket production. How do you see prospects over time?

A. We are not in a period of growth in the space business. For us, the most immediate question is: How many new launch orders will be signed in 2002? We based Ariane 5 production on assumptions of 25-30 commercial launch contracts per year worldwide, of which Ariane would get 50 percent. That's 15 satellites, equivalent to between seven and eight Ariane 5 launches per year.

Can these figures hold?

A. They now look threatened because of the breakdown in the information technology and telecom markets. Some of the past enthusiasm has gone, and some of the new satellite orders that were in the pipeline seem to have disappeared. The result is over-capacity in the launch market.

Ariane contractors are being asked to accept large price cuts in return for contracts for more Ariane 5 rockets. How has this affected MAN Technologie?

A. We are cutting costs like everyone else. Most of our Ariane 4 work is finished and we have scrapped everything from that production line that we don't need for Ariane 5. Some of our people have left. We used to be 1,200 people, and this year it is more like 1,100. Some of our space people have gone over to our aerospace and defense divisions. We have also concentrated all our people from other production sites into a single operation in Augsburg. This has helped us rationalize our production.

Will you be able to meet the 50 percent cost reduction between the first Ariane 5 order and the next one, expected in 2003?

A. Yes. Industry had to make a commitment to cut costs, and in parallel we asked our governments to continue supporting us in the Ariane program. That's the deal that led to the decision by the European Space Agency ministers in November to finance Ariane 5 improvements.

Do you feel threatened by the restructuring that is now occurring, particularly at EADS, which through Astrium and EADS Launch Vehicles is Ariane's biggest industrial contractor?

A. European governments in November made clear that they wanted prefinance in place for the equipment suppliers so that they don't get squeezed out of the market by a company like EADS.

Will the reorganization of Ariane contractors force a change in the shareholder mix of the Arianespace launch consortium?

A. You hear people talk about integrating Arianespace into EADS, distributing the shares of the French government to industry and so on. But we are not at that stage yet. The launcher industry still needs considerable support by governments, and these governments will insist that industrial participation in Ariane manufacturing be spread out across Europe.

So the situation now — where the French space agency has 32 percent and EADS around 27 percent — still is valid. We have an informal club of equipment suppliers among Ariane shareholders. There are eight of us, and our combined shareholding is about 25 percent.

MAN has been a leader in Europe's participation in NASA's X-38 prototype for a space station crew-rescue vehicle. Has your work been stalled by the station's budget crisis at NASA?

A. Yes, this work is going more slowly now because of the budget situation. We should be finished with this work this year and preparing for a 2003 first flight. But that is certainly going to be delayed.

The question is, until when? There have been proposals that Europe would have to increase its contribution in the crew rescue vehicle to $500 million to secure the program. But how to get there is a very difficult question. We hope for more clarity on this in the next couple of months.

We hope the United States will meet its international responsibilities on this.

European governments are expected to decide in June whether to finance the installation of Russia's Soyuz rocket at Europe's spaceport alongside Ariane 5. What is your view?

A. I am chairman of the German-Russian Aerospace Committee and so of course from a political point of view I favor this sort of cooperation. But as a businessman, I want to be sure the conditions are right. We cannot have our Ariane 5 business attacked by someone inside our own fence. If the commercial market was very strong, I would not hesitate. But in the current market, the enthusiasm that may have been there is less.

Ob Strukturbauteile, Tankkomponenten oder Boostergehäuse: Kein anderes deutsches Unternehmen arbeitet so lange und in derartiger Vielfalt für die Ariane zu wie MAN Technologie, die heutige MT Aerospace. Die bis 2005 unter dem Namen MAN Technologie bekannte und seitdem zu OHB Bremen gehörende Firma fertigt bereits seit 1971 Komponenten für die Trägerrakete Ariane einschließlich deren Vorläufertyp Europa. Größter Zulieferer außerhalb Frankreichs.

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Wilhelm Käber, SPD-Oppositionsführer im Kieler Landtag

Uwe Seeler: Real Madrid lockt mich ...

rb. Barcelona, 13. April

„Ich könnte mir durchaus vorstellen, hier mal so zwei oder drei Jahre zu verbringen!“ Das meinte Uwe Seeler auf die Frage, ob sich's hier in Barcelona denn nicht leben ließe. Der Mittelstürmer der deutschen Nationalmannschaft gab überhaupt offenherziger Auskunft über Pläne und Angebote als sonst (Bericht Seite 5).



Immer noch Beschwerden mit dem rechten Fuß hat Mittelstürmer Uwe Seeler. Mannschaftsarzt Dr. Kurt Fischer bandagierte Uwes Fuß, der nach dem Training schmerzte.



Er war oben

Das ist Major Yuri Alexejewitsch Gagarin, 27 Jahre alt, Vater von 2 Kindern, „Kolumbus der Raumfahrt“

Sowjet-Major ist der erste

Erreichte Höhe: 302 km

Zum erstenmal war ein Mensch ganz oben.
Im All.
302 Kilometer hoch.
106 Minuten lang.
Gestern.

Yuri Alexejewitsch Gagarin (27) heißt der Raumpilot. Er ist Major der Sowjet-Luftwaffe. Er ist verheiratet und hat zwei Töchter.

Einmal umkreiste das Raumschiff WOSTOK (Der Osten) die Erde. Über Sibirien hinweg, den Pazifik kreuzend, Südamerika, Afrika überfliegend, zurück nach Sibirien.

Ein großes Abenteuer! Ein neues Kapitel in der Geschichte der Menschheit!

Lesen Sie den großen Bericht über die Bezwingung des Weltraums auf den Seiten 2 und 3.

Kinder haben alle zwei Tage SCHULFREI

dne. Haßfurt, 13. April

Jeden zweiten Tag schulfrei haben die 52 Schulkinder der Gemeinden Dippach und Roßstadt im unterfränkischen Landkreis Haßfurt. Trotz eifrigen Bemühens der beiden Gemeinde-Bürgermeister ist es bis jetzt nicht gelungen, für den im November 1959 geschlossenen Hauptlehrer von Roßstadt Ersatz zu bekommen. Der Lehrer von Dippach unterrichtet jetzt in „Wechselschicht“.

VW-Aktien rutschen weiter

rb Hamburg, 13. April

320 — das ist der letzte VW-Aktien-Kurs! Damit ist jede VW-Aktie 370 mehr wert als die Volksaktionäre dafür bezahlten. Jedoch ist sie gleichzeitig 55 DM weniger wert als noch am Dienstag. Kenner raten zur alten Börsenweisheit: „Keine Panik, wenn die Kurse sinken.“

Elektrische Zahnbürste

upd. New York, 13. April

200 Kinder der amerikanischen Stadt Kansas City probieren zur Zeit eine elektrische Zahnbürste aus. Die Bürste, die von der Kansas-Universität entwickelt wurde, reinigt nach ersten Erfahrungen die Zähne gründlicher und schneller als die traditionelle Bürste. Bei den Universitätsangehörigen und ihren Familien hat sich die neue Erfindung schon bewährt.

Im Nu klare Sicht
BOSCH
Scheibenspüler electromatisch
Beratung und Einbau in ihrer Fachwerkstatt

Eichmann-Prozeß: Zweiter Tag

Keine Gnade – Kein Vergessen

rb. Jerusalem, 13. April

Erregung und Erschütterung — im Eichmann-Prozeß fielen gestern die ersten leidenschaftlichen Worte. Sie kamen aus dem Munde des Generalstaatsanwaltes Hausner. Er verteidigte das Recht Israels, über Eichmann zu Gericht zu sitzen.

Ruhig in der Sprache der Juristen, nannte Hausner Gesetze, Paragraphen, Beispiele. Plötzlich streckte er den linken Arm gegen den Angeklagten im Glaskasten. „Adolf Eichmann war nicht der einfache Zahn im Getriebe.“

Totenstille im Gerichtssaal. „Der Verteidiger hat angedeutet, daß Deutschland für seine Verbrechen durch Wiedergutmachung bezahlt hat. Aber Wiedergutmachung ist keine Sühne.“

„Für dieses Verbrechen gibt es keine Buße, keine Gnade, kein Vergessen. Wir können nur hoffen, daß die neue Generation in Deutschland nicht wie die alte sein wird. Der Sohn soll nicht für die Sünden des Vaters bestraft werden.“

Dann mit einem Blick auf Eichmann: „Aber ihm, der solche Verbrechen begangen hat, kann nicht vergeben werden!“

Prozeß-Bericht auf Seite 4.



Frühjahrs-Frisuren in Kisten? Ja — aber nur für die Photographen

Süße Fracht nach Übersee

Ein Jux-Foto aus Paris: Friseure verpacken ihre kostbaren Köpfchen symbolisch in Kisten. Die Frisuren sollen in USA gezeigt werden.

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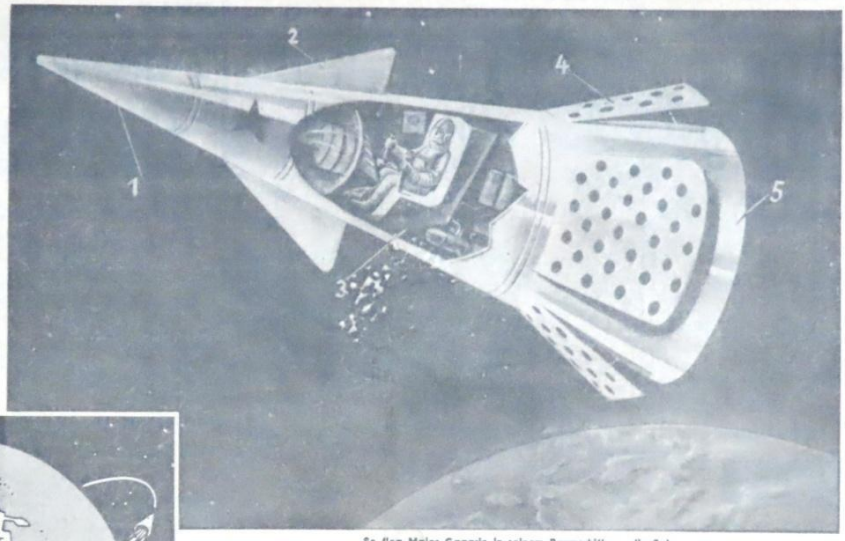
Funksprüche des Piloten

Der Ablauf des Raumfluges nach MEZ (Mitteleuropäische Zeit)

- 7.09 Start im Raum Kaspisches Meer
- 8.02 Radio Moskau gibt erste Sondermeldung
- 8.15 Pilot funkt: Über Südamerika: „Die Schwerelosigkeit überstehe ich gut."
- 8.23 Pilot funkt über Togo (Afrika): „Flug verläuft normal. Ich fühle mich wohl."
- 8.25 Bremsraketen werden gezündet
- 8.45 Sternwarten Lübeck und Bochum hören Funksignale und Wortfetzen
- 8.55 Landung. Erste Worte Gagarins: „Bitte melden Sie der Partei, der Regierung und Nikita Chruschtschow persönlich, daß die Landung normal verlaufen ist. Ich habe keinerlei Verletzungen."



So flog Major Gagarin in seinem Raumschiff um die Erde.



106 Minuten brauchte Major Gagarin vom Start bis zur erfolgreichen Landung

So landete die Kapsel

Auf diesem Weg (linke Karte) umkreiste Major Gagarin in seinem Raumschiff „Wostok" einmal unsere Erde, bevor er wieder landete. Die Rückkehr ist noch das schwierigste Problem der Weltraumfahrt. Beim Eintauchen in die Lufthülle der Erde entstehen an der Kapsel durch die Reibung mit der Luft Hitzegrade von etwa 5000 Grad. Keramische Kunststoffe an der Außenhaut der Kapsel aber können die ungeheuren Temperaturen übertstehen. Nach den Vorstellungen westlicher Wissenschaftler sah das Raumschiff „Wostok" (Karte oben) so aus:

1. Raumschiffnase mit Bremsraketen.
2. Stummelflügel zur Stabilisierung des Fluges.
3. Raumkabine mit Meß-, Funk- und Fernsehgeräten, über die Wissenschaftler von der Erde aus den Flug und die Körperfunktionen des Piloten überwachen. Die Kabine wird vermutlich über der Erde ausgestoßen und landet am Fallschirm.
4. Ausschlebbare Luftbremsen.
5. Raumschiffheck mit Stahlnetz-Fallschirmen zur Erhöhung des Luftwiderstandes, das bei Rückkehr zur Erde nach Durchstoßen der Hitzemauer abgestoßen wird.

Mit und ohne Politik

Streik dehnt sich aus
Der dänische Lokalstreik dehnt sich aus. Zu den 40 000 Transportarbeitern traten gestern weitere 100 000 Metallarbeiter in den Ausstand. Der für Dänemark lebenswichtige Export ist jetzt auf zwei Drittein lahmgelegt.

Bunt verboten
Das ungarische Handelsministerium hat alle Textilgeschäfte aufgefordert, „grellbunte Hemden aus den Geschäften zu entfernen. Begründung: „Die Hemden würden gegen den guten Geschmack verstoßen und nur von Halbstarken gekauft."

Lohnerhöhung ohne ÖTV
Jetzt ist es amtlich: die Angestellten und Arbeiter des Bundes erhalten rückwirkend zum 1. April eine achtprozentige Lohn- und Gehaltszulage. Der Bund will auch dann zahlen, wenn die Gewerkschaft, die 15 Prozent fordert, nicht bis zum 17 April dieses Angebot annimmt.

Zwei Prozent Ausländer
Rund 408 700 ausländische Arbeitnehmer waren Ende März 1941 im Bundesgebiet beschäftigt. Das sind zwei Prozent aller Arbeitnehmer in der Bundesrepublik. An der Spitze stehen die Italiener.

Spion aus Ärger
Zehn Monate Gefängnis für den Münchner Hilfsarbeiter Franz-Josef Hölscher (23). Aus Ärger darüber, daß er nach der Entlassung aus der Bundeswehr eine ihm irrtümlich ausgezahlte Übergangsbeihilfe zurückgeben mußte, nahm er Beziehungen zum sowjetzonalen Nachrichtendienst auf.

Zum Generalmajor ernannt
Brigadegeneral Albert Schnez (50), Chef des Führungsstabes der Bundeswehr, wurde mit Wirkung vom 1. April zum Generalmajor ernannt. Der General ist seit 1930 Soldat.

Täglich 18 Läden
Täglich 18 neue Selbstbedienungs-Läden wurden 1958 eröffnet. Damit haben sich bereits 16 Prozent der 145 000 Lebensmittel-Geschäfte im Bundesgebiet auf Selbstbedienung umgestellt. Das stellte das Institut für Selbstbedienung in Köln fest.

Chruschtschow-Stadt
Auf den Namen Chruschtschow wurde die ukrainische Stadt Nowogeorgiew (südöstlich von Kiew) umgetauft.

Großbrand durch Kinder
Einen Großbrand verursachten mit Streichhölzern spielende Kinder in dem polnischen Dorf Gadka (190 km südlich von Warschau). 25 Gebäude brannten ab.

Stachelige Delikatesse
Die neueste Delikatesse in der südafrikanischen Kap-Provinz sind Junghienen. „Sie sind so gesund", meinte eine Fein-

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Überparteiliche Tageszeitung für Bad und Kreis

Nummer 296 Samstag, 20. Dezember 1958 14. Jahrgang

US-Satellit von vier Tonnen umkreist unseren Erdball

Amerikaner haben Sowjets mit dem bisher schwersten Kunstmond überflügelt

WASHINGTON (HN/AP/dpa). Seit Freitag nacht umkreist ein nahezu vier Tonnen schwerer amerikanischer Erdsatellit mit einer Spitzengeschwindigkeit von über 27 330 Stundenkilometern in jeweils 100 Minuten unseren Erdball. Es ist eine 3991 Kilogramm schwere, 25,9 Meter lange zylinderförmige interkontinentale Rakete des Typs „Atlas". Dieser bisher größte und schwerste von Menschenhand geschaffene „Kunstmond", dessen Lebensdauer von amerikanischen Wissenschaftlern auf etwa 20 Tage geschätzt wird, war von der US-Luftwaffe am Freitagmorgen um 00.02 Uhr MEZ vom Versuchsgelände Kap Canaveral auf Florida aus abgeschossen worden und hatte nach zwei Stunden seine Kreisbahn um die Erde erreicht. Durch den überraschenden, geheimgehaltenen Start ist es offenbar bisher nur in Einzelfällen gelungen, durch Instrumente den Satelliten zu „verfolgen". Er umkreist die Erde auf einer Bahn, deren niedrigster Punkt 186 Kilometer, deren höchster 1005 Kilometer von der Erdoberfläche entfernt ist. Gebiete der Sowjetunion werden nicht von ihm überflogen. In bestimmten Nachtstunden und bei Dämmerung soll er in gewissen Gebieten nördlich und südlich des Aequators zu sehen sein. In dem Trabanten sind zwei Funksender untergebracht, die auf den Frequenzen 107,97 und 107,94 Megahertz Funksignale zur Erde senden. Außerdem verfügt der Satellit über ein Aufnahmegerät, das Funksignale und gesprochene Wörter aufnehmen und auf ein bestimmtes Auslösesignal hin zur Erde zurücksenden soll. Am Freitagabend strahlte der Sender des Satelliten im Weltenraum eine weihnachtliche Friedensbotschaft Präsident Eisenhowers aus. Es handelte sich um eine Tonbandaufnahme, die vor dem Start aufgenommen und nun aus dem Weltenraum gesendet wurde.

Damit gelang es zum erstenmal, eine ganze Rakete und nicht nur deren Spitze auf eine elliptische Bahn zu bringen. Beim Start wog die Rakete 100 Tonnen. Die Gewichtsverluste entstanden durch den Abwurf der ersten beiden Zusatztriebwerke und aus der Verbrennung des Treibstoffes. Mit seinem Gewicht von 3991 kg ist der neue US-Satellit dreimal so schwer wie der bisher größte Erdtrabant der Sowjetunion, der Sputnik III, der 1327 kg wiegt und am Donnerstag seinen 3000. Umlauf um die Erde beendet hatte.

Die Erfolgsmeldung aus Washington ist in den westlichen Ländern mit freudiger Ueberraschung und Befriedigung aufgenommen worden. Der Tenor der westlichen Stellungnahmen wird in den Aeußerungen des Leiters des Instituts für die Physik der Strahlantriebe, Prof. Dr. Eugen Sänger (Stuttgart), deutlich.

Nach Ansicht amerikanischer Raketenexperten ist damit bewiesen, daß die USA nunmehr sowohl über die Schubkraft als auch über das Lenksystem verfügen, um eine mit einem Menschen besetzte Rakete in den Weltraum zu schicken.

Botschaft aus dem Weltall

Die Botschaft des Präsidenten wurde am Freitagabend um 21.15 Uhr MEZ auf der Erde empfangen, als der neue amerikanische Erdsatellit über Kap Canaveral seine Bahn zog.

In seiner Botschaft erklärte Eisenhower: „Hier spricht der Präsident der Vereinig-

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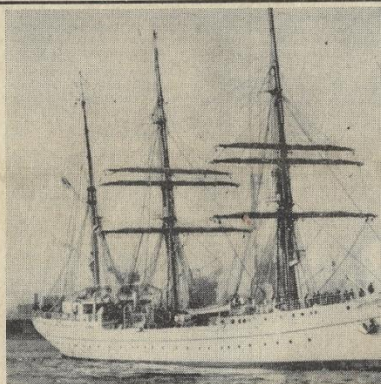

Als erstes Segelschulschiff der Bundesmarine wie bereits berich... in Dienst gestellt. Beim Auslaufen der Dreimastbark (unser AP-Bild ... haben Kiel gab es im Nord-Ostsee-Kanal Schwierigkeiten, weil das ... Kanalbrücke zu hoch war. Die Bark mußte vor der Weiterfahrt er... übernehmen.

Bonn will verhan...

Der Westen zu Gespräch über alle Themen mit M...

BONN (HN/AP/dpa). Die Pariser NATO-Tagung habe ergeben, d... sei, mit der Sowjetunion umfassend und ernsthaft über alle schwebe... Probleme zu verhandeln, unter der Voraussetzung, daß Moskau w... Vorverhandlungen noch während der Gesamtdauer der Konferen... Berlin treffe. Dies stellte Bundespressechef v. Eckardt am Freit... sprach gleichzeitig die Ueberzeugung aus, daß der Westen ...

Bild wünscht Guten Tag!

Ein Mensch, der sich nicht selbst bewundert, ist bewundernswert!
Horst Repinski, Romberg-Harburg



„Seien Sie nett, junger Mann — lassen Sie doch meine Frau sitzen!"

DONNERSTAG **13** APRIL

S.-A. 5.26 S.-U. 19.13 M.-A. 5.03 M.-U. 17.03

Gott näher?

Der erste Mensch im Weltraum ist ein Russe. Das hat keinen Fachmann überrascht. Drei Jahre lang, seit Sputnik I, hat sich Moskau auf dieses Schauspiel vorbereitet.

Schade — die nationalen, kommunistischen Siegestrommeln als Begleitmusik übertönen den wissenschaftlichen Wert und die menschliche Leistung dieses Abenteuers.

Gewiß, als Kolumbus die Segel hißte und Amerika entdeckte, tat er es für die Macht der Königin Isabella von Spanien. Machtstreben, Ehrgeiz, nationales Prestige waren immer die stärksten Triebfedern menschlichen Fortschritts.

Aber heute — fünf Jahrhunderte danach — interessiert die nationale Herkunft des ersten Amerika-Fahrers nur noch die Kreuzworträtsel - Fanatiker.

Juri Gagarin heißt der erste Weltraumpilot. Sein Name wird in den Geschichtsbüchern stehen. Dann wird die Welt auch wissen, wozu sein Flug nützlich war.

Heute noch erscheint dieser Tag selbst Gelehrten, wie dem Nobelpreisträger Born, als eine „tragische Verirrung menschlichen Geistes."

Born und die anderen dürften sich irren. Der erste Lokomotivführer oder der Flugpionier Lilienthal, Daimler und Benz wurden genauso belächelt.

Heute, schon ein halbes Jahrhundert später, wäre die Welt ohne Eisenbahn, Auto und Flugzeug nicht denkbar und lebensfähig.

Für Chruschtschow ist der Weltraumflug ein Mittel zur Macht — der politischen und der geistigen.

Wenn jeder Mensch erst richtig begriffen hat, daß die Erde ein Planet, die Sonne ein Fixstern und der Himmel eine optische Täuschung ist, dann wird die Macht der Kirche zu Ende sein", trumpfte er auf.

Die Mutter des US-Weltraum-Piloten Cooper ist eine einfache, einfältige Frau vom Lande. Von Raketen versteht sie nichts. Daß ihr Sohn vielleicht einmal seinen Fuß auf fremde Planeten setzen wird, kann ihr Gottvertrauen nicht erschüttern. „Mein Sohn wird Gott näher sein", sagt sie schlicht.

Papst Pius XII. gab einigen Weltraumforschern neben seinem Segen mit auf den Weg: „Gott der Herr, der in das Herz des Menschen den unersättlichen Wissensdrang gesetzt hat, hatte nicht die Absicht, seinem Eroberungswillen eine Grenze zu setzen als er sagte: ‚Macht euch die Erde untertan'."

Hans im Bild

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GESUND ZUR ERDE ZURÜCK



Moskau, 13. April

Gestern morgen um 7.09 Uhr MEZ hat das Zeitalter der bemannten Weltraumfahrt begonnen. Der 27jährige Major der sowjetischen Luftwaffe Yuri Alexejewitsch Gagarin wird als erster Raumpilot in die Geschichte eingehen.

Nach einem Raketenflug von 106 Minuten, der ihn mit fast 30 000 km/st bis in 302 km Höhe führte, landete Gagarin mit seinem Raumschiff um 8.55 Uhr irgendwo in den Weiten Sibiriens.

Ein historischer Tag für die Menschheit.

Ein Riesenerfolg für die Sowjet-Union!

Sondermeldung

Mit Fanfarenstößen leitete der Moskauer Rundfunk die Sondermeldung ein. Kremlchef Chruschtschow gratulierte:

„Das ganze Sowjetvolk ist begeistert von Deiner ruhmreichen Tat, der über Jahrhunderte hinaus als eines Beispiels von Mut, Tapferkeit und Heldentum im Dienste der Menschheit gedacht werden wird.

Dein Flug erfüllt die Herzen des sowjetischen Volkes mit großer Freude und mit Stolz auf ihre sozialistische Heimat.

Ich umarme Dich.

Bis zu unserer baldigen Begegnung in Moskau. N. Chruschtschow."

WOSTOK nannten die Sowjets das Raumschiff. „Der Osten" heißt das.

Die kommunistische Propaganda-Maschine läuft auf Hochtouren.

Kopf an Kopf lagen die beiden großen Raketenmächte bis zuletzt im Rennen um die Eroberung des Weltraums.

Während das sowjetische Raumschiff vermutlich auf dem Raketenstützpunkt Kasputin Jar, 100 km südöstlich von Stalingrad, von Superraketen in den Himmel geschleudert wurde, stand auf dem amerikanischen Weltraumbahnhof Kap Canaveral die Rakete bereits auf der Startrampe, mit der der erste Amerikaner ins All geschossen werden soll. Ende April — Anfang Mai sind als Termin vorgesehen.

Allerdings planen die USA zunächst nur einen Weltraumflug von 15 Minuten bis in 150 km Höhe. Die Raumkapsel soll sofort wieder landen. Die Erdumkreisung soll erst Ende des Jahres folgen.

Das sowjetische Raumschiff umkreiste die Erde einmal. Es wog 94,5 Zentner. Die unterste Höhe auf der Erdumlaufbahn betrug 175 km, die größte Höhe 302 Kilometer.

Über die technischen Einzelheiten ihres Raumschiffes schweigen sich die Sowjets aus. Bekannt wurde nur, daß die Pilotenkabine vollgestopft war mit Meßinstrumenten.

Gagarin wurde während des ganzen Fluges durch Fernsehkameras beobachtet. Er selbst hatte nichts weiter zu tun als durchzustehen.

Alle Steuerungsbefehle wurden durch Funksignale aus dem Betonunterständen am Boden gegeben. Elektronengehirne berechneten den Kurs. Es bestand ständige Funkverbindung zwischen dem Kosmonauten, wie die Sowjets ihre Weltraumflieger nennen, und der Bodenstation. Ob er die Sterne oder unter sich die Erde überhaupt gesehen hat?

Es wird erwartet, daß Gagarin morgen oder am Freitag in der sowjetischen Hauptstadt eintreffen wird. Seine Reise um die Welt kostete etwa zwei Milliarden Mark.

Nach seiner Landung wurde er sofort von Ärzten untersucht.

Immer noch nicht sind in der Welt die Gerüchte verstummt, daß die Sowjets schon am Freitag voriger Woche einen bemannten Weltraumversuch unternahmen. Die kommunistische englische Zeitung „Daily Worker" veröffentlichte einen Bericht ihres Moskauer Korrespondenten, wonach der Weltraumfahrer geistesgestört zur Erde zurückgekehrt sei.

Moskau hat diesen Bericht weder bestätigt noch dementiert. Westliche Korrespondenten hatten ähnliches in Moskau gehört.

Ziemlich sicher ist dagegen, daß die Sowjets schon im September vorigen Jahres einen Versuch unternahmen. Der US-Geheimdienst will erfahren haben, daß der Pilot dabei tödlich verunglückt sei.

Chruschtschow mußte ohne Raketendonner vor der UNO in New York auftreten. Er donnerte statt dessen mit den Schuhen auf den Tisch.

Großer Tag

Seit Sputnik I am 4. Oktober 1957 zur Überraschung der Welt das Zeitalter der Raumfahrt einleitete, hat sich Moskau auf diesen einen großen Tag vorbereitet.

Immer wollten sie die ersten sein. Ihre Großraketen gaben ihnen so viel Vorsprung vor den USA, daß sie es auch immer waren.

Dem ersten Sputnik folgte die Hündin Laika, das erste Lebewesen im All (sie mußte getötet werden). Der erste künstliche Sonnenplanet, der erste Mondtreffer, die Photographien von der Rückseite des Mondes, die Venus-Rakete waren weitere Schritte zum ersten bemannten Weltraumflug.

Dagegen holten die Amerikaner mit einer Vielzahl von Satelliten die wesentlichen Forschungs-Ergebnisse aus dem All.

Wie es weitergeht? Moskau teilte bereits mit, daß der Mond das nächste Eroberungsziel sei. Eine gigantische Rakete sei bereits fertiggestellt.

„Und jetzt zum Mond!"

Neidlose Bewunderung bei westlichen Politikern und Wissenschaftlern:

John F. Kennedy (US-Präsident): „Die Erforschung unseres Sonnensystems ist ein Ziel, das die USA und die gesamte Menschheit mit der Sowjetunion teilen. Ich beglückwünsche die sowjetischen Wissenschaftler und Ingenieure."

James Webb (Leiter US-Raumfahrtbehörde): „Eine großartige Leistung. Hoffentlich teilen uns die Russen ihre Erfahrungen mit."

Prof. Lovell (Leiter britische Radio-Sternwarte): „Größte wissenschaftliche Leistung in der Geschichte der Menschheit."

Sir George Thomson (England, Nobelpreisträger): „Ein wunderbarer Fortschritt. Aber Rußland und USA liegen weiter Kopf an Kopf."

Prof. Sänger (deutscher Raketenforscher): „Der Mensch übersteht die Raumkrankheit."

Hermann Oberth (Vater des Raketen-Zeitalters): „Jetzt ist auch der Mondflug eines Menschen nicht mehr fern."

Seine Frau ist Ärztin

27 Jahre alt, verheiratet, Vater von zwei kleinen Töchtern — das ist der sowjetische Weltraumpilot Juri Alexejewitsch Gagarin.

Ein Familienvater wurde bevorzugt, wie bei der Auswahl der amerikanischen Weltraumpiloten. Man braucht in den Raumschiffen keine Abenteurer, sondern solide, verantwortungsvolle Techniker.

„Dieser Mann mit dem gütigen, russischen Gesicht, den schönen klugen Augen und der hohen Stirn ist von großem echtem Charakter", stellte ihn das Moskauer Fernsehen vor.

Gagarin ist Sohn eines Kolchosbauern aus der Nähe von Moskau. Er besuchte die Mittelschule und anschließend eine Berufsschule. Er machte seine Meisterprüfung als Gießer. Seit 1957 ist er Pilot der sowjetischen Luftwaffe. Besondere Ausbildung: Fallschirmspringer.

Seine Frau ist die Ärztin Walentina Gargarina. Tochter Jelena ist zwei Jahre und Galja einen Monat alt.



Jubel und Propaganda

Der Flug des ersten Menschen in den Weltraum hat in der Sowjetunion einen Sturm des Jubels und der Propaganda ausgelöst.

An die Arbeit dachte kaum jemand. Auf Plätzen, in Werkshallen und Büroräumen sammelten sich die Menschen unter Lautsprechern. Die gesamte Propagandamaschine der Kommunistischen Partei schaltete sich ein. Über alle Radiostationen erklangen helle Fanfarenstöße und flotte Marschlieder.

In Moskau konnte selbst Schneetreiben die Menschen nicht in die Häuser vertreiben. Wildfremde Leute schlugen sich auf die Schultern, umarmten sich oder schüttelten sich die Hände.

Täuschung an der EIGER-Wand

Bergsteigen auf Raten

bm. München, 11. April

Als der große Eiger-Bezwinger wurde der Münchner Toni Hiebeler gefeiert. Ihm war gelungen, was bisher keiner schaffte: Die berüchtigte Eiger-Nordwand im Winter zu durchsteigen.

Jetzt mußte er kleinlaut zugeben: „Es war gar nicht die ganze Wand. Wir haben uns das erste Drittel geschenkt."

Dieses Stück hatte er zusammen mit seinen drei Seilgefährten bei Nacht Nebel durch den Tunnel der Jungfrau-Bahn zurückgelegt. Auf einem bequemen Spazierweg also.

Erst als Hans Grünleitner, Hiebelers großer Gegenspieler, die Täuschung aufdeckte, machte der Münchener das Eingeständnis, die Tour „auf Raten" gemacht zu haben.

In einer Sendung des Bayerischen Rundfunks hatte Hiebeler noch erklärt: „Wir haben die ganze Wand durchstiegen! Alles andere ist Verleumdung!" In der Zeitschrift „Der Bergkamerad" stellte er die gleiche Behauptung auf.

War die gewagte Tour nichts als ein lange geplantes Geschäft? Bereits wenige Tage nach dem „Sieg" wurden auf dem deutschen Buchmarkt gleich zwei Werke Hiebelers über die Winterbegehung angekündigt. Grünleitner und Hiebeler werden sich am 21. April in Lörrach vor Gericht gegenüberstehen.



Toni Hiebeler: Eiger-Bezwinger?

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Der Streit um Kirchenpräsident Niemöller (Seite 3)

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Montag, 7. August 1961 C 7108 A Ausgabe N Nr. 181 · Preis 30 Pf

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O. M. — Als diese Zeilen in Druck gingen, hatte sich das Schicksal des sowjetischen Astronauten German Stepanowitsch Titow noch nicht entschieden, der am Sonntagmorgen seinen Raumflug antrat. Seine Raumkapsel ist von jenem erprobten Typ, der schon dreimal Tiere und schließlich Gagarin sicher auf die Erde zurückgebracht hat. Nur einmal ist bisher diese Rückkehr nicht geglückt. Mit jener Chance von vier zu eins hat Titow seinen Flug angetreten.

Der Start und der Wiedereintritt in die Atmosphäre sind die beiden risikoreichsten Phasen jedes bemannten Raumfluges. Was dazwischen liegt, der Flug auf der Kreisbahn, ist technisch ein zweitrangiges Problem, wenngleich auch dabei natürlich gefährliche Zwischenfälle, wie etwa ein Versagen der Druckluft- oder der Sauerstoffanlage, auftreten können. Ob ein Raumschiff einmal, dreimal oder siebzehnmal die Erde umkreist, ist technisch also nicht so bedeutsam.

Die Schwierigkeiten liegen vielmehr auf anderem Gebiet. Die Frage ist, wie ein Mensch physisch und psychisch reagiert, der sich 24 Stunden lang in schwerelosem Zustand befindet, der in der Einsamkeit zwischen der leuchtenden Erde unter ihm und dem schwarzen Himmel über ihm einer intensiven Strahlung ausgesetzt ist und der in 24 Stunden siebzehnmal Tag und Nacht durcheilt? Titow wird darauf Antwort geben können, und dies ist es, was den Flug der „Wostok II" zum bisher bedeutendsten Ereignis der jungen Geschichte der Raumfahrt macht.

Die Amerikaner werden frühestens Ende dieses Jahres, wahrscheinlich aber erst Anfang 1962, in der Lage sein, eine bemannte „Mercury"-Kapsel dreimal um die Erde zu schikken —, an einen 24-Stunden-Flug ist mit diesem kleinen Raumfahrzeug kaum zu denken. Man darf sicher sein, daß Chruschtschow aus dieser Tatsache wiederum propagandistische Münze schlagen wird.

Brandt: Nicht mit dem Feuer spielen

Von unserem Korrespondenten

H.-J. K. **Berlin, 6. August**

Innerhalb von 48 Stunden haben sich im Westberliner Notaufnahmelager Marienfelde 3200 Flüchtlinge gemeldet. Das ist die größte Zahl in zwei Tagen seit 1953. Allein von Sonnabend mittag bis Sonntag nachmittag wurden 2100 bisherige Bewohner der Zone und Ostberlins registriert, die zum Teil körperlich abgehetzt, seelisch erschöpft und mit nur wenig Gepäck Westberlin erreicht hatten.

Im Gegensatz zu den letzten Tagen gab es am Wochenende keine Pausen mehr bei der Ankunft der Flüchtlinge. Fast gleichmäßig zu allen Tageszeiten und selbst in der Nacht meldeten sich Menschen aus Mitteldeutschland in Marienfelde.

Der Berliner Regierende Bürgermeister Brandt erklärte in einer Rundfunkrede, die Machthaber in der Zone wüßten nicht, daß sie „mit dem Feuer spielen". Er forderte die Sowjets auf, sich ein eigenes Bild der Lage zu machen. Die Ostberliner Maßnahmen gegen die „Grenzgänger" bezeichnete Brandt als Versuch des kommunistischen Regimes, „noch vor Beginn der Berlin-Verhandlungen unabänderliche Tatsachen" zu schaffen.

In der vergangenen Woche wurden in den Lagern Westberlin, Gießen und Uelzen insgesamt 10 419 Flüchtlinge registriert, unter ihnen 1141 alleinstehende Jugendliche unter 25 Jahren. In der letzten Juliwoche waren es 7974 Zonenbewohner, die um Notaufnahme baten.

Schon in der Nacht zum Sonnabend und am Sonnabendvormittag stieg die Zahl der Flüchtlinge stark an. Der Sonntag bestätigte, daß der Strom der flüchtenden Menschen unaufhörlich weiter zunimmt.

(Fortsetzung Seite 2, Spalten 2 und 3)

Warschauer Pakt: Noch in diesem Jahr

Nachrichtendienst der WELT

Moskau/Paris, 6. August

Zum ersten Male haben die Mächte des Warschauer Paktes gemeinsam die Forderung nach einer Friedensregelung für Deutschland noch in diesem Jahr erhoben. Wie aus einer Verlautbarung hervorgeht, forderten ihre Parteichefs auf einer dreitägigen Geheimkonferenz in Moskau einen Friedensvertrag, der — falls der Westen eine Beteiligung ablehnt — allein mit der Zone abgeschlossen werden soll.

Die Parteichefs erörterten nach Ansicht diplomatischer Beobachter eingehend den Flüchtlingsstrom aus der Zone nach dem Westen. Sie bekundeten, wie verlautet, daß dieser Strom nicht nur für das Regime in Ostberlin, sondern für den ganzen Ostblock unangenehme Aspekte habe.

Auszüge aus der sowjetischen Note zur Deutschland-Frage an die Vereinigten Staaten und aus dem Memorandum an Bonn veröffentlichen wir auf Seite 9

In Paris haben die über das Wochenende tagenden Außenminister der Westmächte und der Bundesrepublik die militärische Verantwortlichkeit Frankreichs, Großbritanniens und der Vereinigten Staaten für die Sicherung der Zugangswege nach Berlin bekräftigt.

Nach einer Meldung der United Press International, die sich auf Konferenzkreise beruft, haben sich die Minister darauf geeinigt, Moskau für den Herbst Verhandlungen über die Deutschland-Frage unter den Außenministern vorzuschlagen. Ein Sprecher der Delegation der Bundesrepublik in Paris bezeichnete diese Information als falsch. Laut UPI will der Westen als Konferenzort Genf vorschlagen. (Einzelheiten auf Seite 4.)

Zweiter Russe im All
Siebzehnmal um die Erde

Major German Titow 24 Stunden im Weltraum

Von unserem Korrespondenten

ewe. **Moskau, 6. August**

Mit pausenlosen Sondermeldungen im Rundfunk und Fernsehen, mit dröhnender Marschmusik über alle Straßen und Plätze Moskaus und geschwollenen Reden der Kommentatoren feierte Moskau am Sonntag den zweiten bemannten Weltraumflug der Sowjets. Pilot ist der 26jährige Luftwaffenmajor German Stepanowitsch Titow. Er hat seinen Flug mit dem „Wostok II" dem 22. Parteitag der Kommunistischen Partei im Oktober gewidmet.

Der zweite bemannte Weltraumflug der Sowjets dauert wesentlich länger als der erste Flug Major Gagarins vor knapp vier Monaten. Er soll nach offizieller Ankündigung die „Möglichkeiten und Auswirkungen eines längeren Flugs unter kosmischen Bedingungen und im Zustand der Schwerelosigkeit" erproben. Gagarin war am 12. April 1961 nur einmal um die Erde gekreist und nach 108 Minuten wieder gelandet.

So verlief der Sonntag in Moskau:

10.41 Uhr: Radio Moskau unterbricht ein Programm leichter Volksmusik. Es ertönt die pathetische Stimme des schon aus dem zweiten Weltkrieg bekannten Moskauer Staatssprechers Levitan. Levitan: „Achtung! Achtung! Hier spricht Moskau. Hier sind alle sowjetischen Sender. Wir übertragen eine TASS-Sondermeldung über den zweiten bemannten Weltraumflug in der Sowjetunion ..."

(Fortsetzung Seite 2, Spalten 5 und 6.)



Major German Titow,
der zweite russische Astronaut

Telefoto: DIE WELT/UPI

Die Uhr steht auf Verhandlung

Von KURT BECKER

Die sowjetische Antwortnote

Unveränderte Forderungen

Gefahren sind nicht gebannt

Aus der sowjetischen Antwortnote an die Westmächte und dem Memorandum an die Bundesrepublik ist sachlich nichts herauszulesen, was in diesem Falle die Annahme von dem unerschöpflichen Einfallsreichtum Chruschtschows rechtfertigte. Die Forderungen nach zwei Friedensverträgen mit beiden Teilen Deutschlands und einer Auslöschung des Status von Berlin sind nicht um einen Millimeter, um keine Nuance verrückt worden. Nur sind diesmal obendrein umfangreiche Beschuldigungen gegenüber den Vereinigten Staaten und in ganz besonderem Maße gegenüber der Bundesrepublik erhoben worden.

Wie ein amtlicher Regierungssprecher in Bonn zunächst die unsinnige Weisung erhalten konnte, das an die Bundesregierung gerichtete Memorandum als „in der Sache hart, im Ton aber gemäßigt" zu bezeichnen, sollte man sich wohl nur als „Betriebsunfall" erklären; denn in Wahrheit unterscheidet sich dieses Memorandum von den Antwortnoten an die drei Westmächte gerade dadurch, daß es vor allem im Ton ätzende Schärfen und nahezu unverhohlene kriegerische Drohungen aufweist. Während die Propaganda im allgemeinen die Begleitmusik zur Politik abgibt, ist es hier ganz anders: die Propaganda ist elementarer Bestandteil der Politik. Wenn die Sowjets die Bundesrepublik als den eigentlichen Friedensstörer und Kriegstreiber hinstellen — so nicht nur wegen der propagandistischen Polemik um ihrer selbst willen, sondern weil sie hiermit ihr altes Ziel verfolgen, unter den Verbündeten Argwohn zu schüren, die Bundesrepublik selbst aus dem Bündnis herauszuschießen und die westliche Allianz in ihrer Gesamtheit zu erschüttern.

*

An diesen Versuchen halten die Sowjets fest, vielleicht auch ermutigt durch gelegentliche nichtamtliche, auf beträchtliche Konzessionsbereitschaft hindeutende Äußerungen in den westlichen Hauptstädten, wie vor kurzem von Senator Fulbright. Tatsächlich aber ist in den zweidreiviertel Jahren, seitdem Chruschtschow zum Stoß gegen Berlin ausgeholt hat, im Westen etwas sehr Entscheidendes erreicht worden.

Die sowjetische Politik hat die Westmächte unaufhaltsam auf eine einheitliche Linie der festen Entschlossenheit gezwungen, von der eigenen Position auch nicht einen Fußbreit aufzugeben, in Berlin weder einseitig geschaffene Tatsachen zuzulassen noch der politischen Erpressung zu erliegen. Gewiß hätte in diesen fast drei Jahren mehr geschehen können, was dem Westen aus größerer realer Macht heraus eine bessere Verhandlungsposition ermöglicht hätte. Wertvolle Jahre sind in dieser Hinsicht fast nutzlos verstrichen. Aber schon die letzte Antwortnote des Westens auf das sowjetische Deutschland-Memorandum hat den Wert dieser gewandelten Haltung des Westens verdeutlicht, und deshalb vor allem prallten alle Forderungen Chruschtschows gegen eine Wand. Mit der westlichen Antwort bekam er eine Zusammenfassung rechtlicher, politischer und moralischer Prinzipien in die Hand, aber nichts, was er hätte weiterspinnen können oder wollen. So blieb Moskau in seiner Note jetzt nichts weiter, als sein Verlangen nach zwei Friedensverträgen und der Umwandlung Westberlins noch einmal zu motivieren.

*

Beide Seiten sind damit zum Stellungskrieg übergegangen, und der Austausch von Noten gleicht einer Diskussion, die sich im Kreise dreht. Niemand wird mehr ernsthaft erwarten, daß in dieser vor der ganzen Weltöffentlichkeit ausgetragenen Auseinandersetzung eine Seite es auch nur riskieren könnte, sichtbar einen Schritt zurückzuweichen, ohne ihr Gesicht zu verlieren und im eigenen Machtbereich dupiert dazustehen. Da beide Seiten ihre Bereitschaft zum Verhandeln bekundet haben, scheint nun auch der Zeitpunkt gekommen, daß die Diplomatie die praktischen Verfahrensmöglichkeiten sondiert. Die Vorbereitungen in Ost und West

(Fortsetzung Seite 2)

Sommer-Schlußverkauf mit gutem Ergebnis

Von unserem Redaktionsmitglied

ege. **Hamburg, 6. August**

Der Sommerschlußverkauf des Jahres 1961 hat dem Einzelhandel zum Teil voraussichtlich wesentlich größere Umsätze als im Vorjahr gebracht. Man schätzt, daß schon in der ersten Woche gegenüber 1960 ein Zuwachs um 15 bis 20 Prozent erzielt worden ist. Dieser Erfolg beweist nach Auffassung von Fachkreisen die Existenzberechtigung der Saisonverkäufe. (Siehe Wirtschaft.)

Wilhelmi gegen Einberufung der Synode wegen Niemöller

Von unserem Korrespondenten

Str. **Frankfurt a. M., 6. August**

Der Präses der Synode der Evangelischen Kirche in Hessen und Nassau, Bundesschatzminister Wilhelmi, hat sich in einem Gespräch mit der WELT gegen eine außerordentliche Synode der hessen-nassauischen Landeskirche wegen der jüngsten Auseinandersetzungen um Kirchenpräsident Niemöller ausgesprochen. Die Einberufung der Synode war vom Fraktionsvorsitzenden der CDU in Hessen, Großkopf, gefordert worden. Großkopf gehört dem Öffentlichkeitsausschuß der Landeskirche an.

Niemöller hat inzwischen in einem Gespräch mit dem Ratsvorsitzenden der Evangelischen Kirche in Deutschland, Präses Scharf, seine Versicherung wiederholt, daß er sich in der Zone nicht vom Kirchentag distanziert, sondern sogar die gleiche Aufgabe wie dieser verfolgt habe. Niemöller bekräftigte diese Feststellung am Wochenende noch einmal im Hessischen Rundfunk. (Siehe Seite 3.)

Verkehrschaos auf Sowjetbahnen

Springer-Auslandsdienst

London, 6. August

Ein Verkehrschaos auf fast allen großen sowjetischen Eisenbahnlinien hat zu einer starken Behinderung der Einbringung der Ernte geführt. Wie aus Berichten des „Sunday Telegraph" hervorgeht, haben sich an allen großen Verkehrsknotenpunkten der Sowjetunion große Stauungen von beladenen Eisenbahnwaggons ergeben. Allein in Moskau blockierten 2000 mit Lebensmitteln beladene Waggons die Verteilungsstrecken. An verschiedenen Vorortbahnhöfen hätten sich 30 000 t verderblicher Lebensmittel angestaut. Dabei könnten gegenwärtig nur 3000 Tonnen je Tag umgeschlagen werden.



Junge Flüchtlinge aus der Zone warten in Berlin auf den Flug in den Westen
Von 10 419 Flüchtlingen in einer Woche zählte man 1140 alleinstehende junge Leute unter 24 Jahren

Foto: dpa

Rusk zu Adenauer nach Cadenabbia

Von unserem Korrespondenten

Ho. **Bonn, 6. August**

Der amerikanische Außenminister Rusk wird Bundeskanzler Adenauer noch in dieser Woche in Cadenabbia aufsuchen. Rusk beabsichtigt, am Mittwoch in Mailand mit dem italienischen Außenminister Segni zusammenzutreffen. Danach wird er den Kanzler in seinem Urlaubsort besuchen.

Dem Gespräch zwischen Adenauer und Rusk wird eine Unterrichtung des Bundeskanzlers durch Außenminister von Brentano voraufgehen. Brentano reist nach Beendigung der Pariser Außenministerkonferenz nach Cadenabbia. Gesprächsthemen zwischen Rusk und Adenauer werden die Lage in Berlin sowie die jüngsten sowjetischen Noten sein.

Kardinal van Roey gestorben

Brüssel, 6. August (KNA)

Joseph Ernst van Roey, Primas von Belgien und rangältester Kardinal der Katholischen Kirche, ist am Sonntag an den Folgen akuter Kreislaufstörungen im Alter von 87 Jahren gestorben.

Nach dem Tode von Kardinal Tardini am 30. Juli und dem Dahinscheiden des Kurienkardinals Canali am 3. August hat das Kardinalskollegium jetzt nur noch 81 Mitglieder.

Frisia senkt Benzinpreis

Nachrichtendienst der WELT

Emden, 6. August

Die Frisia senkt mit Wirkung vom 7. August die Benzinpreise um 2 Pfennig je Liter an ihren Tankstellen nördlich der Linie Koblenz—Kassel und um 1 Pfennig südlich dieser Linie. Der Preis des Frisia-Benzins hat bisher einheitlich 58 Pfennig betragen. Er war bei der letzten Benzinpreissenkung im April nicht herabgesetzt worden. Die Preissenkung begründet die Frisia mit Frachtersparnissen. Wie die Gesellschaft weiter mitteilt, wird der Frisia-Kraftstoff mit 96/98 Oktan an bisher 105 Frisia-Tankstellen in der Bundesrepublik vertrieben. Die Frisia rechnet damit, bis Ende dieses Jahres rund 150 Frisia-Tankstellen in der Bundesrepublik in Betrieb zu haben.

Krone: Opfer für die Verteidigung

Der Fraktionsvorsitzende vor katholischen Kommunalpolitikern

Essen, 6. August (UPI-AP-dpa)

Weitere Opfer für die Verteidigung der Freiheit forderte der Fraktionsvorsitzende der Christlichen Demokraten im Bundestag, Krone, auf einer kommunalpolitischen Tagung der katholischen Arbeiterbewegung in Essen. Krone kündigte an, daß die Finanzmittel für die militärische Stärke der Bundesrepublik im nächsten Haushaltsplan wesentlich erhöht würden. Seine Partei wolle das auch vor der Bundestagswahl nicht verschweigen.

Es werde sogar notwendig werden, sagte der Fraktionsvorsitzende, die Erfüllung verschiedener, sozialer Wünsche zurückzustellen. Als erfreulich bezeichnete Krone die Tatsache, daß das amerikanische Repräsentantenhaus und der Senat so schnell und einstimmig das Programm des amerikanischen Präsidenten Kennedy zur Verstärkung der Streitkräfte gebilligt habe. Damit werde der östlichen Welt demonstriert, was die westliche Welt für die Freiheit Berlins einzusetzen bereit sei.

Die der katholischen Arbeiterbewegung angehörenden Kommunalpolitiker forderten in einer einstimmig angenommenen Entschließung die Bevölkerung der Bundesrepublik auf, die kommunalen Parlamente bei der Unterbringung der Flüchtlinge zu unterstützen und diese Menschen notfalls in die eigenen Wohnungen aufzunehmen.

Gegen die in der Diskussion vertretene Meinung, die CDU sei zu liberal geworden, wandte sich der CDU-Bundestagsabgeordnete Winkelheide. Die einstimmig von der CDU/CSU-Fraktion beschlossene Änderung der Ehescheidungsbestimmungen und das Sozialhilfegesetz seien doch Beweise, daß in der CDU nach christlichen Grundsätzen Politik gemacht werde, sagte der Abgeordnete.

Verbandspräses, Prälat Schmitt, betonte, daß die Politik von den Glaubens-, Lebens- und Sittengrundsätzen des Christentums getragen werden müsse und das Gewissen der letzte Maßstab bei allen entscheidenden Fragen sei.

Sowjetjäger beschossen persisches Flugzeug

Teheran, 6. August (dpa)

Ein persisches Transportflugzeug ist am Freitag über dem Kaspischen Meer von sowjetischen Jägern beschossen worden. Wie erst am Sonntag amtlich in Teheran mitgeteilt wurde, geriet ein Motor der Maschine in Brand. Der Pilot konnte das Flugzeug auf persischem Gebiet notlanden. Das persische Außenministerium bereitet einen scharfen Protest in Moskau vor.

Die Maschine war mit einer dreiköpfigen Besatzung von Teheran nach Beirut unterwegs. Die Sowjets hatten Funkverbindung mit dem Flugzeug aufgenommen und es angewiesen, in nördlicher Richtung zu fliegen. Nach Weigerung wurde die Maschine angegriffen.

Chinesische Waffen für Rebellen in Angola

London, 6. August (dpa)

Durch die Aufmerksamkeit von zwei Piloten einer britischen Lufttransport-Gesellschaft ist eine illegale Ladung Waffen entdeckt worden, die wahrscheinlich für den Aufstand in Angola bestimmt war. Die Kisten lagen in Tripolis und sollten von der Gesellschaft nach den Kanarischen Inseln geflogen werden. Ihr Inhalt war auf den Frachtlisten mit „Schrauben" angegeben. Als die Piloten jedoch chinesische Schriftzeichen entdeckten, wurden sie aufmerksam, öffneten eine Kiste und fanden Granatwerfer, Munition und Handgranaten.

Trauer über den Tod von Hanns Seidel

Von unserem Korrespondenten

wfm. **München, 6. August**

Der Tod des früheren bayrischen Ministerpräsidenten und langjährigen CSU-Vorsitzenden Hanns Seidel, der am Sonnabendabend im Alter von 59 Jahren in der Münchner Universitätsklinik einer Lungenentzündung erlag, hat vor allem in Bayern große Trauer hervorgerufen.

Am kommenden Mittwoch werden die sterblichen Überreste auf dem Münchner Westfriedhof beigesetzt. Auf Wunsch des Verstorbenen werden keine Trauerreden am Grabe gehalten. Vor der Beisetzung wird in der Theatinerkirche ein feierliches Requiem zelebriert.

Der CSU-Vorsitzende, Verteidigungsminister Strauß, dankte dem Verstorbenen in einem Nachruf für die wertvollen Ratschläge, die er noch im Krankenzimmer zum Wohle der Partei formuliert habe. Sein Amtsvorgänger, Ministerpräsident a. D. Hoegner, bezeichnete Seidel als „scharfen, aber immer anständigen politischen Gegner." (Siehe Seite 2.)

Neuartige U-Boot-Abwehr der US-Marine

New York, 6. August (dpa)

Zur neusten Waffe der amerikanischen U-Boot-Abwehr soll eine bemannte Boje von 108 Meter Länge mit vier Mann Besatzung werden. Erste Pläne sind jetzt in New York bekanntgegeben worden.

Das Rohr soll zunächst in horizontaler Lage auf hohe See geschleppt, dann aber durch Fluten des unteren Teiles in eine vertikale Lage gebracht werden. Wie bei einem Eisberg wird von dem Rohr nur ein kleines Stück über die Wasseroberfläche hinausragen.

Moss gewinnt Großen Preis von Europa

Graf Trips fährt Rundenrekord — 250 000 am Nürburgring

Von unserem Redaktionsmitglied

hba. **Nürburgring, 6. August**

Eine viertel Million Menschen erlebten am Nürburgring den Sieg des Engländers Stirling Moss auf einem Lotuswagen im Großen Preis von Europa. Sie sahen die dramatischste Verfolgsjagd in der diesjährigen Automobil-Weltmeisterschaft.

Die Ferrari-Fahrer Hill (USA) und Graf Trips (Deutschland) versuchten rundenlang, mit ihren stärkeren Motoren den Vorsprung des Engländers aufzuholen. Moss bewies in diesem Rennen, daß er im Augenblick der beste Rennfahrer der Welt ist. Trips und Moss verbesserten in dieser Hetzjagd den offiziellen Rundenrekord und blieben als erste Fahrer unter neun Minuten.

Das Rennen begann mit erregenden Zwischenfällen. Weltmeister Brabham verunglückte schon in der ersten Runde mit seinem neuen Achtzylinder-Cooper und schied unverletzt aus. In der zweiten Runde brannte er Wagen von Ireland (England) vollständig aus. Der Schwede Bonnier fiel nach den ersten 20 Kilometern mit seinem Porsche schon weit zurück und schied später ganz aus.

Graf Trips dehnte mit seinem zweiten Platz seinen Vorsprung in der Fahrer-Weltmeisterschaft weiter aus. Er führt mit 33 Punkten vor Hill mit 29 und Moss mit 21 Punkten. (Siehe Sport.)

Aufgerüttelt von den sowjetischen Erfolgen erklärte US-Präsident John F. Kennedy am 25. Mai 1961: "Ich bin der Ansicht, dass sich unsere Nation dazu verpflichten sollte -noch ehe dieses Jahrzehnt zu Ende geht -das Ziel zu erreichen, einen Menschen auf den Mond und wohlbehalten zur Erde zurückzubringen.[*aus Googel-Infos zusammengestellt*]

Zwei Jahre später unterstrich Vizepräsident Lyndon B. Johnson die politische Bedeutung mit seiner Bemerkung zu Wernher von Braun, der seit den 1950er-Jahren für die amerikanische Weltraumforschung arbeitete: "Wernher, bringen Sie mir diesen Hut bis 1970 zum Mond."

Der Mond war das wichtigste Etappenziel geworden. Bevor ein Hut auf den Mond kommen konnte, musste erst einmal eine Landung auf dem Mond gelingen. Und wieder hatte die Sowjetunion die Nase vorn: Am 3. Februar 1966 landete Luna 9 auf dem Mond, ohne dabei zu zerschellen. Die knapp hundert Kilogramm schwere Sonde mit einem Durchmesser von 58 Zentimetern setzte auf ihren Federbeinen auf. Nicht in meterhohem Staub, wie sowjetische und US-amerikanische Raumfahrtbehörden lang gefürchtet hatten, sondern auf einer festen Mondoberfläche.

An Heiligabend, dem 24. Dezember 1968, erreichten die drei US-Astronauten Frank Borman, William Anders und James Lovell an Bord der Apollo8 den Mond und schickten die wohl teuersten Weihnachtsgrüße der Geschichte zur Erde. Aufgebrochen waren die drei "Mondmänner" drei Tage zuvor, am 21. Dezember 1968 -zur ersten bemannten Mondfahrt der Geschichte.

Dieses besondere Ereignis mit zu erleben, ich war schon bei der DLR, war prägend und faszinierend für mich!

Der 16. Juli 1969 brachte den entscheidenden Vorstoß ins All: Nach erfolgreichem Countdown startete vom Kennedy Space Center die Trägerrakete Saturn V zur Mission Apollo 11. In nur zehn Minuten war die vorgesehene Höhe von knapp 190 Kilometern erreicht, in der die dritte Triebwerkstufe gezündet wurde. Drei Tage dauerte dann die Reise der Columbia zum Mond, der rund 380.000 Kilometer von der Erde entfernt ist. In dieser Zeit gab es für die Astronauten nicht viel zu tun - abgesehen von gelegentlichen Fernsehinterviews: Auf der entfernten Erde verfolgte die gesamte Menschheit das Schicksal der drei.Zunächst umkreiste die Columbia den Mond einige Male.

Neil Armstrong und Edwin Aldrin stiegen in die Mondlandefähre Eagle um, während Michael Collins als Kommandant an Bord der Kommandokapsel blieb. In einem atemberaubenden Landeanflug brachte Armstrong den Eagle im "Meer der Ruhe" auf den Boden.Rund sieben Stunden später war es dann so weit: Am 21. Juli 1969 um 3.51 Uhr MEZ betrat Neil Armstrong als erster Mensch den Mond: "Es ist ein kleiner Schritt für einen Menschen, ein gigantischer Sprung für die Menschheit!" Armstrong und Aldrin sammelten über 20 Kilogramm Mondgestein und Bodenproben. Diese wurden später auf der Erde eingehend untersucht und gaben ersten Aufschluss über den Mond. Den ersten Stein steckte sich Armstrong gleich am Anfang in die Tasche des Raumanzugs, falls die Mission vorzeitig abgebrochen würde.

Europäische Gemeinschaftsprojekte in Frage gestellt

Bonn will Raumfahrtprogramm kürzen

Riesenhuber fordert Einsparungen bei „Hermes“ und „Columbus“

1992

frö. **Bonn** (Eigener Bericht) – Die Bundesregierung will sich weiter an internationalen Projekten der bemannten Raumfahrt beteiligen, muß dabei aber einen strikten Sparkurs fahren. Wie Bundesforschungsminister Heinz Riesenhuber (CDU) vor der Presse in Bonn erläuterte, werde bei der nächsten Ministerkonferenz der Europäischen Raumfahrtbehörde ESA Anfang November im spanischen Granada das gesamte europäische Programm auf den Prüfstand kommen.

Einigkeit bestehe darüber, daß für das Wissenschaftsprogramm mehr Geld ausgegeben werden soll. Geplant ist ein realer jährlicher Zuwachs um fünf Prozent bis 1994 für die Kometenforschung und die Erforschung der Sonne. Auch die Mittel für Erderkundung und Umweltforschung sollen aufgestockt werden. Von Einschnitten verschont bleiben soll auch der Bau einer leistungsstärkeren Version der erfolgreichen Trägerrakete *Ariane*. Damit will die ESA die Chancen auf dem Gebiet der Satellitenstartdienste und die entsprechenden deutschen Industriekapazitäten sichern.

Kürzungen soll es bei den Großprojekten des Raumgleiters *Hermes* und der Weltraumstation *Columbus* geben. Die Raumstation soll in ihrem unbemannten Teil auf die polare Forschungsplattform und in ihrem bemannten Teil zunächst auf die Entwicklung des Weltraumlabors, das an die geplante US-Raumstation *Freedom* angedockt wird, beschränkt werden. Das Columbus-Element MTFF, ein zeitweilig bemanntes freifliegendes Labor, könne dagegen derzeit nicht finanziert werden. Das gelte auch für den von Frankreich favorisierten Raumgleiter *Hermes*, dessen Start ursprünglich für die Jahrhundertwende geplant gewesen war. Nachdem sich Deutschland schon gegen die bemannte Version des Raumgleiters ausgesprochen hatte, äußerte Riesenhuber nun auch „erhebliche Zweifel“ an der Finanzierbarkeit der unbemannten Version. Deutschland habe deshalb die Untersuchung weiterer Alternativen bis hin zur Form lediglich eines *Hermes*-Technologieprogramms gefordert. Auf die Frage, ob die allgemeine Finanzknappheit nicht einen Ausstieg aus der bemannten Raumfahrt erzwinge, antwortete Riesenhuber, das *Hermes*-Programm sei auch mit Blick auf die internationale Kooperation so grundlegend, daß es unklug wäre, darauf zu verzichten. Er rechne damit, daß auch mit nochmals gekürzten Mitteln ein „in sich sinnvolles Programm“ möglich sei.

Um alle Sparmöglichkeiten auszuschöpfen, sollte nach Ansicht Riesenhubers die internationale Kooperation mit den USA, Japan und der GUS verstärkt werden. Er unterstütze die Planungen der ESA, ein mehrjähriges Kooperationsprogramm mit den Raumfahrtstaaten der ehemaligen Sowjetunion aufzunehmen. Dafür solle die ESA umgerechnet 100 Millionen Mark bereitstellen. Weitere 20 Millionen Mark hat Riesenhuber in seinen Entwurf für den Haushalt 1993 eingestellt. Der Forschungsminister wird am kommenden Sonntag in die GUS reisen, um Kooperationschancen auszuloten.

Riesenhuber stellt unmißverständlich klar, daß es angesichts der Aufgaben in der Grundlagenforschung und beim Aufbau der ostdeutschen Forschungslandschaft für die Raumfahrt keine weiteren Mittel aus dem sonstigen Forschungsetat geben könne. Von den knapp 1,8 Milliarden Mark, die im Haushaltsentwurf 1993 für die Raumfahrt eingeplant sind, sollen allein 1,23 Milliarden Mark für ESA-Projekte reserviert werden. Das sind 100 Millionen Mark mehr als 1992. In der mittelfristigen Finanzplanung ist eine weitere Steigerung um 2,5 Prozent jährlich – Inflation eingeschlossen – vorgesehen. Riesenhuber hob hervor, daß Deutschland bei den Ausgaben für die Raumfahrt international auf Rang sieben stehe. (Seite 4)

ISS International Space Station



As collaborator in the Ariane development
I also had to realize:

“Per aspera ad astra” (via rough terrain to the stars).

10 years later in a discussion, Schabowski-Bahr, 1999

1989

So fiel die Mauer

...und dann war es wirklich soweit!

Okt 99

Von
GÜNTHER SCHABOWSKI

Am Abend des 6. November rief mich Krenz an.Vieles wurde via Telefon angedacht und „angeschoben" in jenen turbulenten Tagen. Im Politburo sanktionierte eine verunsicherte Mehrheit von Alten und anderen, die demnächst ihren Platz würden räumen müssen, meist nur noch, was die Minderheit der Putschisten (gegen Honecker) ad hoc zu entscheiden gezwungen war. Der Druck der Öffentlichkeit, das aufkeimende Selbstbewußtsein der Menschen, ihr unverhohlener SED-Überdruß, die Massendemos bestimmten längst das Tempo unserer Stolperschritte. So war es auch diesmal wieder.

Krenzens Stimme am Telefon klang genervt. Am Morgen hatten die Zeitungen den Entwurf eines Reisegesetzes veröffentlicht, der vier Wochen lang öffentlich diskutiert werden sollte, um ihn perfekt zu machen. Uns schien es ein demokratisches Non-Plus-Ultra für die DDR. Doch die sensibilisierten Bürgern hatten die Unzulänglichkeiten des Textes sofort diagnostiziert: Gummiformulierungen hinsichtlich des Erteilens von Reisevisa und von Genehmigungen für das Verlassen der DDR, kein Wort über Devisen, die man zum Beispiel für eine Fahrt in die Bundesrepublik benötigen würde. Statt der Entlastung, die wir uns versprachen, ging erneut eine kalte Dusche öffentlicher Ablehnung auf uns nieder.

Während des Telefonats kamen wir überein, schnellstens zu reagieren, am besten mit einer Regierungsverordnung, die nicht erst im Dezember die Volkskammer passieren müßte. Krenz: Ich veranlasse das jetzt bei Stoph (Noch-Ministerpräsident). Ein oder zwei Tage später mußten wir einen weiteren Beschleunigungsgang einlegen. Von der Moldau erreichte uns die kaum verhüllte Drohung, man würde die Grenze dicht machen, wenn der Flüchtlingsstrom nach Prag anhält. Honecker-Freund Jakes sah sich dadurch von der eignen Opposition unter Druck gesetzt. Andererseits war ein Riesen-Flüchtlings-Biwak auf DDR-Boden an der tschechischen Grenze das letzte was wir brauchen konnten. Mit solcher Schreckensvision bereitete sich für uns das „Wunder" des 9.November vor.

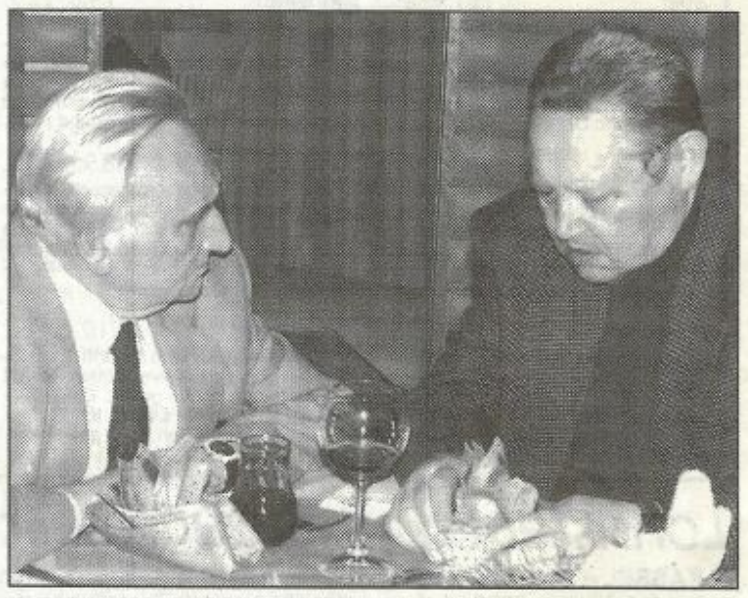
Erinnerungen verblassen, färben sich ein, Erlebtes, Durchlebtes reduziert sich für den Einzelnen auf (für ihn) Bewahrenswertes, Erinnerungen selektieren und werten um. Am wenigsten – so könnte man meinen – besteht diese Gefahr bei Ereignissen, deren Augen- und Ohrenzeugen nach Millionen zählen, begleitet von Tageschronisten der Medien und Zeitgeschichtlern. Ist es tatsächlich so? Der 9. November 1989 markiert ein solches aufwühlendes Massenerlebnis.

Noch immer höre ich die Frage, wie es denn zu dem Zufall gekommen sei, daß Schabowski die Reisefreiheit, also den Mauerfall ausgerufen hat. Und was war das für ein Zettel, haben Sie ihn noch, wer hat Ihnen den zugesteckt? Natürlich beruhen solche haltbaren Eindrücke nicht einfach auf Halluzination.

Da war in der Tat ein Papier zu sehen gewesen auf den Fernsehbildern von der Pressekonferenz. Und was sich zunächst, in den anschließenden Stunden eines schnell wachsenden Menschenstaus an Berliner Grenzübergangsstellen abspielte, stand ja in einem gefährlichen Widerspruch zu meiner Mitteilung. Es sah also überhaupt nicht nach einem planvollen Vorgang, sondern nach einer zur Entladung drängenden explosiven Konfrontation zwischen DDR-Bürgern und verunsicherten Grenzern aus. Ein „Zufall" und das „Papier" – das sind die Begriffe, die noch heute bei vielen den 9. November zum Datum eines Wunders verklären.

Bis es zu jenen Bildern kam, die um die Welt gingen, hatte sich folgendes zugetragen. Drei Tage nach dem verpfuschten Gesetzentwurf trat das ZK zusammen. Innenminister Dickel übergab dort Krenz das von ihm georderte Eilpapier der Regierung. In dürren Worten informierte Krenz das Plenum über die beabsichtigten neuen Reiseregelungen. Er begründete den vorgezogenen Schritt mit der tschechischen Drohung. Ein Wort über die Einwände der Bürger unterblieb. Das altgewählte ZK, in seiner Mehrheit unter dem Schock der Massendemos, des Honeckersturzes und verwirrender Dekrete aus dem Politbüro, nahm die Information ohne besondere Debatte hin. Ich kam erst nach mehrstündigen Gesprächen mit Journalisten gegen 17 Uhr in die Tagung und setzte mich neben Krenz. Er händigte mir den Regierungstext aus. Ich überflog ihn. Die Essentials Reisefreiheit und das Recht auf ständige Ausreise waren enthalten. Nach kurzem Abwägen des Für – Entlastung von öffentlichem Druck – und Wider – neuerliches Eingeständnis einer hastigen Pannenkorrektur – einigten wir uns darauf, daß ich die internationalen Pressevertreter auf dem anschließenden Briefing von unserer Maßnahme unterrichte. „Das wird ein Knüller", war Krenz inzwischen überzeugt.

Der vielzitierte Zufall nahm seinen Lauf. Krenz hatte mir nichts über eine Sperrfrist gesagt. Vielleicht wußte er es selbst nicht, vielleicht hatte er es vergessen. Er behauptet bis heute verbissen das Gegenteil. Das Papier - der immer wieder beschworene Zettel – trug keinen solchen Vermerk. Die Regierungsbürokratie wollte es erst früh um vier durch einen Rundfunksprecher verlesen lassen. Aber wie hätte man Stunden vorher die Weltpresse informieren können und ihnen anschließend Mund, Schreibmaschine oder Telefon mit einem „Embargo" versiegeln wollen. Wenn Krenz mir mit einer solchen Schnapsidee gekommen wäre, hätte ich sie ihm entschieden ausgeredet. Nicht einmal mehr die befehlsgewohnte DDR-Presse war so zu dressieren, geschweige denn die auf der Konferenz versammelte Weltpresse. Aber ich hatte keinen Anlaß zu einer Demarche, siehe oben: Krenz hatte nichts dergleichen geäußert.



Günther Schabowski (re.) im Gespräch mit dem damaligen Ost-Experten der SPD, Egon Bahr. Foto: nh

So kam es, daß die Grenze einige Stunden früher passierbar wurde, als es sich der rote Amtsschimmel ausgedacht hatte. Bis vier Uhr früh wähnte die hinter den Kulissen nur noch amtierende Regierung, Zeit zu haben, um die Posten an den Grenzübergängen überall im Lande zu benachrichtigen. Doch die sahen sich schon bald nach der Pressekonfernz, einer rasch zunehmenden Zahl von Bürgern gegenüber, die die Öffnung „testen" wollten. Die Kunde von meiner Mitteilung hatte sich international, aber mehr noch im unmittelbar betroffenen Ballungsgebiet Ost- und Westberlin wie ein Lauffeuer verbreitet. Ich konnte nicht ahnen, daß ausgerechnet die Grenzposten noch nichts davon wußten. Eine mehrstündige gefährliche Phase der Unsicherheit an den Berliner Passierstellen war die Folge. Noch heute ist es kaum fassbar, daß es nirgendwo zu einem blutigen Tumult kam. Bewirkt wurde es durch das undramatische und eigenständige Reagieren der Grenzposten, wie durch die überwiegend aufgekratzte Stimmung und friedlichen Haltung der Menschen auf beiden Seiten der Grenze. Stunden nach der Pressekonferenz sollte ich Augenzeuge des „Wunders" werden.

Gegen 22 Uhr rief mich ein Mitarbeiter der Bezirksleitung an und informierte mich, daß sich einige tausend Menschen an den „Güst" – den Grenzübergangsstellen eingefunden hätten. Eine halbe Stunde später kam der zweite Anruf. Die Menschentrauben hätten noch zugenommen. Ich mußte nach Berlin. Als ich aus der Siedlung herausfuhr, sah ich nirgendwo ein erleuchtetes Fenster. Wandlitz lag im Schlummer. Zum Übergang Bornholmer Straße wälzte sich die Autoschlange schon über die Schönhauser Allee. Am Grenzübergang Heinrich-Heine-Straße bot sich ein ähnliches Bild. Die Stimmung war entspannt, nahezu fröhlich. Ich hielt mich etwas abseits. Ein Zivilist, vermutlich ein Angehöriger der Staatssicherheit, machte mich darauf aufmerksam, daß die Menschen seit kurzem passieren können. Sie wiesen den Grenzern den blauen Personalausweis der DDR vor. Ich war erleichtert. Das war keine Sache, die gegen uns rollte.



Erst war es nur die Änderung der Reisebestimmungen – später fiel die Mauer dann im wahrsten Sinne des Wortes, zerstückelt von den sogenannten „Mauerspechten". Foto: Archiv

Am späten Abend sprach ich mit Krenz noch eimal telefonisch: „Es läuft jetzt. Irgendeine verflixte Panne muß es gegeben haben bei der Benachrichtigung der Berliner Grenzer. Aber nun scheint es glatt zu gehen. Unglaublicher Andrang. Aber die Leute sind guter Stimmung". Er stimmt mir zu, als ich ihm sage: „Das können wir positiv verbuchen. Die kommen wieder".

Einige Tage danach, als sich das Zittern gelegt hatte, meinte Krenz zu mir: „Mensch, wir hätten uns gleich ins Getümmel stürzen sollen. Die hätten uns als Mauerstürmer gefeiert. Aus der DDR und der BRD schreiben mir die Leute…"

Rumpelnd und knirschend war unser Wendeversuch bisher abgerollt. Ebenso war der 9. November über die Bühne gegangen. An einer Katastrophe waren wir nur eben vorbeigeschrammt. Als eigentliches Wunder bleibt, daß an der fallenden Mauer kein Schuß fiel und kein Blut geflossen ist.

Der größere Irrtum war es, zu glauben, man könne mit 28jähriger Verspätung die DDR durch die Maueröffnung sanieren. Am 13. August 1961 war das triste Stück politischer Architektur hochgezogen worden, um die DDR zu stabilieren. Am 9. November 1989, begannen wir den Mauerabriß, um die DDR zu retten. Es waren zwei konträre Versuche, die den selben Zweck verfolgten. Beide schlugen fehl. Die Frage nach der Lebenstauglichkeit einer sozialistischen Ideologie-Gesellschaft war beantwortet.

Sonderseite NR. 262 DIENSTAG, 9. NOVEMBER 1999 16

9. NOVEMBER 1989

Die Sensation: Ausreise sofort, unverzüglich

Sozusagen aus Versehen hat er das Ende des Ostblocks eingeleitet: Günter Schabowski. Seit gestern ist klar, daß der Mann, der die Maueröffnung bekanntgab, dennoch ins Gefängnis muß.

VON PETER GÄRTNER

Ein dickes Lob für die Provinz. Günter Schabowski kommt das leicht über die Lippen. Anfang der neunziger Jahre ist er „wie von einem anderen Stern" ins nordhessische Rotenburg an der Fulda gekommen, mitten in das frühere Zonenrandgebiet. Als ehemaliges SED-Politbüromitglied und aus purem Selbsterhaltungstrieb. „Denn ich wußte nicht einmal mehr, wie ich meine Miete bezahlen sollte. Und an Arbeit war in Berlin für mich nicht zu denken."

So ergriff er die Chance beim Schopf und wurde von einem Tag auf den anderen Redakteur und Layouter der „Heimat-Nachrichten". Erst mußte Schabowski einige Überzeugungsarbeit leisten, dass er „kein U-Boot-Fahrer" sei und auch „keine PDS-Millionen" dabei habe. „Und ich konnte mir auch nicht erlauben, der westdeutschen Kommunalpolitik Zensuren zu geben."

Alle Varianten drauf

Dann führte der ehemalige Chefredakteur des SED-Zentralorgans „Neues Deutschland" in dem Anzeigenblatt nicht nur eine feste Seite für die Parteien-Selbstdarstellung ein und löste damit in der Region lebhafte Debatten aus. Er selbst schrieb auch über die Auftritte von DJ Bobo, Roberto Blanco und anderen Pop-Stars und hatte am Ende „alle acht Kreisch-Varianten drauf". Schabowski lernte die „neuen Lebensverhältnisse" beim Klassenfeind von einst kennen und schätzen. „So eine intensive Anschauung - das war unglaublich toll für mich."

Mit einem liebenswerten Bild Nordhessens „gerade gegenüber der städtischen Überheblichkeit" und der festen Erkenntnis, daß „die Provinz ein enormer Stabilitätsfaktor für diese Gesellschaft" sei, kehrte er Anfang des Jahres nach Berlin zurück.

Wieder mittendrin

Heute ist Günter Schabowski 70 Jahre alt und aufgrund seiner Wohnung in einem Edelplattenbau zwischen Brandenburger Tor und dem künftigen Bundesrat wieder mittendrin im Hauptstadt-Leben. Beim Einkauf sieht er den SPD-Spitzenpolitiker Franz Müntefering, beim Spaziergang CDU-Generalsekretärin Angela Merkel, die SPD-Linke Andrea Nahles und andere Politiker.

Manchmal drücken ihm wildfremde Leute die Hand und bedanken sich bei dem Mann, der sich heute zu „den Verblendeten" von damals zählt. Und hin und wieder trifft er auch Gerhard Schürer zufällig auf der Straße, der in der DDR die Staatliche Plankommission leitete und ganz in der Nähe wohnt. „Mit dem kann ich auch ein Wort wechseln," erzählt Schabowski.

„Ein Verräter"

Mit den meisten anderen Spitzengenossen von einst geht das nicht. „Für die bin ich ein Verräter, ein Renegat," sagt der Mann mit tief zerfurchter Miene. Daran ist der 9. November vor zehn Jahren nicht ganz unschuldig, der den Diplom-Journalisten weltberühmt machte.

Doch eigentlich begann der Bruch mit dem SED-System, dem Schabowski jahrzehntelang treu diente und das er nach außen mitunter bis zur Selbstverleugnung verteidigte, schon viel früher.

Schuld daran war Gorbatschow. Und der Umstand, daß der einstige SED-Funktionär in Moskau auf der Parteihochschule der KPdSU studierte und mit einer Russin verheiratet ist. Glasnost und Perestroika waren für ihn keine Fremdworte.

Schabowski hatte früh verstanden, daß es den Menschen in der DDR „nicht mehr nur um besseren Lebensstandard, sondern auch um Freiheit ging." So versuchte er, die sich abzeichnenden Umwälzungen aktiv zu gestalten. Mit Egon Krenz und Siegfried Lorenz stürzte er Erich Honecker, „der sich als überzeugter Kommunist der Politbüro-Mehrheit anschloß und sich selbst abwählte," erzählt Schabowski noch heute kopfschüttelnd.

Als erster der SED-Führung traf er sich mit Vertretern der Bürgerbewegung „Neues Forum". Schabowski diskutierte mit Genossen nach ZK-Sitzungen, mit aufgebrachten Bürgern vor dem Roten Rathaus und ging abends in Großbetriebe, um den SED-Kadern den Reformkurs zu erläutern.

DER TAG, ALS DIE MAUER FIEL (ENDE DER SERIE)

Sein Geschäft

„Das waren keine Mutproben. Das war mein Geschäft." Und es war für ihn wie eine Befreiung. „Erstmals konnte ich offen reden, konnte ohne jede Rücksicht frei antworten und bekam einen Faden zu den Leuten."

Auch bei der Großdemonstration am 4. November versuchte der Ost-Berliner SED-Chef, für Veränderungen zu werben. Doch Hunderttausende pfiffen und buhten ihn gnadenlos aus. Zulange hatte er in herausgehobenen Stellungen den SED-Kurs mitgetragen.



Verkündete vor der Weltpresse ein Gesetz, das vom Ministerrat noch gar nicht beschlossen war: Günter Schabowski (Archivfoto: dpa)

Eine der ersten Maßnahmen der neuen Führung war die Vorbereitung eines Gesetzes, das ein Recht auf Reisen und ein Recht für die ständige Ausreise aus der DDR beinhalten sollte. „Es sollte in Ruhe diskutiert werden und im Dezember von der Volkskammer verabschiedet werden," erinnert sich Schabowski.

„Wenn ich immer die DDR verlassen kann, sondiere ich im Westen erst mal die Lage und bleibe nicht dort. So hatten wir uns das überlegt," erzählt er. „Und die Leute, so hofften wir, würden sich irgendwann von unsere Absichten, die DDR zu reformieren, schon überzeugen."

Ablösung verlangt

Doch in den Tagen vor dem Mauerfall überschlugen sich die Ereignisse. Am 7. November trat die DDR-Regierung unter Willi Stoph geschlossen zurück. Am 8. November protestierten die entschlossensten Reformer – angeführt von Ex-Spionage-Chef Markus Wolf und dem kaum bekannten Rechtsanwalt Gregor Gysi – vor dem SED-Zentralkomitee und verlangten die Ablösung von Krenz.

Am nächsten Tag präsentierte der Generalsekretär den über Nacht von Innenministerium und Stasi erarbeiteten Entwurf des neuen Reisegesetzes. „Ich war bei der Sitzung nicht dabei," berichtet Schabowski, „weil ich einigen Korrespondenten Interviews gab."

So setzte sich der „junge Schnösel", wie er trotz seiner 60 Lebensjahre von den Politbüro-Greisen genannt wurde, nur kurz zu Krenz. „Ich mache mich jetzt gleich auf die Socken zur Pressekonferenz. Gibt es noch etwas?" Der SED-Chef gab ihm dann das Papier mit dem neuen Reisegesetz. „Ich hatte das kurz überflogen und mich aber entschieden, auf das Thema erst zum Schluß der PK einzugehen."

Als die Frage gestellt wurde, ob es nicht richtig wäre, nach den Protesten ein Reisegesetz zu veröffentlichen, sagte Schabowski: „Ich habe Ihnen sowieso noch Mitteilung zu machen." Beim Vorlesen fiel ihm zwar auf, dass die meisten DDR-Bürger gar keine Reisepässe besaßen, „die ja überhaupt erstmal ausgegeben werden müssen." Gleichwohl beantwortete er die Nachfrage, wann genau die Verordnung in Kraft trete, mit den Worten „sofort, unverzüglich".

Er wußte nicht, daß zum Zeitpunkt der Pressekonferenz das Gesetz vom Ministerrat noch gar nicht beschlossen war. Und er kannte auch die auf seinem Papier nicht vermerkte Sperrfrist (10. November, 4 Uhr) nicht, die eine Vorbereitung der „Grenzorgane" ermöglichen sollte. Und so kam es, daß die Grenzer völlig überrascht waren, als wenige Stunden nach der Schabowski-Pressekonferenz die ersten Menschen an den Übergängen erschienen und die Ausreise begehrten. Als der Druck der Massen immer größer wurde, öffneten die Grenzsoldaten schließlich die Tore, die Berliner Mauer begann 28 Jahren nach ihrer Errichtung einzustürzen.

Am nächsten Morgen im Politbüro gab es zwar keine Debatte. Doch Stasi-Chef Erich Mielke meinte, ohne einen Namen zu nennen: „Da hat uns ja einer was eingebrockt." Tatsächlich dürfte kaum ein Spitzenfunktionär, der für das Reisegesetz gestimmt hatte, geahnt haben, daß er mit seinem Votum das Ende der DDR einleitete.

Der rasante Wandel nach dem Mauerfall beendete das Kapitel Reform der DDR. Im Januar 1990 wurde Schabowski auf Druck der Basis aus der SED/PDS ausgeschlossen – „worüber ich mich heute noch freue". Er hat in der Folgezeit schärfer als alle anderen Politbüro-Mitglieder mit seiner Vergangenheit gebrochen.

Ins Gefängnis

Die Phase der Auseinandersetzung mit dem untergegangenem SED-Staat endet vorübergehenderweise im Gefängnis. Denn gestern lehnte der Bundesgerichtshof die Revisionsanträge im sogenannten Politbüroprozeß ab. Schabowski darf allerdings darauf hoffen, wegen guter Führung vorzeitig entlassen zu werden. Wiederholungsgefahr besteht ohnehin nicht.

Gleichwohl hält sich der Ex-Funktionär, der erst 1984 Politbüro-Mitglied wurde, juristisch für unschuldig, weil er in Bezug auf das Grenzregime vor „vollendete Tatsachen" gestellt worden war. Doch moralisch bekannte er sich der Verantwortung. Im Gerichtssaal hat er als einziger der Angeklagten die Angehörigen der Maueropfer glaubhaft um Verzeihung.

Distanziert

„Jedes der Opfer ist mit diesem Prozeß mehr noch, beklemmender noch, zu einem Zeugen und Mahner gegen die Untauglichkeit unseres sozialen Rezepts geworden." Er distanzierte sich vom Honecker-Kurs: nichts habe rechtfertigen können, daß nur ein einziger Flüchtling erschossen wurde.

„Ich wußte, daß Menschen an der Grenze getötet wurden," betonte er vor Gericht. Das habe er aus der West-Presse erfahren. Aber er habe nicht gewußt, daß Grenzsoldaten „vergattert" und belobigt wurden. So habe er sich immer einreden können, „daß der Soldat sicher aus Notwehr gehandelt hat."

Verurteilt

Am 25. August 1997 verurteilte die 27. Große Strafkammer Schabowski wegen Totschlags in drei Fällen zu drei Jahren Haft. In Moabit bekannte er: dies sei „keine Siegerjustiz", dieses Verfahren sei „kein politischer Prozeß", sondern ein „politischer Vorgang" und für ihn vor allem „ein Lernprozeß".



Noch in der Nacht vom 9. auf 10. November stiegen die Berliner auf die Mauer – und drüber. (Foto: dpa)

9.1 Wiedervereinigung-zugeordnete Informationen

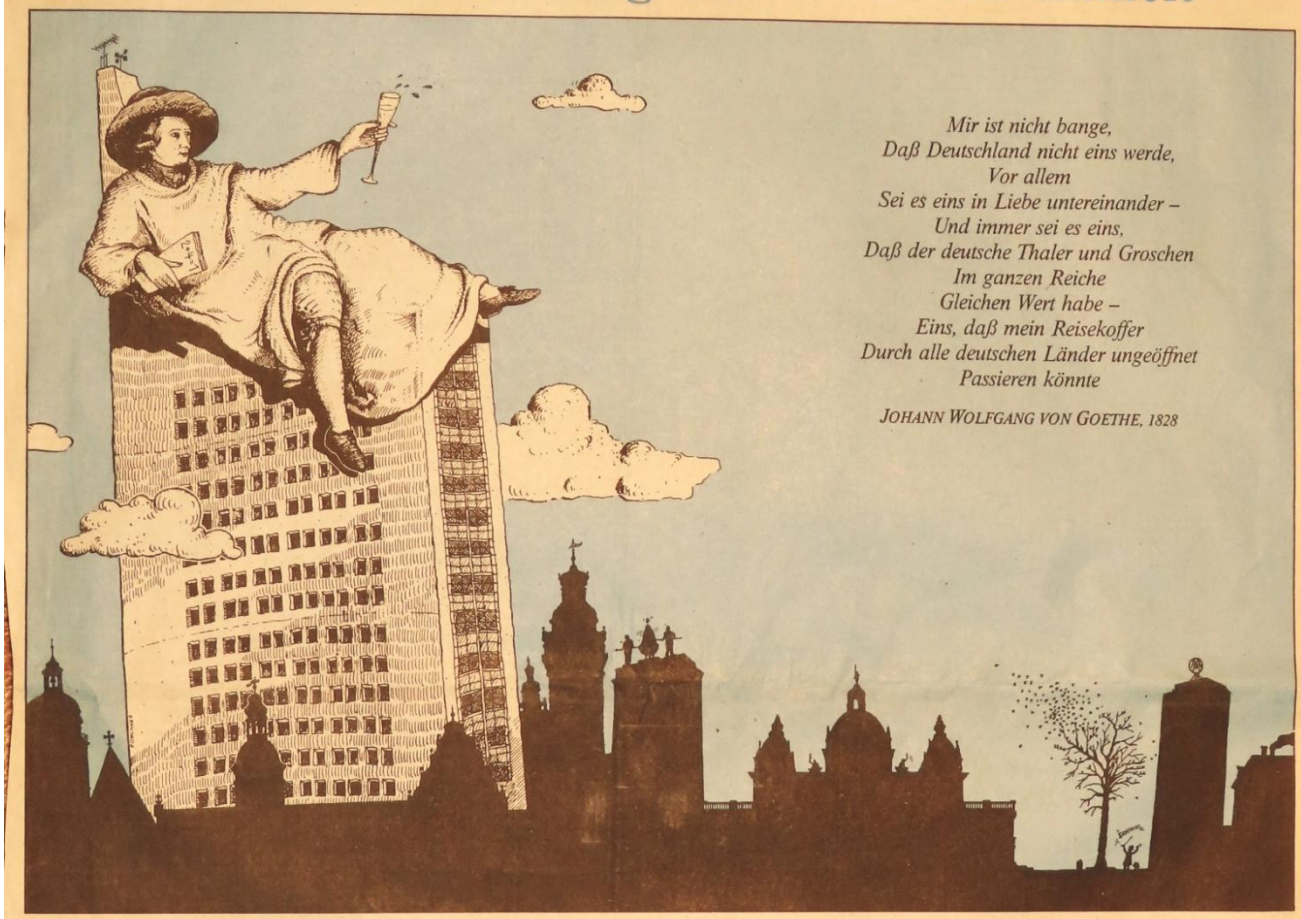
Süddeutsche Zeitung

BEILAGE

MÜNCHNER NEUESTE NACHRICHTEN AUS POLITIK, KULTUR, WIRTSCHAFT UND SPORT

46. Jahrgang / 8000 M… …llach 20 22 20 — München, Dienstag/Mittwoch, 2./3. Oktober 1990 — Nummer 227 / 40. Woche

3. Oktober 1990: Tag der Deutschen Einheit



Mir ist nicht bange,
Daß Deutschland nicht eins werde,
Vor allem
Sei es eins in Liebe untereinander –
Und immer sei es eins,
Daß der deutsche Thaler und Groschen
Im ganzen Reiche
Gleichen Wert habe –
Eins, daß mein Reisekoffer
Durch alle deutschen Länder ungeöffnet
Passieren könnte

JOHANN WOLFGANG VON GOETHE, 1828

Nach vielen Kurven plötzlich am Ziel

Die Nachbarn werden gespannt verfolgen, ob das geeinte Deutschland seine Versprechungen einlöst

Von Josef Riedmiller

Bei einem vollen Siege muß man also an die Demütigung und Aufteilung Deutschlands gehen . . ." Dieser Satz fiel nicht auf der Teheraner Konferenz, auch nicht in Jalta oder Potsdam. Er ist in einem Brief enthalten, den Großfürst Nikolaj Michailowitsch im August 1916 an Zar Nikolaj II. richtete. Der Großfürst war das Haupt der antideutschen Fraktion in Petersburg, und zu seinem Ratschlag kam er durch die Überlegung, daß es vorteilhafter sei, „in Mitteleuropa ein verschiedenstämmiges und schwaches Österreich als ein starkes Deutschland zu haben". Er beließ es nicht bei seiner Anregung, sondern machte auch einen Teilungsplan und vergaß auch nicht, eine multinationale Besatzungsarmee für das besiegte Deutschland vorzusehen. Noch vor dem Kaiser mußte allerdings der Zar den Thron räumen.

Schon ein Jahrhundert zuvor hatte auch Rußland auf dem Wiener Kongreß dafür Sorge getragen, daß die deutschen Königreiche und Fürstentümer zahlreich blieben. Preußen nicht nach allen seine Hand ausstrecken konnte. Otto von Bismarck war sich nach der Reichsgründung von 1871 darüber im klaren, daß ihm mehr Appetit Rußland nicht gestatten würde. Nichts fürchtete er daher mehr als die mögliche Verwicklung seines Reiches in die Konflikte Österreich-Ungarns mit den slawischen Völkern im Herrschaftsbereich Wiens mit der Konsequenz eines deutsch-russischen Zusammenstoßes. Folgerichtig schloß er mit Petersburg den Rückversicherungsvertrag. Der war allerdings ein zu feines Instrument in den Händen einer machttrunkenen Führung in Berlin, die nicht verhindern konnte, daß in Petersburg der „deutsche Komplex" gedieh, der Rußland an die Seite Frankreichs und schließlich sogar Englands trieb.

Aber nach dem Ersten Weltkrieg fanden es das besiegte Rußland und das besiegte Deutschland schon bald nützlich, sich gegenseitig zu stützen, um die harten Auflagen der Sieger zu mildern. Selbst nach Hitlers Machtantritt lief das Geschäft weiter, konnte sich sogar ausweiten – bis hin zum gemeinsamen Beutezug. Hitler glaubte, die Sowjetunion Stalins leicht einsaken, Deutschland zur Weltmacht machen zu können – und hatte doch die wahren Weltmächte gegen sich. Im November 1943 trafen sich ihre Führer zum ersten Male gemeinsam in Teheran. Der amerikanische Präsident Roosevelt hatte bereits einen Teilungsplan für Deutschland bei sich, dem sich der britische Premier Winston Churchill, wie er später schrieb, „grundsätzlich" nicht widersetzte. Stalin erklärte, wiederum nach Churchills Bericht, er sähe Deutschland am liebsten aufgeteilt: ihm sei alles recht, was eine möglichst große Schwächung Deutschlands verspreche. Andrej Gromyko, damals Sowjetbotschafter in Washington, zitiert hingegen Stalin in seinen „Erinnerungen" so: „Meiner Meinung nach läßt sich die deutsche Frage nicht dadurch lösen, daß man den deutschen Einheitsstaat zerstückelt. Auf diese Weise können Sie Deutschland ebensowenig ausschalten wie Rußland." Ihm kam es auf die Entmilitarisierung und „Demokratisierung" Deutschlands an – auf dessen Ausschaltung durch ökonomische Schwächung und politische Durchdringung.

Auf der Konferenz von Jalta im Februar 1945 wurde in sieben von acht Sitzungen fast ausschließlich über Polen diskutiert: Über seine Nachkriegsgrenzen, sein politisches System und seine Führer. Die drei Mächte wurden sich einig, im geschlagenen Deutschland drei besondere Zonen zu bilden plus einer für Frankreich. Daß Polen territorial für seine Gebietsverluste an die Sowjetunion auf Kosten Deutschlands entschädigt werden sollte, war auch klar. In einer Grauzone blieb indessen, was mit dem besiegten Deutschland zu geschehen habe – außer daß es bestraft, zur Wiedergutmachung herangezogen und für immer daran gehindert werden sollte, seine Nachbarn zu bedrohen. Die „Berliner Erklärung" der vier Siegermächte vom 6. Juni 1945 hält fest, daß es in Deutschland keine zentrale Regierung oder Behörde mehr gebe, seine Grenzen würden „später" festgelegt. Die Potsdamer Konferenz vom Juli/August 1945 regelte die Grenzziehung nach Osten, vorbehaltlich eines Friedensvertrags. Den vier Oberkommandierenden der Besatzungsstreitkräfte wurde die „höchste Regierungsgewalt in Deutschland" übertragen, „von jedem in seiner Besatzungszone", und „gemeinsam in den Deutschland als Ganzes betreffenden Fragen". Außerdem wurde festgelegt, daß „Deutschland als eine wirtschaftliche Einheit zu betrachten" sei. Diese Bestimmung konnte nicht verwirklicht werden, weil sich Frankreich Zentralverwaltungen widersetzte und überdies jede Besatzungsmacht versuchte, ihre Zone zu „gestalten". Die USA lehnten es zum Beispiel schon 1946 ab, aus ihrer Zone Reparationsgüter an die Sowjetunion zu liefern – entgegen den Potsdamer Beschlüssen. Hingegen gelang es den drei Westmächten nach und nach, über „Bizone" und „Trizone" einen einheitlichen Wirtschaftsraum zu schaffen, aus dem sich dann die Bundesrepublik herausschälte. Die Hauptantriebkraft dabei war das tiefe

FORTSETZUNG AUF SEITE 2, SPALTE 1

Bewährungsprobe für die Deutschen

Nach Überwindung der Spaltung muß sich zeigen, wie stark der Wille zur Einheit wirklich ist

Von Hermann Rudolph

Ein Traum wird wahr – aber kaum einer hat ihn noch geträumt. Vermutlich ist es dieses Paradoxon, dieser halb verdeckte Bruch im Gefühl der Genugtuung über den Gang der deutschen Dinge, was es uns schwer macht, dem Rang dieses 3. Oktober gerecht zu werden. Denn es kann ja ernstlich kein Zweifel daran sein, daß die Vereinigung der beiden deutschen Staaten ein Ereignis säkularen Zuschnitts ist. Jedenfalls hat man Mühe, in der deutschen Geschichte ein Ereignis von vergleichbarer glücklicher Signatur zu finden. Die Reichsgründung 1871? Aber die war trotz der Erfüllung nationalen Sehnens, die sie darstellte, doch ein Blut-und-Eisen-Stück. Die 48er Revolution, in der sich die Deutschen, nach dem schönen Wort von Theodor Heuss, zum ersten Mal als ein Volk empfunden und erfahren haben? Sie ist dann doch gescheitert. Am Ende bleibt fast nur jener Friede von Münster und Osnabrück, der, am Anfang der neuzeitlichen deutschen Geschichte, eine dreißigjährige Misere beendet.

In Wahrheit ist die Wiederherstellung der Einheit nach mehr als 40 Jahren Trennung ein unvergleichlicher Vorgang. Er ist am Ende, alles in allem genommen, was dazu gehört – auch die Politik Gorbatschows, die ihn möglich gemacht hat –, kaum anders zu begreifen denn als der Einbruch des Wunders in die Politik. Das gilt auch für die deutsch-deutsche Seite der staunenswerten Transformation in der Mitte Europas, die nun in der Einheit gipfelt. Was war diese Einheit denn den Deutschen in den Jahrzehnten der Teilung? Für die längste Zeit und erst recht für zehn, zwanzig Jahre, die noch zu unserer Gegenwart gehören, blieb sie bestenfalls ein Richtpunkt, kaum noch ein Zielpunkt, und auch dies mehr und mehr unter anderen Politik-Zielen. Die Zahl derer, die mit ihr einfach nichts mehr anzufangen wußten, wuchs, nicht nur im Westen, auch im Osten. Man tut kaum jemandem Unrecht, wenn man feststellt, daß die Bereitschaft, in der Einheit die Perspektive deutscher Politik zu sehen, jedenfalls – in aller Zurückhaltung ausgedrückt – sehr viel geringer war als es das Bundesverfassungsgericht erlaubte, das in einem Urteil die Deutschen auf die Einheit verpflichtete. Und war das ein Wunder? Die Teilung brachte nicht nur zwei Staaten hervor, sondern auch, mit der Gewalt des Faktischen tief einschneidend in alles Gewachsene, zwei Gesellschaften, ja zwei Geschichten, eine westliche und eine östliche, eine der Bundesrepublik und eine der DDR. Nun ist auch das schon Geschichte geworden – auch wenn es, woran kein Zweifel erlaubt ist, fortwirkende Geschichte ist.

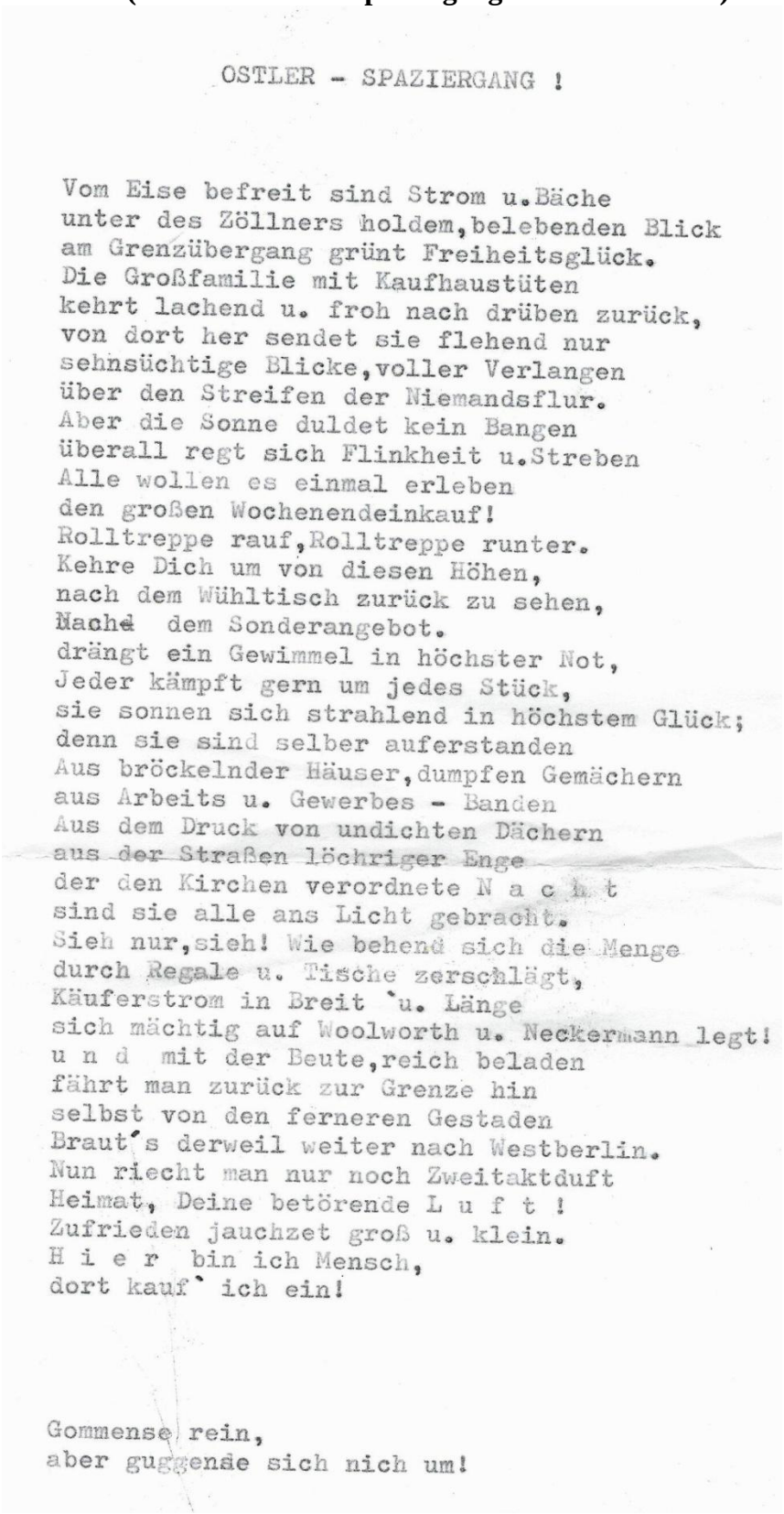
Um so mehr ist daran zu erinnern, daß die Anfänge der deutschen Zwei-Staatlichkeit – in der Bundesrepublik wie, auf ihre Weise, in der DDR – im Horizont einer leidenschaftlichen Auseinandersetzung um die deutsche Einheit standen. Die Unvorstellbarkeit, daß der deutsche Einheitsstaat auf Dauer geteilt werden könne, stand als Vorzeichen so ziemlich aller Versuche, ein neues staatliches Leben zu etablieren; sie bestimmte die Lebensluft des ganzen Jahrzehnts, in dem Bundesrepublik und DDR entstanden. Entsprechend selbstverständlich war, daß die Einheit binnen kurzem kommen müsse, also *Wiedervereinigung* im wörtlichen Sinne sein werde. Der Grundgesetz-Artikel 23, der nun die Einheit auf dem Wege des schlichten Beitritts ermöglicht hat, hat diese Überzeugung mit der Geduld des Gesetzes am Leben erhalten. Damals teilte sie jeder, und niemand hielt für möglich, daß die Zeit der Trennung ausreichen könne, zwischen Bundesgebiet und den „anderen Teilen Deutschlands" – wie es im Text heißt – Unterschiede entstehen zu lassen, die eine Anpassungs- und Überleitungs-Operation wie den Einigungsvertrag nötig machten.

Hinter so ziemlich allen zentralen Konflikten der damaligen Jahre stand, direkt oder vermittelt, die Frage der Einheit – hinter den Auseinandersetzungen um die Westintegration und die Wiederbewaffnung, in denen um den politischen Ort der jungen Bundesrepublik gestritten wurde, wie hinter der Konfrontation zwischen Bundesrepublik und DDR. Immer ging es auch darum, ob die Chance für die Einheit offen gehalten oder ob sie verspielt werde. Der Weg der Deutschen durch diese Jahre ist deshalb auch gepflastert mit Deutschland-Plänen aller Parteien und aller Kaliber, mit Initiativen, Memoranden und Konzepten, die sich daran versuchten, die nationale Einheit gegen die mächtigen Fliehkräfte des Ost-West-Konflikts zu retten.

Das war alles weit mehr als nur eine politische Affäre. Das Ringen um die Bewahrung der Einheit, das Sich-Stemmen gegen die Teilung war das große innere Drama, das die Gründer- und Aufbaujahre der Bundesrepublik begleitete, und für die DDR bildete es die eigentliche Schlüsselfrage ihrer Existenz. Die faktische Teilung des Landes, vollzogen durch die Abtrennung der DDR von der bis gestern und vorgestern noch praktizierten Einheit, und vorgestern noch praktizierten Einheit, also gleichsam am lebenden Körper, war nur die eine Seite davon; die andere ist die Seelengeschichte von Hoffnung und Verzweiflung, Nicht-Wahrhaben-Wollen und

FORTSETZUNG AUF SEITE 2 SPALTE 3

Ostler-Spaziergang
(Nach dem Oster-Spaziergang in Goethes Faust)



OSTLER - SPAZIERGANG !

Vom Eise befreit sind Strom u.Bäche
unter des Zöllners holdem,belebenden Blick
am Grenzübergang grünt Freiheitsglück.
Die Großfamilie mit Kaufhaustüten
kehrt lachend u. froh nach drüben zurück,
von dort her sendet sie flehend nur
sehnsüchtige Blicke,voller Verlangen
über den Streifen der Niemandsflur.
Aber die Sonne duldet kein Bangen
überall regt sich Flinkheit u.Streben
Alle wollen es einmal erleben
den großen Wochenendeinkauf!
Rolltreppe rauf,Rolltreppe runter.
Kehre Dich um von diesen Höhen,
nach dem Wühltisch zurück zu sehen,
Macht dem Sonderangebot.
drängt ein Gewimmel in höchster Not,
Jeder kämpft gern um jedes Stück,
sie sonnen sich strahlend in höchstem Glück;
denn sie sind selber auferstanden
Aus bröckelnder Häuser,dumpfen Gemächern
aus Arbeits u. Gewerbes - Banden
Aus dem Druck von undichten Dächern
aus der Straßen löchriger Enge
der den Kirchen verordnete N a c h t
sind sie alle ans Licht gebracht.
Sieh nur,sieh! Wie behend sich die Menge
durch Regale u. Tische zerschlägt,
Käuferstrom in Breit `u. Länge
sich mächtig auf Woolworth u. Neckermann legt!
u n d mit der Beute,reich beladen
fährt man zurück zur Grenze hin
selbst von den ferneren Gestaden
Braut`s derweil weiter nach Westberlin.
Nun riecht man nur noch Zweitaktduft
Heimat, Deine betörende L u f t !
Zufrieden jauchzet groß u. klein.
H i e r bin ich Mensch,
dort kauf` ich ein!

Gommense rein,
aber guggense sich nich um!

Vor der Wiedervereinigung:

Wie wesentlich diese für uns möglichen, seltenen Grenzüberschreitungen unserer Verwandten waren, ist wohl leider in Ost und West voll vergessen!

Allmähliche Entdeckung einer sehr fernen Welt

Von der Generation, die so alt ist wie die Bundesrepublik, wurde die DDR lange Zeit als exotisches Land gesehen und als vage Bedrohung empfunden

Von Herbert Riehl-Heyse

Von Altötting aus gesehen, zum Beispiel, lag die DDR Mitte der fünfziger Jahre so ungefähr einen Kilometer links vom Mond. Ohnehin muß man zugeben, daß unsereiner damals nicht gerade die Welt erobert hat: Mit einer Busfahrt zum Chiemsee und einer Woche Rom im Heiligen Jahr war man schon ziemlich in der Spitzengruppe der Weltgereisten. Was im übrigen Deutschland als solches anging, so kannten wir es sehr gut, und zwar im wesentlichen mit Hilfe der Tabellen der Fußball-Oberligen. Daraus ergab sich unter anderem, daß eine Stadt namens Emscher (Vorname Horst) im Westen unseres Vaterlandes liegen mußte und Osnabrück (VfL) im Norden, wohingegen die Stadt Bonn weniger wichtig war, weil sie keine Mannschaft in der Oberliga hatte. Städte wie Schwerin oder Magdeburg gab es in Deutschland definitiv nicht.

Im Rückblick ist das gewiß eine der merkwürdigsten Ungereimtheiten der Gründerzeit der Bundesrepublik, die sozusagen mit der Gründerzeit meiner Generation zusammenfiel: daß einerseits, auch bei uns in der bayerischen Provinz, dauernd von dem demnächst wiedervereinigenden Deutschland die Rede war; und daß das, andererseits, nichts mit unserem Lebensgefühl zu tun hatte: Wir hatten andere Sorgen. (Und das erklärt schon mal ein bißchen, warum auch heute viele Leute – nicht nur in der bayerischen Provinz – mit den neuen Sorgen des neuen Deutschlands nicht behelligt werden wollen.)

Dabei ist es nicht so, daß wir nicht politisiert gewesen wären, im Gegenteil. Auch bei uns, im östlichsten Oberbayern, wurde zum Beispiel heftig wahlgekämpft – und natürlich habe ich den Tag nie vergessen, an dem der Wahlkämpfer Konrad Adenauer im großen Saal der Speisegaststätte Bannwarth den Soffjets und der SPD und der Geschichte erklärte, daß seine Politik unweigerlich eines Tags zur Wiedervereinigung in Freiheit führen werde. Die paar Jungsozialisten im Saal, die hin und wieder einen Zwischenruf wagten, haben wir gnadenlos ausgepfiffen.

Und wieder dieser merkwürdige Zwiespalt: Ich denke schon, anläßlich dieses Versuchs einer Rekonstruktion, daß unser Beifall für Adenauer und den örtlichen Abgeordneten Bauer/Wasserburg und einen jungen, sehr lauten Minister namens Strauß ehrlich gemeint war; ich bin sogar ziemlich sicher, daß wir ihren deutschlandpolitischen Bekenntnissen geglaubt haben, irgendwie. Und ich bin zugleich sicher, daß wir alle ihre Verheißungen tief innen etwa so ernst genommen haben wie die präzisen Beschreibungen des Himmelreiches durch die Kapuziner in der Magdalenenkirche, neben der Speisegaststätte Bannwarth. Auch diese Redner kannten das Paradies nur vom Hörensagen. In Wahrheit war Deutschland für uns ganz eindeutig die Bundesrepublik: das Land, um dessen Zukunft alleine es auf den Wahlplakaten ging; das Land, dessen stark auf die Bundesrepublik konzentrierte Zeitungen wir lasen – mit einigem Mißtrauen natürlich, wenn sie *Spiegel* hießen oder *Süddeutsche*; das Land endlich, gegen dessen obszöne Filme wir hin und wieder mit der Fackel in der Hand demonstrieren mußten, weil Hildegard Knef für einige Sekunden im Schattenriß ihren unbekleideten Busen sehen ließ. Das waren die wirklich spannenden Themen damals. Ob in der DDR überhaupt Filme produziert wurden, wußten wir schon deshalb nicht, weil es uns keiner sagte; und im übrigen hieß die DDR sowieso „Zone" und wollte uns – zusammen mit den Russen und der Fünften Kolonne SPD – ganz bald vereinnahmen, was aber Strauß und der Abgeordnete Bauer/Wasserburg schon verhindern würden.

Erste Expedition

Von den Sorgen und Ängsten im Zusammenhang mit dem expansiven Kommunismus war natürlich dauernd die Rede, und so gesehen war der andere Teil Deutschlands durchaus präsent, auch in Altötting: als vage Bedrohung, als verschwommenes Feindbild, als exotisches Land, über das man in Anführungszeichen sprechen mußte und aus dem Nachrichten in unser Bewußtsein nur drangen, wenn Arbeiter wegen der Erhöhung ihrer Normen – was war das aber? – auf die Straße gingen. In der Schule – humanistisches Gymnasium Burghausen – wurde die SBZ durchgenommen wie Brasilien, nur nicht so intensiv. Als eines Tages in der Abiturklasse, im Fach Sozialkunde, der Schüler Scholz über das Schulsystem in der Zone referieren mußte, war unser Entsetzen groß: Dort nämlich, so erfuhren wir, mußten die Kinder an manchen Vormittagen statt zur Schule in die Fabrik gehen. Dafür, daß es bei uns nie so sein würde, hatten wir die Bundeswehr.

Später ist dann das Fernsehen erfunden worden, da wurden die Nachrichten ein wenig reichhaltiger; auch die Zeitungen waren besser informiert – um so sonderbarer das Gefühl, daß wohl, nicht nur mir, die DDR, bis weit in die siebziger Jahre hinein, dadurch nicht wirklich näher kam. Übrigens vermochten das später auch nicht die eigenen Expeditionen zu ändern: Wer endlich einmal selber nach drüben fuhr – zum Beispiel, um in Schönefeld zwischenzulanden –, der wußte hinterher vor allem, daß die ganze Zone nach Lysol roch. (Viel mehr wollten auch die Daheimgebliebenen nicht wissen.) Und wer später – wie ich – das Glück hatte, in eine Familie einzuheiraten, die „drüben" Verwandtschaft hatte, der ertappte sich hinterher dabei, wie er tagelang vor allem von der Toilette erzählte, daß das Klo der Verwandten auf der Treppe war und keine Wasserspülung hatte. Nach solchen Reisen, die oft auch darunter litten, daß man jeweils an der Grenze gegen den heftigen Impuls ankämpfen mußte, wenigstens einen Grenzoffizier körperlich anzufallen, war in der Regel zweierlei klar: daß das eine sehr, sehr ferne Welt war, in die man nur kurz eingetaucht war. Und daß von der Geschichte schon dafür gesorgt werden würde, daß das auch so bleiben würde – weshalb wir uns um so heftiger auf die Bundesrepublik konzentrierten: Nichts sonst war unser Vaterland, und wenn in München ein Postbote wegen seiner Mitgliedschaft in der DKP aus dem Staatsdienst flog, dann empörte uns das ganz zwangsläufig viel mehr als die Ermordung eines jungen Mannes aus Thüringen, der versucht hatte, nachts über einen Grenzfluß nach Bayern zu schwimmen. Daß uns so etwas nicht so viel angehe – auch das hatten wir vermutlich schon in Altötting gelernt, genauso wie die Leute in Emscher das gelernt hatten und die in Osnabrück.

Aber man lernt ja vieleicht dazu. Daß mich der andere Teil Deutschlands vielleicht doch in irgend einer Weise betrifft, das habe ich zum erstenmal wahrscheinlich vor drei Jahren wirklich kapiert (ohne daß ich deshalb gleich sehr viel patriotischer geworden wäre). Das war, als ein Onkel meiner Frau, Frühpensionär, zu Besuch war in München und als er mich, da standen wir gerade auf dem Viktualienmarkt, umgeben von Mangos und Kiwis und ganzen Stapeln von Spargel, plötzlich fassungslos fragte, warum eigentlich er allein den Krieg verloren habe und nicht auch ich. Auch solche Besuche (die Herr Honecker einen Tages nicht mehr verhindern konnte) haben wohl dazu geführt, daß die Leute in der DDR sich plötzlich dazu entschlossen haben, „das Volk" zu sein und das auch zu sagen.

Und sie haben dazu geführt, daß selbst wir Altöttinger nun wissen, wo Schwerin und Magdeburg liegt. Wie doch die Weltgeschichte manchmal beiträgt zur Erweiterung unseres Horizonts.



Bewährungsprobe für die Deutschen

FORTSETZUNG VON SEITE 1

Sich-Fügen ins Unvermeidliche, die sich damit verband. Weil die Einheit für die Deutschen hüben wie drüben noch eine ganz selbstverständliche, für abdingbar gehaltene Größe war, rührte der Streit um sie die Gemüter tief auf, schlug Wunden und erzeugte Verhärtungen, die lange nachwirkten. Im Boden dieser Enttäuschungen und Verletzungen wurzelte schließlich auch der Vorwurf gegen Adenauer, der wie kein anderer die junge Republik aufwühlte: er habe die Einheit der West-Bindung zum Opfer gebracht. Anknüpfend vor allem an seine ablehnende Haltung zur Stalin-Note von 1952, die einen Weg zur Wiedervereinigung zu öffnen schien, hatte dieser Vorbehalt unter dem Stich- und Reizwort der „versäumten Gelegenheiten" eine halbe Generation gegen ihn in Opposition gebracht. Eine Spur dieser Erbitterung zog sich noch hin bis zu Willy Brandts vielumstrittener Behauptung von der „Wiedervereinigung" als der „spezifischen Lebenslüge der zweiten Deutschen Republik".

Tiefes Umdenken

Daß alle diese Debatten längst vergessen und versunken sind, macht deutlich, wie sehr sich der Stellenwert der Einheit seitdem verändert hat. Es läßt zugleich erkennen, wie tief das Umdenken gegangen ist, dessen sich die Deutschen in der Bundesrepublik seit den sechziger Jahren in bezug auf die deutsche Frage befleißigt haben. Als zu Anfang dieses Jahrzehnts der Philosoph Karl Jaspers dafür plädierte, der Selbstbestimmung der Menschen in der DDR den Vorrang vor der Wiedervereinigung zu geben, löste das noch einen Sturm der Entrüstung aus. Nicht einmal ein Jahrzehnt später wurde dieser Prioritäten-Wechsel zur Grundlage der Politik gegenüber der DDR, zuerst der sozial-liberalen Koalition, dann der christlich-liberalen. Denn die Ausbreitung der Überzeugung, daß die Besserung der Lebensumstände in der DDR und eine deutsch-deutsche Normalisierung wichtiger seien als das Beharren auf staatlicher Einheit, war die notwendige Bedingung dafür, daß die Politik der kleinen Schritte zunehmend Unterstützung fand.

Bittere Lektion

Der Wandel deutet die Spannweite der Veränderung an, aber noch nicht ihre Tiefe, ihre Logik. Die Einheit blieb zwar ein zentraler Wert für die deutsche Politik, aber nun bezog sie sich nicht mehr auf den Staat, sondern die Nation – die „Einheit der Nation" bildete als Inbegriff der historisch, kulturell und gefühlshaft begründeten Zusammengehörigkeit der Deutschen den Leitbegriff der neuen Politik gegenüber der DDR. In dieser Verlagerung eines staatlichen Anspruchs ins Allgemeine, schon fast Deklamatorische (obwohl es doch viel mehr war), steckten die bitteren Lektionen seit dem Mauerbau: Nicht mehr die Unvorstellbarkeit der Teilung auf Dauer, sondern die Unwahrscheinlichkeit und mit den Jahren dann auch das Unausdenkbare der Herbeiführung der staatlichen Einheit war zum Vorzeichen aller Politik geworden. Auch galt die Zustimmung zu dieser Politik nicht nur der „Einheit der Nation", die sie wahren wollte; sie quittierte auch die Erleichterung darüber, daß nun mit den Formeln und Floskeln Schluß gemacht worden sollte, auf die die Wiedervereinigungspolitik gekommen war. Schließlich wird dem historischen Tiefgang dieses Wandels nicht gerecht werden, wenn man sich nicht klar macht, daß zu ihm Grundströmungen im kollektiven Bewußtsein mitschoben. Langsam, allmählich, im Laufe vieler Debatten und Kontroversen, löste sich in den sechziger und siebziger Jahren das politische wie das historische Bewußtsein aus dem Banne des Bismarck-Reiches. Nicht nur der Nationalstaat verlor seinen Maßstabscharakter; zugleich spielte mit einem Mal der Umstand für das Nachdenken über die deutsche Frage eine Rolle, daß die Deutschen in ihrer Geschichte meist in vielen Staaten gelebt hatten und daß das Bismarck-Reich nur eine Epoche in ihr war.

Es liegt auf der Hand, daß sich die Lage in der DDR anders darstellte. Der andere deutsche Staat hat sich viel unausweichlicher als die Bundesrepublik als Teil empfunden und empfinden müssen, weil die Wünsche, Sehnsüchte und Bedürfnisse seiner Bürger im eigenen Land unentwegt an willkürlich verhängte Grenzen stießen. Anders als die Bundesrepublik ist deshalb die DDR nie auch nur in die Nähe eines Zustandes gelangt, in dem sie ihren politischen und gesellschaftlichen Schwerpunkt in sich selbst, in ihrer Geschichte, ihrem So-Sein und erst recht in der absehbaren Zukunft gefunden hätte. Das vor allem ist es gewesen, was dem Gedanken an die Einheit dort mehr Faszination verschaffte; eben deshalb schlug der Wunsch nach Veränderung der Verhältnisse so eruptiv in das Verlangen nach Einheit um, sobald sich, im Herbst 1989, die Chance dafür bot.

Auseinandergelebt

Nach alledem ist offenkundig, daß die Wiederherstellung der deutschen Einheit auch eine Probe für die Deutschen ist – zumindest eine Bewährungsprobe. Denn nun muß sich herausstellen, ob, hüben wie drüben, der Wille zur Einheit noch groß genug ist, um den neuen, gemeinsamen Staat als künftige Form ihrer politischen und gesellschaftlichen Existenz anzunehmen und auszufüllen. Daß sich die Deutschen in den vier Jahrzehnten der Teilung im präzisen Sinne des Wortes auseinandergelebt hätten, ist nicht zu bezweifeln; es ist an tausenderlei Erfahrungen der vergangenen Monate und auch der Betroffenheitsstimmung abzulesen, die sich in den Prozeß der Vereinigung insgesamt eingeschlichen hat. Jetzt stellt sich die Frage, ob sie in der Lage sind, sich wieder zusammenzuleben. Das aber hängt auch davon ab, wieviel Einheit sie wollen und brauchen.

Im Nachkriegsjahr 1949, in dem die Weichen für die deutsche Teilung endgültig gestellt wurden, beendete Reinhold Maier, der schwäbische Liberale, seine Rede zum Dreikönigstreffen mit den Worten: „Erneut ziehen wir hinaus, um Deutschland zu suchen und in ihm Einheit und Recht und Freiheit. Möge ein guter Gott helfen, daß wir unser Vaterland wiederfinden!" Man kann in der deutschen Nachkriegsgeschichte die Spuren solchen Suchens an vielen Stellen wahrnehmen, oft genug freilich nur gleichsam auf archäologische Weise; vielleicht sind sie ihre besten Teile, in denen sie in diesem Sinne nach einer neuen politischen Form der Existenz der Deutschen suchte. Man kann hoffen, daß die Deutschen sie nun gefunden haben.

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Nach vielen Kurven plötzlich am Ziel

FORTSETZUNG VON SEITE 1

werdende Zerwürfnis zwischen den westlichen Siegermächten und der Sowjetunion, als „Kalter Krieg" die vorherrschende weltpolitische Strömung für fast vier Jahrzehnte. Der amerikanische Diplomat George F. Kennan beriet seine Regierung schon im Sommer 1945: „Die Idee, Deutschland mit den Russen regieren zu wollen, ist ein Wahn ... Besser ein zerstückeltes Deutschland, von dem wenigstens der westliche Teil als Prellbock für die Kräfte des Totalitarismus wirkt, als ein geeintes Deutschland, das diese Kräfte wieder an die Nordsee verläßt." Die sowjetische Politik hingegen verfolgte eine Art Doppelstrategie, die gekennzeichnet war durch das Bestreben, vor den eigenen Eroberungen den „Eisernen Vorhang" herunterzulassen, um sie ungestört „verdauen" zu können, bei gleichzeitiger Aufrechterhaltung der Ansprüche in ganz Deutschland, schon der Reparationen wegen.

Stalins Vorschlag

Die Nürnberger Prozesse gegen die Nazi-Kriegsverbrecher brachten die vier Siegermächte noch einmal zu gemeinsamem Handeln zusammen, obwohl auch hier schon die Meinungen darüber auseinandergingen, wer wie hart zu bestrafen sei. Die Währungsreform in den Westzonen, die Blockade Berlins und der Korea-Krieg verschärften die Gegensätze und brachten dem Kalten Krieg Hochkonjunktur. Aber die Bildung der beiden deutschen Regierungen bedeutete noch nicht die Spaltung Deutschlands. Um den in Gang kommenden Einbau der Bundesrepublik in das westliche Abwehrsystem zu verhindern, bot Stalin 1952 einem vereinigten, neutralisierten Deutschland einen Friedensvertrag an – ein Vorschlag, der bis heute, was seine Zielsetzung und seine eventuellen Möglichkeiten angeht, unterschiedlichen Bewertungen unterliegt.

Molotow sprach auf der Berliner Außenministerkonferenz 1954 von einem Deutschland, das „vorläufig" in zwei Teile gespalten sei, dessen Wiedervereinigung warten müsse, bis „einige unaufschiebbare Maßnahmen" durchgeführt seien – auch diese darauf berechnet, den Beitritt der Bundesrepublik zur westlichen Allianz zu verhindern. Selbst nachdem dieser Beitritt 1955 erfolgt war und im selben Jahr die Bundesrepublik und die Sowjetunion diplomatische Beziehungen zueinander aufgenommen hatten – Moskau also beide deutschen Staaten anerkannt hatte und Bonn wiederum diese Tatsache –, blieb die „Wiedervereinigung" noch für einige Jahre im sowjetischen Vokabular: „Konföderation" und „Deutsche an einen Tisch" waren Slogans in der zweiten Hälfte der fünfziger Jahre. Selbst der sowjetische Friedensvertrags-Vorschlag vom Januar 1959, der eine Unterzeichnung durch beide deutsche Regierungen vorsah, stellte für später eine „Wiedervereinigung Deutschlands in dieser oder jener Form" in Aussicht.

Doch schon ein halbes Jahr später nahm Nikita Chruschtschow in einer Rede in Stettin eine wichtige Grenzziehung vor: Die Westgrenzen der sozialistischen Länder verliefen dort, „wo die Grenze zwischen der DDR und der Bundesrepublik Deutschland gezogen ist". In den drei Jahren zwischen Moskaus Berlin-Ultimatum und dem Mauerbau in Berlin im August 1961 hat sich die sowjetische Diplomatie die Zwei-Staaten-Theorie als feste Bezugsgröße für ihre Deutschlandpolitik angeeignet. Aus dem Abstand mehrerer Jahrzehnte wagte Gromyko die Behauptung: „Alle Deutschen, wo immer sie leben, sollten sich daran erinnern, daß die Sowjetunion nie eine Zerstückelung Deutschlands gewollt hat. Es waren die USA und England, die auf den Drei-Mächte-Konferenzen das Zerreißen Deutschlands vorschlugen."

Gromyko sah es aber in der „Logik der historischen Gerechtigkeit", daß die Bundesrepublik im Moskauer Vertrag vom 12. August 1970 die Grenzen in Europa und auch jene der DDR anerkannte. Das schien für ihn der Hauptertrag halbjähriger Verhandlungen gewesen zu sein, und so stellte er beinahe vergnügt fest, daß die westdeutsche Seite sich mit dem „Brief zur deutschen Einheit" an den Obersten Sowjet „begnügt" habe. Auch alle anderen einschlägigen internationalen Abmachungen, wie das Vier-Mächte-Abkommen über Berlin, der deutsche Grundlagenvertrag und das Schlußdokument der KSZE-Konferenz in Helsinki 1975, wurden von Gromyko als fester Pfeiler der Zweistaatlichkeit Deutschlands gewertet.

Daß sie nunmehr ein fester Bestandteil der internationalen Ordnung sei, unverrückbar für unabsehbare Zeit, daran schien es in Moskau nie mehr einen Zweifel gegeben zu haben. Was immer mal wieder „Ärger" bereitete, war die Unterbringung Westberlins in diesem Schema oder die Art und Weise, in der westdeutsche Politiker in Moskauer Bankett-Reden den Anspruch auf Wiedervereinigung aufrechterhielten. Ärgerlich reagierte auch Michail Gorbatschow, als Bundespräsident Richard von Weizsäcker bei seinem Staatsbesuch 1987 das nationale Thema anschlug. Es gebe die „Realität der Teilung", sagte der Generalsekretär, und: „Was in hundert Jahren sein wird, entscheidet die Geschichte."

Es dauerte dann allerdings nur noch zwei Jahre, bis die Ungarn den Stacheldrahtzaun an ihrer Westgrenze abbauten, bis in Berlin die Mauer fiel und mit ihr die innerdeutsche Grenze. Niemand anderer als Gorbatschow selbst hatte die Regime in Budapest, Prag und Ostberlin auf Schleudersitze gesetzt, in Warschau tat es die „Solidarität". Dennoch: Die Ersetzung eines SED-Chefs durch einen anderen, wie zunächst geschehen, ist nicht zu verwechseln mit der Auflösung des SED-Staats. Diese kann nicht im voraus geplant gewesen sein, denn von einer Stufe zur anderen, von einer Kurve zur anderen bewegte sich die sowjetische Politik, bis sie – angefangen von der Ablehnung einer deutschen Wiedervereinigung überhaupt bis zur Neutralisierung eines vereinigten Deutschlands – schließlich sogar in den Einschluß Gesamtdeutschlands in die westliche Allianz einwilligte. Um die Deutschen sicher und unter Obhut aufzubewahren? Um mit ihnen, wenn sie erst uneingeschränkt souverän und aller fremden Vorbehaltsrechte ledig wären, ein Spiel zu beginnen?

Zum Riesen erklärt

Es muß anders gewesen sein. Der Staatsmann Gorbatschow hatte, in Kenntnis des wirklichen Zustands der einstigen Blockmitglieder, eingesehen, daß es über die Kräfte der Sowjetunion ging, die Last vieler verdrossener Gesellschaften und ineffektiver Volkswirtschaften weiterzutragen. Er hat nicht gesagt „Rette sich, wer kann", aber er hat niemanden daran gehindert, sich zu retten. Er hat zumal in der DDR Ballast abgeworfen in der Gewißheit, die Bundesrepublik werde ihn aufnehmen – und mehr als das. Diese glaubt sich stark genug, auch etwas von der Last schultern zu können, welche auf die Sowjetunion direkt drückt, und vergißt dabei, daß sie noch andere Verpflichtungen hat, gerade im Osten. Der sowjetische Außenminister Eduard Schewardnadse hat das vereinte Deutschland bereits zum „Riesen" erklärt. Ob es sich nun so verhält oder nicht – eher nicht –, es erscheint den Nachbarn als solcher. Und es ist nur ein Zeichen des Verlustes vernünftiger Maßstäbe, daß Bonner Planspiele aufgreifend – der Vorschlag kommt, Deutschland sollte, seiner künftigen weltpolitischen Rolle angemessen, nun auch Ständiges Mitglied des Sicherheitsrates der UNO werden – als ob es Japan, Indien, Brasilien und auch Italien nicht gäbe. Aber was tut der „Riese" wirklich, was kann er tun, außer Bewunderung oder Erzittern zu verbreiten? Noch ist nicht eingetreten, was von vielen befürchtet wird, nämlich daß er antideutsche Koalitionen ermuntern werde. Und noch wird rundum abgewartet, ob er seine Versprechen einlösen kann: die Europäische Gemeinschaft weiterzubringen, ihr Währungssystem mitzutragen, die ramponierten Wirtschaften in Mittel- und Osteuropa zu sanieren zu helfen, dem amerikanischen Weltpolizisten zur Seite zu stehen und vieles andere mehr.

Alte Verhaltensmuster

Einige Länder wollen sich nicht darauf verlassen, daß der „Riese" alles kann und immer gutmütig bleiben wird. Sie entwikkeln eigene Verhaltensmuster, und einige davon sind schon recht alt. Nehmen wir die Reise-Diplomatie, die in die zwischen den Weltkriegen begangenen Pfade zurückzukehren scheint. Es fliegt sich leicht über Deutschland hinweg, von Warschau nach Paris, von Paris nach Prag, von London nach Prag und Budapest. Das ist kein Tourismus, es handelt sich um Gesten, vorerst um solche der Normalisierung, aber mit der Perspektive der Intensivierung. Italien, Jugoslawien, Ungarn, Österreich und die ČSFR bilden eine Fünfergruppe, nun schon mit der nicht verschwiegenen Zielsetzung, das Gewicht Deutschlands auszutarieren. Und Margaret Thatcher läßt sich nicht länger von EG-Visionen den Blick in die weite Welt verstellen: Die osteuropäischen Staaten sollen in die Gemeinschaft aufgenommen, der Klub soll größer werden, der Raum der Demokratie sich von Kalifornien über die USA hinweg bis nach Wladiwostok ausdehnen. Darin wäre Deutschland dann gut aufgehoben. Und gilt auch nach der Einigung Deutschlands, daß Bonn und Washington *partner in leadership* sein sollen, wie Präsident George Bush sagte? Oder ist nicht eher Rivalität zwischen ihnen zu erwarten, zumindest in Europa, wo sich das Gewicht Deutschlands allein schon nach den Gesetzen der Schwerkraft bemerkbar machen wird?

Noch ist Deutschland ganz mit sich selbst beschäftigt, nicht zum ersten Male in seiner Geschichte. Es hat Moskau sehr viel versprochen, um die hundert Jahre Geschichte, von denen Gorbatschow sprach, abzukürzen, und es scheint, daß darüber jene in Vergessenheit geraten, denen gegenüber sich Bonn gern als guter Onkel und Nothelfer präsentierte. Es ist die totale „Wende" zu Deutschland, ohne forschenden Blick zurück oder nach nebenan, die im Nebel beläßt, wie sich die Deutschen und ihre Nachbarn künftig fühlen werden.



Ende eines Zweikampfs sondergleichen

Allenfalls für kurze Zeit könnte die Bundesrepublik nun im internationalen Sport zu einer Supermacht werden

Im Hintergrund des Titelblattes ertüchtigen sich vier Läufer aus der NS-Zeit vor einem jener steinernen Kolosse, wie sie der Bildhauer Arno Breker zu modellieren pflegte. Über den Artikel schrieben die Blattmacher der französischen Sportzeitung *L'Equipe* „Allemagne unie – ACHTUNG!" und nannten ihr 20seitiges Dossier „Deutschland, Deutschland über alles". Die Angst vor den vereinigten Deutschen geht um, die Angst, von einer sportiven Supermacht in die Rolle von Statisten gedrängt zu werden. Ein Blick in die olympische Statistik erklärt das Unbehagen. 572 olympische Medaillen hat der dahingeschiedene Arbeiter-und-Bauern-Staat bis heute zusammengerafft, obwohl die DDR erst von 1956 an mitsporteln durfte. Das macht Rang vier im „ewigen Medaillenspiegel". Sieben Plätze dahinter rangieren die bundesdeutsche Athleten, sie brachten es auf

Von Ludger Schulze

358 Medaillen. Jetzt, nachdem die 2+4-Verhandlungen der Politiker über die Bühne gegangen sind,- taucht eine ähnliche Formel unter den Sportlern auf: 2+4=1. Der Zusammenschluß der augenblicklich zweitstärksten olympischen Mannschaft (DDR) mit der viertbesten (Bundesrepublik) müsse Sport-Deutschland unweigerlich zur absoluten Dominanz verhelfen – Einigkeit macht zu stark, lautet die Furcht der internationalen Bedenkenträger.

Eine Spitzenstellung im Weltsport haben die beiden Deutschlands in den vergangenen 40 Jahren schon innegehabt: Die Kraft, mit der die eine Partei die jeweils andere k.o. zu schlagen versuchte, fand im Wettkampfsport nicht ihresgleichen; erst aufgrund der politischen Lage wurde der Zweikampf abgebrochen. Anfangs lagen die Vorteile eindeutig bei der neuen Bundesrepublik, die ihre Aufnahme in die „olympische Familie" mit Hilfe einer aus der NS-Zeit übriggebliebenen Funktionärsgarde vorantrieb. Karl Ritter von Halt, der letzte Reichssportführer, ertrotzte die Anerkennung durch das Internationale Olympische Komitee und wehrte gleichzeitig Ansprüche des Ost-NOKs ab. DDR-Olympier durften nur in einer gesamtdeutschen Mannschaft unter der Führung des westdeutschen „Nationalen Komitees für Deutschland" tätig werden, wobei sich die Gemeinsamkeit auf die Kleidung und das Emblem beschränkte. Ernstere Schwierigkeiten ergaben sich, als die DDR Ende der fünfziger Jahre ihre Staatssymbole in den Sport einbrachte: die Fahne mit Hammer und Zirkel und die Hymne, „Spalterflagge" und „Becherhymne", wie man hierzulande sagte. Das Aufziehen der Fahne und das Abspielen der Hymne wurde gemäß einem Beschluß der Bundesregierung als Verstoß gegen das Grundgesetz betrachtet. Beides war somit auch für die bundesdeutschen Funktionäre untragbar, besonders als Bestandteil des olympischen Zeremoniells. Das IOC behalf sich mit einem Kompromiß, verzierte die schwarz-rot-goldene Flagge mit den fünf olympischen Ringen und ließ zur Siegerehrung Beethovens Hymne „An die Freude" ertönen. Innerhalb der einzelnen Sportverbände aber überboten sich beide Seiten an Einfallsreichtum, um eine De-facto-Anerkennung des anderen zu verhindern.

Als der Mannheimer Rudi Altig 1959 in Leipzig Rad-Weltmeister geworden war, wurde das offizielle Zeremoniell mit Bundesfahne und Deutschland-Lied zwar pro forma eingehalten, doch verstummten die Lautsprecher nach wenigen Takten: Ein eigens beauftragter Stasi-Mann hatte die Schallplatte vom Teller gerissen. Bei der Eishockey-Weltmeisterschaft 1961 trat das bundesdeutsche Team gar nicht erst an, um den Insignien der DDR nicht Reverenz erweisen zu müssen. Die Eishockeyspieler aus dem Osten revanchierten sich zwei Jahre später nach einer Niederlage gegen die feindlichen deutschen Brüder, indem sie der Fahne brüsk den Rücken zukehrten.

Nach dem Bau der Berliner Mauer kam der spärliche deutsch-deutsche Sportverkehr beinahe vollständig zum Erliegen, gelegentliche „Blockadebrecher" wurden in der DDR propagandistisch ausgeschlachtet, in der Bundesrepublik aber häufig gleich beim Grenzübertritt wieder nach Hause geschickt. Wettkämpfe zwischen Deutschen fanden fast ausschließlich auf neutralem Boden und in einem eisigen Klima statt, private Kontakte waren von östlicher Seite strengstens untersagt. Von einem friedlichen Wettstreit innerhalb der olympischen Regeln, wie es das IOC gebietet, konnte in Anbetracht des gegenseitigen Hasses keine Rede sein. Von den ständigen, nervtötenden „querelles allemandes" hatte bald sogar der hohe IOC-Debattierklub die Nase voll. 1965 trug das Gremium dem wachsenden Einfluß der DDR Rechnung und erkannte dessen NOK als selbständiges Mitglied an, das allerdings bei den Spielen von 1968 noch unter der gemeinsamen Flagge anzutreten hatte. Olympia '72 wurde in die Bundesrepublik, nach München vergeben. Den Preis für das Entgegenkommen des IOC mußten die Funktionäre um den klugen NOK-Präsidenten Willi Daume unverzüglich zahlen: Das IOC beschloß mit 44 : 4 Stimmen die Zulassung der Staatssymbole der DDR, die letzte Bastion der Westdeutschen war gefallen.

Im letzten gemeinsamen Team für die Spiele von 1964 hatte die DDR bereits eine Majorität von 194 : 184 Sportlern erkämpft. Und vier Jahre später wurde die These der bundesdeutschen Funktionäre, wenn es darauf ankomme, wären letztlich die eigenen Leute doch die stärkeren, endgültig ad absurdum geführt. Und nun begannen die Verantwortlichen endlich, über die Mauer zu schauen und den sportlichen Erfolg der DDR zu analysieren. Daß der Sport drüben einen völlig anderen Rang einnahm, hatte schon frühzeitig Staatschef Walter Ulbricht festgelegt. „Der Sport ist bei uns... ein entscheidendes Mittel, um das kommunistische Bewußtsein in den Massen zu stärken." Ulbricht machte auch kein Hehl daraus, wen es in erster Linie zu schlagen galt. Siege von DDR-Sportlern, sagte er, seien „die beste Antwort an die Adresse der Bonner Alleinvertreter und Revanchisten." Sportliche Erfolge wurden zu Siegen über den Klassenfeind und sollten die Überlegenheit des sozialistischen Gesellschaftssystems beweisen. Intern eigneten sich die Sport-Asse vorzüglich zur Sympathiewerbung für das ungeliebte SED-Regime. Spitzenathleten übernahmen die Position als Bindeglied zwischen Regierung und Bevölkerung, geschickt nutzte man die Popularität einzelner Könner aus. Exemplarisch dafür steht die „Radsport-Legende" Gustav („Täve") Schur (dessen Sohn Jens inzwischen Profiradler geworden ist). Der mehrmalige Olympiamedaillen-Gewinner und Weltmeister der fünfziger Jahre, ein Mann mit starker persönlicher Ausstrahlung, wurde systematisch als Held und Vorbild der sozialistischen Gesellschaft aufgebaut. Publikumsliebling Schur machte, wie viele andere DDR-Sportheroen auch, politische Karriere. Bis zum März dieses Jahres saß der Radfahrer, der dem Arbeiter-und-Bauern-Staat unablässig seinen Dank abzustatten pflegte, in der Volkskammer. Abweichler hingegen hatten mit schärfsten Sanktionen zu rechnen. Der Schwimmer Matthias Pechmann etwa empfahl sich einer Kollegin vom Rodeln scherzhaft als „Heiner", nachdem DDR-Schlittenfahrer sich mittels Anwärmen der Kufen eine Medaille zu erschleichen versucht hatten. Pechmann wurde daraufhin derart geschuriegelt, daß er seine Flucht zu planen begann. Nachdem sein Vorhaben entdeckt worden war, wurde der Europameister zu zwei Jairen Haft verurteilt.

Von Anfang an setzte in der DDR eine systematische Planung des Sports ein, die ihren Ursprung in der Überlegung hatte, daß die DDR nur über ein Viertel der Bevölkerung der Bundesrepublik verfügt, mit dem vorhandenen Reservoir also wesentlich effektiver umzugehen hatte. Schon im Kindergarten wurden die künftigen Stars entdeckt, über die Kinder- und Jugendspartakiaden beständig gefördert bis hin zu Olympia. (Darüber hinaus erfüllte der Sport auch eine gewisse paramilitärische Funktion zur Abschreckung des äußeren Feindes, wie der einstige Minister für Volksbildung, Fritz Lange, schon 1955 deutlich gemachte hatte: „... überwinden wir den pädagogischen Pazifismus im Turnunterricht. Machen wir den Turnunterricht auch für die vormilitärische Ausbildung unserer Jugend nutzbar.") Hervorragend ausgebildete Trainer, ausgeklügelte Lehrpläne, die intensive Einbeziehung der Wissenschaften, eine umfassende medizinische Betreuung einschließlich einer erschreckend perfekten Dopingpraxis, größte soziale Absicherung in Schule, Studium und Beruf, der Zentralismus und Dirigismus der Organisation verhalfen dem DDR-Sport zu seiner Ausnahmestellung.

Eine gewisse Resignation

1968 wurde das Primat des Sports sogar in die Verfassung geschrieben: „Körperkultur, Sport und Touristik als Elemente der sozialistischen Kultur", heißt es im Artikel 18, „dienen der allseitigen körperlichen und geistlichen Entwicklung der Bürger." Privilegien aller Art, vom Essenszuschuß bis zum Wartburg, von Geldprämien bis zur Hilfestellung im Berufsleben, waren hohe Anreize für eine sportliche Karriere. Und Geld spielte so gut wie keine Rolle. Schätzungen errechneten für den gesamten Sport der DDR einen Jahresetat bis zu fünf Milliarden Mark, im Bereich des Spitzensport pro Kopf mindestens fünfmal soviel wie in der Bundesrepublik. Der direkte Zuschuß der Bundesregierung für den Spitzensport betrug 1989 knapp 27 Millionen Mark, Fußball-Bundesligaklubs FC Bayern setzte im gleichen Zeitraum 34,4 Millionen um. Versuche, bestimmte Methoden des DDR-Sports zu kopieren, blieben im Dickicht des Föderalismus stecken oder scheiterten an einer Gesellschaftsordnung, die dem Individuum weitgehend die freie Entscheidung überläßt.

Freilich versucht der Westen nach der Wende, sich des östlichen Know-how zu bemächtigen. Heerscharen von Sportlern und Trainern sind nach der Wende abgeworben worden, ganze Vereine wurden aufgekauft, vom Fußball bis zum Schach. Aber nicht nur Spitzenleute wurden herübergelockt, sondern auch junge Talente – auf diese Weise kann der bundesdeutsche Sport seine Schwächen in der Nachwuchsförderung ein paar Jahre lang kaschieren. Für genau diesen Zeitraum könnten sich die Befürchtungen von *L'Equipe* bewahrheiten. Zumindest bis zu den Spielen von 1992 werden die einstigen DDR-Helden durch finanzielle Anreize beträchtlich zu motivieren sein. Wenngleich unter den bundesdeutschen Sportlern in etlichen Disziplinen angesichts der neuen Konkurrenz im eigenen Land eine gewisse Resignation zu spüren ist, schließen Prognostiker nicht aus, daß Deutschland besser als alle anderen Sportländer abschneiden wird. Aber was dann? Die vergleichsweise karge Förderung des Spitzensports wird auch die einstigen DDR-Sportler auf ein niedrigeres Niveau zurückdrängen. Zu Hause werden sie ohnehin schlechte Bedingungen vorfinden: In der DDR wird das einstige „Volksvermögen" verhökert, Sportvereine verscherbeln ihr Inventar zu Dumpingpreisen – vom Handbohrer über Diktiergeräte bis hin zu Moonboots. Viele der früheren Lieblingskinder des Sozialismus werden künftig lieber eine berufliche Karriere anstreben; durch den Wegfall der Privilegien fehlt ein wesentliches Stimulans für die Sportausübung. Und so, wie sich die Verbände und Organisationen der DDR den entsprechenden Institutionen der Bundesrepublik anschließen und unterordnen, wird sich auch das Niveau der einzelnen Athleten dem westdeutschen Standard angleichen. Überdies wird den kühnen arithmetischen Berechnungen von der Natur der Sache ein Riegel vorgeschoben: Die Startfelder bei internationalen Veranstaltungen sind beschränkt, in Zukunft werden also nicht mehr sechs bis acht Deutsche aus zwei Ländern teilnehmen, sondern lediglich drei oder vier aus einem. Allein dieses simple Beispiel mag übertriebene Erwartungen dämpfen. Gleichwohl herrscht die Angst vor den Deutschen in den Arenen und hinter den Kulissen. Im Internationalen Olympischen Komitee hat sich dies bereits artikuliert: Den Antrag, einen dritten deutschen Vertreter aufzunehmen, haben die IOC-Mitglieder wütend abgeschmettert, schon jetzt schaut man den Gesamtdeutschen genau auf die Finger. Viele jedenfalls wären nicht sehr unglücklich, wenn sich 2+4=1 als das herausstellen würde, was es nach den Gesetzen der Mathematik ist: eine Ungleichung.

1964 Reisemöglichkeiten: Im Geheimfach unter dem Kofferraum und via CSSR schmuggelte Heinz Edelmann seine Frau von Deutschland-Ost nach Deutschland-West. Photo: dpa/SZ-Archiv



Als „Kirche für andere" auf Distanz zur Macht bleiben

In der DDR haben die Kirchen eine theologisch-ethische Einsicht gewonnen, hinter die sie ohne erheblichen Verlust an Glaubwürdigkeit nicht mehr zurück können

Wie groß der Anpassungsdruck der bisher westdeutschen evangelischen Kirchen auf die „armen Vettern" in der Ex-DDR ist, zeigt das Hickhack um den ökumenischen Gottesdienst zum Tag der Einheit. Der DDR-Kirchenbund wollte ihn am 2. Oktober abends feiern. So sollte auch durch die zeitliche Distanz der Eindruck vermieden werden, als sei der Gottesdienst voll in das Programm des 3. Oktober integriert und stelle so etwas wie die religiöse Weihe des nationalen und politischen Ereignisses dar. Den Politikern aber paßte der Termin nicht. Sie wandten sich an die Kirchen, und diese setzten den politischen Wunschtermin am 3. Oktober um 9.00 Uhr in der Berliner Marienkirche durch. Daß der staatlichen Vereinigung die kirchliche folgen muß, ist unbestritten. EKD und Kirchenbund sind bereits dazu

Von Gerhard Thomas

auf dem Weg. Die Frage aber ist, wie diese Einigung gestaltet wird. Wird es – wie in der Politik – ein „Anschluß" des Kirchenbundes an die EKD sein? Legt man damit die eigene Geschichte der ehemaligen DDR-Kirchen zu den Akten, ohne Erfahrungen aus dieser Geschichte für den weiteren Weg der evangelischen Kirchen fruchtbar zu machen? Viele engagierte evangelische Christen zwischen Ostsee und Erzgebirge fürchten, daß es so kommen wird. Die Reaktionen gerade an der Basis der Kirche schwanken zwischen Zorn und Resignation. Was hat die Kirchen in der Ex-DDR vier Jahrzehnte hindurch geprägt? Sie haben sich als „Lerngemeinschaft" verstanden. Was haben sie gelernt?

Mit der Kurzformel „Kirche im Sozialismus" hat der Kirchenbund, für viele mißverständlich, sein Selbstverständnis beschrieben. Das dokumentierte den Willen der Kirchen, die konkrete Gesellschaft, in der sie lebten, als den Ort ihres Zeugnisses und Dienstes anzunehmen. So widerstanden die Kirchen der Versuchung zur inneren Emigration, zum bloßen „Überwintern" und Warten auf bessere Zeiten. Die theologische Leistung bestand darin, die traditionelle Verquickung von bürgerlicher Gesellschaft und Christentum zu überwinden und antikommunistische Ideologie nicht als christlich geboten zum Maßstab ihres Handelns zu machen.

Schon auf der Bundessynode 1972 beschrieb der damalige mecklenburgische Landesbischof Heinrich Rathke in Aufnahme Bonhoefferscher Gedanken die Kirche im Sozialismus als „Kirche für andere": die nicht Kirche neben den anderen, gegen oder ohne die anderen, aber auch nicht wie die anderen sein könne. Ein Jahr später hielt der Erfurter Propst Heino Falcke auf der Bundessynode sein berühmtes Referat, in dem er die Formel vom „verbesserlichen Sozialismus" prägte und damit den Zorn des Staates hervorrief. In der Folgezeit wurde von Synoden und Kirchenleitungen in vielfachen Variationen die Aufgabe beschrieben, den Sozialismus als „gerechtere Form des Zusammenlebens", als „Sozialismus mit menschlichem Antlitz" zu verwirklichen. In „kritischer Solidarität", nicht in grundsätzlicher Verweigerung, wollten die Kirchen daran mitwirken. Dieser Wille kam auch darin zum Ausdruck, daß die Kirchen strikt auf dem Prinzip der Trennung von Staat und Kirche beharrten, aber auch darauf, daß dies nicht bedeuten könne, sich, wie der Staat es wollte, aus politischen und gesellschaftlichen Fragen herauszuhalten. So wahrte die Kirche eine heilsame Distanz zur Macht, ohne sich in ein innerkirchliches Ghetto zurückzuziehen. Als „Kirche für andere" nahm sie ihren Auftrag nicht nur in Liturgie, Seelsorge, Mission und Diakonie wahr, sondern auch im Sinne politisch und sozial kritischer Prophetie.

Ständiger Unruhefaktor

Neben der Ökumene waren es im eigenen Lande besonders die politisch engagierten Gruppen im Raum der Kirche, die Lernprozesse in Gang setzten. Sie waren ein ständiger Unruhefaktor, mit dem sich die Kirchen zwar oft schwer taten, von denen sie sich aber doch nicht trennten. Manche politische Initiativen, die zuerst unter hohem persönlichen Risiko von den Gruppen gestartet wurden, fanden Eingang in Synoden und wurden zu Themen der Gesamtkirche. Als ein Beispiel sei das Eintreten für den Zivildienst genannt. So haben die Kirchen in ihrer DDR-Geschichte eine theologisch-ethische Einsicht gewonnen, hinter die sie ohne einen erheblichen Verlust an Glaubwürdigkeit nicht mehr zurück können. Sie haben gelernt, die biblische Botschaft ganzheitlich zu verstehen. Das Evangelium reiche, so hat Landesbischof Werner Leich als Kirchenbund-Vorsitzender in den letzten Jahren immer wieder betont, in „alle Lebensbereiche" hinein. Damit waren Fragen politischer Verantwortung für evangelische Christen nicht mehr nur Ermessensfragen, sondern Sache des Glaubensgehorsams. Klaren Ausdruck fand dies in dem Dokument „Bekennen in der Friedensfrage" der Bundessynode 1986. In diesem Dokument wurden beispielsweise Wehrdienst und Verweigerung nicht mehr als gleichwertige Möglichkeiten dargestellt, sondern der Verweigerung wurde der deutliche Vorzug gegeben als einem „Ausdruck des Glaubensgehorsams, der auf den Weg des Friedens führt".

Kritische Solidarität

Natürlich gehört in diesem Zusammenhang der „konziliare Weg", den die Kirchen in der ehemaligen DDR in ökumenischer Gemeinschaft gegangen sind. Die Ökumenische Versammlung für Gerechtigkeit, Frieden und Bewahrung der Schöpfung war 1988/89 ein Höhepunkt im Blick auf die Umsetzung der theologischen Einsicht in die soziale und politische Dimension der biblischen Botschaft. Erinnert sei an die drei „vorrangigen Verpflichtungen", die in der theologischen Grundlegung stehen und in den übrigen elf Texten der Ökumenischen Versammlung konkret für die damalige Situation in der DDR entfaltet wurden: für die Armen, für Gewaltfreiheit, für den Schutz und die Förderung des Lebens. Diese Texte, die im Kern das Programm enthielten, für das die Menschen im Herbst vorigen Jahres auf die Straße gingen, wurden übrigens von allen an der ökumenischen Versammlung beteiligten Kirchen ratifiziert. Nur wer bereit ist, diese „Lernerfahrungen" der evangelischen Kirchen in der DDR zur Kenntnis zu nehmen, wird vielleicht ermessen können, wieviel Christen zwischen Mecklenburg und Sachsen daran liegt, sie für den weiteren Weg bewahren zu können. Die im Ganzen durchgehaltene Distanz zur Macht hat die Glaubwürdigkeit der Kirchen auch in der nichtchristlichen Öffentlichkeit wesentlich gestärkt. Deshalb sollten sich die evangelischen Kirchen im neuen Gesamtdeutschland diese Distanz erhalten. Als „Kirche für andere" möchten viele Engagierte in den ehemaligen DDR-Kirchen querdurch von der Leitung bis zur Basis im Sinne der Verpflichtungen der Ökumenischen Versammlung auch in einer offenen, pluralistischen, demokratischen Gesellschaft den Weg „kritischer Solidarität" weitergehen.

Der Berliner Bischof Gottfried Forck hat das kürzlich in einem Interview mit der Evangelischen Wochenzeitung *Die Kirche* so gesagt: „Wir müssen jetzt darauf achten, daß wir nicht in die Rolle derer geraten, die voller Vertrauen auf die Regierung schauen. Vielmehr müssen wir die kritische Begleitung der politischen Kräfte fortsetzen (...) Es ist nicht nur eine Randfrage für die Kirche, sondern gehört zu ihrem Wesen, daß sie sich leiten lassen muß von dem Wort Jesu Christi, das immer auch ein kritisches Wort zu den politischen und gesellschaftlichen Verhältnissen unter uns ist." Eine der Gretchenfragen, wie die Kirche es mit der Macht hält, hat sich im kirchlichen Vereinigungsprozeß bereits im Streit um die Militärseelsorge gestellt. Der Kirchenbund hat darauf bestanden, den westdeutschen Militärseelsorgevertrag nicht übernehmen zu müssen. Man sieht die Freiheit der Verkündigung und Seelsorge gefährdet, wenn die Militärpfarrer als Staatsbeamte in Uniform in die Strukturen der Bundeswehr eingebunden sind. Die EKD hat zwar hier einen Sonderweg der bisherigen DDR-Kirchen zugestanden, es sieht aber bisher nicht so aus, als ob sie ihrerseits zur Kündigung des Militärseelsorgevertrages bereit wäre.

Vor offenen Türen

Heino Falcke hat schon im Januar in einem Thesenpapier vor dem Anpassungsdruck gewarnt, dem die Kirchen auf ihrem „großen Marsch in die gesellschaftlichen Institutionen" ausgesetzt sind. Die Kirchen in der ehemaligen DDR finden seit der Wende überall, auch beim Staat, offene Türen für ihre Belange. Diese neue Situation birgt die Gefahr in sich, daß die Kirchen sie nur nutzen, um die ramponierte Volkskirche zu reparieren. Diese durchaus erkennbare Tendenz zu innerkirchlicher Restauration, die etwa im Bereich des Finanzwesens oder der religiösen Unterweisung von den westdeutschen Kirchen gefördert wird, kann verhindern, daß die Kirchen sich auf die neuen inhaltlichen Herausforderungen einstellen und dazu Entscheidungen treffen. Die neuen sozialen Probleme müssen die Tagesordnung der Kirchen stark bestimmen, wenn sie ihren DDR-Lernerfahrungen treu bleiben wollen: Arbeitslosigkeit, Ausländerfeindlichkeit, wachsende Kriminalität, gewalttätiger Extremismus, Vereinsamung von Menschen, die sich den neuen Anforderungen nicht gewachsen fühlen – die Liste ist lang. Alles in allem: Mit dem Untergang der DDR dürfen nicht auch die Erfahrungen untergehen, die die Glaubwürdigkeit der Kirchen ausgemacht haben. Evangelische Christen in der DDR hoffen noch darauf, daß sich der Prozeß des Zusammenwachsens der Kirchen partnerschaftlich gestaltet, im Gespräch miteinander, in das jeder Partner mit der Bereitschaft geht, etwas lernen und sich im Gesprächsprozeß selbst verändern zu können.

Der Autor ist Chefredakteur der in Ostberlin erscheinenden Evangelischen Wochenzeitung Die Kirche.

1989 Reisemöglichkeiten: Noch standen Posten an der Grenze, aber jeder durfte durch: Ostberliner auf dem Weg nach Westen. Photo: Regina Schmeken/SZ-Archiv



„Allein befugt, für das deutsche Volk zu sprechen"

Von der Konferenz der Großen Drei in Jalta bis zum Tag der Einheit 1990 – eine Chronik der deutschen Teilung und der Wiedervereinigung

Zusammengestellt von
Klaus Schumann

1945

5. bis 11. Februar: Auf der Konferenz in Jalta behandeln die „Großen Drei" (USA, UdSSR und Großbritannien) die deutsche Frage: Reparationen, Beteiligung Frankreichs an der Besetzung deutschen Staatsgebietes und die Kontrolle über Deutschland.

30. April: Die „Gruppe Ulbricht" trifft im Raum Berlin ein und beginnt im Auftrag der Roten Armee mit dem Aufbau einer Verwaltung. Adolf Hitler begeht Selbstmord.

7./9. Mai: Bedingungslose Kapitulation der deutschen Wehrmacht in Reims und Berlin-Karlshorst.

5.Juni: Die vier Alliierten (einschließlich Frankreich) übernehmen die Regierungsgewalt in Deutschland.

1. bis 3. Juli: Die amerikanischen und britischen Truppen ziehen sich entsprechend den Vereinbarungen von Jalta aus Sachsen, Thüringen und Mecklenburg zurück und rücken in die Westsektoren von Berlin ein.

14. Juli: In der SBZ wird die „Einheitsfront der antifaschistisch-demokratischen Parteien" (KPD, SPD, CDU, LDPD) gegründet, der sogenannte Antifa-Block; er wird 1948 durch Aufnahme der DBD, des FDGB und der NDPD erweitert.

17. Juli bis 2. August: Die Potsdamer Konferenz legt die weitere Behandlung Deutschlands, die Reparationsansprüche und die Demontagen fest.

1946

21./22. April: Vereinigungsparteitag von KPD und SPD zur Sozialistischen Einheitspartei Deutschlands (SED).

1947

25. Februar: Auflösung des Staates Preußen.

6. Dezember: Konstituierung des ersten „deutschen Volkskongresses für Einheit und gerechten Frieden" als vorläufiges Regierungsorgan in der SBZ.

1948

20. März: Die Sowjets verlassen den Alliierten Kontrollrat, der damit beschlußunfähig wird.

16. Juni: Die UdSSR stellt auch in der interalliierten Militärkommandantur (Verwaltung Berlins) ihre Mitarbeit ein. Die Westmächte errichten deshalb am 21. Dezember eine eigene Kommandantur für Berlin (West).

18. bis 20. Juni: Währungsreform in den drei Westzonen.

23. Juni: In der DDR wird die „Deutsche Mark der Deutschen Notenbank" geschaffen.

24. bis 28. Juni: Währungsreform auch in der SBZ.

23./24. Juni: Beginn der Berlin-Blockade: Die UdSSR sperrt die Land- und Wasserwege zwischen Westberlin und Westdeutschland. Die USA und Großbritannien stellen durch eine Luftbrücke (vom 26. Juni 1948 bis 30. September 1949) die Versorgung von Westberlin sicher. Die Blockade endet am 12. Mai 1949.

30. November: In Ost-Berlin wird eine eigene Stadtverwaltung unter Friedrich Ebert eingerichtet, die Spaltung der Berliner Verwaltung ist vollendet.

1949

6. bis 8. April: Die Außenminister der drei westlichen Besatzungsmächte beschließen in Washington ein gemeinsames Besatzungsstatut für die Westzonen (Trizone).

8. Mai: Der Parlamentarische Rat billigt das Grundgesetz der Bundesrepublik. Am 10. Mai wird Bonn zur vorläufigen Bundeshauptstadt bestimmt.

23. Mai: Der Präsident des Parlamentarischen Rats, Konrad Adenauer, verkündet das Grundgesetz.

7. Oktober: Gründung der Deutschen Demokratischen Republik, die Verfassung bestimmt Ost-Berlin zur Hauptstadt der DDR.

10. Oktober: Die SMAD überträgt die Verwaltungsfunktionen an die Provisorische Regierung der DDR und wird in die Sowjetische Kontrollkommission (SKK) umgewandelt. Die fünf Landtage der DDR wählen die Provisorische Länderkammer.

21. Oktober: Bundeskanzler Konrad Adenauer betont im Bundestag, die Bundesregierung Deutschland sei „allein befugt, für das deutsche Volk zu sprechen" (Alleinvertretungsanspruch).

1950

8. Februar: Das Ministerium für Staatssicherheit (MfS) wird errichtet.

22. März: Die Bundesregierung fordert erstmals eine Wiedervereinigung durch freie, allgemeine, gleiche, geheime und direkte Wahlen zu einem gesamtdeutschen Parlament unter internationaler Kontrolle.

6. Juli: Die DDR und Polen schließen den Görlitzer Vertrag, der die Oder-Neiße-Grenze als „unantastbare Friedens- und Freundschaftsgrenze" bestätigt.

30. November: Brief Grotewohls an Adenauer mit dem Vorschlag, einen „Gesamtdeutschen Konstituierenden Rat" zu bilden. Adenauer stellt am 15. Januar 1951 fest, „daß diejenigen, die auf das deutsche Gebiet östlich der Oder und Neiße im Warschauer Abkommen Verzicht geleistet haben, nicht legitimiert erscheinen, von einer Wiedervereinigung Deutschlands zu sprechen"; die Voraussetzungen für freie Wahlen seien in der Sowjetzone nicht gegeben.

1951

9./13. Juli: Großbritannien und Frankreich (am 19. Oktober auch die USA) erklären den Kriegszustand mit Deutschland für beendet.

20. September: Das Berliner Abkommen zwischen den Währungsgebieten der DM-West und der DM-Ost regelt den Interzonenhandel und bildet die Rechtsgrundlage für den innerdeutschen Handel.

1952

10. März: Die sowjetische Regierung schlägt den drei Westmächten vor, einen Friedensvertrag mit Deutschland – vertreten durch eine gesamtdeutsche Regierung – abzuschließen (sogenannte „Stalin-Note"). Die Westmächte und die Bundesregierung lehnen jedoch am 25. März Verhandlungen ab, bevor nicht über freie gesamtdeutsche Wahlen entschieden sei.

26. Mai: Die DDR-Regierung erläßt eine Verordnung über eine fünf Kilometer breite Sperrzone entlang der Demarkationslinie als Reaktion auf die Unterzeichnung des Deutschlandvertrages. Für Besucher aus Westdeutschland sind Aufenthaltsgenehmigungen nötig. In Berlin werden die Telephonverbindungen in den Ostsektor unterbrochen. Vom 15. Januar 1953 an verkehren nur noch U- und S-Bahn zwischen den Sektoren.

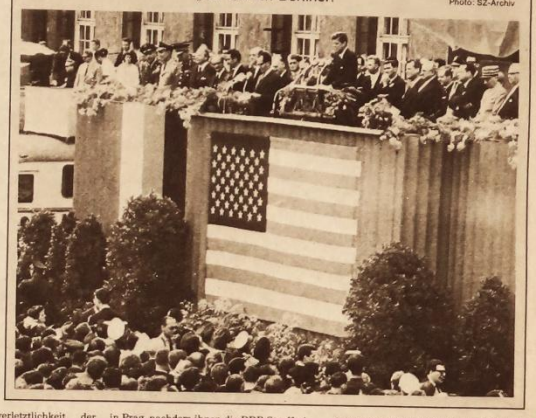
Symbolfigur Walter Ulbricht dankte seinen Betriebskampfgruppen im August 1961 für ihre Anstrengungen beim Mauerbau in Berlin.

Photo: AP/SZ-Archiv



Symbolfigur Der amerikanische Präsident John F. Kennedy im Juni 1963 vor dem Schöneberger Rathaus: „Ich bin ein Berliner."

Photo: SZ-Archiv



1953

1. Januar: Den Kirchen wird verboten, Religionsunterricht in den Schulen abzuhalten.

28. Mai: Die Regierung der DDR beschließt eine Erhöhung der Arbeitsnormen um mindestens zehn Prozent.

17. Juni: Bauarbeiterstreiks gegen die Erhöhung der Normen weiten sich zum Volksaufstand in Ost-Berlin und in anderen Städten der DDR aus. Er wird durch sowjetische Truppen niedergeschlagen.

4. August: Mit Verkündung des Gesetzes wird der 17. Juni zum „Tag der deutschen Einheit".

1954

25. März: Die UdSSR proklamiert die Souveränität der DDR.

1955

25. Januar: Die UdSSR beendet den Kriegszustand mit ganz Deutschland. Sie betrachte die Wiedervereinigung als ausschließliche Angelegenheit der Deutschen.

5. Mai: Die Bundesrepublik Deutschland wird teilweise souverän und am 9. Mai Mitglied der NATO.

23. September: Bundeskanzler Konrad Adenauer formuliert die „Hallstein-Doktrin".

1956

18. Januar: Die DDR-Volkskammer beschließt die Schaffung der Nationalen Volksarmee (NVA). Die Einheiten der Bundeswehr begannen zwei Wochen zuvor ihren Dienst.

27. Januar: Die DDR tritt dem Warschauer Pakt bei.

18. August: Das Bundesverfassungsgericht erklärt die Kommunistische Partei Deutschlands (KPD) für verfassungswidrig.

22. November: Bei den XVI. Olympischen Spielen in Melbourne tritt erstmals eine gesamtdeutsche Mannschaft an.

1957

27. Juli: Die DDR schlägt eine Konföderation zwischen beiden deutschen Staaten vor.

19. Oktober: Die Bundesrepublik wendet erstmals die „Hallstein-Doktrin" an und bricht die diplomatischen Beziehungen zu Jugoslawien ab.

1958

10./27. November: Berlin-Ultimatum Nikita Chruschtschows: Umwandlung von Westberlin in eine „entmilitarisierte Freie Stadt" innerhalb von sechs Monaten. Die Westmächte lehnen am 31. Dezember jede Veränderung des Status von Berlin ab.

1959

11. Mai bis 15. August: Deutschlandkonferenz in Genf mit Delegationen der Bundesrepublik und der DDR. Die letzte Deutschlandkonferenz der Siegermächte des Zweiten Weltkriegs wird ohne Ergebnis vertagt.

1. Oktober: Die DDR-Volkskammer ändert die Staatsflagge: Hammer und Zirkel im Ährenkranz werden als Emblem der Arbeiter-und-Bauern-Macht Bestandteil der Fahne.

1960

15. April: Die Kollektivierung der DDR-Landwirtschaft ist beendet. Nur 7,6 Prozent der gesamten Nutzfläche sind noch in Privatbesitz.

1961

15. Juni: Auf einer Pressekonferenz in Ostberlin sagt Ulbricht: „Niemand hat die Absicht, eine Mauer zu errichten."

13. August: Abriegelung der Grenzen zu den Westsektoren durch die DDR. Die Berliner Mauer wird gebaut.

16. August: Seit 0.00 Uhr ist die Zonengrenze für Einwohner der DDR und Ostberlins, die nach Westdeutschland reisen wollen, gesperrt.

1962

17. September: Die UdSSR erklärt den Viermächtestatus von Berlin für beendet.

1963

21. Juni: Der DDR-Ministerrat erläßt eine Verordnung über den „Schutz der Staatsgrenze" zwischen der DDR und Westberlin und die Errichtung des 100 Meter breiten Todesstreifens.

15. Juli: Der SPD-Politiker Egon Bahr empfiehlt für die Deutschlandpolitik die Formel „Wandel durch Annäherung".

17. Dezember: Erstes Passierscheinabkommen.

1964

9. September: Rentner aus der DDR dürfen einmal jährlich in die Bundesrepublik und nach Westberlin reisen, um Verwandte zu besuchen.

1. Dezember: Der „Mindestumtausch" wird eingeführt.

1965

21. März: Der Evangelischen Kirche in Deutschland ist es zum erstenmal nicht möglich, eine gesamtdeutsche Synode abzuhalten.

1966

7. Februar bis 18. März: Briefwechsel SED-SPD über einen geplanten Redneraustausch.

1967

20. Februar: Die Volkskammer verabschiedet das „Gesetz über die Staatsbürgerschaft der DDR".

1968

8. April: Neue Verfassung der DDR. Sie definiert die DDR als „sozialistischen Staat deutscher Nation".

11. Juni: Die DDR führt die Paß- und Visapflicht im Reise- und Transitverkehr der Bundesrepublik und Westberlins ein.

1969

10. Juni: Der Bund der Evangelischen Kirchen in der DDR entsteht. Damit endet die Einheit der Evangelischen Kirche in Deutschland.

1970

19. März: In Erfurt treffen Bundeskanzler Brandt und DDR-Regierungschef Stoph zu einem Meinungsaustausch zusammen. Am 21. Mai kommt es zu einem zweiten deutsch-deutschen Gipfeltreffen in Kassel.

1971

3. September: Die Botschafter der vier Siegermächte treten als Alliierter Kontrollrat in Berlin zusammen und unterzeichnen das Viermächteabkommen über Berlin. Die UdSSR gewährleistet den Transitverkehr zwischen Westberlin und der Bundesrepublik.

17. Dezember: Transitabkommen zwischen der DDR und der Bundesrepublik.

20. Dezember: Nach Vereinbarungen des DDR-Ministerrates und des Senats können erstmals seit 1961 Bewohner von Westberlin den Osttell der Stadt und die DDR besuchen.

1972

26. Mai: Unterzeichnung des Verkehrsvertrages zwischen der DDR und der Bundesrepublik.

3. Juni: Unterzeichnung des Viermächteschlußprotokolls zum Berlin-Abkommen vom 3. September 1971.

21. Dezember: Unterzeichnung des „Vertrages über die Grundlagen der Beziehungen zwischen der Bundesrepublik Deutschland und der Deutschen Demokratischen Republik": Anerkennung der Viermächteverantwortung. Unverletztlichkeit der Grenzen, Beschränkung der Hoheitsgewalt auf das eigene Staatsgebiet; Austausch „Ständiger Vertreter", Beibehaltung des innerdeutschen Handels, Antrag beider Staaten auf UNO-Mitgliedschaft.

1973

9. Februar: Frankreich und Großbritannien erkennen die DDR an.

1974

14. März: Das Protokoll über die Errichtung „Ständiger Vertretungen" wird unterzeichnet.

6./7. Mai: Willy Brandt, Bundeskanzler seit 1969, tritt nach der Verhaftung seines persönlichen Referenten, des DDR-Spions Günter Guillaume, zurück.

4. September: Die DDR und die USA nehmen diplomatische Beziehungen auf.

27. September: Die DDR-Volkskammer streicht den Begriff der „ganzen deutschen Nation . . ." aus der Verfassung.

1975

7. Oktober: In Moskau wird ein Beistandspakt zwischen der DDR und der UdSSR unterzeichnet. Die deutsche Frage wird als gelöst erklärt.

1976

18. August: Aus Protest gegen die Unterdrückung der Kirchen verbrennt sich in Zeitz der evangelische Pfarrer Brüsewitz.

16. November: Der Lyriker und Sänger Wolf Biermann wird während einer Tournee in der Bundesrepublik ausgebürgert.

1977

7. Oktober: Bei Tumulten bei einem Konzert auf dem Ostberliner Alexanderplatz werden drei Menschen, darunter zwei Volkspolizisten, getötet.

1978

16. November: Die Abkommen über den Bau der Autobahn Berlin–Hamburg, die Wiedereröffnung des Teltow-Kanals in Berlin und den nichtkommerziellen Zahlungsverkehr werden unterzeichnet.

1979

28 Juni: Die DDR-Volkskammer beschließt, die Abgeordneten von Ostberlin direkt wählen zu lassen.

1980

1. Januar: Bei Transitfahrten durch die DDR entfallen die Straßenbenutzungsgebühren; Bonn zahlt dafür 50 Millionen Mark jährlich.

9. Oktober: Die DDR erhöht den Mindestumtausch von 13 auf 25 DM pro Tag.

1981

11. bis 13. Dezember: Auf Einladung Honeckers kommt Bundeskanzler Schmidt an den Werbellinsee.

1982

20. November: Eröffnung der Transitautobahn Berlin–Hamburg.

1983

1. Juli: In München wird ein Kreditvertrag über 1 Milliarde DM für die DDR unterzeichnet. F. J. Strauß hat ihn „eingefädelt".

30. Dezember: Der Senat und die DDR vereinbaren die Übernahme der S-Bahn auf Westberliner Gebiet.

1984

24. Januar: DDR-Bürger, die in die Vertretung der Bundesrepublik und in die US-Botschaft geflüchtet waren, dürfen ausreisen.

1. August: Die DDR erleichtert für einen 950-Millionen-Kredit den Grenzverkehr.

1985

15. Januar: Die letzten DDR-Bürger verlassen die Botschaft der Bundesrepublik in Prag, nachdem ihnen die DDR Straffreiheit und Prüfung ihrer Ausreiseanträge zugesichert hat.

11. März: Michail Gorbatschow wird Generalsekretär der KPdSU.

1986

23. April: Eisenhüttenstadt und Saarlouis schließen die erste deutsch-deutsche Städtepartnerschaft.

6. Mai: Ein Kulturabkommen zwischen beiden deutschen Staaten wird unterzeichnet.

1987

17. Juli: Der Staatsrat beschließt eine Amnestie und die Abschaffung der Todesstrafe.

7. bis 11. September: Besuch des DDR-Staatsratsvorsitzenden Erich Honecker in der Bundesrepublik. In Abweichung vom Redemanuskript spricht er vom Tag, „an dem Grenzen uns nicht mehr trennen, sondern Grenzen uns vereinen, so wie uns die Grenze zwischen der DDR und der VR Polen vereint".

28. Oktober: Berlin feiert sein 750. Gründungsjubiläum. Dabei treffen sich zum ersten Mal die Bürgermeister Diepgen und Krack. US-Präsident Reagan fordert in Westberlin Gorbatschow auf, die Mauer abzureißen.

1988

1. März: Einwohner von Westberlin können künftig bei Tagesreisen nach Ostberlin einmal dort übernachten.

1989

2. Mai: Ungarische Grenzsoldaten beseitigen den Stacheldraht an der ungarisch-österreichischen Grenze. Der Eiserne Vorhang fällt.

7. Juli: Der Warschauer Pakt widerruft die Breschnew-Doktrin von der beschränkten Souveränität der sozialistischen Staaten.

10. August: Aufnahme des innerdeutschen Flugverkehrs.

13. August: Die Bonner Botschaft in Budapest muß wegen Überfüllung schließen. Von dort wollen 181 DDR-Bürger ausreisen.

19. August: Das Fest der „Paneuropa-Union" bei Sopron nutzen etwa 600 Urlauber aus der DDR zur Flucht aus Ungarn. Tausende fliehen seit Wochen über die grüne Grenze nach Österreich.

22. August: Die Botschaft der Bundesrepublik in Prag wird geschlossen, weil 140 DDR-Bürger darin Zuflucht gesucht haben. Hunderte von Flüchtlingen klettern über den Zaun in den Garten der Botschaft.

8. September: Alle 117 DDR-Bürger, die sich seit sechs Wochen in der Vertretung Bonns in Ostberlin aufhalten, verlassen das Gebäude ohne die Zusicherung einer Ausreise.

11. September: Die ungarische Regierung öffnet ungeachtet der Verträge mit Ostberlin die Grenze. Innerhalb von drei Tagen reisen 15 000 Deutsche aus der DDR über Ungarn und Österreich in die Bundesrepublik. Das „Neue Forum", erste in der ganzen DDR wirkende Oppositionsgruppe, formiert sich (Gründung am 1. Oktober).

1. Oktober: 6000 DDR-Flüchtlinge aus Prag und 800 aus Warschau treffen in der Bundesrepublik ein.

3. Oktober: Erneut warten 7000 Flüchtlinge in und vor der Prager Botschaft. Die DDR gestattet die Ausreise, führt aber die Visumpflicht für CSSR-Reisen ein.

4. Oktober: Massenausreise in verriegelten Zügen über Dresden.

7. Oktober: Nach seinem Gespräch mit Erich Honecker sagt Michail Gorbatschow: „Wer zu spät kommt, den bestraft das Leben." Dies ist das Aufbruchsignal für die Opposition in der DDR. In Ostberlin, Leipzig, Dresden und anderen Städten demonstrieren Zehntausende für Freiheit und Reformen, Hunderte werden verhaftet und verprügelt.

9. Oktober: In Leipzig ziehen 70 000 Menschen nach den Montags-Friedensgebeten in den Kirchen über den Karl-Marx-Ring. Es ist die größte Demonstration seit dem 17. Juni 1953. „Wir sind das Volk – keine Gewalt" ertönen tausendfach die Sprechchöre.

10. bis 15. Oktober: In Dresden werden 500 Demonstranten freigelassen, die SED verspricht einen Dialog und Reisemöglichkeiten; die evangelische Kirche stellt sich offen an die Spitze der Opposition.

16. Oktober: In Leipzig demonstrieren über 120 000 Menschen für Reformen.

18. Oktober: Um 14.12 Uhr meldet ADN den Rücktritt Erich Honeckers. Der neue Parteichef Egon Krenz kündigt eine „Wende" in der DDR an.

8. November: Das Politbüro der SED tritt geschlossen zurück. – Über die CSSR sind bisher etwa 50 000 DDR-Bürger in die Bundesrepublik gekommen.

9. November: Um 18.15 Uhr gibt Günter Schabowski, ZK-Sekretär für Information, vor Journalisten bekannt, alle DDR-Bewohner könnten über sämtliche Grenzübergänge nach Westberlin und in die Bundesrepublik reisen. Noch in der Nacht eilen Zehntausende nach Westberlin und feiern Wiedersehen; auf der Mauer vor dem Brandenburger Tor tanzen die Menschen aus Ost und West.

13. November: Der Dresdner SED-Bezirkschef Hans Modrow wird neuer Ministerpräsident der DDR. In Leipzig demonstrieren 200 000 Menschen für weitreichende Reformen; Transparente mit der Aufschrift „Deutschland, einig Vaterland" sind zu sehen.

1. Dezember: Die Volkskammer streicht den Führungsanspruch der SED aus der Verfassung; am 3. Dezember werden Honecker und andere „Altgardisten" aus der SED ausgeschlossen, am 6. Dezember legt Krenz seine Ämter nieder.

22. Dezember: Das Brandenburger Tor wird geöffnet, Westdeutsche können ab Weihnachten ohne Visum und Zwangsumtausch in die DDR reisen.

1990

15. Januar: Zehntausende stürmen die Zentrale des Staatssicherheitsdienstes in Ostberlin.

18. März: Zum ersten Mal seit 40 Jahren finden freie (Volkskammer-)Wahlen in der DDR statt.

6. Mai: Kommunalwahlen in der DDR.

1. Juli: Die Währungs-, Wirtschafts- und Sozialunion zwischen der Bundesrepublik und der DDR tritt in Kraft.

15./16. Juli: Bei einem Besuch Kanzler Kohls und Außenminister Genschers im Kaukasus erklärt der sowjetische Präsident Gorbatschow, das vereinte Deutschland könne „frei und selbst entscheiden", welchen Bündnissen es angehöre.

22. Juli: Die Volkskammer beschließt die Konstituierung der einstigen fünf Länder der DDR zum 14. Oktober mit der Wahl der Landtage.

22./23. August: Die Volkskammer der DDR beschließt den Beitritt der DDR zur Bundesrepublik zum 3. Oktober.

31. August: Mit der Unterzeichnung des zweiten Staatsvertrages ist die Einheit Deutschlands besiegelt.

12. September: Die 2+4-Gespräche der beiden deutschen Staaten mit den vier Siegermächten des Zweiten Weltkriegs finden in Moskau ihren Abschluß. Der „Vertrag über die äußeren Aspekte der Vereinigung Deutschlands", der von Gesamtdeutschland und den Alliierten ratifiziert werden muß, enthält den endgültigen Verzicht der Siegermächte auf sämtliche Besatzungsrechte und die deutsche Garantie der Oder-Neiße-Grenze zum 3. Oktober. Damit hat das vereinte Deutschland nach 45 Jahren seine Souveränität wieder.

Der deutsch-sowjetische Generalvertrag wird paraphiert.

1. Oktober: Suspendierung der Rechte der vier Siegermächte in Berlin und Gesamtdeutschland.

3. Oktober: 0.00 Uhr Beginn der Einheit Deutschlands in voller Souveränität.

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Süddeutsche Zeitung

MÜNCHNER NEUESTE NACHRICHTEN AUS POLITIK, KULTUR, WIRTSCHAFT UND SPORT

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Das Streiflicht

(SZ) In seinen letzten vier Lebensjahren hatte Nikolaj II. häufig seinen Wohnort wechseln müssen. Nach dem Ausbruch des Ersten Weltkriegs, auch von der russischen Oberschicht mit Begeisterung begrüßt, hatte der Zar und „Selbstherrscher" immer weniger Gelegenheit, sich seiner prächtigen Residenz in Petrograd zu erfreuen. Von 1915 an hielt er sich fast ständig im Hauptquartier der Armee in Mogiljow auf, und im August jenes Jahres übernahm er sogar den Oberbefehl, weniger um den ersehnten Sieg herbeizuführen, sondern mehr um seinem Onkel, dem populären Großfürsten Nikolaj, das militärische Zepter und die bis dahin noch gewährte Gunst der Massen zu entwinden. Diese hielten schon im Februar 1917 dafür, daß mit dem Zaren keine Schlacht mehr zu gewinnen sei; er mußte abdanken, und sein Bruder Michail, der ihm nachfolgte, hielt es auf dem Thron auch nur einen Tag lang aus. Selbst die noch „bürgerlichen" Revolutionäre wollten den Zaren nicht ohne Aufsicht lassen und schickten ihn in seine Sommer-Residenz Zarskoje Selo vor den Toren Petrograds, später nach Tobolsk in Sibirien.

Von dort brachten ihn die Bolschewiki nach der Oktoberrevolution in die Uralstadt Jekaterinburg, das heutige Swerdlowsk. Der Zar und die Zarin, ihre fünf Kinder und einige Verwandte wurden im Ipatjew-Haus eingesperrt. Als sich die mit den Westmächten verbündete Tschechische Legion dem Zarenverlies näherte, erschossen die Wachen Nikolaj II. und seine gesamte Familie. Wer hatte den Befehl dazu gegeben, die örtlichen Sowjets, Lenin, Trotzkij, Dscherschinskij? Sind alle Eingeschlossenen umgekommen oder ist es der Zarentochter Anastasia wirklich gelungen, zu entfliehen? Wo wurden die Erschossenen beerdigt? Auf diese Fragen gibt es bis heute keine schlüssigen Antworten, aber eine umfangreiche Literatur, die von dem Dunkel lebt, das die letzten Stunden der russischen Herrscherfamilie umgibt.

Es war ausgerechnet Boris Jelzin, der Erneuerer des russischen Staats- und Lebensgefühls, der in seiner Zeit als Gebietsparteichef von Swerdlowsk das Ipatjew-Haus hatte abreißen lassen. An der Hinrichtungsstätte durfte die russisch-orthodoxe Kirche jetzt ein Holzkreuz errichten, und vielleicht hat Glasnost noch soviel Kraft, um in die Geschichte des Untergangs der Dynastie Romanow mehr Licht zu bringen. Was davor war, ist allerdings gut bekannt: Das grenzenlose Unverständnis des Zaren für soziale und politische Umwälzungen, die Grausamkeit, mit der er die Opposition verfolgen ließ, die noch größere Verbohrtheit und Machtanmaßung, die seine Frau aus dem Hause Hessen auszeichneten. Nikolaj II. war ein unfähiger Herrscher, der in der Gewalt Entlastung suchte. Dennoch waren es die Morde von Jekaterinburg, die im Ausland das Bild der neuen Herren Rußlands prägten. Als Märtyrer eines aufgeklärten Rußlands, auf das Europa wartet, ist der zeitlebens unaufgeklärte letzte Zar aber auch nicht geeignet. Am Kreuz in Swerdlowsk gibt es viel zu erklären – und viel zu bedenken.

Heute in der SZ

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Am Dienstag um Mitternacht

Ende der Teilung Deutschlands

Am Reichstag weht als Symbol die Bundesflagge Feste und Feuerwerke in allen Teilen des Landes

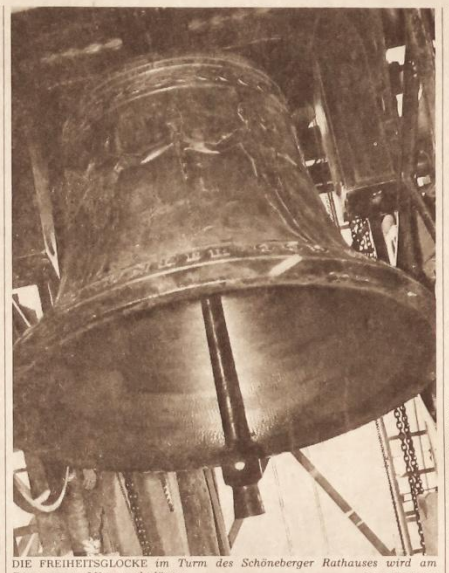
(SZ) Fast 41 Jahre nach ihrer Gründung hört die DDR am heutigen Dienstag um Mitternacht auf zu existieren und wird Teil der Bundesrepublik Deutschland. DDR-Bürger werden Bundesbürger. Im Turm des Rathauses Schöneberg wird die vom amerikanischen Volk den Berlinern gestiftete Freiheitsglocke läuten; vor dem Reichstag wird die Bundesflagge gehißt, um symbolisch die deutsche Einheit zu vollenden.

An dieser Zeremonie mit voraussichtlich Hunderttausenden von Zuschauern werden Bundespräsident Richard von Weizsäcker, Bundeskanzler Helmut Kohl, das scheidende DDR-Staatsoberhaupt, Volkskammer-Präsidentin Sabine Bergmann-Pohl, und DDR-Ministerpräsident Lothar de Maizière teilnehmen. Zum Auftakt der offiziellen Veranstaltungen verabschieden Magistrat und Senat am Dienstagvormittag eine Erklärung zur Wiederherstellung der Einheit Berlins, und die alliierten Stadtkommandanten werden ihre Arbeit für beendet erklären.

Um 00.05 Uhr beginnen am Potsdamer Platz, im Jahnstadion im Ostbezirk Prenzlauer Berg und in Friedrichshain Feuerwerke. Um neun Uhr am Mittwoch findet in der Marienkirche ein ökumenischer Gottesdienst statt, in dem der Vorsitzende der Deutschen Bischofskonferenz, Karl Lehmann, und der evangelische Landesbischof Johannes Hempel predigen. Um elf Uhr werden Weizsäcker, Bundestagspräsidentin Rita Süssmuth, Frau Bergmann-Pohl und der Regierende Bürgermeister Walter Momper bei einem Staatsakt in der Philharmonie sprechen.

Fast überall in Deutschland werden die Menschen in der Nacht zum Mittwoch feiern können: Die Sperrstunde ist vielerorts aufgehoben. Mit Feuerwerken und Straßenfesten wird die Einheit in München, Bonn und Hamburg genauso gefeiert werden wie in Rostock, Erfurt oder Magdeburg, Leipzig, vor einem Jahr Ausgangspunkt der Demokratiebewegung in der DDR, feiert vier Tage lang mit viel Kultur.

In der Bundeshauptstadt Bonn, die im geeinten Deutschland um ihren Rang kämpfen muß, soll am Dienstagabend bei der Auftaktveranstaltung „Unsere gemeinsame Zukunft: Deutschland wird eins. Europa wird eins" der europäische Aspekt hervorgehoben werden. Der Chor der Europäischen Gemeinschaft wird gegen Mitternacht mit „Wunderkerzen für alle" Beethovens „Ode an die Freude" singen.



DIE FREIHEITSGLOCKE *im Turm des Schöneberger Rathauses wird am Dienstag um Mitternacht läuten.* Photo: SZ-Archiv

Auf dem Parteitag in Hamburg

Christlich-Demokratische Parteien vereinigt

Kohl: Ein großer Tag in der Geschichte der CDU / De Maizière dankt dem Kanzler für seinen festen Glauben an die Einheit

Hamburg (Eigener Bericht) – Die westdeutsche CDU hat am Montag auf einem Parteitag in Hamburg den Zusammenschluß mit den fünf CDU-Landesverbänden aus der DDR vollzogen. Damit gab es zwei Tage vor der Vollendung der deutschen Einheit nur noch eine Christlich-Demokratische Union in Gesamtdeutschland. Der Parteivorsitzende Helmut Kohl, der genau vor acht Jahren zum Bundeskanzler gewählt worden war, sprach von einem „großen Tag in der Geschichte unserer Partei". Der Vorsitzende der Ost-CDU, DDR-Ministerpräsident Lothar de Maizière, dankte Kohl für seinen festen Glauben an die Einheit, der ihn zu Recht zum „Kanzler der Einheit" gemacht habe.

Am Abend wählten die Delegierten Kohl mit 943 von 957 gültigen Stimmen zum Ersten Vorsitzenden der Partei. Der Parteitag quittierte das Ergebnis mit großem Applaus und „Helmut-Helmut"-Rufen. Kohls Stellvertreter wurde de Maizière, der 908 Stimmen erhielt. (Bericht Seite 2)

Am Vormittag hatte zunächst die CDU der Bundesrepublik die satzungsmäßigen Voraussetzungen für den Beitritt der fünf Landesverbände aus der Noch-DDR geschaffen. Am Nachmittag begann dann der eigentliche Vereinigungsparteitag. In seiner Begrüßungsrede beschrieb Kohl die Geschichte der CDU in Ost und West seit 1945. Dabei warnte er davor, über die Rolle der Ost-CDU als Blockpartei in der von der SED angeführten Nationalen Front der DDR pauschal zu urteilen. „Es war ein Weg verzweifelten Kampfes um Selbstbehauptung und manchmal auch von später Einsicht." Er sei aber auch gekennzeichnet gewesen von rücksichtsloser Unterdrückung durch das Regime.

Anschließend erklärten je drei Vertreter der Landesverbände Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt und Thüringen sowie der Ostberliner CDU, die sich bereits mit der Westberliner Union zusammengeschlossen hat, feierlich den Beitritt zur Gesamt-Partei.

„Von nun an sind wir wieder eine Partei, eine CDU für ganz Deutschland", sagte Kohl dann in seiner eigentlichen Parteitagsrede. Für das letzte Jahrzehnt dieses Jahrhunderts nannte er drei „große politische Gestaltungsaufgaben": den Wiederaufbau in der bisherigen DDR, die Verwirklichung der Vereinigten Staaten von Europa und die Verpflichtung der Deutschen, ihrer gewachsenen Verantwortung in der Welt gerecht zu werden.

Die überwiegende Mehrheit der Bürger habe die Notwendigkeit erkannt, „gemeinsam eine Durststrecke zu bewältigen", sagte Kohl im Blick auf die wirtschaftliche Entwicklung. Wer gern und häufig von den Kosten der Einheit rede, der solle auch die Erträge der Einheit nicht vergessen. „Es wäre jedenfalls verhängnisvoll, hier nur die Geberden und dort nur die Nehmenden zu sehen", sagte Kohl.

Die wirtschaftlichen und sozialen Probleme seien jedoch nicht einmal die schwierigsten, fuhr Kohl fort. „Vier Jahrzehnte kommunistischer Diktatur haben gerade auch im geistigen und kulturellen Leben verheerende Schäden hinterlassen." Kohl nannte vor allem die Schulen und Hochschulen sowie Medien, Kunst und Literatur als Bereiche, in denen „die Trümmerstücke ideologischer Indoktrination beiseite" geräumt werden müßten.

Kohl bekräftigte die Position der CDU als Partei der Mitte. Immer wieder aufkommenden Forderungen, „aus Gründen der Tagesopportunität oder anderen Motiven" die Partei nach links oder nach rechts zu bewegen, erteilte Kohl eine klare Absage. „Niemand in unserer Union hat einen Monopolanspruch auf Wirtschaftskompetenz oder auf soziales Gewissen", sagte Kohl.

De Maizière ging ausführlich auf die Rolle der CDU im SED-Staat ein. Die Mitarbeit in der CDU oder in anderen Parteien sei die einzige Alternative zur SED gewesen, wenn man sich nicht ganz aus dem öffentlichen Leben habe zurückziehen wollen, sagte er. Die CDU sei gespalten gewesen in eine korrupte, SED-hörige Führung und in eine an der Basis arbeitende, aber wenig wirksame Partei. Ein gerechtes Urteil werde nur der fällen können, der die Zwänge einer Diktatur berücksichtige und ihre Möglichkeiten der Unterdrückung Andersdenkender richtig einzuschätzen wisse.

De Maizière versprach eine ehrliche und umfassende Aufklärung des Kapitels Staatssicherheit. Es dürfe jedoch nicht dazu kommen, „daß dieses Thema unsere gemeinsame Zukunft erschwert und uns auf neue Weise teilt". Wer sich von Halbwahrheiten, Verdächtigungen oder Indiskretionen Sensationen verspreche, der bediene sich der Methoden der Staatssicherheit. Die Sechs-Monats-Bilanz seiner Regierung könne sich sehen lassen, sagte de Maizière: „Für eine ‚Laienspielschar' ist das eine beachtliche Leistung." Zum Abschluß des Parteitags am heutigen Dienstag wollen die 1000 Delegierten ein Manifest über die Grundsätze christdemokratischer Politik verabschieden. (Seiten 2, 4, 6 und 8)

Ostberlins Ex-Spionagechef untergetaucht

Markus Wolf setzt sich in den Osten ab

Dem ehemaligen Agentenführer droht die Verhaftung wegen geheimdienstlicher Tätigkeit „in besonders schwerem Fall"

Von Olaf Ihlau

München, 1. Oktober – Wenn nach dem Tag der deutschen Einheit die Fahnder des Generalbundesanwalts mit einem Haftbefehl an der Ostberliner Wohnungstür des ehemaligen DDR-Spionagechefs Markus Wolf klingeln, werden sie vergeblich warten: Um der drohenden Festnahme zu entgehen, hat „Mischa" Wolf sich in Richtung Osten abgesetzt. Offiziell, wie aus seiner Umgebung verlautet, „zu Urlaub und Ischiaskur" – auf jeden Fall aber für länger.

Das Telephon des vormaligen Geheimdienstchefs ist seit dem Wochenende ständig auf den Anrufbeantworter umgestellt. Wolf selbst verkündet mit nervösem Räuspern in der Stimme, seine Familie sei „zur Zeit nicht anwesend". Dem Vernehmen nach ist der ehemalige Leiter der Hauptabteilung Aufklärung im Ostberliner Ministerium für Staatssicherheit in ein Land des früheren Ostblocks gereist – wahrscheinlich in die Sowjetunion, möglicherweise aber auch nach Bulgarien. Vor Wolf hatte sich bereits der in die DDR übergelaufene Kölner Verfassungsschützer Hansjoachim Tiedge, dem gleichfalls die Verhaftung drohte, auf die Krim abgesetzt.

Wolfs Untertauchen kommt insofern etwas überraschend, weil der Ex-Spionagechef noch bis vor kurzem immer wieder erklärt hatte, er wolle sich der Justiz stellen und einen Prozeß durchstehen. Außer der „reinen nachrichtendienstlichen Tätigkeit", so hatte Wolf auch der SZ mitgeteilt, habe er sich „mit völlig reinem Gewissen der Obhut der gesamtdeutschen Rechtsprechung unterstellen". Allerdings hatte Ostberlins einstiger Chefaufklärer auch die Hoffnung auf eine Amnestie geäußert und – sehr zum Zorn der westdeutschen Sicherheits- und Justizorgane – recht schroff verkündet, daß er seine vormaligen Agenten „nicht ans Messer liefern" werde.

Dies wurde Wolf in Bonn als „anmaßende Geschwätzigkeit" angekreidet. Es trug wohl mit dazu bei, daß sich jene Kräfte durchsetzten, die dem Geheimdienstchef und einstigen Dirigenten von „Perspektivagenten" wie des Kanzler-Spions Günter Guillaume kein Pardon gewähren wollten. Der Haftbefehl gegen Wolf lautet auf geheimdienstliche Agententätigkeit „in einem besonders schweren Fall". Damit hätte Wolf auch nicht zum Kreis jener minderbelasteten früheren DDR-Spione gezählt, für die das Bundesinnenministerium eine Amnestie in Aussicht genommen hatte. Diese Pläne waren dann von der CSU torpediert worden.

Markus Wolf hatte zeitweise sogar mit dem Gedanken gespielt, sich noch vor dem Tag der deutschen Einheit der Bundesanwaltschaft in Karlsruhe zu stellen. Nach den jüngsten Entwicklungen und in der bevorstehenden Wahlkampfzeit sah er jedoch offenbar keine Chance mehr für ein faires Verfahren. Ein weiteres Indiz war für ihn die Aufkündigung eines Buchvertrags durch den Bertelsmann-Verlag, ein Schritt, der, wie ihm gegenüber bekundet wurde, „auf Druck von Bonn hin" erfolgte.

Seine Lage hat Wolf in Briefen an Bundespräsident Weizsäcker, Altbundeskanzler Brandt, Außenminister Genscher und Generalbundesanwalt Stahl dargestellt und dabei auch um Rat gebeten. Diese vor 14 Tagen abgeschickten Briefe blieben bis zum Wochenende ohne Antwort. Bei Hitlers Machtergreifung hatte der aus dem Schwäbischen stammende Sohn des Arztes und Dramatikers Friedrich Wolf als neunjähriger Deutschland verlassen müssen, weil sein Vater Kommunist und Jude war. Er wolle nicht ein zweites Mal „zur Emigration gezwungen werden", vertraute der 67jährige Wolf einem Mitarbeiter unlängst an.

Grundgesetz-Serie als Sonderdruck

Durch die Vereinigung der beiden deutschen Staaten und die damit verbundene Diskussion über Verfassungsänderungen hat eine SZ-Serie, die im vergangenen Jahr aus Anlaß des 40jährigen Jubiläums des Grundgesetzes erschien, neue Aktualität erhalten. Die SZ hat diese Serie deshalb überarbeitet, aktualisiert und veröffentlicht sie in der Reihe „SZ-texte" als Band Nr. 10. Zu erhalten ist diese Broschüre von heute an zum Preis von 7 DM am Vertriebsschalter der Süddeutschen Zeitung (Montag bis Freitag von 8.30 bis 17 Uhr) München, Färbergraben 23, oder durch Postversand. In diesem Fall bitten wir um Überweisung von 9 DM (inkl. Porto und Verpackung) auf das Postgirokonto München 5541-803. Absender bitte deutlich schreiben. (Vermerk: „SZ-texte Nr.10")



Letzte Tage in der DDR

„Alles hier muß weg, ob es sinnvoll ist oder nicht." Axel Hacke berichtet aus Ostberlin. SEITE 3

Dieter Schröder befaßt sich im Leitartikel mit dem Versagen, aber auch der Lernfähigkeit der Deutschen: „Nach einem unruhigen Jahrhundert". SEITE 4

Endzeitstimmung in Ostberlin: Die Richter werden nach Hause geschickt, ihre Gerichte geschlossen. Heribert Prantl berichtet. SEITE 16

Die Angst vor der Normalität. Kultur im geeinten Deutschland: Von Albrecht Roeseler SEITE 18

Die deutsche Einheit im Licht der Wirtschaft. SZ-Korrespondenten in Bonn, Berlin und Brüssel untersuchen die Folgen im Inneren und die Ausstrahlung auf die EG. SEITE 34

Deutschland erhält volle Souveränität

New York (dpa) – Die vier Siegermächte des Zweiten Weltkriegs und die beiden deutschen Staaten haben am Montag in New York die Suspendierungserklärung unterzeichnet, mit der die vier Mächte ab 3. Oktober auf die Ausübung ihrer Rechte und Verantwortlichkeiten für Berlin und Deutschland als Ganzes verzichten. Sie räumen damit dem vereinten Deutschland volle Souveränität ein, obwohl diese rechtlich erst mit dem Abschluß der Ratifizierungsprozesse in den beteiligten Ländern eintreten kann. (Seite 2)

Neues Wahlgesetz am Donnerstag im Bundestag

Bonn (AP) – Zwei Tage nach dem Spruch der Karlsruher Richter hat Bundesinnenminister Wolfgang Schäuble den Vorsitzenden der im Bundestag vertretenen Parteien und Fraktionen sowie dem Innenausschuß des Parlaments einen „Formulierungsvorschlag" für eine Änderung des Wahlgesetzes vorgelegt. Die SPD signalisierte ihr Einverständnis mit einem Blitzverfahren. Die Erste Lesung der Novelle soll am Donnerstag und die Zweite und Dritte Lesung am Freitag auf die Tagesordnung der ersten Plenarsitzungen des gesamtdeutschen Bundestages gesetzt werden. (Seite 8)

Bessere Renten jetzt auch für ältere Mütter

Bonn (dpa) – Rentenleistungen für Kindererziehung stehen jetzt allen älteren Müttern zu. Seit 1. Oktober erhalten auch 800 000 Frauen, die in den Jahren 1917 bis 1920 geboren sind, die zusätzliche Leistung.

Serben in Kroatien rufen Autonomie aus

Zagreb (dpa) – Die knapp 600 000 Menschen zählende serbische Minderheit in Kroatien, der zweitgrößten jugoslawischen Republik, hat am Montag ihre Autonomie ausgerufen. Die Serben wollen in Zukunft als neunter Landesteil des Vielvölkerstaates auch einen Vertreter in das Staatspräsidium entsenden und mit einer gleichberechtigten Fraktion im Bundesparlament vertreten sein. (Seite 13)

Weitere acht Deutsche im Irak verschleppt

Bonn (Reuter) – Im Irak sind weitere acht Deutsche verschleppt worden. Nach Angaben des Auswärtigen Amtes wurden sie aus Hotels in Bagdad geholt und an strategisch wichtige Punkte gebracht. Damit sind jetzt nach Erkenntnissen des Auswärtigen Amtes seit Beginn der Golf-Krise Anfang August insgesamt 76 Deutsche als „Schutzgeisein" verschleppt worden. (Seiten 2 und 10)

Sedlmayrs Sekretär verhaftet

München (SZ) – Der 27jährige Privatsekretär des ermordeten Schauspielers Walter Sedlmayr, Werner Dahms, ist unter dem Verdacht des versuchten Betrugs verhaftet worden. Dahms wird vorgeworfen, ein Testament Sedlmayrs und einen Mietvertrag zu seinen Gunsten gefälscht zu haben. (Seite 21)

Aktienhausse

München (SZ) – An den Börsen gab es eine Hausse. Der SZ-Aktienindex stieg um 14,89 auf 324 Punkte. Die durchschnittliche Umlaufrendite öffentlicher Anleihen sank auf 9,19 Prozent. Der Dollar ermäßigte sich auf 1,5511 (1,5641) Mark; in New York stieg der Dow-Jones-Index um 63 Punkte, der Dollar schloß mit 1,5580/90 Mark. (Bericht Seite 44, Kurse Seiten 36 und 40)

Überwiegend freundlich

München (SZ) – Der Ausläufer eines zum Baltikum ziehenden Tiefs überquert ganz Mitteleuropa. Nachfolgend setzt sich Hochdruckeinfluß durch. Vorhersage: Stellenweise Frühnebel, sonst wolkig mit zunehmenden Aufheiterungen. Später sonnig und trocken. Tagestemperaturen 16 bis 21, Tiefstwerte 9 bis 4 Grad. (SZ-Wetterbericht Seite 2)

Am Tag der Deutschen Einheit,

am Mittwoch, dem 3. Oktober 1990, erscheint die *Süddeutsche Zeitung* nicht. Die Donnerstagausgabe vom 4. Oktober erhalten unsere Leser zur gewohnten Stunde.

Windelen vermutet Korruption

730 Millionen Mark Transitpauschale vermißt

Berlin (AP) – In der DDR sind dem CDU-Politiker Heinrich Windelen zufolge 730 Millionen der 860 Millionen Mark spurlos verschwunden, die Bonn für 1990 als Transitpauschale überwiesen hatte. Dies meldet ADN unter Berufung auf die *Dresdner Morgenpost*. Zitiert wird der frühere Minister für innerdeutsche Beziehungen mit der Aussage, es seien nur noch 70 Millionen Mark gefunden worden. Es habe eine „ganz klare Abmachung" mit der DDR gegeben, die Pauschale „ausschließlich für Verkehrsinvestitionen zu verwenden". Bei den dafür bestimmten Kommunen sei aber nichts angekommen. Windelen habe als Gründe teilweise „Korruption, teilweise die Begünstigung aller Bonzen, aber auch das völlig unübersichtliche Rechnungswesen" in der DDR genannt. Nach dem Geld werde gefahndet. Auch der Haushaltsausschuß des Bundestages befasse sich mit dem Fall. Laut Windelen ist der Fuhrpark des DDR-Verkehrsministeriums ebenfalls verschwunden, darunter ein Luxusreisebus, mit dem früher die mittleren Beamten zum Wochenende an die Ostsee gefahren worden seien. Er habe sich „praktisch in Nichts aufgelöst".

DDR-Offiziere kritisieren Entlassung der Generäle

Berlin (AP) – Das Offizierskorps der Nationalen Volksarmee der DDR (NVA) ist entsetzt über die Folgen der deutschen Einheit. Admiral a. D. Theodor Hoffmann, ehemaliger Chef der NVA, und Generalleutnant a. D. Manfred Grätz, früher im Hauptstab der Volksarmee, kritisierten die am Freitag überraschend ausgesprochene Entlassung der letzten 24 Generäle der DDR-Streitkräfte. Die NVA sei „von der Bundeswehr gnadenlos vereinnahmt" worden wie die DDR von der Bundesrepublik, sagten die hohen Offiziere der PDS-Zeitung *Neues Deutschland*.

Kuratorium Unteilbares Deutschland löst sich auf

Bonn (AP) – Nach dem 3. Oktober wird es das Kuratorium Unteilbares Deutschland nicht mehr geben, wie sein geschäftsführender Vorstand in Bonn mitteilte. Die am 17. Juni 1954 gegründete Vereinigung setzte sich unter Leitung führender Persönlichkeiten wie Herbert Wehner oder Franz Josef Strauß für die Wiedervereinigung der beiden deutschen Staaten ein. Nach 36 Jahren Arbeit sei das gesetzte Ziel, die Teilung Deutschlands zu überwinden, erreicht.

Vorläufiger Vertriebsstop für 15 Medikamente

München (SZ) – Das Bundesgesundheitsamt in Berlin hat für 15 niedrig dosierte orale L-Tryptophan-haltige Arzneimittel das Ruhen der Zulassung und damit einen vorläufigen Vertriebsstop angeordnet. Die Arzneimittel waren vor allem dazu bestimmt, Patienten mit schweren Nierenerkrankungen bestimmte Eiweißstoffe essentielle Aminosäuren zuzuführen. Es handelt sich um folgende Präparate: BSD 1800 Pfrimmer, Essentielle Aminosäuren-EAS Perlen, Essentielle Aminosäuren Oral-Tabletten und Granulat, Ketosteril-Tabletten und Granulat, Membravit Membran-Ativator Tabletten, Remedium Antidepressivum EKF, Roborans-Elixier, Ultramin und Vivasorb. Aus Frankreich waren Fälle unerwünschter Nebenwirkungen nach Einnahme niedrig dosierter L-Tryptophan-haltiger Arzneimittel gemeldet worden.

Vier Siegermächte unterzeichnen „Suspendierungserklärung"

Deutschland erhält am Mittwoch volle Souveränität

Vor der KSZE-Außenministerkonferenz in New York lädt Genscher den neuen „Rat für Sicherheit" nach Berlin ein

ub **Bonn** (Eigener Bericht) – Die vier Siegermächte des Zweiten Weltkrieges haben am Montag in New York mit der Unterzeichnung einer „Suspendierungserklärung" auf ihre Rechte und Verantwortlichkeiten für Berlin und Deutschland ab 3. Oktober verzichtet. Dem vereinten Deutschland wird damit die volle Souveränität eingeräumt, obgleich diese völkerrechtlich erst mit dem Abschluß der Ratifizierung des 2+4-Vertrages über die äußeren Aspekte der Einheit eintreten wird. Vor der durch Präsident Bush eröffneten Außenministerkonferenz der KSZE und nach der Unterzeichnung der Dokumente lud Außenminister Genscher den geplanten „Rat für Sicherheit und Zusammenarbeit in Europa" nach Berlin ein.

Die Suspendierungserklärung, in der auf den 2+4-Abschluß in Moskau verwiesen wird, wurde von den Außenministern Frankreichs, Großbritanniens, der USA und der Sowjetunion unterzeichnet und mit der Unterschrift des Bundesaußenministers und eines Vertreters der DDR-Regierung zur Kenntnis genommen. Die vier Mächte erklärten, „daß die Wirksamkeit ihrer Rechte und Verantwortlichkeiten in bezug auf Berlin und Deutschland als Ganzes mit Wirkung vom Zeitpunkt der Vereinigung Deutschlands bis zum Inkrafttreten des Vertrags über die abschließende Regelung in bezug auf Deutschland ausgesetzt wird". Als Ergebnis würden die Wirksamkeit der entsprechenden, damit zusammenhängenden vierseitigen Vereinbarungen, Beschlüsse und Praktiken und die Tätigkeit aller entsprechenden Einrichtungen, der vier Mächte ab dem Zeitpunkt der Vereinigung Deutschlands ebenfalls ausgesetzt.

Bundesaußenminister Genscher erneuerte in seiner Rede vor den 35 Unterzeichnerstaaten der Schlußakte von Helsinki, wie aus dem in Bonn vorliegenden Text hervorgeht, die Verpflichtung, das vereinte Deutschland werde sich jeder Machtpolitik enthalten, aber sich seiner Verantwortung stellen. Schon kurz nach dem Fall der Mauer hatte Bonn erklärt, die deutsche Vereinigung werde nicht hinter dem Rücken der Nachbarn und nicht vor den Präsentation des Ergebnisses von Verhandlungen mit den vier Mächten vollzogen werden. Ursprünglich dachte man dabei an den KSZE-Gipfel im November in Paris. Angesichts des rasanten Tempos der Entwicklung wurde jedoch die New Yorker Außenministerkonferenz als Forum gewählt.

Genscher gab in New York auch bekannt, worauf sich die 35 Staaten geeinigt haben, um den KSZE-Prozeß zu institutionalisieren. In Paris sollen regelmäßige Tagungen der Staats- und Regierungschefs alle zwei Jahre einberufen werden, um „richtungsweisende Entscheidungen" zu treffen. Zweimal jährlich sollen die Außenminister beraten. Die wichtigste Aufgabe dieses Rates wird es nach Genschers Worten sein, die Dynamik der europäischen Entwicklung zu erhalten und gleichzeitig zu stabilisieren.

Der Bundesaußenminister lud den Rat „zu einer seiner ersten Sitzungen" nach Berlin ein. Hintergrund für diese Formulierung ist ein noch nicht beendetes Tauziehen um den Sitz künftiger KSZE-Institutionen. Von amerikanischer Seite war einmal Warschau ins Spiel gebracht worden. Auch Wien zeigt deutliches Interesse. Die Sowjetunion bevorzugt Berlin.

In seiner Rede gab Genscher auch Hinweise auf die interne westliche Diskussion über das Konfliktverhütungs- und Konfliktschlichtungszentrum der KSZE. Die Zeit sei reif für neue Möglichkeiten der einvernehmlichen Entscharfung politischer Konflikturs achen, für kooperative Lösungen von Streitfällen, die die Sicherheit und Zusammenarbeit in Europa berührten, sagte der Außenminister. Dieser institutionelle, politische Aspekt der Konfliktverhütung müsse im Mittelpunkt eines Expertentreffens im Januar nächsten Jahres auf Malta stehen. Man hat sich darauf verständigt, in Paris das Konfliktverhütungszentrum nicht als ein politisches Instrument, sondern als ein technisches zur Umsetzung vertrauensbildender Maßnahmen und für Zwecke des Informationsaustauschs über militärische Aktivitäten ins Leben zu rufen. Bonn und Moskau treten dafür ein, daß dieses Zentrum die politische Funktion erhalten soll, sich aus eigener Berechtigung im Falle krisenhafter Entwicklungen einzuschalten. Paris und London bestehen jedoch darauf, daß die Vertreter der einzelnen Staaten an die Weisungen der jeweiligen Außenministerien gebunden sind.

Zu den Wiener Verhandlungen über die konventionelle Abrüstung in Europa sagte der Bundesaußenminister, das in Aussicht stehende erste Abkommen biete die Chance einer grundlegenden Neuorientierung der militärischen Sicherheit in Europa in ganzer Breite. Kein Staat und keine Staatengruppe solle über mehr militärische Mittel verfügen als zur Selbstverteidigung unbedingt notwendig sei. (Seite 4)

Deutschland-Erklärung im Wortlaut

Die Erklärung der vier Siegermächte des Zweiten Weltkriegs, die am Montag in New York unterzeichnet wurde und mit der Deutschland die volle Souveränität erhält, war bereits am 12. September bei den 2+4-Gesprächen in Moskau vereinbart worden. Diese Erklärung, mit der die USA, die UdSSR, Großbritannien und Frankreich formell ihre sogenannten Vorbehaltsrechte aussetzen, hat folgenden Wortlaut:

„Die Regierungen der Französischen Republik, der Union der Sozialistischen Sowjetrepubliken, des Vereinigten Königreichs von Großbritannien und Nordirland und der Vereinigten Staaten von Amerika,

vertreten durch ihre Außenminister, die am 1. Oktober 1990 in New York zusammengetroffen sind,

unter Berücksichtigung des am 12. September 1990 in Moskau unterzeichneten Vertrages über die abschließende Regelung in bezug auf Deutschland, der die Beendigung der Vier-Mächte-Rechte und -Verantwortlichkeiten vorsieht,

erklären, daß die Wirksamkeit ihrer Rechte und Verantwortlichkeiten in bezug auf Berlin und Deutschland als Ganzes mit Wirkung vom Zeitpunkt der Vereinigung Deutschlands bis zum Inkrafttreten des Vertrages über die abschließende Regelung in bezug auf Deutschland ausgesetzt wird. Als Ergebnis werden die Wirksamkeit der entsprechenden, damit zusammenhängenden vierseitigen Vereinbarungen, Beschlüsse und Praktiken und die Tätigkeit aller entsprechenden Einrichtungen der vier Mächte ab dem Zeitpunkt der Vereinigung Deutschlands ausgesetzt.

Die Regierungen der Bundesrepublik Deutschland, vertreten durch ihren Außenminister, und die Regierung der Deutschen Demokratischen Republik, vertreten durch ihren Minister für Bildung und Wissenschaft, nehmen diese Erklärung zur Kenntnis." (dpa)

Rede vor der UNO-Vollversammlung

Bush setzt auf politische Lösung am Golf

„Nach irakischem Abzug aus Kuwait Chancen für Regelung auch anderer Nahost-Probleme"

New York (AP/Reuter) – Der amerikanische Präsident George Bush hat am Montag seinen Rücktritt des Irak aus dem annektierten Kuwait als unabdingbare Voraussetzung des seit zwei Monaten schwelenden Golf-Konflikts bezeichnet. In einer Rede vor der UNO-Vollversammlung in New York versicherte er, daß die USA eine friedliche Lösung auf politischem Wege anstreben. Wenn die Truppen des irakischen Rückzugs erfüllt sei, dann bestünden Chancen auch für die Lösung anderer offener Nahost-Probleme, beispielsweise des Konflikts zwischen Israel und den Arabern.

„Wir suchen nach einem friedlichen Ergebnis, nach einem Ergebnis auf diplomatischem Wege", erklärte der Präsident. Iraks von niemandem provozierter Aggressionsakt gegen Kuwait sei jedoch ein Rückfall in ein anderes Zeitalter, ein düsteres Relikt einer düsteren Zeit. Der Irak habe Kuwait ausgeplündert, unschuldige Zivilisten terrorisiert und sogar Diplomaten als Geiseln genommen. Für diese Verbrechen müßten der Irak und seine politische Führung zur Rechenschaft gezogen werden. Die Invasion in Kuwait vom 2. August dürfe keinen Bestand haben.

Bush sagte weiter: „Ich glaube aufrichtig, daß es im Gefolge des bedingungslosen Abzugs des Irak aus Kuwait Möglichkeiten gibt, daß der Irak und Kuwait ihre Differenzen auf Dauer regeln, daß die Golfstaaten selbst neue Absprachen für ihre Stabilität treffen, daß alle Staaten und Völker der Region den Konflikt lösen, der die Araber von Israel trennt." Die Hauptaufgabe der Welt sei jedoch jetzt und stets, zu demonstrieren, daß Aggression nicht toleriert werde und sich nicht auszahle.

Der amerikanische Präsident lobte die Bereitschaft der Sowjetunion für Zusammenarbeit beim weltweiten Embargo gegen den Irak. Mehr als je zuvor seien die Vereinten Nationen „ein Zentrum für internationale kollektive Sicherheit". Die vom Irak ausgehende, an die Völkergemeinschaft gerichtete Herausforderung sei eine Prüfung, an der diese Gemeinschaft nicht scheitern dürfe. Er habe die feste Zuversicht, daß die Gemeinschaft diese Prüfung bestehen werde, sagte Bush. Der sowjetische Außenminister Eduard Schewardnadse bewertete Bushs Rede als „sehr konstruktiv", nannte sie aber nicht „versöhnlich" gegenüber Bagdad.

Iraks Staatschef Saddam Hussein muß ungeachtet seines jüngsten Angebots mit einer neuen verschärften UNO-Resolution rechnen. Die USA und die Sowjetunion arbeiten dem Vernehmen nach an einem entsprechenden Entwurf, in dem offen mit militärischer Aktion gedroht wird. London und Paris reagierten umgehend auf den Vorstoß Saddams, der die Bereitschaft zum Dialog mit Paris erklärt hatte.

Der französische Außenminister Roland Dumas schloß Verhandlungen mit Saddam über die Beilegung der Golfkrise aus, solange der Irak sich nicht aus Kuwait zurückgezogen und die ausländischen Geiseln freigelassen habe. Dumas betonte, es habe keine Gespräche zwischen Frankreich und Irak über die Aufnahme eines Dialogs gegeben. In London erklärte das britische Außenministerium, die Äußerungen Saddams enthielten nichts Neues. Der Präsident wisse sehr wohl, daß die gegenwärtige Krise nur beigelegt werden könne, wenn sich Irak an die Resolutionen des Sicherheitsrates der Vereinten Nationen halte. Diese Entschließungen seien „nicht verhandelbar".

Sowjets fühlen sich als Geiseln

Im Irak lebende sowjetische Arbeiter fühlen sich einem sowjetischen Zeitschriftenbericht zufolge als „Geiseln" und haben an das Parlament der Russischen Föderation appelliert, sich für ihre Heimkehr einzusetzen. Die Zeitschrift *Argumenty i Fakty* berichtete unter Berufung auf einen Irak-Besucher und einen vier Wochen alten Brief der 300 Arbeiter, die Sowjetbürger bekämen nur noch wenig zu essen und zu trinken und seien durch iranische Übergriffe gefährdet. Die Zeitschrift forderte die Politiker auf, sich für eine vorzeitige Beendigung der Arbeitsverträge einzusetzen. Die Lage verschlimmere sich jeden Tag.

Aktuelles Lexikon

Berliner Freiheitsglocke

Am 24. Oktober 1950 erklang die Freiheitsglocke im Turm des Rathauses Schöneberg zum erstenmal. Anwesend waren teil. Die 10 206 Kilogramm schwere Glocke, die in England hergestellt wurde, eine Nachbildung der berühmten „Liberty Bell" in Philadelphia, ist ein Geschenk der Amerikaner an Berlin. Auf Initiative von General Clay hatten 17 Millionen Amerikaner den „Freiheitsschwur" unterzeichnet, der die Glocke auf ihrem „Kreuzzug für die Freiheit" nach Beendigung der Blockade durch 26 Bundesstaaten der USA begleitete. Die Liste mit den Unterschriften dieses Bekenntnisses „an die Unantastbarkeit und an die Würde des einzelnen Menschen" sowie an „das gleiche Recht auf Freiheit" wird heute noch im Turm des Rathauses Schöneberg aufbewahrt. Die Glocke trägt die Inschrift „Möge diese Welt unter Gott eine Wiedergeburt der Freiheit erleben." Als Signal der Freiheit wird ihr Klang jeden Sonntagmittag auf beiden Programmen des RIAS ausgestrahlt. Genau drei Wochen vor dem 40. Jahrestag ihrer Einweihungsfeier läutet die Freiheitsglocke am heutigen Dienstag um 23.55 Uhr den Tag der deutschen Einheit ein. mh

Wahl der CDU-Führung

De Maizière Stellvertreter Kohls

Weitere drei Präsidiumssitze für Politiker aus der DDR

dle. **Hamburg** (Eigener Bericht) – Mit ihrem Zusammenschluß zu einer gesamtdeutschen Partei hat die CDU am Montag in Hamburg auch ihre Führungsspitze neu gewählt. Dabei wurden die Spitzengremien nicht nur um Vertreter aus der DDR erweitert, sondern zum Teil auch neu strukturiert. Wichtigste Änderung war die Schaffung der Position eines alleinigen Stellvertretenden Parteivorsitzenden. Mit 943 von 957 gültigen Stimmen wurde Bundeskanzler Helmut Kohl zum ersten Vorsitzenden der Gesamtpartei gewählt. Dies entspricht 98,5 Prozent der Stimmen. Bei seiner letzten Wahl im September vorigen Jahres in Bremen hatte Kohl 77 Prozent der Stimmen erhalten. Kohl dankte dem Parteitag für „dieses Wahlergebnis". „Das passiert einem im politischen Leben nicht häufig", sagte Kohl.

Als einziger Kandidat für den Stellvertreter-Posten erhielt DDR-Ministerpräsident Lothar de Maizière 908 von 932 gültigen Stimmen. Dies entspricht 97,4 Prozent. De Maizière kommentierte seinen Erfolg mit dem Hinweis, daß man in den fünf neuen Bundesländern das Wort DDR wolle man ja in Zukunft vermeiden – zwar Probleme mit Ergebnissen über 90 Prozent habe, er mit diesem Resultat aber gut leben könne.

Das Parteipräsidium besteht künftig aus dem Vorsitzenden, dem Generalsekretär, dem Stellvertretenden Vorsitzenden, dem Bundesschatzmeister sowie zehn Beisitzern. Es fiel auf, daß in den Beschlußvorlagen für den Parteitag der Generalsekretär vor dem Stellvertretenden Vorsitzenden rangierte. Im Amt des Generalsekretärs wurde Volker Rühe mit 743 Stimmen bei 163 Nein-Stimmen und 52 Enthaltungen bestätigt. Mit 805 von 869 gültigen Stimmen wurde auch Schatzmeister Walther Leisler-Kiep wiedergewählt.

Bislang hatte Kohl sieben Stellvertreter. Anstelle des ehemaligen niedersächsischen Ministerpräsidenten Ernst Albrecht rückte der baden-württembergische Regierungschef Lothar Späth mit 819 von 956 gültigen Stimmen wieder ins Präsidium auf. Er war im vorigen Jahr nach einem gescheiterten Versuch, Kohl als Parteichef zu stürzen, aus diesem Gremium abgewählt worden.

Die drei zusätzlichen Präsidiumssitze für Vertreter aus der DDR wurden mit dem Einigungsvertrags-Unterhändler Staatssekretär Günther Krause – er erzielte mit 868 Stimmen das beste Ergebnis –, dem Leiter des bisherigen Büros des DDR-Ministerpräsidenten, Klaus Reichenbach (638 Stimmen), und der bisherigen Volkskammer-Präsidentin Sabine Bergmann-Pohl – sie mußte mit 586 Stimmen das schlechteste Resultat hinnehmen – besetzt. Die Kandidatur Reichenbachs hatte unter den Delegierten Unmut ausgelöst, weil er noch kurz vor der Wende in der DDR die sogenannten Errungenschaften des SED-Regimes in einem Zeitungsinterview gewürdigt hatte. Diese Bedenken schlugen sich dann auch im Wahlergebnis nieder.

Die weiteren Präsidiumsmitglieder sind: Bundesarbeitsminister Norbert Blüm (832 Stimmen), Ex-Generalsekretär Heiner Geißler (749), Hessens Ministerpräsident Walter Wallmann (704). Bundestagspräsidentin Rita Süssmuth (697), die stellvertretende nordrhein-westfälische Landesvorsitzende Christa Thoben (654) und Verteidigungsminister Gerhard Stoltenberg (649).

Der bisher 20köpfige Bundesvorstand wurde um sechs Mitglieder erweitert. Die Bekanntgabe dieses Wahlergebnisses wurde auf den heutigen Dienstag verschoben. Aus der DDR waren Hans Joachim Meyer, Brandenburg, Willibald Böck, Thüringen, Gerd Gies, Sachsen-Anhalt, Marion Walsmann, Thüringen, Ulrich Junghans, Brandenburg, und Hans Geisler, Sachsen, gewählt. Um die restlichen 20 Sitze bewarben sich 23 Kandidaten. Unter ihnen der Chef der CDU-Sozialausschüsse und stellvertretende DGB-Vorsitzende Ulf Fink, der schleswig-holsteinische Landesvorsitzende Ottfried Hennig und der Bundesbeauftragte für den Zivildienst, Peter Hintze, die bisher nicht im Bundesvorstand waren.

Weitere Nachrichten auf den Seiten 8, 10, 13, 15 und 64

Der SZ-Wetterbericht

Wetterlage

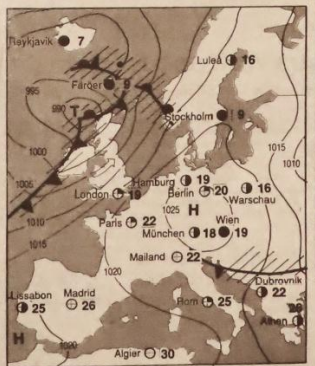
Das Wetter gestern: Weite Teile West- und Mitteleuropas lagen unter einer starken bis geschlossenen Wolkendecke. Ursache war ein Tief mit Kern über der Ostsee. Seine Ausläufer überquerten nahezu ganz Deutschland. So gab es vor allem im Norden und Westen wiederholt Regenfälle oder Schauer, die Mittagstemperaturen lagen zwischen 13 und 18 Grad. Nur in den südlichen Landesteilen war es wesentlich freundlicher. Bei weiß-blauem Himmel kletterte das Thermometer in Oberbayern auf über 20 Grad. Sommerliche Werte zwischen 24 und 30 Grad sind noch im gesamten Mittelmeerraum anzutreffen. War es über dem zentralen und östlichen Mittelmeer weitgehend störungsfrei, so entwickelten sich über der Ostküste Spaniens und über den Balearen teilweise kräftige Gewitter mit intensiven Niederschlägen. Regnerisches und teilweise recht windiges Wetter herrschte über den nördlichen Britischen Inseln und dem Süden Skandinaviens. Die Mittagstemperaturen von nur 10 bis 15 Grad zeigten schon herbstlichen Charakter.

Wetterlage: Der Ausläufer eines zum Baltikum ziehenden Tiefs überquert ganz Mitteleuropa. Nachfolgend setzt sich in weiten Teilen Deutschlands Hochdruckeinfluß durch.

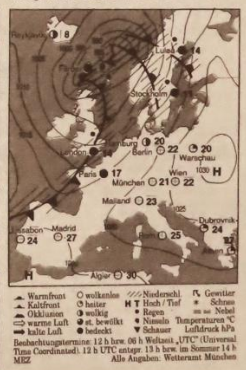
Gestern, 1. Oktober (Satellitenbild 12.30 Uhr)



Heute, 2. Oktober (12.00 Uhr UTC)



Morgen, 3. Oktober (12.00 Uhr UTC)



Warmfront · Kaltfront · Okklusion · warme Luft · kalte Luft

wolkenlos · heiter · wolkig · bedeckt · Niederschl. · Hoch/Tief · Regen · Nieseln · Schauer · Gewitter · Schnee · Nebel · Temperaturen °C · Luftdruck hPa

Beobachtungstermine: 12 h bzw. 06 h Weltzeit „UTC" (Universal Time Coordinated). 12 h UTC entspr. 13 h bzw. im Sommer 14 h MEZ

Alle Angaben: Wetteramt München

Vorhersage bis Mittwoch

Südbayern: Örtlich Frühnebel, sonst wolkig und zunehmend aufgeheitert, örtlich etwas Regen. Morgen sonnig und trocken. Höchstwerte 16 bis 21 Grad. Nachts Abkühlung auf 9 bis 4 Grad. Schwacher südwestlicher Wind. **Alpengebiet:** Gebietsweise noch stark bewölkt und etwas Regen, später aufgeheitert. Temperaturanstieg auf 16 bis 21, in 2000 m bis über 10 Grad. Nachts Tiefstwerte von 9 bis 5 Grad. In freien Lagen zunächst aufliebender, sonst schwacher südwestlicher Wind. **Nordbayern:** Örtlich Frühnebel, sonst heiter bis wolkig und trocken. Tageshöchstwerte bis 23 Grad. Nachts Abkühlung auf 8 Grad. Schwacher südwestlicher Wind. **Baden-Württemberg:** Frühnebel, später überwiegend sonnig bis zu 20 Grad. Tiefstwerte 10 bis 5 Grad. Schwache Luftbewegung. **Hessen – Rheinland-Pfalz – Saarland:** Frühnebel, sonst heiter ohne Niederschlag. Mild mit Höchstwerten bis 21 Grad. Nachts Tiefstwerte um 7 Grad. Schwacher Wind. **Nordrhein-Westfalen:** Heiter, kein Niederschlag. Tageswerte um 20 Grad. Frühwerte bei 8 Grad. Schwacher Wind aus uneinheitlichen Richtungen. **Norddeutschland:** Örtlich Frühnebel, sonst heiter. Morgen in der zweiten Tageshälfte Bewölkungszufzug und auch folgend Regen. Höchstwerte 16 bis 20 Grad. Nachts Abkühlung auf 7 bis 4 Grad. **Berlin:** In den Frühstunden gebietsweise Nebel, sonst heiter und trocken. Tageserwärmung auf 16 bis 20 Grad. Tiefstwerte um 7 Grad. Schwacher Wind.

Weitere Aussichten bis Samstag

Süddeutschland: Wechselhaft und einzelne Schauer, etwas kühler, zum Wochenende wechselnder freundlicher und recht mild. **Norddeutschland:** Übergang zu starker bis wechselnder Bewölkung mit wiederholten Schauern. Höchstwerte um 14 Grad. Teilweise windig. Später kaum noch Niederschlag, längere Aufheiterungen.

Welt, 1. 10.

	Wetter	Temp. in °C		Wetter	Temp. in °C
Amsterdam	wolkig	16	Istanbul	heiter	26
Athen	heiter	25	Kopenhagen	heiter	21
Barcelona	st. bew.	25	Lissabon	heiter	24
Bern	Nebel	16	Locarno	heiter	17
Belgrad	heiter	23	London	heiter	14
Bordeaux	wolkig	21	Madrid	heiter	22
Delhi	–	–	Mailand	Nebel	16
Dublin	st. bew.	14	Moskau	bedeckt	9
Dubrovnik	heiter	22	New York	–	–
Helsinki	st. bew.	8	Nizza	st. bew.	19
Hongkong	–	–	Las Palmas	wolkig	26
Innsbruck	st. bew.	19	Palma d.M.	wolkig	28
Kairo	heiter	28	Paris	st. bew.	15
Kapstadt	–	–	Peking	–	–
Kopenhagen	heiter	21	Prag	st. bew.	18
Lissabon	heiter	24	Rio	–	–
Locarno	heiter	17	Rom	heiter	24
London	heiter	14	Salzburg	Regen	19
Madrid	heiter	22	S.Francisco	–	–
Mailand	Nebel	16	Stockholm	st. bew.	9
Moskau	bedeckt	9	Tel Aviv	–	–
New York	–	–	Tokio	–	–
Nizza	st. bew.	19	Wien	heiter	24
Las Palmas	wolkig	26	Zürich	st. bew.	18
Palma d.M.	wolkig	28			

Deutschland, 1. 10.

	Wetter	Wind km/Std.	Temperatur in °C um 6 Uhr	12 Uhr	Luft rel. F in % um 14 Uhr
Berlin	wolkig	NW	10	17	63
Bonn	wolkig	NO	10	15	74
Dresden	st. bew.	NW	8	17	64
Frankfurt	Regenschauer	SW	10	17	80
Hamburg	st. bew.	NW	10	12	75
Leipzig	st. bew.	NW	10	16	74
München	st. bew.	NW	10	18	71
Nürnberg	Regen	W	2	16	77
Stuttgart	st. bew.	SW	10	15	79
Wendelstein	st. bew.	SW	10	9	91
Zugspitze	st. bew.	W	10	2	93

30. 9.

	Temperatur max.	min.	Sonne in Std.	Niederschl. mm in 24 Std.
Berlin	19	11	0,2	0,3
Bonn	19	12	0,1	40
Dresden	23	16	2,8	41
Frankfurt	21	12	1,4	31
Hamburg	17	11	0	5
Leipzig	22	17	2,0	16
München	20	13	4,6	0,3
Nürnberg	21	12	3,3	0,5
Stuttgart	22	9	1,5	10
Wendelstein	15	11	7,2	9
Zugspitze	9	4	8,0	3

München, 02. 10.

	°C	Jahr
absolutes Temp.-Maximum	26,3	1942
absolutes Temp.-Minimum	–1,7	1952

Temperaturhistorie	Max.	Min.
1989	13	9
1988	12	10
1960	15	11
1950	10	13
1940	10	7
1890	10	8

Urlaubsorte, 1. 10.

	Luft	Wasser
Helgoland	15	14
Rügen	15	14
Sylt	15	13
Agadir	24	23
Antalya	27	25
Heraklion	23	24
Malaga	27	24
Rimini	20	22
Palermo	26	24
Tunis	32	26
Venedig	22	22
Cypern	28	28

Mond und Sonne

SA 8.14 MA 18.42

SU 17.52 MO 3.34

4. 10. 11. 10. 18. 10. 26. 10.

Süddeutsche Zeitung

MÜNCHNER NEUESTE NACHRICHTEN AUS POLITIK, KULTUR, WIRTSCHAFT UND SPORT

46. Jahrgang / 8000 München 2, Postfach 20 22 20 *** München, Donnerstag, 4. Oktober 1990 Nummer 228 / 40. Woche / 1,30 DM

Das Streiflicht

(SZ) Wir soll das alles bezahlen? Wo tun wir den Kanzler hin? Was wird die Nationalelf zu dem Angriff sagen? Offene Fragen, welche (nun nicht die peinlichen Kernprobleme der Einheit) harren weiter der Klärung. Und jetzt steckt uns auch noch die Sprache weg – wie nennen wir das Ding, fleisch wie unseren Fleische, das da mit uns eins geworden ist? Wir nennen es die „Noch-DDR". Politiker, Journalisten und sonstiges öffentlich Sprechbedürftiges kommt nicht um die DDR in unsprechbarer Schachtelform über die Lippen, sie alle, so hat die Gesellschaft für deutsche Sprache festgestellt, leiden unter „Wortfindungsnot". Die Rückblick-Ballett sich in schönster Kreuzgangmelodien der beschriebenen Rede, bei denen das Bemühen um Präzision, dürftig unterstützt von der Ökonomie des Bindestrichs, schnellstens Triumphe über die Ästhetik feiert. Schuld hat der Mauerfall der Geschichte, ein ganz abgetragener Fetzen, der in Stroben zum Kleidungsstück des Jahres gehoben hat. Wer immer einen Zipfel zu fassen vermeinte, von diesem Mantel oder auch nur ein Zipfelchen, fällt sich (und sein Publikum) das auch sprachlich anziehen, mit allerhand geschichtsbewußten Adjektiven und Appositionen. „Die jetzige DDR" muß es nun heißen oder „die neu hinzugekommenen Länder" – man weiß ja, wie die Leute sind, am Ende denken sie, hier hätte einer was nicht mitgekriegt.

Die Ernennung des Kanzlers zum Bundeskanzler sicht mehr „ärgert" zu sagen – in Ordnung. Ein überwindiges Wort, schmeckt aber nach Butazor und gehört mühlos abgelegt in jene Schublade, in der schon Sammelsurien wie „Mühlschichtlein für Fensterzinne hüben", „Bonnachtspakete von Care-Kaffee" sowie – im Fach linguistische Prätentionen – die Wörter „Phänomen", „Gottlieder" und „Zone" modern, nicht zu vergessen ein Paar schwer abgenutzter Anführungsstriche.

Wie aber fassen wir's dann, welchen Namen soll das unhandliche Kind tragen? Die Westhaubener Sprachbilder haben Vorschläge erbeten, bislang ist nichts Brauchbares in Sicht. Die hier, vom Kanzler eine überzeugende Alternative zu fordern, verbietet der Respekt vor der Leistungsgrenze des anderen. Auch den Herren Schäuble und Krause weiß man kaum mehr abverlangen als jenes „in Artikel 3 beschlossene Gesetz", mit dem wir Leser die Ereignisse ertragen verständlicher, weiten das noch nötig ist. Aber was ist mit den über zum guten Wort Betrübten, den Dichtern und Denkern, etwa, jenen, die sich wie ein letztes Mal BRD-beheimatheften?, auf die sich einer der ihnen (noch) bernt? Die haben wohl mit der Sache selbst zu viele Probleme, als daß sie massenhafte Vorschläge für den Tagesgebrauch zu machen hätten. Die Noch-DDR jedenfalls haben wir gründlich hinter uns. Doch nachdem wir auf diesem sprachlichen Klettpfuß bis zur Einheit gekämpft sind, könnte nun Schlimmeres folgen: Es droht die „Normal-DDR" als Titel der „Einst-elf-heute-sechzehn-Länder-BRD"



DAS HISSEN DER BUNDESFLAGGE am Mittwoch um null Uhr vor dem Reichstag in Berlin symbolisierte die Vollendung der deutschen Einheit. Auf dem Platz der Republik drängten sich Abertausende von Menschen. Einzelne Zuschauer schwenkten die Europafahne. Bundespräsident Richard von Weizsäcker versprach am Ende der Zeremonie: „Wir wollen in einem vereinten Europa dem Frieden der Welt dienen." Photo: Regina Schmeken

Das Land ist wieder vereint und uneingeschränkt souverän

„Der glücklichste Tag der Deutschen"

Die DDR verabschiedet sich mit der „Ode an die Freude" / Weizsäcker: Sich zu vereinen, heißt teilen lernen
Siegermächte verzichten auf ihre Rechte / Gorbatschow erwartet von der Einheit Festigung des Friedens

Berlin, 4. Oktober – **Die beiden deutschen Staaten sind vereinigt. Mit dem Hissen der Bundesflagge vor dem Berliner Reichstag hörte nach fast 41 Jahren am Mittwoch um null Uhr die Deutsche Demokratische Republik zu bestehen auf. Sie trat dem Geltungsbereich des Grundgesetzes bei. Die alliierten Siegermächte hatten zuvor auf ihre Vorbehaltsrechte verzichtet und damit 45 Jahre nach dem Sieg über das Dritte Reich den Deutschen die Souveränität zurückgegeben. Die Einheit, zu der aus aller Welt Glückwünsche eingingen, wurde im ganzen Land mit Zeremonien und Volksfesten gefeiert. Allein in Berlin, der neuen Hauptstadt der Bundesrepublik, waren Hunderttausende auf den Straßen. Auch Gegner der Einheit zogen durchs Zentrum, Auseinandersetzungen waren aber die Ausnahme.**

Von Knut Pries

Nach einem ökumenischen Gottesdienst in der Berliner Marienkirche klangen die offiziellen Feierlichkeiten am Mittwochmittag mit einem Staatsakt in der Philharmonie aus. Wie andere Redner nannte die bisherige Volkskammer-Präsidentin Sabine Bergmann-Pohl den 3. Oktober den „glücklichsten Tag der Deutschen". Die auf der DDR in das neue Deutschland kommenden Menschen erwarteten „nicht das Land, wo Milch und Honig fließen, aber ein Land der Gerechtigkeit und der solidarischen Teilens". Bundespräsident Richard von Weizsäcker mahnte: „Sich zu vereinen, heißt teilen lernen."

Mit Unterstützung ihrer Nachbarn hätten die Deutschen den Auftrag des Grundgesetzes erfüllt: die Einheit in freier Selbstbestimmung zu vollenden, sagte Bundespräsident von Weizsäcker vor den 2000 Gästen in der Philharmonie. „Zum erstenmal bilden wir Deutschen keinen Staat gegen- und auf der europäischen Tagesordnung." Der Tag ist gekommen, an dem zum erstenmal in der Geschichte das ganze Deutschland seinen dauerhaften Platz im Kreis der westlichen Demokratien findet," Unter dem Beifall des Auditoriums zollte der Präsident all jenen Dank, die geholfen hätten, die Teilung Deutschlands zu überwinden, der Sowjetunion und ihren Präsidenten Michail Gorbatschow, den Trägern der Reformbewegungen in Ungarn, Polen und der Tschechoslowakei, den Westalliierten USA, Großbritannien und Frankreich, der Europäischen Gemeinschaft, vor allem aber „jenen Deutschen, die in der DDR den Mut aufbrachten, sich gegen Unterdrückung und Willkür zu erheben". Noch bleibe freilich zwischen Deutschen aus Ost und West viel Trennendes zu überwinden, „Dazu bedarf es nicht nur der Hilfe, sondern vor allem der Achtung."

Symbolisch war die Einheit um Mitternacht um Reichstag vollzogen worden. Zu den Klängen der Freiheitsglocke stieg die schwarz-rot-goldene Bundesflagge an einem 40 Meter hohen Mast vor dem Eidfällgni auf. Die nunmehr Worte des Bundespräsidenten gingen im Lärm der Feuerwerke, das auf der ganzen Festmeile bis zum Alexanderplatz zu sehen war, stimmte die Polizeiorchester anschließend in die Nationalhymne ein. Im Reichstagsgebäude tritt am Donnerstag der neue Bundestag mit seinen 144 Abgeordneten aus der am Dienstag aufgelösten Volkskammer zu einer konstituierenden Sitzung zusammen.

Mit einer Rede Lothar de Maizières im Schauspielhaus am Akademieplatz wurde Beethovens 4. Symphonie mit Schillers „Ode an die Freude", gespielt vom Gewandhaus-Orchester Leipzig unter dem „Revolutionshelden wieder Wilen" Kurt Masur, vorabschiedete sich die DDR offiziell aus der Gemeinschaft der Staaten. Der erste und letzte freigewählte Ministerpräsident nannte es „einen Abschied ohne Trauer". Die Deutschen aus Ost und West tief in die Mauern zu mehr Verständnis füreinander auf. „Wir werden erst dann zu einer inneren Einheit finden, wenn wir bereit sind, die vielen Urteile aus Unkenntnis und Unwissenheit zu korrigieren." Bei allen verständlichen Sorgen und Ängsten dürfe man sich andererseits „die Gunst der Stunde nicht kleinreden lassen. Nicht was wir gestern waren, sondern was wir morgen gemeinsam sein wollen, vereint uns zum Staat."

Mit Appellen zur Solidarität wandten sich de Maizière und Bundeskanzler Helmut Kohl auch über das Fernsehen an die Bürger der Bundesrepublik, die mit den 16,4 Millionen Ostdeutschen künftig 78,5 Millionen Einwohner zählen wird. Das Staatsgebiet vergrößert sich um 108 333 auf 357 000 Quadratkilometer. Die „schwierige Wegstrecke", die vor dem Land liege, sei zu bewältigen, sagte Kohl. „Wenn wir zusammenhalten und auch zu Opfern bereit sind, haben wir alle Chancen auf einen gemeinsamen Erfolg." Auch die wirtschaftlichen Probleme seien lösbar. De Maizière warnte davor, die Vereinigung zu einer rein materiellen Frage zu degradieren. „Die Einheit will nicht nur bezahlt, sondern auch mit dem Herzen gewollt sein."

Den Auftakt zu den Feierlichkeiten hatte am Dienstagmorgen eine gemeinsame Sitzung des Westberliner Senats und des Ostberliner Magistrats gebildet. Anschließend fand die Öffentlichkeit der Alliierten über Berlin offiziell ihr Ende. Die drei westlichen Stadtkommandanten überreichten dem Regierenden Bürgermeister Walter Momper ein Schreiben, in dem sie ihre Vorbehaltsrechte für ausgesetzt und ihren Auftrag für erfüllt erklärten. Dem schloß Momper sich an: „Sie können mit Stolz melden, daß Dauer der größte Sieg bei einem schwierigen Einsatz gelungen ist: den Frieden zu wahren und die Freundschaft der Menschen zu erlangen."

Alle einer der letzten Schritte vor der Einheit hatte sich am Nachmittag die Nationale Volksarmee aufgelöst. Seit Mitternacht unterstehen die nicht entlassenen Soldaten und Zivilangestellten Bundesverteidigungsminister Gerhard Stoltenberg.

Mit Freude, aber auch mit Furcht und Unbehagen wurde die Vereinigung Deutschlands im Ausland aufgenommen. US-Präsident George Bush und der sowjetische Präsident Michail Gorbatschow gratulierten den Deutschen und sprachen von einem „großen Ereignis". Der israelische Parlamentspräsident Dov Schilansky bezeichnete den Tag der deutschen Einheit dagegen als „Tag der Trauer für das jüdische Volk". Bush sagte in Washington, die Jahre des Konflikts und der Konfrontation zwischen Ost und West seien nun vorbei. Gorbatschow schrieb, die Vereinigung Deutschlands, die sich im Einvernehmen mit den Nachbarn, mit anderen Staaten und Völkern vollzogen habe, sei ein großes Ereignis nicht nur für die Deutschen allein. Sie habe sich an der „Grenze von zwei Epochen" vollzogen. „Sie wurde zu einem Symbol: und wie ich hoffe, wird sie auch zum Faktor der Festigung der allgemeinen Friedenssicherung."

Der Bundespräsident beim Staatsakt in der Berliner Philharmonie

Die Geschichte hat es dieses Mal gut mit uns gemeint

Weizsäcker: Grenzen sollen Brücken zu den Nachbarn werden / Bürger in ganz Deutschland zur Solidarität aufgerufen

Berlin (dpa) – Bundespräsident Richard von Weizsäcker hat die Deutschen zur gemeinsamen Solidarität aufgerufen. In einem Staatsakt zum Tag der deutschen Einheit in der Berliner Philharmonie wies er darauf hin, daß die Bestätigung der deutschen Teilung nicht allein mit Ängsten zu Zusammen sei. Vielmehr gebe es, öffentlich und privat, unaufgefordert, miteinander und miteinander, „Sich zu vereinen, heißt teilen lernen", sagte der Bundespräsident.

Weizsäcker würdigte den Tag der Vereinigung als einen „Vorgang von Fundamentaler Bedeutung" für die Deutschen und ihre Nachbarn. Zum erstenmal blühten die Deutschen keinen Sonderpunkt auf der europäischen Tagesordnung. Ihre Einheit werde einvernehmlich aufgenommen, sondern, an friedlich vereinbart. Sie sei Teil eines geschichtlichen Prozesses, der eine neue Friedensordnung in Europa zum Ziele habe. „Dessen Ziel wollen wir Deutschen dienen, ihm ist unsere Einheit gewidmet."

Kein Mensch habe die Vorstellungskraft besessen, den Gang der Ereignisse vorauszusehen, sagte Weizsäcker. Sie erfüllten die Deutschen den heutigen Tag „als ihr schönster." Er füge hinzu, die Geschichte habe es dieses Mal gut mit den Deutschen gemeint. „Um so mehr haben wir Grund zur gewissenhaften Selbstbesinnung." Die Deutschen würden nicht vergessen, daß er ohne den von Deutschland unter Hitler begonnenen Krieg nie zur Teilung gekommen wäre. Mit großer Achtung habe die Welt registriert, wie aufrichtig die freien Kräfte und besonders die Jugend in der DDR es als ihre Aufgabe angesehen hätten, gutzumachen, was das alte Regime der geschichtlichen Mitverantwortung schuldig geblieben sei. Der Gesang der Präsidentschaften der beiden deutschen Parlamente vor einigen Monaten in Israel zum Gedenken an die Judenverfolgung symbolisiere die Gemeinsamkeit der Deutschen in ihrer geschichtlichen Verantwortung.

Der Bundespräsident unterstrich, daß die Vereinigung etwas anderes sei als eine bloße Erweiterung der Bundesrepublik. Zum erstenmal in der Geschichte finde das ganze Deutschland seinen dauerhaften Platz im Kreis der westlichen Demokratien und könne nun selbst seinen Anteil daran haben. Die Deutschen und alle ihre Nachbarn lebten jetzt in geschützten Grenzen, die durch die freie Einsicht in ihre vertraglichen Funktionen geschützt seien.

„Lösbar ist nur, was die entzweigenden Hindernisse. Der Streit um Grenzen aber verliere in Zukunft jeden Sinn. Die Grenzen werden zu Brücken zu den Nachbarn werden. Das ist unser Wille", bekräftigte Weizsäcker.

Der Bundespräsident dankte der Sowjetunion unter Führung von Präsident Michail Gorbatschow, den Bürgerbewegungen und Völkern Ungarns, Polens und der Tschechoslowakei und allen Deutschen, „die in der DDR den Mut aufbrachten, sich gegen Unterdrückung und Willkür zu erheben". Weizsäcker sagte, in überzeugender es dem vereinten Deutschland gelingen werde, seiner Verantwortung für den Frieden in Europa und in der Welt gerecht zu werden, desto besser werde auch die deutsche Zukunft sein. „Die Geschichte gibt uns die Chance. Wir sollen sie wahrnehmen, mit Zuversicht und mit Vertrauen."

Das Geschenk der Einheit

SZ-Reporter berichten, wie es der alten und neuen Hauptstadt der 3. Oktober gebracht wurde. SEITE 3

Berlin – ein wirrliger und zärtlich-kräftiger Schauplatz. Leitartikel von Hermann Rudolph SEITE 4

Berichte über die Feiern in der Bundesrepublik und über Reaktionen auf den Vollzug der Einheit SEITE 9

Das internationale Echo auf den Vollzug der deutschen Einheit SEITE 14

Eine Nacht der Freude. Bilder von den Feiern in Berlin SEITE 19

Invasion in Klein-Berlin. Tausende feiern in dem ostdeutschen Grenzdorf Mödlareuth SEITE 30

Wortlaut der Rede des Bundespräsidenten zum Tag der Einheit und der Botschaft des Bundeskanzlers an die Regierungen der Welt SEITE 33-34

REISE UND ERHOLUNG

Ein schönes „Hallo" im Land von Onkel Ho: Vietnam ist auch im „Touristenjahr 1990" besonders für Einzelreisende noch ein Abenteuer / Das Städtchen Colmars in der Haute-Provence hat eine reiche Geschichte / Dem weißblauen Krummstab auf der Spur: Der Prälatenweg von Marktoberdorf bis Kochel Seite 79–84

UMWELT WISSENSCHAFT TECHNIK

Ökologische Fehlart DDR / Umweltforschung in der DDR / Deutsches Grundklonskop wird entwickelt / Hirnschäden bei Neugeborenen / Bluthochdruck als Selbstvergiftung / Neue Erkenntnisse aus der Artenerforschung / Umweltorientierter Campingtoilette Seite 85–89

Erste gesamtdeutsche Regierung gebildet

Berlin (Reuter) – In Berlin ist am Mittwoch die erste gesamtdeutsche Regierung Kohl gebildet worden. Bundespräsident Richard von Weizsäcker ernannte die CDU-Politiker Lothar de Maizière, Sabine Bergmann-Pohl und Günther Krause sowie den stellvertretenden FDP-Chef Rainer Ortleb und den DSU-Vorsitzenden Hansjoachim Walther zu Ministern ohne Bereich. De Maizière führte die erste frei gewählte Regierung der DDR, Frau Bergmann-Pohl das erste frei gewählte Parlament. Krause handelte den Einheitsvertrag aus. Der neuen Minister werden am heutigen Donnerstag im Reichstag bei der ersten Sitzung des gesamtdeutschen Bundestages vereidigt.

Ex-DDR-Spionagechef Großmann festgenommen

Berlin (AP) – Fahndungsbeamte haben am Mittwoch einen der Top-Spione der früheren DDR, den Leiter der Hauptverwaltung Aufklärung des Ministeriums für Staatssicherheit, Werner Großmann, festgenommen. Das berichtete die Bundesanwaltschaft in Karlsruhe. Großmann sei in seinem Ostberliner Haus festgenommen worden. Er war 1986 als Nachfolger des in den Ruhestand gehenden Markus Wolf als Leiter der Auslands-Spionageabteilung eingesetzt worden. Der Haftbefehl in Karlsruhe entscheidet heute über den Vollzug der Untersuchungshaft. Geschehen sind bisher die Versuche, auch die Haftbefehle gegen Wolf und den in die DDR übergesiedelten Verfassungsschützer Hansjoachim Tiedge zu vollstrecken. Beiden gelang es sich abzusetzen. (Seite 12)

Gorbatschow-Besuch für November geplant

Hamburg (Reuter) – Der sowjetische Präsident Gorbatschow wird voraussichtlich am 9. November nach Deutschland kommen. Das verlautete aus Regierungskreisen in Berlin. Er werde zusammen mit Bundeskanzler Kohl den deutsch-sowjetischen Freundschaftsvertrag unterzeichnen.

Aktienkurse steigen

München (SZ) – Am Tag der Einheit hielten die deutschen Finanzplätze geschlossen. Tags zuvor war der SZ-Aktienindex um 12,19 auf 338,19 Punkte gestiegen. Die durchschnittliche Umsatzrendite öffentlicher Anleihen ermäßigte sich auf den 9,73 Prozent. Der Dollar stieg in Frankfurt auf 1,5559 (1,5551) Mark. Am Mittwoch schloß er in New York mit 1,5416/31 Mark. (Bericht Seite 46, Kurse Seiten 39 bis 44)

Unbeständig und Regen

München (SZ) – In den nächsten Tagen überqueren weitere Tiefausläufer Deutschland und erhalten das unbeständige Wetter aufrecht. Vorhersage: Bedeckt und mitunter Regen. Tagestemperaturen: 12 bis 17 Grad, nachts 8 bis 3 Grad. (SZ-Wetterbericht Seite 2)

Gewinnzahlen im Mittwoch-Lotto (40):
Ziehung A: 8, 12, 17, 20, 23, 28; Zusatzz. 23
Ziehung B: 3, 12, 23, 43, 46, 48; Zusatzz. 18
Spiel 77: 7706524 (Ohne Gewähr)

Heute in der SZ

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. . . es sei denn, wir gründen ihn
„Pit" heißt einer der genossenschaftlich organisierten neuen Mentkauer Verlage. Mit seinem Leiter Alexander Bakenschuck sprach Henning Saetz.

WIRTSCHAFT 37–45
Die Bundesbank verbreitet Optimismus
Nach Ansicht ihres Mitglieds Wilhelm Gaddum ist die Lage im Osten Deutschlands nicht von Hoffnungslosigkeit geprägt.

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Der große Erfolg des Karl Moik
Ein Gespräch mit dem TASS-Generaldirektor über die Medien-Perestrojka.

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Wo Peter Gauweiler und der Grüne Hartmut Bäumer aufeinander trafen.
Von Michael Stiller

MÜNCHEN 21–28
Originelle Gesichter am großen „Tag der Freude" – 10 000 bei Sportler-Fest auf dem Marienplatz / Ausländer in Kasernen, Asylbewerber in Unterkünften – Konflikt zwischen Staat und Stadt verschärft sich / Nach Finanzloch des Stadtrats-Sekretärs: Diskret! Anwalt lud Haftbefehlsverdächtige ein / Die Landhagenwahl: Ernstkandidaten aus Laim / Vor 150 Jahren wurde die Bahnstrecke München – Augsburg eröffnet

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USA und UdSSR einig über konventionelle Abrüstung

New York (AFP) – Die Außenminister der Vereinigten Staaten und der Sowjetunion, James Baker und Eduard Schewardnadse, haben am Mittwoch in New York eine Einigung bei ihren Verhandlungen über konventionelle Abrüstung in Europa erzielt. Nach sechsstündigen Verhandlungen teilten die beiden Minister mit, sie hätten sich über die wesentlichen Punkte eines Vertrags über konventionelle Abrüstung geeinigt. Als nächstes wollten sie über die Einigung mit ihren Verbündeten sprechen. (Seite 16)

Sowjet-Parlament hebt Freundschaftsvertrag auf

Moskau (dpa) – Das sowjetische Parlament hat den am 7. Oktober 1975 zwischen der UdSSR und der DDR unterzeichneten Vertrag über Freundschaft, Zusammenarbeit und gegenseitigen Beistand außer Kraft gesetzt. Wie die amtliche sowjetische Nachrichten-Agentur TASS meldete, folgte der Oberste Sowjet damit einem Wunsch der ehemaligen DDR-Regierung, den Pakt zum Zeitpunkt der Vereinigung Deutschlands aufzuheben. Das Parlament beauftragte gleichzeitig die Regierung, die Arbeiten im Zusammenhang mit der Vereinigung fortzusetzen, damit die „allseitigen Interessen der Sowjetunion, insbesondere im Bereich der Sicherheit", garantiert würden.

Deutsche Vereinigung auch in UNO und NATO vollzogen

New York (dpa) – Die Vereinigung Deutschlands ist auch bei den Vereinten Nationen und in der NATO vollzogen worden. 17 Jahre nach dem Beitritt der beiden deutschen Staaten zur Weltorganisation gab es im Saal der UNO-Vollversammlung ein neues Schild: Germany – Deutschland. Die schwarz-rot-goldene Fahne mit Hammer und Zirkel im Ährenkranz wurde eingezogen. Der deutsche UNO-Botschafter Hans Otto Bräutigam wurde von anhaltendem Beifall der anderen Delegierten begrüßt. Durch die Vereinigung hat sich die Zahl der UNO-Mitglieder, die durch den Beitritt Liechtensteins auf 160 gestiegen war, auf 159 verringert. Am Mittwoch ist das vereinte Deutschland auch förmlich der Nordatlantischen Allianz (NATO) beigetreten. Bei einem Treffen der NATO-Botschafter in Brüssel sagte der deutsche Geschäftsträger Hans-Friederich von Ploetz, das neue Deutschland sei nunmehr ein Vollmitglied des westlichen Verteidigungsbündnisses.

Bundesbahn mit höheren Schulden in die Einheit

hen. **Bonn** (Eigener Bericht) – Die Talfahrt der Deutschen Bundesbahn in die roten Zahlen wird sich noch vor der angestrebten Fusion mit der Reichsbahn der ehemaligen DDR weiter beschleunigen. Wie die *Süddeutsche Zeitung* erfuhr, weist der jetzt fertiggestellte Entwurf des DB-Wirtschaftsplans für 1991 einen Verlustanstieg um rund 1,1 auf 6,23 Milliarden Mark aus. Zur Finanzierung von Betriebsverlusten und Investitionen wird die Bundesbahn im kommenden Jahr rund 5,1 Milliarden Mark auf dem Kapitalmarkt aufnehmen müssen. Welchen Zuschußbedarf die vorübergehend noch selbständige Deutsche Reichsbahn hat, ist gegenwärtig völlig unklar. (Seite 33)

Schwere Krawalle in Berlin

Berlin (dpa) – Schwere Krawalle überschatteten am Mittwochabend die Feiern zur deutschen Einheit in Berlin. Mehr als 1000 Polizisten wurden eingesetzt, darunter auch das Sondereinsatzkommando (SEK) der Berliner Polizei. Im Verlauf der Demonstration und der Krawalle wurden mehr als 130 Personen vorläufig festgenommen. Die Auseinandersetzungen hatten sich am Alexanderplatz im Anschluß an eine genehmigte Demonstration unter dem Motto „Deutschland halt's Maul" entwickelt, als gegen Polizeikräfte Steine geworfen wurden. (Seite 6)

Besonderer Gruß an Israel

Botschaft Kohls an die Welt

Von Deutschland wird nur Frieden ausgehen, sagt der Kanzler

Bonn (AFP/dpa) – Bundeskanzler Helmut Kohl hat allen Staaten der Welt die friedliche Partnerschaft des vereinten Deutschlands zugesichert und versprochen, daß von deutschem Boden in Zukunft nur Frieden ausgehen werde. „Unser Land will mit seiner wiedergewonnenen nationalen Einheit dem Frieden in der Welt dienen und die Einigung Europas voranbringen", betonte Kohl in einer Botschaft an die Regierungen der Welt. Deutschland verpflichte sich zum Gewaltverzicht, bekenne sich zum europäischen Friedensprozeß und wolle sich künftig an den Friedenstruppen der Vereinten Nationen beteiligen. „Wir werden hierfür die innerstaatlichen Voraussetzungen schaffen."

Mit der Vereinigung übernehme Deutschland auch größere Verantwortung in der Völkergemeinschaft, schrieb Kohl. „Unsere Außenpolitik bleibt deshalb ausgerichtet auf weltweite Partnerschaft, enge Zusammenarbeit und friedlichen Interessenausgleich." Deutschland erkenne den endgültigen Charakter seiner Grenzen an, darunter auch die Grenze zu Polen. Die Achtung der territorialen Integrität und Souveränität aller Staaten sei eine grundlegende Bedingung des Friedens.

Das vereinte Deutschland werde die völkerrechtlichen Verträge der ehemaligen DDR erörtern, „um ihre Fortgeltung, Anpassung oder ihr Erlöschen zu regeln beziehungsweise festzustellen", schrieb der Kanzler. Deutschland wolle sich vor allem darum bemühen, daß die Länder Mittel-, Ost- und Südosteuropas engere Bindungen mit der Europäischen Gemeinschaft aufbauen könnten. Das geeinte Deutschland werde tatkräftig mithelfen, aus der EG eine politische Union zu machen.

Der Platz Deutschlands bleibe in der NATO, betonte der Regierungschef. Das Bündnis müsse zu einem Grundpfeiler einer neuen übergreifenden Sicherheitsarchitektur werden. Deutschland setze sich für eine Gewaltverzichtserklärung von NATO und Warschauer Pakt ein. Der Kanzler forderte die anderen europäischen Staaten auf, wie Deutschland ihre Truppenstärke zu reduzieren.

Die Länder Afrikas, Asiens und Amerikas könnten auch künftig auf die Solidarität Deutschlands zählen. „Was wir in die deutsche Einheit investieren, geht nicht zu ihren Lasten." Beim Kampf gegen Armut und Terrorismus werde Deutschland seinen Teil der Verantwortung tragen.

In seiner Botschaft an den israelischen Ministerpräsidenten Yitzhak Schamir ersetzte Kohl den Satz „Zugleich stehen wir zu den moralischen und rechtlichen Verpflichtungen, die sich aus der deutschen Geschichte ergeben" durch die Fassung: „Deutschland wird auch in Zukunft in der Kontinuität des Bewußtseins seiner historischen Verantwortung stehen. Die von Deutschen und im deutschen Namen am jüdischen Volk begangenen Verbrechen werden wir niemals vergessen."

„Europa ist die Zukunft"

Kohl rief die Deutschen in Ost und West auf, jetzt Solidarität vor allem untereinander zu beweisen. In einer Ansprache über Hörfunk und Fernsehen sagte der Kanzler, jeder wisse, daß eine schwierige Wegstrecke bevorstehe. Wenn alle zusammenhielten und auch zu Opfern bereit seien, „haben wir alle Chancen auf einen gemeinsamen Erfolg". Kohl betonte, die wirtschaftlichen Voraussetzungen in der Bundesrepublik seien heute ausgezeichnet. „Noch nie waren wir besser vorbereitet als jetzt, die wirtschaftlichen Aufgaben der Wiedervereinigung zu meistern." Hinzu kämen Fleiß und Leistungsbereitschaft der Menschen in der bisherigen DDR. Er sei sich gewiß, daß die wirtschaftlichen Probleme in einer überschaubaren Zeit zu lösen seien. „Noch wichtiger ist jedoch, daß wir Verständnis füreinander haben, daß wir aufeinanderzugehen. Wir müssen ein Denken überwinden, das Deutschland immer noch in ein ‚Hüben' und in ein ‚Drüben' aufteilt."

Mit der Vereinigung Deutschlands nach mehr als 40 bitteren Jahren der Teilung werde ein Traum Wirklichkeit. „Für mich ist dieser Augenblick einer der glücklichsten in meinem Leben." Aus vielen Briefen und Gesprächen wisse er, welche große Freude auch die allermeisten Bürger empfänden. Diese Freude werde von vielen Menschen in der Welt geteilt. „Sie sollen wissen, was uns in diesem Augenblick bewegt: Deutschland ist unser Vaterland, das vereinte Europa unsere Zukunft."

Ausdrücklich dankte Kohl noch einmal den Freunden und Partnern in Frankreich, Großbritannien und den USA, vor allem Präsident Bush, aber auch dem sowjetischen Präsidenten Gorbatschow. Er habe das Recht der Völker auf den eigenen Weg anerkannt. „Ohne diese Entscheidung hätten wir den Tag der deutschen Einheit nicht so bald erlebt", sagte der Kanzler.

Letzte Rede als Ministerpräsident

De Maizière: Stunde der Freude

Beitritt der DDR zur Bundesrepublik „Abschied ohne Tränen"

Berlin (dpa) – Der Beitritt der DDR zur Bundesrepublik ist nach Worten des bisherigen DDR-Ministerpräsidenten Lothar de Maizière „eine Stunde großer Freude", „das Ende mancher Illusionen" und „ein Abschied ohne Tränen". Beim Festakt im Ostberliner Schauspielhaus sagte de Maizière in seiner letzten Rede als Ministerpräsident, mit dem 3. Oktober ende die dramatische Phase der Neuorientierung, die im Herbst 1989 begonnen habe. „Wir stehen an der Schwelle zu einer neuen Zeit." Der Weg in die Zukunft könne unter hoffnungsvollen Vorzeichen angetreten werden, die Freiheit, Demokratie, Rechtsstaatlichkeit und soziale Gerechtigkeit hießen.

Diese Werte seien höher einzuschätzen als die materiellen Vorteile, die nach einer Zeit vieler Entbehrungen „verständlicherweise so leicht in den Vordergrund rücken", sagte de Maizière. Die gemeinsame Zukunft werde davon abhängen, „welche Bereitschaft zu wechselseitigem Verständnis wir aufbringen". De Maizière: „Es dürfen die auf der einen Seite nicht die hohe Warte als ihre Plattform begreifen. Und die auf der anderen Seite dürfen sich nicht nur als Lernende ansehen, die durch ihre Geschichte zusätzlich belastet sind." Zu einer inneren Einheit könne es erst dann kommen, „wenn wir bereit sind, die vielen Urteile aus Unkenntnis und Unwissenheit an der Wirklichkeit zu korrigieren".

Der letzte Ministerpräsident der DDR mahnte, „die Ideale des anderen zu respektieren – auch wenn man sie nicht teilt". Das Ende einer Ideologie, das für viele eine bittere Enttäuschung gewesen sei, sollte nicht dazu führen, „daß der Glaube an alle Ideale zerstört wird". Manche „Schatten der Vergangenheit" seien besonders dunkel und würden noch lange Wirkung zeigen. Sie aufzuhellen, verlange von jedem ein höchstes Maß an Verantwortung und Selbstdisziplin. „Wir wollen dieses Kapitel unserer Geschichte ehrlich und umfassend aufarbeiten", sagte de Maizière. Am Ende, nach der „notwendigen Klärung von Schuld und Unschuld, müssen die Aussöhnung und Befriedung der Gesellschaft stehen". Die Vergangenheit dürfe nicht auf neue Weise die Zukunft teilen.

Trotz der Sorgen vieler Bürger sei das Ende der DDR „gleichzeitig eine große Wende zum Positiven, wie sie die Geschichte nur selten bereithält". De Maizière betonte, „wir haben wirklich allen Anlaß zu Freude und Dankbarkeit. Wir können einen neuen Anfang machen", dessen Vorzeichen die selbst erstrittene Freiheit, die gewollte Einheit, das lang entbehrte Recht und die neu gegebene Menschenwürde seien. In der Bundesrepublik gebe es eine demokratische Ordnung, die sich trotz mancher Unzulänglichkeiten bewährt und weiter entwickelt habe. „Nicht was wir gestern waren, sondern was wir morgen gemeinsam sein wollen, vereint uns zum Staat", sagte de Maizière.

„Eine Wunde schließt sich"

Als den glücklichsten Tag der Deutschen hat die bisherige Volkskammerpräsidentin, Sabine Bergmann-Pohl, den Tag der Vereinigung gewürdigt. Jetzt schließe sich vor allem für die Menschen in der bisherigen DDR eine Wunde, sagte sie am Mittwoch auf dem Staatsakt in der Berliner Philharmonie. Sie betonte, daß die Einheit nicht gegen die Interessen der Nachbarn stehe. „Auschwitz ist zwar kein Veto gegen den deutschen Nationalstaat, wohl aber eine immerwährende Mahnung für uns, die Geschichte nicht zu vergessen."

Die aus der DDR in das neue Deutschland kommenden Menschen erwarteten „nicht das Land, wo Milch und Honig fließen", aber ein Land der Gerechtigkeit und des solidarischen Teilens. Der materielle Reichtum, der in der DDR gefehlt habe, sei weniger wichtig gewesen als die Vorenthaltung von Freiheit und Gerechtigkeit.

„Was wir zu lernen haben werden, ist, von der neu gewonnenen Freiheit verantwortungsvoll Gebrauch zu machen", sagte das bisherige DDR-Staatsoberhaupt. Es werde noch viel Zeit, großes Einfühlungsvermögen und Mut zu unpopulären Entscheidungen für das Zusammenwachsen der beiden Teile Deutschlands erforderlich sein. „Nehmen wir Rücksicht auf die Mentalität und Empfindlichkeit des anderen, stehen wir zusammen", appellierte sie an alle Bürger.

Frau Bergmann-Pohl erinnerte daran, daß die friedliche Revolution in der DDR vom Umbruch in den osteuropäischen Staaten begleitet worden sei. Die deutsche Einheit richte sich nicht gegen die Interessen der Nachbarn, sondern füge sich ein in das „große Europa". „Wir versprechen ebenso Europäer zu sein wie Deutsche", sagte sie. Die Menschen aus der ehemaligen DDR brächten dabei neben dem Stolz auf ihre „sanfte Revolution" auch die Erfahrung ein, daß 40 Jahre Diktatur „nicht ohne Schaden an Leib und Seele" blieben.

Aktuelles Lexikon

Hauptstadt

Berlin ist auch in den Jahren der Teilung von den Politikern der Bundesrepublik immer als die deutsche Hauptstadt bezeichnet worden, obwohl Staatsoberhaupt, Parlament und Regierung ihren Sitz in Bonn hatten. Der Parlamentarische Rat hat Bonn am 10. Mai 1949 zur provisorischen Bundeshauptstadt erklärt, der Bundestag dies am 3. November 1949 bestätigt. In der alten DDR-Verfassung wurde im Artikel 1 (Ost-)Berlin als Hauptstadt bestimmt. Allgemein gilt als Hauptstadt eines Landes jene Stadt – es muß nicht immer die größte sein –, in der Regierung und Parlament ihren Sitz haben. Dort sind normalerweise auch die ausländischen Diplomaten akkreditiert. In manchen Bundesstaaten – so in Australien, Brasilien, Indien, Kanada, den USA – sind die Hauptstädte ein eigener, unabhängiger Verwaltungsbezirk. (Die Bürger Washingtons DC dürfen erst seit 1966 den Präsidenten mitwählen und seit 1973 eine eigene Stadtregierung bestimmen.) In Monarchien ist die Hauptstadt meist identisch mit der Residenzstadt, dem Sitz des Staatsoberhauptes. In Deutschland gibt es feste Residenzstädte erst seit dem 15. Jahrhundert. Kaiser und Könige des Mittelalters zogen von Pfalz zu Pfalz, den befestigten Wohnsitzen, und mit ihnen die Regierungsbehörden. hs

Junge Österreicher protestieren

Krach um deutsche Fahne am Wiener Rathaus

Wien (dpa) – Die Geste des sozialistischen Wiener Bürgermeisters Helmut Zilk, das Wiener Rathaus zum Tag der Deutschen Einheit mit den schwarz-rot-goldenen Farben zu beflaggen, hat in Österreich eine Kontroverse ausgelöst. Eine Arbeitsgemeinschaft Jugendlicher, die von der Katholischen über die Sozialistische Jugend bis hin zu den Kommunisten reicht, verlangte von Zilk die Einholung der deutschen Farben.

Statt des von Zilk angeordneten Transparents „Wir gratulieren" sollte nach Ansicht seiner Kritiker eine Aufschrift mit den Worten treten: „Kohl zum Gruß – Österreich bleibt neutral". Zilk, der den 3. Oktober als „wichtigen Tag für Europa" bezeichnet hatte, nannte in einem Treffen mit Mitgliedern der Arbeitsgemeinschaft deren Kritik „lächerlich und kindisch". Den Aktionisten warf er vor, die Flagge des neuen Deutschland mit der früheren Hakenkreuzfahne der Nazi zu verwechseln.

Die linksliberale Wiener Zeitung AZ beschuldigte den Wiener Bürgermeister, seine Kritiker „niedergebrüllt" zu haben. Unterstützung bekam Zilk von der national orientierten Freiheitlichen Partei Österreichs. Ein Sprecher bezeichnete Zilks Maßnahme als „eine gute Sache". Zurückhaltend reagierte Zilks Parteifreund Bundeskanzler Franz Vranitzky.

Thatcher gegen Änderungen im UNO-Sicherheitsrat

New York (dpa) – Die britische Regierungschefin Margaret Thatcher hat sich dagegen ausgesprochen, daß Deutschland ständiges Mitglied des Weltsicherheitsrates wird. Sie sehe „keinen Grund", das Gremium umzustellen, sagte sie in einem Interview der US-Fernsehgesellschaft CNN. Der Rat habe in den letzten Wochen gut zusammengearbeitet, und „ich hielte es für ganz falsch, eine siegreiche Truppe zu verändern". Großbritannien gehört mit China, Frankreich, den USA und der Sowjetunion zu den fünf ständigen und mit Vetorecht ausgestatteten Mitgliedern des UNO-Sicherheitsrates. Die ständige Mitgliedschaft Deutschlands war von dem sowjetischen Deutschlandexperten Portugalow vorgeschlagen worden.

Weitere Nachrichten auf den Seiten 6, 8, 11, 12, 14, 15, 16, 18 und 64

Ansprache an die Bevölkerung des Saarlandes

Lafontaine fordert Solidarität

„Deutschland soll besonderen Beitrag zum Frieden leisten"

Saarbrücken (AP) – Zum „Ende der Nachkriegszeit" hat der saarländische Ministerpräsident und SPD-Kanzlerkandidat Oskar Lafontaine die Deutschen zu Solidarität und wechselseitigem Verständnis aufgerufen. In einer Fernsehansprache im Saarländischen Rundfunk sagte Lafontaine am Dienstagabend: „In der Vergangenheit hat Deutschland einen besonderen Beitrag zum Krieg geleistet. In Zukunft muß es einen besonderen Beitrag zum Frieden leisten."

Mit der staatlichen Vereinigung Deutschlands ende der „lähmende und kräftezehrende Ost-West-Konflikt" und es beginne eine neue Epoche, der man mit Zuversicht entgegenblicken könne, sagte der SPD-Politiker. Die Leistungsfähigkeit der deutschen Wirtschaft und die gefestigte Demokratie seien gute Voraussetzungen, um mit den großen Schwierigkeiten auf dem Weg zur gesellschaftlichen Vereinigung fertig zu werden. Lafontaine verwies dabei auch auf die Erfahrungen bei der Integration des Saarlandes in die Bundesrepublik vor mehr als 30 Jahren, die auch ein Probelauf für die spätere, größere Vereinigung gewesen sei. Trotz einer besseren Ausgangslage als heute für die ehemalige DDR habe die verspätete Eingliederung dem Saarland vor allem in wirtschaftlicher Hinsicht lange zu schaffen gemacht und zeige im Grunde noch immer ihre „versteckten Spätfolgen".

Lafontaine mahnte auch, von der neu gewonnenen Souveränität und Stärke behutsam Gebrauch zu machen. Dabei müsse Deutschland sich „nach innen und nach außen stets als Teil eines größeren Europas verstehen". Seine geographische Lage in der Mitte Europas könne es dazu nutzen, um zwischen Ost und West zu vermitteln.

Das vereinte Deutschland kann und muß nach den Worten des stellvertretenden SPD-Fraktionsvorsitzenden Wolfgang Roth Motor für ein vereintes Europa sein. Es müsse seine Brückenfunktion im Herzen Europas zwischen Ost und West nutzen, forderte Roth in einer in Bonn veröffentlichten Erklärung. Die Dynamik der Einigung müsse zur Überwindung der Grenzen zwischen Ost und West beitragen.

Bundestagspräsidentin Rita Süssmuth:

Neues Kapitel der Geschichte

Grundgesetz „ist das wichtigste Geschenk unseres Landes"

Berlin (Reuter) – Bundestagspräsidentin Rita Süssmuth hat die deutsche Einheit als den Beginn eines „neuen Kapitels der Geschichte" bezeichnet, das zahlreiche Verpflichtungen für die Deutschen bringe. „Vor uns liegt eine neue Zeit", sagte sie am Mittwoch beim Staatsakt in Berlin. Die deutsche Einheit bedeute jetzt, zu teilen und soziale Solidarität mit den Schwachen zu zeigen. Auch dürften alle Deutschen nie die Leiden vergessen, die in ihrem Namen dem jüdischen Volk zugefügt worden seien. Den Jugendlichen aus der ehemaligen DDR empfahl sie das Grundgesetz als „wichtigstes Geschenk unseres Landes".

Der Tag der Einheit sei ein „Tag der Freude, Dankbarkeit, Verantwortung und der Bescheidenheit". Sie dankte allen, die zum Vollenden der deutschen Vereinigung beigetragen hätten, allen voran den Deutschen in der ehemaligen DDR, den Ungarn, Polen und den Bürgern in der ČSFR. Seit dem vergangenen Herbst habe sich eine gewaltige Verwandlung vollzogen: „Aus Unfreiheit wurde Freiheit, aus Angst Wagemut, Hoffnung und Zuversicht", sagte sie. Die deutsche Einheit sei die Stunde, „in der wir uns darüber klar werden müssen, was wir von uns selbst zu erwarten haben und was andere von uns erwarten".

Frau Süssmuth beschwor den „Willen zur Gemeinsamkeit" aller Deutschen. „Wir müssen unser ganzes Land zur Blüte bringen", sagte sie. Dabei gehe es auch um sozialen Ausgleich, um die gemeinsame Bewahrung der kulturellen Vielfalt und den gemeinsamen Schutz der Umwelt. „Wir müssen uns jetzt von den Begriffen ‚Mein' und ‚Dein', ‚Wir' und ‚Ihr' lösen." Teilen sei die eine Seite der Einheit, Gemeinsamkeit die andere. Vor allem die Jugend im Osten und Westen Deutschlands müsse sich jetzt besser kennenlernen und ihre gemeinsame europäische Verantwortung begreifen.

Zur Einheit gehörten Kraft und Wille zur Erinnerung. Nie dürften die unendlichen Leiden des jüdischen Volkes, die Opfer der Nachbarvölker und die Kriegsverheerungen vergessen werden, die mit dem deutschen Namen verbunden seien.

Der SZ-Wetterbericht

Wetterlage

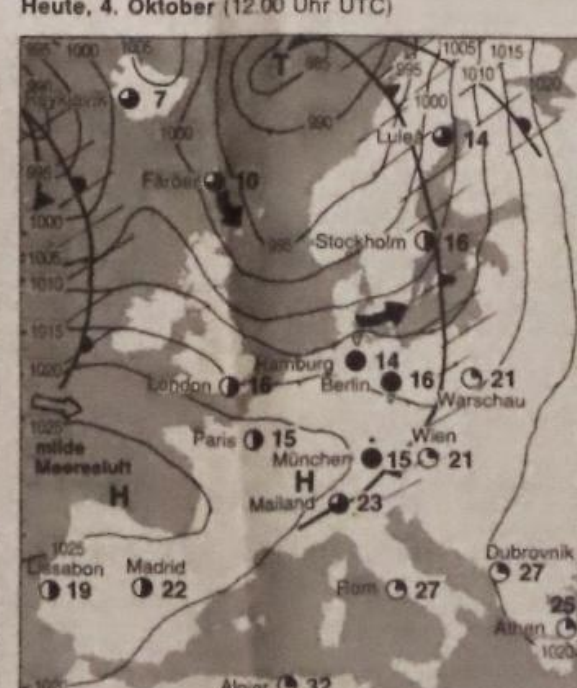
Das Wetter gestern: Die wellende Kaltfront eines umfangreichen Tiefs mit Kern südlich Islands bestimmte das Wetter von Spanien über Frankreich bis Großbritannien. Bei bedecktem Himmel fiel verbreitet Regen, die Mittagstemperaturen lagen über Spanien bei 25, über Frankreich bei 20 und über den Britischen Inseln um 15 Grad. Die Warmfront des Tiefs brachte über Westskandinavien geschlossene Bewölkung und Regen bei Temperaturen zwischen 8 und 12 Grad. Über dem Nordosten Skandinaviens war es gebietsweise heiter bei Temperaturen meist unter 10 Grad. Ein Tief bestimmte das Wetter über dem westlichen Mittelmeer bis nach Mittelitalien mit teils hochreichender Quellbewölkung und Schauern und Gewittern, die Mittagswerte lagen hier zwischen 22 und 26 Grad. Ein umfangreiches Hoch mit Schwerpunkt östlich von Polen bestimmte das Wetter auch in Mitteleuropa und dem östlichen Mittelmeer. In seinem Bereich war es gebietsweise noch am Mittag neblig-trüb, sonst schien die Sonne. Die Mittagswerte erreichten über Mitteleuropa 18 bis 24, über Südosteuropa örtlich über 25 Grad.

Wetterlage: In den nächsten Tagen überqueren weitere Tiefausläufer Deutschland und erhalten das unbeständige Wetter aufrecht.

Gestern, 3. Oktober (Satellitenbild 12.30 Uhr)



Heute, 4. Oktober (12.00 Uhr UTC)



Morgen, 5. Oktober (12.00 Uhr UTC)



Warmfront · Kaltfront · Okklusion · warme Luft · kalte Luft · wolkenlos · heiter · wolkig · st. bewölkt · bedeckt · Niederschl. · H T Hoch / Tief · Regen · Nieseln · Schauer · Gewitter · Schnee · Nebel · Temperaturen °C · Luftdruck hPa

Beobachtungstermine: 12 h bzw. 06 h Weltzeit „UTC" (Universal Time Coordinated): 12 h UTC entspr. 13 h bzw. im Sommer 14 h MEZ

Alle Angaben: Wetteramt München

Vorhersage bis Freitag

Südbayern: Am Donnerstag bedeckt und zeitweise Regen. Höchstwerte 12 bis 17, nachts 8 bis 3 Grad. Am Freitag wechselnde Bewölkung und einzelne Regenschauer, 9 bis 13 Grad. Zeitweise auffrischender Südwest- bis Westwind. **Alpengebiet:** Berge besonders am Donnerstag vielfach in Wolken, weitere Niederschläge, Schneefallgrenze allmählich unter 1500 m sinkend. **Nordbayern:** Meist starke, auf den Bergen aufliegende Bewölkung und zeitweise Regen, morgen bei veränderlicher, teils lockerer Bewölkung noch Schauer. Tageswerte 12 bis 16, morgen 9 bis 13, auf den Bergen auf 7 Grad sinkend. Zeitweise mäßiger Südwest- bis Westwind. **Baden-Württemberg:** Durchzug eines Regengebietes, morgen bei wechselnder Bewölkung noch Schauer. Höchstwerte um 15 Grad, morgen tiefer, nachts bei 8 Grad. **Hessen – Rheinland-Pfalz – Saarland:** Bedeckt und Regen, morgen bei veränderlicher Bewölkung noch Schauer. Tageswerte um 15 Grad, morgen tiefer, nachts um 8 Grad. Mäßiger Südwest- bis Westwind. **Nordrhein-Westfalen:** Bewölkt und Regen, am Freitag zunächst heiter, später erneut bewölkt, aber noch trocken. Höchstwerte um 15, nachts bei 10 Grad. Mäßiger Südwest- bis Westwind. **Norddeutschland:** Wechselnd bewölkt und Regenschauer, am Freitag vielfach heiter, kaum noch Niederschlag. Tageswerte 13 bis 18, nachts um 8 Grad. Starker Wind um Südwest bis Nordwest. **Berlin:** Meist wolkig, zeitweise Regen, morgen vielfach heiter, teils wolkig und Schauerneigung.

Welt, 3. 10.

	Wetter	Temp. in °C		Wetter	Temp. in °C		Wetter	Temp. in °C
Amsterdam	wolkig	20	Istanbul	bedeckt	21	Paris	heiter	21
Athen	heiter	28	Klagenfurt	heiter	19	Peking	wolkig	23
Barcelona	Regen	19	Lissabon	bedeckt	22	Prag	heiter	18

Deutschland, 3. 10. · **2. 10.** · **München, 4. 10.** · **Urlaubsorte, 3. 10.**

9.2 Frauenkirche Dresden, ein Symbol der Versöhnung

Die Frauenkirche ist ein evangelischer Sakralbau am Neumarkt in Dresden. Der 91 Meter hohe Kuppelbau wurde 1726 bis 1743 durch den Rat der Stadt von George Bähr geschaffen. Nach der Zerstörung 1945 blieb die Frauenkirche eine Ruine, bevor sie 1993 bis 2005 wiederaufgebaut wurde
[Wikipedia].
Der "Trümmerberg" unten, der Dresdner Frauenkirche ist die Ruine der im Zweiten Weltkrieg zerstörten Kirche, die nach 1945 über 40 Jahre lang als Mahnmal stehen blieb, bevor sie ab 1993 wiederaufgebaut wurde, wobei Tausende alter, sortierter Steine wiederverwendet wurden, was die bunte, mosaikartige Fassade erklärt, die das einzigartige Symbol des Krieges und des Wiederaufbaus darstellt.
Der Wiederaufbau begann mit der aufwendigen Sortierung und Katalogisierung von rund 12.000 Trümmersteinen, die in die neue Fassade integriert wurden. Dunkle, gebrannte Steine der Ruine vermischen sich mit neuen helleren Steinen, was der Kirche ihr charakteristisches, fleckiges Aussehen verleiht, das an ein Mosaik erinnert. Der praktische Baubeginn der Kirche war die erste offizielle Steinversetzung am 27. Mai 1994 und der Bau konnte 2005 mit der Weihe der neuen Frauenkirche abgeschlossen werden.
Die Wiedererrichtung der aus Sandstein erbauten Frauenkirche wurde zu einem weltweit beachteten Zeichen der Versöhnung speziell mit den Engländern (Bombenangriff durch Engländer und USA) und des Wiederaufbauwillens der Stadt, finanziert durch Spenden aus aller Welt. Von den Gesamtkosten von 180 Millionen Euro kamen ca. 115 Millionen Euro durch Spenden aus aller Welt zusammen. Den restlichen Anteil von 65 Millionen Euro stellten die Stadt Dresden, der Freistaat Sachsen und der Bund in etwa gleichen Teilen zur Verfügung.
Aus dem Mahnmal gegen Krieg und Gewalt wurde nun ein Symbol der Versöhnung.

Den Fortschritt dieser Gemeinschaftsleistung konnte ich seit September 1990 regelmäßig bewundern, parallel zur Entwicklung der Stadt als hervorragendem Studien-, Industrie- und Studien-Standort. Als Bau-Statiker war der Bau der Kuppel besonders eindrucksvoll für mich. Der ausführende Statiker (Tragwerksplaner) erklärte uns auf der Kuppelhöhe während des Rohbaus, wie man 1735 die Horizontalkräfte der Kuppel statisch aufgefangen hat. Jetzt haben wir es besse mit einem stählernen geschlossenen Umfangszugring (Ring-Zuganker), und noch dazu wird die Kuppel damit noch statisch sicherer.



Ruine 1991, überwuchert



Sabine K.

10 Betrachtungen zur Energie-Aussicht, Kernenergie und Windenergie, 1992

Süddeutsche Zeitung

MÜNCHNER NEUESTE NACHRICHTEN AUS POLITIK, KULTUR, WIRTSCHAFT UND SPORT

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Das Streiflicht

(SZ) Wieder fällt eine Mauer in Deutschland, wieder wird ein Schritt zurückgelegt auf dem Weg zu einheitlichen Lebensverhältnissen, wieder ein bißchen Schlucken Selbstbestimmung für die nach Freiheit dürstenden Opfer kommunistischer Bevormundung. Jahrzehntelang mußten unsere Landsleute im Osten auf ein elementares Menschenrecht verzichten, das im Westen ganz selbstverständlich in Anspruch genommen wird: das Recht, besoffen Auto zu fahren. Nüchtern betrachtet, ist das Steuern eines Automobils ein langweiliger, von stupiden Bewegungen geprägter und durch eine Unzahl von Verkehrsregeln eingeschränkter Vorgang. Nach dem Genuß eines halben Dutzends Pils & Korn dagegen – wem erzählen wir das! – offenbart sich die Welt uns Steuer herum aus einem ganz neuen, aufregenden Blickwinkel, auf einmal ist Musik drin: Heissa, wie da die Reifen surren und pfeifen, hussa, wie da die Passanten hüpfen und tanzen. Brüder im Weingeist an Saale und Unstrut, Freunde des Radeberger und Lübzer Bitterhopfens, bald ist es soweit: Nur noch 28mal schlafen, und dann ran an die Theken und frisch ans Steuer: Vom 1. Januar an gilt die gesamtdeutsche 0,8-Promille-Grenze.

Zu danken ist die Vereinheitlichung des Straßenverkehrsgesetzes einer Mehrheit der Parlamentarier von CDU/CSU und FDP, der Lobby aus Bierbrauern, Weinbauern, Kneipiers, Getränkeindustriellen, Reparaturbetrieben und Abschleppunternehmen. Leicht war das nicht. Rund 62 Prozent der Bevölkerung im Westen und 89 Prozent im Osten haben bei einer Umfrage den Vorschlag des Bundesrats gebilligt, 0,5 Promille Alkohol im Blut zum Maß der relativen Fahrtüchtigkeit zu machen. Da mußten unsere auf Volksfesten und in Arbeitslagen gestählten Abgeordneten beweisen, daß ihnen ein gesunder, die Wirtschaft stützender Alkoholismus über alles geht, daß sie gefeit sind gegen schädlichen Populismus. Ein Kompromiß mit der DDR-Nullösung hätte ja auch den Eindruck erwecken können, als ob irgend etwas richtig gewesen wäre in Honeckers Diktatur.

Was wissen schon die Mediziner und Verkehrsrichter! Die meisten dieser Neunmalklugen hatten vermutlich nie einen anständigen Autorausch! Einige Wirrköpfe, das konnte nicht ausbleiben, forderten sogar ein absolutes Alkoholverbot im Verkehr. Wie soll denn das funktionieren, wo schon der als Stoffwechselprodukt erzeugte, natürliche Blutalkohol bis zu 0,2 Promille gehen kann? Also nimmt man sicherheitshalber gleich 0,8 Promille, dann hat der Körper einen gewissen Spielraum. Und überhaupt: Was nützt die ganze Reglementiererei, wenn die Polizei zuwenig kontrolliert? Weil sich das nicht ändern wird (schließlich hat die Polizei Wichtigeres zu tun, zum Beispiel die Nachsorge an den Unfallorten), heißt die Devise in Bonn: keine Experimente. Wer weiß, ob sich alle ans nüchterne Autofahren gewöhnen könnten.

In der deutschen Energiepolitik bahnt sich ein Kurswechsel an

Stromkonzerne wollen auf Kernkraftwerke verzichten
Ende der Wiederaufarbeitung in Aussicht gestellt

Angebot von RWE und VEBA: Bestehende Atommeiler nach Ende ihrer Betriebszeit durch Kohle- und Gaskraftwerke ersetzen
Kernenergie soll nur noch als Option erhalten bleiben / Pläne mit Niedersachsens Regierungschef Schröder abgestimmt

Bonn, 3. Dezember – In der deutschen Atompolitik bahnt sich ein einschneidender Kurswechsel an: Die Energiekonzerne RWE und VEBA haben angeboten, bestehende Kernkraftwerke nach dem Ende ihrer Betriebszeit durch Kohle- und Gaskraftwerke zu ersetzen; die Kernenergie soll lediglich als Option erhalten bleiben. Gleichzeitig wird ein Ende der Wiederaufarbeitung in Aussicht gestellt. Ziel der Pläne, die VEBA und RWE gemeinsam mit dem niedersächsischen Ministerpräsidenten Gerhard Schröder (SPD) verfolgen, ist es, wieder einen energiepolitischen Konsens zu erreichen. Am 18. Dezember wollen die Firmenvorstände das Thema mit Bundeskanzler Kohl erörtern. Hessens Umweltminister Fischer (Grüne) nannte die Pläne „hochinteressant".

Von Thomas Fröhlich und Ulrich Deupmann

Nach monatelangen Verhandlungen zwischen Energiewirtschaft und Politik, in denen VEBA-Chef Klaus Piltz und Schröder als offensivste Verfechter eines neuen Energiekonsenses aufgetreten waren, haben Piltz und der RWE-Vorstandsvorsitzende Friedhelm Gieske ihr Angebot am 23. November in einem Brief an den Bundeskanzler dargelegt. Nach Gesprächen mit den kernenergiekritischen Parteien habe man „den Eindruck gewonnen, daß die pauschale, programmatische Forderung des ‚Kernenergie-Ausstiegs' auf ein geordnetes Auslaufen der heute genutzten Kraftwerke präzisiert und zugleich Kernenergie als eine Option für die langfristige Energiezukunft bei Weiterentwicklung der Kerntechnik sehr wohl akzeptiert werden könnte", heißt es in dem Brief.

Konkret schlagen RWE und VEBA für alle Kernkraftwerke eine Regelbetriebszeit vor, die von allen Landesregierungen – gleich welcher politischer Couleur – dann auch akzeptiert werden müsse. Die Sicherheit der Anlagen müsse dabei selbstverständlich gewährleistet sein. Anstelle der Atomkraftwerke wollen die Energiekonzerne Kohle- oder Gaskraftwerke bauen. Sie müßten von allen Parteien im Konsens genehmigt werden. Die Energiewirtschaft denkt aber auch an einen gemeinsam mit Frankreich geplanten neuen Atomreaktor-Typ. Dieser Typ soll so sicher sein, daß bei einem Unfall keine Radioaktivität mehr nach außen entweichen kann. Als erste Kernkraftwerke würden die Anlagen in Biblis, Würgassen und Stade ersetzt.

Als Anreiz für SPD und Grüne, die Kernenergie als Zukunftsoption zu akzeptieren, bieten RWE und VEBA einen Ausstieg aus der Wiederaufarbeitung an, die nach dem Aus für Wackersdorf derzeit nur im Ausland vorgenommen wird. Der Abschied von der Wiederaufarbeitung ist allerdings an die Bedingung geknüpft, daß die direkte Endlagerung als alleiniger Entsorgungsweg anerkannt wird. In diesem Falle könnte die Wiederaufarbeitung nach dem Auslaufen der Verträge mit England und Frankreich beendet werden.

Davon wäre auch die Produktion von Mischoxid-Brennelementen (MOX) betroffen, in denen das bei der Wiederaufarbeitung anfallende Plutonium verwertet wird. Nur noch das vorhandene und noch anfallende Plutonium müßte im Siemens-Brennelementewerk Hanau verarbeitet werden. Dieses Werk wird von der rotgrünen Landesregierung in Hessen blockiert. Die direkte Endlagerung ist bei einem Wegfall der Wiederaufarbeitung unerläßlich. Nur so kann der Entsorgungs-Vorsorgenachweis nach dem Atomgesetz geführt werden. Gieske und Piltz halten deshalb die zügige Fertigstellung des Standorts „Schacht Konrad" für schwach- und mittelradioaktiven Abfall bei Salzgitter sowie die Wiederinbetriebnahme des ehemaligen DDR-Endlagers Morsleben für „vordringlich und unverzichtbar". Die RWE- und VEBA-Manager sind sogar bereit, auf das geplante Endlager für hochradioaktiven Atommüll in Gorleben zu verzichten, wenn dort ein Zwischenlager errichtet und ein Erststandort für das Endlager gefunden wird. Dieses Endlager könne auch im Ausland liegen, hieß es.

In Teilen der Energiewirtschaft stößt das Vorpreschen von Gieske und Piltz auf deutliche Skepsis. Zwar wünscht sich auch die süddeutsche Energiewirtschaft unter Führung der Bayernwerk AG (München) die Rückkehr zum energiepolitischen Konsens. Dem Vernehmen nach vertritt das Bayernwerk aber die Ansicht, daß die Pläne von RWE und VEBA auf einen Ausstieg aus der Kernenergie hinauslaufen, ohne daß der Wiedereinstieg mit neueren Reaktor-Typen schon heute sichergestellt ist. Auch Siemens ist, wie es heißt, über den möglichen Kurswechsel „nicht sonderlich erfreut". Das Unternehmen fürchtet um seine Milliarden-Investition in das Hanauer Brennelementewerk. (Seite 7)

Persönliche Erklärung vor dem Berliner Landgericht

Honecker weist Verantwortung für Todesschüsse zurück
„Ohne die Sperrung der Grenzen in Deutschland hätte ein Atomkrieg gedroht" / Prozeß als „Polit-Schauspiel" bezeichnet

Hz. **Berlin** (Eigener Bericht) – Der einstige Partei- und Staatschef der DDR, Erich Honecker, hat seinen Prozeß vor dem Berliner Landgericht zu einer umfassenden Selbstverteidigung genutzt. Ebenso verteidigte er dort am Donnerstag weit ausholend den DDR-Staat und die Gesellschafts- und Wirtschaftsordnung des Sozialismus. Zugleich übte er scharfe Kapitalismus- und Justizkritik. Die Anklage des gemeinschaftlichen Totschlags gegen ihn und seine Mitangeklagten wies Honecker ebenso zurück wie er die Zuständigkeit des Gerichts bestritt. Honeckers Erklärung dauerte 70 Minuten und war von einer 40minütigen Pause unterbrochen.

Wegen des offenkundig weiter fortgeschrittenen Krebsleidens des 80jährigen Honecker soll die bisher noch auf Ende nächster Woche festgesetzte neuerliche medizinische Untersuchung vorgezogen werden. Vom Ausgang dieser Untersuchung hat die 27. Strafkammer des Landgerichts ihre Entscheidung über den Antrag der Verteidiger abhängig gemacht, das Honecker-Verfahren vom Gesamtverfahren abzutrennen und einzustellen sowie ihren Mandanten aus der Haft zu entlassen. Neben Honecker und dem früheren Verteidigungsminister Heinz Keßler sind noch der ehemalige Vize-Verteidigungsminister Fritz Streletz und der Suhler SED-Bezirkssekretär Hans Albrecht angeklagt – alle als frühere Mitglieder des Nationalen Verteidigungsrates der DDR.

In einzelnen bezeichnete Honecker das Gericht als ein „Gericht der Sieger über uns Besiegte", den gegen ihn geführten Prozeß als eine „Farce", ein „Polit-Schauspiel" und einen „Nürnberger Prozeß gegen Kommunisten" mit dem Ziel, den Sozialismus und den DDR-Staat noch nachträglich zu diskreditieren und sich politischer Gegner mit den Mitteln des Strafrechts zu entledigen. Der Verunglimpfung der DDR dienten auch die medienwirksam vermarkteten und mißbrauchten Toten an der Mauer. Die toten DDR-Grenzsoldaten, zum Beispiel, würden überhaupt nicht erwähnt. „Der unnatürliche Tod jedes Menschen in unserem Land hat uns immer bedrückt. Der Tod an der Mauer hat uns nicht nur menschlich betroffen, sondern auch politisch geschädigt." Und: „Die Toten sollen die Unmenschlichkeit der DDR und des Sozialismus beweisen und von der Misere der Gegenwart und den Opfern der sozialen Marktwirtschaft ablenken."

Honecker machte geltend, daß die DDR und ihre Repräsentanten politisch weltweit anerkannt gewesen seien. Wenn die DDR jetzt als Unrechtsstaat gebrandmarkt werde und ihre Repräsentanten zu Verbrechern gestempelt würden, diene dies der Vorbereitung vieler anderer politischer Prozesse gegen Bürger der früheren DDR. Es werde hier zudem nicht nur der Kalte Krieg fortgesetzt, sondern auch der Grundstein für ein „Europa der Reichen und der Millionäre" gelegt.

Honecker nannte die Anklage einen „Unrechtsakt" und wies sie mit dem Hinweis auf die Block-Konfrontation nach dem Zweiten Weltkrieg zurück. Die Entscheidung zur Sperrung der Grenzen in Deutschland sei am 5. August 1961 in Moskau „nicht leichten Herzens" durch den Warschauer Pakt beschlossen worden, von dem die DDR nur ein geringerer Teil gewesen sei. Er, Honecker, habe persönlich den Mauerbau mitverantwortet und befürwortet, weil in der seinerzeitigen Spannungssituation sonst ein Weltund ein Atomkrieg gedroht habe. Im übrigen sei die deutsche Teilung „nicht ein Werk der Kommunisten (gewesen), sondern das Werk der westlichen Alliierten und Konrad Adenauers". Ohne den durch die Mauer erst ermöglichten deutsch-deutschen Grundlagenvertrag hätte es weder politische Entspannung noch die Einheit Deutschlands gegeben. Deswegen treffe ihn und seine Genossen „nicht nur keine juristische, sondern auch keine politische und moralische Schuld".

Positiv im Vergleich zu Westdeutschland sei Honeckers soziale Bilanz des „gescheiterten Experiments" der DDR aus, die keine Arbeitslosigkeit, keine Obdachlosigkeit, keinen Drogenmißbrauch und viel weniger Kriminalität gekannt habe. Honecker, der seinen Vortrag mit dem Hinweis eingeleitet hatte, daß er wegen seiner tödlichen Krankheit Urteil und Strafe ohnehin nicht mehr erleben werde, schloß mit den Worten: „Tun Sie, was Sie nicht lassen können." (Seite 4)

Wahlkommission lehnt Panics Kandidatur ab

Belgrad (Reuter) – Die serbische Wahlkommission hat die Kandidatur des jugoslawischen Ministerpräsidenten Milan Panic für das Amt des serbischen Präsidenten mit der Begründung abgelehnt, er erfülle nicht die Voraussetzung, wonach ein Kandidat mindestens ein Jahr in Serbien gelebt haben muß. Der Regierungschef nannte die Entscheidung „verfassungswidrig" und kündigte eine Klage vor dem serbischen Verfassungsgericht an. Panic, der amerikanischer Staatsbürger ist und erst vor fünf Monaten nach Serbien zurückkehrte, wollte am 20. Dezember gegen den umstrittenen Amtsinhaber Slobodan Milosevic antreten.

Westdeutsche Wirtschaft weiter im Abschwung

München (SZ) – Die westdeutsche Wirtschaft befindet sich weiter im Abschwung. Nach Angaben des Statistischen Bundesamtes in Wiesbaden sank das Bruttoinlandsprodukt im dritten Vierteljahr wie bereits im zweiten Quartal 1992 gegenüber dem Vorquartal um 0,5 Prozent. Noch stärker ausgeprägt war der Rückgang beim Bruttosozialprodukt; hier war sogar ein Minus von 1,5 Prozent zu verzeichnen. Erstmals seit 1982 wird die westdeutsche Industrieproduktion laut Ifo-Institut in diesem Jahr abnehmen. Im Durchschnitt dürfte sich der Rückgang im verarbeitenden Gewerbe auf 1,5 Prozent belaufen, heißt es. (Seite 21)

Nahezu drei Millionen Arbeitslose in Ost und West

ps. **Nürnberg** (Eigener Bericht) – Die Zahl der Arbeitslosen in Deutschland nähert sich der Drei-Millionen-Grenze, teilte die Bundesanstalt für Arbeit in Nürnberg mit. 2,97 Millionen Menschen waren im November ohne Beschäftigung. Im Westen stieg ihre Zahl um 54 000 auf 1.884 Millionen an. Das entspricht einer Quote von 6,1 Prozent. In den neuen Ländern nahm die Arbeitslosigkeit um 11 000 auf 1,087 Millionen (Quote: 13,4 Prozent) ab. Die Kurzarbeit hat laut Bundesanstalt besonders kräftig zugenommen. Allein in Westdeutschland stieg ihre Zahl im Vergleich zum Oktober um 151 000 auf 478 000. (Seiten 4, 6, 21, 37 und 60)

Schiller verurteilt Gerede über Währungsreform

Th. **Hamburg** (Eigener Bericht) – Die Anfänge einer Rezession greifen auf Deutschland über. Diese Einschätzung gab der frühere Bundeswirtschafts- und -finanzminister Karl Schiller in einem SZ-Interview. Angesichts der hohen Staatsschulden könne man aber nicht mehr, wie 1966/67 bei der von Schiller mitbewerkstelligten Überwindung der ersten Rezession, mit „deficit spending" entgegenhalten. Konjunkturbedingte Steuerausfälle müßten allerdings durch zusätzliche Neuverschuldung ersetzt werden. Für „völligen Humbug" hält es Schiller, von der Gefahr einer Währungsreform zu sprechen. (Wortlaut Seite 24)

Konferenz in Dschidda drängt UNO zu sofortigem Handeln

Islamische Staaten fordern Militärintervention in Bosnien
Einzelaktionen muslimischer Länder abgelehnt / Sarajewo weiter unter schwerem Beschuß / Alle Flüge ausgesetzt

Dschidda/Sarajevo (Reuter/dpa/AP) – Anhaltende Kämpfe in Bosnien-Herzegowina haben den Druck auf die Vereinten Nationen verschärft, mit einer Militärintervention dem Blutvergießen ein Ende zu machen. Für den Einsatz militärischer Gewalt sprachen sich die in der Islamischen Weltkonferenz (OIC) zusammengeschlossenen Länder zum Abschluß ihrer Konferenz in Dschidda aus. Die UNO-Friedenstruppen setzten am Donnerstag sämtliche Flüge im ehemaligen Jugoslawien für 48 Stunden aus, nachdem eine Maschine mit dem UNO-Kommandeur für Bosnien an Bord unter Beschuß geraten war. Unblutig endete die Geiselnahme eines UNPROFOR-Soldaten, der von Unterkunften in Kiseljak verschleppt worden war. Er wurde nach mehreren Stunden freigelassen.

In der Abschlußerklärung der OIC, die 50 Mitglieder hat, wird der UNO-Sicherheitsrat aufgefordert, umgehend alle notwendigen Maßnahmen einschließlich der Anwendung von Gewalt gegen Serbien und Montenegro zu ergreifen, um die Kämpfe zu beenden. Zugleich verlangte Rat sie vom Rat, Bosnien-Herzegowina vom Waffenembargo auszunehmen. Der Rat solle den OIC-Mitgliedern die unverzügliche Lieferung von Waffen an Bosnien-Herzegowina erlauben. In der Erklärung der Konferenz wird das Recht Bosnien-Herzegowinas auf Selbstverteidigung betont. Alle OIC-Mitglieder werden aufgerufen, Bosnien dabei zu unterstützen. Der Rat wurde gebeten, vor dem 15. Januar die Lage in Bosnien-Herzegowina zu überprüfen, damit entsprechende UNO-Resolutionen umgesetzt werden könnten.

Der saudische Außenminister Prinz Saud el Faisal erklärte, der Termin 15. Januar sei kein Ultimatum. Die Konferenz habe lediglich einen Zeitrahmen geben wollen. Diplomaten in Dschidda erklärten, mit der Setzung eines Termins für den Sicherheitsrat seien zunächst sofortige Einzelaktionen islamischer Länder aufgeschoben worden. Während der Beratungen hatten sich mehrere islamische Staaten bereit erklärt, der UNO Truppen zu Verfügung zu stellen, um ihren muslimischen Glaubensbrüdern in Bosnien beizustehen. Ein Alleingang für eine sofortige militärische Intervention außerhalb des Rahmens der UNO sei besonders von Iran, der Türkei, Algerien, Indonesien und Senegal unterstützt worden, hieß es in Konferenzkreisen. Auf der Konferenz hatten die Jugoslawien-Beauftragten von UNO und EG, Cyrus Vance und David Owen, einer militärischen Intervention in Bosnien erneut eine Absage erteilt.

Der britische Verteidigungsminister Malcolm Rifkind sprach sich am Donnerstag erneut gegen eine militärische Intervention im Jugoslawien-Konflikt aus. Im BBC-Fernsehen erklärte Rifkind weiter, es sollten aber Maßnahmen zur Durchsetzung des über Bosnien-Herzegowina verhängten Flugverbots ergriffen werden. Das Verbot werde von den Serben laufend mißachtet, was unannehmbar sei.

In Bosnien hielten die Kämpfe unterdessen unvermindert an. Die muslimischen Stadtteile Sarajewos waren auch am Donnerstag erneut heftigen Artillerieangriffen der Serben ausgesetzt. Um die notleidende bosnische Zivilbevölkerung zu versorgen, soll am Montag ein Teil der Bahnstrecke zwischen der kroatischen Hafenstadt Ploce und Herzegowinas Hauptstadt Mostar wieder in Betrieb genommen werden, teilte das UNO-Flüchtlingshilfswerks in Zagreb mit. Sollte sich diese „Probefahrt" als Erfolg erweisen, so plant das Hilfswerk danach eine ähnliche Fahrt zwischen Mostar und Sarajewo.

DIE SEITE DREI

Der übermächtige Drang zur Mitte

Vor der Wahl zur Nationalversammlung in Slowenien. Von Bernhard Küppers

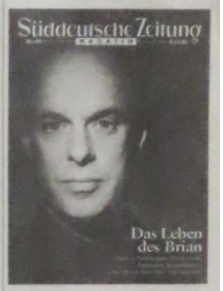
LEITARTIKEL Seite 4

Der ungeliebte Vertrag

Von Franz Thoma

Außer dem Risiko einer instabilen Währung bringt der eben vom Bundestag ratifizierte Vertrag von Maastricht wenig greifbare Resultate. Deshalb gehört er zunächst auf Eis gelegt.

HEUTE IM MAGAZIN:



Das Leben des Brian: Brian Eno, der Chefästhetiker des Pop, über seine ersten Kindheitserinnerungen, Little Richard und den Zauber von Parfüm.
Tatort Thale: Spurensuche in einer deutschen Kleinstadt – wie es zum Überfall auf ein Asylantenheim kam.

Sachsen unterstützt SPD-Länder

Länderfinanzminister wollen Bundesetat 1993 aufhalten

Bonn (AFP) – Die Finanzminister der Länder haben empfohlen, wegen des Bundeshaushalts 1993 den Vermittlungsausschuß von Bundestag und Bundesrat anzurufen. Falls die Länderkammer bei der Sitzung am 18. Dezember dieser Empfehlung folgt, könnte das Inkrafttreten des Haushaltes verzögert werden. Der Vermittlungsausschuß könnte voraussichtlich erst im Januar zusammenkommen. Wie zu erfahren war, stimmte im Finanzausschuß des Bundesrates am Donnerstag in Bonn neben SPD-Ländern auch das CDU-regierte Sachsen für die Anrufung des Vermittlungsausschusses. Der SPD-Haushaltsexperte Helmut Wieczorek wertete die Empfehlung als „ein tiefes Geschichte der Bundesrepublik noch nicht dagewesenes Mißtrauensvotum gegenüber dem Finanzgebaren der Bundesregierung". Die Regierung habe kein schlüssiges Programm für den Aufbau der neuen Länder vorgelegt.

Spanischer Atlantikküste droht eine Ölpest

La Coruña (Reuter) – Vor der spanischen Atlantikküste ist am Donnerstag der mit 80 000 Tonnen Rohöl beladene griechische Öltanker Aegean Sea auf Grund gelaufen, auseinandergebrochen und in Brand geraten. Der Öltepich hat bereits einige Strände verseucht. (Seite 12)

Gestern in den Kammerspielen

Ein Scheißstück

„Scheiße" ist Arthur Kopits Lieblingswort. Alles in seinem Zweiakter „Road to Nirvana" ist Scheiße. Der Film, das Geschäft und die Menschen schon überhaupt. Ein sehr überflüssiges Stück über Hollywood-Karrieren! In den ansprechenden Bühnenbildern von Jürgen Rose inszenierte Kammerspiel-Hausherr Dieter Dorn eher schwerfällig etwas Boulevardeskes. Allerdings: mit vier brillanten Schauspielern. Lambert Hamel, Manfred Zapatka, Andrea Bürgin und Susanne Melles begeisterten das Publikum. chs

Aktienhandel schleppend

München (SZ) – Bei schleppendem Geschäft waren am Donnerstag die Notierungen an den deutschen Börsen behauptet. Der Aktienindex DAX betrug 1332,50 (–1,46) Punkte. Das Umlaufvolumen öffentlicher Anleihen sank um zwei Hundertstel auf 1,31 Prozent. In Frankfurt betrug der Mittelkurs des Dollars 1,5811 (1,5794) Mark, und in New York schloß die US-Währung mit 1,5825/33 Mark. (Bericht Seite 28, Kurse Seiten 29–32)

Zeitweise Regen

München (SZ) – Eine kräftige Westströmung mit zunächst milder, später kalter Meeresluft bestimmt die Wetterlage. Vorhersage: Stark bewölkt, zeitweise Regen. Höchstwerte bis 10, Tiefstwerte bis 5 Grad. (SZ-Wetterbericht Seite 2)

Heute in der SZ

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Das Ministerium für Frauen und Jugend weist mit einer Aufklärungskampagne auf die wachsende Gewalt gegen Kinder hin. Von Bernd Geiser

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Wenn der Putz abbröckelt
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Das Abenteuer eines Dialogs
Was dabei herauskommt, wenn ukrainische Künstler ihre Begegnung mit dem Westen verarbeiten. Von Franz Kotteder

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Hunderttausend Bürger werden zur Lichterkette erwartet. Von Frank Müller

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GEW-Appell an Pädagogen, sich mutig gegen Gewalt zu stellen. Von Dietrich Mittler

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10.1 Kernenergie

AKTIV-REPORT 24. Oktober 1998 / Seite 4

Der Aufschrei hallt noch nach: Seit Monaten sind Atomtransporte in und aus Deutschland gestoppt, und seit Monaten träufeln die Medien die Legende von „verstrahlten Castoren" in die Köpfe – ungeachtet der Tatsache, daß es gar keine verstrahlten Castoren gegeben hat. Überhöhte Kontaminationen wurden vielmehr bei französischen Behältern festgestellt. Selbst der Hinweis von Strahlenschutz-Fachleuten, von den Kontaminationen sei zu keiner Zeit eine Gesundheitsgefahr ausgegangen, ging im allgemeinen Presse- und Polit-Rummel unter.
Zeit für eine Klarstellung der näheren Umstände eines „Skandals".



Krach um Castor: Am Kern vorbei

Sommerliche Temperaturen, am blauen Himmel über der imposanten Kulisse des Kernkraftwerks in Stade lacht die Sonne – ein herrlicher Oktobertag an der Elbe. In einem hellen Sitzungszimmer im Verwaltungsgebäude sitzen der Strahlenschutztechniker Karsten Köpke, der Strahlenschutzarbeiter Dietrich Gohde und Joachim Scheer, der Leiter der Überwachungsabteilung. Und hier ist die Stimmung wie seit sieben Tagen Regenwetter.

Der Grund: Seit dem Bekanntwerden von Kontaminationen an Atomtransporten stürzen sich Presse und Politik auf die Kerntechnik wie die Geier aufs Aas.

Nur mit Mühe hält Karsten Köpke seinen Ärger im Zaum:



Frustriertes Duo: Dietrich Gohde und Karsten Köpke bei Routinearbeiten im Kernkraftwerk Stade.



Joachim Scheer: „Unsachliches Polit- und Pressegeschepper."

„Bei uns sind alle Transporte sauber rausgegangen", bekräftigt er. Erst in französischen Verladebahnhöfen seien die Kontaminationen aufgetreten. Restlos auf die Palme bringt das Trio allerdings die Unsachlichkeit der öffentlichen Diskussion.

Rund 4 000 Becquerel betrug die größte an einem Waggon aus Stade festgestellte Kontamination. Dazu Überwachungs-Chef Joachim Scheer: „Selbst wenn ein Mensch diese Kontamination wie ein Schoko-Eis abschlecken würde, betrüge die Strahlenbelastung gerade mal 0,03 Millisievert."

Zum Vergleich: Eine Dosis von 2 Millisievert nimmt jeder Mensch durch die natürliche Umgebungsstrahlung pro Jahr auf. Scheer ergänzt: Sämtliche Kontaminationen befanden sich in den Bodenwannen des Waggons oder an den Behältern. Darüber liegt jedoch ein Schutzhemd, von außen sind die Verunreinigungen also überhaupt nicht zugänglich!"

Die Fachleute aus Stade fühlen sich zu Unrecht an den Pranger gestellt. Scheer: „Für uns ist einfach nicht nachvollziehbar, welches unsachliche Polit- und Pressegeschepper da losgetreten wurde." Zu keiner Zeit habe eine Gefahr für Menschen bestanden. „In der Öffentlichkeit jedoch kam das ganz anders rüber."

„Wir reden vor die Wand"

Mit Folgen, die auch vor dem Privatleben der im Stader Kernkraftwerk Beschäftigten nicht haltmachen. Strahlenschutzfachkraft Dietrich Gohde: „Selbst in meiner Familie wird mir nicht mehr geglaubt, daß unsere Arbeit kein Risiko birgt. Das ist doch dein Arbeitsplatz, bekomme ich zu hören, da kannst du ja gar nichts anderes sagen."

Dem frischgebackenen Vater Karsten Köpke geht es ähnlich. „Seit Monaten rede ich in meinem Freundeskreis vor die Wand", ärgert er sich. Ständig müsse er sich fragen lassen, ob er denn verrückt sei, täglich mit einer Technik zu arbeiten, die doch gar nicht beherrschbar sei. Köpke: „Es ist einfach frustrierend, wenn man mit sachlichen Argumenten nicht mehr weiterkommt."

Joachim Scheer bringt die Sorgen der Stader auf den Punkt: „Meine Kinder sagen in der Schule aus Angst vor Repressalien nicht mehr, wo ihr Vater arbeitet. So weit sind wir hier gekommen."

Ulrich Halasz





Nicht gestrahlt und doch gestraft: Der Castor-Behälter (Foto oben). Die von der deutschen Firma GNB hergestellten Behälter des Typs Castor (**C**ask for **S**torage and **T**ransport **o**f **R**adioactive Material) werden für Transporte abgebrannter Brennelemente innerhalb Deutschlands – wie im März nach Ahaus – verwendet (Foto Mitte). Kontaminationen wurden aber lediglich an Transportbehältern französischer Fertigung (Foto unten) auf dem Weg zur Wiederaufbereitungsanlage La Hague festgestellt. Ziel in Frankreich, also Transportmittel französisch – darum kam bislang hierfür kein Castor zum Einsatz. Fotos: dpa (3), Halasz (3)

Becquerel und Millisievert

Becquerel und Millisievert – seit Monaten geistern diese Begriffe durch die Medienwelt. Fast ebenso häufig allerdings werden sie falsch verwendet. Was also bedeuten sie?

● Als Radioaktivität bezeichnet man die Eigenschaft bestimmter Atome, ständig Energie in Form von Strahlung abzugeben. Die Einheit **Becquerel** (Bc) gibt dabei die physikalische Anzahl der radioaktiven Zerfälle eines Atoms an. Ein Becquerel bedeutet also einen Kernzerfall pro Sekunde.

● Für eine Gesundheitsgefährdung ist dagegen die von einem Menschen empfangene radioaktive Strahlungsdosis entscheidend. Diese Dosis wird in **Sievert** (Sv) gemessen. Kleine Dosen werden in Millisievert angegeben (1 Sv = 1 000 mSv).

Für Personen, die beruflich mit Radioaktivität in Berührung kommen, sieht die Strahlenschutzverordnung einen jährlichen Maximalwert von 50 Millisievert vor.

Ausstieg: Was wäre, wenn...?

● 30 Prozent des deutschen Stroms werden in deutschen Kernkraftwerken produziert. Ersetzt die Bundesrepublik die Kernenergie durch konventionelle Kohlekraftwerke, kann sie ihre internationalen Klimaschutzverpflichtungen nicht einhalten.

● Auch der Übergang zu vergleichsweise emissionsarmen Erdgasanlagen ist nicht ohne Risiko: 70 Prozent der Welt-Erdgasvorräte befinden sich in Ländern der ehemaligen UdSSR und im Nahen Osten – also in politisch labilen Regionen.

● Durch einen Ausstieg aus der Kernenergie gingen in Deutschland 40 000 hochqualifizierte Arbeitsplätze verloren.

● Werden deutsche Kernkraftwerke abgeschaltet, kaufen die Energieversorger Strom im Ausland – auch aus Kernkraftwerken.

● Deutschland betreibt die weltweit sichersten Kernkraftwerke. Es wäre unverantwortlich, diese stillzulegen, während zum Beispiel in Osteuropa Reaktoren mit ungleich niedrigeren Sicherheitsstandards weiterbetrieben würden. Nur wenn Deutschland seine Kompetenz für Bau und Betrieb von sicheren Kernreaktoren erhält, kann es Sicherheitsverbesserungen weltweit durchsetzen.

● Eine sofortige Umstellung von Kerntechnik auf regenerative Energien wie Sonne, Wind und Wasser ist nicht möglich. Erneuerbare Energien stehen nicht ständig zur Verfügung. Außerdem: In den letzten Jahren wurden in Deutschland 5 000 Windkraftanlagen installiert. Diese liefern jedoch gerade einmal 1 Prozent des deutschen Strombedarfs.



„Für die Gegner eine weitere willkommene Gelegenheit"

Von Unsicherheit bis Empörung – die Grenzwertüberschreitung bei Atomtransporten hat heftige Reaktionen ausgelöst. Wie aber steht es um die Fakten? Fragen an Heinz-Peter Butz, Leiter der Abteilung Kommunikation der Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) in Köln.

AKTIV: Herr Butz, die GRS war mit der luchenlosen Aufklärung der Vorkommnisse um die Atommülltransporte beauftragt. Ihre Erkenntnisse?

Butz: Es hat sich gezeigt, daß das vorhandene technische Instrumentarium grundsätzlich ausreicht, die Behälter mit der strahlenden Fracht so zu transportieren, daß die Grenzwerte eingehalten werden. Die meisten Transporte waren ohne Befund.

AKTIV: Was heißt grundsätzlich?

Butz: Es ist nicht akzeptabel, daß über 20 Prozent der Transporte in die französische Wiederaufbereitungsanlage La Hague Grenzwertüberschreitungen aufgewiesen haben. Wir empfehlen Verbesserungen im technischen Bereich bei den Be- und Entladevorgängen. Wir werden hier die Vorschläge der Industrie bewerten.

AKTIV: Wie bewerten Sie den Skandal um die verstrahlten Castor-Transporte?

Butz: Es gab überhaupt keinen Castor-Skandal. Castoren sind deutsche Transportbehälter. Bei den mit diesem Behältertyp durchgeführten Transporten wurde nur an einem einzigen Behälter eine überhöhte Kontamination festgestellt. Nochmal: Castor ist kein Synonym für Atomtransporte, sondern ein eigenständiges Produkt.



Heinz-Peter Butz: „Strahlendosis stellte nie und nimmer eine reale Gefahr dar."

AKTIV: Was hat denn nun gestrahlt?

Butz: Bei Atom-Transporten aus deutschen KKW nach La Hague sind bei Behältern französischer Fertigung und an den Eisenbahnwaggons Kontaminationen festgestellt worden...

AKTIV: ...die weit über dem zulässigen Grenzwert von 4 Becquerel pro Quadratzentimeter lagen.

Butz: Es handelte sich um lokale Verunreinigungen, für die es drei Ursachen geben kann. Ursprünglich festhaftende Kontamination, die sich während des Transports infolge thermischer, mechanischer und chemischer Einflüsse in nichtfesthaftende und damit durch Wischproben erfaßbare Kontamination umwandelt.

Zweitens: Radioaktives Restwasser oder radioaktive Partikel können aus Poren oder Hohlräumen an die Oberfläche des Behälters gelangen.

Und: Beim Be- und Entladen kann Kontamination von kontaminiertem Arbeitsmaterial übertragen werden.

AKTIV: Der Atomindustrie war dieses Phänomen bekannt. Warum hat sie es lange verschwiegen?

Butz: Ich nehme an, weil selbst erhebliche Überschreitungen der Grenzwerte nie und nimmer eine reale Gefahr darstellten. Man hat wohl unterschätzt, wie ein Bekanntwerden der Vorkommnisse von der Öffentlichkeit aufgenommen würde. Hier lag der Fehler. Angesichts der kontroversen Kernenergie-Diskussion ist eine vollständige Offenheit der richtige Weg.

AKTIV: An einem Transport wurde eine punktuelle Strahlung von 22 600 Becquerel festgestellt. Das soll harmlos sein?

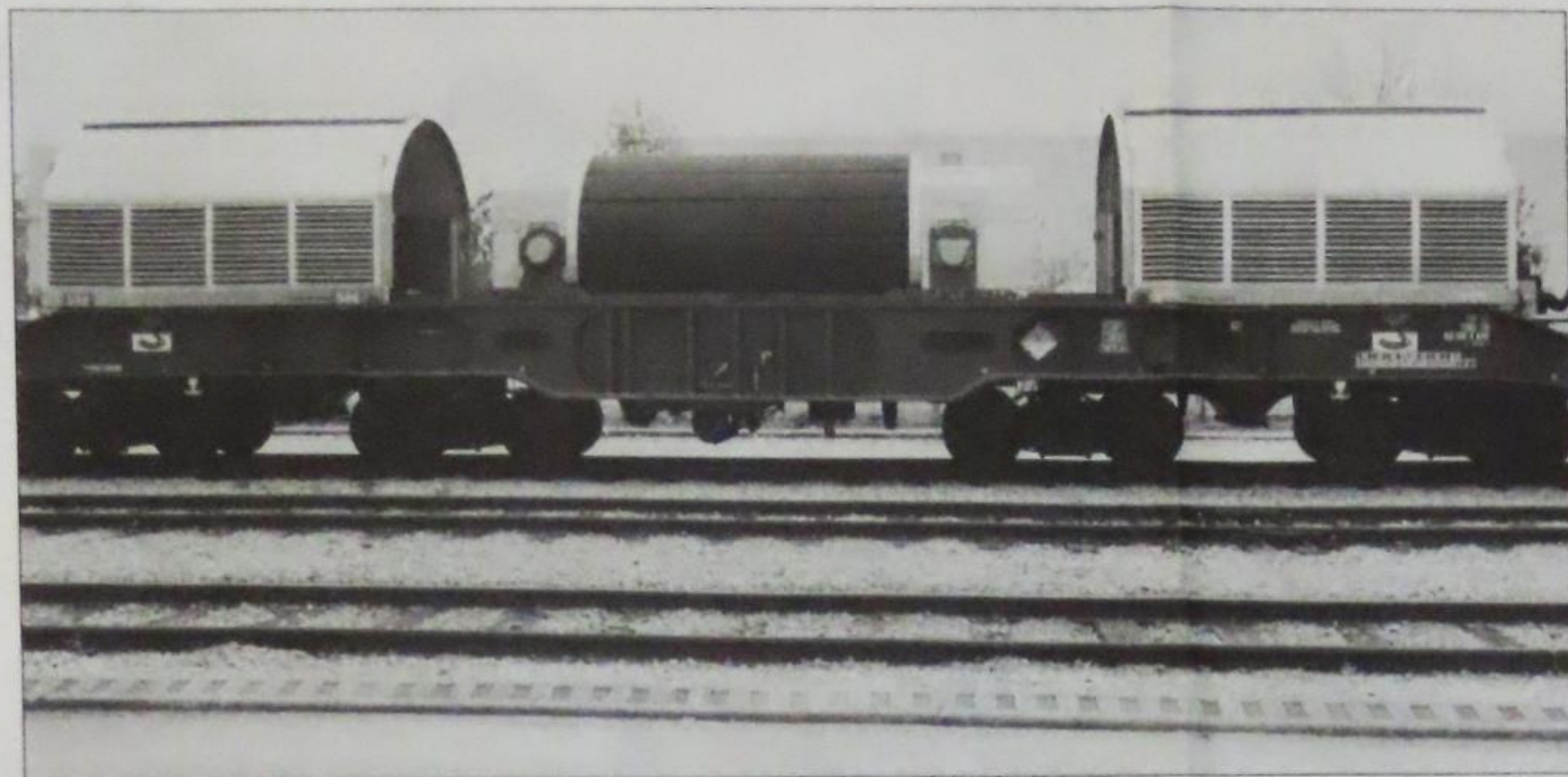
Butz: So ist es. Zum Vergleich: Ein Mensch strahlt mit rund 10 000 Becquerel, ein Kilo Kalidünger mit über 6 000 Becquerel. Im übrigen kommt es immer auf die Strahlendosis in Millisievert an, nicht auf die in Becquerel gemessene Aktivitätsmenge.

AKTIV: Was bedeutet das beispielsweise für einen Polizisten, der neben einem Transport herläuft?

Butz: Aus der Sicht des Strahlenschutzes war die Strahlendosis zu vernachlässigen.

AKTIV: Weshalb dann der ganze Zauber?

Butz: Gute Frage. Auf der einen Seite müssen Grenzwerte eingehalten werden. Auf der anderen Seite war es in meinen Augen für diejenigen, die die Kernenergie aus ideologischen Gründen ablehnen, eine willkommene Gelegenheit, sie weiter zu diffamieren. *UH*



Nach der Entdeckung unzulässig hoher Kontamination (hier ein Zug im französischen Armanville) wurden die Abtransporte ausgedienter Brennelemente aus deutschen Kernkraftwerken eingestellt. Die Wiederaufarbeitung ist nur in ausländischen Anlagen möglich. Foto: dpa

Kernenergie: Atomtransporte stürzen die Branche erneut in eine Vertrauenskrise

Meldewege haben Lücken

VDI nachrichten, 29. 5. 98 –
Viele haben davon gewußt, daß zumindest theoretisch die radioaktiven Rückstände an der Außenhaut der Castorbehälter zu erhöhter Strahlung führen können. Aber keiner wollte es so recht glauben – bis die Transporte der Brennelemente eingestellt wurden.

Angela Merkel vor der Bundespressekonferenz: Der Mahner und Kritiker Professor Schlich habe unabhängige deutsche Gerichte von seinen Einschätzungen nicht überzeugen können. Das holten französische Behörden nach. Ende April meldeten sie nach Deutschland, daß bei den letzten Messungen der Atomtransporte in Frankreich erhöhte radioaktive Kontaminationen in 16 Fällen gemessen wurden. In einigen Fällen lag die Strahlenbelastung erheblich höher als der Grenzwert. Der liegt bei vier Bq/cm². Der höchste gemessene Wert lag bei 13 400 Bq/cm².

Wie inzwischen bekannt ist, haben französische Behörden schon früher auf Grenzwertüberschreitungen bei Transporten abgebrannter Brennelemente auch aus Deutschland hingewiesen. Nach Angaben des Vorstandschefs der Hamburgischen Elektrizitätswerke, Manfred Timm, wurde das Kieler Energieministerium als zuständige Aufsichtsbehörde über erhöhte Werte in den Jahren 1986 und 1988 informiert. Schon 1985 unterrichtete die in Hanau ansässige nukleare Transportgesellschaft NTL nach Hinweisen aus Frankreich das Kernkraftwerk Philippsburg über eine erhöhte Strahlenbelastung bei zwei Transporten. Auch der Essener Energieversorger RWE erhielt 1994 einen blauen Brief mit Hinweisen aus Frankreich.

Die Gegner der Kernenergie sehen ihre Proteste gegen die Castortransporte im nachhinein gerechtfertigt. Sie werfen Merkel vor, der Atomindustrie zu sehr zu Diensten gewesen zu sein. Sie glauben ihr nicht, daß sie nichts gewußt habe. Sie sehen eine Kumpanei zwischen ihr und der Atomindustrie. Sie haben inzwischen bei sieben Staatsanwaltschaften gegen die Betreiber der fraglichen Atomkraftwerke, aber auch gegen Verantwortliche im Bonner Umwelt- und Verkehrsministerium Anzeige erstattet wegen verstrahlter Atomtransporte. Aus der Opposition kommen Stimmen, die Bundesumweltministerin Angela Merkel zum Rücktritt auffordern. Zurückhaltender ist die Führung der SPD. Sie erwartet von der Umweltministerin, zweifelsfrei zu machen, daß sie vor dem 24. April keine Kenntnis von den erhöhten Strahlenwerten bei den Castortransporten hatte. Merkel hat das mehrfach beteuert und dabei auf die Messungen verwiesen, die in Deutschland durchgeführt wurden. Und die hatten keine Anhaltspunkte für eine erhöhte Strahlenbelastung geliefert.

Auch die Spitzen der Betreiberfirmen deutscher Atomkraftwerke wollen von den Vorgängen nicht unterrichtet worden sein. Das Problem sei in ihren Unternehmen auf der Fachebene behandelt worden. Die Mitarbeiter hätten die politische Brisanz der Vorkommnisse weit unterschätzt. Hinweise an die Aufsichtsbehörden seien unterblieben, weil für solche Vorkommnisse keine Meldepflicht besteht. Inzwischen hat sich die deutsche Atomwirtschaft bei Bundesumweltministerin Angela Merkel öffentlich entschuldigt. Auf der kerntechnischen Jahrestagung in München Anfang der Woche bedauerte der Präsident des Deutschen Atomforums, daß durch das Fehlverhalten der Kernkraftwerksbetreiber die Bundesumweltministerin in erhebliche politische Schwierigkeiten geraten sei.

Die Atomwirtschaft versichert, alles daran zu setzen, den Vertrauensverlust wieder wettzumachen und den Zehnpunkteplan zu erfüllen, mit dem Merkel am Montag dieser Woche in die Offensive ging. Dabei erhob sie schwere Vorwürfe gegen die Energieversorgungsunternehmen wegen gravierender Mängel im Informationssystem und gegen die Länder, weil die Aufsicht über die Kernkraftwerke und die Beladung der Castorbehälter mit abgebrannten Brennelementen in deren Zuständigkeit liege.

Merkel will schnell Klarheit über die Ursachen der erhöhten Strahlung und darüber schaffen, wie sie abgestellt werden können. Sie beauftragte damit die Gesellschaft für Anlagen- und Reaktorsicherheit. Geklärt werden soll auch, wie es dazu kam, daß wichtige Informationen nicht weitergeleitet wurden. Merkel: Für die Akzeptanz von Hochtechnologien sei es unverzichtbar, daß Grenzwerte sorgfältig kontrolliert, Überschreitungen oder Nichteinhaltungen umgehend abgestellt werden. Sie kündigte Konsequenzen für den Meldeweg in den Kernkraftwerken sowie zwischen den Behörden an. Auch müsse die Unübersichtlichkeit der Aufgaben- und Verantwortungsstruktur des Transportsystems beseitigt werden. Solange die Ursachen des Kontaminationsproblems ungeklärt und kein neues Informationssytem geschaffen sei, bleibe der Stopp von Transporten bestehen.

Die Gewerkschaft der Polizei fordert eine Sondersitzung auch der Länderinnenminister. Sie will wissen, wie gefährdet die Beamten durch die erhöhte Strahlung gewesen seien. Das Pariser Strahlenschutzamt OPRI hat inzwischen damit begonnen, rund 60 Arbeiter des Eisenbahndepots von Sotteville-les-Rouen in Nordfrankreich auf deren radioaktive Belastung hin zu überprüfen.

In einem sind sich alle einig: Die Vorgänge um die Atomtransporte haben das Vertrauen in den verantwortungsvollen Umgang mit der Kerntechnik erneut tief erschüttert. Der Staatsminister im Kanzleramt, Bernd Schmidtbauer, sagte: Die Betreiber der Kernkraftwerke hätten das in sie gesetzte Vertrauen verspielt. Die Wirtschaft, aber auch die Gewerkschaft Bergbau, Chemie und Energie warnen davor, die Mängel bei den Transporten nun gegen die Kernenergie zu instrumentalisieren.

HAGEN BEINHAUER

Strahlung

Radioaktivität und Grenzwerte

VDI nachrichten, 29. 5. 98 –
Als Radioaktivität wird die spontane Umwandlung eines Atomkerns unter Abgabe ionisierender Strahlung bezeichnet. Sie wird gemessen durch die Anzahl der Zerfälle pro Sekunde. Die Maßeinheit ist das Becquerel (Bq). Die Aktivität von 1 Bq liegt vor, wenn in einer bestimmten Menge eines Radionuklides 1 Atomkern pro Sekunde zerfällt.

Die Wirkung ionisierender Strahlung wird maßgeblich bestimmt durch die auf Materie und Gewebe übertragene Energie. Diese Energiedosis wird gemessen in Joule (J) pro Kilogramm (kg), kurz Gray (Gy) genannt (1 Gy = 1 J/kg). Verschiedene Arten ionisierender Strahlung haben bei gleicher Energiedosis in lebendem Gewebe unterschiedliche Strahlenwirkungen. Dabei sind Alpha-Strahlen und schnelle Neutronen 10- bis 20mal so wirksam (Qualitätsfaktur 10 bis 20) wie Beta-Strahlung, Gamma-Strahlung und Röntgen-Strahlung. Das Produkt aus der Energiedosis und dem Qualitätsfaktor wird als Äquivalentdosis bezeichnet. Die Einheit ist das Sievert (Sv). Für beruflich strahlenexponierte Personen wurden als Dosisgrenzwert 50 mSv (Millisievert) pro Jahr festgesetzt. Für die nicht beruflich exponierte Bevölkerung gilt der Grenzwert von 0,3 mSv pro Jahr jeweils für den Luft- und Wasserpfad. my/mg

Castorbehälter

Gewaschen und dennoch strahlend

VDI nachrichten, 29. 5. 98 –
Abgebrannte Brennelemente eines Kernkraftwerkes werden zunächst in einem mit Wasser gefüllten Abklingbecken gelagert, wo sich die Radioaktivität verringert. Der Transportbehälter, der Castor, taucht in das radioaktiv verseuchte Wasser ein, wird mit den Brennelementen beladen und unterhalb der Wasseroberfläche verschlossen.

Nach Ende des Beladevorganges wird der Castor wieder aus dem Abklingbecken emporgehoben und kommt in eine Dekontaminierungsanlage, in der Hochdruckreiniger die radioaktiven Reste vom Äußeren des Behälters entfernen. Dennoch bleiben strahlende Reste am Transportbehälter haften, wie Messungen zeigen. Experten nehmen an, daß Reste des Wassers aus dem Abklingbecken sich in feinen Fugen zwischen dem Körper, Dekkel oder Transportzapfen des Castors festsetzen und während des Bahntransportes durch Rüttelbewegungen und unterschiedliche Wärmedehnungen „ausgeschwitzt" werden. mg

Transportbehälter: Partikel haften an der Oberfläche

Greenpeace befürchtet Gefahren für Transportarbeiter und Polizisten

VDI nachrichten, 29. 5. 98 –
„Bundesumweltministerin Merkel wie auch die Betreiber von Atomkraftwerken haben behauptet, daß von den radioaktiv verseuchten Transportbehältern keine Gefahren für Menschen und Umwelt ausgehen. Doch für diese Behauptung fehlt jeder Beleg. Im Gegenteil. Wir müssen befürchten, daß Menschen einer realen Strahlengefahr ausgesetzt waren," sagte Greenpeace-Atomexperte Helmut Hirsch am Montag.

Obwohl genaue und umfassende Informationen zu den gemessenen Strahlenwerten bislang nicht veröffentlicht wurden, sei Angaben des Bundesumweltministeriums zu entnehmen, daß auf größeren Flächen der Behälter und Transportwaggons radioaktive Kontamination von bis zu 13 000 Becquerel pro Quadratzentimeter gemessen wurden, meinte Hirsch bei der Vorführung einer Castor-Beladung in München. Dies bedeute, daß entsprechend der Größe der kontaminierten Flächen diese mit Hunderttausenden Becquerel verstrahlt gewesen sein könnten. „Die radioaktiven Stoffe haften nur oberflächlich auf den Behältern, kontaminieren nachweislich die Waggons und möglicherweise Personen in der Nähe der Behälter."

Bahnarbeiter könnten ihre Kleidung kontaminieren. Gelangten diese radioaktiven Teichen dann auf Lebensmittel, könnten sie in den Körper gelangen. Je hunderttausend Becquerel Cäsium-137, die in den Körper gelangen, würde es zu einer Strahlenbelastung von 1,4 Millisievert kommen. Am stärksten gefährdet seien Bahnarbeiter, die an den Waggons und den Behältern arbeiten beispielsweise beim Umladen. Potentiell gefährdet seien aber auch andere Menschen, die sich in der Umgebung aufhalten und Polizisten, die solche Transporte überwachen.

Außer Transportarbeitern und Polizisten könnten auch Anwohner der Transportstrecken gefährdet werden, wenn die radioaktiven Teilchen von der Oberfläche der Behälter in die Umgebung gelangen. g/mg

Atommülltransporte: Grenzüberschreitende Abfallbeseitigung

Chronik der Castor-Ereignisse

VDI nachrichten, 29. 5. 98
Die stellenweise Verseuchung von einem Fünftel der Atommülltransporte ins Ausland hat die Diskussion über die Sicherheit der Transporte neu belebt. Hier eine Chronik der Ereignisse in diesem Jahr

20. März: Der bisher letzte Castor-Transport zu einem deutschen Ziel trifft aus Süddeutschland kommend im Zwischenlager Ahaus in NRW ein. Er wird von mehreren zehntausend Polizisten bewacht.

24. April: Französische Behörden informieren den Abteilungsleiter Reaktorsicherheit im Bonner Umweltministerium, Gerald Hennenhöfer, darüber, daß an Atommüll-Behältern aus Deutschland beim Transport in die Wiederaufarbeitungsanlage La Hague stellenweise die Grenzwerte für die atomare Strahlung (4 Becquerel pro cm²) bis zum fünffachen Wert überschritten wurden.

30. April: Das Bonner Umweltministerium veröffentlicht die Mitteilung der französischen Behörden. In Frankreich beginnt eine öffentliche Diskussion über das Thema Atomtransporte und darüber, ob Arbeiter der Umladestation Valognes in der Normandie gefährdet waren.

4. Mai: Bisher letzte Castor-Zug fährt vom Atomkraftwerk Stade nach La Hague.

7. Mai: Die SPD fordert einen Stopp der deutschen Atommülltransporte.

12. Mai: Experten der französischen Sicherheitsbehörde DSIN übergeben deutschen Experten in Paris Meßprotokolle der französischen Firma Transnucleaire. Danach wurden an einigen Castoren und den Wannen, auf denen sie gelagert waren, Grenzüberschreitungen bis zum 3000fachen der geltenden Grenzwerte gemessen. Die Verseuchungen traten bei 20 % der Transporte von 1997 auf.

14. Mai: Umweltministerin Angela Merkel (CDU) stoppt alle Bahntransporte von Castor-Behältern nach La Hague.

20. Mai: Die Betreiber der Atomkraftwerke teilen dem Umweltministerium mit, sie hätten bereits seit Mitte der 80er Jahre von der Verseuchung einzelner Tranporte gewußt. Merkel stoppt auch Transporte ins britische Sellafield.

21. Mai: Merkel stoppt alle Transporte.

22. Mai: Merkel kritisiert die Atomindustrie. SPD, FDP und Grüne beantragen eine aktuelle Stunde im Bundestag. Erste Rücktrittsforderungen gegen Merkel werden laut. Die Sprecherin des Umweltministeriums berichtet, man habe einen US-Zeitschriften-Artikel aus dem Jahr 1991 gefunden, in dem auf die theoretische Möglichkeit der Castor-Verseuchung hingewiesen wurde. Später heißt es, das Problem sei auch auf wissenschaftlichen Kongressen erörtert worden.

23. Mai: Die Kernkraftwerksbetreiber räumen ein, daß sie Fehler gemacht haben und dadurch Vertrauen in der Bevölkerung verloren gegangen ist.

24. Mai: Das Umweltministerium erklärt, das Problem möglicher Kontamination sei „als solches bekannt" gewesen. Merkel versichert erneut, über die konkreten Fälle hätten sie und ihre Mitarbeiter aber nichts gewußt. ms/mg

Brennelement-Transporte: Kraftwerksbetreiber wollen Kommunikationspannen beseitigen – Mitarbeiter bei Sicherheitsfragen zu wenig sensibel

Branche will Castor-Transporte besser überwachen

VDI nachrichten, München, 29. 5. 98 –
Von den Verunreinigungen zahlreicher Brennelemente-Transportbehälter haben nur die direkt involvierten Ingenieure gewußt, nicht aber die Chefetagen. So hieß es am Dienstag auf der Jahrestagung Kerntechnik in München, und gleichzeitig gelobten die Top-Manager Besserung.

Während der Jahrestagung Kerntechnik bedauerte Dr. Wilfried Steuer als Präsident des Deutschen Atomforums zwar ausdrücklich die Kommunikationspannen zwischen Experten, Management-Ebene und Behörden beziehungsweise Ministerien, betonte zugleich aber auch, es habe aus seiner Sicht hier „keinerlei Vorsatz und keinerlei Vertuschungsmanöver" gegeben. Die einzelnen Behälter selber – meist keine eigentlichen Castoren, sondern fremde Modelle – seien „nicht undicht gewesen", bei Abfahrt der Transporte „waren alle gemessenen Werte in Ordnung" und es habe „zu keiner Zeit eine Gefährdung des Transportpersonals oder der Polizei" gegeben, sagte Steuer vor Journalisten. „Deshalb finde ich die Attacken der Polizeigewerkschaft auch höchst seltsam und verantwortungslos".

Das gesamte Transportsystem soll jetzt spürbar verbessert werden, und gerade auch bei den Kraftwerken „arbeiten wir nun intensiv daran, die Dinge fester in den Griff zu bekommen", ergänzte Dr. Otto Majewski, Vorstands-Chef der Bayernwerk AG. Ihm lag sichtlich daran zu betonen, daß „keinerlei Anzeigepflichten verletzt worden" seien, und ebenso, „daß wir trotz der Erschwernisse für unsere tägliche Arbeit voll hinter dem Zehn-Punkte-Plan stehen", den das Bonner Umweltministerium vorgelegt hat.

Störungen, hob Majewski hervor, „lassen sich zwar nie verhindern", doch, so fuhr er optimistisch fort, „wir haben sie im Griff". Er räumte ein, daß „wir unsere Mitarbeiter im Sinne einer gelebten Sicherheitskultur sensibler machen müssen", denn nur so könne man erreichen, daß fortan „offener kommuniziert" werde und zwar auch bei vordergründig belanglos aussehenden Kleinigkeiten. Daß die Ingenieure vor Ort nichts von der Kontamination nach oben gemeldet haben, war laut Majewski immerhin „kein Verstoß gegen die geltenden Vorschriften".

Zur Überwachung nuklearer Transporte, so der Bayernwerks-Chef weiter, „müssen wir jetzt ein lückenloses System einrichten", nachdem nun ja doch aller Welt klar geworden ist: „das bisherige Vorgehen war einfach nicht transparent genug". Denn „es waren ja drei bis vier verschiedene Stellen beteiligt", dabei gab es jeweils „große und zahlreiche Schnittstellenprobleme", und in der Folge hatte „keiner mehr den vollständigen Überblick". Frage eines Journalisten hierzu: „Was aber hat Sie denn eigentlich gehindert, schon früher für mehr Transparenz zu sorgen?" Antwort Majewski: „Nichts hat uns gehindert."

Das Münchner Pressegespräch wies unverkennbar die Tendenz auf, die ganze Sache möglichst rasch herunterzuspielen. Dafür stehen exemplarisch Worte wie etwa Steuers Wunsch, „es sollte wieder mehr Gelassenheit einkehren", oder seine Bemerkung, „wo Menschen sind, passieren eben Fehler". Während Majewski noch nicht sagen konnte, wann die vorerst gestoppten Atom-Transporte wieder rollen können, räumt Steuer ein, manche Kernkraftwerke könnten nach spätestens einem Jahr schon Probleme mit ihrer eher knappen, lokalen Lagerkapazität bekommen.

Laut Adolf J. Hüttl, Chef des Siemens-Bereiches Energieerzeugung, betrug „die zusätzliche Strahlen-Exposition durch die Oberflächen-Kontamination weit weniger als ein Tausendstel bis ein Zehntausendstel der Direktstrahlung aus dem Transportbehälter". Auch seien „die in den Transportvorschriften festgelegten Oberflächen-Grenzwerte von vier Bequerel pro Quadratzentimeter bei Transportbeginn nicht nur eingehalten, sondern in allen Fällen sogar unterschritten worden" und im übrigen habe „keine Meldepflicht für derartige Vorgänge" bestanden.

Hüttl meinte, „auch angesichts der Diskussionen der letzten Tage" habe kein anderer Industriezweig in Deutschland „ein ähnlich hohes Verantwortungsbewußtsein gezeigt, wie die Kerntechnik". Denn diese Industrie habe sich „von Anbeginn an alle nötigen Gedanken gemacht und entsprechende Konzepte entwickelt, wie sie die gestellte Aufgabe, den Energieträger Uran wirtschaftlich zu nutzen, verantwortungsvoll erfüllen kann." Die Branche suche auch nach Wegen, wie sie sicherstellen kann, daß „sowohl der Mensch als auch die Natur geschützt werden, und daß sowohl beim Betrieb der Kernkraftwerke als auch bei der Entsorgung und Transport des radioaktiven Abfalls kein Schaden entsteht". Ob aber wichtige Leute in Bonn dies auch so sehen?

EGON SCHMIDT

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End-lagerungen

Das Schlimme an Kernenergie ist, so die überwiegende Sicht, daß sie Abfall erzeugt – langstrahlenden Abfall – der uns, aber auch die Nachkommen, für lange Zeit gefährden könnte; eine im Untergrund, im Hades schlummernde Bombe auf Zeit.

Bei dieser Diskussion ist allerdings in Vergessenheit geraten, daß generell und überall die Gesetze der Physik, besonders aber die Erhaltungssätze gültig sind. Nirgends verschwindet etwas zu nichts. Beispielsweise in der klassischen Energieerzeugung verschwindet nicht nur kein Brennstoff – nein, die Restbestände werden immer mehr. Das, was in der Kernenergie solche Pein zu bereiten scheint, ist ein generelles Naturgesetz: Verbrennen erzeugt Asche, und zwar üblicherweise mehr Asche an Menge, als vorher an Brennstoff vorhanden war. Sofort ergeben sich zwei Fragen. Ist die nukleare „Asche" besonders gefährlich und ein Mengenproblem? Und was machen wir mit der konventionellen Asche?

Für den nuklearen Teil ist es fast trivial zu sagen, daß die Asche gefährlich ist. Andererseits ist pro erzeugter Energieeinheit die Menge relativ klein. Nicht so im konventionellen Bereich – der Abfall ist enorm und beträgt ein Vielfaches der eingesetzten Brennstoffmenge: Hunderte von Millionen Tonnen pro Jahr entstehen als konventionelle Asche. Wir müssen nur alle Überbleibsel des Verbrennungsvorgangs dazu zählen. Wo ist da das Endlager für diese Art von Asche? – Wohlgemerkt, das Endlager, das unsere Nachkommen nicht gefährdet?

Die Endlager heißen bislang schlicht Luft, Wasser, Boden, und wir benutzen sie fleißig und im zunehmenden Maße, sogar mit exponentiell wachsender Intensität, denn der Energieverbrauch in den letzten 25 Jahren stieg bei fossilen Quellen in der Bundesrepublik von 130 auf 340 Millionen Tonnen SKE. Sehen wir uns einmal das Endlager Bundesrepublik Deutschland an!

Die Atmosphäre über der Bundesrepublik ist der erste Hauptempfänger des größten Teils der Verbrennungsrückstände. Allgemein bekannt ist, daß überwiegend aus fossilem Brennstoff 3 Millionen Tonnen Schwefeldioxid (SO_2) pro Jahr in die Atmosphäre über der Bundesrepublik gelangen, wobei der „grenzüberschreitende Verkehr" nahezu ausgeglichen ist. Da ganz offensichtlich und Gott sei Dank sich das SO_2 über die Jahre nicht anreichert, führt der einzige noch übrigbleibende Weg zu den nächsten Endlagern, sprich Boden und Gewässer. Nun läßt sich aus der Fläche der Bundesrepublik und den 3 Millionen Tonnen SO_2 ganz leicht ausrechnen, daß pro Quadratkilometer und Jahr dann 12 Tonnen SO_2 oder Folgeprodukte ab- und endgelagert werden. Allein über die besagten letzten 25 Jahre sind das 300 Tonnen pro km² oder 60 Lastwagen voll, auf jeden Quadratkilometer unseres Landes. Daß Schwefel und seine Verbindungen toxisch sind, ist fast trivial zu sagen – entsprechend sollte also leicht vorstellbar sein, daß das Ablagern von hunderten von Tonnen von Schwefelverbindungen pro Quadratkilometer über Jahrzehnte zu schwerwiegenden Folgen für die Lebensfähigkeit von Boden und Gewässern geführt hat. Wir hinterlassen unseren Nachkommen einen verseuchten Boden.

Das Erstaunliche sind nicht das Waldsterben und die toten Quellgewässer – das Erstaunliche ist, daß es erst in diesen Jahren bemerkt wird und daß es immer noch viel Verwunderung darum gibt.

Ähnlich wie mit Schwefel verhält es sich mit Stickstoffverbindungen.

Die hier abgelagerten Mengen bewegen sich in der gleichen Größenordnung wie das SO_2 – nur die Ursachen sind etwas verschieden. Zu diesen beiden Noxen kommt noch eine große Zahl weiterer toxischer Verbindungen – nur die Masse ist geringer. Der allergrößte Abfall aus fossiler Verbrennung ist allerdings die Aufoxidation des Kohlenstoffs, also die Bildung von Kohlendioxid. Hier haben wir – nur die Bundesrepublik – die stattliche Zahl von 1 300 000 000 Tonnen pro Jahr dem Endlager Atmosphäre zugeführt. Wäre der Luftraum über der Bundesrepublik abgeschlossen, so resultiert allein die „Endlagerung" der letzten 20 bis 30 Jahre in einem CO_2-Gehalt in eben diesem Luftraum von 1 Prozent – eine abenteuerlich hohe Zahl, da sie das 40fache des natürlichen Gehaltes ist. „Glücklicherweise" können wir, wie so oft bei Umweltproblemen, diesen Abfall auf andere abwälzen, da Luft keine seitlichen Grenzen hat.

Würden alle Bewohner dieser Erde gleichermaßen rücksichtslos verfahren, die Erde wäre sehr viel schlechter bewohnbar, und zwar sehr schnell.

Angesichts der Abfallproblematik bei Energieerzeugung mit fossilen Brennstoffen stellt sich die Frage, wie es möglich ist, daß einerseits nukleare Endlagerung mit der in der Zukunft liegenden Möglichkeit eines Schadens soviel Aktion und Reaktion bei Öffentlichkeit und Politikern erzeugt, andererseits eingetretene Schäden, die in ihrem Ausmaß rasch steigen und katastrophale Formen annehmen, die Politiker und Öffentlichkeit nur am Rande berühren.

Tritt hier eine psychologische Form der Endlagerung auf, die die schleichende Katastrophe über die Gewöhnung in den Bewußtseinsuntergrund abdrängt? Treten hier Verdrängungsmechanismen auf, weil man für die nukleare Problematik so schön die Schuld bei anderen suchen kann, was für den konventionellen Bereich nicht mehr möglich ist, denn im „Konventionellen" sind wir alle Sünder? Läßt sich mit der nuklearen Angst spielen, die sich für Politiker in Wählerstimmen ummünzen läßt – im konventionellen Bereich aber nicht, weil die eigene Politik mit dafür verantwortlich ist?

Wir müssen erneut darüber nachdenken, welche Risiken wir uns leisten wollen und welche nicht – und welche Risiken und Schäden wir unseren Nachkommen zumuten können.

Dr. S. Hartwig, Professor an der BUGH Wuppertal, befaßt sich im Fachbereich Sicherheitstechnik mit gefährlichen Stoffen, chemischen Prozessen und Konsequenzanalysen.

„Verzicht auf Kerntechnik unverantwortlich“

VDI-N, Köln, 26. 5. 95 – 1995

Ideologen wollen die Kerntechnik aus dem Land jagen“, klagt der Präsident des Bundesverbandes der Deutschen Industrie (BDI), Hans-Olaf Henkel, im Gespräch mit den VDI-Nachrichten. Der ehemalige IBM-Manager will das nicht mitansehen. Die Kerntechnik ist für ihn eine der Energiequellen der Zukunft. „Weltweit gibt es über 400 Kernkraftwerke, 60 sind in Bau“, so Henkel. Beim Blick über die Grenzen schöpft der auslandserfahrene Manager Hoffnung, daß sich auch die Deutschen bei der Frage der Kernenergie bewegen. „Ich bin kein Träumer und ich packe keine Eisen an, die zu heiß sind.“

Die Wahlerfolge der Grünen in Bremen und Nordrhein-Westfalen dürfe man nicht überbewerten. Die Schweden zeigten, daß eine Gesellschaft „zum Ausstieg aus dem Ausstieg“ fähig sei. Der Streit um die Kernkraft gehört für Henkel, der seit Anfang des Jahres die deutsche Industrie repräsentiert, zu den dringendsten Problemen, die es zu lösen gilt. „Wenn wir die Kernkrafttechnik endgültig einmotten, übernehmen Japaner und Amerikaner die Führerschaft auf diesem Gebiet.“

Diese Entwicklung will Henkel, 1992 von der Umweltstiftung Worldwide Fund for Nature (WWF) und der Zeitschrift Capital zum Ökomanager des Jahres gewählt, stoppen – und zwar auch aus ökologischen Gründen. Die Gesellschaft müsse sich entscheiden, zwischen den Risiken, die der CO_2-Ausstoß für das Klima mit sich bringe, und den Risiken der Kernenergie. Und die hält der BDI-Chef bei den deutschen Anlagen für äußerst gering. „Unsere Kraftwerke sind im internationalen Vergleich die sichersten. In der 'Hitparade' der weltweit über 400 Kernkraftwerke belegt die Bundesrepublik in punkto Sicherheit die ersten sechs Plätze.“ Analog zum deutschen Anspruch, Umweltstandards zu exportieren, fordert Henkel daher, Kerntechnik-Sicherheitsstandards zu verbreiten. „Es ist direkt unverantwortlich“, appelliert Henkel, „anderen Gesellschaften, die sich für die Kernkraft entschieden haben, unser Sicherheitsniveau vorzuenthalten.“

In den Energiekonsensgesprächen, die nur schleppend vorankommen, verhandeln Regierung und SPD über eine Option für neue Kraftwerke nach dem Jahr 2005. Henkel mag so lange nicht warten. „Im Augenblick ist ja ein Genehmigungsverfahren geplant, das sich nicht auf einen konkreten Standort bezieht. Ich kann nur hoffen, daß dann auch wieder einmal jemand den Mut findet und einen Standort benennt. Auch wenn wir neue Werke erst weit nach der Jahrtausendwende brauchen.“ Alte Kernkraftwerke sollten bis an ihr technisches Lebensende laufen können, fordert Henkel. „Wenn wir in Deutschland die Lebensdauer auf 25 Jahre begrenzen, würden wir Investitionen von 400 Mrd. DM in den Wind schlagen. Wir können uns den Luxus einer solchen Verschwendung nicht leisten“, so Henkel. Die Deutschen hätten „einen Hang zur Hysterie“. Ein gutes Beispiel dafür sei der Transport von Brennelementen. „Es gab schon 1600 solcher Castor-Transporte und niemand fühlte sich bedroht. Beim 1601. gibt es plötzlich kriegsmäßige Aufmärsche.“ Daß dies alles vor den Energie-Konsensgesprächen geschah und ausgerechnet in Niedersachsen, ist für Henkel kein Zufall. „Hier wird manipuliert, das dürfen wir uns nicht gefallen lassen.“ (Seite 4) M. HOFFMANN/P. SCHWARZ

Kommentar

Gegen den Strom

VDI 1995

Ein Öko-Manager streitet für die Kerntechnik: So laut wie der neue BDI-Präsident Hans-Olaf Henkel hat lange kein führender Kopf in der deutschen Industrie mehr für die Atomkraft getrommelt. Während sich in Bonn Regierung und Opposition um einen „Energiekonsens“ mühen, geht er aufs Ganze. Henkel will mehr als eine vage Option nach dem Jahr 2005. Der ehemalige IBM-Europachef möchte der umstrittenen Hochtechnologie in Deutschland den Weg freimachen. Schon heute, fordert Henkel, sollten die Energieversorger sagen, wo ein Kraftwerk der nächsten Generation gebaut werden könnte – auch wenn dessen Strom erst weit nach der Jahrtausendwende benötigt wird.

Hans-Olaf Henkel will ein politisches Signal. Und er will es jetzt, damit deutsche Firmen im Geschäft bleiben. Denn während hierzulande die Atomenergie geächtet ist, werden fast überall auf der Welt neue Anlagen errichtet. Milliarden-Umsätze winken. Kernkraft-Kritiker setzt der BDI-Präsident vor allem mit ökologischen Argumenten unter Druck: Wer es ernst meine mit dem Klimaschutz, dürfe nicht weiter fosssile Energieträger bevorzugen. Nur mit Kernkraft, deren Risiko gegen null gehe, ließen sich die CO_2-Emissionen einschneidend verringern.

Je mehr die Erinnerung an Tschernobyl verblaßt, desto größer die Schlagkraft des Arguments. Doch Zweifel sind erlaubt, ob die grüne Karte wirklich sticht. Nicht auszudenken, was geschähe, würde tatsächlich schon heute ein Standort für ein neues Kraftwerk benannt. Der Kampf um Wackersdorf, der Widerstand gegen Gorleben würde gegen den organisierten Protest verblassen. Gewiß hat Henkel recht, wenn er die Konsenssucht der Deutschen beklagt. Wer etwas bewegen will, muß den Mut haben, auch gegen den Strom zu schwimmen. Doch neue Anlagen würden die Gesellschaft wohl spalten. Ein hoher Preis für eine riskante Technologie. (Seite 1)

PETER SCHWARZ

STADT-AUSGABE HMG München, Montag, 14. März 2011 67. Jahrgang / 11. Woche / Nr. 60 / 2,00 Euro

Das Streiflicht

(SZ) Als es in den Schulen noch keine Computer gab, mussten die Schüler alles analog machen. Sie mussten analog ihre Hausaufgaben abschreiben, sie mussten sich analog in dürre Mädchen verlieben und sie mussten analog die schwächeren Mitschüler mobben. Das Wort mobben wurde in diesen analogen Zeiten eher selten verwendet, stattdessen griff man zum hübsch altertümlichen Wort hänseln, das seinerseits wohl von dem Wort *hanse* kommt, welches Schar, Gemeinschaft bedeutet. Wer in diese Schar, Gemeinschaft aufgenommen werden wollte, musste sich nur ein bisschen piesacken lassen, schon war er drin. Aber war man in der Schule nicht eher draußen, wenn man gehänselt wurde, und zwar auf unbestimmte Zeit? Die Regel lautete ja nicht, dass sich die armen Hunde, sagen wir, eine Woche lang quälen lassen mussten und dann mit Küsschen in die Klassengemeinschaft aufgenommen wurden. Nein, die Gehänselten wurden konsequent bis zur Oberstufe gehänselt, nachmittags liefen sie heulend nach Hause und wurden von ihren Müttern mit Schlagsahne vollgestopft.

Wenn die Gehänselten heute nach Hause kommen, machen sie mit rotgeheulten Augen ihren Computer an und werden dort weitergehänselt. All die bösen Sätze, die sie in der Schule gehört haben, bekommen sie hier noch einmal schriftlich auf Facebook und Twitter oder auf tShareGossip, wo die Hänseltreunde aller Schulen dieser Welt ihre ungünstigen Botschaften gegen die Zukurzgekommenen streuen. Der amerikanische Präsident Barack Obama will sich dieses Spiel jetzt nicht mehr lange ansehen. Er weiß nämlich, wovon er redet. Er ist als Kind auch immer gehänselt worden. Warum? Obama hatte abstehende Ohren und hieß mit Vornamen Barack. Das heißt, er hat natürlich noch immer abstehende Ohren und heißt auch noch Barack, aber das wird ihm auf dem internationalen Parkett nicht mehr so deutlich vorgehalten wie damals auf dem Schulhof der St. Francis of Assisi Elementary School in Jakarta. Das Gehänseltwerden, sagt Obama heute, könne bei einem Kind zu schlimmen Verwerfungen führen, die es später wiederum in sehr unkomfortable Lebenslagen bringen könnten – bis hin zur Präsidentschaftskandidatur.

Es ist ganz gut, dass der amerikanische Präsident den Rotzlöffeln einmal ganz klarmacht, wozu es führt, wenn sie auf tShareGossip zum Beispiel diese misogyne Rubrik „Das schönste / hässlichste Mädchen der Schule" einrichten. Das führt zu Ausgrenzung, Außenseitertum und bitteren Tränen. Einerseits. Andererseits ist es natürlich gerade für sehr junge Menschen nicht uninteressant, mag sein, sogar lehrreich zu erfahren, nach welchen Kriterien ein Mädchen als hübsch zu gelten hat oder nicht. Aber das ist nur so ein flüchtiger Gedanke, und er wird auch umgehend gelöscht.

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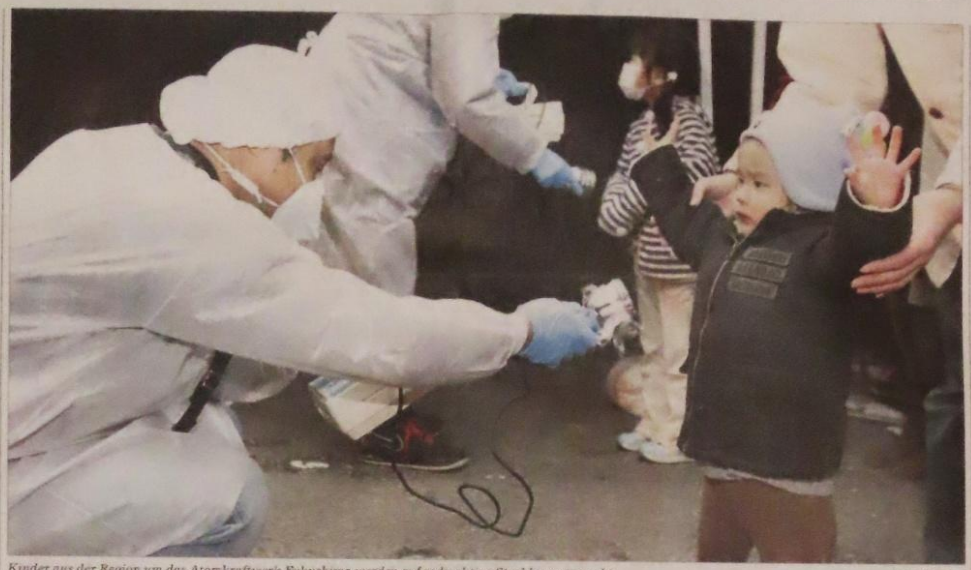

Kinder aus der Region um das Atomkraftwerk Fukushima werden auf radioaktive Strahlen untersucht. Foto: Reuters

„Schlimmste Krise in Japan seit dem Zweiten Weltkrieg"

Angst vor der Atom-Katastrophe

In zwei Reaktoren droht Kernschmelze / Hunderttausende verlassen die Region / Mehr als 10 000 Tote durch Tsunami

München – **Das Versagen der Kühlsysteme von zwei Blöcken im japanischen Kernkraftwerk Fukushima 1 nach dem verheerenden Tsunami vom Freitag hat weltweit die Sorge vor einer Atomkatastrophe ausgelöst. Experten des Betreibers und Soldaten der japanischen Streitkräfte kämpften das gesamte Wochenende darum, eine Kernschmelze in den Reaktoren an der Pazifikküste zu vermeiden. Nach Ansicht von Experten hat diese aber wahrscheinlich bereits eingesetzt. Die Behörden gehen inzwischen davon aus, dass bei dem Erdbeben und den folgenden Flutwellen mehr als 10 000 Menschen ums Leben gekommen sind. Japans Premierminister Naoto Kan sprach von der „schlimmsten Krise seit dem Zweiten Weltkrieg".**

Die Behörden versuchten, die beiden betroffenen Reaktorblöcke 230 Kilometer nordöstlich von Tokio behelfsmäßig mit Meerwasser zu kühlen. Im Umkreis von 20 Kilometern wurden die Menschen aufgefordert, sich in Sicherheit zu bringen. Auch um das zwölf Kilometer südlich gelegene Kraftwerk Fukushima 2 wurde die Evakuierung einer Zone von zehn Kilometern Radius um die vier Blöcke angeordnet, weil die Kühlsysteme nicht ordnungsgemäß arbeiteten. Insgesamt 200 000 Menschen wurden aufgefordert, die Umgebung der Atommeiler zu verlassen. Am Nachmittag lösten die Behörden zudem Alarm um das drei Blöcke umfassende Kraftwerk Onagawa aus, nachdem dort erhöhte Strahlungswerte gemessen wurden. Sie stammte offenbar aus Fukushima. Die Feuerwehr meldete zudem, im Kernkraftwerk Tokai seien Pumpen ausgefallen. Laut dem Betreiber wird es aber ausreichend gekühlt.

Zwar hatten sich die Reaktoren in Fukushima 1 nach dem Beben abgeschaltet, der Tsunami hatte aber die für die Kühlung nötige Stromversorgung unterbrochen, einschließlich der dieselbetriebenen Notstromaggregate. Der Leiter des Kabinettssekretariats der Regierung in Tokio, Yukio Edano, räumte am Sonntag ein, dass es durch die Überhitzung zu Verformungen am Reaktorkern von Block drei gekommen sein könnte, bestritt aber eine Kernschmelze. Am Samstag hatte die Regierung von der Möglichkeit gesprochen, dass der Kern des 40 Jahre alten ersten Reaktorblocks teilweise geschmolzen sei. Eine schwere Explosion, ausgelöst durch aus dem Kühlmittel freiwerdenden Wasserstoff, hatte das Dach und die Außenwände der Reaktorhalle weggesprengt. Laut der Regierung wurden dabei aber weder der Schutzmantel noch das Reaktordruckgefäß beschädigt, die zwei wichtigsten Barrieren gegen den Austritt des radioaktiven Materials.

Auf dem Gelände des Kraftwerks wurden dennoch erhöhte Strahlungswerte gemessen, was die japanischen Behörden damit erklärten, dass gezielt Wasserdampf aus den überhitzten Reaktoren abgelassen worden sei. Damit versuchte die Betreibergesellschaft Tokyo Electric Power Company (Tepco) nach eigenen Angaben, den Druck im Inneren zu reduzieren und eine Zerstörung des Reaktorbehälters zu verhindern. Sollte es zu einer vollständigen Kernschmelze kommen, befürchten Experten, dass große Mengen Radioaktivität in die Umwelt gelangen. Prognosen über die Wahrscheinlichkeit einer solchen Katastrophe ließen sich aber kaum anstellen, da öffentlich zu wenig über den Zustand der havarierten Reaktoren bekannt war. Die japanischen Behörden ordnen den Unfall bislang auf Stufe vier der von null bis sieben reichenden internationalen Bewertungsskala für nukleare Ereignisse ein. Es ist damit der schwerste Unfall seit der Katastrophe von Tschernobyl im Jahr 1986.

Rettungsmannschaften versuchten unterdessen ununterbrochen, den Menschen in der am stärksten von dem Tsunami betroffenen Region an der Pazifikküste im Nordosten der Insel Honshu zu helfen. Die Behörden bestätigten bis zum Sonntagabend mehr als 1600 Tote, es werde aber befürchtet, dass mehr als 10 000 Menschen ums Leben gekommen sind. Die Polizei in Miyagi teilte mit, dass die Zahl der Toten in ihrer Präfektur „fast sicher 10 000 übersteigen" werde. Allein in der Küstenstadt Minamisanriku wurde mehr als die Hälfte der etwa 17 000 Einwohner vermisst. Die Flutwelle zerstörte dort fast alle Häuser. Die Regierung schickte 65 000 Soldaten in das Katastrophengebiet, 35 000 weitere sollen bis Mittwoch hinzukommen. Schlamm und Trümmer versperrten Straßen und behinderten die Retter. *pkr*

Außerdem in dieser Ausgabe

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Deutschland streitet wieder über Kernenergie

SPD-Chef Gabriel: Das Atomzeitalter ist zu Ende / Bundesregierung gegen neue Debatte über Laufzeiten

Von Daniel Brössler

Berlin – Nach der Reaktorkatastrophe von Fukushima will die Bundesregierung zwar die Sicherheit deutscher Meiler verstärken, lehnt eine rasche Abkehr von der Atomenergie aber ab. Es sei unmöglich, „einfach zur Tagesordnung" überzugehen, räumte die Bundeskanzlerin und CDU-Vorsitzende Angela Merkel ein. Nach einem Krisentreffen mit mehreren Ministern im Kanzleramt kündigte sie eine Sicherheitsüberprüfung aller deutschen Atomkraftwerke an. Am Dienstag dieser Woche will sie darüber mit den Ministerpräsidenten betroffener Bundesländer beraten. Weitere Konsequenzen ließ sie offen. Die Opposition forderte die Rücknahme der von der schwarz-gelben Koalition beschlossenen Laufzeitverlängerung für Reaktoren.

Die Kanzlerin bezeichnete solche Forderungen als verfrüht. Es gehe jetzt um die „Sicherheit heute, die Sicherheit morgen, um die Sicherheit in naher Zukunft". Im Vordergrund stehe daher nicht, was „im Jahre 2018 oder 2025" passiere. Im Herbst hatte die Bundesregierung den unter Rot-Grün beschlossenen Atomausstieg aufgekündigt. Sie verlängerte die Laufzeiten der Kernkraftwerke um durchschnittlich zwölf Jahre. Der letzte der insgesamt 17 Reaktoren würde demnach erst 2036 vom Netz gehen.

SPD und Grüne forderten außer der Rücknahme der Laufzeitverlängerung ein Abschalten der sieben ältesten und unsichersten Meiler. „Wir müssen uns klarmachen, dass nicht nur das Zeitalter des billigen Öls, sondern auch das Atomzeitalter zu Ende ist", sagte SPD-Chef Sigmar Gabriel. Der Fraktionschef der Grünen im Bundestag, Jürgen Trittin, verlangte einen Ausstieg aus der „unbeherrschbaren, menschenfeindlichen Technologie". Die Linkspartei forderte „unverzüglich und unumkehrbar" eine Politik der „systematischen Reaktorabschaltung". In Baden-Württemberg beteiligten sich am Samstag an einer schon länger geplanten Menschenkette gegen die Atomkraft nach Angaben der Veranstalter 60 000 Menschen.

Kurz vor den Landtagswahlen in Baden-Württemberg, Rheinland-Pfalz und Sachsen-Anhalt sehen sich die Parteien angesichts der Ängste in der Bevölkerung mit einer völlig neuen Lage konfrontiert. CDU-Chefin Merkel wiederholte zwar, dass sie die friedliche Nutzung der Kernenergie für „verantwortbar und vertretbar halte", verdeutlichte aber auch, dass sie in der Katastrophe von Fukushima eine Zäsur sehe. „Die Geschehnisse in Japan sind ein Einschnitt für die Welt", sagte sie. Das gelte insbesondere, weil die nuklearen Folgen eines Erdbebens selbst in einem Land mit solch hohen Sicherheitsstandards nicht hatten verhindert werden können. Die Beteuerung, deutsche Kernkraftwerke seien sicher, genüge nun nicht mehr. Sie fügte hinzu: „Sie sind sicher, aber trotzdem muss man nachfragen: Was ist aus einem solchen Ereignis zu lernen?" Umweltminister Norbert Röttgen (CDU) sprach sich für eine Grundsatzdebatte über die Atomkraft aus. Er finde, „dass dieser Debatte nicht ausgewichen werden darf, auch nicht kann".

Deutliche Vorbehalte gegen eine grundsätzliche Diskussion ließ FDP-Chef und Vizekanzler Guido Westerwelle erkennen. „Jetzt sollten keine parteipolitischen Debatten im Vordergrund stehen", sagte er. Zu prüfen sei vielmehr, „ob auch unsere Kühlsysteme Anfälligkeiten haben könnten". Das Atom-Unglück in Japan stelle die Laufzeitverlängerung nicht in Frage, erklärte die FDP-Fraktionsvorsitzende im Bundestag, Birgit Homburger. „Bei uns gibt es keine vergleichbaren Erdbeben und Tsunamis. Trotzdem zeigt sich, dass wir bei der Verlängerung der Laufzeiten die Sicherheitsmaßstäbe neu bewerten müssen", sagte Bayerns Umweltminister Markus Söder (CSU) der *Süddeutschen Zeitung*.



Die Explosion in der Atomanlage von Fukushima war so stark, dass sie das Dach und die Wände des Reaktorgebäudes zerstörte. Foto: Reuters

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Sechs Seiten Beilage
The New York Times

Araber fordern Flugverbotszone

Libysche Luftwaffe soll an Angriffen gehindert werden

Kairo – Die Arabische Liga hat vom UN-Sicherheitsrat die Errichtung einer Flugverbotszone über Libyen gefordert. „Die Arabische Liga hat den UN-Sicherheitsrat offiziell ersucht, eine Flugverbotszone gegen jegliche militärische Aktion gegen das libysche Volk zu verhängen", sagte Liga-Generalsekretär Amr Mussa am Samstag in Kairo. Mit dem Flugverbot für die Luftwaffe des libyschen Diktators Muammar al-Gaddafi sollen die Menschen vor Bombardierungen geschützt werden. Die Organisation schuf damit eine wichtige Voraussetzung für ein internationales Eingreifen in dem Krisenland. Nun muss der UN-Sicherheitsrat entscheiden – allerdings ist unklar, ob es dort eine Mehrheit für eine Flugverbotszone gibt. Derweil gewannen die Truppen Gaddafis bei ihrer Offensive gegen die Aufständischen zunehmend die Oberhand. (Seiten 4 und 8) *dpa*

Lokführer drohen mit schärferen Streiks

Berlin – Im Tarifkonflikt mit der Bahnbranche will die Lokführergewerkschaft GDL mit einer massiven Streikwelle den Druck erhöhen. Die Streiks sollen schneller hintereinander getaktet werden", sagte GDL-Chef Claus Weselsky am Wochenende. Bundesverkehrsminister Peter Ramsauer und Wirtschaftsminister Rainer Brüderle forderten die Tarifparteien auf, den Konflikt unverzüglich beizulegen. (Wirtschaft) *SZ*

Mord an Siedlerfamilie im Westjordanland

Jerusalem – Bisher unbekannte Täter haben im Westjordanland fünf Mitglieder einer jüdischen Siedlerfamilie getötet. Die beiden Eltern sowie drei ihrer Kinder wurden in der Nacht zu Samstag erstochen. Für die Bluttat wurden palästinensische Extremisten verantwortlich gemacht. Das israelische Kabinett billigte am Sonntag den Ausbau von Siedlungen im Westjordanland. (Seiten 4 und 8) *SZ*

Gold für Jenny Wolf und die Biathlon-Staffel

Inzell – Bei der Eisschnellauf-WM in Inzell hat Jenny Wolf Gold gewonnen. Die Berlinerin siegte auf ihrer Paradestrecke über 500 Meter zum vierten Mal in Folge bei einer Einzelstrecken-WM. Die deutsche Frauenstaffel gewann bei den Biathlon-Weltmeisterschaften in Russland ebenfalls Gold. Silber ging an die Ukraine, Bronze an Frankreich. (Sport) *SZ*

Das Wetter

München – Verbreitet stark bewölkt. Zeitweise Regen oder Sprühregen. Im Süden im Tagesverlauf Chancen auf Wolkenlücken. Im Norden später ebenfalls längere Zeit trocken, aber kaum Sonne. Temperaturen zwischen neun und 17 Grad. (Seite 37 und Lokales)

Gewinnzahlen vom Wochenende
Lotto (12.03.): 9, 15, 19, 31, 38, 43
Zusatzzahl: 5, **Superzahl:** 9
Toto: 1, 1, 2, 1, 1, 0, 2, 2, 2, 1, 2, 0, 1
Auswahlwette: 6, 12, 22, 31, 34, 37
Zusatzspiel: 39
Spiel 77: 8 2 6 9 1 3 0
Super 6: 1 6 5 4 4 3
Weitere Gewinnzahlen: Wirtschaft, Seite 5 (Ohne Gewähr)

Als Betroffener des Ausstiegs aus der Kernenergie (meiner MT-Abteilung nach 1986) :

Ich war nach dem wiederum letztlich durch menschliche Fehler verursachten Fukushima-Unglück im März 2011 auch für das Abschalten, aber nicht wie damals der jetzige bayerische Ministerpräsident Söder für augenblicklich, sondern für ein zeitlich sinnvolles Auslaufen. Damit hätten wir uns ruhigere Winter in den letzten Jahren geschaffen, zumindest was die Energiesicherheit betrifft. Mein Grund war besonders: In Deutschland wird es kein Endlager geben, vor allem nicht in Bayern.

Warum wünscht man also, nach dem Wissen auf den vorherigen drei Seiten, gerade in Bayern noch nach einem AtomKraftWerke (AKW)-Plan und wünscht sogar Mini-AKWs, obwohl alle Voraussetzungen fehlen!



Als ehemaliges Mitglied in einem Ausschuss, dessen Mitglieder zu einem wesentlichen Teil für die Material-Sicherheit der deutschen AKWs zuständig waren, kann ich zusätzlich sagen: Diese Spezialisten wurden als nicht mehr notwendig betrachtet, so dass unsere hervorragende Überwachung nicht mehr gegeben sein wird, nämlich mangels ausreichender erfahrener Spezialisten. Kein Student wollte übrigens das Fach noch studieren!

Als Betroffener des für mich unverständlichen, schlagartigen MAN-Ausstiegs aus der Windenergie (1986), nach dem Bau der Windenergieanlagen Aeroman, GROWIAN, WKA 60 etc nur ein paar Bemerkungen, (weitere Kommentare sind auf Seite 180 und in [CUN22] zu finden):

Getroffen haben mich die nicht-professionellen, rot gekennzeichneten Aussagen von 1982 in den Medien (s. Punkte auf nächster Seite) über GROWIAN. Diese beunruhigen den Leser lediglich!

1. Es war nie Kunststoff vorgesehen seitens des Auftraggebers BRD: Vorgeschlagen war CFK (CarbonFaser-verstärkter Kunststoff). Das ist etwas ganz Anderes als der wenig steife, wenig feste Kunststoff allein.

2. CFK ist leichter und würde sich auch weniger verformen. Allerdings konnte man damals den notwendigen rechnerischen Nachweis für den ‘Werkstoff‘ CFK nicht liefern (*mit der vom Autor in 2006 herausgegebenen VDI Richtlinie 2024, Blatt 3, wäre dies möglich gewesen*) und den Aushärteprozess verstand man noch nicht .

3. Wir waren in meiner Abteilung stolz darauf, dass die Verformungsverträglichkeit von GFK-Blatthaut (GlasFaserverstärkter-Kunststoff) und Tragholm so gut ausgelegt werden konnte.

Übrigens:

Bei MAN-Neue Technologie haben wir wahrscheinlich in 1989 die erste weltweite Windenergiekonferenz ausgerichtet. Dr. Cuntze mit Dr. Windheim, dem BRD-Projektbegleiter aus Jülich.

10.2 Windenergie

DIE ZEIT – Nr. 43 – 22. Oktober 1982

Growian, das Ding im Wind

Die Windmühle der Zukunft – eine Herausforderung an die Kunst der Ingenieure

Von Wilhelm Herzog

Wie weit man blicken kann! Es riecht nach Meer, ein frischer Seewind füllt die Lungen, man atmet tief und schmeckt die Seeluft auf der Zunge.

Ringsum sind Kohlfelder und rauhe Wiesen mit rotbunten Kühen, Gänseherden und Schafen, dazwischen Kiebitze, so viele, wie ich noch nie sah, und Krähen und Stare in Schwärmen, sie sammeln sich schon zum Flug in den Süden. Ein Bauer pflügt, und hinter ihm in den Furchen hacken Möwen nach Würmern und Käfern. Am Straßenrand verkauft eine Bäuerin Weißkohl und Rotkohl, riesige, kräftig duftende Köpfe, für eine Mark das Stück. Hier im weiten, leeren Land ein Verkaufsstand? Wer soll der Bäuerin die Kohlköpfe abkaufen? Sie findet Käufer, denn nur wenige hundert Meter von hier steht „Growian", das Riesending, die Große Windenergieanlage.

Noch ist sie im Bau, aber sie wird schon viel bestaunt von Neugierigen, die weit fahren, um das Ding zu sehen und im Informationskiosk anhand von Schautafeln lernen wollen, wie es funktioniert. Wenn ihr Wissensdurst gestillt ist, gehen sie auf die andere Straßenseite und erstehen billig ein paar Kohlköpfe.

Nun hat „Growian" ihre fremdartige, fast bedrohliche und dennoch schöne Gestalt nach fast fünf Jahren Plan- und Bauzeit gewonnen: ihr Haupt- und Herzstück, das Maschinenhaus mit den beiden Rotorflügeln, die insgesamt hundert Meter lang sind, sind oben angelangt. Das Maschinenhaus allein hat die Maße eines ausgewachsenen Einfamilienhauses.

Der Turm stand schon seit Monaten, hundert Meter hoch und dreieinhalb Meter schlank. Er ist aus elf Abschnitten zusammengesetzt, sie wurden einzeln in Süddeutschland gebaut, Stück für Stück hierher zum Kaiser-Wilhelm-Koog in Dithmarschen verfrachtet und an Ort und Stelle Stück für Stück aufeinandergesetzt und fest verschweißt.

Als die erste Turmröhre auf dem gewaltigen Betonfundament befestigt war, wurde die vorgefertigte leere Schale des Maschinenhauses darübergestülpt, der Turmschaft durchdringt also das Maschinenhaus.

Während der Turm auf seine Höhe wuchs, bekam das Maschinenhaus die nötigen Anlagen: den Generator, die Motoren, die den Kopf in den Wind drehen, die Nabe, das Steuerpult mit den vielen Schalt- und Regelanlagen, die Treppen und das Getriebe. Und schließlich wurden die beiden Rotorblätter angeschweißt, fünfzig Meter lang ist jedes.

Das alles, vierhundert Tonnen schwer, so schwer, wie ein vollbeladener Jumbo-Jet, an den es entfernt auch erinnert, mußte nach oben gehievt werden, hundert Meter hoch.

Es gab keinen Kran, der das bewältigen konnte, wie also Haus und Flügel nach oben bringen? Die Ingenieure mußten sich Neues einfallen lassen, denn eine solche Aufgabe ist noch nie und nirgends gestellt worden.

Sie machten es so: Oben am Turm wurden sechs hydraulische Flaschenzüge angebracht. Wie ein Junge sich an einer Kletterstange hand- und fußweise nach oben hangelt, so arbeiten auch die Hubvorrichtungen. Mit einem Unterschied: Die Flaschenzüge hangelten nicht *sich* an den Zugseilen nach oben, sondern sie zogen die Stahlseile, die am Maschinenhaus befestigt waren, durch sich hindurch mit zwei wechselweise arbeitenden Kralen (Hände und Füße) nach oben, Dezimeter um Dezimeter.

Tagelang dauerte es, bis Haus und Flügel dort waren, wo sie hingehören. Und in dieser Zeit durfte der Wind, der später so erwünscht ist, nicht zu stark aufbrisen. Denn der Turmschaft war noch nicht mit Spanntrossen gesichert. Erst als das Maschinenhaus die Stelle erreicht hatte, wo der Haltering für die Spanntrossen angebracht wurde, konnten die armdicken Halteseile befestigt und gespannt werden, und die Mannschaft konnte aufatmen. Denn damit war der schwierigste Teil bewältigt. Der Rest war ein Klacks: Der Kopf wurde noch ein Dutzend Meter höher gezogen und festgemacht.

Chaotischen Kräften ausgeliefert

Der Turm ist aus nur drei Zentimeter starken Stahlwänden, er ist viel leichter als das Maschinenhaus mit den Flügeln. Der Schwerpunkt der ganzen Anlage liegt also verhältnismäßig hoch. Der Turm würde auch ohne Windeinwirkung gefährlich mit dem Kopfe wackeln, würden die Spannseile ihn nicht festhalten.

Aber die Lage des Schwerpunktes ist nicht die einzige und nicht einmal die gewichtigste Ursache für die vielen Stabilitätsprobleme. Viel wichtiger, weil fast unberechenbar, sind die Windkräfte, die auf das Ganze einwirken.

Selbst ohne Rotor wäre das Maschinenhaus den gänzlich chaotischen Windkräften ausgeliefert, es bietet ja Angriffsfläche genug. Je nachdem, wie und wo der Wind auf das Haus prallt, will sich der Kopf um die Turmachse drehen oder verkanten. Aber durch die Rotorflügel wird das Ganze noch viel komplizierter, denn sie wirken unter anderem als Hebel, und je länger ein Hebel, desto gewaltiger sind die Kräfte, die übertragen werden. Ein Hebel von fünfzig Meter Länge kann da schon schweißtreibende Probleme aufwerfen.

Hinzu kommt aber, daß die Hebel, also die Flügel, nicht stillhalten, sondern sich drehen, das ist ja ihre Aufgabe, und dadurch entstehen wiederum ganz neue Kräfte.

Aus der Propeller-Fliegerei kennt man alle diese Kräfte. Der Flieger weiß, daß der Propeller das Flugzeug um die Längsachse rollen will, es gegen seine Drehrichtung zur anderen Seite schieben und je nach Fluglage die Nase mal nach oben, mal nach unten drucken will. Im Flugzeug bleiben diese Kräfte durch aerodynamische Gegenmittel wie Leitwerk- und Flügelformung und durch die Steuerausschläge des Piloten ohne Wirkung.

Auch bei „Growian" wären alle diese Kräfte leicht zu berechnen und zu beherrschen, wenn der Wind gleichmäßig, mit gleicher Stärke und aus gleicher Richtung auf die Rotoren bliese.

Aber das tut er eben nicht. Er kommt in Wirbeln und Böen daher, bläst den Rotor mit wechselnder Geschwindigkeit und aus wechselnden Richtungen an.

Hinzu kommt weiter, daß der Turm seine Nase, die Nabe, ein wenig nach oben trägt. Das muß er tun, damit die sich drehenden Rotorblätter gehörigen Abstand halten können vom Turm und den Abspannseilen. Außerdem bilden die beiden Flügel keine gestreckte Gerade, sondern sie sind wie ein sehr stumpfwinkliges V vom Winde weggeneigt, wodurch zusätzliche Schwungmomente auftreten.

Vom Winde weggeneigt? Ja, denn „Growian" wendet dem Wind den Rücken zu, der Wind trifft das Haus von hinten, er bläst erst auf Turm und Haus und dann erst auf den Rotor; mit einem Wort: „Growian" ist ein „Leeläufer".

Diese Rotoranordnung hat Vorteile und Nachteile. Ein Vorteil: Die Windrichtungslage ist stabil. Der Wind drückt sich den Turmkopf gewissermaßen ständig in die beste Anblasposition, oder würde es zumindest tun, wenn der Turmkopf wie der Wetterhahn auf der Kirchturmspitze frei beweglich wäre.

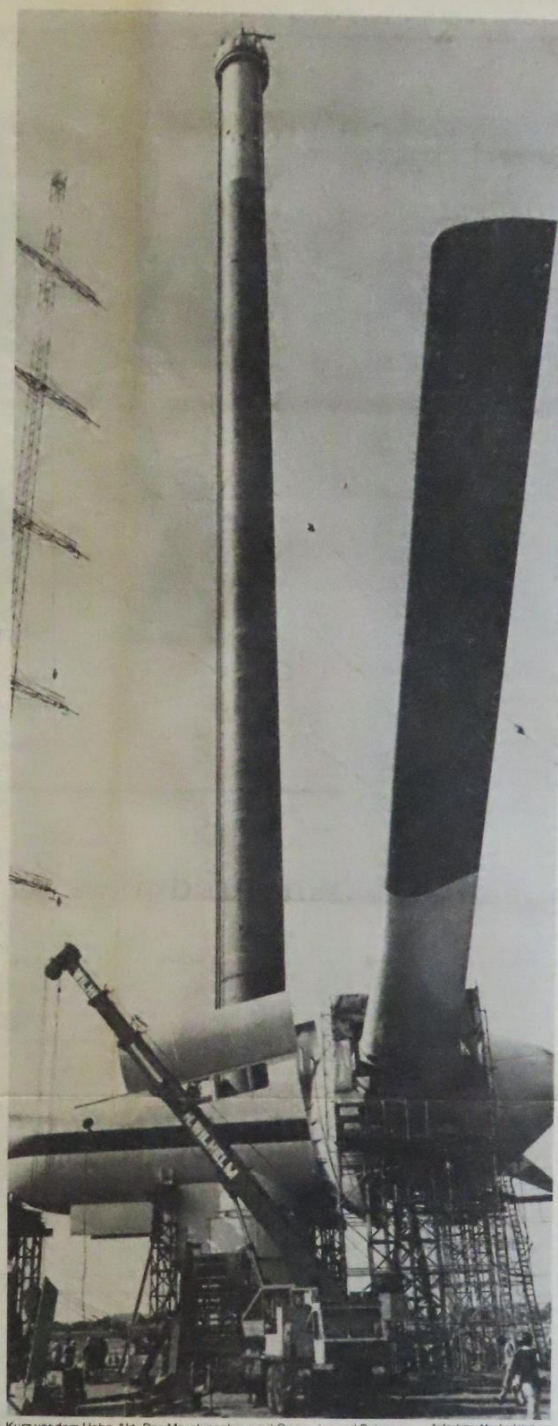
Das ist er natürlich nicht. Motoren drehen ihn ständig in die von Sensoren erfühlte günstigste Windrichtung. Aber bei der leeseitigen Anordnung brauchen Motor und Halterungen nicht so starke Kräfte zu überwinden wie bei Luvläufern. Ein weiterer Vorteil des Leelaufers ist, daß der Wind die Rotorblätter nicht auf den Turm zu-, sondern vom Turm wegbiegt. Denn der Wind kann die Rotorblätter ganz kräftig durchbiegen.

Nachteil des Leelaufers ist, daß jeweils der nach unten drehende Rotorflügel durch den Windschatten des Turmes muß und dort Sekundenbruchteile lang nicht angeblasen wird. Zur gleichen Sekunde aber wird der hochdrehende Flügel von gewaltigen Windkräften gepackt, seine Spitze steht in diesem Augenblick ja hundert Meter höher als das untere Flügelende. Oben bläst der Wind viel kräftiger als unten. Auch wenn der untere Rotorflügel nicht durch den Turmschatten drehen muß (und der Luvläufer muß das nicht), werden die beiden Flügel verschieden stark angeblasen und haben die Neigung, sich aus der Drehebene herauszukanten.

Um diese Kräfte aufzufangen und zu verhindern, daß sie die Lager und den Turm zu sehr belasten, haben die Ingenieure sich eine Menge einfallen lassen müssen. So lassen sie die Nabe, an der die Rotorflügel befestigt sind, federnd um ein Gelenk pendeln. Aber das tilgt bei weitem nicht alle Verwindungs- und Schwingungskräfte, und so werden einige vom Rotor auf das Maschinenhaus und den Turm übertragen.

Ein Teil davon wird im Maschinenhaus durch ein Trägheitssystem gedämpft. Ein zweites Schwingungs-Tilgungssystem ist im Turm in etwa fünfzig Meter Höhe angebracht. Es besteht aus einem schweren Gewicht, das verzögert und verzögernd mitschaukelt, wenn der Turm in Schwingung gerät. Das Verzögern geschieht hydraulisch durch eine Art Ölbad, in dem das Gewicht sich bewegen muß. Es bewirkt im Prinzip dasselbe wie ein Kind, das Beine und Körper gegenläufig zur Schaukelbewegung und zum Schaukelrhythmus schwingt und dadurch die Schaukel zum Halten bringt.

Das zweite Tilgungssystem in der Turmmitte ist nötig, weil sich ein Teil der Schwingerbewegungen des Kopfes trotz der Dämpfung noch auf den Turm überträgt. Und aus einem weiteren Grund. Jedes elastische Etwas hat nämlich eine „Eigenschwingungsfrequenz", was nur eine andere Bezeichnung ist für die Neigung dieses Etwas, sofort ins Schwingen zu geraten, wenn nur die richtige Anregung dazu kommt. Eine Stimmgabel summt zum Beispiel sofort mit, wenn in der Nähe eine andere Stimmgabel gleicher Frequenz angeschlagen wird und summt. Oder: Wenn eine Waschmaschine in der Küche die Wäsche schleudert, kann sie das Geschirr im Schrank zum Klirren bringen.



Kurz vor dem Hebe-Akt: Das Maschinenhaus mit Generator und Rotoren — Aufnahme: Manfred Vollmer

Wenn der Turm tanzt

So haben auch Rotor und Turm ihre eigenen Schwingungsfrequenzen. Man muß sie verschieden groß halten, damit der Rotor den Turm nicht zum Tanzen bringt. Dafür gibt's verschiedene Wege: Man kann die Eigenfrequenz des Turmes so hoch legen, daß die des Rotors weit darunter bleibt. Eine Stimmgabel mit dem Ton G kann eine andere, die auf den Kammerton A gestimmt ist, auch nicht anregen. Ein solcher Turm mit einer höheren Frequenz wird dann sehr massiv, entweder aus Stein oder als ausladendes Gittermonstrum, gebaut.

Man kann aber auch den umgekehrten Weg gehen: Dann wird die Eigenfrequenz des Turmes niedriger angelegt als die des Rotors; auch dann haben die beiden Frequenzen genügend Abstand, und der Rotor kann den Turm nicht zum Mitschwingen anregen.

Mit zwei Ausnahmen. Beim Anlaufen erreicht der Rotor bei einer bestimmten Drehzahl nämlich genau die Schwingungsfrequenz des Turmes, er „durchläuft" die Turmfrequenz und bringt den Turm zum Tanzen. Außerdem hat jedes elastische Material zum Leidwesen der Techniker auch noch mehrere Oberfrequenzen, wie etwa Geigensaiten Obertöne haben. Mit einem Wort: Die Schwingungstilgung im Turm ist absolut notwendig.

Damit sind bei weitem nicht alle Probleme dargelegt, vor die sich die Ingenieure gestellt sahen. Transportprobleme waren noch das geringste, obschon für das Maschinenhaus, das ebenfalls in Süddeutschland hergestellt worden ist, zum Beispiel in dem Städtchen Brunsbüttel Oberleitungen angehoben und Verkehrsschilder entfernt werden mußten, sonst hätte es nicht durchgepaßt. Bis Brunsbüttel war es per Schiff befördert worden. Dann war da noch die Sache mit den Rotorflügeln. Nach den „baureifen" Plänen sollten sie aus
1 Kunststoff hergestellt werden, denn Kunststoff ist gut zu verarbeiten, und vor allem ist er leicht. Aber dann wurde nachgerechnet, und es entstanden Zweifel, ob der Kunststoff fest genug wäre für die enormen Fliehkräfte. Zudem hatte man
2 Befürchtungen, daß Kunststoff-Flügel sich unter Windbelastung zu sehr durchbiegen würden.

So entschieden sich die Ingenieure schließlich für eine ganz andere Bauweise: Die Flügel bekamen als tragendes Rückgrat einen Kastenholm aus Stahl. An und um den Holm wurde dann die aerodynamisch geformte Kunststoffhülle montiert, die aus zwei Halbschalen besteht. Der Holm liegt also wie ein Würstchen zwischen zwei Brötchenhälften.

Die Festigkeit war damit gewährleistet, aber man hatte sich eine Fülle neuer Probleme aufgehalst. Zum Beispiel das: Stahl- und Kunststoff
3 dehnen sich unter Belastung und bei verschiedenen Temperaturen ganz unterschiedlich. Daher mußten völlig neue Verbindungstechniken entwickelt werden.

Vier Monate lang wurde dann der Testflügel im Werk unter allen nur erdenklichen Belastungen geprüft. Auf dem Prüfstand hat er den Belastungen standgehalten. Nun hoffen die Ingenieure, daß die Flügel auch am Turm den schwersten Orkanen widerstehen.

Wenn der Sturm mit mehr als 80 Stundenkilometer bläst, und das tut er nach langjährigen Messungen an etwa sieben Tagen im Jahr, braucht „Growian" nicht mehr zu arbeiten, ihre Flügel werden auf Segelstellung gestellt und bleiben stehen. Weitere 83 Tage im Jahr wird die Windmühle aus entgegengesetztem Grund arbeitslos sein: Der Wind ist dann zu schwach. Insgesamt drei Monate im Jahr kann die Anlage also keinen Strom liefern, von Zeiten, wo sie aus anderen Gründen vielleicht stillsteht, einmal abgesehen.

Warum so hoch hinaus?

Das Rückgrat aus Stahl hatte aber noch weitere Folgen: Die Flügel wurden viel schwerer als ursprünglich berechnet, und deshalb mußten die Lager und andere Dinge in der Nabe und im Maschinenraum verstärkt werden. Dadurch wiederum wurde das ganze Maschinenhaus um fast 80 Tonnen schwerer, und das warf alle Stabilitätsberechnungen für den Turm über den Haufen. Man mußte fast bei Null wieder anfangen.

Viele der Probleme wären überhaupt nicht oder nicht so entstanden, wenn „Growian" nicht so groß geraten wäre. Sie ist ja die größte Anlage ihrer Art auf der Erde. Wozu diese Größe? Ist das Größenwahn oder Rekordsucht? Schließlich gibt es große Windenergieanlagen anderswo auch schon, vor allem in den USA, mit Rotordurchmessern bis zu 60 Metern. Windmühlen haben zu Hunderttausenden viele tausend Jahre lang die Menschheit mit Energie versorgt. Gibt's da nicht Erfahrungen genug? Muß man so hoch hinaus?

Ja, man muß, denn wenn die Windkraft ernsthaft und nicht nur als alternative Spielerei auf ihre Verwendbarkeit getestet werden soll, muß man in Höhen vorstoßen, wo der Wind genug Energie hat. Der Wind weht kräftiger, je höher man geht. Die Energieleistung wächst mit der dritten Potenz der Windgeschwindigkeit, was bedeutet, daß die Energieausbeute in hundert Metern Höhe fast sechsmal so groß ist wie in zehn Metern.

Das ist theoretisch bekannt. Man muß aber einfach erproben, wo zwischen Leistung und Kosten der beste Kompromiß erzielt wird. Zwei kleine Anlagen, die zusammen soviel leisten wie eine große, kosten mehr als eine große. Wo schneiden oder treffen sich Leistungs- und Kostenkurve? „Growian" soll auch dafür Daten erbringen, sie ist ja in jeder Hinsicht eine Versuchsanlage. Das Gelände ist für sechs Jahre gepachtet; was danach mit der Anlage wird, weiß noch niemand.

Mit den Ingenieuren über all diese Dinge zu sprechen, ist ein Vergnügen, sie beherrschen ihr Metier souverän und hängen keiner Ideologie an. Offen sagen sie, sie könnten nicht garantieren, ob alles so funktioniert, wie es soll, und ob nicht doch ein Orkan von nie erlebter Wucht das Ding umwirft.

Wie ich deutsche Ingenieure und deutsches Sicherheitsdenken einschätze, wird „Growian" technisch bestehen. Sie wird Strom für vierhundert Haushalte ins Netz einspeisen, solange der Wind stark genug weht.

Aber zu welchem Preis? Die Anlage wird fast hundert Millionen Mark kosten. Sollte sie oder eine ähnliche je in Serie gehen, werden die Anlagen billiger werden, das ist gewiß. Aber eine Kilowattstunde Strom wird die Hersteller auch dann rund eine Mark kosten. Kohlestrom kostet zehn Pfennig, Atomstrom fünf. Das sind Größenordnungen, keine exakt kalkulierten Zahlen.

Natürlich war das bekannt, als das Bundesforschungsministerium Auftrag und Gelder für die Anlage vergab. Bekannt war ebenso, daß statt eines Kernkraftwerkes mindestens 600 „Growians" gebaut werden müßten. So ist es denn nicht verwunderlich, daß gerade Kernkraftgegner das Ministerium und die Erbauer der Anlage verdächtigen, „Growian" solle als Alibi dienen, sie solle in Wahrheit nur beweisen, daß es mit alternativen Energien nicht gehe, daß wir also Kernkraft brauchten.

Alibi – das klingt nach Krimi und Ganoventum, und das soll es ja wohl auch. Aber nehmen wir einmal an, das Ministerium wollte wirklich beweisen, daß wir mit der weichen Energie allein unseren Bedarf nicht stillen können – was wäre daran falsch oder gar kriminell? Wir brauchen 80 000 Megawatt, die kann der Wind nicht liefern, und wenn, dann zu einem Preis, den mit Sicherheit niemand zahlen wollte.

Windkraftanlagen in der Bundesrepublik Deutschland

Anwendungsreif, aber kommerziell unattraktiv

Breitentestprogramm soll in den nächsten 10 Jahren Einstieg in die Serienfertigung ermöglichen

VDI-N, Kassel, 10. 2. 89 – Anwendungsreif, aber unter den heutigen Bedingungen kommerziell unattraktiv, so sieht Erich Hau, Vorstandsmitglied des Instituts für Solare Energieversorgungstechnik in Kassel, die Situation bei kleinen und mittleren Windkraftanlagen. Nachfolgend beschreibt er den Entwicklungsstand und die Perspektiven der Windenergienutzung in der Bundesrepublik Deutschland.

In der Bundesrepublik nimmt die Anzahl und die Vielfalt von neu entwickelten Windkraftanlagen vor allem im kleineren Leistungsbereich ständig zu. Auch wenn die Mehrzahl der angebotenen Anlagen noch im Prototypstadium steckt, einige Typen haben bereits eine bescheidene Serienfertigung erreicht.

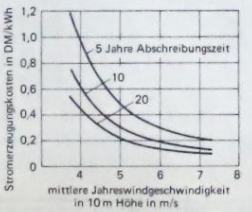
Die Erfahrungen mit dem mehrjährigen Versuchsbetrieb von großen Windkraftanlagen im Leistungsbereich von einem oder mehreren Megawatt, in der Bundesrepublik vor allem das Projekt Growian, haben gezeigt, daß diese Anlagen noch erheblich von einer wirtschaftlichen Anwendung entfernt sind. In erster Linie sind dafür die hohen Baukosten verantwortlich. Bei spezifischen Kosten von 5000 bis 10000 DM/kW liegen die Stromerzeugungskosten sowohl gegenüber konventionellen Energieerzeugungstechniken als auch im Vergleich zu kleinen Windkraftanlagen bei weitem zu hoch. Darüber hinaus muß die technische Zuverlässigkeit und die Lebensdauer der Komponenten noch wesentlich gesteigert werden.

Auf der anderen Seite wird das Entwicklungspotential gerade der großen Anlagen als besonders hoch eingeschätzt. Die Perspektiven, mit Windkraftanlagen im Megawatt-Leistungsbereich zu wirtschaftlich vertretbaren Kosten Strom zu erzeugen, sind keineswegs aussichtslos.

Die Technologie der großen Megawatt-Anlagen wird deshalb mit einer zweiten Generation weiterentwickelt. Auf der Insel Helgoland entsteht in diesem Jahr eine 1,2-MW-Anlage, die, auch wenn sie in ihrer technischen Konzeption anders ist, die Erfahrungen von Growian verwertet. Ein Schwestermodell wird in spanisch-deutscher Kooperation in Spanien geplant.

Die Einblatt-Konzeption Monopteros, mit einer Leistung von 650 kW noch eher zu den mittleren Anlagen zu rechnen, wird mit drei Exemplaren bei Wilhelmshaven in einer verbesserten Ausführung realisiert und ausführlich getestet. Die erste der drei Anlagen des „Jade-Windparks" wurde kürzlich errichtet. Ebenfalls bei Wilhelmshaven entsteht bis 1991 eine neue 3-MW-Großanlage: Aeolus II.

Windkraftanlagen mit einer Leistung bis zu etwa 300 kW, entsprechend einem Rotordurchmesser von ca. 30 m, unterscheiden sich von den Großanlagen vor allen Dingen durch die wesentlich günstigeren spezifischen Herstellkosten. Die einfachere und ausgereiftere Technik, vor allem aber der Serienbau für die amerikanischen Windfarmen, haben dazu geführt, daß heute spezifische Herstellkosten von weniger als 2000 DM/kW erreicht werden. Eine typische mittlere Anlage mit 25 m Rotordurchmesser und 200 kW Nennleistung kostete 1988 einschließlich Fundamentierung



Neben der Windgeschwindigkeit spielt die Abschreibungszeit bei Windkraftanlagen eine entscheidende Rolle.

Quelle: E. Hau

und Netzanschluß rund 400 000 DM – mit fallender Tendenz. Rechnerisch lassen sich bei diesen Investitionen Stromerzeugungskosten von weniger als 0,15 DM/kWh erzielen, sofern man bereit ist, der Anlage eine längere Amortisationszeit (10 bis 15 Jahre) einzuräumen.

Ungeachtet des anwendungsreifen Entwicklungsstandes von kleinen und mittleren Anlagen ist der kommerzielle Einsatz unter den heutigen Bedingungen noch nicht attraktiv. Bei allem begründeten Optimismus und Engagement darf man vor dieser Tatsache nicht die Augen verschließen. Ein privater Unternehmer ist nicht bereit, in eine neue Technik, deren Betriebskosten und Lebensdauer ungewiß sind, zu investieren, wenn sich die Investition erst in zehn oder fünfzehn Jahren wirtschaftlich rechnet. Selbst mit den heute preisgünstigen Anlagen betragen die Stromerzeugungskosten 0,20 oder 0,30 DM/kWh, wenn man marktwirtschaftliche Amortisationszeiten von fünf bis sieben Jahren zugrundelegt.

Die Attraktivität der Windkraftnutzung liegt heute – und möglicherweise auch auf absehbare Zeit – im gesamtwirtschaftlichen Bereich. Die unbestreitbare Umweltfreundlichkeit ohne Aufwendungen für Sicherheit und Entsorgung oder Schäden durch Luftverschmutzung spart der Volkswirtschaft erhebliche „soziale Kosten" der Stromerzeugung. Diesen volkswirtschaftlich begründeten „Bonus" reklamiert die Nutzung erneuerbarer Energiequellen für sich. Das ist kein Ruf nach Subventionen, selbst wenn er als solcher mißgedeutet werden sollte.

BMFT fördert Prototypen mit einer Leistung bis zu 800 kW

In der Bundesrepublik läuft zur Zeit ein Prototypenqualifikationsprogramm für neu entwickelte kleine und mittlere Windkraftanlagen bis zu einer Leistungsgrenze von 800 kW. Bis zu fünf Prototypen werden durch das Bundesministerium für Forschung und Technologie (BMFT) gefördert. Von besonderem Interesse ist dabei die Leistungsklasse von 200 bis 300 kW entsprechend einem Rotordurchmesser von 25 bis 30 m. Mit Anlagen dieser Größe werden heute die günstigsten Erzeugungskosten erreicht.

Das bei weitem wichtigste Vorhaben auf dem Gebiet der Windenergienutzung wird der sogenannte Breitentest für Windkraftanlagen sein. Dieses Programm geht von der Erkenntnis aus, daß Windkraftanlagen nur über eine Mindestserienfertigung kostengünstig produziert werden können und darüber hinaus auch zur technischen Ausreifung eine gewisse Anwendungsbreite benötigen. Gemäß einer Vereinbarung des BMFT mit den norddeutschen EVU sollen in den nächsten Jahren mindestens 100 MW Windkraft realisiert werden. Die Kosten werden zur Hälfte von den EVU und zu 25 % als Investitionsförderung von den Bundesländern, vornehmlich Niedersachsen und Schleswig-Holstein, aufgebracht. Die noch fehlenden 25 % sollen – in Form einer „Leistungsförderung" – als Zuschlag auf die erzeugten kWh über zehn Jahre vom BMFT gewährt werden. Das heißt, zu der von den Versorgungsunternehmen berechneten Einspeisungsvergütung von ca. 0,10 DM/kWh zahlt das BMFT noch einen Bonus von etwa 0,06 DM/kWh.



Mittelgroße Anlagen, wie diese Enercon 32 (300 kW), stehen im Mittelpunkt des neuen Breitentests für Windkraftwerke. Foto: Enercon

Energieversorger unterstützen Langzeittest

Dieses Programm wird für die deutschen Hersteller von Windkraftanlagen Chance und Herausforderung zugleich sein. Die Chancen liegen vor allem darin, daß sie – mit beträchtlicher öffentlicher Förderung – in die Lage versetzt werden, ihre neu entwickelten Anlagentypen zumindest in kleineren Serien zu produzieren und im Langzeittest zu erproben. Positiv zu bewerten ist auch der Beitrag der Versorgungsunternehmen. Eine Einspeisevergütung von 0,10 DM/kWh liegt heute sicher noch etwas über ihren betriebswirtschaftlich vermiedenen Kosten durch die Einspeisung von Windenergie.

Die – natürlich beabsichtigte – Herausforderung für die herstellende Industrie sollte jedoch nicht unterschätzt werden. Das Fördermodell ist so ausgestattet, daß nur Anlagen, die tatsächlich nicht allzuweit von der Wirtschaftlichkeit entfernt liegen, für den Käufer attraktiv sind. Das werden vor allem mittelgroße Anlagen sein, deren spezifische Investitionskosten nicht wesentlich über 2000 DM/kW liegen dürfen. Das Angebot der deutschen Hersteller ist nicht gerade üppig in dieser Klasse – und zu diesen Preisen. Schlimmer noch, der freie europäische Markt rückt in greifbare Nähe. Ein Abschotten des Programms gegenüber unerwünschter ausländischer Konkurrenz wird kaum möglich sein. Es ist nicht völlig auszuschließen, daß sich am Ende ein ähnlicher Effekt einstellen könnte wie auf den kalifornischen Windfarmen. Die „tax credits" waren auch dort in erster Linie als Förderung für die einheimischen Produkte gedacht. Am Ende waren aber fast 40 % europäische – vor allem dänische – Hersteller die Nutznießer.

So wichtig der Bau von Windkraftanlagen mit zunehmenden Stückzahlen auch ist, Forschung und Weiterentwicklung dürfen nicht zu kurz kommen, wenn man das Ziel im Auge behalten will, die Windenergienutzung letztlich auch ohne staatliche Förderung über die Wirtschaftlichkeitsschwelle zu heben. Technologische Ansatzpunkte für Verbesserungen und Verringerung der Herstellkosten gibt es genug. Die Weiterentwicklung erfordert jedoch auch bei kleineren Anlagen beträchtliche Mittel, die mit den heute in Aussicht stehenden Verkaufszahlen nicht von der Industrie „verdient" werden können. Die Förderung der Forschung und Weiterentwicklung bleibt deshalb primär ein öffentliches Anliegen.

Forschung bleibt primär ein öffentliches Anliegen

Das BMFT wird parallel zum Breitentest ein technisch-wissenschaftliches Begleitprogramm fördern. Sämtliche Anlagen im Breitentest – man rechnet mit etwa 500 bis 600 Einzelanlagen bei 100 MW Gesamtkapazität – werden meßtechnisch erfaßt und die Ergebnisse über einen Zeitraum von mindestens zehn Jahren ausgewertet. Die ausschließlich rezeptive Registrierung von Meßdaten reicht allerdings nicht aus, um für den Entwicklungsfortschritt verwertbare Erkenntnisse zu gewinnen. Nur in Verbindung mit einer aktiven und sich an allgemeingültigen Problemstellungen orientierenden langfristigen Forschungsstrategie sind derartige Meßprogramme effektiv.

Bemerkenswerterweise gehen einige entscheidende Impulse von den an der Windenergie interessierten Bundesländern aus, z. B. formieren sich in Niedersachsen und Hessen – auch in den deutschen Mittelgebirgen gibt es ein Potential für die Windenergienutzung! – an den Universitäten, aber auch als außeruniversitäre Einrichtungen, Institute, die sich mit Solar- und Windenergieforschung beschäftigen. Wenn es diesen anwendungsnah arbeitenden Instituten gelingt, das große wissenschaftliche Potential, das in den bundesdeutschen technischen Universitäten vorhanden ist, zielgerichtet und koordiniert für die Windenergieforschung nutzbar zu machen, wird dies mit Sicherheit der Weiterentwicklung der Windenergietechnologie zusätzliche Schubkraft verleihen.

Wie konnte man sich in 1989

- nach diversen Weiterentwicklungen –

noch so irren,

was den Windenergiepreis nach zukünftiger Serienherstellung betraf?

10.3 Unsere Erde

AKTIV. REPORT 22. Mai 1993 / Seite 4

Das Wachstum der Weltbevölkerung nimmt dramatische Ausmaße an – in 32 Jahren 8,5 Milliarden Menschen?

Wie belastbar ist unsere Erde?

Die Erde versorgt uns mit Lebensraum, Nahrungsmitteln und Energie. Aber all das ist nicht unerschöpflich – unsere Lebens- und Überlebensquellen sind begrenzt.

1993

Dennoch wächst die Weltbevölkerung – eine Folge des industriellen und medizinischen Fortschritts – in atemberaubendem Tempo weiter. Zur Zeit Christi lebten schätzungsweise 160 Millionen Menschen auf der Erde. Erst 1 000 Jahre später hatte sich die Bevölkerung der damaligen Welt auf 320 Millionen Menschen verdoppelt.



Heute dagegen wissen wir, daß sich in nicht einmal 40 Jahren, etwa im Jahr 2030, die gegenwärtige Weltbevölkerungszahl (5,42 Milliarden, das sind 5 420 Millionen) verdoppelt haben wird. Die Erde ist voll.

Die sechs Weltkarten auf dieser Seite sprechen eine klare Sprache: Geburtenkontrolle und schonende Nutzung der natürlichen Quellen – nur so kann die Erde, der blaue Planet im Weltraum, überleben.

Texte: Giesbert Wiegel / Fotos: Comstock / Zahlen: Population Reference Bureau, Washington; World Population Prospects, UN New York und Zero Population Growth Inc., Carbondale/Washington D.C.



Die Welt im Jahre 1 n.Chr.

Das Römische Reich beherrscht die damals bekannte Welt. Kaiser Augustus regiert von 27 vor bis 14 nach Christus. Seine Herrschaft reicht von Nordfrankreich bis Nordafrika, vom heutigen Portugal bis in die Türkei. Das Reich der Römer, mit modernen Verkehrswegen und für damalige Zeit realtiv guten hygienischen Verhältnissen in den großen Städten, besteht noch 475 Jahre. Die Lebenserwartung liegt bei durchschnittlich 34 Jahren. Nur wer viel Geld hat, kann sich ärztliche Hilfe leisten.



Die Welt im Jahre 1000

Die Zeit des Hochmittelalters: In Deutschland regiert Otto II. bis 1002, wird dann von Heinrich II. abgelöst. In Ungarn entsteht ein christliches Königreich, England hatte sich von der dänischen Herrschaft befreit. In Europa leben schätzungsweise 52 Millionen Menschen mit einer Lebenserwartung von 35 Jahren. Von jetzt an würde es 800 Jahre dauern, bis sich die Weltbevölkerung auf 640 Millionen Menschen verdoppelt hätte. Pest, Cholera und Typhus fordern in Europa Hunderttausende Menschenleben.



Die Welt im Jahre 1850

1835 fährt die erste deutsche Eisenbahn von Nürnberg nach Fürth. 1841 dampft Borsigs erste deutsche Lok über die Gleise. 1847 verfassen Karl Marx und Friedrich Engels das „Kommunistische Manifest". Der Heilbronner Arzt Robert Mayer veröffentlicht das Gesetz von der Erhaltung der Energie. Justus von Liebig feiert Erfolge mit der Agrikulturchemie, die die landwirtschaftlichen Erträge enorm steigern konnte. Bruckner, Brahms und Wagner, Liszt und Verdi komponieren Unsterbliches.



Die Welt im Jahre 1950

Der Zweite Weltkrieg hat tiefe Wunden geschlagen. Über 50 Millionen Tote. Der Koreakrieg beginnt im Juni 1950. Kanzler Konrad Adenauer erreicht 1955 die Wiederherstellung der vollen Souveränität der Bundesrepublik Deutschland. In der harten Zeit des Wiederaufbaus, dem das deutsche Wirtschaftswunder folgen sollte, lag die Lebenserwartung bei etwa 65 Jahren. Der durchschnittliche Bruttostundenlohn in der deutschen Industrie 1950: 1,42 Mark für Männer und 0,86 Mark für Frauen.



Die Welt im Jahre 1993

In der westlichen Welt sind medizinische und pharmazeutische Versorgung hervorragend. Die durchschnittliche Lebenserwartung der Neugeborenen liegt bei 71 Jahren für Männer und bei fast 77 Jahren für Frauen. Familienplanung und Geburtenkontrolle sind hier an der Tagesordnung. China: Eine Familie darf nur noch ein Kind haben (Ausnahme: Mehrlingsgeburt). 2,8 Milliarden Menschen zählen zu den Ärmsten der Armen. In vielen Teilen Afrikas wüten Hungersnöte, die 45 Millionen Leben fordern.



Die Welt im Jahre 2025

Trotz aller Aufforderungen zur Geburtenplanung wächst die Bevölkerung in Indien und Pakistan in dramatischen Ausmaßen. Afrika kann seine Menschen längst nicht mehr ernähren, ist wie Südamerika auf weltweite Hilfe angewiesen. Von je 100 Mark, die in den Industriestaaten erwirtschaftet werden, gehen 10 Mark in Form von Lebensmitteln nach Afrika, Asien und Südamerika, um den Hunger zu mildern. Krebs, AIDS, Malaria und Bilharzinose (Wurmkrankheit) können wirksam bekämpft werden.

AKTIV 19. Dezember 1992 / Seite 10–11

Der Globus, auf dem wir leben, ist ein faszinierender Himmelskörper: Wasser auf der Oberfläche – Gluthitze im Kern • Eine nur wenige Kilometer dicke Lufthülle schützt Pflanzen, Tiere und Menschen



Europa aus der Satellitenperspektive: Aus dem Weltall erscheint die Erde durch Lichtreflexionen des Mondes als blauer Planet.

Fotos: Lade-Agentur (3), dpa (2)

Nur eine dünne Kruste trennt uns von der Hölle

Hätte der französische Phantasie-Autor Jules Verne seine 1864 beschriebene „Reise zum Mittelpunkt der Erde" tatsächlich angetreten, wäre er bereits auf den ersten hundert Kilometern mitsamt seinem raketengetriebenen Steinbohrer bei lebendigem Leibe gegrillt worden. Denn unterhalb der festen Erdkruste ist buchstäblich die Hölle los.

Fester Boden findet sich nur in der etwa 50 Kilometer mächtigen Erdkruste. Die nächsten 3 000 Kilometer führen durch einen zähflüssigen Sumpf aus glühendem Silikatgestein. Noch weit unwirtlicher geht es im sogenannten äußeren Erdkern zu: dickflüssiges Eisen und Nickel, 4 000 Grad heiß.

Feuriger Klumpen und Wasserplanet

Die Erde ist so ungleichmäßig strukturiert wie nur wenige bekannte Planeten. Sie ist zwar im Innern ein feuriger Steinklumpen, zugleich aber auch ein Wasserplanet – zwei Drittel der Oberfläche sind von Meeren bedeckt.

Der scheinbar feste Boden unter unseren Füßen besteht in Wahrheit aus einer Vielzahl einzelner Schollen, die sich wie Treibeis über den glutflüssigen Untergrund bewegen. Vulkane kennzeichnen die Schwachstellen in dieser von Gräben zerfurchten Oberfläche. Nicht weniger als 550 Vulkane waren während der bekannten Menschheitsgeschichte mindestens einmal aktiv.



Erhebliche Schäden: Im April bebte im deutsch-niederländischen Grenzgebiet die Erde so stark wie seit rund 240 Jahren nicht mehr.

Schollenschieben zum Erdbeben

Verschieben sich die Schollen gegeneinander, kommt es zu Erdbeben. Rund eine Million Beben lassen sich jedes Jahr von Meßinstrumenten nachweisen. Etwa 150 000 wirken sich als spürbare Erschütterungen aus, doch nur zwei oder drei führen zu größeren Zerstörungen.

Ohne schützende Atmosphäre und Magnetfeld wären die Menschen auf Mutter Erde einem tödlichen Bombardement von kosmischen Strahlen ausgesetzt.

Von den riesigen Energiemengen, die täglich von der Sonne zur Erde abgestrahlt werden, erreichen nur etwa 27 Prozent die Erdoberfläche. Rund 15 Prozent der Strahlung aus dem All werden von der schützenden Atmosphäre geschluckt, etwa ein Drittel von den Wolken reflektiert, und ein Viertel fällt dann letztlich der diffusen Zerstreuung zum Opfer.

Doch schon die geringsten Verschiebungen in diesem Gleichgewicht hätten fatale Auswirkungen: Eine neue Eiszeit oder der Hitzetod wären die schlimmen Folgen.

Lebenswichtiges Gasgebräu

Die Atmosphäre besteht zu mehr als 99 Prozent aus Stickstoff und Sauerstoff. Von größter Bedeutung ist außerdem ein Gas, das nur in vergleichsweise kleinen Mengen in der Atmosphäre vorkommt: Kohlendioxid. Zusammen mit Wasserdampf bildet es den Wärmeschutz der Erde. Zuviel davon heizt dagegen das Klima auf (Treibhauseffekt).



Glühende Lava schießt aus einem Vulkan: An den Schwachstellen der Erdkruste gelangt das zähflüssige Gestein aus dem Erdinnern an die Oberfläche.

Elf Fragen an unseren blauen Planeten

Satellitenfotos zeigen die Erde als blauen Planeten. Warum blau? Luft und Wasser sind farblos. Das ist eine der Fragen, die auf dieser Seite beantwortet werden. Blau wurde zum Symbol für den einzigen belebten Himmelskörper in unserem Sonnensystem. Die Erde treibt in einer schmalen Lebenszone um die Sonne. Schon eine geringfügige Änderung der Umlaufbahn würde das Klima völlig verändern. In welcher Weise, das zeigen unsere Nachbarplaneten: Auf der Venus brütet eine Hitzehölle mit Temperaturen von 470 Grad, die Marsoberfläche ist eine Kältewüste. Dank der optimalen Entfernung zur Sonne konnte sich um die Erde eine Atmosphäre bilden, die uns vor gefährlichen Strahlen aus dem All schützt. Das komplizierte Gleichgewicht in der dünnen Lufthülle ist Grundlage für die Existenz des Lebens auf unserem Planeten.



Vertauschte Rollen: Die Erde geht über dem Mondhorizont auf. Am 20. Juli 1969 landeten zum ersten Mal Menschen auf dem 380 000 Kilometer entfernten Erdtrabanten.

Warum ist die Erde ein blauer Planet?

Der Mars erscheint rot, der Jupiter weiß und Uranus grün. An der Farbe der Erde ist der Mond beteiligt: Die Erde reflektiert Sonnenlicht zum Mond und dieser wirft das Licht zurück. An diesen reflektierten Strahlen überwiegt der blaue Anteil.

Welche Farbe hat der Himmel?

Nicht blau, sondern rot. Eine Vielzahl der Strahlen im All liegt sogar im Infrarotbereich. Die blaue Farbe wird durch Reflexion erzeugt: Feinste Teilchen in der Atmosphäre zerstreuen die violetten und blauen Strahlen, während gelbe und rote Strahlen ungehindert passieren. Das Auge erkennt nur die blaue Streustrahlung.

Nimmt die Zahl der Naturkatastrophen zu?

Der Eindruck täuscht. Wir leben in einem Medienzeitalter, und der Bericht über ein Erdbeben im entlegendsten Winkel der Erde flimmert bereits wenige Stunden später über die Fernsehbildschirme. Die Statistik zählt beispielsweise für jedes Jahrzehnt dieses Jahrhunderts etwa ein halbes Dutzend größerer Naturkatastrophen wie Vulkanausbrüche, Erdbeben, Überschwemmungen, Stürme auf.

Kann die Erde explodieren?

Nein. Zwar ist die Erde ein Himmelskörper mit vulkanischer Glut unter einer dünnen Kruste. Doch der Innendruck reicht nicht aus, um den gesamten Planeten zu sprengen.

Droht eine neue Eis- oder Wärmezeit?

Der Wechsel der Durchschnittstemperatur ist in der Erdgeschichte eine durchaus normale Erscheinung. Die Saurier starben vor 65 Millionen Jahren vermutlich deshalb aus, weil das Erdklima abkühlte. Noch früher herrschten in unseren Breiten Temperaturen wie heute in der Südsee. Und die Französische Revolution wurde vor 200 Jahren zum Teil durch eine „kleine Eiszeit" ausgelöst: Als Folge von Mißernten, eisigen Wintern und kühlen Sommern kam es zunächst zu einzelnen Hungeraufständen, schließlich zur Revolution. Heute werden diese natürlichen Wechseltrends im Erdklima durch menschliche Einflüsse überlagert. So scheint es, daß der Einfluß des durch Abgase erzeugten Treibhausklimas sich stärker auswirkt als die bisher bekannten Phasen der Aufwärmung und Abkühlung des Klimas.



Spuren eines Erdbebens: Die Statistik zählt für jedes Jahrzehnt etwa ein halbes Dutzend größerer Naturkatastrophen.

Wie entstand das Weltall?

Darüber gibt es unterschiedliche Theorien. Die wahrscheinlichste lautet: Am Anfang war eine kleine Kugel unvorstellbar dicht zusammengepreßter Energie, die plötzlich explodierte und sich seither mit rasender Geschwindigkeit ausbreitet – der Weltraum. Mit dieser Urknall-Theorie lassen sich die meisten unserer heutigen Erkenntnisse logisch erklären. Die Frage freilich, woher die kleine Energiekugel ganz zu Anfang dieser Entwicklung kam, kann die Wissenschaft nicht beantworten.

Wie groß ist das Weltall?

Der Durchmesser beträgt schätzungsweise 36 Milliarden Lichtjahre. Ein Lichtjahr ist die Strecke, die Licht (Geschwindigkeit: 300 000 Kilometer pro Sekunde) in einem Jahr zurücklegt: insgesamt etwa 10 Billionen Kilometer. Ein Lichtstrahl erreicht den Mond in 1,25 Sekunden, ein Sonnenstrahl die Erde in etwa 8 Minuten. Da sich Funksignale und auch Raumschiffe mit vielfach geringerer Geschwindigkeit durch das All bewegen, wird die Schwierigkeit deutlich, andere Sonnensysteme innerhalb einer menschlichen Lebensphase zu erreichen.

Dehnt sich das Weltall immer noch aus?

Ja! Auch unser Sonnensystem wandert mit einer Geschwindigkeit von 20 Kilometern pro Sekunde durch das Weltall, die gesamte Milchstraße, zu der unser Sonnensystem gehört, sogar mit 300 Kilometern pro Sekunde. Da sich das Weltall ausdehnt, aber die darin enthaltene Materie gleichbleibt, nimmt die Konzentration der Materie ab. Mit anderen Worten: Die Entfernung zu anderen Sonnensystemen wird ausgehend von der Urknall-Theorie immer größer.

Wie entstehen Sonnenlicht und -wärme?

Der Druck im Zentrum der Sonne beträgt etwa 110 Millionen Tonnen pro Quadratzentimeter. Das reicht aus, um Atome zu zertrümmern, ihre Kerne freizulegen und zusammenprallen zu lassen. Dabei wird jene Strahlung frei, die Licht und Wärme für das Leben auf der Erde liefert.

Wann stirbt die Sonne?

Die Sonne gewinnt ihre Strahlungsenergie aus thermonuklearen Reaktionen in ihrem Innern. Einfach ausgedrückt: Sie verheizt sich selbst. Geht der Energievorrat der Sonne einmal zur Neige, wird sie sich gewaltig ausdehnen – in etwa sechs Milliarden Jahren.

Dabei verschlingt sie auch ihr gesamtes Planetensystem einschließlich der Erde. Am Ende wird die zu einem „Roten Riesen" aufgeblähte Sonne unter der Wirkung ihrer eigenen Schwerkraft in sich zusammenbrechen und zu einem schwach leuchtenden „Weißen Zwerg" von ungeheurer Dichte werden.

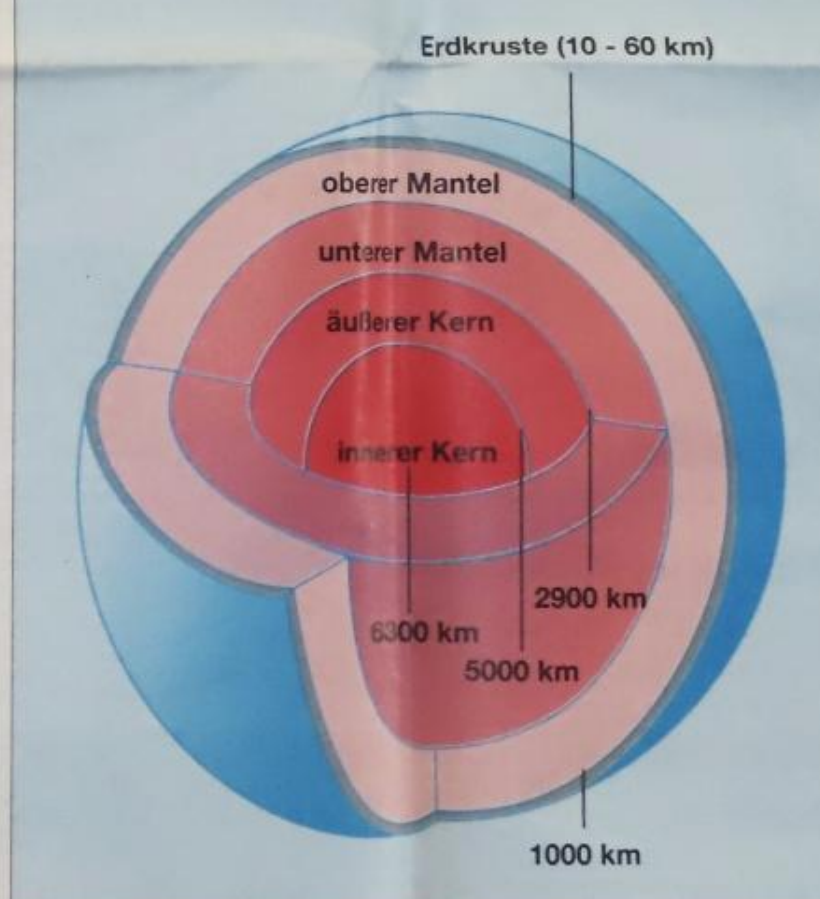
Ist auch der letzte Rest an Energie aufgebraucht, bleibt nur noch ein toter dunkler Himmelskörper, ein „Schwarzer Zwerg", übrig. Das wird in etwa acht Milliarden Jahren sein.

Gibt es Leben auf anderen Planeten?

Viel spricht dafür: Die irdischen Lebenselemente Sauerstoff, Wasserstoff oder Kohlenstoff sind im Weltall weit verbreitet. Denkbar wäre auch durchaus eine Lebensform, die chemisch ganz anders konstruiert ist als irdisches Leben. Nach Meinung vieler Wissenschaftler wäre es Ausdruck von Arroganz, wollte man annehmen, daß die unvorstellbare Zahl von Planeten in anderen Sonnensystemen des Weltalls durchweg ohne Leben ist.

Entnommen aus dem Sparkassen-Magazin. Bearbeitung: Klaus-Peter Wilmes

Aufbau der Erde



Die Erde in Zahlen

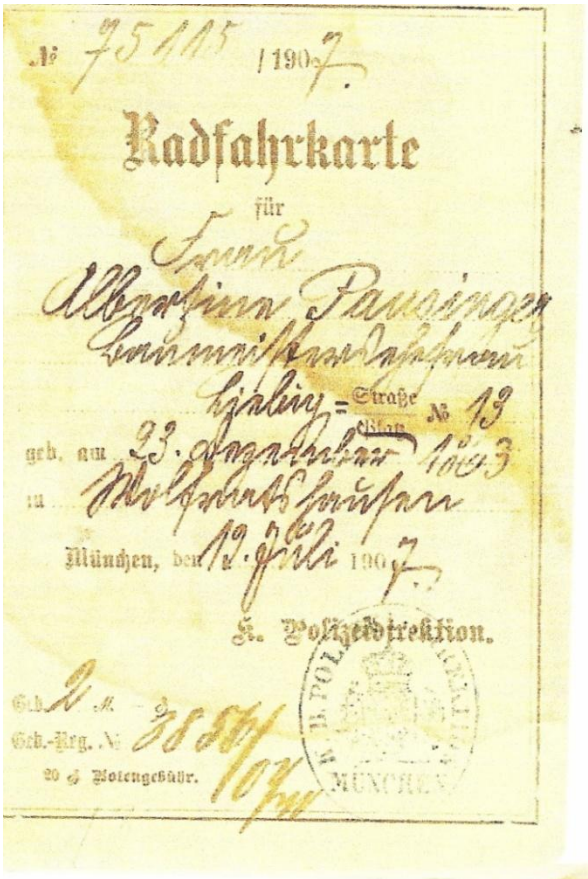
- Durchmesser am Äquator: 12 756 Kilometer.
- Durchmesser vom Nord- zum Südpol: 12 714 Kilometer.
- Entfernung zur Sonne: 149,6 Millionen Kilometer.
- Mittlere Geschwindigkeit auf ihrer Umlaufbahn um die Sonne: 107 280 km/h.
- Länge des Tages: 24 Stunden, 3 Minuten, 57 Sekunden.
- Länge des Jahres: 365,24 Tage (der Vierteltag wird alle vier Jahre durch den 29. Februar aufgefangen).
- Wasservorrat: 1,3 Milliarden Kubikkilometer, davon 97 Prozent in den Ozeanen; nur 97 000 Kubikkilometer erreichen als Niederschlag das Festland.
- Erdoberfläche: 29 Prozent Land (Kontinente Afrika, Amerika, Antarktis, Asien, Australien und Europa); 71 Prozent Wasser.
- Alter 4,5 Milliarden Jahre.
- Höchste Landerhebung Mount Everest mit 8 848 Metern.
- Größte bekannte Meerestiefe: Witjastiefe I im Marianengraben des Pazifischen Ozeans mit 11 022 Metern.
- Temperatur im Erdmittelpunkt (6 300 Kilometer tief): zwischen 2 000 und 10 000 Grad (Schätzung).

Wetterrekorde: Hitliste der Meteorologen

- Europas Hitzerekord: Am 4. August 1881 in Sevilla/Spanien mit 50 Grad.
- Welt-Hitzerekord: Am 13. September 1922 in Al'Aziziyah/Libyen mit 58 Grad.
- Europas Regenrekord: In Crkvika/Jugoslawien mit 460 Zentimetern im Jahresdurchschnitt.
- Europas Trockenrekord: In Astrakhan/Rußland mit 16 Zentimetern im Jahresdurchschnitt.
- Deutschlands Kälterekord: Am 12. Februar 1929 in Hüll/Kreis Mainburg mit minus 37,8 Grad, am Tag zuvor in Zittau/Sachsen minus 33,8 Grad.
- Deutschlands kältester Ort: Zugspitze mit einer jährlichen Durchschnittstemperatur von minus 11,6 Grad. Die tiefste Temperatur wurde auf der Zugspitze im Februar 1940 gemessen: minus 36,6 Grad; die höchste Temperatur im Juli 1957 mit 17,9 Grad.
- Europas Schneerekord: Im März 1894 fiel im Riesengebirge an 3 Tagen 3 Meter Schnee.
- Afrikas Kälterekord: Am 11. Februar 1935 in Ifrane/Marokko mit minus 24 Grad.

11 Verschiedenes über die Jahrzehnte

11.1 Radfahrkarte (1907) und Atbeitsordnung (1920)



№ 75115 / 1907.

Radfahrkarte

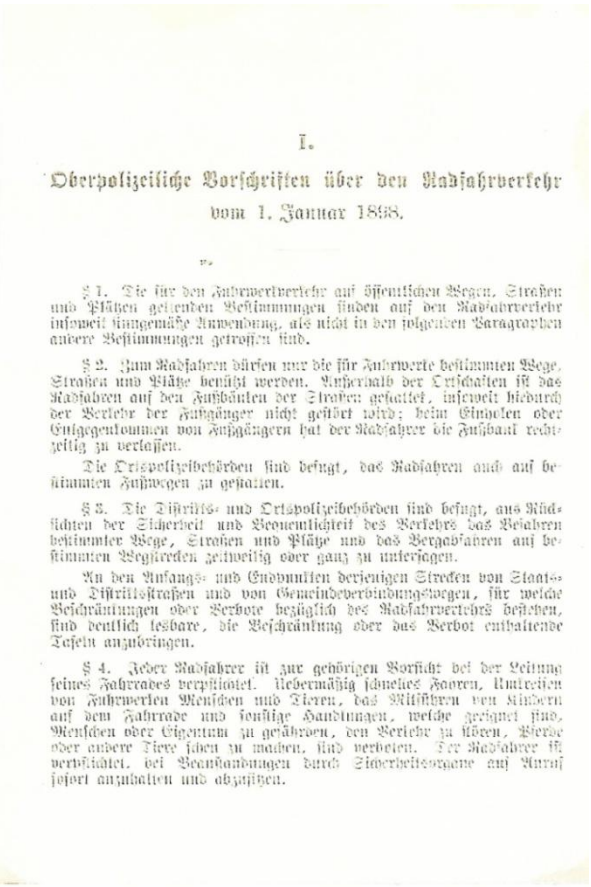
für

Frau
Klementine Pauringer
Ehefrau
Lilienstraße № 13
geb. am 23. September 1863
in Mühldorf Oberbayern

München, den 19. Juli 1907.

K. Polizeidirektion.

Geb. M. 2.–
Geb.-Reg. № 38807
20 ₰ Botengebühr.



I.

Oberpolizeiliche Vorschriften über den Radfahrverkehr
vom 1. Januar 1898.

§ 1. Die für den Fuhrwerkverkehr auf öffentlichen Wegen, Straßen und Plätzen geltenden Bestimmungen finden auf den Radfahrverkehr insoweit sinngemäße Anwendung, als nicht in den folgenden Paragraphen andere Bestimmungen getroffen sind.

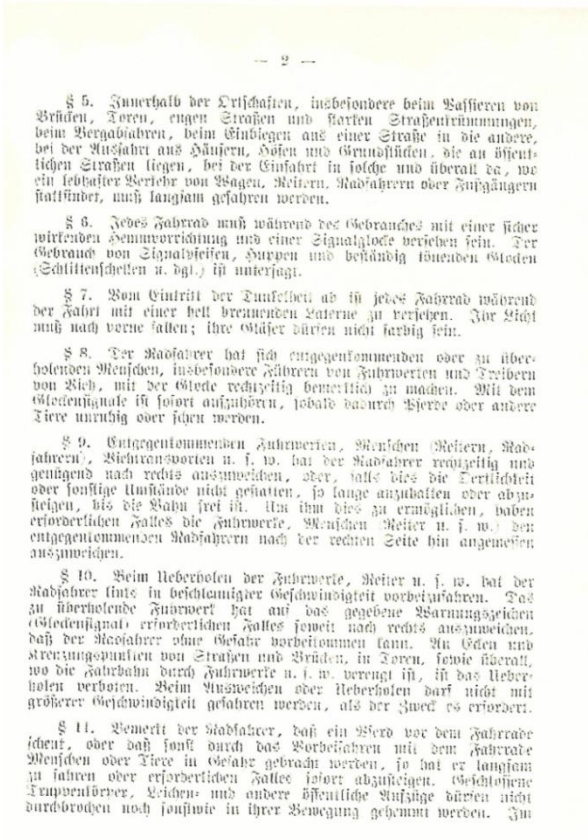
§ 2. Zum Radfahren dürfen nur die für Fuhrwerke bestimmten Wege, Straßen und Plätze benützt werden. Außerhalb der Ortschaften ist das Radfahren auf den Fußbänken der Straßen gestattet, insoweit hiedurch der Verkehr der Fußgänger nicht gestört wird; beim Einholen oder Entgegenkommen von Fußgängern hat der Radfahrer die Fußbank rechtzeitig zu verlassen.

Die Ortspolizeibehörden sind befugt, das Radfahren auch auf benannten Fußwegen zu gestatten.

§ 3. Die Distrikts- und Ortspolizeibehörden sind befugt, aus Rücksichten der Sicherheit und Bequemlichkeit des Verkehrs das Befahren bestimmter Wege, Straßen und Plätze und das Bergabfahren auf bestimmten Wegstrecken zeitweilig oder ganz zu untersagen.

An den Anfangs- und Endpunkten derjenigen Strecken von Staats- und Distriktsstraßen und von Gemeindeverbindungswegen, für welche Beschränkungen oder Verbote bezüglich des Radfahrverkehrs bestehen, sind deutlich lesbare, die Beschränkung oder das Verbot enthaltende Tafeln anzubringen.

§ 4. Jeder Radfahrer ist zur gehörigen Vorsicht bei der Leitung seines Fahrrades verpflichtet. Uebermäßig schnelles Fahren, Umreiten von Fuhrwerken Menschen und Tieren, das Mitführen von Kindern auf dem Fahrrade und sonstige Handlungen, welche geeignet sind, Menschen oder Eigentum zu gefährden, den Verkehr zu stören, Pferde oder andere Tiere scheu zu machen, sind verboten. Der Radfahrer ist verpflichtet, bei Veranlassungen durch Sicherheitsorgane auf Anruf sofort anzuhalten und abzusitzen.



— 2 —

§ 5. Innerhalb der Ortschaften, insbesondere beim Passieren von Brücken, Toren, engen Straßen und starken Straßenkrümmungen, beim Bergabfahren, beim Einbiegen aus einer Straße in die andere, bei der Ausfahrt aus Häusern, Höfen und Grundstücken, die an öffentlichen Straßen liegen, bei der Einfahrt in solche und überall da, wo ein lebhafter Verkehr von Wagen, Reitern, Radfahrern oder Fußgängern stattfindet, muß langsam gefahren werden.

§ 6. Jedes Fahrrad muß während des Gebrauches mit einer sicher wirkenden Hemmvorrichtung und einer Signalglocke versehen sein. Der Gebrauch von Signalpfeifen, Hupen und beständig tönenden Glocken (Schlittenschellen u. dgl.) ist untersagt.

§ 7. Vom Eintritt der Dunkelheit an ist jedes Fahrrad während der Fahrt mit einer hell brennenden Laterne zu versehen. Ihr Licht muß nach vorne fallen; ihre Gläser dürfen nicht farbig sein.

§ 8. Der Radfahrer hat sich entgegenkommenden oder zu überholenden Menschen, insbesondere Führern von Fuhrwerken und Treibern von Vieh, mit der Glocke rechtzeitig bemerklich zu machen. Mit dem Glockensignale ist sofort aufzuhören, sobald dadurch Pferde oder andere Tiere unruhig oder scheu werden.

§ 9. Entgegenkommenden Fuhrwerken, Menschen (Reitern, Radfahrern), Viehtransporten u. s. w. hat der Radfahrer rechtzeitig und genügend nach rechts auszuweichen, oder, falls dies die Oertlichkeit oder sonstige Umstände nicht gestatten, so lange anzuhalten oder abzusteigen, bis die Bahn frei ist. Um ihm dies zu ermöglichen, haben erforderlichen Falles die Fuhrwerke, Menschen, Reiter u. s. w. den entgegenkommenden Radfahrern nach der rechten Seite hin auszuweichen.

§ 10. Beim Ueberholen der Fuhrwerke, Reiter u. s. w. hat der Radfahrer links in beschleunigter Geschwindigkeit vorbeizufahren. Das zu überholende Fuhrwerk hat auf das gegebene Warnungszeichen (Glockensignal) erforderlichen Falles jeweil nach rechts auszuweichen, daß der Radfahrer ohne Gefahr vorbeikommen kann. An Ecken und Kreuzungspunkten von Straßen und Brücken, in Toren, sowie überall, wo die Fahrbahn durch Fuhrwerke u. s. w. verengt ist, ist das Ueberholen verboten. Beim Ausweichen oder Ueberholen darf nicht mit größerer Geschwindigkeit gefahren werden, als der Zweck es erfordert.

§ 11. Bemerkt der Radfahrer, daß ein Pferd vor dem Fahrrade scheut, oder daß sonst durch das Vorbeifahren mit dem Fahrrade Menschen oder Tiere in Gefahr gebracht werden, so hat er langsam zu fahren oder erforderlichen Falles sofort abzusteigen. Geschlossene Truppenkörper, Leichen- und andere öffentliche Aufzüge dürfen nicht durchbrochen noch sonstwie in ihrer Bewegung gehemmt werden. Zu

— 3 —

Dienste begriffenen Fuhrwerken der k. Post und der Feuerwehr ist freie Fahrbahn zu geben. Das Nebeneinanderfahren mehrerer Radfahrer ist nur insoweit gestattet, als dies ohne Belästigung des übrigen Verkehrs geschehen kann.

§ 12. Jeder Radfahrer muß eine von der Ortspolizeibehörde seines Wohnortes oder, falls er einen Wohnort in Bayern nicht hat, seines Aufenthaltsortes ausgestellte, auf seinen Namen lautende Fahrkarte bei sich führen und auf Erfordern den Aufsichtsbeamten vorzeigen. Die einmal ausgestellte Fahrkarte gilt unabhängig von einem etwaigen Wohnorts- oder Aufenthaltswechsel für das ganze Königreich.

Personen, welche sich nicht im Besitze einer solchen Fahrkarte befinden, dürfen auf öffentlichen Wegen, Straßen und Plätzen nicht radfahren.

Personen, welche das 14. Lebensjahr noch nicht vollendet haben, darf die Fahrkarte nur ausnahmsweise dann erteilt werden, wenn ausreichende Sicherheit dafür besteht, daß von ihnen eine Gefährdung des öffentlichen Verkehrs nicht zu besorgen ist; Personen unter 18 Jahren darf die Fahrkarte nur mit Zustimmung des gesetzlichen Vertreters erteilt werden.

Amtsbekannten Geisteskranken darf die Fahrkarte nur auf Grund ärztlichen Gutachtens und mit Zustimmung des etwaigen gesetzlichen Vertreters, sowie nur in jederzeit widerruflicher Weise erteilt werden.

Für Radfahrer, die sich nur auf der Durchfahrt in Bayern befinden, genügt eine von ihrer Heimatsbehörde ordnungsgemäß ausgestellte, auf ihren Namen lautende Fahrkarte, oder sonstige amtliche Legitimation.

Für aktive Militärpersonen und Zöglinge der Militärbildungsanstalten wird die Fahrkarte von ihren Kommandobehörden ausgefertigt.

Die Fahrkarte kann von der zur Ausstellung derselben jeweils zuständigen Behörde zeitweilig oder gänzlich entzogen werden, wenn der Radfahrer nach Erteilung der Fahrkarte wegen vorsätzlicher oder fahrlässiger Tötung oder Körperverletzung oder wegen Sachbeschädigung bestraft wurde, sofern diese Akte mit dem Radfahren im Zusammenhange stehen, ferner wenn er wegen Uebertretung der gegenwärtigen Vorschriften wiederholt gerichtlich bestraft worden ist.

§ 13. Die Ausstellung der Fahrkarte durch die Ortspolizeibehörde unterliegt der Gebühr nach Art. 165 Ziff. 2 lit. a bezw. Art. 188 des Gebührengesetzes und § 2 der Allerhöchsten Verordnung vom 20. September 1879, die gebührenpflichtigen Angelegenheiten der einer Distriktspolizeibehörde untergeordneten Gemeindebehörden betreffend.

Für Personen, welche das Fahrrad ausschließlich im öffentlichen Dienste benützen, wie Gendarmen, Schutzleute, Feuerwehrleute, Brief-

träger, Distriktstechniker, Straßenwärter u. s. w., erfolgt die Ausstellung der Fahrkarte gemäß Art. 3 Ziff. 1 des Gebührengesetzes gebührenfrei.

§ 14. In Gemeinden mit mehr als 50000 Einwohnern sind die Ortspolizeibehörden befugt, für die in ihrem Bezirke wohnenden Radfahrer die Führung von Nummernschilden an den Fahrrädern vorzuschreiben, beziehungsweise die hierüber bestehenden Vorschriften zu belassen, wobei bezüglich der aktiven Militärpersonen und der Zöglinge der Militärbildungsanstalten besondere Ausnahmsbestimmungen im Benehmen mit der zuständigen militärischen Kommandostelle zu treffen sind.

Die Kosten des polizeilich verliehenen Nummernschildes sind von dem Inhaber des Fahrrades zu ersetzen.

In Gemeinden unter 50000 Einwohnern, in welchen zur Zeit die Führung von Nummernschilden an den Fahrrädern bereits vorgeschrieben ist, kann diese Einrichtung aufrecht erhalten werden.

§ 15 aufgehoben.

§ 16. Uebertretungen der gegenwärtigen Vorschriften werden gemäß § 366 Ziff. 10 des Reichsstrafgesetzbuches mit Geldstrafe bis zu sechzig Mark oder mit Haft bis zu vierzehn Tagen bestraft.

§ 17. Die gegenwärtigen Vorschriften treten am 1. März 1898 für den ganzen Umfang des Königreiches in Kraft. Mit dem gleichen Zeitpunkte werden — vorbehaltlich der in § 14 enthaltenen Bestimmungen über die Beibehaltung der Vorschriften bezüglich der Führung von Nummernschilden — die bestehenden Polizeivorschriften über den Radfahrverkehr auf öffentlichen Wegen, Straßen und Plätzen aufgehoben. Den k. Kreisregierungen, den Distrikts- und Ortspolizeibehörden bleibt es anheimgestellt, etwa veranlaßt erscheinende weitere polizeiliche Vorschriften über den Radfahrverkehr, welche den gegenwärtigen Bestimmungen nicht entgegenstehen dürfen, innerhalb ihrer Bezirke zu erlassen.

II.

Auszüge aus den ortspolizeilichen Vorschriften der k. Polizeidirektion München vom 6. Oktober 1902 über den Straßenverkehr und den Verkehr in den öffentlichen Anlagen.

A.

V. Verkehr mit Personenfahrrädern.

§ 59. (**Allgemeine Bestimmungen.**) Das Radfahren hat sich ausschließlich auf die für den Fuhrwerkverkehr bestimmten Fahrbahnen bezw. auf die als solche kenntlich gemachten Radfahrwege zu beschränken.

Das Fahren auf den Trottoirs und sonstigen Fußwegen, das Ausfahren aus Häusern, Höfen, Toren und Grundstücken, sowie das Einfahren in diese über Trottoirs und sonstige Fußwege ist verboten. Außerhalb der zusammenhängend bebauten Stadtteile ist das Radfahren auf den Fußbänken der Straßen gestattet, insoweit hiedurch der Verkehr der Fußgänger nicht gestört wird; beim Einholen oder Entgegenkommen von Fußgängern hat der Radfahrer die Fußbank rechtzeitig zu verlassen.

Das Führen und der Gebrauch von Signalpfeifen, Hupppen und beständig tönenden Glocken (Schlittenschellen u. dgl.), sowie von sog. Radlaufglocken ist untersagt.

An unübersichtlichen Stellen, insbesondere beim Passieren von Toren und engen Straßen, beim Einbiegen aus einer Straße in die andere, sowie bei scharfen Straßenkrümmungen, endlich überall da, wo ein lebhafter Verkehr stattfindet, muß langsam gefahren und rechtzeitig Signal mit der Glocke gegeben werden.

Das Schieben von Fahrrädern ist auf allen Trottoirs ausnahmslos, auf den sonstigen Fußwegen nur innerhalb der zusammenhängend bebauten Stadtteile untersagt.

In den für den Fuhrwerkverkehr geschlossenen Straßen (§ 30)*) ist auch das Radfahren verboten.

*) Siehe B.

Soferne für einzelne Straßen eine bestimmte Fahrtrichtung vorgeschrieben ist (§ 31),*) darf auch der Radfahrverkehr nur in dieser Richtung erfolgen.

Die allgemeinen Vorschriften hinsichtlich des Fuhrwerkverkehrs, nämlich §§ 6, 20 Abs. I und V, 21 Abs. I mit VII, 22, 23, 25, 28 und 29*) haben sinngemäße Anwendung zu finden.

Verboten ist, auf Personenfahrrädern Gegenstände zu transportieren, welche erheblich länger sind als das Fahrrad selbst.

Untersagt ist endlich, bei der Fahrt Hunde an der Leine mitzuführen.

§ 60. (**Besondere örtliche Verbote.**) Das Fahren mit Personenfahrrädern ist abgesehen von den Fällen besonderer Berechtigung verboten:

1. in der k. Residenz,
2. in der Residenzstraße von der Feldherrnhalle bis zur Brienzingstraße während der Ablösung der k. Residenzwache einschließlich der Zeit, in welcher die Paradenmusik auf der Feldherrnhalle spielt,
3. über die Rampe des k. Hof- und Nationaltheaters, sowie des Prinzregententheaters,
4. zwischen dem sogenannten Stern auf dem Max Josef-Platze, der k. Residenz, dem k. Residenztheater und dem k. Hof- und Nationaltheater,
5. im Forum der Maximilianstraße auf dem nördlichen Straßenzug zwischen der Seitz- und Adelgundenstraße (beim k. Regierungsgebäude entlang),
6. durch den Schlichtingerbogen (Einmündung der Lederer- in die Burgstraße),
7. auf den von der Wolfratshauserstraße und der Ludwigshöhe zu Tal führenden Bergstraßen mit Ausnahme des sogenannten Schmidtberges in Thalkirchen,
8. im k. englischen Garten, mit Ausnahme der für den allgemeinen Lastfuhrwerkverkehr eröffneten Straßen,
9. in den k. Anlagen der Hirschau,
10. im k. Hofgarten einschließlich der Hofgartenarkaden,
11. auf der der Ostseite des k. Hofgartens entlang führenden Fahrstraße zwischen der Hofgarten- und der Galeriestraße,
12. in dem zum k. Schloß Nymphenburg gehörigen Hofgarten,
13. in den k. Maximiliansanlagen rechts der Isar nördlich des Maximilianeums,
14. im Bavariapark und in den Anlagen um die Ruhmeshalle,
15. auf der Theresienwiese mit Ausnahme der in der Verlängerung der Mozartstraße und der Bavariastraße zur Bavaria führenden Straßen.

*) Siehe B.

Im k. englischen Garten, in den k. Anlagen der Hirschau (hier mit Ausnahme des vom Ammeister und von der Gyßlingstraße zur Föhringer Fähre direkt führenden Weges), im k. Hofgarten einschließlich der Hofgartenarkaden und in dem zum k. Schloß Nymphenburg gehörigen Hofgarten ist auch das Schieben und Stehenlassen von Fahrrädern verboten.

Beim Befahren der beiden Auffahrtstraßen zum Terrassenbau an der Luitpoldbrücke muß jeweils der in der Fahrtrichtung rechtsliegende Straßenzug eingehalten werden.

Diese Auffahrtstraßen, sowie die äußere Prinzregentenstraße zwischen der Terrasse (dem Friedensdenkmal) und der Maria Theresiastraße dürfen nur im langsamen Tempo befahren werden.

Auf dem Wege zwischen Arnulf- und Bayerstraße entlang der Ostseite des Hauptbahnhofgebäudes ist der Durchgangsverkehr untersagt.

§ 61. (**Zeitliche Fahrbeschränkungen.**) Der Viktualienmarkt einschließlich der denselben durchziehenden Teile der Reichenbach- und Blumenstraße darf von 5 bis 11 Uhr vormittags nicht befahren werden.

Das Radfahren durch das Hofgartentor am Odeonsplatz ist in der Zeit von 7 Uhr vormittags bis 7½ Uhr nachmittags verboten.

Für gewisse Kategorien von Personen können polizeilich Ausnahmen gestattet werden.

B.

§ 20. (**Einhalten der Fahrbahnen etc.**) Der Fuhrwerkverkehr hat sich ausschließlich auf die dafür bestimmten Fahrbahnen zu beschränken. Das Fahren auf den Traversen in ihrer Längsrichtung ist verboten. Die als Radfahrwege bezeichneten Wege oder Straßenteile sind für jeden anderweitigen Verkehr verboten.

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Den zur Regelung des Verkehrs, namentlich zur Vermeidung von Verkehrsstörungen an Ort und Stelle ergehenden Anordnungen der Polizeiorgane, auch wenn diese Anordnungen nur durch Hochheben der Hand oder durch Winke erfolgen, ist Folge zu leisten.

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§ 21. (**Rechts- und Nebeneinanderfahren.**) Alles Fuhrwerk hat während der Fahrt, soweit nicht örtliche Hindernisse entgegenstehen

stets die der Fahrtrichtung nach rechtsseitige Hälfte der Fahrbahn tunlichst nahe dem Straßenrande einzuhalten.

Das Abbiegen nach der entgegengesetzten Seite zum Zwecke des Anhaltens darf nicht früher als durchaus notwendig erfolgen.

In denjenigen Straßen, in welchen die Fahrbahn nicht in ihrer ganzen Breite gepflastert ist, können Fuhrwerke, insoweit es die Verkehrs- und Straßenverhältnisse gestatten, den gepflasterten oder ungepflasterten Teil der Fahrbahn benützen; jedoch ist innerhalb des gepflasterten oder ungepflasterten Teiles stets rechts zu fahren und nach rechts auszuweichen.

In denjenigen von der Trambahn befahrenen Straßen, in welchen die Geleise nicht in der Mitte der Fahrbahn liegen, haben

1. Lastfuhrwerke den von den Trambahngeleisen freibleibenden Teil der Fahrbahn zu benützen; die Benützung der Fahrbahn innerhalb der Trambahngeleise ist nur zulässig, soweit der übrige Teil der Fahrbahn nicht frei oder nicht genügend breit ist;
2. für Personenfuhrwerke ist auch die Benützung der Fahrbahn innerhalb der Trambahngeleise zulässig, soweit hiedurch der Trambahnverkehr nicht gestört wird;

in allen diesen unter 1 und 2 bezeichneten Fällen ist jedoch stets rechts zu fahren und nach rechts auszuweichen.

Die Bestimmung des Abs. II gilt auch für die Fälle der Abs. III und IV.

Das Einbiegen aus einer Straße in die andere muß in gemäßigter Gangart und zwar nach rechts mit kurzer Wendung, nach links in weitem Bogen geschehen.

Auch beim Passieren von Toren, Straßenunterführungen 2c. ist, soweit nicht anderweitige polizeiliche Anordnungen getroffen sind, überall die rechte Seite, bezw. die rechte Durchfahrt, bei drei Durchfahrten die rechte Durchfahrt oder, bei genügender Breite zum Ausweichen, die rechte Seite der mittleren Durchfahrt zu benützen.

. . . . . .

§ 22. (**Begegnen von Hoffuhrwerken.**) Den zu Wagen oder zu Pferde befindlichen Mitgliedern des Königlichen Hauses darf nicht vorgefahren werden.

Fuhrwerke, welche Seiner Königlichen Hoheit dem Prinzregenten oder hier anwesenden Majestäten begegnen, haben, wenn Allerhöchstdieselben Sich zu Wagen oder zu Pferde befinden, rasch auf die Seite zu fahren und so lange zu halten, bis Seine Königliche Hoheit oder Ihre Majestäten vorüber sind.

Fuhrwerke, welche zu Wagen oder zu Pferde befindlichen anderen Mitgliedern des Königlichen Hauses oder hier weilenden fremden Fürstlichkeiten begegnen, haben nach der entgegengesetzten Seite ganz auszuweichen.

§ 23. (**Vorfahren.**) Es darf nur links vorgefahren werden. An Straßenecken und Kreuzungspunkten von Straßen, in Toren, sowie überall, wo die Fahrbahn durch entgegenkommende Fuhrwerke oder in sonstiger Weise verengt ist, ist das Vorfahren verboten.

§ 25. Im Schritte und mit besonderer Vorsicht muß außerdem gefahren werden:

1. bei der Ausfahrt aus Häusern, Höfen, Toren und Grundstücken, welche an öffentliche Straßen, Wege und Plätze grenzen, sowie bei der Einfahrt in erstere;
2. an Trambahnhaltestellen, wenn Fahrgäste aus- oder einsteigen;
3. überall da, wo ein besonders lebhafter Verkehr stattfindet.

§ 28. (**Truppenkörper und öffentliche Aufzüge.**) Geschlossene Truppenkörper oder geschlossene Abteilungen der Schutzmannschaft oder der Feuerwehr sowie öffentliche Aufzüge dürfen durch Fuhrwerke nicht durchbrochen oder sonstwie in ihrer Bewegung gehemmt werden.

§ 30. (**Ausschluß des Fuhrwerksverkehrs.**) Für allen Fuhrwerksverkehr sind, vorbehaltlich polizeilicher Erlaubnis in besonders gelagerten Fällen, geschlossen:

1. die Albertstraße,
2. die Hebammenstraße,
3. die Hl. Geiststraße,
4. die Probstbräustraße,
5. die Wolfstraße.

Das Befahren der Thiereckstraße, sowie der Straße am Durchlaß ist nur für den Bedarf der Angrenzer und zum Zwecke der Straßenreinigung gestattet.

§ 31. (**Fahrtrichtung.**) Soferne durch polizeiliche Anordnung das Befahren einer Straße nach einer bestimmten Richtung vorgeschrieben ist, darf nicht in entgegengesetzter Richtung gefahren werden.

Bis auf weiteres dürfen daher folgende Straßen nur in nachbezeichneter Richtung befahren werden:

1. die Altenhofstraße in der Richtung von der Diener- nach der Burgstraße,
2. die Augustinerstraße in der Richtung von der Neuhauser- und Kaufingerstraße nach dem Frauenplatz,

3. die Dürnbräustraße in der Richtung vom Thal nach der Lederer- bezw. Hochbrückenstraße,
4. die Filserbräustraße in der Richtung vom Frauenplatz nach der Weinstraße,
5. die Grufstraße in der Richtung von der Diener- nach der Weinstraße,
6. die Hahnenstraße in der Richtung von der Schönfeldstraße nach der Von der Tannstraße,
7. die Herbststraße in der Richtung von der Arnulf- nach der Marsstraße,
8. die Hofterstraße in der Richtung von der Hackenstraße nach dem Färbergraben,
9. die Leonhardstraße in der Richtung von der Preysing- nach der Kirchenstraße,
10. die Pflugstraße in der Richtung von der Marienstraße nach dem Thal,
11. die Rochusstraße und der Rochusberg in der Richtung von der Pfandhaus- nach der Salvatorstraße,
12. die Sammtstraße in der Richtung von der Lilienstraße nach dem Mariahilfplatz,
13. die Schlosserstraße in der Richtung von der Sonnenstraße nach der Zweigstraße,
14. die Schrammerstraße in der Richtung von der Wein- nach der Residenzstraße,
15. die Sporerstraße in der Richtung von der Weinstraße nach dem Frauenplatz,
16. die Wolfgangstraße in der Richtung von der Leonhard- nach der Preysingstraße.

III.

Anhang.

Reichsstrafgesetzbuch.

§ 230. Wer durch Fahrlässigkeit die Körperverletzung eines anderen verursacht, wird mit Geldstrafe bis zu neunhundert Mark oder mit Gefängnis bis zu zwei Jahren bestraft.

§ 366. Mit Geldstrafe bis zu sechzig Mark oder mit Haft bis zu vierzehn Tagen wird bestraft:

2c. 2c.

2. wer in Städten oder Dörfern übermäßig schnell fährt oder reitet, oder auf öffentlichen Straßen oder Plätzen der Städte oder Dörfer mit gemeiner Gefahr Pferde einfährt oder zureitet,
3. wer auf öffentlichen Wegen, Straßen oder Plätzen das Vorbeifahren anderer mutwillig verhindert,

2c. 2c.

10. wer die zur Erhaltung der Sicherheit, Bequemlichkeit, Reinlichkeit und Ruhe auf den öffentlichen Wegen, Straßen, Plätzen oder Wasserstraßen erlassenen Polizei-Verordnungen übertritt.

Es durften damals mit der Radfahrkarte nur bestimmte Straßen in einer Richtung befahren werden!

Arbeits-Ordnung

der

Maschinenfabrik Augsburg-Nürnberg A. G.
Werk Augsburg.

Einleitung.

Die nachstehende für Arbeitgeber und Arbeiter (Arbeiterinnen) rechtsverbindliche Arbeitsordnung ist auf Grund der Bestimmungen der Gewerbeordnung und des Betriebsrätegesetzes vereinbart. Sie tritt am 18. Oktober 1920 in Kraft.

Für alle Fragen des Lohn- und Arbeitsverhältnisses, über die die Arbeitsordnung nichts enthält, gelten die Bestimmungen der zwischen dem Verband Bayerischer Metallindustrieller und den Gewerkschaften abgeschlossenen Tarifverträge. Diese gehen entgegenstehenden Bestimmungen der Arbeitsordnung vor. Für Arbeiten außerhalb des Betriebes gelten neben dieser Arbeitsordnung besondere Vorschriften.

I. Beginn und Ende des Arbeitsverhältnisses.

§ 1.

Bei der Einstellung sind die Ausweispapiere, insbesondere die Quittungskarte für die Invalidenversicherung und von Minderjährigen das Arbeitsbuch beizubringen.

Zu den Ausweispapieren gehören auch Zeugnisse und die Steuerkarte.

Wohnung und Wohnungswechsel sind bekanntzugeben.

§ 2.

Wöchnerinnen müssen bei der Annahme eine Schonungszeit von 8 Wochen überstanden haben und nachweisen, daß seit ihrer Niederkunft wenigstens 6 Wochen verflossen sind.

§ 3.

Die Einstellung erfolgt unter Berücksichtigung der vereinbarten Richtlinien durch die Betriebsleitung oder den damit beauftragten Beamten. Jeder Arbeiter erhält bei seinem Eintritt in das Arbeitsverhältnis einen Abdruck der im Betriebe ausgehängten Arbeitsordnung, die er durch eigene Namensunterschrift in einer Personalkarte anzuerkennen hat. Erst nach Leistung der Unterschrift gilt der Arbeiter als eingestellt. Bei der Einstellung wird der Zeitpunkt für die Aufnahme der Arbeit verabredet. Bei Einstellung zu vorübergehender Arbeit muß dies ausdrücklich vereinbart werden.

§ 4.

Jeder Arbeiter gehört mit der Aufnahme der Arbeit der Krankenkasse an, zu der der Arbeitgeber den gesetzmäßigen Beitragsanteil bezahlt, sofern der Arbeiter nicht nachweisen kann, daß er Mitglied einer auf Grund der Reichsversicherungsordnung anerkannten Ersatzkasse ist.

Kündigung und Entlassung.

§ 5.

Das Arbeitsverhältnis kann unbeschadet der Rechte des Arbeiters aus den §§ 84—90 B.R.G. von beiden Seiten, gleichgültig, ob die Beschäftigung in Zeit- oder Stücklohn (Akkordlohn) erfolgt, ohne Einhaltung einer Kündigungsfrist und vor Fertigstellung einer bereits angefangenen Stücklohnarbeit (Akkordarbeit) zu jeder Zeit und Stunde gelöst werden.

Die Bestimmungen der Gewerbeordnung über fristlose Entlassung bleiben hiervon unberührt.

§ 6.

Bei dem Austritt erhält der Arbeiter sofort, wenn außergewöhnliche Umstände vorliegen, baldmöglichst die hinterlegten Papiere und den rückständigen Lohn gemäß § 15 der A.-O., sowie ein Arbeitszeugnis, das auf Verlangen auch auf Führung und Leistung ausgedehnt wird.

§ 7.

Der Arbeiter hat beim Austritt alle Maschinen, Werkzeuge, Werkzeugbuch und sonstige ihm anvertraute Gegenstände ordnungsgemäß der zuständigen Stelle zu übergeben. (Siehe auch §§ 23 und 26).

II. Arbeitszeit.

§ 8.

Arbeitstage sind sämtliche Werktage mit Ausnahme der gesetzlichen Feiertage und des Karsamstages sowie anderer gemäß den Bestimmungen des B.R.G. vereinbarter und durch Anschlag bekannt gegebener Tage.

§ 9.

Die regelmäßige Arbeitszeit dauert wöchentlich 48 Stunden und zwar:

während der **Sommermonate** vom 1. April bis Ende September:

Montag mit Freitag von 6^{45} morgens bis 3^{00} nachmittags,

Samstag von 6^{45} morgens bis 1^{00} nachmittags, mit $^1/_4$ stündiger Frühstückspause;

während der **Wintermonate** vom 1. Oktober bis Ende März:

Montag mit Freitag von 7^{45} morgens bis 4^{00} nachmittags,

Samstag von 7^{45} morgens bis 2^{00} nachmittags, mit $^1/_4$ stündiger Frühstückspause.

Am Tage vor dem Christfest und an Silvester schließt die Arbeitszeit wie an den Samstagen.

Die Arbeitszeit der jugendlichen Arbeiter wird nach den gesetzlichen Bestimmungen geregelt und durch Anschlag bekanntgegeben.

§ 10.

Verschiebungen der Arbeitszeit und Pausen werden mit der, nach dem Betriebsrätegesetz zuständigen Arbeitervertretung vereinbart und durch Anschlag rechtzeitig bekanntgegeben.

§ 11.

Die Arbeiter sind zur Leistung von Ueber-, Nacht-, Sonn- oder Feiertagsarbeit gemäß den tariflichen Bestimmungen und nach Vereinbarung über Umfang und Dauer mit der nach dem Betriebsrätegesetz zuständigen Arbeitervertretung verpflichtet. Die Ueberarbeit ist rechtzeitig bekanntzugeben.

In unvorhergesehenen dringenden Fällen kann die Leistung von Ueberarbeit von der Betriebsleitung angeordnet werden, wenn die Ueberarbeit zur Aufrechterhaltung des Betriebes notwendig ist und nicht vorher mit der Arbeitervertretung vereinbart werden kann.

Unter den Arbeiten, die zur Aufrechterhaltung des Betriebes notwendig sind, sind auch solche zu verstehen, bei denen es sich um Fertigstellung von notwendigen Arbeiten im Einzelfalle handelt.

In Notfällen, bei Inventuren oder bei Mangel an geeigneter Arbeit sind die Arbeiter verpflichtet, vorübergehend auch andere Arbeit zu verrichten, wie die, für die sie angenommen worden sind. Die Bezahlung erfolgt nach den hiefür in dem Tarifvertrage getroffenen Bestimmungen.

§ 12.

Maßgebend für Beginn und Ende der Arbeitszeit ist die Fabrikuhr, nach der die Zeichen zur

Aufnahme und Beendigung der Arbeit gegeben werden. 10 Minuten vor Beginn der Arbeit wird ein allgemeines erstes Zeichen gegeben. Jeder Arbeiter hat sich pünktlich bei seiner Arbeit einzufinden und bis zum Schluß der Arbeitszeit bei derselben zu verbleiben.

Der Aufenthalt in fremden Werkstätten, Betrieben und Abteilungen ohne Erlaubnis ist untersagt.

Jeder Arbeiter hat beim Betreten des Werkes die ihm zugewiesene Kontrollmarke oder -Karte an der Kontrolltafel beim Tor abzunehmen und an der Kontrolltafel in der Werkstätte aufzuhängen oder einzustecken. Nach Arbeitsschluß sind die Kontrollzeichen an den Tafeln in der Werkstätte abzunehmen und an den Tafeln beim Tor aufzuhängen oder einzustecken. Wenn das Kontrollzeichen sich nicht am richtigen Platze befindet, so muß dies sofort dem Pförtner angezeigt werden. Es ist streng untersagt, die Kontrolleinrichtungen für einen anderen Arbeiter zu benutzen oder sonstigen Mißbrauch damit zu treiben. Alle zur Kontrolleinrichtung gehörenden Gegenstände sind sorgfältig zu behandeln.

Arbeiter, die vor Schluß der Arbeitszeit die Fabrik verlassen wollen, haben vom zuständigen Vorgesetzten unter Angabe des Grundes einen Auslaßschein zu verlangen, welcher beim Pförtner abzugeben ist.

Zum Betreten des Verwaltungs- und Betriebsgebäudes sowie der Krankenkasse hat sich der Arbeiter bei dem zuständigen Vorgesetzten einen Ausweis ausstellen zu lassen und beim Zwischentorpförtner vorzuzeigen.

20 Minuten vor Beginn und nach Schluß der für ihn jeweils festgesetzten Arbeitszeit darf der Arbeiter ohne Erlaubnis nicht in der Fabrik anwesend sein.

§ 13.

Ist ein Arbeiter durch unvorhergesehene Veranlassung am Erscheinen zur Arbeit verhindert, so hat er dies baldmöglichst, tunlichst jedoch vor Ablauf des ersten Tages seiner Abwesenheit, unter Angabe der Gründe mitzuteilen.

Gesuche um Urlaub in besonderen Fällen sind möglichst einen Tag zuvor bei den zuständigen Vorgesetzten anzubringen.

Wer von der Arbeit fortbleibt und sich nicht spätestens am dritten Tage ausreichend entschuldigt, gilt, wenn die Möglichkeit der Entschuldigung vorlag, als mit dem Beginn der Versäumnis ausgeschieden.

III. Lohnberechnung und Lohnzahlung.

§ 14.

Der Arbeiter erhält für die von ihm geleistete Arbeit den vereinbarten Stunden- oder Stücklohn unter Zugrundelegung der tariflichen Abmachungen.

Bezahlt wird nur die Zeit, während der wirklich gearbeitet worden ist.

Abweichend von der Bestimmung unter Abs. 2 wird versäumte Arbeitszeit in folgenden Fällen bezahlt:

a) bei Betriebsunfällen bis zu 8 Arbeitsstunden;
b) beim Tode des in häuslicher Gemeinschaft lebenden Ehegatten bis zu 8 Arbeitsstunden;

c) beim Tode von Kindern unter 17 Jahren, sofern sie in häuslicher Gemeinschaft leben, bis zu 4 Arbeitsstunden.

§ 15.

Scheiden Arbeitnehmer vor der regelmäßigen Lohnzahlung aus, so erhalten sie ihren Verdienst nach Feststellung des Betrages ausgezahlt. Die Stücklohnberechnung erfolgt nach den tariflichen Bestimmungen. Die Auszahlung erfolgt an den Ausscheidenden persönlich gegen Quittung über den erhaltenen Betrag. Ausnahmsweise kann der Lohnbetrag postfrei übersandt werden. Erfolgt die Uebersendung durch die Post auf Wunsch des Arbeitnehmers, so geschieht dies auf dessen Kosten.

§ 16.

Die Lohnperiode dauert 7 Tage, sie beginnt jeweils am Montag.

§ 17.

Die Auszahlung des Lohnes erfolgt am Freitag jeder Woche während der Arbeitszeit bar, entweder direkt oder in verschlossenen Lohndüten.

Vor der Auszahlung erhält der Arbeiter einen Lohnausweis, aus welchem die Zahl der Lohn- und Akkordstunden, der Stundenlohn und Akkordverdienst ersichtlich sind.

Auf der Lohndüte sind außerdem noch die Abzüge ersichtlich.

Fällt der Lohntag auf einen Feiertag, so erfolgt die Auszahlung am vorhergehenden Werktage.

Die Lohnsummen können unter Ausgleich bei der nächsten Lohnzahlung auf Markbeträge abgerundet werden.

§ 18.

Einsprüche gegen die Berechnung des Lohnes müssen spätestens am ersten auf die Lohnzahlung folgenden Arbeitstage, Beanstandungen wegen Nichtübereinstimmung des ausgehändigten Geldbetrages mit der Endsumme der Abrechnung sofort, jedenfalls vor Verlassen des Zahllokales vorgebracht werden.

§ 19.

Bei der Lohnzahlung werden in Abzug gebracht:

a) die Beiträge zu den gesetzlichen Versicherungen,
b) gepfändete oder behördlich beschlagnahmte Beträge,
c) Vorschüsse gemäß der bei der Bewilligung getroffenen Vereinbarung,
d) Steuerabzüge, zu denen der Arbeitgeber gesetzlich verpflichtet ist,
e) die dem Arbeitgeber geschuldeten Beträge für überlassene Wohnung, Feuerung, Licht usw.
f) die auf Grund des § 31 Abs. 1 der Arbeitsordnung etwa zu zahlenden Geldbeträge.

§ 20.

Lohnreste, die binnen 6 Monaten nach dem Ausscheiden des Arbeiters aus dem Betrieb nicht erhoben wurden, verfallen zu Gunsten der Betriebskrankenkasse oder sonstiger sozialer Einrichtungen.

IV. Allgemeine Bestimmungen.

§ 21.

Die Arbeitszeit dient der ordnungsmäßigen Erledigung der Arbeit.

Die Beschäftigten sind verpflichtet, den zwischen Betriebsleitung und Betriebsrat vereinbarten Bestimmungen zur Erhaltung der Ordnung und der Sicherheit von Leben und Eigentum im Betrieb und Verwaltung zu entsprechen.

Sie haben den Anweisungen zu folgen, welche die mit der Leitung und Beaufsichtigung beauftragten Personen bei der Ausführung ihrer Obliegenheiten erteilen.

Die für den Betrieb bestehenden Unfall- und Feuerverhütungsvorschriften sind streng zu beachten, insbesonders dürfen Vorrichtungen zur Unfallverhütung und die Feuerlöscheinrichtungen nicht beseitigt oder unwirksam gemacht werden.

Die unbefugte Benutzung der Fahrstühle ist verboten.

Jeder Arbeiter kann beim Betreten und Verlassen der Fabrik angehalten werden, um sich wegen etwa unrechtmäßig mitgeführter Gegenstände auszuweisen. Durchsuchung mitgeführter Körbe, Pakete, Rucksäcke und dergl. sowie körperliche Untersuchungen sind zulässig.

Fahrräder dürfen nicht mit an die Kontrolltafel genommen werden und sind an den hiefür bestimmten Plätzen abzustellen und zu sichern. Radfahren innerhalb des Werkes ist untersagt.

Das Rauchen in den Holzbearbeitungswerkstätten, Modellböden und auf Holzlagerplätzen sowie

in allen, durch besondere Verbote gekennzeichneten Räumen ist strengstens untersagt. Rauchen während der Arbeitszeit ist nur gestattet
in den Gießereien während des Gießens,
in der Hammerschmiede den an den Schweißöfen Beschäftigten und
in den Pförtnerzimmern den Nachtpförtnern.

Mit Licht, Heizung, Wasser, Kraft und allen übrigen Materialien ist auf das sparsamste umzugehen.

Besuche fremder Personen, auch von Angehörigen der Arbeiter, sind nicht gestattet. In dringenden Fällen kann die Erlaubnis zu einer kürzeren Besprechung im Pförtnerzimmer erteilt werden. Den Arbeitnehmern ist jeder Handel innerhalb der Fabrik verboten.

Den Arbeitnehmern ist das Anbringen von Anschlägen im Werk untersagt.

Erkrankung und jeder erlittene Unfall muß sofort dem zuständigen Vorgesetzten angezeigt werden.

§ 22.

Der Arbeiter ist verpflichtet, jede Verhinderung an seiner Arbeit sofort der zuständigen Stelle zu melden, insbesondere wenn das Material zur Weiterarbeit auszugehen droht.

Erkennbare Fehler, die sich im Material oder in der vorherigen Bearbeitung zeigen, hat der Arbeiter dem zuständigen Vorgesetzten anzumelden, ehe er an dem betreffenden Stück fortarbeitet.

§ 23.

Werkzeuge sind sachgemäß zu behandeln. Das Schadhaftwerden oder der Verlust von Werkzeugen ist sofort zu melden.

Jeder Arbeiter, der Werkzeuge zur Ausführung seiner Arbeit benötigt, erhält einen verschließbaren Behälter (Kasten, Schrank usw.) und ist für das ihm übergebene Werkzeug verantwortlich. Er erhält darüber ein Verzeichnis, in das Zu- und Abgänge eingetragen werden. Eigenhändige Eintragungen dürfen vom Arbeiter nicht gemacht werden.

Die zum allgemeinen Gebrauch vorhandenen Werkzeuge müssen sofort nach erfolgter Benutzung in ordnungsmäßigem Zustande zurückgegeben werden.
Am Wochenschluß sind sämtliche derartige Werkzeuge in ordnungsmäßigem Zustande zurückzugeben.

Die Ausgabe neuer und der Umtausch unbrauchbar gewordener Werkzeuge erfolgt nur gegen Ausweis. Unbrauchbar gewordene Werkzeuge werden nur dann kostenlos ersetzt, wenn die Unbrauchbarkeit durch Abnutzung erkennbar ist oder Bruchstücke zurückgegeben werden, die die Werkzeuge kennzeichnen.

Eigene Werkzeuge dürfen nur mit Zustimmung des Arbeitgebers verwendet werden.

§ 24.

Jeder Arbeiter hat die von ihm zu bedienenden Maschinen sorgfältig zu behandeln und während der dafür festgesetzten Zeit, jedoch nur wenn sie außer Betrieb gesetzt sind, gut zu reinigen.

Veränderungen und Ausbesserungen an den Maschinen und Werkzeug-Vorrichtungen dürfen eigenmächtig nicht vorgenommen werden. Das Schadhaftwerden von Maschinen ist sofort zu melden.

§ 25.

Zeichnungen und Modelle sind mit besonderer Sorgfalt zu behandeln und nach erfolgter Benutzung an die vorgeschriebene Stelle abzuliefern. Von Zeichnungen, Gebrauchsmustern, Modellen usw. darf niemand ohne Zustimmung der Betriebsleitung Nachbildungen machen oder sie auch nur zeitweise aus der Fabrik entfernen.

Zur Wahrung der Fabrikgeheimnisse sind die Arbeiter verpflichtet.

§ 26.

Jeder Nachteil oder Schaden, der nachgewiesenermaßen der Fabrik vorsätzlich oder infolge grober Fahrlässigkeit durch einen Arbeiter zugefügt wird, sei es an Werkzeugen, Maschinen, Zeichnungen, Geräten, Werk- und Betriebsstoffen und Arbeitserzeugnissen oder an anderen Sachen, ist zu ersetzen.

§ 27.

Uebrig gebliebene Materialien und Abfälle von wertvollerem Material sind ordnungsmäßig zurückzugeben.

§ 28.

Den Arbeitern ist Uebernahme von Arbeiten auf eigene oder fremde Rechnung außerhalb der Arbeitszeit für dritte Personen, Anfertigung von Privatarbeiten während der Arbeitszeit sowie Mitnahme von Werkzeugen, Materialien usw. untersagt.

§ 29.

Das Umkleiden und Waschen darf — abgesehen von abweichenden Vereinbarungen in besonderen Fällen — nicht während der Arbeitszeit und nur in den dazu bestimmten Räumen geschehen. Die Kleider sind in dem verschließbaren Schrank aufzubewahren.

§ 30.

Jeder Arbeiter, der sich durch Betriebseinrichtungen, Anordnungen der Betriebsleitung, Verhalten von Aufsichtsbeamten oder Mitarbeitern benachteiligt oder aus irgend welchem Grunde unberechtigt behandelt glaubt oder in Ausübung seiner Arbeit behindert fühlt, hat das Recht, sich innerhalb der Geschäftsstunden an den nächstzuständigen Betriebsbeamten und gegebenenfalls an die Betriebsleitung spätestens am nächsten Arbeitstage mündlich oder schriftlich zu wenden. Der Zutritt zur Betriebsleitung kann nach vorheriger Anmeldung durch Zettel, welche vor Eintritt in die Fabrik beim Pförtner zu haben sind, erfolgen.

Findet eine befriedigende Erledigung nicht statt, so kann er sich beschwerdeführend an den Arbeiterrat wenden. Anonyme Anzeigen werden nicht berücksichtigt.

V. Schlußbestimmungen.

§ 31.

Die Betriebsleitung stellt unter Mitwirkung des Arbeiterrates die nachstehenden Bestimmungen

fest, die bei Verstößen gegen die Arbeitsordnung zur Anwendung kommen sollen. Hierbei sind die Vorschriften des BRG. und der GO. beachtet.

Die erlassenen Bestimmungen bilden eine Ergänzung der Arbeitsordnung (§ 104 VI BRG.).

Zuwiderhandlungen gegen diese Arbeitsordnung und die nach Maßgabe derselben und der Gewerbeordnung erlassenen Anordnungen können mit Verweis, Androhung der Entlassung, Entlassung oder mit Geldstrafen bis zur Hälfte des durchschnittlichen Tagesarbeitsverdienstes, Tätlichkeiten gegen Mitarbeiter, erhebliche Verstöße gegen die guten Sitten, sowie gegen die zur Aufrechterhaltung der Ordnung des Betriebes, zur Sicherung eines gefahrlosen Betriebes oder zur Durchführung der Bestimmungen der Gewerbeordnung erlassenen Vorschriften mit Geldstrafen bis zum vollen Betrag des durchschnittlichen Tagesarbeitsverdienstes belegt werden.

Die Strafen werden im Einzelfalle durch den Arbeitgeber oder seinen dazu ermächtigten Vertreter festgesetzt, dem Betreffenden mit Angabe des Grundes sofort mitgeteilt. Die Strafen werden bei der nächsten Lohnzahlung eingezogen und für die Betriebskrankenkasse oder andere soziale Zwecke zum Besten der Arbeiter verwendet.

§ 32.

Bekanntmachungen der Firma an die Arbeiter erfolgen rechtswirksam durch Anschlag an den hierfür vorgesehenen zugänglichen Stellen. Es kann sich niemand darauf berufen, einen Anschlag nicht gelesen zu haben.

Vereinbarungen zwischen Betriebsleitung und Arbeitervertretung über Aenderungen, Ergänzungen oder Auslegungen der Arbeitsordnung werden mit beiderseitiger Unterschrift bekanntgegeben.

Diese Arbeitsordnung ist auf Grund des § 78, Ziffer 3 und § 104, IV, BRG. erlassen.

Augsburg, den 2. Oktober 1920.

Maschinenfabrik Augsburg-Nürnberg A.G.

gez.: Lauster. ppa. Heller.

Für den Arbeiterrat: gez.: Thum.

Druck von Joh. Walch, Buch- u. Steindruckerei, Augsburg.

11.2 Very Deep Impression: Germany's Win of the Soccer Championship (Bern, 1954)

During a school trip, we had the opportunity to watch a small black and white television from a great distance. The 3-2 victory against Hungary, at that time the best team in the world, had been unimaginable for us, but my football hero Fritz Walter (with him half the German team came from Kaiserslautern) achieved this momentous event for all of us in Germany under the Boss, our national coach Seppl Herberger.

Some details:
The roles are clearly defined at Bern's Wankdorf Stadium before kickoff of the World Cup final: Germany is a massive underdog against the formidable Hungarians.
Even in the group stage, the German team faced the Hungarian legends, featuring stars like Czibor, Puskás, and Kocsis, and suffered a crushing 3-8 defeat. Nevertheless, Sepp Herberger's men finished second in their group and advanced to the quarterfinals, defeating Yugoslavia and Austria, and now face the Magyars once again in the final. After just nine minutes, the situation seemed hopeless, with Germany trailing 2-0. But spurred on by the traveling German fans, Morlock, Rahn, Walter & Co. battled against defeat in the pouring rain. Morlock slotted home a pass from Rahn in the 10th minute to pull one back, and nine minutes later Helmut Rahn equalized.

And finally, with these legendary words

*"**Rahn should shoot from the back – Rahn shoots! – Goooal! Goooal! Goooal! Goooal!"***

our famous radio reporter Herbert Zimmermann commented on July 4, 1954, on the play that made Germany world champions for the first time and lifted the entire country out of a deep depression just nine years after the end of the war.


Montag, den 5. Juli

10 Pf

Bild ZEITUNG

UNABHÄNGIG · ÜBERPARTEILICH

Das Unheil lauerte überall

Züge rasten ineinander

3:2! Deutschland ist Weltmeister!

Der Triumph über Ungarn

Kurz vor Schluß schoß Rahn das Siegestor

Mercedes vorn!



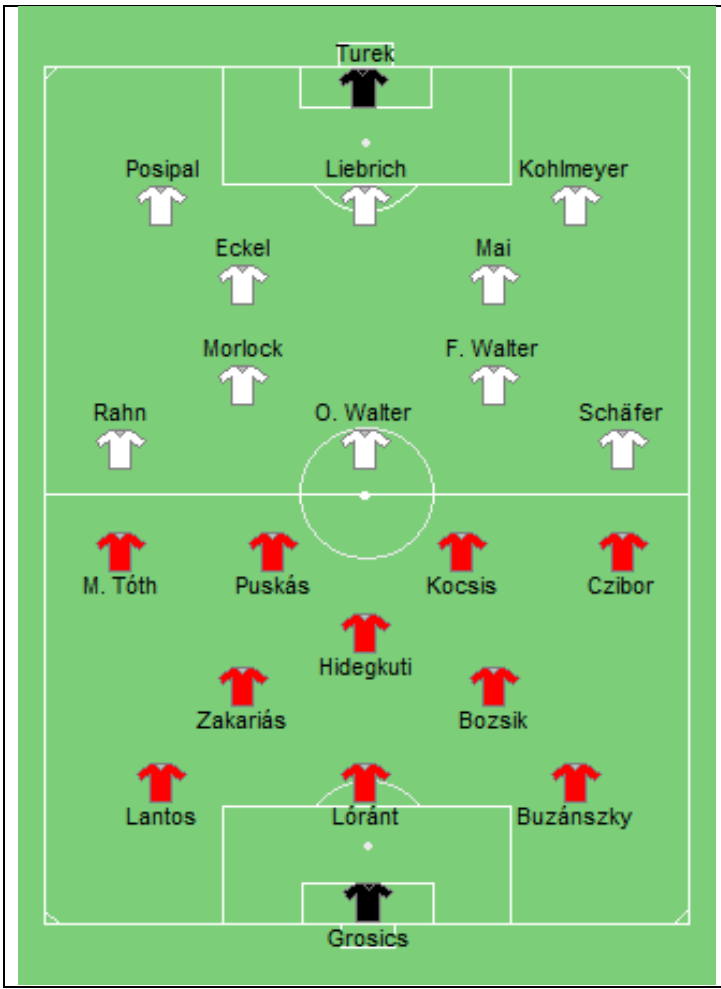
On above school trip, we carried the heavy pot for preparing our very hearty soup. Classmate Zschiesche carried the lid. I helped him.



Being very proud,
I bought for 10 DPfg this
Bild daily paper
on the next day.

(I could witness all 4
championships
on TV!)

Fritz Walter was our hero. In 1955, when the, at that time excellent team 1. FC Kaiserslautern gave a guest match in our district town, we all went there.



Hungary was the best team in the world at the time. As schoolchildren, we identified with Puskás or Hidegkuti.

HN Nummer 298

Sport am Montag

Montag, 23. Dezember 1957

Der 1:0-Sieg über Ungarn war verdient



Die beiden Kapitäne Nandor Hidegkuti und Hans Schäfer tauschen Wimpel aus. Zwischen ihnen der holländische Schiedsrichter Martens, der sein erstes Länderspiel gut über die Zeit brachte.

Deutsche Wucht und Kampfgeist stoppten ungarische Eleganz, der die Krönung fehlte

Sportredakteur Hermann Wittekindt berichtet aus Hannover

Die Weltmeisterschaftsrevanche, von der nach Bern so oft gesprochen wurde, die aber immer wieder sich verschob, zu der kam es auch in Hannover nicht, denn in dem nach hartem Winterwetter sonnenüberstrahlten und fast völlig besetzten Niedersachsen-Stadion feierte man einen kaum erwarteten, aber doch verdienten deutschen Sieg. Mit 1:0 fiel er zwar recht knapp aus und mußte in der zweiten Hälfte schwer verteidigt werden, aber es war immerhin ein Sieg und keine von fast allen deutschen Fußballanhängern erwartete Niederlage. Soll man aber nach diesem Sieg in Jubelstürme ausbrechen und wieder neue Hoffnungen für Stockholm hegen? Nein! Tempogeladen und kampfreich war das Treffen, aber keine Offenbarung. Der größeren spielerischen Eleganz der Ungarn setzten die Deutschen Kampfeseifer und eine kaum erwartete Wucht entgegen. Und die Ungarn? Sie blieben weit hinter den Erwartungen zurück. Im Training schossen sie wie aus allen Rohren, aber im Spiel war nichts von kraftvollen Schüssen zu sehen. Und so kann man, wenn man die Chancen auf beiden Seiten abwägt, unsern Sieg schon als verdient bezeichnen, wenn er auch oft genug an einem seidenen Faden hing.

Alle Vorbedingungen gut

Das Niedersachsen-Stadion bot sich in prächtiger Verfassung dar. Der Schnee war vollständig vom Spielfeld weggeräumt, die Grasnarbe gut, der Boden zwar etwas schwer, aber doch nicht zu schwer. Ungarns Fahnen im Flaggenwald im großen Rund zeigten kein Emblem, vereinzelt sah man in der Menge rot-weiß-grüne Fahnen, aber das Hui, Hui, Hurah, das man deutlich aus dem Riesenlärm vor dem Spiel und zu Anfang heraushören konnte, verstummte schließlich immer mehr, und auch ein ungarischer Begleiter konnte in der Pause seine Landsleute unter den Zuschauern nicht zu größerer Begeisterung entfachen.



Eisern stand der Abwehrblock

Das Hauptverdienst am deutschen Sieg ist den deutschen Abwehrreihen zuzuschreiben, sie kämpften mit einem beispielhaften Einsatz des ganzen Körpers, mit voller Wucht in alle gegnerischen Aktionen hereinfahrend. Herkenrath stand vor allem nach der Pause — vorher hatte er wenig zu tun — mehrfach im Brennpunkt. Seine Leistung war ohne Fehl und Tadel. Zweimal warf er sich in höchster Gefahr Sandor und Machos vor das Schußbein, und nachdem er verschiedene Schüsse sicher gehalten hatte, rettete für ihn, als er herausgelaufen war, Schäfer auf der Linie.

Juskowiak spielte das Spiel seines Lebens, für ihn galt es, sich wieder in die erste Reihe zu bringen, und das müßte er geschafft haben. Oft war der wieselflinke kleine schwarzhaarige Rechtsaußen Sandor zu bedauern, so hart wurde er genommen, aber auch Ehrhardt und später für ihn Stollenwerk brachten es immer wieder fertig, den nicht minder schnellen und wendigen Lenkal zu bremsen.

Eckel noch alte Klasse

Wewers als Stopper war überraschend gut, aber der Beste der Läuferreihe war doch Horst Eckel, der auch dann noch, als die Ungarn nach der Pause einen Dauerbelagerungszustand verhängt hatten, den Ball ab und zu nach vorn brachte und den letzten Ansturm der deutschen Mannschaft ankurbelte. Szymaniak kann man nicht den

Schnelle Außenstürmer

Lebhaft ging das Publikum mit, wenn unsere Außen, die leider viel zu oft auf die ungarische Abseitsfalle hereinfielen, losprechten. Vollmar fiel am meisten herein, aber trotzdem brachte er den meisten Schwung in den Angriff. Cieslarczyk war ja als Rechtsaußen eine Verlegenheitslösung, hing viel weit zurück, brachte aber dann, wenn er loszog, auch immer wieder Gefahr. Leider fand er nicht ganz die richtige Unterstützung durch Alfred Schmidt, während Schäfer sich oft als guter Regisseur erwies und bei der Ueberlegenheit der Ungarn viel hinten aushalf. Kelbassa, der Torschütze, gab sich durch schnelles Rochieren alle Mühe, seine Mannen in Schußposition zu bringen, aber das Spiel ging bei allen zu sehr in die Breite. Nur sein Tor war bei der Torsicherung der Ungarn der einzige Moment, wo er aus der langen Reihe von Freund und Feind herausschoß und zum Schuß kam.

Ungarn übertrieb das Querpaßspiel

Das, was wir bei der deutschen Mannschaft soeben rügten, das Spiel in die Breite, wurde von den Ungarn noch übertrieben. Gewiß hetzten sie ihre Außen los, aber meist wanderte der Ball zwar elegant und gekonnt, aber erfolglos von Mann zu Mann, ohne daß ein Schrittbreit Boden gewonnen wurde. Regisseur Hidegkuti war vor der Pause am meisten daran schuld, aber als für ihn nach dem Wechsel Bundszak hereinkam, wurde es nicht anders. Bei der Drangperiode der

Deutschland - Ungarn 1:0 (1:0)

Deutschland:

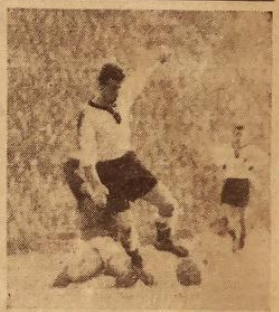
Herkenrath
Erhardt — Juskowiak
Eckel — Wewers — Szymaniak
A. Schmidt — Schäfer
Cieslarczyk — Kelbassa — Vollmar

Ungarn:

Lenkei — Machos — Sandor
Hidegkuti — Czordas
Berendi — Sipos — Boszik
Sarosi — Matrai
Grosics

Mitte der zweiten Halbzeit Bundszak für Hidegkuti, Stollenwerk für den verletzten Erhardt.

Schiedsrichter: Martens (Holland)
Tor: 29. Min. 1:0 Kelbassa



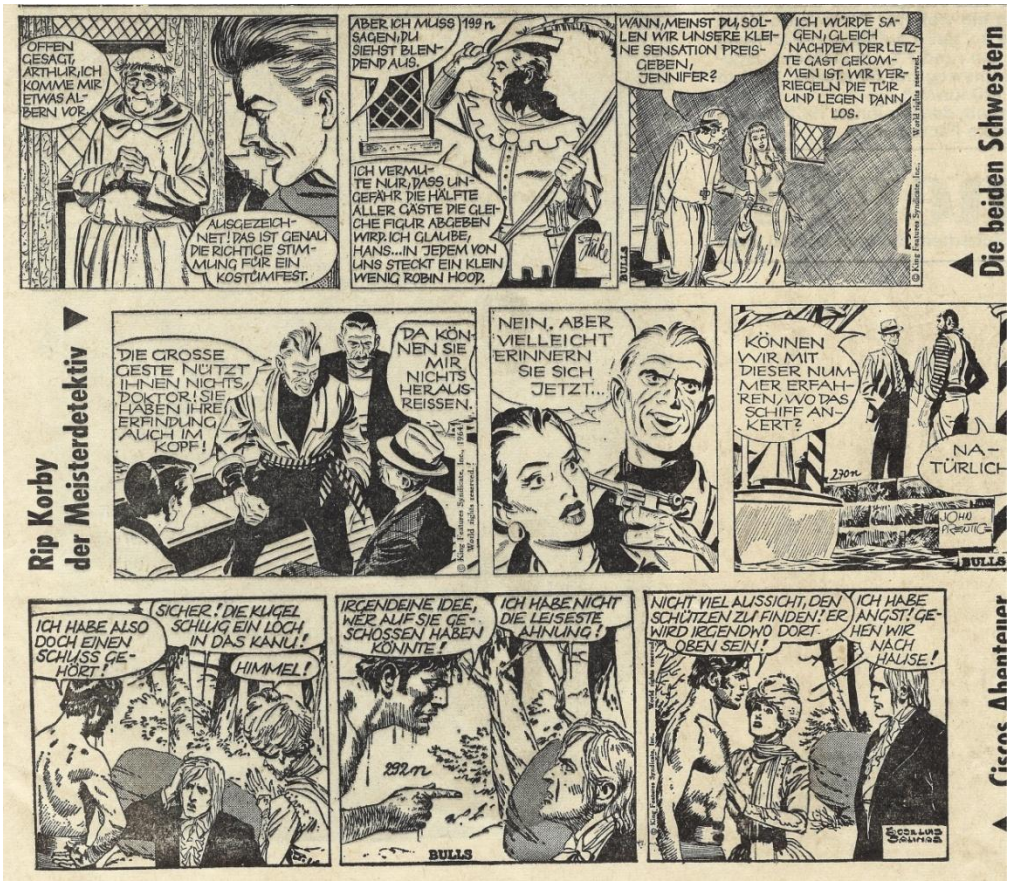
Schäfer war der Inszenator vieler Angriffe, im Hintergrund Horst Eckel, der wohl die beste Partie in der deutschen Mannschaft spielte.

Nach der Pause war noch ein zweites Tor für Deutschland gefallen. Szymaniak hatte einen Freistoß vors Tor gegeben, und Grosics wurde, ohne im Besitz des Balles zu sein, von zwei deutschen Stürmern in die Schere genommen. Der Ball war zwar, als Cieslarczyk und Kelbassa hochgesprungen waren, ins Tor geflogen, aber Martens gab es — völlig zu recht — nicht. Die Pfiffe waren unnötig, ebenso wie die Härten, die dann die Ungarn ins Spiel brachten und die zur Verletzung und dem Ausscheiden von Erhardt führten. Das war ein Mißton, der nicht zu sein brauchte, und daß die Ungarn zum Schluß nicht mehr zum Sportgruß antraten, war auch nicht besonders schön.

Das Fazit

Die Länderspielbilanz ist um einen weiteren Sieg reicher geworden, die Ungarn haben ihre Revanche nach [illegible]

Täglich in der Zeitung in den Fünfzigern.



Bundeswehr 1960 und 2026



Bewerbung elektronisch über Bewerbungsportal



11.3 Das war einmal

OLYMPISCHE SOMMERSPIELE 1992

Barcelona, 25. Juli bis 9. August

Medaillenspiegel

Nach 257 von 257 Wettbewerben

	Gold	Silber	Bronze
GUS	45	38	29
USA	37	34	37
Deutschland	33	21	28
China	16	22	16
Kuba	14	6	11
Spanien	13	7	2
Südkorea	12	5	12
Ungarn	11	12	7
Frankreich	8	6	16
Australien	7	9	11
Italien	6	5	8
Kanada	6	5	8
Großbritannien	5	3	12
Rumänien	4	8	9
CSFR	4	3	1
Nordkorea	4	–	3
Japan	3	8	11
Bulgarien	3	7	6
Polen	3	6	10
Niederlande	2	6	7
Kenia	2	4	2
Norwegen	2	4	1
Türkei	2	2	3
Indonesien	2	2	1
Brasilien	2	1	–
Griechenland	2	–	–
Schweden	1	7	4
Neuseeland	1	4	2
Finnland	1	3	2
Dänemark	1	1	4
Marokko	1	1	1
Irland	1	1	–
Estland	1	–	1
Äthiopien	1	–	1
Litauen	1	–	1
Algerien	1	–	1
Schweiz	1	–	–
Jamaika	–	3	1
Nigeria	–	3	1
Lettland	–	2	1
Österreich	–	2	–
Namibia	–	2	–
Südafrika	–	2	–
Serbien/Montenegro	–	1	2
Kroatien	–	1	2
Belgien	–	1	2
Iran	–	1	2
Israel	–	1	1
Peru	–	1	–
Taiwan	–	1	–
Mexiko	–	1	–
Slowenien	–	–	2
Mongolei	–	–	2
Surinam	–	–	1
Bahamas	–	–	1



Barcelona'92

VORHANG ZU: *Die Olympischen Spiele von Barcelona existieren nur noch in der Erinnerung.* Photo: dpa

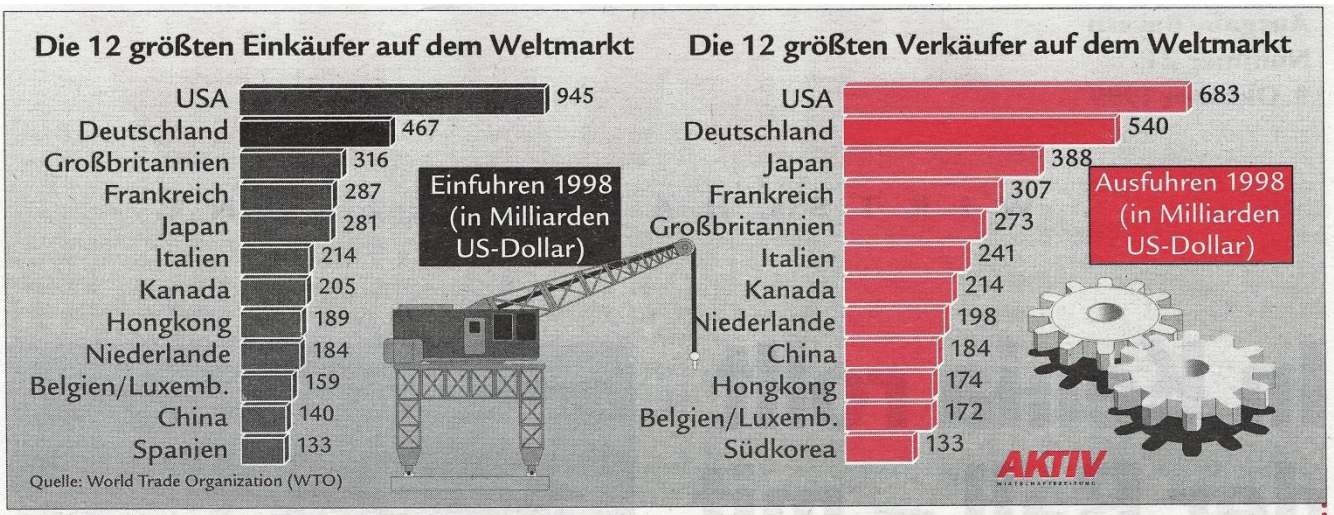
Boxen

Fußball

Handball

Hockey

Kanu



Der mit Abstand größte Markt für Erzeugnisse aus dem Ausland (Import) sind die USA. Auf Platz zwei – wenn auch mit erheblichem Abstand – liegt Deutschland. Beim Export liegen die Vereinigten Staaten wieder vor Deutschland. Insgesamt wurden 1998 weltweit Waren im Wert von 5 375 Milliarden US-Dollar exportiert. Das sind umgerechnet etwa 9 675 Milliarden Mark. Ein gut laufender Export wird auch 1999 der Garant für das – wenn auch mäßig steigende – Wirtschaftswachstum in Deutschland sein.

Heute zwei Sonderseiten vom Besuch der britischen Königin in Hessen

Einzelpreis 20 Pfennig

HERSFELDER ALLGEMEINE

Freitag, 21. Mai 65 Nr. 117

HESSISCHE ALLGEMEINE UNABHÄNGIG ÜBERPARTEILICH RUF 2947 - 3161 - 4597 1 P 3699 A

Königin Elizabeth grüßt die hessische Bevölkerung



Im Kurhaus in Wiesbaden (von links): Prinz Philip, Frau Zinn, Königin Elizabeth, der hessische Ministerpräsident Zinn und Chefdolmetscher Weber vom Auswärtigen Amt in Bonn. (Aufn.: Baron)

Festlicher Staatsbesuch in Wiesbaden

Monarchin würdigt Leistungen des Landes / 100 000 Menschen auf den Beinen

Wiesbaden (eg/AP/dpa). Auf ihrer Rundreise durch die Bundesrepublik hat Königin Elizabeth II. von England am Donnerstag mit ihrem Gemahl, Prinz Philip, Hessen und der Landeshauptstadt Wiesbaden einen Staatsbesuch abgestattet. Mit 15 Minuten Verspätung traf der Sonderzug im Wiesbadener Hauptbahnhof ein, wo Ministerpräsident Zinn das königliche Paar empfing. Von den 270 000 Wiesbadener Einwohnern waren schätzungsweise 100 000 auf den Beinen. Zwölf Kilometer maßen die Sperrseile an den Straßen, hinter denen sich die Menschen drängten. Auf der Fahrt zum Schloß wurde die aus elf Kraftfahrzeugen bestehende Kolonne stürmisch bejubelt. An der Treppe des Nassauer Schlosses, das jetzt den hessischen Landtag beherbergt, begrüßten Landtagspräsident Fuchs und seine Frau vor dem mit Blumen in den Farben Rot-Weiß-Blau getauchten Treppenaufgang die Monarchin.

Nach Vorstellung der hessischen Minister mit ihren Damen, des Landtagspräsidiums und des Wiesbadener Oberbürgermeisters nannte Ministerpräsident Zinn in einer kurzen Ansprache den die Landeshauptstadt umgebenden Teil Hessens das Stammland des oranischen Zweigs der nassauischen Grafen und erwähnte besonders Wilhelm III., der 1688 den englischen Thron bestieg und als Schöpfer der „Bill of Rights" (der Grundrechte Großbritanniens) entscheidend die verfassungsrechtliche Entwicklung des Inselreiches beeinflußte.

In ihrer Antwort stellte die Königin fest: „Ich bin Ihnen, Herr Ministerpräsident, Ihrer Regierung und der Bevölkerung des Landes Hessen sehr dankbar für das Willkommen, das Sie mir in dieser sehr eleganten Stadt entboten haben . . . Die Geschichte Ihres Landes weist viele Verbindungen mit dem Vereinigten Königreich und mit meiner eigenen Familie auf. Ich glaube sogar, daß mein Urgroßvater einer der regelmäßigsten Besucher der hessischen Bäder war."

Die Königin sprach dann ihre Freude über den regen kulturellen Austausch zwischen hessischen Städten und denen ihres Landes aus, würdigte die in Hessen im Erziehungswesen eingeführten Neuerungen und die in der Städteplanung erzielten Fortschritte und wies schließlich auf die engen englisch-deutschen Geschäftsbeziehungen hin. „Nicht weit von hier, in Frankfurt, dem finanziellen Zentrum Deutschlands, gibt es eine beträchtliche Kolonie britischer Geschäftsleute."

Elizabeth II. schloß: „Herr Ministerpräsident, ich bin sehr erfreut, heute als Ihr Gast hier weilen zu dürfen. Ich danke Ihnen und überbringe allen Bewohnern des Landes Hessen herzliche Grüße und gute Wünsche aus meinem Lande."

100 DM für einen Fensterplatz

Nach der Eintragung in das „Goldene Buch" der Stadt Wiesbaden fuhr die Königin im offenen Wagen an der Seite des Ministerpräsidenten unter brausendem Beifall zum Kurhaus. Immer wieder wurde der Ruf „Queen, Queen" laut. An der Seite von Frau Zinn folgte Prinz Philip im nächsten, nicht weniger herzlich bejubelt. Viele Wiesbadener hatten sich an der Durchfahrtsstraße einen Fensterplatz erkämpft. Zum Teil hatten sie bis zu 100 DM für die Chance bezahlt, die Königin aus nächster Nähe zu sehen.

Auf einem Teppich, den die englische Königin Victoria dem späteren Kaiser Wilhelm II. 1881 geschenkt hatte, begrüßte Elizabeth II. dann im großen Saal des Wiesbadener Kurhauses bei einem Empfang der hessischen Staatsregierung 300 prominente Gäste. 20 000 Fliederzweige, Nelken, Chrysanthemen und Lilien — vorwiegend in den Landesfarben Rot und Weiß — verströmten betäubenden Duft, als der Königin etwa 30 Gäste einzeln vorgestellt wurden.

Abstecher nach Schloß Wolfsgarten

Der Jubel der Zehntausende brauste erneut auf, als die königlichen Gäste die Rückfahrt zu dem am Bahnhof wartenden Sonderzug antraten, der sie zum Schloß Wolfsgarten bei Langen brachte. Mit diesem privaten Abstecher an den Wohnort des Chefs des Hauses Hessen und bei Rhein, Prinz Ludwig und seiner englisch geborenen Gattin, Prinzessin Margarete, endete der Besuch in Hessen. Ministerpräsident Zinn und seine Gattin hatten sich bereits vor dem Kurhaus am Auto verabschiedet. Im Laufe der Nacht brachte der Sonderzug die Königin und ihr Gefolge nach München.

Geht Prinz Charles in Deutschland zur Schule?

London (AP). Königin Elizabeth von Großbritannien erwägt, ihren ältesten Sohn, Prinz Charles, in der Bundesrepublik in die Schule zu schicken. Wie die Zeitung „Daily Sketch" meldet, will die Königin ihre Entscheidung nach ihrer Rückkehr aus Deutschland treffen. Die Königin denkt angeblich an Salem, wo auch Prinz Philip erzogen wurde. Wenn der 16 Jahre alte Charles nach Salem gehen sollte, wird er nach der Meinung des „Daily Sketch" etwa ein Jahr dort bleiben. Premierminister Wilson soll die politischen Aspekte bereits mit seinen Kabinettskollegen erörtert haben. Der Buckingham-Palast hat sich bisher zu der Pressemeldung nicht geäußert.

Erhard: Bleibende Bedeutung

Bonn (AP/dpa). Der Besuch der englischen Königin wird nach Ansicht von Bundeskanzler Erhard eine „hohe und bleibende Bedeutung für die Zukunft beider Völker haben. In einer Würdigung des Staatsbesuches betonte der Kanzler vor dem Kabinett, mit „besonderer Dankbarkeit" sei in Deutschland die Erklärung der Königin zur Wiedervereinigung aufgenommen worden. „Unsere guten Wünsche begleiten unseren hohen Gast auf seiner weiteren Reise durch Deutschland."

Rheinfahrt von Koblenz nach Kaub

Bereits als die Wagenkolonne der Königin am Donnerstagvormittag von der Residenz Petersberg nach Koblenz gefahren war, hatten Tausende von jubelnden Menschen ihren Weg dicht gesäumt. Kurz vor zwölf war die Wagenkolonne in Koblenz eingetroffen, wo rund hunderttausend Menschen die fahnengeschmückten Straßen säumten.

An der Schiffsanlegestelle am Deutschen Eck in Koblenz begrüßten der rheinland-pfälzische Ministerpräsident Altmeier und seine Gattin die hohen Gäste. Altmeier bat in seiner Begrüßungsansprache die Königin, vom Rhein die Überzeugung mitzunehmen, „daß wir die gebotene Freundschaftshand freudig und dankbar ergreifen mit dem aufrichtigen Wunsch, diese Freundschaft in den kommenden Jahrzehnten zu vertiefen."

Die Königin bedauerte in ihrer Erwiderung, daß in den letzten 50 Jahren zuviel von Dingen zu hören gewesen sei, die die britische und deutsche Nation trennten. „Heute wollen wir uns entschließen, in der Zukunft mehr an solche Dinge zu denken, die uns verbinden. Wir wollen ein neues und besseres Verstehen erreichen."

An Bord des mit Blumen geschmückten Rheinschiffes „Lorelei" fuhr die Königin dann mit ihrem Gefolge, eskortiert von Motorbooten der Wasserschutzpolizei, bis Kaub, wo sich Altmeier von seinen Gästen verabschiedete.

Mit 5000 PS durch die Lande

Hier erwartete die Königin ihre „Residenz auf Schienen" — ein 400 Meter langer Salonzug aus 15 modernsten D-Zugwagen, gezogen von einer elektrischen Lokomotive mit 5000 Pferdestärken. Mit diesem Zug werden die Königin und ihr Gefolge nun in den nächsten Tagen quer durch Deutschland reisen. Ihre erste Station war Wiesbaden.

Briten sprechen von großem Erfolg

Allgemeine Begeisterung über den Empfang ihrer Königin in Deutschland

London (Eig. Ber. fh). Der Staatsbesuch Königin Elizabeths beherrschte auch am dritten Tage die Schlagzeilen der britischen Presse. In großen Berichten schildern die Zeitungen, der Funk und das Fernsehen den überwältigenden Empfang, der ihrer Königin überall bisher zuteil wurde. „Die Queen erobert die Herzen der Deutschen", lautet eine Überschrift. Sie trifft den Ton aller aus Bonn gekabelten Reportagen und Artikel.

Die Reise Königin Elizabeths wird jetzt schon in England als ein großer Erfolg angesehen, wenn sich die Presse vorerst auch noch mit politischen Wertungen zurückhält. Eine Ausnahme macht allein der „Daily Express", der bereits zum Tag der Ankunft der Königin einen scharfen antideutschen Aufsatz brachte und am Donnerstag erneut mit einem bissigen Kommentar und einer bösartigen Karikatur die alte unversöhnliche Linie fortsetzt.

Der „Daily Express", mit fast fünf Millionen Beziehern eine der größten Zeitungen in England, bezeichnet sich gern als die Stimme des Volkes. In Wirklichkeit spricht er mit seiner reaktionären Propaganda nur eine ständig kleiner werdende Minderheit in Großbritannien an.

Besuch in der Zone beantragt

Bemerkenswert ist, daß der ganz rechts stehende „Daily Express" in seiner antideutschen und antieuropäischen Tendenz sich mit den Leuten von ganz links trifft. Einige mit den Kommunisten sympathisierende Unterhausabgeordnete der Labour-Partei haben einen Antrag eingebracht, in dem sie den Wunsch äußern, daß die Königin auch der Sowjetzone einen Besuch abstatten solle. Auch hier handelt es sich um Außenseiter, hinter denen weder die Mehrheit des britischen Volkes, noch ihrer eigenen Partei und schon gar nicht die Politik der Regierung steht.

Bonn will Wohnungsbau verstärken

Weiterer Abbau der Zwangswirtschaft wird um zwei Jahre hinausgeschoben

Bonn (eg/AP/dpa). Innerhalb der nächsten drei Jahre sollen in der Bundesrepublik weitere 1,5 Millionen neue Wohnungen erstellt werden. Das teilte Bundeswohnungsbauminister Lücke am Donnerstag im Bundestag bei der Begründung des Gesetzentwurfes der Regierung mit, nach dem der weitere Abbau der Wohnungszwangswirtschaft um zwei Jahre bis zum 1. Januar 1968 hinausgeschoben werden soll.

In den restlichen etwa 55 „schwarzen Kreisen" bleiben Mietpreisbindung und Wohnraumbewirtschaftung bestehen. Es handelt sich dabei vorwiegend um Großstädte. Der Entwurf wurde an die zuständigen Ausschüsse überwiesen.

Die Terminänderung ist notwendig geworden, weil trotz anhaltender Wohnungsbauleistungen im Gegensatz zu den Erwartungen das statistische Wohnungsdefizit an einigen Schwerpunkten nicht entscheidend gemindert werden konnte.

Als Ausgleich für die Terminverschiebung sieht der Entwurf in den „schwarzen Kreisen" vom 1. Januar 1966 an eine Mieterhöhung für rund 1,25 Millionen Altbauwohnungen und etwa 700 000 zwischen 1950 und 1956 gebaute Sozialwohnungen bis zu 25 Prozent vor.

Heilmittelwerbung wird gebremst

Im weiteren Verlauf seiner Sitzung hat der Bundestag das Heilmittel-Werbegesetz verabschiedet, mit dem die Werbung auf dem gesamten Gebiet des Heilwesens mit Wirkung vom 1. Juli strengen Vorschriften unterworfen wird. Schlaf-, Schmerz- und Abmagerungsmittel dürfen — soweit frei verkäuflich — künftig nur noch mit Warnhinweisen in den Handel gebracht werden, wenn sie bei langanhaltendem und übermäßigem Gebrauch die Gesundheit gefährden können. Jede irreführende Werbung, die Werbung mit Gutachten oder Werbegeben und die Werbung für eine Fernbehandlung sind verboten. Für Schlafmittel und rezeptpflichtige Arzneimittel darf überhaupt nicht mehr geworben werden.

Schließlich lehnte der Bundestag mit Mehrheit den SPD-Antrag ab, mit der Bundestagswahl am 19. September auch die 36 deutschen Abgeordneten für das Straßburger Europaparlament direkt zu wählen.

Flugzeug-Absturz bei Kairo fordert 121 Tote

Kairo (AP/dpa). Bei einer Flugzeugkatastrophe in Ägypten sind am Donnerstagmorgen 121 Menschen ums Leben gekommen. Beim Anflug auf Kairo stürzte eine vierstrahlige Düsen-Verkehrsmaschine der „Pakistan International Airlines" um zwei Uhr MEZ brennend ab. 121 der Insassen waren sofort tot. Die sechs Überlebenden erlitten lebensgefährliche Brandverletzungen.

Bericht im Innern der Ausgabe

Koschewoi nach Baden-Baden

Herleshausen (eg). Der Oberbefehlshaber der sowjetischen Streitkräfte in der Zone, General Koschewoi, hat am Donnerstag den Zonengrenzübergang in Herleshausen passiert, um zum französischen Hauptquartier in Baden-Baden zu reisen. Der General wird von zehn sowjetischen Offizieren begleitet und will dem Oberbefehlshaber der französischen Truppen in der Bundesrepublik, General de Brebisson, einen Besuch abstatten.

Bericht im Innern der Ausgabe

11.4 Kritik an Ausbildung

1997

2 VDI nachrichten
7. November 1997 · Nr. 45

POLITISCHES PRISMA

Industriefreundliche Energie-Steuer

Langsam gewinnt die Idee der Ökosteuer neue Befürworter. Diese Woche legte der „Förderverein Ökologische Steuerreform", ein Zusammenschluß namhafter Manager, ein neues Konzept vor, von dem sie letztlich eine Nettoentlastung der deutschen Wirtschaft erwarten.



Hans Herrmann Münchmeyer fordert Ökosteuer.

Das jedenfalls erklärte der Vorsitzende des Vereins, der ehemalige BASF-Manager Henner Ehringshaus. Er und seine Mitstreiter, darunter der Hamburger Bankier Hans Herrmann Münchmeyer, sind fest davon überzeugt, daß sich die Klimaziele von Rio nur mit einer Energiesteuer erreichen lassen. Die Kritik der USA, die Deutschen handelten, gemessen an ihren eigenen Zielen, nicht entschlossen genug, sei berechtigt, meinen sie.

Das FÖS-Konzept, an dem auch Ernst-Ulrich von Weizsäcker („Faktor vier") mitgearbeitet hat, sieht vor, daß die Energiepreise über sechs Jahre jeweils um 5 % erhöht werden. Dieses Geld fließt als Steuer in die Staatskasse und soll so im ersten Jahr 10 Mrd. DM bringen und im sechsten gar 65 Mrd. DM. Ausgenommen von der Steuer sind die regenerativen Energien und die Prozeßenergie für die gewerbliche Wirtschaft. „Damit werden viele ökologisch motivierte Menschen nicht einverstanden sein", räumt Münchmeyer ein. Im Gegenzug zu dieser Steuererhöhung sollen besonders wettbewerbsschädliche direkte Steuern reduziert werden, fordert FÖS. Das ist auch einer der Gründe, weshalb die Manager auf Zustimmung von BDI und VCI hoffen. Beide Verbände hatten bislang jegliche Energiebesteuerung abgelehnt.

JW/HC

China-Geschäfte



Horst Teltschik sieht mehr Chancen denn Risiken in China.

Während der chinesische Regierungschef Milliarden-Geschäfte in den USA anleierte, beschäftigte man sich auch in Bayern mit den wirtschaftlichen Beziehungen zum Reich der Mitte. „Politische Begleitung auf dem größten Markt der Welt ist unverzichtbar", erklärte der ehemalige Kanzlerberater, BMW-Vorstand Horst Teltschik, auf einem Wirtschaftskongreß Anfang der Woche in München. Seine Forderung: Das Instrumentarium der Außenhandelsförderung gehöre weiterentwickelt. Während Teltschik die großen Chancen dieses Fernost-Geschäfts hervorhob, war von anderen Unternehmen eher Skeptisches zu hören. Versicherungen sehen unter den 20 Mio. Chinesen keinen großen Markt; auch Banker äußerten sich vorsichtig. Gerhard Hinterhäuser von der Bayerischen Vereinsbank in Singapur zweifelte daran, daß die 300 000 Staatsbetriebe, die demnächst verkauft werden sollen, Investitionen lohnten. 60 % der Betriebe fahren Verluste ein, schätzte er, zudem müßten viele Arbeitnehmer entlassen werden.

RM/HC

Schlappe für Aufbau Ost



Rolf Schwanitz (SPD): Haushaltssperre bremst Aufbau Ost.

Als einen „neuerlichen Wortbruch" gegenüber den neuen Bundesländern hat der SPD-Abgeordnete und Vorsitzende der Querschnittsgruppe Deutsche Einheit, Rolf Schwanitz, die zweite Haushaltssperre von Finanzminister Theo Waigel bezeichnet. Der sächsische Abgeordnete hatte bereits Anfang Oktober anläßlich der ersten Haushaltssperre moniert, daß von der Kürzung der Mittel allein 1 100 forschungstreibende Unternehmen in den neuen Bundesländern betroffen seien. Diese Entwicklung werde mit der erneuten Haushaltssperre

Standpunkt: Bundespräsident Roman Herzog kritisiert die deutsche Bildungspolitik

„Ihr seid nicht mehr gut und schnell genug"

VDI nachrichten, 7. 11. 97, has – Weniger Provinzialismus und das Bekenntnis zu Qualitätsunterschieden an den Hochschulen fordert Bundespräsident Roman Herzog. Wir dokumentieren seine zweite Berliner Rede in Auszügen.



Eine wertorientierte Erziehung, in der es auf Verläßlichkeit, Pünktlichkeit und Disziplin ankommt, mahnt Bundespräsident Roman Herzog an. Foto: Argus/Janke

Man sagt das so leicht, Bildung entscheidet über unsere Zukunft. Aber wie steht es dann um diese Zukunft, wenn die besten Köpfe dieser Welt auf der Suche nach den besten Ausbildungsmöglichkeiten nicht mehr nach Deutschland kommen?

Noch ist es so, daß Eliten in Asien oder Südamerika häufig deutsch sprechen, weil sie in Deutschland studiert haben. Das schafft Bindungen für das ganze Leben. Aber die Söhne und Töchter dieser Eliten zahlen inzwischen lieber hohe Studiengebühren in den USA, als daß sie an unseren Universitäten studieren möchten. Es ist nicht nur der Verlust an Internationalität, der uns schadet. Darin steckt vor allem die unverblümte Nachricht: Ihr seid nicht mehr gut und rasch genug. Diese Nachricht mußte uns so treffen wie einst der Sputnikschock die USA!

Ich wünsche mir ein Bildungssystem, das wertorientiert ist. Ich weiß sehr wohl, daß jede Art von Wertekatalog seit Jahren unter Ideologieverdacht fällt, zumindest wenn er sich nicht auf Allgemeinplätze zurückzieht. Aber Bildung darf sich nicht auf die Vermittlung von Wissen und funktionalen Fähigkeiten beschränken! Zur Persönlichkeitsbildung gehört neben Kritikfähigkeit, Sensibilität und Kreativität auch das Vermitteln von Werten und sozialen Kompetenzen. Dabei denke ich durchaus auch an die Vermittlung von Tugenden, die gar nicht so altmodisch sind, wie sie vielleicht klingen: Verläßlichkeit, Pünktlichkeit und Disziplin, vor allem aber der Respekt vor dem Nächsten und die Fähigkeit zur menschlichen Zuwendung.

Auch von den Hochschulen fordere ich mehr Praxisbezug. Wenn heute bis zu 40 % eines Jahrgangs studieren, ist es unrealistisch zu erwarten, jedem stünden die klassischen Akademikerlaufbahnen offen – zudem im gewünschten Fachgebiet. Wir können es uns nicht mehr leisten, jährlich Tausende von hochintelligenten Menschen am Arbeitsmarkt vorbei auszubilden. Viele Unternehmen leisten sich heute teure betriebsinterne Zusatzausbildungen, um junge Universitätsabsolventen auf die Arbeitswirklichkeit vorzubereiten. Ich habe schon gesagt, daß sich das bei der Hochspezialisierung vieler Unternehmen nicht ganz vermeiden lassen wird. Aber auch die Hochschulen haben hier zu tun, wozu sie imstande sind!

Für die Hochschulen heißt Praxisbezug, stärker als bisher auf den Verbleib der Absolventen zu schauen. Natürlich erwarte ich von jedem Hochschulabgänger genügend Selbständigkeit, den eigenen Weg in das Berufsleben zu gehen. Aber ich frage mich doch schon lange, wie eine Hochschule eigentlich die Qualität ihrer Ausbildung überprüfen will, solange nicht auch handfeste Daten über die beruflichen Werdegänge ihrer früheren Studenten ausgewertet werden. Jedes Wirtschaftsunternehmen weiß heute alles über den Verbleib seiner Produkte und über die Abnehmer seiner Dienstleistung. In Amerika gibt es an den Universitäten schon lange Career-Centers, in denen sich Absolventen und zukünftige Arbeitgeber begegnen können und mit denen eine direkte Verbindung zwischen Hochschule und Berufswelt geschaffen ist, die beide Seiten zwingt, ihre Ansprüche und Angebote immer wieder aufeinander abzustimmen. Bei uns ist so etwas leider immer noch selten.

Provinzielles Denken darf vor allem in unserer Hochschullandschaft keinen Platz haben. Ich weiß: Es gibt inzwischen schon eine Reihe von Hochschulen, in denen – beispielsweise – Vorlesungen auf Englisch zum Alltag gehören und die ein einiges Netzwerk mit ausländischen Universitäten geknüpft haben. Aber ich sehe auch noch immer große Inseln des Provinzialismus: Warum bedarf es immer noch einer Sondergenehmigung, um eine Diplomarbeit in Englisch abzufassen, der Lingua franca vieler Wissenschaften? Warum werden den zum Wechsel bereiten deutschen Studenten bei einem Auslandsaufenthalt zusätzlich Steine in den Weg gelegt, weil die Prüfungsbürokratie ausländische Studienleistungen nicht anerkennt? Im Examen stellt sich sowieso heraus, ob der Prüfling etwas gelernt hat oder nicht! Warum sind die Worte „Service" und „Kundenorientierung" auf dem Campus noch immer Fremdwörter? Es gibt auch 1997 noch Bibliotheken, die ihre Pforten um 16.30 Uhr schließen! Warum lebt ein Teil des wissenschaftlichen Nachwuchses noch immer in alterttümlichen Abhängigkeitsverhältnissen unter der Patronage von Ordinarien, anstatt, wie anderenorts, durch eigenverantwortliche Forschung die produktivsten Lebensjahre bestmöglich zu nutzen? Warum lassen wir als Folge schlechter Studienbetreuung und -beratung Begabungen verkümmern oder abwandern?

In Deutschland folgt die Hochschullandschaft einem Säulenmodell. Auf der einen Seite stehen die Universitäten, auf der anderen die Fachhochschulen. Längst haben sich die Fachhochschulen aus dem Schatten der Universitäten befreit – sowohl was die Studentenzahlen als auch was die Qualität der Ausbildung anbelangt. Durch viele zukunftsorientierte, praktisch und auch international ausgerichtete Ausbildungsgänge sind sie inzwischen auch für die besten Abiturienten attraktiv geworden. Dennoch werden die Fachhochschulabsolventen bei der Entlohnung ein Leben lang gegenüber Universitätsabsolventen benachteiligt, und es ist für sie auch nicht leicht, ihr Können durch akademische Weiterqualifizierung, also etwa durch eine Promotion, unter Beweis zu stellen. Da gibt es noch immer zu viele Berührungsängste zwischen Universitäten und Fachhochschulen. Hier müssen die Durchlässigkeiten erhöht werden.

Andererseits sind unsere universitären Studiengänge noch zu oft so strukturiert, als ob die Studierenden allesamt zu potentiellen Wissenschaftlern ausgebildet werden müßten. Muß jedes geisteswissenschaftliche Studium wirklich mit einem Magister abgeschlossen werden? Qualifiziert bei naturwissenschaftlichen Studiengängen wirklich der Doktortitel oder das Diplom für den Arbeitsmarkt? Muß tatsächlich jeder ausgebildete Jurist heute noch die Fähigkeit zum Richteramt nachweisen? Sollen wir nicht – gerade angesichts von Berufskarrieren, die immer weniger planbar werden – eine Vielzahl von Schnittstellen schaffen, an denen man zu unterschiedlichen Zeitpunkten im Leben zwischen der Berufswelt und den verschiedenen Ausbildungsstätten pendeln kann? Bei einer solchen Umstrukturierung müssen wir uns auch allen Ernstes fragen, ob wir heute nicht zuviel Lehrstoff vermitteln. Ich höre schon den Aufschrei, den eine solche Frage hervorruft! Wie kann man in Zeiten, in denen das Wissen rasant zunimmt, ausgerechnet die Reduzierung des vermittelten Wissens anregen? Die Antwort darauf liegt ziemlich nahe: Erstens können wir trotz der Zunahme des Wissens unsere Ausbildungszeiten nicht beliebig verlängern, und zweitens führt die Explosion des Wissensstoffes nicht nur zu einer Vermehrung, sondern auch zu einem raschen Veralten von Wissen. Statt also alle Studierenden mit unendlichem Detailwissen auf den letzten Stand der Forschung zu bringen, müssen wir noch stärker ihre Fähigkeit schulen, Informationen auszuwählen und zu bündeln, sich Daten, Fakten und Probleme selbst zu erarbeiten. Wir müssen sie also das Lernen lehren – und nicht nur an den Hochschulen. „Lebensbegleitendes Lernen" ist schon seit einiger Zeit als Schlagwort in aller Munde. Geschehen ist in dieser Sache aber nur wenig. Wir müssen dafür endlich die Möglichkeiten schaffen!

Vor allem für die Hochschulen ist es höchste Zeit, sich vom Mythos vermeintlicher Gleichheit zu verabschieden. Meist handelt es sich dabei doch nur noch um Fiktionen, die mit der Realität nichts mehr zu tun haben. Seien wir realistisch: Niemand wird in der Wirtschaft heute nur aufgrund eines Stückes Papier mit einer Note eingestellt. Überall weiß man, daß es zwischen den einzelnen Fachbereichen und Universitäten große Unterschiede gibt! Das betrifft die Forschungsleistungen ebenso wie die personelle und finanzielle Ausstattung, das Lehrangebot und nicht zuletzt die Notengebung. Viele Unternehmen haben heute schon aufwendige Assessment-Verfahren entwickelt, weil sie um die Unterschiede in der Ausbildung ihrer Bewerber wissen. Wir müssen die Qualitätsunterschiede endlich wieder transparent machen und auch dafür sorgen, daß gute Leistungen belohnt und schlechte durch die Entziehung von Ressourcen sanktioniert werden.

ROMAN HERZOG

Die vollständige Rede im Internet: http://www.vdi-nachrichten.com

Roman Herzog
wurde 1994 zum Bundespräsidenten gewählt. Der 1934 geborene Jurist war Professor in Berlin und Speyer, Minister in Baden-Württemberg und Richter am Bundesverfassungsgericht. Herzog ist auch in der evangelischen Kirche engagiert. has

MANAGEMENT & KARRIERE

VDI nachrichten 25
6. März 1998 · Nr. 10

Personalentwicklung: Mit neuen Programmen wollen Unternehmen den Erfahrungsschatz älterer Mitarbeiter heben

Die Kreativität der 50jährigen

VDI nachrichten, Hannover, 6. 3. 98 –
Ältere Mitarbeiter gelten in den meisten Unternehmen noch immer als Ballast, den es abzuwerfen gilt. Doch Vorruhestandsregelungen sind kaum noch bezahlbar, seitdem die Zuschüsse des Gesetzgebers ausbleiben und die Belegschaften immer älter werden. Neue Konzepte zur altersgerechten Personalentwicklung wollen den Erfahrungsschatz älterer Mitarbeiter heben.

Die demographische Zeitbombe tickt: Immer mehr Alten stehen immer weniger Junge gegenüber, auch in den Betrieben. Nach Angaben des Deutschen Instituts für Wirtschaftsforschung (DIW) waren 1996 etwa 25 % der Beschäftigten älter als 50 Jahre. Zur Jahrtausendwende soll mehr als die Hälfte der Erwerbstätigen über 45 sein, während sich die Zahl der 15 bis 30jährigen auf 21 % verringert, schätzt Werner Dostal vom Institut für Arbeitsmarkt- und Berufsforschung (IAB) in Nürnberg.

Daß die Verkürzung des Arbeitslebens durch Frühverrentung langfristig keine Lösung sein kann, davon sind die Arbeitsmarktexperten einhellig überzeugt. „Dabei wird außer acht gelassen, daß der Kapitalmarkt diese nicht wiederholbare Kostensenkungsmaßnahme nur einmal honorieren kann", erläutert Heinz Uepping, Geschäftsführender Gesellschafter der incon Gesellschaft für innovatives Personal- und Organisationsconsulting mbH in Taunusstein. Zudem sei mit den Schlankheitskuren der vergangenen Jahre auch ein immenser Verlust an Erfahrungen alterer Mitarbeiter verbunden, den sich die Unternehmen auf Dauer kaum leisten könnten.

Tatsächlich weisen neuere gerontologische Untersuchungen der Altersforscherin Prof. Dr. Ursula Lehr darauf hin, daß ältere Mitarbeiter den jüngeren Kollegen einige Kompetenzen voraus haben. Dazu zählen eine ausgeprägte Urteilsfähigkeit, größere Souveränität im Umgang mit komplexen Sachverhalten, geringere Belastung durch private Probleme, realistischere Selbsteinschätzung sowie ausgeprägterer Sinn für das Machbare. „Im technischen Bereich mag Jungsein von Vorteil sein", so das Fazit der Gerontologin, „im sozialen Bereich überwiegen die Fähigkeiten der Älteren."

In Funktionen, die auf Wissen, Erfahrung und rationeller Umsetzung beruhen, erreichen Mitarbeiter ihr Leistungsmaximum erst im fünften Lebensjahrzehnt, beobachtet Uepping in seiner Beratungspraxis: „Kreativität, Agilität und Innovationsfähigkeit unterliegen keinem Verfall. Sie bleiben bis ins hohe Alter erhalten." Voraussetzung dafür sei allerdings eine „intergenerative Personalentwicklung". Statt Manager aufs Altenteil zu schieben, sollten Unternehmen deren Kompetenz und Erfahrung als Potential der Wertschöpfung nutzen, etwa als Coach oder Spezialist in altersgemischten Teams.

Literaturtip

Führungskräfte, Arbeitsmarktexperten und Wissenschaftler verschiedener Unternehmen, Institutionen und Branchen stellen ihre Konzepte zu einer altersgerechten Personalentwicklung vor.

Friedrich Kayser/Heinz Uepping: Kompetenz der Erfahrung. Luchterhand Verlag, Neuwied 1997, 268 S., 84 DM. DS

Doch die Realität in den Betrieben sieht vielfach anders aus: „Während jüngere Mitarbeiter durch ständige Lern- und Motivationsimpulse dauernd zu Höchstleistungen angespornt werden, bricht die Weiterbildung in der Regel ab, wenn der Mitarbeiter sich intern für eine Position als Fach- oder Führungskraft qualifiziert hat", beobachtet Uepping. Fehlende Personalentwicklung sei die Ursache für die angeblich nachlassende Leistungsfähigkeit älterer Mitarbeiter, die spätestens ab 40 Jahren vielerorts sich selbst überlassen bleiben. Die Folgen einer derart jugendzentrierten Personalentwicklung kommen die Unternehmen teuer zu stehen: Die vorhandenen Qualifikationen veralten, fehlendes Training läßt die Lernfähigkeit verkümmern und erzeugt Resignation.

„Gewohnheiten, Rituale und Routinen in den Führungsetagen kaschieren rund 20 % der Aktivitäten, die nichts zur Wertschöpfung beitragen", stellt Uepping im Rahmen von empirischen Studien fest. „Die richtige Nutzung von Erfahrung hingegen bringt eine Leistungserweiterung von rund 120 %." Um das bisher vielfach vernachlässigte, auf Erfahrung beruhende „Leistungsdelta von rund 40 %" in die Wertschöpfungskette einzubinden, arbeitet incon seit rund fünf Jahren mit dem „Senator-Modell". Ältere Manager ab 58 Jahren wechseln aus der Linienverantwortung in die Rolle eines Coaches oder Beraters und bringen ihr Know-how in altersgemischte Teams ein. Abzuraten sei hingegen von Projekten, die in Richtung „Elefantenfriedhof" gehen, in Maßnahmen nämlich, die nach Altenförderung oder -schonung aussehen.

Neue Aufgabenfelder für erfahrene Führungskräfte sieht Uepping etwa in der Erkundung neuer Märkte im Ausland oder in Projekten zur Marktbeobachtung. Mit den neuen Aufgaben und Funktionen ist eine jeweils im Einzelfall auszuhandelnde Flexibilisierung der Arbeitszeit und des Gehaltes verbunden. „Kernaufgaben können nach wie vor fest entlohnt, die Mitarbeit an zusätzlichen Aufgaben oder Projekten über Festhonorare oder variable Bezüge abgegolten werden. „Öffentlich tun sich die meisten Unternehmen bisher zwar noch schwer, von dem jahrelang propagierten Jugendkult abzurücken", beobachtet Uepping. „Aber hinter den Kulissen tut sich einiges."

Zum Beispiel bei den Schott Glaswerken in Mainz, wo Führungskräfte im Alter zwischen 55 und 65 Jahren spürbar überrepräsentiert sind. Im Rahmen des Pilotprojektes „Altersgerechte Mitarbeiterentwicklung", das der Vorstand unlängst genehmigte, sollen zunächst etwa 25 Führungskräfte der ersten Berichtsebene ganz oder teilweise aus dem Tagesgeschäft aussteigen, um ihre Kompetenz und Erfahrung im strategischen Bereich einzubringen. Denkbar wäre etwa, daß der 60jährige Leiter eines Servicebereiches ein wichtiges Unternehmensprojekt zum Beispiel zur Harmonisierung des Berichtswesens übernimmt. Ab 63 ist dann der gleitende Übergang in die Pensionierung geplant.

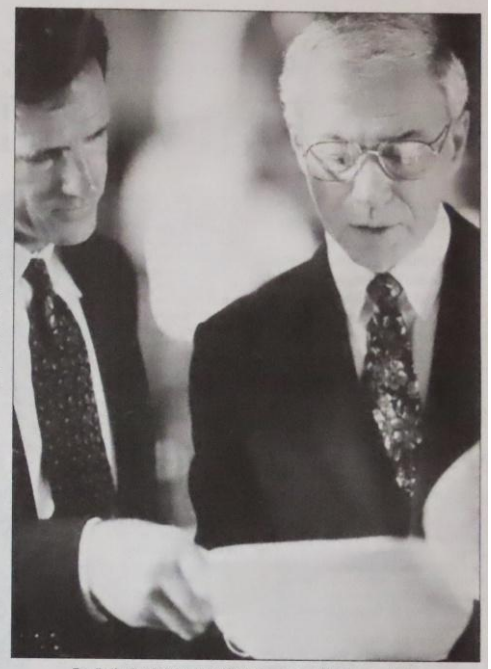
„Wir wollen die Älteren nicht in die Wüste schicken"

Ziel des Pilotprojektes, das später bis auf die Meisterebene hinuntergezogen werden soll, sei eine Verjüngung des Managements auf freiwilliger Basis, erklärt Karl Böhm, Sprecher der Leitenden Angestellten im Unternehmensrat des High-Tech-Betriebes mit rund 5000 Mitarbeitern am Standort Deutschland: „Veteranen auf der ersten und zweiten Berichtsebene dürfen keine Positionen blockieren, auf die engagierte Nachfolger zwischen 45 und 50 geradezu hinschmachten." Andererseits dürfe jedoch keinesfalls der Eindruck entstehen, „Ältere in die Wüste zu schicken".

Bei der Daimler-Benz AG in Stuttgart denken die Personalexperten ebenfalls über Alternativen zur Frühverrentung nach. „Gründen wir eine Auffanggesellschaft oder finden wir eine elegantere Antwort auf die demographische Keule?" Das ist für Helmut Schnorr die entscheidende Frage. Vorruhestandsregelungen jedenfalls seien viel zu teuer, seitdem sich die öffentlichen Kassen nicht mehr daran beteiligen ließen, meint der Leiter der Organisation Datenverarbeitung Nutzfahrzeuge bei dem Stuttgarter Automobilkonzern.

Mit 44 Produktionsstätten weltweit ist Schnorr zudem häufig auf der Suche nach geeigneten Mitarbeitern für den Aufbau von Joint-ventures in entlegenen Gegenden wie etwa in chinesischen Provinzen. „Die ganz jungen Manager sind zwar hochmotiviert, aber ihnen fehlt es für solche Einsätze an Erfahrung", beschreibt Schnorr das Problem. Zudem würden jüngere Mitarbeiter von Geschäftspartnern in asiatischen Ländern, wo die Erfahrung des Alters im Gegensatz zum Westen ein hohes Ansehen genießt, oftmals nicht akzeptiert. Die mittlere Generation von Managern um die 40 sei fast ausnahmslos an Ehefrauen mit schulpflichtigen Kindern gebunden und von daher kaum für die Versetzung ins Ausland zu gewinnen.

Der erste Schritt zur altersgerechten Personalentwicklung in Stuttgart bestehe in einer demographischen Analyse der Belegschaft nach Alter, Betriebszugehörigkeit und Verweildauer, erläutert Schnorr. Die Herauslösung aus der operativen Ebene müsse aber sorgfältig vorbereitet sein: „Manager neigen dazu, sich abgeschoben zu fühlen, wenn sie vom Tagesgeschäft entlastet werden." DAGMAR SOBULL



Realistische Selbsteinschätzung, geringe Belastung durch private Probleme, sichere Urteilsfähigkeit und ein ausgeprägter Sinn für das Machbare zeichnen erfahrene, ältere Mitarbeiter aus. Foto: ifa-Bilderteam

Nr. 22 · 2. Juni 1995

Empfehlungen des VDI für eine zukunftsorientierte Ingenieurqualifikation

Ingenieurausbildung im Umbruch

VDI-N, Düsseldorf, 2. 6. 95 – Auf dem Deutschen Ingenieurtag in Saarbrücken stellte der VDI seine Empfehlungen für eine zukunftsorientierte Ingenieurqualifikation vor. Im folgenden sind diese Empfehlungen auszugsweise abgedruckt.

Der grundlegende Strukturwandel in Technik, Wirtschaft und Gesellschaft, ausgelöst einerseits durch neue wissenschaftliche Erkenntnisse, durch fortschreitende Internationalisierung der Märkte und Verschärfung des Wettbewerbs und andererseits durch steigendes Umweltbewußtsein, durch die ambivalente Einstellung der Gesellschaft zur Technik und die Ambivalenz der Technik selbst, stellt neue Anforderungen an die Qualifikation der Ingenieure.

Den strukturellen Herausforderungen begegnen die Unternehmen mit einem beschleunigten Innovationstempo, mit qualitätssteigernden und kostengünstigeren Produktionsweisen und verbesserten Dienstleistungsangeboten. Sie tun dies nicht zuletzt durch Neuorganisation der bisherigen Management- und Arbeitsstrukturen ... Diese ... Neuorientierung der Arbeits- und Entscheidungsprozesse fordert auch von den Ingenieuren ein verändertes Qualifikationsprofil und berufliches Selbstverständnis.

Im Zuge dieses Strukturwandels sind neben den fachlichen Kenntnissen und Fähigkeiten zunehmend Teamfähigkeit, Methodenkompetenz, systemisches und vernetztes Denken erforderlich. Erwartet werden auch Urteils- und Handlungskompetenz in Zusammenhang mit gesellschaftlichen, interkulturellen, politischen, ökonomischen und ökologischen Bedingungen und Folgen der Entstehung und Verwendung von Technik.

Daraus ergeben sich grundlegende Änderungen in der Struktur des Bildungswesens, der Auswahl der Studienhalte und der Lehrmethoden.

Die einzelnen Ingenieuraufgaben stellen unterschiedliche Anforderungen an die methodische Vorgehensweise.... Jede Ingenieuraufgabe erfordert eine Kombination des Theorie- und Praxisbezuges, wenn auch in unterschiedlicher Zusammensetzung.

Die Eignungen, Neigungen, Fähigkeiten und Fertigkeiten der Studenten sind in ähnlicher Weise unterschiedlich ausgeprägt. Das Hochschulsystem sollte sowohl die Anforderungen der beruflichen Praxis als auch die persönlichen Begabungsmerkmale der Studenten berücksichtigen.

Da unterschiedliche Qualifikationsprofile in einer einheitlichen Hochschulform nur schwer vermittelt werden können, fördert der VDI ein gegliedertes Hochschulsystem mit eigenständigen Hochschultypen und differenzierten Ausbildungsprofilen.... Für den Erfolg einer Volkswirtschaft ist es entscheidend, daß alle Funktionen in der Palette der Innovationskette mit kompetenten und motivierten Ingenieuren besetzt werden können. Die Ausbildung an unterschiedlichen Hochschulformen ist dementsprechend als gleichwertig, aber andersartig anzusehen.

Das differenzierte System der Ingenieurausbildung in der Bundesrepublik Deutschland mit unterschiedlichen Ausbildungsprofilen an Universitäten und Fachhochschulen entspricht diesen Anforderungen. Absolventen beider Hochschulformen finden dabei Aufgaben in der beruflichen Praxis, die der jeweils im Studium erworbenen Qualifikation entsprechen.

Analysiert man die Arbeit eines Ingenieurs, so kann man feststellen, daß sie aus unterschiedlichen, für einen Arbeitsplatz charakteristischen Tätigkeiten besteht.... So unterschiedlich diese Anforderungen an verschiedenen Arbeitsplätzen auch sein mögen, sie sind mit einer Grundqualifikation, bestehend aus dem vermittelten Wissen und den erforderlichen Fähigkeiten abzudecken. Der schnelle Wandel des Fachwissens verringert den Stellenwert von Spezialisierungen in der Grundqualifikation und damit in der Erstausbildung.



Die Basis der erforderlichen Ingenieurqualifikationen bildet ein breites Spektrum der mathematisch-naturwissenschaftlichen und technischen Grundlagen. Dieses grundlegende Wissen ist unentbehrlich für das Verständnis der Naturphänomene und deren prinzipielle Nutzung in den technischen Anwendungen, dient aber zugleich als Fundament für den Aufbau eines vertieften Wissens auf einem Anwendungsgebiet. Möglichst breite Grundlagen sind außerdem eine wichtige Voraussetzung für die fachliche Kommunikationsfähigkeit mit Ingenieuren und Naturwissenschaftlern aus anderen Fachgebieten. Deswegen darf die Grundausbildung nicht zu fachspezifisch angelegt sein und sollte durch Praktika und Übungen vertieft werden.

Zunehmende Bedeutung kommt aber auch der Vermittlung von fachübergreifenden nichttechnischen Inhalten zu. Diese sollen den künftigen Ingenieur zu kreativem Problemlösen, zu kooperativem Sozialverhalten mit Führungs- und Kommunikationskompetenz, zu ganzheitlicher Betrachtung eines technischen Projektes in seinem Umfeld und, nicht zuletzt, zu internationalem Einsatz befähigen.

Die Beherrschung der Grundlagen allein verleiht dem Ingenieur jedoch noch keine Berufsfähigkeit. Um den Anforderungen der beruflichen Praxis genügen zu können, benötigt er darüber hinaus das vertiefte Wissen des betreffenden Fachgebietes und die speziellen Kenntnisse der ingenieurmäßigen Problemlösungsmethodik. Das darüber hinaus benötigte Spezialwissen der Anwendung entsprechend den Aufgaben am Arbeitsplatz wird während der Einarbeitung und durch Weiterbildung erworben.

Das vertiefte Wissen eines Anwendungsgebietes befähigt den Ingenieur, den Gesamtumfang der Aufgaben zu überblicken, seine spezielle Problemlösung in die übergeordnete Gesamtlösung einzubinden und Schnittstellenprobleme zu meistern. Hierzu gehören Kenntnisse über die Systemfunktionen des betreffenden Fachgebietes und über die technisch-wissenschaftlichen Realisierungsmöglichkeiten mit Hilfe der ingenieurmäßigen Vorgehensweise. Angesichts der wachsenden Komplexität moderner Geräte, Anlagen und Systemen gewinnen gerade die Fähigkeiten zum Gesamtüberblick, zum Denken in Systemen und zur Kommunikation auf Systemebene mit allen am Projekt Beteiligten besonders an Bedeutung. Von den Ingenieuren wird erwartet, daß sie den steigenden Anforderungen an das Theorieverständnis und der zunehmenden Komplexität beim Gestalten, Betreiben und Vermarkten technischer Systeme und Produkte entsprechen.

Der Kern der im Studium zu erwerbenden Qualifikation sollte ein breites Spektrum an mathematisch-naturwissenschaftlichem, technischem und übergreifendem Grundwissen bilden. Dieses sollte sich über alle in Betracht kommenden Ausbildungsfächer erstrecken und die Basis für die später erforderliche berufliche Mobilität legen. Die fundierte Vermittlung breiter Grundlagen ist auch deshalb so wichtig, weil diese später im Berufsleben nur schwer nachzuholen ist.

Zum modernen Grundlagenwissen gehören nach Meinung des VDI auch ökologische Kenntnisse im Anwendungszusammenhang der jeweiligen Technologie und Kenntnisse über Inhalte und Verfahren der Technikbewertung.

Auf den Grundlagen aufbauend sollte die Vermittlung von anwendungsbezogenem technischen Wissen in Form einer exemplarischen Vertiefung in einigen wenigen technischen Arbeitsgebieten folgen. Die Wissensvermittlung soll auch relevante fachübergreifende nichttechnische Aspekte durch Einbeziehung in fachbezogene Lehrveranstaltungen berücksichtigen.

Eine Klassifizierung der einzelnen Wissensgebiete führt zum Ergebnis, daß ein optimaler Kompromiß in der Ingenieurausbildung dann erreicht werden kann, wenn auf die drei Ausbildungsblöcke mathematisch-naturwissenschaftliche Grundlagen, technische Grundlagen und exemplarische Vertiefung in einem Anwendungsgebiet jeweils ungefähr 30, 30 und 20 Prozent der gesamten Ausbildungszeit verwendet wird. 20 Prozent des Studienvolumens sollten der Vermittlung von nichttechnischen Inhalten vorbehalten sein mit dem Ziel, die fachübergreifenden Fähigkeiten des Ingenieurs zu fördern, wie es der VDI bereits 1990 in seiner entsprechenden Empfehlung gefordert hat.

Insbesondere sind fachliche Strukturierungen durch interdisziplinäre und problembezogene Inhalte zu überlagern sowie Theorie und Anwendung stärker aufeinander zu beziehen. Für diese Inhalte sind auf Kosten der konventionellen Lehrformen ... verstärkt problem- und projektbezogene Studienformen einzuführen, die technisch-fachliche und fachübergreifende Studieninhalte integriert vermitteln. Insbesondere ist die Kooperation zwischen Hochschule und Wirtschaft ... zu intensivieren....

Neben der Wissensvermittlung durch Lehrveranstaltungen... zeichnet sich die Ingenieurausbildung in Deutschland durch hohen Praxisbezug aus. Dieser kann allerdings nur dann zu voller Geltung kommen, wenn er sowohl von Hochschullehrern als auch von Studenten aktiv betrieben und in den Lehrveranstaltungen voll berücksichtigt wird. Dafür sind ausreichende technische Einrichtungen zu schaffen bzw. auszubauen.

Das deutsche Hochschulsystem der Ingenieurausbildung kennt zwei Ausbildungsmodelle. Das Fachhochschulstudium soll acht Semester und das Universitätsstudium zehn Semester Regelstudienzeit umfassen. Studienumfang und Anzahl der Leistungselemente sollen zur Erhaltung der Chancengleichheit in allen Bundesländern vergleichbar sein.

Aufgabe der Hochschulen ist es, das Studium in drei Phasen (Grundstudium, Hauptstudium, Diplomarbeit) so zu organisieren, daß es in der Regelstudienzeit im Durchschnitt erfolgreich abgeschlossen werden kann.

Das Ingenieurstudium reicht nicht aus, dem Ingenieur Rüstzeug für die gesamte Zeit seiner Berufstätigkeit zu geben. Erst das Zusammenwirken von Ausbildung und Weiterbildung schafft und erhält die Qualifikation, die von ihm gefordert wird. Während sich die Ingenieurausbildung aus bildungsökonomischen Gründen auf die Vermittlung breiter Grundlagen beschränken muß, kommt der Weiterbildung die Aufgabe zu, im Rahmen breitgefächerter Angebote solche Inhalte zu vermitteln, die dem Ingenieur die volle Berufsfähigkeit ermöglichen und ihn während seines Berufslebens weiterhin berufsfähig halten. ...Insgesamt ist festzustellen, daß im technischen Bereich kein dem Bedarf entsprechendes Angebot der Hochschulen vorhanden ist....

Die berufliche Weiterbildung der Ingenieure ist nur gemeinsam von Hochschulen, freien Weiterbildungsträgern wie dem VDI-Bildungswerk und der Wirtschaft als internationaler Wissens- und Erfahrungstransfer zu gestalten, um so die jeweiligen Stärken und Erfahrungen optimal einzubringen.

Von der Qualifikation der Ingenieure als Basis für Innovation und Technologie hängt die Bewältigung des Strukturwandels in den Unternehmen entscheidend ab.

Der VDI will dazu beitragen, die Erfolgsquoten im Ingenieurstudium zu erhöhen und die Verweildauer den Regelstudienzeiten anzupassen....

Es ist zu erwarten, daß auch künftig für zwei Drittel aller Beschäftigten der Einstieg in das Berufsleben über eine Berufsausbildung erfolgen wird. Mehr Durchlässigkeit zwischen beruflicher und allgemeiner Bildung ist zu schaffen, um wertvolle Begabungsreserven aus der Berufspraxis zu aktivieren.

... Der VDI erinnert in diesem Zusammenhang an das noch ungelöste Problem des späten Berufseintritts. Dieses kann zum Teil durch eine Straffung der Ausbildung bewältigt werden. Der VDI regt darüber hinaus an, die organisatorische und inhaltliche Struktur und die Dauer des Gymnasiums von acht oder neun Jahren sorgfältig zu überdenken.

Bei der Mathematik und den Naturwissenschaften solle im Gymnasium mehr auf die Vermittlung von Weltverständnis als auf die Abprüfung von Fähigkeiten zur Lösung komplexer Probleme oder komplizierter Transfers Wert gelegt werden. Wichtiger wäre die Einführung einer allgemeinen technischen Bildung auch am Gymnasium, wie es der VDI in diesem Zusammenhang bereits gefordert hat.

Thesen

1. Der VDI empfiehlt, die bewährten eigenständigen Profile der beiden Hochschulformen Universität und Fachhochschule beizubehalten, weiterzuentwickeln und Kooperationen zu intensivieren.

2. Der VDI empfiehlt, die Struktur der Ingenieurausbildung, bestehend aus mathematisch-naturwissenschaftlichen, technischen und überfachlichen Grundlagen, sowie der exemplarischen Vertiefung in einem Anwendungsgebiet weiterzuentwickeln. Dabei ist der Umfang der Vertiefung zugunsten der Grundlagenausbildung zu reduzieren. Das Ziel soll neben der Vermittlung von fachbezogenen Kenntnissen und Fähigkeiten das analytische, fachübergreifende Denken in technischen Zusammenhängen sein.

3. Der VDI empfiehlt, die viergliedrige Inhaltsstruktur der Ingenieurausbildung mit 30 Prozent mathematisch-naturwissenschaftlichen Grundlagen, 30 Prozent technischen Grundlagen, 20 Prozent exemplarischer Vertiefung in einem Anwendungsgebiet und 20 Prozent nichttechnischen Inhalten zu gewährleisten, die Einzeldisziplinen untereinander zu verzahnen und kontinuierlich an die technische und gesellschaftliche Entwicklung anzupassen.

4. Der VDI empfiehlt, den Studienanfängern aller Ingenieurfachrichtungen zum frühestmöglichen Zeitpunkt die Gelegenheit zu geben, die grundsätzliche Neigung unter Beweis zu stellen und eine eventuelle Revision der ursprünglich gewählten Fachrichtungsentscheidung zu treffen.

5. Der VDI empfiehlt,
– Strategien, Instrumente und Methoden zu entwickeln, die Effektivität und Wirtschaftlichkeit von Weiterbildungsmaßnahmen steigern
– Leitlinien als Orientierung für Weiterbildungseinrichtungen zu schaffen
– den Hochschulen Ausstattung und Anreize für Aktivitäten im Weiterbildungsbereich zur Verfügung zu stellen und somit eine Zusammenarbeit mit den freien Weiterbildungsträgern wie dem VDI-Bildungswerk und der Wirtschaft zu ermöglichen
– finanzielle Rahmenbedingungen für Weiterbildungsaktivitäten zu schaffen.

ANZEIGE

VDI BILDUNGSWERK

LEHRGÄNGE · SEMINARE · PRAKTIKA

Ausgewählte Seminare im Juni:

50-16-13 **12.–14. Juni** **Nürnbrecht**
Führung: Gemeinsam zum Erfolg – Der eigenen Stärken bewußt werden, Führungswissen gezielt einsetzen –
Dr. H. Kuhn, Neuss

45-17-05 **12.–13. Juni** **Düsseldorf**
Technischer Einkauf – Wirtschaftlicher Einkauf
Dr.-Ing. D. Fuchs, Bremen

32-68-08 **13.–14. Juni** **Stuttgart**
Beschreibung, Ermittlung und Vergrößerung der Dämpfung in Maschinen, Anlagen, Geräten und Komponenten
Prof. Dr.-Ing. W. Stühler, Berlin

Seit 1973 wird für mich die berufliche Bildung als ‚schlechter-wertig' gegenüber der Hochschulbildung in allen Bereichen gesehen.
Ich habe mich deswegen in 2011 gefreut, dass Kollege Rauner den umseitigen Artikel geschrieben hat.
Das von ihm genannte Zusammenspiel von Ingenieur-, Meister- und Facharbeiterkompetenz war die Basis, auf Grund der wir hervorragende Produkte herstellen konnten.

Die notwendige berufliche Weiterbildung dazu gibt es für mich nur, wenn die Ausbilder eine solche erfahren haben.

Hochschulen: Die Einführung von Bachelor- und Masterdiplomen garantiert noch lange nicht die Vergleichbarkeit der Studiengänge

Diplome: Auch eine Frage der Macht

VDI nachrichten, Hannover, 19. 11. 99 –

Werden deutsche Hochschulabschlüsse international unterbewertet? In den angelsächsischen Ländern gilt das Universitätsdiplom weniger als ein Master, der FH-Abschluss weniger als ein Bachelor.

Nichts scheint in Deutschland so schnell eine kollektive Panik auszulösen wie der Hinweis, dass die Amerikaner den Deutschen meilenweit voraus seien. Jetzt haben auch die Hochschulen begonnen, ihre Abschlüsse den USA anzupassen. Auf Empfehlung der Hochschulrektorenkonferenz (HRK) werden nun eifrig Bachelor- und Master-Studiengänge eingerichtet.

Mindestens 300 Studiengänge, die zu den neuen akademischen Graden führen, liegen den Länderministerien bereits zur Genehmigung vor. Noch steckt rund ein Drittel im Bearbeitungsstau. Und schon zweifeln manche, ob die neuen Abschlüsse überhaupt ihr Ziel erreichen, die deutschen Hochschulabschlüsse international vergleichbar zu machen. Auch das US-Hochschulsystem ist nicht so einheitlich, wie es vielfach den Anschein hat. Die US-amerikanischen Hochschulen sind so pluralistisch organisiert und besitzen ein derart unterschiedliches Niveau, dass sie selbst amerikanischen Studenten einen Hochschulwechsel nicht gerade einfach machen.

Wenn sich beispielsweise ein Student aus einer wenig renommierten Universität mit einem „Master of Science in Electrical Engineering" am berühmten Massachusetts Institute of Technology (MIT) weiterqualifizieren will, muss er meist Zusatzleistungen bringen. Da hilft ihm weder die US-einheitliche Bezeichnung der Abschlüsse noch der modulare Studienaufbau, dessen Kredit-Punkte-System den nahtlosen Wechsel erleichtern sollte.

Also Etikettenschwindel? „Wir müssen uns frei machen von der Vorstellung, dass man sich auf dem weltweiten Studienparkett wie auf dem deutschen bewegen kann", mahnt Professor Heyno Garbe (Uni Hannover), dessen Fachbereich Elektro- und Informationstechnik künftig auch neu strukturierte Studiengänge bietet, die nach drei Jahren zum Bachelor of Science oder nach fünf Jahren zum Master of Science führen. Auch diese Studenten müssen, wenn sie nach dem Bachelor in den USA einen Master draufsetzen wollen, ihre Qualifikation überprüfen lassen.

Immerhin stimmen die Abschlüsse dann wenigstens formal überein. Bisher musste keine angelsächsische Hochschule ein deutsches Diplom kennen oder gar anerkennen, obwohl z. B. in England und dem übrigen Commonwealth „Postgraduate Diploma" weit verbreitet sind. Zwar entsprechen diese nicht immer einem akademischen Grad, sondern eher einer Leistungspunkte-Bescheinigung. Inhalte und Studiendauer jedoch stimmen meist ziemlich genau mit dem deutschen Fachhochschul-Diplom überein.

Rein formal aber wird selbst das deutsche Universitäts-Diplom nur als „Undergraduate"- oder Bachelor-Abschluss eingestuft, etwa durch die Richtlinien des britischen „National Academic Recognition Information Centre" (NARIC). Begründung: Das deutsche Diplom ist der erste berufsqualifizierende Abschluss, der Master dagegen – nach dem Bachelor – bereits der zweite.

Die deutsche Hochschulrektorenkonferenz jedoch bewertet das Uni-Diplom äquivalent zu einem Master-Grad, das Fachhochschul-Diplom als einem Bachelor gleichwertig. International aber zählt das FH-Diplom offiziell sogar weniger als ein Bachelor mit einjähriger Praxisphase.

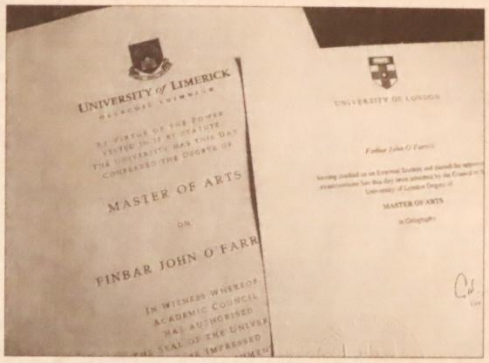
Endgültig unübersichtlich wird es für Ingenieure, die sich in angelsächsischen Ländern selbständig machen möchten. Die englischen Berufsverbände etwa fordern eine Registrierung, die wiederum eine Reihe von Bedingungen vorschreibt zum Beispiel ein mindestens vierjähriges Studium und weitere sehr britische Leistungen, etwa soziales oder Management-Wissen, berichtet Professor Hans-Erich Scholz von der FH Dresden.

Sicher ist: Die Hürden zu einer globalen akademischen und gleichzeitig beruflichen Anerkennung deutscher Hochschulabsolventen bleiben selbst nach der Einführung der neuen Abschlüsse hoch. Das Ganze läuft auf eine subtile Machtfrage hinaus, schätzt Wolf Wagner, Prorektor für Studium und Lehre an der FH Erfurt: „Auch die französischen Hochschulen lassen sich ihre Abschlüsse vergolden."

Dennoch könne Deutschland auf den Bachelor und Master nicht mehr verzichten. „Damit schaffen wir auf jeden Fall formal bessere Voraussetzungen für deutsche Studierende im Ausland und umgekehrt auch für Ausländer, die zu uns kommen", erklärt Dr. Jochen Hellmann vom Deutschen Akademischen Austauschdienst (DAAD) in Bonn.

Letztlich wird die Nagelprobe der beruflichen Zugang sein. „Es waren auch Unternehmer, die den Bachelor wollten", erinnert Jochen Hellmann. „Nun sollen sie die Leute nicht im Regen stehen lassen." Tatsächlich fordert die Industrie jahrelang jüngere und stärker praxisorientierte Hochschulabsolventen. Doch erfahrungsgemäß, räumt der Experte vom DAAD ein, würde es einige Jahre dauern, bis der Arbeitsmarkt auf solche Veränderungen reagiert.

RUTH KUNTZ-BRUNNER



Deutsche Studenten müssen sich auf neue Studienordnungen einstellen: Die Anpassung an amerikanische Vorbilder wird die Hochschulen künftig stark prägen. Foto: Zeimann

Bachelor und Master

Neue Abschlüsse in Deutschland

Das Hochschulrahmengesetz empfiehlt Fachhochschulen und Universitäten die Einführung von Bachelor- und Master-Abschlüssen (BA und MA). Die Kultusministerkonferenz schreibt vor, dass die unterschiedlichen Hochschulformen im Titel ersichtlich sein müssen.

Fachhochschulen verleihen Bachelor und Master mit Fachzusatz, z. B. „of Engineering", Universitäten den Bachelor of Science (B.Sc.) oder den Master of Science (M.Sc.) für Medizin, Mathematik, Natur- und Ingenieurwissenschaften. Daneben laufen vorläufig die Diplom-Studiengänge weiter.

Der Bachelor kann nach drei oder vier Jahren erreicht werden, der Master nach weiteren ein oder zwei Jahren – insgesamt soll ein Studium höchstens noch fünf Jahre dauern. Zum Master-Studiengang wird nur zugelassen, wer bereits über einen Abschluss (vornehmlich Bachelor) verfügt und im Regelfall eine Aufnahmeprüfung besteht. Der Master berechtigt zur Promotion. Die neuen Studiengänge müssen modularisiert sein und ein Leistungspunktesystem besitzen. Im internationalen Vergleich sollte ein FH-Diplom dem vierjährigen Bachelor entsprechen, ein Uni-Diplom oder Uni-Magister dem Master. RKB

Studierende aus dem Ausland

Probleme mit dem Geld

VDI nachrichten, 19. 11. 99 –

Ausländische Studenten stellen ihrem Gastland Deutschland kein gutes Zeugnis aus: Probleme mit den Behörden, Schwierigkeiten mit der Studienfinanzierung und Ausländerfeindlichkeit machen den rund 100 000 Studierenden aus dem Ausland zu schaffen.

Wie kann diese Situation verbessert werden? Darüber diskutierten in der vergangenen Woche in Berlin Experten der Hochschulrektorenkonferenz (HRK), des Deutschen Studentenwerk (DSW) und dem Deutschen Städtetag.

In den Amtsstuben der Städte und Gemeinden gelten bereits die Vorgaben, den Gästen aus anderen Nationen das Leben zu erleichtern. Dennoch beklagten sich die Studenten über Alltagsschwierigkeiten. Ein Hauptproblem: das Geld. Vor allem Studierende aus Entwicklungsländern, von denen sich fast alle ihren Lebensunterhalt verdienen müssen, kommen mit der erlaubten Arbeitszeit von 90 Tagen während der Semesterferien nicht über die Runde.

Der Doktorand Narcisse Fididranzana aus Madagaskar findet diese Arbeitszeitregelung „zu hart". Hinzu komme, dass sie durch die zeitliche Begrenzung von vielen Arbeitgebern gar nicht erst genommen würden. Der Doktorand machte aber auch negative Erfahrungen an seiner Universität, der TU Berlin: Er sei von vielen Deutschen wie der „Laufbursche" behandelt worden.

Ein weiteres Problem: die Wohnungssuche. Grundsätzlich würden sich die Studenten einige Änderungen wünschen: Übergangswohnheime für die erste Phase des Studiums, eine gelockerte Arbeitserlaubnis, aber auch bessere Informationen über die deutschen Universitäten bereits im Heimatland.

Nach einer Erhebung des DSW ist der Studienort Deutschland für viele nicht der Wunschtraum. Hätten sie die freie Wahl gehabt, wären nur 42 % der Studierenden aus anderen Industrieländern tatsächlich an eine deutsche Universität gegangen. Bei den Studenten aus den Entwicklungsländern schneidet der Studienort Deutschland noch schlechter ab: 63 % hätten sich lieber ein anderes Land ausgesucht. BIRGIT BÖHRET

2012

Berufliche Bildung wird in Europa abgewertet

BILDUNG: Länder, die ihre Studierendenquote nach den Empfehlungen der OECD nach oben treiben, gefährden ihre berufliche Bildung und ihre Wettbewerbsfähigkeit, warnt der Bremer Bildungsforscher Felix Rauner. Der Anteil der Arbeitsplätze für hoch Qualifizierte liege in den Industriestaaten nur bei 20 %.

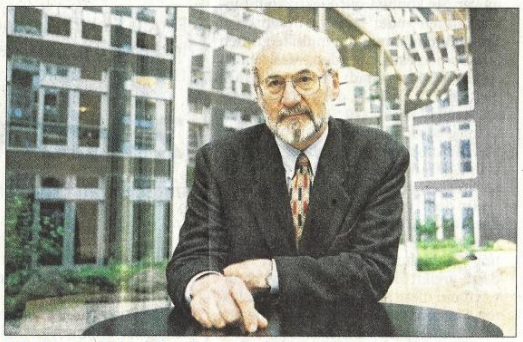
VDI nachrichten, Düsseldorf, 27. 4. 12, has

Noch ist der Europäische Qualifikationsrahmen (EQR), mit dem allgemeine und berufliche Bildungsabschlüsse vergleichbar gemacht werden, nicht unter Dach und Fach, doch eine Tendenz zeichnet sich schon ab: Die berufliche Bildung werde gegenüber der akademischen Bildung abgewertet, bemängelt Felix Rauner, Ingenieur und Bildungsforscher an der Universität Bremen. Denn im EQR seien die oberen Stufen für die akademische Bildung reserviert. Dabei müsse die Berufsausbildung den Kürzeren ziehen.

Die treibende Kraft, die in Europa hinter der Abwertung der beruflichen Bildung steht, ist Großbritannien, sagt Rauner. Die Briten orientieren sich am GATS, dem internationalen Abkommen über den Handel mit Dienstleistungen. Darin wird der Qualifikationsmarkt als ein wichtiger Service-Markt eingestuft. Gesteuert werden soll dieser über ein modulares Zertifizierungssystem.

Die zunehmende Akademisierung der Bildung geht zurück auf das Konzept der post-industriellen (Wissens)gesellschaft, das von dem einflussreichen amerikanischen Soziologen Daniel Bell 1973 formuliert wurde. Der Dreh- und Angelpunkt der post-industriellen Gesellschaft sei das theoretische wissenschaftliche Wissen, um das sich (zukünftig) alles drehen werde: die Technikentwicklung, die Ökonomie und die Bildung.

Diese problematische Botschaft wurde Auslöser für eine Politik, die auf eine steigende Zahl von akademisch ausgebildeten jungen Menschen setzte. Im Englischen hat sich dafür die Redewendung „college-for-all" eingebürgert.



Felix Rauner, Bildungsforscher an der Universität Bremen, sieht in der Deregulierung der beruflichen Bildung eine Gefahr für die Industrie. Foto: itb/Uni Bremen

Diese college-for-all-Politik habe bei jungen Menschen Aufstiegshoffnungen geweckt, die nicht zu erfüllen seien. In Ländern, in denen die Studierendenquote hochgetrieben wurde, müssten sich Hochschulabsolventen oft mit Jobs begnügen, für die sie überqualifiziert sind. Denn in allen Industrieländern liege der Anteil der Arbeitsplätze, für die eine wissenschaftliche Ausbildung nötig sei, bei rund 20 %.

In zahlreichen OECD-Ländern wie Kanada, Spanien, den USA, aber auch in vielen Schwellenländern, übersteige der Anteil der hochschulisch Qualifizierten nicht selten um mehr als das Doppelte die Nachfrage. Die Redewendung „Now I have a bachelor-degree, but I don't have any skills" ist z. B. in den USA Ausdruck dieser Entwicklung. Selbst in China ist in den Ballungszentren diese Entwicklung zu beobachten. Dieses Problem ist in Deutschland aber aufgrund der geringeren Akademikerquote weniger gravierend, erklärt Rauner.

Wie sieht die Alternative des Bremer Bildungsforschers aus? Rauner fordert eine „Architektur paralleler Bildungswege". Neben den herkömmlichen disziplinär ausgerichteten universitären Studiengängen müssten duale Studiengänge für Studenten eingerichtet werden, die aus dem Berufsleben kommen. Auch diese Studiengänge sollten bis zur Promotion führen.

Wohin eine Vernachlässigung und Deregulierung in der beruflichen Bildung führe, zeigten die ausgeprägten Prozesse der Deindustrialisierung in Ländern wie Großbritannien und den Vereinigten Staaten. Vergleichsuntersuchungen britischer Forscher zur Wettbewerbsfähigkeit englischer Unternehmen zeigten, dass die Arbeitsproduktivität rund 30 % unter der vergleichbarer deutscher Unternehmen liegt. Die Ursache dafür liegt vor allem in der fehlenden Qualifizierung von Facharbeitern und Meistern.

In starkem Maße hätten auch die USA die berufliche Bildung zugunsten einer „college-for-all-Politik" vernachlässigt, sagt Rauner – zulasten des Niveaus an den Colleges. So besuche mittlerweile ein großer Teil der Studierenden sogenannte „some-college-Kurse" von sechs Wochen bis zu einem Semester, in denen vermittelt wird, wie man Haus und Garten in Schuss hält oder Hochzeiten organisiert. Eine bildungspolitische Weichenstellung, die zum industriellen Abstieg der USA beigetragen habe, so Rauner.

Auch China, der Wirtschaftsgigant der Zukunft und Herausforderer der Vereinigten Staaten, orientiert sich in der Bildungspolitik stark an den USA, beobachtet Rauner, der China häufig besucht und mit Bildungsforschern aus dem Reich der Mitte zusammenarbeitet.

„Vieles wird in China unbesehen übernommen und gilt als kulturell und wissenschaftlich überlegen", sagt Rauner. Management-Konzepte aus den US-Kaderschmieden erfreuen sich großer Wertschätzung. Wie in den USA ist der Anteil der Studierenden in den Ballungszentren auf bis zu 70 % eines Altersjahrganges angestiegen. Auf dem Arbeitsmarkt fehlen dagegen qualifizierte Facharbeiter.

Kompetenz in den Sektoren, die Deutschland stark gemacht haben, würden dagegen unterschätzt, beobachtet der Bremer Experte. Zwar seien Ingenieure aus Deutschland in China hoch angesehen, aber es fehle am Verständnis für das Zusammenspiel von Ingenieur-, Meister- und Facharbeiterkompetenz in einer branchenspezifisch stark ausdifferenzierten Industrie.

HARTMUT STEIGER

Der vollständige Artikel unter
www.vdi-nachrichten.com/rauner

Eine Schlankheitskur für die Schulen

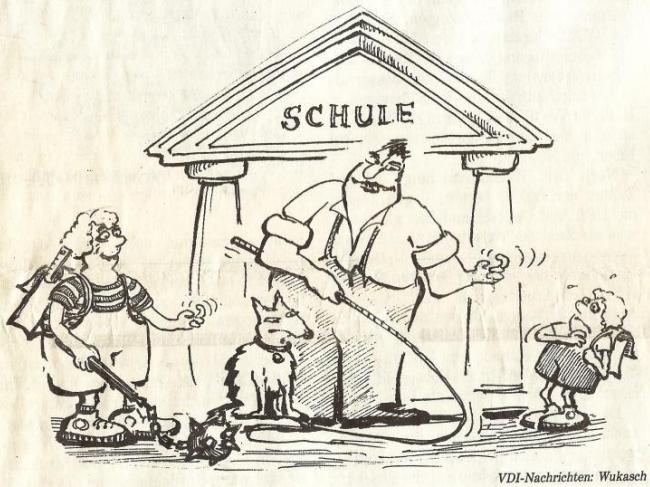
Experten wollen die Freiheit der Schulen gegenüber dem Staat stärken – Beamtenstatus der Lehrer soll aufgehoben werden

VDI-N, Düsseldorf, 13. 10. 95 –

Johannes Rau mahnt zur Mäßigung: Auf die Probleme an den Schulen gebe es nicht „eine richtige Antwort", dozierte der nordrhein-westfälische SPD-Ministerpräsident, als er Anfang dieser Woche die Denkschrift „Zukunft der Bildung – Schule der Zukunft" der Presse vorstellte. Gleichzeitig warnte er auch davor, einzelne Ergebnisse dieser voluminösen Bestandsaufnahme des deutschen Schulsystems als „Steinbruch für tagespolitische Auseinandersetzungen zu mißbrauchen".

Kaum ein Thema ist so stark ideologisiert wie die Schulpolitik, und die Sozialdemokraten sind daran nicht schuldlos. Vor allem in Hessen haben sich in den letzten 20 Jahren die Fronten verhärtrt. Den verbissenen Anhängern der Gesamtschule aus den Reihen der SPD und der Grünen stehen ebenso hartnäckige Kritiker aus der CDU, Elternvereinigungen und den Standesorgansisationen der Lehrer gegenüber. Vorerst, so scheint, hat der Streit um die integrierten Gesamtschulen ein Ende gefunden. Kürzlich bescheinigte der Hessische Staatsgerichtshof, daß diese Schulform nicht gegen die Verfassung des Landes verstoße.

Aus dieser Blockade will die von Johannes Rau eingesetzte Bildungskommission Nordrhein-Westfalen einen Weg zeigen. In ihrer Denkschrift unterziehen die 22 Fachleute aus Wissenschaft, Wirtschaft und Verwaltung, das deutsche Schulwesen einer harschen Kritik. Ihr Fazit: Die allgemeinbildenden Schulen (Hauptschule, Realschule, Gymnasien, Gesamtschulen) sind überreguliert, unflexibel und bereiten die Schüler nicht ausreichend auf die Zukunft vor. Die Leitfragen, an denen sich die Empfehlungen orientieren, lauten:



VDI-Nachrichten: Wukasch

Was sollen Schüler lernen und wie kann die Schule so organisiert werden, daß effizienter gelernt werden kann?

Die Kommission, die sich für ihre Denkschrift zwei Jahre Zeit genommen hat, bricht in ihren Empfehlungen auch mit liebgewordenen Traditionen. So soll die Grundschule um zwei auf sechs Jahre verlängert und die Sekundarstufe zwei in eine berufliche und eine gymnasiale Oberstufe gegliedert werden. Außerdem plädiert die Kommission, in der auch Hilmar Kopper, Chef der Deutschen Bank, und Reinhard Mohn von der Bertelsmann Stiftung mitgearbeitet haben, Lehrer nicht mehr als Beamte einzustellen.

Auch die Lehrerbildung müßte verändert werden. Das alte Karrieremuster der meisten Pädagogen – Abitur, Studium, Beamter – sollte nach Auffassung der Kommission durchbrochen werden. Jeder Lehrer sollte bereits vor Aufnahme des Studiums Erfahrungen in einem anderen Beruf vorweisen können – wenn auch in engem Rahmen. Die Experten plädieren daher für „ein halbjähriges Praktikum oder eine vergleichbare berufliche Tätigkeit in Wirtschaft, Verwaltung, sozialen oder außerschulischen Einrichtungen". Der Zugang zum Lehrerberuf soll nicht mehr ausschließlich den Absolventen der einschlägigen Studienrichtungen, sondern auch Bewerbern mit „äquivalenten Qualifikationen" offenstehen.

Den größten Reformbedarf sieht die nordrhein-westfälische Bildungskommission in einer neuen Schulorganisation. Der Staat dürfe nicht mehr durch unzählige Erlasse, Verordnungen und Gesetze regulierend in den Schulalltag eingreifen. So füllen z. B. die einschlägigen Vorschriften des nordrhein-westfälischen Kultusministeriums mittlerweile ein Kompendium von mehr als 1000 Seiten. Grund genug, eine Dregulierung der Schulen zu verlangen. „Keine Organisation", so Reinhard Mohn, „läßt sich von einem Punkt aus zentral steuern, weder ein Unternehmen noch die Schulen".

Was in den Unternehmen unter dem Stichwort Lean Production seit Anfang der 90er Jahre zu einem Abbau von Hierarchien geführt hat, soll künftig auch auf die Schulen angewendet werden. Die Rechte der Einzelschulen, heißt es in der Denkschrift, sollten so umfassend wie möglich, die der Behörden oberhalb der Schule möglichst eng definiert werden. Auf diese Weise können die Schulen pädagogische Kreativität entfalten und sich ihr eigenes Profil bilden. Auch bei personellen Entscheidungen, der Auswahl der Lehrer und des Rektors, sollen die Schulen mitbestimmen können. Ein Schulleiter, so die Vision der Experten, müsse nicht immer ein Lehrer sein.

An der staatlichen Verantwortung für das Bildungswesen will auch die NRW-Kommission nicht rütteln. Allerdings soll sich der Einfluß der Aufsichtsbehörden lediglich darauf beschränken, das Leistungsniveau und die Vergleichbarkeit der Abschlüsse zu garantieren.

HARTMUT STEIGER

Plädoyer für Eliten

VDI 1995

Wie wird Deutschland in fünfzig Jahren aussehen? Wird es noch zu den führenden Industrienationen gehören oder verliert es den Anschluß an die technische Entwicklung? Prognosen sind kaum möglich, nur eines ist sicher: Wenn der Lebensstandard hierzulande gesichert werden soll, dann sind Spitzenleistungen notwendig.

Spitzenleistungen setzen nicht nur ein günstiges politisches und wirtschaftliches Klima voraus, mehr noch sind sie auf die Förderung exzellenter Begabungen in Schulen und Hochschulen angewiesen. Wenn in den sechziger und siebziger Jahren das Bildungs- und Wissenschaftsystem ausgebaut wurde, um mehr Chancengleichheit herzustellen, so ist jetzt an der Zeit, Schulen und Hochschulen so zu differenzieren, daß Leistungsfähige nicht unterfordert werden und durchschnittlich begabte Schüler und Studenten in angemessener Zeit einen Abschluß erreichen können. Beide Anforderungen können derzeit Schulen und Hochschulen kaum erfüllen.

Vor allem die Universitäten müssen finanziell und personell in die Lage versetzt werden, daß sie Spitzenleistungen unter den Professoren und Studenten auch hervorbringen können. Das beginnt damit, daß sie sich ihre Studenten in einigen Bereichen selbst aussuchen, daß sie ein unverwechselbares Profil herausbilden und ihre wenig effizienten Strukturen reformieren.

Aber mehr noch muß sich das Klima in der Gesellschaft verändern. Eliten dürfen nicht verpönt werden. Vor allem aber dürfen sie keine geschlossene Kaste bilden. Wenn die Führungspositionen den Angehörigen aller Schichten offenstehen, wenn Leistung über den Aufstieg entscheidet, dann können Eliten mit Akzeptanz rechnen. Daß sie zur Zukunftssicherung gebraucht werden, steht außer Zweifel. *(Seite 10)*

HARTMUT STEIGER

Der Kommentar

Von KLAUS BECKER

Kassel 1997

Kurzes Gedächtnis

Die Bilder, die da zur abendlichen Nachrichtenzeit über die Glotze flimmerten, schienen eintönig wie je. Funktionärstreffen einer jener Großverbände, die kaum einen Nachrichtenwert haben. Die aber bei uns auf alle Fälle gesendet werden, weil garantiert einer der Ober-Funktionäre in einem Rundfunkrat sitzt. Und man ihm deshalb rechtzeitig mit möglichst viel öffentlich-rechtlichem Journalisten-Speichel, zwecks Förderung weiterer Karriere, die Schuhe putzen muß. Doch plötzlich wird die Szene interessant. Der Kanzler als Gastredner ausgepfiffen – wen wundert's? Der Regierungschef zur gegenwärtigen Zeit, der nicht genug Kritik auf sich zöge: Es wäre wirklich eine seltsame Erscheinung. Und gerade dieser Kanzler mit seiner satten Selbstzufriedenheit gibt ja auch den Bürgern oft genug Anlaß zu der Frage, ob er deren tatsächliche Sorgen noch kennt oder gar berücksichtigt. Doch da spenden die Funktionäre, wie man sehen kann, plötzlich lebhaften Beifall. Für die Gastredner Gregor Gysi und Jürgen Trittin. Der eine, Gysi, Erbe einer Partei, die die östliche Hälfte Deutschlands 40 Jahre brutal unter ihrer Fuchtel hielt und ganz nebenbei noch in den wirtschaftlichen Ruin stürzte. Der andere, jetzt Bundessprecher der Grünen, einst aktiver Kommunist im Westen, der uns genau dieses Modell aufschwätzen wollte. Jenes sozialistische Wirtschaftsmodell, an dessen Trümmern der Sozialstaat jetzt fast zu ersticken droht.

Kompliment. Das Kalkül auf das kurze Gedächtnis bei Funktionären klappt offenbar hervorragend. Pfiffe für den Kanzler, der sich mit der Erblast herumschlagen muß, Beifall für die Alt-Kommunisten Gysi und Trittin. Daß wir Jahr für Jahr rund 200 Milliarden Mark für das grauenhafte Erbe genau jener Ideologie aufbringen müssen – es scheint schon erfolgreich verdrängt. Rechnen wir es einmal um: Jeder steuerzahlende Bürger in diesem Land muß ungefähr 6.000 Mark für die Spätfolgen einer Wahnidee, die überall, aber auch überall gescheitert ist, aufbringen. Könnten wir uns diese 6.000 Mark ersparen – wir können es nicht! – dann könnte man auf einen Schlag die Steuern senken, könnte die Sozialkassen sanieren, milliardenschwere Programme für Mehrbeschäftigung auflegen.

Doch das Geld können wir nur einmal ausgeben. Wir müssen es in diesem Fall ausgeben, weil wirklichkeitsfremde Ideologen von einer Wirtschafts- und Sozialordnung träumten, einen unvorstellbaren Machthunger verspürten. Der mit ungeheuren Opfern an menschlichem Leben und Leiden, mit wirtschaftlichen Verwüstungen in der gesamten östlichen Hälfte Europas bezahlt werden muß. Sieben Jahre nach dem Zusammenbruch der östlichen Hälfte Europas – vor allem aus wirtschaftlichen Gründen – klatschen Funktionäre hier den Vertretern jener Ideologie Beifall, die nichts, aber auch gar nichts dazu gelernt haben. Und zeigen damit wieder einmal, wie wirklichkeitsfremd sich jene Schicht gebärdet, die sich das Sagen in diesem Land anmaßt. Sie kann ja noch so viel Unsinn produzieren: Die Folgen ihres Leichtsinns, ihrer Bedenkenlosigkeit und ihres kurzen Gedächtnisses müssen allemal wir ausbaden.

Außerdem habe ich als einer der ersten Deutschen schon 1963 eine Inspektionsreise durch die deutschen Ostgebiete gemacht, die Erinnerungen waren damals noch taufrisch. Auf dieser Reise habe ich immer wieder Polen getroffen, die bei deutschen Bauern gearbeitet hatten, und alle waren des Lobes voll über ihre Arbeitgeber. Und hier die Stimme eines Polen wörtlich: „Mein Bauer (den ich übrigens kannte) war wie ein Vater zu mir, mein Vater hätte mich nicht besser behandeln können."

Das sind meine persönlichen Erlebnisse mit Ostarbeitern; die Negativ-Darstellung auch für den privaten Bereich ist einfach falsch. Und überhaupt: Wer zahlt eigentlich eine Entschädigung für unsere Zwangsarbeit bei den Polen?

W. Stock
Aschara

Ein zu düsteres Bild

1998

„1,5 Mio. Zwangsarbeiter leben noch" (Nr. 36/99)

Den letzten Satz von Mark Spoerers Bericht möchte ich wiederholen: „Die Zwangsarbeiter mussten – wenn sie Pech hatten – bei einem Industrieunternehmen, oder – wenn sie Glück hatten – auf dem Lande arbeiten. Der Nettolohn war lächerlich gering, die Behandlung oft – aber nicht immer – schlecht."

Sie malen ein zu düsteres Bild, weil Sie wahrscheinlich nicht selbst dabei waren und es demzufolge nicht wissen können.

Ich (Jahrgang 1935) spreche hier nur mal für die Ostarbeiter, die in der privaten Landwirtschaft tätig waren (40 % aller). Ich weiß aus eigenem Ermessen, dass diese es zu 90 % bis 95 % gut hatten: Ich kann das beurteilen, weil wir selbst auf unserem Bauernhof in Pommern drei Ostarbeiter beschäftigt hatten (zwei Polen-Jungen für Pferde und Kühe, ein Ukrainer-Mädchen im Haushalt). Und ich weiß auch, wie die Ostarbeiter bei den anderen Bauern unseres Dorfes behandelt wurden.

In dem Artikel von Mark Spoerer bedürfen einige Aussagen der Ergänzung, verbunden mit einigen Anmerkungen. Schon die zweite Überschrift lässt aufhorchen, denn dort ist von acht Millionen Sklaven die Rede. Wahrscheinlich kennt der Autor wie der normale Bürger Sklaven nur aus den Geschichtsbüchern bzw. aus der Literatur. Fremdarbeiter oder, wie es heute heißt, Zwangsarbeiter, die zwischen 1940 und 1945 in Deutschland tätig waren, mögen unterschiedliche Arbeitsbedingungen vorgefunden haben, den Status von Sklaven hatten sie nie. Sie hatten die gleiche Arbeit zu leisten wie Deutsche auch, wurden praktisch gleich ernährt, genossen im Rahmen des Möglichen Freizügigkeit und wurden, es sei denn in Fall von Sabotage, nicht gestraft. Dass ein Teil von Ihnen in Baracken lebte, war damals nicht unüblich; viele deutsche Soldaten wären froh gewesen, wenn sie eine solche Behausung gehabt hätten. Der Autor gibt richtig an, dass die Mehrzahl der Arbeitskräfte in der Landwirtschaft und im privaten Bereich tätig war. Wenn man sich vor Augen hält, dass wenige Jahre zuvor die Stalinsche Kulakenvernichtung mit Millionen von Hungertoten die Länder der Sowjetunion heimgesucht hatte, dürfte die Annahme, dass sich manch einer freiwillig meldete, nicht abwegig sein. Es überrascht auch, dass Mitte 1945, als keine deutschen Truppen mehr auf sowjetischem Gebiet standen, mehr Ukrainer, Weißrussen und Russen in Deutschland waren als Ende 1944. Wie erklärt sich diese Vermehrung? Handelt es sich um Menschen, die vor der Roten Armee geflohen sind?

Schließlich ein Wort zu den geforderten Entschädigungen: Ist es gerechtfertigt, wenn z.B. Polen, die von 1940 bis 1944 auf einem ostpreußischen, schlesischen oder pommerschen Hof gearbeitet haben und sich 1945 diesen Hof kostenlos aneigneten, auch noch Entschädigungen fordern? Wenn es darum geht, 54 Jahre nach Kriegsende weitere deutsche Leistungen einzufordern, ist gern von moralischer Verpflichtung die Rede. Polen hat neben einer Reihe von Entschädigungen 1992 ein wahrhaft fürstliches Geschenk erhalten: Die Hälfte seiner Schulden in Höhe von 9 Mrd. DM wurde erlassen. Wäre wenige Jahre nach dem Geschenk von 4,5 Mrd. DM dankbares Schweigen nicht die angemessenere Haltung?

Dr. T. Reichelt
Bonn

Der Kommentar

Von KLAUS BECKER

Lotterei 1997

„Wir sind auf dem Weg, ein verlottertes Land zu werden: Eine Nation, in der Schwarzarbeit, Steuerhinterziehung, Sozialhilfemißbrauch an der Tagesordnung sind, ist krank." Mit solch markigen Worten meldet sich der Vorsitzende der niedersächsischen CDU, Christian Wulff, einer der Zukunfts-Hoffnungen seiner Partei, zu Wort.

Recht hat er – wir haben dies genau mit ähnlichen Worten schon oft geschrieben. Hüten uns deshalb auch, seiner Analyse zu widersprechen.

Nur: Da fehlt doch noch eine ganze Menge. Da fehlt vor allen Dingen ein Wort über das unglaubliche Versagen der politischen Klasse. Wo liegen denn, Herr Wulff, die Ursachen für die systematisch sinkende Bereitschaft der Bürger, dem Staat Geld zu geben?

Er kann doch in seinem eigenen Landesverband ruhig mal damit anfangen: Da soll es ja Politikerinnen in höchsten Ämtern geben, die gern auf das teuerste Verkehrsmittel, das Flugzeug, zurückgriffen, sich auf Kosten der Steuerzahler mit Bundeswehr-Maschinen durch die Lande fliegen ließen.

Und anschließend wurde natürlich alles von einem ausschließlich von Politikern besetzten Ausschuß gut geheißen: Das mußte so sein, die Frau Präsidentin war ja nur auf Dienstreise.

Nein, sprechen wir nicht über die Riesenpensionen nach kürzester Amtsdauer, angesichts derer es Millionen Rentnern in diesem Land nur speiübel wird. Fragen wir nicht nach den zahllosen Privilegien derer, die über die Steuerkassen verfügen. Wulff fragt ja auch nicht danach.

Er stellt nur fest, was daraus entsteht: und da hat er ja durchaus Recht. Nur nach den Ursachen fragt er nicht. Denn geht es ans Eingemachte, dann müßte er seinen Kollegen mal ganz kräftig auf die Finger klopfen.

So lange er nur die Folgen einer verkorksten Politik anprangert, wird er nichts erreichen, außer Wortgeklingel.

So lang in diesem Land unwidersprochen festgehalten werden kann, daß rund 70 Milliarden Mark pro Jahr aus öffentlichen Kassen verschwendet, zum Fenster hinausgepulvert werden, so lange nichts daran geändert wird, daß die Steuerzahler dieses Landes zwei Drittel der Netto-Kosten für die Europäische Union tragen, deren Verschwendungssucht auch notorisch ist, ist wohl nichts zu machen.

So lange die Politik es nicht schafft, groteske Subventionen für veraltete Industriezweige wie den Bergbau abzuschaffen, wo jeder Arbeitsplatz im Jahr mit 140.000 Mark bezuschußt wird – ein Vielfaches von dem, was die meisten Steuerzahler überhaupt in der Tasche haben –, so lange mögen Politiker wirklich mal ganz kleine Brötchen backen. Es ist jetzt Mode, zunächst erst mal auf die Abgabe-unwilligen Bürger zu schimpfen.

Da spricht man von „Steuer-Schlupflöchern". Und vergißt, daß die von Politikern aus Gründen der Wirtschaftsförderung, ob wirksam oder nicht, angepriesen und durchgesetzt wurden.

Wenn die Bürger sich so etwas zunutze machen, jammert man plötzlich.

Doch gemach: Privilegien, Verschwendung, sinnlose Subventionen – die politische Klasse setzt die Maßstäbe. An ihrem Verhalten nehmen die Bürger Maß. Der Volksmund sagt: „Wie man in den Wald ruft, so schallt es heraus."

Es ist ja schon begrüßenswert, wenn Politiker wie Wulff das ziemlich ungeschminkt sehen.

Nur: Weniger schimpfen und mehr nach den Ursachen schauen.

Und da wollen wir nochmal ein bekanntes Wort zitieren: „Wenn man den Balken im eigenen Auge nicht sieht, dann sollte man über den Splitter im Auge der anderen besser schweigen."

Der Kommentar

Von KLAUS BECKER

Sand streuen 1997

In diesen Tagen heißt es Abschied nehmen. Jasna muß samt Familie ausreisen. Mit ihren Kindern, die gut Deutsch können, in der Schule sehr gute Leistungen bringen. Ein Musterbild an Fleiß und Arbeitswillen und dabei immer höflich und gut gelaunt. Jasna ist Bosnierin und hat ihren Ausreise-Bescheid.

Dafür hat sie schon den Bescheid, daß sie in die USA einreisen und dort auf Dauer leben darf. Sie hat den strengen Bestimmungen, die die Amerikaner bei der Auswahl und Aufnahme ihrer Zuwanderer anlegen, standgehalten. Jetzt wird sie, wie ich hoffe, genau so gut gelaunt und arbeitsam ihre Zukunft in den USA aufbauen, und ihre beiden Töchter werden irgendwann als junge Amerikanerinnen zu Besuch kommen.

Dafür bleiben die anderen hier. Zum Beispiel die wachsende Zahl derer, die illegal zu uns gekommen sind. Die ihre Papiere immer häufiger schon bei der Anreise vernichten und damit dokumentieren: Wir legen es gar nicht darauf an, mit euch ehrlich umzugehen. Wir betrügen euch von der ersten Minute an und erwerben deshalb das Recht, auf Dauer dazubleiben.

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Was immer wir tun, was immer geschieht: Ihr könnt uns nicht abschieben, wir bleiben euch erhalten. Wieviele Straftaten da auch vorkommen, ihr werdet auf Dauer verpflichtet sein, uns zu unterhalten, uns zu versorgen.

Es ist das groteske Ergebnis einer Politik, die offenbar die Dinge nicht mehr steuern kann, sondern sich dahin treiben läßt. Was tut sie dagegen? Nichts. Sie pendelt hilflos im Gestrüpp zwischen selbstgeschaffenen Gesetzen und einer geradezu jämmerlichen Interessenvertretung nach außen. Die Politik muß eingestehen: Wir sind am Ende unseres Lateins. Wir können nichts mehr machen, wir kapitulieren.

Nur dem Bürger gegenüber muß man das noch verbergen. Dem Bürger gegenüber muß man ja Stärke demonstrieren. Dem Bürger muß man Sand in die Augen streuen. Denn was würde wirklich geschehen, wenn die Bürger merkten, wie handlungsunfähig, wie hilflos der Staat tatsächlich ist? Der Staat muß sich ihm gegenüber ja als Löwe aufspielen, obwohl er schon lange nur noch ein Kätzchen ohne Krallen und ohne Zähne ist. Stark ist er nur noch da, wo er seinen Bürgern – denen, die keine andere Staatsbürgerschaft haben – Geld wegnehmen kann, die Früchte ihrer Sparsamkeit zerstören, ihr zusammengetragenes Vermögen vernichten. Da ist er bärenstark. Da wird er sogar brutal, rücksichtslos.

Ansonsten versagt er. Da reist der Bundeskanzler nach Italien und verkündet großspurig, das Land müsse sofort dem Schengener Abkommen beitreten. Aufgenommen werden in die Reihe der Länder, zwischen denen Kontrollen wegfallen. Der Kanzler wischt alle Bedenken vom Tisch. Obwohl auch er weiß, daß Italien seine Außengrenzen gar nicht kontrollieren kann und will. Weil man weiß, daß die illegalen Zuwanderer sowieso gleich nach Norden, vorzugsweise nach Deutschland, weiterreisen.

Was kümmert's diesen Politiker? Die Alternative: Da läßt sich der Grüne Joschka Fischer dafür feiern, daß er seine Parteifreunde auf bedingungslose Unterstützung die Linie von Günther Grass in der Einwanderungspolitik einschwört. Also: Noch mehr Wirrwarr in der Zuwanderungspolitik, noch weniger Abschiebungen, noch mehr Aufweichung von Gesetzen, noch mehr Lasten. Natürlich nicht für die grünen Großmäuler und Mandatsträger. Sie haben ja schon längst ihre Schäfchen im Trockenen.

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Zeitsprung: Vor 70 Jahren starb Hermann Hollerith, der Erfinder der Lochkarte und Gründer von IBM

Eine junge Frau brachte die Datenverarbeitung ins Rollen

VDI nachrichten, Las Vegas, 19. 11. 99 –
Hermann Hollerith ist von allen Wegbereitern des modernen Computers – neben Babbage, Zuse und anderen – der am wenigsten bekannte, obwohl es noch gar nicht so lange her ist, dass die von ihm entwickelte Lochkarte das Speichermedium schlechthin war.



Hermann Hollerith entwickelte das Verfahren zur Datenverarbeitung mit Lochkarten.

Was vor Jahrzehnten die „Hollerith-Maschine" als Gerät zur schnellen Datenerfassung und -verarbeitung war, das ist heute – auf einem ganz anderen Leistungsniveau – der Personalcomputer. Mit dem PC schließt sich ein Kreis, denn Hermann Hollerith, der Erfinder der lochkartengesteuerten Tabuliermaschine, gründete 1896 das Unternehmen, aus dem 1924 die International Business Machines Corporation hervorgehen sollte, heute besser bekannt als IBM.

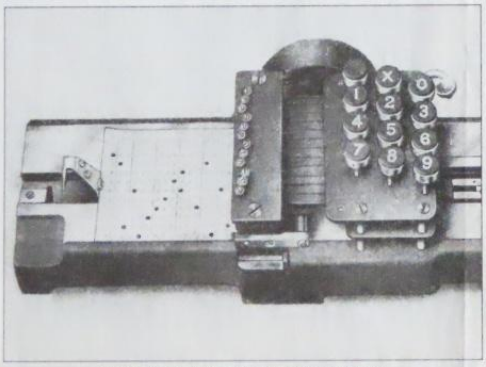
Hollerith hat diese dritte und letzte Umbenennung des von ihm gegründeten Unternehmens Tabulating Machine Company noch miterlebt, er starb fast auf den Tag genau vor 70 Jahren, am 17. November 1929 im Alter von 69 Jahren.

Hollerith wurde als Sohn deutscher Einwanderer am 29. Februar 1860 in Buffalo im US-Bundesstaat New York geboren. Mit 15 Verließ er das City College New York und machte bereits mit 19 seinen Abschluss an der Columbia School of Mines. Er unterrichtete Maschinenbau am bekannten Massachusetts Institut of Technology (MIT) und entwickelte dort u.a. ein elektrisch betriebenes Bremssystem für Eisenbahnen, das sich aber gegen die dampfbetriebenen Bremssysteme von Westinghouse nicht durchsetzen konnte.

In der Nachfolge der US-Volkszählung von 1880 wandte sich der junge Hollerith dann den Problemen zu, die später sein Lebenswerk bestimmten: der Bearbeitung großer Datenmengen. Seit 1881 arbeitete er für das Census Office, jene Behörde, die für die Volkszählung zuständig ist. Dort begegnete er John Shaw Billing, der mit der statistischen Analyse der 1880er-Zählung beschäftigt gewesen war.

Wie ein Biograf Holleriths schrieb, kam beiden die Idee zur lochkartengestützten Datenauswertung während eines Abendessens in Billings Haus. Nach einer Anekdote machte Hollerith in diesem Zusammenhang ganz besondere Erfahrungen mit der Statistik: Um Billings Tochter zu gefallen, kaufte er ihr alle Lose für eine Wohltätigkeitsveranstaltung ab – bis auf eines. Und das hat dann schließlich gewonnen.

Hollerith behauptete stets, Billing habe die Ursprungsidee gehabt, während jener Hollerith als den Urheber bezeichnete. Jedenfalls war das Verfahren bis zur Volkszählung 1890 so weit gediehen, dass es den Behörden 5 Mio. Dollar ersparte und den Zeitaufwand für die Bearbeitung der Daten um zwei Jahre verkürzte.



Eine Lochmaschine nach dem Hollerith-System.

Holleriths Idee war so einfach wie wirkungsvoll: Die Daten der Zählung wurden in Lochkarten gestanzt, diese elektrisch abgetastet und dann in mechanischen Zählern und Sortiereinheiten weiterverarbeitet. Das erste Patent für Holleriths Lochkartenleser stammt noch aus seiner Zeit beim MIT.

Dort entwickelte er eine handbetriebene Lese-Einheit, bei der die Löcher in der Karte durch Drähte abgetastet wurden, die mit einem unter der Karte befindlichen Quecksilberbad einen Kontakt herstellten. So wurden die Löcher als elektrischer Kontakt erkannt, waren keine Löcher gestanzt, kam kein Kontakt zu Stande. So ließen sich 0 und 1 des binären Zahlensystems problemlos auseinander halten. Organisiert waren die Daten auf der Lochkarte in Spalten und Zeilen. Dabei entsprachen die Zeilen den einzelnen bit eines Datenwortes, die Spaltenzahl bestimmte das Maximum der auf der Karte speicherbaren Datenworte.

In den Jahren darauf wurde dieses Prinzip weiterentwickelt und verfeinert. Holleriths spätere Maschinen führten die Karten automatisch in den Leser, konnten addieren und sortieren, statt nur einfach Daten zu sammeln.

Holleriths Erfolg brachte natürlich auch Konkurrenten auf den Plan, die am lukrativen Geschäft mit der Volkszählung – diese findet nach einem Gesetz in den USA seit 1790 alle zehn Jahre statt – profitieren wollten.

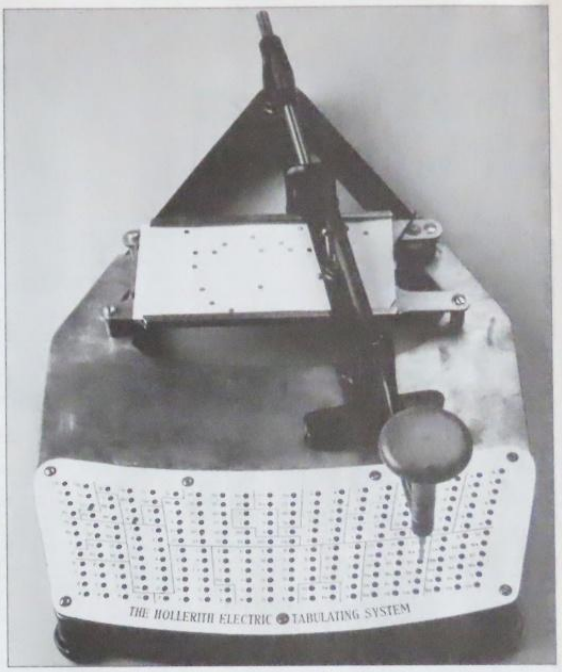
Während der Zählung von 1910 führte das zu einem heftigen Patentrechtsstreit zwischen Holleriths Firma Tabulating Machine und einem Wettbewerber unter Leitung von Edward Durand. Der Prozess ging bis zum obersten Gerichtshof und wurde von Hollerith schlussendlich verloren.

Dennoch ist der Einfluss des Lochkartenpioniers auf die moderne Datenverarbeitung unbestritten. Die von ihm entwickelte Speicherkarte wurde bis in die 60er Jahre verwendet. Manche Ingenieurstudenten haben sogar noch in den 80ern ihre Programmierarbeiten auf gelochten Kartenstapeln am Hochschul-Rechenzentrum abgegeben, um dann Tage später als Ergebnis einen Syntax-Error gemeldet zu bekommen....

Holleriths Firma spielte eine ebenso wichtige Rolle in der Computerei. Nach der Übernahme rivalisierender Unternehmen wurde aus Tabulating Machines die Computing-Tabulating-Recording Company CTR. Diese heuerte eines Tages einen Verkäufer von NCR an, Thomas J. Watson. Nach nur fünf Jahren hatte dieser die komplette Kontrolle über CTR übernommen (Hollerith selbst arbeitete bis 1921 als Berater für seine ehemalige Firma) und benannte diese 1924 in International Business Machines um.

Unter den drei Buchstaben IBM wurde diese Firma zum Synonym für Computer überhaupt, bis der 1981 entwickelte PC seinen Siegeszug antrat und neuen Unternehmen wie Intel, Microsoft oder Compaq den Weg zum Big-Business öffnete – entwickelt wurde er allerdings von IBM.

JENS D. BILLERBECK



Der Hollerith-Pantograph-Locher von 1890, mit dem Daten auf Lochkarten übertragen werden. Foto (3): AKG

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Berliner Museum zeigt die Nachbildung der Z1

Wiedergeburt einer historischen Rechenmaschine

Konrad Zuse wählte das Dualsystem für Speicher und Rechenwerk – Von Kristin Mierzowski

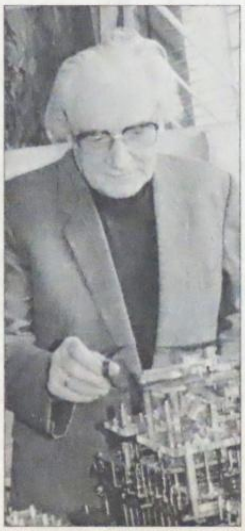
VDI-N, Berlin, 22. 9. 89 – Der erste programmgesteuerte Rechner der Welt – Konrad Zuses Z1 – ist wieder dorthin zurückgekehrt, wo er einst entwickelt wurde: nach Berlin. Seit dem 14. September ist die mechanisch arbeitende Maschine im Museum für Verkehr und Technik funktionstüchtig zu besichtigen. Freilich ist es nur ein Nachbau, denn das von 1936 bis 1938 entstandene Original und alle Konstruktionsunterlagen wurden ein Opfer der Bomben.

Der Nachbau der Z1 ist ein Gemeinschaftsunternehmen der gesamten deutschen informationstechnischen Industrie. Die Initiative zur Gründung des Kuratoriums „Z1-Nachbau" hatte die Gesellschaft für Mathematik und Datenverarbeitung (GMD) ergriffen. Beteiligt waren Siemens, AEG, Krupp Atlas Elektronik, Nixdorf und Datev. Siemens hat einen Großteil der Kosten übernommen und die technischen Voraussetzungen für den Nachbau geschaffen. So wurden alle Komponenten im Siemens-Werk Bad Hersfeld, dem Sitz der früheren Zuse KG, hergestellt. Die Montage selbst erfolgte in Zuses Haus in Hünfeld.

Daß Konrad Zuse vor mehr als 50 Jahren überhaupt auf die Idee verfiel, einen Rechner zu bauen, lag an den umfangreichen Berechnungen, die der junge Bauingenieur als Statiker bei den Henschel-Flugzeugwerken in Berlin zu bewältigen hatte. Sie brachten den ideenreichen Techniker dazu, sich mit deren Automatisierung zu befassen. Zuse gab seine Stelle auf und richtete sich in der elterlichen Wohnung in Berlin-Kreuzberg eine Werkstatt ein, wo in den Jahren 1936 bis 1938 der Erstling Z1 entstand.

Das am vordringlichsten zu lösende Problem schien Zuse damals ein großer Speicher für Zahlen zu sein, da mechanische Rechenmaschinen mit kleinen Speichern zu dieser Zeit bereits existierten. Die Relaistechnik hatte er als zu aufwendig verworfen, deshalb versuchte er den Aufbau mit platzsparenden mechanischen Mitteln. Ein Speicherwerk mit tausend Zahlen ließ sich damit auf einem Raum von etwa einem halben Kubikmeter unterbringen, ein Relaisspeicher gleicher Kapazität hätte rund vierzigtausend Relais erfordert.

Einer der genialen Einfälle, die Konrad Zuses Rechner auszeichneten, war es, das Dualsystem zur Darstellung der Zahlen zu wählen und nicht, wie damals allgemein üblich, die Dezimaldarstellung. Nach vielen Versuchen kam er schließlich zur bistabilen mechanischen Schaltgliedtechnik. Im Speicher hatte man es dann nur noch mit Kombi-



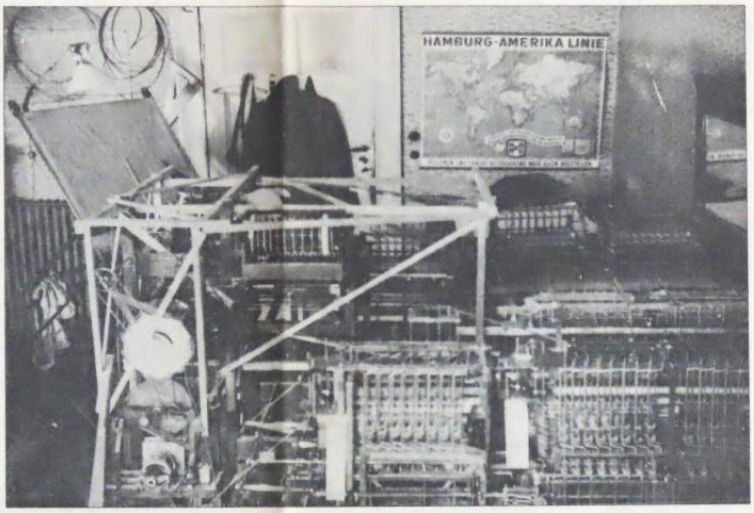
nationen von Ja- und Nein-Werten zu tun. Entsprechend mußte der Speicher aus einzelnen Zellen, die jeweils die Darstellung einer Reihe von „0"- oder „1"-Werten (heute als Wort bezeichnet) ermöglichten, aufgebaut werden.

Nach dem gleichen Prinzip wurde später auch das Rechenwerk der Z1 entworfen. Das Rechnen erfolgte mit Hilfe des von Zuse entwickelten „Aussagekalküls" (Schaltalgebra), mit dem sich alle Zahlenrechnungen allein mit den drei logischen Grundoperationen „Und", „Oder" und „Negation" ausführen lassen. Die von Zuse geschaffenen, aus dünnen Blechen aufgebauten bistabilen Schaltelemente lassen sich für diese drei Grundoperationen sowie zum Speichern von Dualzahlen verwenden.

Zuses Maschine arbeitete in Gleitkomma-Darstellung mit einem Exponenten- und einem Mantissenwerk. Möglich waren die Operationen Addition, Subtraktion, Multiplikation und Division sowie das Umsetzen von dezimalen in duale Zahlen und umgekehrt. Die Z1 wurde über ein Programm gesteuert, bei dem die Befehle über einen gelochten 35-mm-Filmstreifen mit 8-Bit-Code gelesen und schrittweise abgearbeitet wurden. Die Eingabe der Zahlen erfolgte über eine vierstellige Dezimaltastatur mit Kommaeinstellung, die Ausgabe über eine Anzeigevorrichtung mit Blechlamellen.

Zur Steuerung der einzelnen Operationen diente das Leitwerk mit 86 Bedienungsgliedern für arithmetische Funktionen. Es wurde über die Befehle aus den Lochstreifen eingestellt und erhielt wie die anderen Baugruppen seinen Arbeitstakt von Nockenscheiben einer Hauptsteuerwelle als gemeinsamem Impulsgeber. Als Antrieb verwendete Zuse damals einen ausgedienten Staubsaugermotor. Der Speicher war über ein duales Wählwerk zur programmgesteuerten Auswahl der jeweils anzusprechenden Speicherzellen mit den beiden Rechenwerken für Mantissen- und Exponenten-Zahlen verbunden.

Schon während des Baus der Z1 stellte Konrad Zuse fest, „daß es zwar grundsätzlich möglich war, bei sorgfältiger Fertigung ein gut arbeitendes mechanisches Gerät zu konstruieren, daß jedoch die zahlreichen Verbindungen zwischen verschiedenen Teilen, welche aufgrund der hohen Flexibilität des Gerätes erforderlich waren, erhebliche konstruktive Schwierigkeiten bereiteten." Die Original-Z1 war aus diesem Grund nicht in allen Teilen voll funktionsfähig. Nach einem Versuchsgerät Z2 entstand deshalb der 1941 fertiggestellte Relais-Rechner Z3, den das Deutsche Museum in München ebenfalls als Nachbau zeigt.



Ein historisches Foto des ersten programmgesteuerten Rechners der Welt (oben). Der Erfinder Konrad Zuse ging 50 Jahre später an den Nachbau seines Erstlings Z1 (links). Foto (2): Siemens

Es zeugt von dem ungebrochenen Unternehmungsgeist des heute 79jährigen Computerpioniers, daß er Ende 1986 dem Wagnis zustimmte, seinen Erstling noch einmal zu konstruieren und aufzubauen. Dieser Entschluß bedeutete praktisch eine vollkommene Neukonstruktion des mechanischen Rechners Z1. Aus dem Gedächtnis heraus mußte Professor Zuse einige hundert Konstruktionszeichnungen erneut anfertigen. Anschließend waren mehrere tausend mechanische Schaltglieder mit je sechs bis neun Blechen herzustellen und zu einer funktionierenden Maschine zusammenzufügen.

Nach den Vorstellungen von Professor Zuse sollte beim Nachbau der Z1 das ursprüngliche Konzept der Architektur und des logischen Aufbaus der Schaltungen gewahrt bleiben. Die Konstruktion mußte dem Stand von 1936 entsprechen, d. h. der Rechner sollte auch im gleichen Maßstab mit einem Schaltgliedabstand von 30 mm hergestellt werden.

Da anders als vor 50 Jahren für die exakte Herstellung der zahlreichen Bleche jetzt moderne Fertigungswerkzeuge benutzt werden konnten, war zu erwarten, daß die „neue alte Z1" in allen ihren Teilen funktionieren würde. Beim Nachbau der Z1 sind Rechenwerk und Speicherwerk als in sich funktionierende Einheiten konstruiert. Der Speicher ist für 64 Worte à 24 bit (1 bit Vorzeichen, 7 bit Exponent, 16 bit Mantisse) ausgelegt.

Von 1936 bis 1938 hat Zuse in „84-Stunden-Wochen" mit Hilfe von Freunden seine erste Z1 gebaut. Auch in die Neukonstruktion, die ebenfalls rund zwei Jahre benötigte, hat der Computerpionier seine ganze physische und psychische Schaffenskraft investiert. Unterstützt wurde er von zwei Diplomanden und einem „exzellenten" Werkzeugmacher von Siemens. Wer jetzt ins Museum für Verkehr und Technik nach Berlin kommt, wird voller Hochachtung vor diesem Wunderwerk an Erfindungsgeist und mechanischer Präzision stehen, dem „ersten freiprogrammierbaren Rechner der Welt".

My connection to the former Civil Engineer Konrad Zuse was multifaceted:

*His company was in Bad Hersfeld, which is in my home district. My girlfriend at the time worked the

*My older friend Werner (a jurist), who lived in Feldafing, at the Starnberger See, was a good col during the studies at Berlin and was visited regularly by Konrad Zuse. Werner told me that they cons Konrad a little eccentric and more.

11.6 Miscellaneous



BILDER DES JAHRES

VDI nachrichten · 21. Dezember 2001 · Nr. 51/52 5

Stammzellen in der Diskussion: Gewebe- und Organzüchtung aus embryonalen Stammzellen? Während sich Forscher und Ärzte bei der Therapie bestimmter Krankheiten riesige Sprünge über embryonale Stammzellen erwarten, bleibt die Ethikfrage umstritten. Der vom Kanzler eingesetzte Ethikrat ist unter Auflagen für den Import embryonaler Stammzellen. Ende Januar 2002 soll der Bundestag darüber entscheiden. Foto: Visum

Das Videoband hat ausgedient, endlich gibt es sie zu kaufen: DVD-Rekorder, mit denen man fast beliebig oft Filme auf die schimmernden Scheiben bannen kann. Die DVD-Brenner sind für den PC und für das Wohnzimmer zu haben. Dumm für die Kunden, dass sich die Großen der Unterhaltungselektronik mal wieder nicht auf einen Standard einigen wollen – wie beim Video seinerzeit. DVD-Ram, DVD+RW und DVD-RW rangeln heute um die Gunst des Publikums. Foto: Philips

UMTS klemmt in Startlöchern: Während in Japan die dritte Generation im Oktober mit Verspätung startet, zeigen sich in Europa Analysten beunruhigt über die hohen UMTS-Lizenzpreise und reden die große Handykrise herbei. Dabei sind die deutschen Verbraucher erst dabei, die Vorstufe, den GPRS-Standard, zu verdauen. Der allerdings hatte mit teuren Tarifen und fehlenden Handys einen wenig überzeugenden Start. In den Labors der Branche wird derweil fieberhaft nach „Killerapplikationen" bei den Diensten gesucht. Foto: Siemens

Tunnelbrand: Unter dem St. Gotthard in den Schweizer Alpen kam es am 24. Oktober zu einer Kollision zweier Lkw. Elf Menschen starben. Dem parallel zum Gotthard-Tunnel verlaufenden Sicherheitsstollen ist es zu verdanken, dass nicht noch mehr Menschen umkamen. Foto: AP

Windows 2001 heißt XP: Das neue Windows vereint die Profi- und die Heimversion des Betriebssystems und bedeutet endgültig das Ende für MS-Dos. Auch das Ende des langjährigen Kartellverfahrens gegen den Softwaregiganten Microsoft rückte 2001 in greifbare Nähe. Zumindest die Aufspaltung des Unternehmens ist vom Tisch. Foto: AP

Die Brennstoffzelle gilt als Stromlieferant der Zukunft. Prototypen der nur mit Gas und Luftsauerstoff betriebenen Zelle, die kein CO_2 emittiert, werden bereits in Feldversuchen getestet: in Pkws, in Kellern von Häusern und in Kraftwerken. Und bei Laptops verspricht sie eine verlängerte Betriebsdauer. Foto: dpa

Der Cholesterinhemmer Lipobay sorgte für das diesjährige Sommertheater. Obwohl der Zusammenhang zwischen einer tödlich verlaufenden Muskelschwäche und dem Präparat bis heute nicht nachgewiesen ist, zwang die Medienkampagne den Leverkusener Chemieriesen Bayer in die Knie. Er nahm das Präparat, mit dem weltweit rund 6 Mio. Patienten behandelt wurden, vom Markt; der Bayer-Kurs an der Börse stürzte ab. Foto: ap

Harte Landung: Viele Fluggesellschaften sind in diesem Jahr auf der Strecke geblieben – nicht nur in Amerika, auch in Europa. Hier mussten sich die schweizerische Swissair und die belgische Sabena vom Markt verabschieden. Auch Lufthansa und LTU gerieten in Turbulenzen, hier waren die Mitarbeiter zu weit reichenden Konzessionen bereit, um Entlassungen zu verhindern. Drei Gründe gibt es für die weltweiten Milliardengelsten: erstens der Preiskampf innerhalb der Branche, zweitens die konjunkturellen Einbrüche und drittens die enormen Ausfälle, die die Fluggesellschaften nach den Terroranschlägen am 11. September nicht mehr verkraftet haben. Foto: ap

Salami-Crash und Dotcom-Krise waren 2001 die meist gebrauchten Vokabeln auf dem Börsenparkett. Weltweit sackten die Aktienindizes nach jedem Zwischenhoch um so tiefer ab. Der Dax, das wichtigste deutsche Börsenbarometer, verlor gegenüber dem Höchststand im Februar rund 1800 Punkte (-26 %). Laut Creditreform werden voraussichtlich 32 400 Firmen in diesem Jahr Insolvenz anmelden. Besonders schlimm hat es die so genannten Dotcoms getroffen. Die Liste der Pleiten enthält prominente Namen: EM.TV, Pixelpark und Brokat galten noch vor einem Jahr als Stars am Neuen Markt. Experten rechnen mit einer Erholung der Konjunktur – und damit der Aktienmärkte – erst für Mitte 2002. Foto: ddp

Die Dotcom-Pleitewelle erfasste nicht nur Hinterhof-Klitschen mit „visionären" Konzepten. Auch gute Ideen mit prominenten Zugpferden blieben auf der Strecke. Das Sportportal Sportgate etwa sollte Millionen Sportinteressierte mit exklusiven Informationen versorgen. Am Ende aber guckten Hauptgesellschafter Boris Becker, Vorstandsvorsitzender Helmut Thoma sowie Mitgründer Paulus Neef (Pixelpark) und Manfred von Richthofen als Präsident des Deutschen Sportbundes in die Röhre. Foto: ap

A Star is gone: Seit 1986 umkreiste die russische Raumstation MiR die Erde. In ihren letzten Jahren war sie von zahlreichen Pannen gebeutelt und wurde schließlich am 23. März 2001 im Südpazifik zum Absturz gebracht. Als „Nachfolger" entsteht derzeit die Internationale Raumstation ISS, die mit dem Multimillionär Dennis Tito im Frühjahr den ersten Weltraumtouristen beherbergte. Foto: dpa

Der Start der „Gläsernen Manufaktur" in Dresden ist für VW der Beginn eines neuen Kapitels Automobilgeschichte. Als erster Hersteller verwirklicht Volkswagen laut Konzernchef Ferdinand Piech für den „Phaeton" ein Produktionskonzept, das „Prozesse der klassischen industriellen Automobilproduktion und manufakturartige Arbeiten miteinander verknüpft". Die Käufer können auf edlem Ahorn-Parkett miterleben, wie ihre Luxus-Limousine entsteht. Foto: ap

Concorde fliegt wieder: Fast 16 Monate nach dem Absturz eines Überschall-Jets starteten am 7. November wieder Maschinen der Fluggesellschaften Air France und British Airways von Paris und London nach New York. Beide Fluggesellschaften investierten rund 113 Mio. € in die Neukonzeption des Kraftstofftanks und der Reifen. Am 25. Juli 2000 waren beim Absturz einer Concorde nahe der französischen Hauptstadt insgesamt 113 Passagiere ums Leben gekommen, darunter 97 Deutsche. Foto: ap

Baden-Württemberg

Man kann es sich im Leben nicht immer aussuchen. Manchmal aber doch.

Unmittelbar auf den Festungsmauern findet der das Besondere schätzende Gast mit dem »Hotel am Münster« in Breisach eine excellente Adresse. Man genießt mit Stauder Pils – Die kleine Persönlichkeit – den ausgeprägten Stil und die architektonische Extravaganz eines Hauses, in dem man sich stets wohlfühlen wird.

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Der nächste Reiseteil erscheint am Dienstag, 21. September 1993

Anzeigenschluß: Freitag, 17. September, 14.00 Uhr

Süddeutsche Zeitung Anzeigenabteilung, 80289 München, Auskunft: Telefon 089/2183-8654

Fluten, frühere (1965) und in jetziger Heimat

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Montag, 19. Juli 65 Nr. 164

HESSISCHE ALLGEMEINE — UNABHÄNGIG — ÜBERPARTEILICH — RUF 2947 - 3161 - 4597 — 1 P 3699 A

Hochwasser fließt ab - Chaos bleibt zurück



Eberschütz, im Kreis Holgeismar, an der Diemel, völlig vom Wasser abgeschnitten. Die Fluten brauchten nur eine halbe Stunde, um die Straßen mehrere Meter hoch zu überschwemmen und in die Häuser einzudringen. Mehrere Einwohner retteten sich auf die Dächer und wurden von Hubschraubern gerettet. Das Vieh wurde teilweise in höher gelegene Räume gebracht. Erst am Sonntagnachmittag begann auch hier das Wasser zu sinken. Es ließ viele schwere Gesteinsbrocken und einen Schlammteppich zurück. (Aufnahme: Lengemann, freigegeben unter Nr. 181/65 vom Regierungspräsidenten in Kassel)

Zinn: Niederschmetternd und furchtbar

Zehn Menschen ertranken in Nordhessen, Ostwestfalen und Niedersachsen

Kassel (eg/AP/dpa). **Die durch langanhaltende Wolkenbrüche ausgelöste riesige Flutkatastrophe hat in Nordhessen, Ostwestfalen und im südlichen Niedersachsen zehn Menschen das Leben gekostet sowie verheerende Schäden angerichtet, deren ganzes Ausmaß sich zur Stunde noch nicht annähernd überblicken läßt.**

Bundeswehr, belgische, holländische und britische Einheiten, Polizei, Feuerwehr und zahlreiche Hilfsorganisationen, die seit Freitag in unentwegtem Einsatz gegen die entfesselte Natur gestanden hatten, haben Hunderte von Menschen mit Hubschraubern, Sturmbooten, Lastwagen und Schwimmpanzern von den Dächern ihrer Häuser gerettet. Jetzt sind die Soldaten dabei, zerstörte Brücken und Straßen zu reparieren sowie totes Vieh zu bergen.

Noch dem Abfließen des Wassers bietet sich in den am härtesten betroffenen ostwestfälischen Kreisen Büren, Paderborn, Warburg und Lippstadt sowie in den nordhessischen Kreisen Waldeck und Holzminden ein chaotisches Bild. Weite Landstrecken sind mit einer zähen Schlammschicht bedeckt. Nachrichten- und Telefonverbindungen sind zerrissen. Häuser einsturzt, Bahndämme unterspült und Kraftfahrzeuge zerstört. Insgesamt 24 Brücken sind von den Fluten weggerissen worden.

Absturz vom rettenden Seil

Allein in der kleinen Gemeinde Erteln im westfälischen Regierungsbezirk Detmold fanden sechs Menschen den Tod. Drei Kinder ertranken zusammen mit ihrer Großmutter in einem Haus, als die Wassermassen mit furchtbarer Gewalt über das Dorf hereinbrachen. Vermutlich ertranken ist dort auch ein Hirtenjunge, der vom Wasser überrascht wurde. Als ein Hubschrauber versuchte, die Mutter der drei ertrunkenen Kinder mit einem Kleinstkind auf dem Arm an einem Rettungsseil an Bord zu ziehen, stürzte das Kind vom Arm der Mutter in das reißende Wasser und ertrank. Auch die Mutter stürzte ab, konnte aber später aus einer Baumkrone gerettet werden.

Ein ähnlicher Vorfall ereignete sich in Helmarshausen im nordhessischen Landkreis Holgeismar, wo gleichfalls eine Frau abstürzte, die bereits das Rettungsseil eines Hubschraubers ergriffen hatte. Sie starb an den dabei erlittenen Verletzungen. In Wrexen im benachbarten Landkreis Waldeck starb eine 64jährige unter den Trümmern ihres Hauses, das durch einen vom Hochwasser verursachten Erdrutsch eingestürzt war.

Im niedersächsischen Bevern bei Holzminden rissen die Wassermassen eine 64jährige auf offener Straße in den Tod. In Schloß Neuhaus in Westfalen ertrank ein Mann beim Wasserschöpfen im Keller seines Hauses.

Der nordrhein-westfälische Innenminister Willi Weyer erklärte in Paderborn, nur dem gemeinsamen Einsatz von Bundeswehr und NATO-Streitkräften sei es zu danken, daß Schlimmeres verhütet wurde. Einzelne kommunale Behörden seien nicht über Funk erreichbar gewesen, als das Telefonnetz ausfiel. Oft hätten Boten mit der Katastrophenwarnung losgeschickt werden müssen. Dem technischen Hilfsdienst habe es an Rettungsgerät gefehlt. Selbst die Hubschrauber hätten sich erst Rettungsleinen bei der Feuerwehr ausborgen müssen.

Schnelle Hilfe zugesagt

Der hessische Ministerpräsident Zinn hat am Sonntag nach einem Rundflug über das nordhessische Katastrophengebiet in Helmarshausen (Kreis Hofgeismar) und in Wrexen (Kreis Waldeck) schnelle Hilfe zugesagt. Seine ersten Eindrücke von den Verwüstungen faßte er in den Worten zusammen: „Das ist niederschmetternd und furchtbar." Der Regierungschef lobte besonders die Haltung der Bevölkerung und dankte den Helfern. Der Kasseler CDU-Bundestagsabgeordnete Haase kündigte nach einem Ferngespräch mit dem Bundesinnenminister an, daß sich das Bundeskabinett auf seiner nächsten Sitzung am Mittwoch in Bonn mit ersten Hilfsmaßnahmen für die vom Unwetter betroffenen Gebiete befassen werde.

Schaulustige störten

Trotz aller Aufrufe und Ermahnungen waren am Sonntag zahlreiche Schaulustige besonders in das ostwestfälische Ueberschwemmungsgebiet gefahren und hatten dort mit ihren Wagen an vielen Stellen die Aufräumungsarbeiten behindert.

Siehe auch Kommentar Seite 2 und weitere Berichte im Innern

So hätten Sie tippen müssen!

Lotto: 7, 9, 13, 20, 34, 46 und Zusatzzahl 11
Toto: 1, 2, 2, 1, 1, 0, 0, 2, 2, 2, 1, 1, 1 und 1
Auswahlwette: 6, 7, 19, 30, 38, 40, 2 (ohne Gewähr)

Passagierschiff „Seven Seas" treibt hilflos vor Neufundland

Für 400 Passagiere zur Zeit keine Gefahr, Hochseeschlepper ausgesandt

New York/Bremen (AP/dpa). Das Bremer Fahrgastschiff „Seven Seas" der Europa-Canada-Linie treibt mit etwa 400 Passagieren und 200 Mann Besatzung seit Samstag abend bewegungsunfähig im Atlantik. Ein Feuer im Maschinenraum, das wieder gelöscht werden konnte, hatte den Ausfall der Maschinenanlage zur Folge. Zur Zeit liegt das 12 500 BRT große Schiff 800 Kilometer vor Neufundland.

Ein Sprecher der Reederei teilte in New York mit, es bestande zur Zeit keine Gefahr für Schiff und Passagiere. Das Wetter sei ruhig und die See glatt. Ein Hochseeschlepper ist bereits unterwegs, der die „Seven Seas" abschleppen soll.

Man rechnet damit, daß Schlepper und Schiff am Freitag in Neufundland eintreffen werden. Ursprünglich sollte die „Seven Seas", die aus Rotterdam kam, am Donnerstag in New York einlaufen.

Von Sprengladung zerrissen

Bozen (dpa). Von einer Sprengladung zerrissen wurden ist am Wochenende der 23jährige Oesterreicher Helmut Immerwohl in einem Hochhaus in Bozen (Südtirol). Die Polizei vermutet, daß der aus Wien stammende Oesterreicher den Sprengkörper selbst hergestellt hat und durch unvorsichtiges Hantieren damit die Explosion auslöste.

Gespräch Frei-Erhard in München

Offizieller Staatsbesuch des chilenischen Präsidenten beginnt erst heute

München (dpa/AP). Zu einer anderthalbstündigen Unterredung ist am Sonntag Bundeskanzler Erhard mit dem chilenischen Staatspräsidenten Frei in München zusammengetroffen. Das Gespräch wurde später von Erhard als fruchtbar bezeichnet. Der inoffizielle Besuch Freis in München war vereinbart worden, weil der Kanzler am Wochenende einen mehrwöchigen Urlaub am Tegernsee angetreten hat. Der eigentliche Staatsbesuch Freis in der Bundesrepublik beginnt heute.

Wie ein chilenischer Regierungssprecher am Samstag in Santiago mitteilte, wird Frei in Deutschland auch über die Einrichtung eines Volkswagenwerkes in Chile bei Valparaiso, der zweitgrößten Stadt des Landes, verhandeln.

Der sozialpolitische Berater Präsident Freis, Vergara, gab in Bonn bekannt, daß die Bundesrepublik mit der Finanzierung von acht „Sozialzentren" mit Ausbildungsstätten für gewerbliches Berufsförderung einen Beitrag zu dem chilenischen Sozialprogramm leisten will.

Französische Jäger drängen US-Maschine über Sperrgebiet ab

Paris (AP/dpa). Ein französisch-amerikanischer Luftzwischenfall hat sich am Wochenende über Südfrankreich ereignet. Zwei französische Flugzeuge haben eine Aufklärungsmaschine der US-Air-Force im Sperrgebiet über einer Atomanlage im Rhône-Tal bei Pierrelatte zum Abdrehen gezwungen. Von amerikanischer Seite wurde dazu erklärt, die Maschine sei nicht „abgefangen" sondern lediglich „identifiziert" worden. Dann habe sie wieder Kurs auf ihren Heimatflughafen in der Bundesrepu-

Dachauer Neueste

LOKALNACHRICHTEN DER SÜDDEUTSCHEN ZEITUNG FÜR DEN LANDKREIS

Geschäftsstelle: 8060 Dachau, Färbergasse 4 | Samstag/Sonntag, 17./18. Februar 1990 | Telephon 0 81 31/60 22-23

Grüne gegen A 99-Teilöffnung

„Belastung unzumutbar für Karlsfeld"

w.g. **Dachau** – In einem Dringlichkeitsantrag an den Kreistag fordert Claus-Peter Weber (Grüne), die vorzeitige Inbetriebnahme des Autobahnteilstücks Feldmoching – Ludwigsfeld der A 99 zu verhindern, bevor nicht die ganze Strecke bis zur Anschlußstelle Langwied an der Autobahn Stuttgart fertig sei. Nach Webers Informationen soll in den nächsten Tagen ein sogenannter Koordinierungskreis A 99 zusammentreten, dem Vertreter der Autobahndirektion, der Regierung von Oberbayern, der Obersten Baubehörde und Staatssekretär Peter Gauweiler angehören, und die vorzeitige Inbetriebnahme der Autobahn bis zur Dachauer Straße in Ludwigsfeld beschließen.

Weber verlangt, daß Landrat und Verwaltung alle rechtlichen Schritte dagegen unternehmen, weil sonst vor allem Karlsfeld stark belastet würde. Die Belastung für Gemeinde und Landkreis sei nicht hinnehmbar, weil der gesamte Verkehr von der Stuttgarter Autobahn über die B 471 zur B 304 und zur Autobahnanschlußstelle Ludwigsfeld fließen würde, glaubt Weber, der bis zur Fertigstellung des restlichen Teilstücks der A 99 von Ludwigsfeld bis Langwied mit einer Bauzeit von rund fünf Jahren rechnet.

Weber richtet in diesem Zusammenhang heftige Vorwürfe an Staatssekretär Gauweiler und den Münchner Stadtplanungsreferenten Uli Zech, die das gutnachbarliche Verhältnis zwischen München und dem Landkreis Dachau aufs Spiel setzten, um den „lärm- und abgasgeplagten Anliegern der Münchner Verdistraße ein Wahlgeschenk zu Lasten der Karlsfelder" zu machen.

Der Kreisrat der Grünen attackiert auch Landrat Hansjörg Christmann, der entweder von den Plänen seines Parteifreundes Gauweiler nichts gewußt habe oder sich nicht habe durchsetzen können. Weber erinnerte daran, daß sowohl der Landkreis wie die Stadt Dachau und die Gemeinde Karlsfeld ihre Zustimmung zum Bau der A 99 davon abhängig gemacht haben, daß sie in einem Zug von Feldmoching bis Langwied gebaut in Betrieb genommen werde.

In die Richtung von Webers Antrag zielt auch eine Erklärung der Karlsfelder Grünen, die sich ebenfalls auf Aussagen des Münchner Stadtplanungsreferenten beziehen, in denen Zech Überlegungen anstellt, die A 99 nur bis Ludwigsfeld zu bauen, wobei gleichzeitig die B 304 neu und die verlängerte Triebstraße für den Verkehr freigegeben werden sollten. Damit könnte nach Zechs Meinung der Druck auf München gemindert werden, die Autobahn A 92 von Deggendorf ins Stadtgebiet hinein zu verlängern. Die Karlsfelder Grünen halten die Münchner Pläne für „eine unzumutbare Belastung für Karlsfeld". Sie fordern den Gemeinderat, der seinerseits für die Freigabe der A 99 in einem Stück votiert hatte, auf, „auf Wahrung der Karlsfelder Interessen zu bestehen". Die A 99 darf nach Ansicht der Grünen „erst bei Fertigstellung aller Teilstücke" für den Verkehr freigegeben werden.

Hasselfeldt hofft auf Spekulationsgesetz

w.g. **Karlsfeld** – Schon in den nächsten Wochen hofft Bundeswohnungsbauministerin Gerda Hasselfeldt (CSU) mit dem Koalitionspartner FDP zu einem Verhandlungsergebnis zu kommen, das gesetzliche Schritte zur Eindämmung der Spekulation bei der Umwandlung von Miet- in Eigentumswohnungen ermöglicht. Das schreibt die Ministerin an die Karlsfelder CSU-Gemeinderatskandidatin Karin Lehmann, die selbst von einem spekulativen Verkauf betroffen ist. Karin Lehmann ist Mieterin in einer Wohnanlage in der Karlsfelder Blütenstraße, die 1987 ohne Vorwarnung für die Mieter in Eigentumswohnungen umgewandelt worden war.

Eine Dokumentation über die damaligen Ereignisse sandte sie an Gerda Hasselfeldt mit der Bitte, etwas gegen solche spekulativen Verkäufe zu unternehmen. Die Ministerin antwortete, daß sie den im Bundesrat eingebrachten Vorschlag der Bayerischen Staatsregierung unterstütze, die Sperrfrist für Eigenbedarfskündigungen von drei auf sieben Jahre zu verlängern. Sie sehe darin einen wichtigen Schritt, Umwandlungsspekulation zu verhindern.



INDERSDORF AM SEE: *Ganz neue Perspektiven eröffnete am Donnerstagnachmittag der Blick auf die Klosterkirche. Weniger locker konnten das die Bürger nehmen, deren Keller und teilweise sogar Erdgeschoßräume von Regenfluten unter Wasser gesetzt wurden. Am gestrigen Freitag war das Wasser bereits so weit zurückgegangen, daß nur noch Tümpel in den Glonnauen zwischen Kloster und Markt Indersdorf standen.* w.g./Photo: Heigl

Überschwemmung diesmal vor allem in Indersdorf

Man wird über Ursachen nachdenken müssen

Glonn bildete Seen auf Landwirtschaftsflächen / Erdgeschosse unter Wasser

Landkreis Dachau – **Nach der Hochwasserkatastrophe im Sommer '89 wurde vor allem das Glonntal durch die von Sturmböen begleiteten Regenfälle am Donnerstag erneut von Wasserfluten heimgesucht. Besonders schwer wurde diesmal Markt Indersdorf betroffen, wo man 1966 das letzte annähernd so schlimme Hochwasser registrierte. Im gesamten Glonntal standen weite Wiesen- und Ackerflächen unter Wasser, während sich die Schäden an Gebäuden in Grenzen hielten. Zahlreiche Straßensperren wegen Überflutung waren am gestrigen Freitag wieder aufgehoben, nachdem die Wassermassen weitgehend abgeflossen waren.**

Von Walter Gierlich

„Nicht zu vergleichen mit dem vorigen Sommer" war das Hochwasser in Indersdorf am Donnerstag nach Auskunft von Bruno Hanusch, dem geschäftsleitenden Beamten der Gemeinde. Seit 1966 habe es so schwere Überschwemmungen in der Gemeinde nicht gegeben, erklärte Hanusch gestern, nachdem sich die Lage weitgehend gebessert hatte. Die Straße nach Glonn mußte am Donnerstag ebenso gesperrt werden wie die Verbindungsstraße von Wöhr nach Untermoosmühle. Innerorts, wo sich zwischen Kloster und Markt eine geschlossene Wasserfläche gebildet hatte, mußten Bahnweg, Franz-Fischer-Weg, Philosophenweg und eine Straße in Langenpettenbach gesperrt werden. Dort wie am unteren Marktplatz wurden zahlreiche Keller überflutet, am Bahnweg sogar Räume im Erdgeschoß. Vergeblich hatte die Feuerwehr in einigen Bereichen versucht, Sandsackbarrieren gegen die Wassermassen zu errichten: Sie wurden einfach überspült.

Über den materiellen Schaden konnte Hanusch gestern noch keine näheren Angaben machen. Er berichtete jedoch beispielsweise von einem Geschäftsmann, dessen Warenlager im Keller überschwemmt wurde, wobei Schaden von 50 000 bis 60 000 Mark entstanden sei. Die Feuerwehr Indersdorf war auch am Freitag noch mit dem Auspumpen vollgelaufener Keller beschäftigt, während Straßensperren wieder aufgehoben wurden.

Kaum Einsatzpausen

Weniger dramatisch stellte sich die Lage in anderen Glonntalgemeinden dar. Odelzhausens Bürgermeister Anton Wirthmüller, in dessen Kommune die Glonn ebenfalls große Seenplatten gebildet hatte, wußte von keinen Gebäudeschäden und auch nicht von vollgelaufenen Kellern. Seen bildeten sich auch in Erdweg und Altomünster, wo die Feuerwehren am Donnerstag ebenfalls pausenlos im Einsatz waren.

In Weichs, das im Sommer '89 schlimm betroffen worden war, liefen diesmal nur wenige Keller voll. Nach Auskunft aus dem Rathaus gab es jetzt kaum Gebäudeschäden. Die Straße von Ebersbach war am Donnerstag wegen Hochwassers, die Verbindung von Weichs nach Fränking wegen umgestürzter Bäume gesperrt. Schwere Schäden richteten die Fluten an verschiedenen von der Flurbereinigung angelegten Straßen an. Diese Wirtschaftswege wurden teilweise regelrecht weggespült.

Auch in Petershausen standen am Donnerstag – verglichen mit vergangenem Sommer – nur wenige Keller unter Wasser, obwohl der Wasserstand der Glonn nach Auskunft von Bürgermeister Ludwig Götz höher war als damals. Aber da die Fluten diesmal nicht so überraschend kamen, sondern allmählich anschwollen, sei mehr Zeit für Gegenmaßnahmen gewesen. Die Feuerwehren hatten „sehr viel Arbeit und waren voll im Einsatz", berichtete Götz gestern. Auch in Petershausen war eine Reihe von Straßen für den Verkehr unpassierbar geworden.

Bürgermeister Götz erklärte, daß man „nicht einfach zur Tagesordnung übergehen" werde, obwohl man glimpflich davongekommen sei. Es gelte, sich jetzt Gedanken über die Ursachen solcher Überschwemmungen zu machen. Götz sprach in diesem Zusammenhang von „gewissen Fehlern" in der Landwirtschaft und von einer Chance, in der jetzigen Endphase der Flurbereinigung „vieles zu korrigieren". Die im Zuge der Flurbereinigung in den letzten Jahren getroffenen Maßnahmen wie die Anlegung von Auffangbecken und Rückstauräumen für Hochwasser hätten sich am Donnerstag bewährt. Zwar seien dabei weite Wiesenflächen unter

Fortsetzung auf Seite II

WAHLANZEIGE

Wohnungsnot

Lassen Sie sich nichts vormachen:

CSU/CDU/FDP in Bonn stoppten den sozialen Wohnungsbau. Verknappung trieb die Preise hoch. Jetzt gibt es nur noch teure Wohnungen – wenn überhaupt.

DARUM: Mehr preiswerte Mietwohnungen / ökologische Bauweise / flächensparend, mehrgeschoßig in Grünzonen / energiesparend / mit unbedenklichen Baumaterialien/alten-, behindertengerecht.

Claus-Peter Weber, Stadtrat

Machen auch Sie in Dachau die grüne Opposition stark für einen

Deutsch-deutschen Umbau auf ökologischer und sozialer Basis.

DIE GRÜNEN

OB: Regierungsförderung ist begrenzt

„Mit 32 Wohnungen das Kontingent 1990 erfüllt"

CSU-Antrag auf 55 Sozialmietwohnungen für 1991 im Stadtrat heiß diskutiert

Dachau – **32 Sozialwohnungen für 1990, 55 für 1991: Damit wirbt die Dachauer CSU jetzt auf Wahlplakaten. Die 55 Sozialwohnungen, die auf der Restfläche im Baugebiet Josef-Effner-Straße entstehen sollen, waren in der jüngsten Stadtratssitzung Anlaß heftiger Diskussionen. Der SPD-Fraktionsvorsitzende Bernd Sondermann beklagte, der entsprechende CSU-Antrag sei „genau getimed" und deshalb „unaufrichtig". Dennoch wurde er einstimmig angenommen.**

Von Petra Scheiblich

Ursprünglich waren im Baugebiet an der Josef-Effner-Straße nicht Mietwohnungen, sondern soziale Eigenheime geplant gewesen. Jetzt hat die CSU einen Vorschlag von Oberbürgermeister Lorenz Reitmeier aufgegriffen, statt dessen Sozialwohnungen zu bauen. Die Mitglieder von Bau- und Hauptausschuß haben den Antrag bereits einhellig begrüßt.

Bernd Sondermann, dem OB-Kandidaten der SPD, schien das Anliegen des CSU-Antrags klar. Schließlich sei die CSU noch „vor einem Dreiviertel]ahr nicht bereit gewesen", sich für mehr sozialen Wohnungsbau einzusetzen. „Und nun werben sie mit den Sozialwohnungen auf ihren Wahlplakaten: Das ist einfach unaufrichtig", entrüstete sich der SPD-Fraktionsvorsitzende. Besonders „scheinheilig" finde er, daß dieser Antrag so kurz vor der Wahl gestellt werde.

Sondermann hatte sich schon vor der Stadtratssitzung beklagt, die CSU wolle in ihrem Wahlkampf den Wählern weismachen, in Dachau sei in Sachen Wohnungsbau alles beispielhaft". In einer Pressemitteilung wehrt sich Sondermann vor allem gegen die CSU-Behauptung, „sie habe seit 1961 über 1400 Sozialwohnungen geschaffen". Richtig sei vielmehr, sagt der OB-Kandidat der SPD, daß der ehemalige SPD-Bürgermeister Böck bis 1966 „über die Hälfte der sozialen Mietwohnungen geschaffen" habe. Auch Claus-Peter Weber von der Ausschußgemeinschaft kritisierte den CSU-Antrag. Er warf OB Reitmeier und der CSU vor, daß 55 Sozialwohnungen „einfach zu wenig sind", zumal bereits 160 Anmeldungen vorlägen. Kreisbaurat Erwin Deffner (CSU) setzte sich gegen diese Kritik massiv zur Wehr. „Das schlägt doch dem Faß den Boden aus, dies als Tropfen auf den heißen Stein zu bezeichnen", meinte er und betont, daß im Grunde doch alle „für Sozialwohnungen sind".

Oberbürgermeister Reitmeier gab außerdem zu bedenken, daß man „für 1990 mit 32 Wohnungen das Kontingent bereits erfüllt habe", da von der Regierung von Oberbayern nicht mehr gefördert würden. „Zu wenig Druck nach oben", lautete daraufhin der Vorwurf Sondermanns. In einer Pressemitteilung hatte er schon vorab die Meinung geäußert, daß „die Kritiklosigkeit von Oberbürgermeister und CSU in dieser Frage zeigt, daß man sie nicht mit anderen Maßstäben messen kann" als die CSU in Bund und Land.

SZ-UMFRAGE

Opfer

Für den Aufbau einer sozialen Marktwirtschaft sowie eines tragfähigen sozialen Netzes in der DDR wird die Bundesrepublik viele Milliarden Mark aufbringen müssen. Bisher dementiert die Regierung nur halbherzig, daß dafür auch die Steuern erhöht werden könnten. Die SZ fragte: „Sind Sie bereit, für ein vereintes Deutschland finanzielle Opfer zu bringen?"



Arnfried Kiermeier (32), Physiker aus Dachau: „Im Prinzip ja. Ich wäre bereit, für Subventionen durch Steuererhöhungen in einem gewissen Rahmen vielleicht zehn Prozent des Einkommens abzugeben. Allerdings ist ein vereintes Deutschland im Prinzip nicht in meinem Sinn. Für mich sind auch zwei deutsche Staaten denkbar. Aber das ist wahrscheinlich zur Zeit eine isolierte Meinung. Finanzielle Opfer werden sicher in den nächsten fünf Jahren nötig sein."

WAHLANZEIGE

Liebe Dachauer Autofahrer, langsamer fahren in der Unteren Stadt bringt **mehr Sicherheit** für alle!

Ihre Dachauer **F.D.P.**



Josefine Rapp (40), Bedienung aus Dachau: „Ich bin damit nicht einverstanden. Wenn, dann sollten nur die etwas abgeben, die genug verdienen, Doppelverdiener zum Beispiel. Generell sollte man der DDR helfen, daß sie wieder selbständig wirtschaften kann. Ich bin gegen eine Wiedervereinigung; man sollte vielmehr etwas dazu beitragen, daß die DDR eigenständig bleibt."



Paul Sowada (67), Rentner aus Dachau: „Nein, uns hat nach dem Krieg auch keiner geholfen, als wir aus der Gefangenschaft gekommen sind. Wir haben auch hart arbeiten müssen, uns sind die gebratenen Tauben auch nicht zugeflogen. Der nächsten Verwandtschaft muß natürlich schon geholfen werden, und das tun wir auch. Aber warum allgemein? Ich bin gegen Steuererhöhungen; unser soziales Netz darf nicht kaputt gehen."



Sybille Hörl (28), Hausfrau aus Dachau: „Ich persönlich habe schon Opfer für Bürger aus der DDR erbracht: Bei mir waren ein halbes Jahr lang ehemalige DDR-Bürger privat untergebracht. Sicherlich wird's uns treffen. Es kommt halt nur darauf an, in welcher Höhe. Wir haben nach dem Krieg schließlich das Glück gehabt, auf der richtigen Seite zu leben. Für mich ist die Wiedervereinigung schon in Ordnung."



Thomas Grimm (24), Schüler aus Dachau: „Mich als Schüler wird's ja wohl nicht treffen. Ich glaube, daß Wiedervereinigung und Steuererhöhungen unserer Regierung das Kreuz brechen werden. So einfach, wie sich das die Politiker vorstellen, geht das nicht. Meiner Meinung nach wird man auf jeden Fall die Mehrwertsteuer um ein Prozent erhöhen müssen. Ich finde, man sollte die DDR lieber so weit bringen, daß sie wieder aus eigenen Kräften wirtschaften kann. Die Bundesrepublik sollte nicht den väterlichen Geldgeber spielen."

Vorankündigung!

Politischer Aschermittwoch mit Dr. Hans Hartl

Mi. 28. Feb. 1990

10.30 Uhr Hörhammerbräu (Altstadt), Saaleinlaß 9 Uhr — **Dachau**

20.00 Uhr Klosterbräu, Saalenlaß 18.00 Uhr — **Indersdorf**

BAYERN SPD



VERMEIDEN SIE HEUTE DIE SORGEN VON MORGEN

Wer möchte das nicht? Ein Leben frei von finanziellen Sorgen. Die gesicherte Ausbildung für seine Kinder. Die zukunftssichere Anlage seines Geldes. – Utopien? Unerfüllbare Wunschvorstellungen? Keineswegs. Wer sich rechtzeitig darum kümmert, wird rasch erkennen, daß solche Ziele leichter zu erreichen sind, als man glaubt.

Am besten sprechen Sie noch heute mit uns über die finanzielle Absicherung Ihrer Zukunft. Denn private Vorsorge beginnt bei uns.

wenn's um Geld geht – Sparkasse

Wie gleichen sich die Fotos vom Winterhochwasser 1990 (oben) und Sommerhochwasser 2024?

Die heftigen Niederschläge Anfang Juni lassen Bäche und Flüsse über die Ufer treten. Äcker und Gärten gleichen Seen. Keller und Tiefgaragen laufen voll. Die Schäden sind enorm. Mit am schlimmsten traf das Hochwasser im Juni meine Marktgemeinde Markt Indersdorf.

Richtige Maßnahmen ergriffen?? Zuständigkeiten klar geworden??



Foto: Niels P. Jørgensen, 2024

……

Keep in mind what I experienced at the Pinatubo, Philippines (volcanic eruption 1991)
after about 11 years later.
The residents could re-cultivate their small fields.



It takes time, but nature regenerates without us.
Nature doesn't need us.

Der heißeste Tag seit 200 Jahren



Photo: Helmut O. Hauck

Das war noch nie da: Mit 37,2 Grad Celsius erlebten die Münchner am gestrigen Mittwoch den heißesten Tag seit mindestens 200 Jahren in ihrer Stadt! Der Hitzerekord, für den das Wetteramt am Bavariaring keine vergleichbaren Daten in seinen Aufzeichnungen für die bayerische Landeshauptstadt zur Verfügung hat, übertraf sogar jenen Juli-Tag aus dem Jahre 1920, an dem ganze 36,2 Grad gemessen worden waren.

Und wie begingen nun die Bürger das Jahrhundertdatum 27. Juli 1983? Man nahm's eher apathisch denn begeistert hin, stöhnte und ächzte gewaltig unter den subtropischen Temperaturen, schluckte literweise Erfrischungsgetränke und wischte sich den Schweiß von der Stirn. Die absolute Höchstmarke auf der Quecksilbersäule wurde gegen 14.30 Uhr auf dem Thermometer erreicht, wobei die Luftfeuchtigkeit mit 26 Prozent übrigens für ein insgesamt doch „recht kreislaufschonendes Wetter" sorgte – meinte jedenfalls Diplom-Meteorologe Klaus Teuter.

Wesentlich besser als die Werktätigen und Angestellten in den Büros hatten es da schon die Schulkinder, die sich nicht nur in die Ferien, sondern meist auch ins kühlende Naß stürzten (unser Bild zeigt den Wasserfall am Eisbach im Englischen Garten). Dies galt sogar für jene, bei denen das gestern verteilte Zeugnis bereits für eine Abkühlung anderer Art gesorgt hatte. Bis zum 12. September hat die Pennäler-Seele jetzt jedoch ihre Ruh'.

Rekordtage verzeichnet auch die Münchner Berufsfeuerwehr, die seit Beginn dieses Monats allein 296mal ausrücken mußte, um übervolle und deswegen auslaufende Benzintanks von Kraftfahrzeugen abzuzapfen.

Befürchtungen, wonach vielleicht der heutige Donnerstag die Rekordmarke von gestern erneut übertreffen könnte, sollen laut Auskunft des Wetteramtes nicht berechtigt sein. Die Meteorologen rechnen mit aufkommender Bewölkung und nachfolgenden Regenschauern; kühlere Atlantikluft soll folgen und Höchstwerte um die 25 Grad Celsius mit sich bringen. Ob sich die dürstende Natur (und natürlich auch wir leidende Menschenwesen) deshalb freilich schon auf Regen und gemäßigteres Wetter einrichten sollten? Wer weiß ... wo's doch jetzt ein Rekord-Sommer geworden ist!

George Deffner

25 EU-Mitglieder, 2003

Europa dehnt sich nach Osten aus

Bald schlägt es 25!

Bei der Erweiterung der Europäischen Union (EU) naht jetzt die Stunde der Wahrheit. Kann der bisherige Zeitplan eingehalten werden, wird das europäische Haus im Jahr 2004 um zehn Länder aufgestockt werden. Dann werden Estland, Lettland, Litauen, Malta, Polen, die Slowakei, Slowenien, Tschechien, Ungarn und Zypern als Neumitglieder dazugehören.

Rumänien und Bulgarien mussten beim 2004er-Beitrittsziel „passen". Sie werden sich frühestens im Jahr 2007 qualifizieren. Die Verhandlungen mit Beitrittskandidat Türkei ziehen sich noch länger hin.

Statistisch bedeutet die Erweiterung: Die EU wird statt bisher 15 dann 25 Mitgliedstaaten haben. Sie wird sich in der Fläche ausdehnen – um mehr als 30 Prozent. Ihre Bevölkerung wird wachsen – um 75 Millionen Menschen.

Größtes Neumitglied soll Polen mit 38,6 Millionen Einwohnern werden. Kleinster Kandidat ist Malta mit knapp 400 000 Bürgern. Es wird ein großer europäischer Markt entstehen – mit 500 Millionen Menschen. Aber auch das Wohlstandsgefälle zwischen den reichsten und ärmsten Ländern des erweiterten Europa wird wieder deutlich steiler werden.

Alle Kandidatenländer standen (und stehen zum Teil noch) unter erheblichem Anpassungsdruck. Sie sollen eine rechtsstaatliche und demokratische Ordnung besitzen, Menschenrechte und Minderheitenschutz gewährleisten, und sie sollen eine wettbewerbsfähige marktwirtschaftliche Ordnung aufbauen, die dem Konkurrenzdruck aus dem Westen standhält. Diese Forderungen haben die Beitrittskandidaten aus Sicht der EU-Kommission im Wesentlichen erfüllt.

Der 80 000-Seiten-Text

In vielen tausend Details mussten die Kandidaten nachweisen, dass sie den politischen und ökonomischen Entwicklungsstand eines EU-Mitglieds erreicht haben. Zu diesem Zweck hatten sie ein von der EU verfasstes, umfangreiches Regelwerk, den „acquis communautaire" (etwa: Besitzstand der Gemeinschaft), in ihre Gesetze und die Verwaltungspraxis zu übertragen. Dabei handelt es sich um 80 000 Seiten Text in insgesamt 31 Kapiteln. Mit ihrer Hilfe wurde Punkt für Punkt die Beitrittsreife der jeweiligen Kandidaten festgestellt.

Zu den heiklen Fragen, die in den letzten zwölf Monaten gelöst wurden, gehören die Arbeitnehmerfreizügigkeit und der Kauf von Grund und Boden durch Ausländer. Bei den Verhandlungen wurde ein Thema gegen das andere ausgespielt: Polen zum Beispiel erreichte wie andere Beitrittsländer einen Aufschub in der Grundstücksfrage, weil man sich wegen der niedrigen Bodenpreise vor einem Ausverkauf fürchtet. Im Kern richtet sich der Vorbehalt gegen kaufkräftige Deutsche.

Auf der anderen Seite musste Warschau hinnehmen, dass die Alt-EU-Länder, vor allem Deutschland und Österreich, die Arbeitnehmerfreizügigkeit vorerst einschränken. Die Angst vor einer Einwanderungswelle aus den Beitrittsländern, vor allem aus Polen, drückte sich im Kompromiss einer bis zu siebenjährigen Übergangszeit aus. Erst nach deren Ablauf dürfen Bürger der Beitrittsländer ohne Einschränkungen im Westen arbeiten.

Finanzielle Hilfen

In den ersten drei Jahren ihrer EU-Mitgliedschaft sollen die zehn Kandidatenländer zusammen mehr als 40 Milliarden Euro erhalten. Dies ist ein vergleichsweise geringer Betrag, denn unter den 15 bisherigen Mitgliedern verteilt die EU-Kommission von 2000 bis 2006 ungleich höhere Beträge. Die Kandidaten haben allerdings im Vorfeld des möglichen Beitritts Vorbereitungshilfen (3,1 Milliarden Euro pro Jahr) kassiert – Gelder, für die oftmals nicht genügend Projekte zur Verfügung standen, um sie sinnvoll auszugeben.

Ungarn als „Zugpferd"

In den zehn Kandidatenländern befürworten die Bürger derzeit allesamt den Beitritt zur Gemeinschaft. Die nächste Volksabstimmung soll es im März 2003 in Ungarn geben. Das Land soll der EU als „Zugpferd" dienen, da hier über 80 Prozent der Bürger dem Beitritt positiv gegenüberstehen.

Scheinbare Nebensächlichkeiten können die Europafreudigkeit allerdings drosseln. Beispiel Tschechien: Zwar weiß kaum ein Tscheche über die Vorzüge eines EU-Beitritts Bescheid. Um so empörter wird über die Forderung aus Brüssel diskutiert, den hehren Pflaumenschnaps Slivovica in simplen Schnaps umzubenennen, weil dem Getränk Industrialkohol beigemischt wird.

Teilung überwinden

In der EU-Argumentation für die Ausdehnung überwiegt das politische Element: Die EU garantiere politische Stabilität, Demokratie, Wahrung der Menschenrechte und Minderheitenschutz. Sie werde die künstliche Ost-West-Teilung überwinden. Die dabei entstehenden Kosten seien ein niedriger Preis für die „Wiedervereinigung Europas". Ein großes wirtschaftliches Risiko besteht allerdings in der Überforderung der Beitrittsländer. Sollte sich das Lebensniveau durch den Beitritt drastisch verändern, sind Stabilitätsrisiken denkbar. Die politischen Institutionen in Polen oder in Ungarn etwa müssen in der Lage sein, die sozialen Auswirkungen abzufangen, wenn die letzten großen Stahlwerke in Oberschlesien oder in Ostungarn geschlossen werden müssen, weil sie nicht rentabel betrieben werden können.



Rinder- gegen Pferdestärken – Kontraste auf der Fernstraße: Polen ist das größte der Beitrittsländer.

Die EU-Erweiterung

Die 10 neuen EU-Länder ab 2004



ZYPERN	
Fläche (qkm)	9 251
Einwohner (Mio.)	0,8
BIP/Einwohner	€ 15 100
Wachstum (%)	4,0
Inflation (%)	2,0
Arbeitslose (%)	4,0

MALTA	
Fläche (qkm)	316
Einwohner (Mio.)	0,4
BIP/Einwohner	€ 10 300
Wachstum (%)	- 0,8
Inflation (%)	2,5
Arbeitslose (%)	6,5

SLOWENIEN	
Fläche (qkm)	20 273
Einwohner (Mio.)	2,0
BIP/Einwohner	€ 10 500
Wachstum (%)	3,0
Inflation (%)	8,6
Arbeitslose (%)	5,7

SLOWAKEI	
Fläche (qkm)	49 035
Einwohner (Mio.)	5,4
BIP/Einwohner	€ 4 200
Wachstum (%)	3,3
Inflation (%)	12,3
Arbeitslose (%)	19,4

TSCHECHIEN	
Fläche (qkm)	78 866
Einwohner (Mio.)	10,2
BIP/Einwohner	€ 6 200
Wachstum (%)	3,3
Inflation (%)	4,5
Arbeitslose (%)	8,0

UNGARN	
Fläche (qkm)	93 030
Einwohner (Mio.)	10,2
BIP/Einwohner	€ 5 700
Wachstum (%)	3,8
Inflation (%)	9,1
Arbeitslose (%)	5,7

ESTLAND	
Fläche (qkm)	45 227
Einwohner (Mio.)	1,4
BIP/Einwohner	€ 4 500
Wachstum (%)	5,0
Inflation (%)	5,6
Arbeitslose (%)	12,4

LETTLAND	
Fläche (qkm)	64 589
Einwohner (Mio.)	2,4
BIP/Einwohner	€ 3 600
Wachstum (%)	7,7
Inflation (%)	2,5
Arbeitslose (%)	13,1

LITAUEN	
Fläche (qkm)	65 300
Einwohner (Mio.)	3,5
BIP/Einwohner	€ 3 800
Wachstum (%)	5,9
Inflation (%)	1,3
Arbeitslose (%)	16,5

POLEN	
Fläche (qkm)	312 685
Einwohner (Mio.)	38,6
BIP/Einwohner	€ 5 100
Wachstum (%)	1,1
Inflation (%)	5,3
Arbeitslose (%)	18,4

Zu viele ausländische Arbeitnehmer?

Im Zusammenhang mit der EU-Erweiterung werden immer wieder Ängste deutlich, eine Flut von Zuwanderern werde den Arbeitsmarkt vor allem in Deutschland überschwemmen.

Die Freizügigkeit für Arbeitnehmer innerhalb der EU kann indessen nur dann zum Problem werden, wenn die Wirtschaftsstrukturen in den einzelnen Ländern auf Dauer so unterschiedlich bleiben wie bisher. Sobald sie sich angleichen, verschwinden viele Wanderungsanreize.

Grundsätzlich gilt: Wie viele Arbeitskräfte aus dem Ausland angeworben werden können, hängt von der Aufnahmefähigkeit des Arbeitsmarktes ab. Viele landwirtschaftliche Betriebe in Deutschland sind zum Beispiel zur Spargel- oder Obsternte dringend auf polnische Wanderarbeiter angewiesen. Für die Industrie sind Produktionskooperationen in den Beitrittsstaaten ohnehin viel interessanter – weil kostengünstiger – als der Import von Arbeitskräften.

Deutschland bleibt EU-„Zahlmeister"

Der größte Nettozahler der EU ist die Bundesrepublik Deutschland. Im Jahr 2001 entrichtete sie rund 20,1 Milliarden Euro an den EU-Haushalt, bekam aber nur gut 10,2 Milliarden Euro heraus – ein Minus von knapp 10 Milliarden Euro.

Am meisten von den EU-Geldern profitiert haben zuletzt die Südländer – allen voran Spanien, dem 2000 fast 4,5 Milliarden Euro mehr aus der EU-Kasse zuflossen, als es hineinlegte.

Die Differenz zwischen dem, was ein Land in den EU-Haushalt einzahlt, und seinen Rückflüssen sagt indessen wenig über seinen Nutzen aus der EU-Mitgliedschaft aus. Der ist zum Beispiel durch die verbesserten Handelsmöglichkeiten für die Bundesrepublik Deutschland besonders groß.

Texte: Wolfgang Larmann; Fotos: Glaser

In 800 Tagen kommt der Euro in die Geldbörse

In knapp 1 000 Tagen geht die D-Mark in Pension





Die Teilnehmer am Euro stehen fest. Es sind Belgien, Deutschland, Finnland, Frankreich, Irland, Italien, Luxemburg, Holland, Österreich, Portugal und Spanien.

Vier EU-Länder sind vorerst nicht dabei: Dänemark, Großbritannien und Schweden wollen nicht, Griechenland durfte nicht, weil es als einziges EU-Mitglied keine der Maastricht-Bedingungen erfüllt hatte. Doch die Griechen wollen es schaffen, am 1. Januar 2003 auf den Euro-Zug aufzuspringen. Die Inflationsrate ist jedenfalls von über 20 Prozent vor fünf Jahren mittlerweile auf rund 2,2 Prozent heruntergedrückt worden.

Umstellung ist schon sehr oft erfolgt

Bis Ende des Jahres 2001 bleibt der Euro eine Buchgeldwährung. Viele Firmen (vor allem die international tätigen) wickeln ihre Geschäfte bereits in Euro ab und überweisen ihren Mitarbeitern den Monatslohn in Euro. Manch ein Privatkunde hat sein Konto bei Bank oder Sparkasse bereits auf Euro umgestellt: Das Konto wird in Euro geführt, und alle Daueraufträge, Überweisungen und Einzugsermächtigungen werden in Euro abgerechnet.

Ab dem 1. Januar 2002 (das sind von heute an noch 800 Tage) beginnt der Umtausch der nationalen Währungen in Euro. Jedes Land kann dann noch eine Übergangszeit von einem halben Jahr nutzen. Spätestens ab 1. Juli 2002 ist der Euro dann das alleingültige gesetzliche Zahlungsmittel. Und damit hat die gute alte Mark dann endgültig ausgedient. In 1 000 Tagen geht sie in Pension. Aber keine Angst: Wer danach noch irgendwo ein paar Scheine findet, der kann sie weiterhin bei der Bank umtauschen lassen.





Auch wenn wir der Mark zu Recht nachtrauern, für die beteiligten Länder ist der Euro von Vorteil. Er ermöglicht grenzenlosen Handel in einer einheitlichen Währung auf einem Markt, der mit 350 Millionen Einwohnern zu den größten der Welt zählt.

Gerade für Deutschland ist die Währungsunion wichtig. Mehr als die Hälfte sämtlicher deutschen Exporte geht in die Partnerländer der EU – Jahr für Jahr Waren und Dienstleistungen im Wert von fast 500 Milliarden Mark.

Die verschiedenen Währungen kosteten den grenzüberschreitenden Handel viel Geld. Zum einen durch den Umtausch von Franc, Lira und Pfund in Mark. Zum anderen weil zwischen Abschluss eines Geschäfts und Lieferung der Ware oft Monate liegen und niemand im Voraus wissen konnte, welchen Wechselkurs er dann bekommen würde.

Bei starken Kursschwankungen war das ein großes Risiko, gegen das man sich nur gegen Zahlung einer Prämie absichern konnte. Für den Umtausch und die Absicherung mussten die Exporteure in der EU bislang rund 40 Milliarden Mark im Jahr (das sind umgerechnet über 109 Millionen Mark am Tag) bezahlen.

Zweitwichtigste Währung der Welt

All das wird es beim Euro nicht mehr geben. Und schließlich gewinnt die Europäische Union durch die gemeinsame Währung auf dem Weltmarkt. Der Euro hat gute Aussichten, nach dem Dollar weltweit die zweitwichtigste Währung zu werden.

Ein Problem ist noch nicht gelöst: Wohin mit den alten Scheinen? Allein von der Mark sind mehr als 2,6 Milliarden Scheine in Umlauf. Soll man sie verbrennen, auf die Müllkippe bringen oder in ausgedienten Bergwerksschächten bunkern? Der originellste Vorschlag kommt von einem Essener Unternehmen. Die Mark soll zu Dünger werden.

Die Firma tüftelt seit längerem an dieser Idee. Die Scheine werden kleingehäckselt und dann mit Kartoffelschalen und anderem Biomüll vermischt. Nach acht Wochen ist vom Geld nichts mehr zu finden. Die Mark ist zu Kompost geworden. Mo





Die Euro-Einführung war sinnvoll und gut, besonders für den Reiseverkehr.

Warum gab es aber nicht den leichten 1€-Schein, analog zum US-Greenback, sondern nur die weltweit ungünstig verwendbare schwere 1€-Münze ??

Totale Sonnenfinsternis am 11. August 1999: Auf der Zentrallinie konnten wir das Schauspiel intensiv erleben. Analog, später zum aufkommenden Ausnahmesturm Wiebke konnte man erleben, wie es total ruhig in der Natur wurde.



Seite 8 / Süddeutsche Zeitung Nr. 179 BY DOKUMENTATION Freitag, 6. August 1999

Erstmals seit 1887 ist am kommenden Mittwoch wieder eine totale Sonnenfinsternis in Deutschland zu beobachten. Beim Ratsvorsitzenden der Evangelischen Kirche in Deutschland stapeln sich die Briefe von Leuten, die an diesem Tag den Untergang der Welt befürchten. Immerhin soll bereits Papst Urban VIII. 1628 in einen speziellen Raum geflüchtet sein, um der „schädlichen Wirkung" der Sonnenfinsternis zu entgehen. Moderne Zeitgenossen bereiten sich derzeit mit Schweißerbrillen, Schutzfolien, aber auch allerlei gefährlichen Hausmitteln auf die Sonnenbeobachtung vor. Ärzte warnen eindringlich vor dem ungeschützten Blick ins Licht.

Ein Schauspiel, das einst die Welt erschreckte

Erst seit dem 17. Jahrhundert sagt man Sonnenfinsternisse präzise voraus, doch bereits die Menschen von Stonehenge hatten die Möglichkeit dazu

Von Helmut Hornung

In der englischen Salisbury-Ebene erheben sich die grauen Felsen von Stonehenge in den Himmel. Bis zu fünfzig Tonnen wiegen die Sandsteinfindlinge, die wohl in der dritten und letzten Bauphase vor vielleicht 3500 Jahren auf Baumstämmen gerollt oder auf Schlitten herangezogen wurden. Stonehenge – ein Ort magischer Sternenkulte? Anscheinend berechneten die Priesterastrologen der Megalith-Kultur damit Sonnen- und Mondfinsternisse. Computeranalysen in den sechziger Jahren haben gezeigt, dass die Ausrichtung der Anlage auf den Sonnenlauf abgestimmt ist. Und mit dem „Stonehenge-Spiel" lassen sich tatsächlich Finsternisse vorhersagen.

Die Sonne ist der Stern, der Leben ermöglicht. Den alten Kulturen galt sie ebenso wie alle anderen Gestirne als göttliches Wesen. Um 1350 vor Christus erhob sie der ägyptische Pharao Amenophis IV. zum alleinigen Gott Aton. Er selbst nannte sich fortan Echnaton (dem Aton nützlich). „Strahlend steigst Du auf am Rand des Himmels, Aton, der Du lebst seit Anbeginn ...", heißt es im hymnischen Sonnengesang. Doch der verklang schnell. Nach dem Tod Echnatons beendete sein Nachfolger Tuth Ench Amun den monotheistischen Kult.

Welch ein Schrecken muss die Menschen früherer Zeiten ergriffen haben, als die strahlende, wärmende Sonne mitten am Tag aus heiterem Himmel ihren Glanz verlor, bis nur noch eine schwarze, von einem matten Schimmer umkränzte Scheibe übrig blieb. Von Westen raste eine dunkle Wand heran, und ein Wind erhob sich. Hatte Gott „das Land am hellen Tage finster werden lassen", wie der Prophet Amos im Alten Testament schreibt? Hatte eine höhere Macht zu den Menschen gesprochen? Babylonier und Assyrer verfügten zwar über erstaunliche astronomische Kenntnisse und wussten, dass Sonnenfinsternisse nur bei Neumond eintreten konnten. Doch auch sie sahen in dem Naturschauspiel ein böses Vorzeichen, das den König das Leben kosten konnte – war doch der Sonnengott offenbar unzufrieden mit dessen Herrschaft. Als eine Art „selbsterfüllende Prophezeiung" mag der Tod von König Ludwig dem Frommen, Sohn Karls des Großen, gewertet werden. Die Finsternis am 5. Mai 840 soll ihn so erschreckt haben, dass er sechs Wochen später starb. Noch im Jahr 1628 flüchtete Papst Urban VIII. in einen Raum, den der Magier und Mönch Tomaso Campanella eingerichtet hatte, um der schädlichen Wirkung einer Sonnenfinsternis zu entgehen. Selbst im 20. Jahrhundert, in dem der Mechanismus des Naturschauspiels bis ins letzte Detail verstanden ist, sehen Astrologen bei einer totalen Sonnenfinsternis schwarz.

Als Kronzeuge für die bevorstehende Apokalypse gilt der französische Seher Nostradamus (1503 bis 1566). In Vers 72 der zehnten Centurie schreibt er, im siebenten Monat des Jahres 1999 werde ein „großer König des Terrors" vom Himmel kommen und den „großen König Angoulmois zum Leben erwecken". Hält man Nostradamus zu Gute, dass er die Kalenderreform nicht vorauszusagen vermochte und sich daher im Monat irrte, könnte der Vers wage auf die Sonnenfinsternis am 11. August hindeuten. Wer der „König von Angoulmois" sein könnte, steht dagegen nicht in den Sternen. Auch die letzte Zeile der Prophetie ist diffus: Der König soll „vor und nach Mars" mit „Glück regieren". Die Menschheit hat also auch danach die besten Chancen, ihren „Untergang" zu überleben.

Sonnenfinsternisse haben den Lauf der Welt viel weniger bestimmt, als manche Autoren annehmen. Experten wie der Astronom Rudolf Kippenhahn glauben, dass etwa vier Fünftel aller antiken Berichte falsch sind. Zum Beispiel soll bei der Kreuzigung Christi nach Lukas „die Sonne ihren Schein verloren haben". Den Evangelien zufolge wurde Christus am jüdischen Passahfest hingerichtet, das in die Zeit des ersten Vollmonds nach Frühlingsbeginn fällt. Bei Vollmond kann es aber keine Sonnenfinsternis geben. Oder starb Jesus am 24. November 29, als eine schwarze Sonne über Syrien und vielleicht auch über Jerusalem schimmerte? Selbst die Beobachtung von Augenzeugen im 20. Jahrhundert verklärt sich mit der Zeit. Viele Menschen behaupten, sie hätten in den Jahren 1954 oder 1961 in unserer Region jeweils eine totale Sonnenfinsternis erlebt. Tatsächlich bedeckte der Mond in beiden Fällen das Tagesgestirn in ganz Deutschland nur partiell.

Die Augenblicke der Dunkelheit haben das Wissen über das Universum erhellt. So ließen sich an Mond- und Sonnenfinsternissen die Gesetze der Himmelsmechanik überprüfen. Denn obgleich die Chaldäer vielleicht dem Saros-Zyklus auf die Spur kamen, wonach sich beide Finsternis-Arten alle 18 Jahre und elf Tage wiederholen, sind präzise Prognosen erst auf Grund der Erkenntnisse Isaac Newtons im 17. Jahrhundert möglich. Die Sonne selbst erforschen die Astronomen während totaler Finsternisse seit dem 19. Jahrhundert. So entschlüsselten Warren de la Rue und Angelo Secchi im Juli 1860 die Natur der Protuberanzen, jene roten Feuerzungen, die über der vom Mond abgedeckten schwarzen Sonnen lodern und in denen der Stern gewaltige Materiemengen ins All schleudert. Auch das Studium der Korona – der äußeren Gasatmosphäre – beschränkte sich früher auf die Momente der Totalität.

Für die moderne Forschung haben totale Sonnenfinsternisse keinen großen Stellenwert mehr. Rund um die Uhr nehmen Astronomen den solaren Fusionsreaktor mit seiner Zentraltemperatur von 15 Millionen Grad und seiner zur Zeit wieder einmal von großen dunklen Flecken übersäten Oberfläche ins Visier, verfolgen Satelliten das turbulente Geschehen auf dem Glutball. Doch selbst der rationalste Wissenschaftler kann sich wohl den besonderen Momenten unter schwarzer Sonne nicht entziehen.

Sonne – Mond – Mantelschatten – Kernschatten
mittlerer Abstand Sonne-Erde: ca. 149,4 Millionen Kilometer
mittlerer Abstand Mond-Erde: 384400 Kilometer
12.29 Uhr: Kernschatten berührt Deutschland, Breite: 110 Kilometer
13.12 Uhr: Längste Finsternis in Rumänien (2min 23sek)
14.38 Uhr: Ende der Finsternis östlich von Indien

Das Drehbuch für das kosmische Schattentheater ist einfach: Sonne, Erde und Neumond stehen auf einer Linie. In der Praxis müssen die drei Akteure einem diffizilen Spielplan folgen. Die Mondbahn ist gegenüber der Ebene, in der die Erde um die Sonne läuft, um etwa fünf Grad geneigt. Aus diesem Grund trifft der rund 400 000 Kilometer ins All ragende Mondschatten unseren Planeten nicht bei jedem Umlauf. Nur wenn der Trabant in oder nahe einem der beiden Bahnschnittpunkte (Knoten) steht, kann er die Sonne verfinstern. In jenen Regionen, die der etwa 14 000 Kilometer lange und maximal 270 Kilometer schmale Pinselstrich des Kernschattens überstreicht, erscheint die Sonne total bedeckt. Daher besitzt das Naturschauspiel für einen bestimmten Ort Seltenheitswert. Partielle Finsternisse treten viel häufiger auf, weil der Halbschatten des Mondes bis zu 7000 Kilometer breit ist. hor

DEUTSCHLAND – nördliche Grenze der Totalitätszone – Zentrallinie – südliche Grenze der Totalitätszone – ÖSTERREICH

Mit der Geschwindigkeit eines Jagdflugzeugs wird der etwa 110 Kilometer breite Kernschatten des Mondes in den Mittagsstunden des 11. August lautlos über Süddeutschland hinweghuschen.

Interview mit dem EKD-Ratsvorsitzenden Manfred Kock

Weltuntergang hat Konjunktur

Endzeitpropheten versuchen, aus der Angst Kapital zu schlagen

Manfred Kock, (62) ist Präses der Evangelischen Kirche im Rheinland und Ratsvorsitzender der Evangelischen Kirche in Deutschland (EKD). In seinem Büro stapeln sich die Briefe von Menschen, die das Ende der Welt befürchten. Mit dem Kirchenmann sprach Matthias Drobinski.

SZ: *Sie erhalten derzeit viele Briefe zum Thema Sonnenfinsternis. Was steht denn drin?*

Kock: Viele Menschen, die mir schreiben, haben große Angst vor dem Ende der Welt. Sie möchten dann entweder wissen, was sie selber tun sollen, wenn das Ende kommt, oder sie fordern die Kirchen auf, sich irgendwelchen Aktionen anzuschließen. Die Schreiber verweisen darauf, dass sich auch bei der Kreuzigung Jesu die Sonne verfinstert habe oder dass sich nun die Untergangsvisionen der Apokalypse einstellten.

Manfred Kock: „Es gibt keinen Grund zur Angst. Weltflucht ist kein Programm." Foto: Archiv/imo

SZ: *Haben Ihrer Meinung nach solche Untergangsvorstellungen Konjunktur, oder sind die Briefeschreiber nur gehäufte Einzelfälle?*

Kock: Natürlich erlebe ich nur einen bestimmten Ausschnitt, aber das Thema Weltuntergang hat tatsächlich Konjunktur. Viele Menschen sind verunsichert angesichts einer unübersichtlichen Welt, die in Unordnung geraten scheint. Und wenn dann ein beeindruckendes astronomisches Ereignis wie die Sonnenfinsternis eintritt, wenn es mitten am Tag dunkel wird, dann wird das schon als Zeichen gesehen. Dann kommen die vorhandenen Ängste erst richtig hoch. Wir, die aufgeklärten Menschen, lächeln darüber. Aber die Sache ist nicht ganz ungefährlich – es gibt Gruppen, die zu solchen Daten sogar den kollektiven Selbstmord ankündigen.

SZ: *Haben Sie ernstzunehmende Hinweise dafür?*

Kock: Ich weiß von Psychotherapeuten, dass es derzeit tatsächlich mehr gefährdete Menschen gibt als sonst, oft Leute, die ohnehin Probleme haben. Wenn dann Wahrsagerinnen im Fernsehen vom Ende der Welt reden und von Kometen, die auf die Erde zurasen, dann macht das diesen Leuten das Leben nicht einfacher. Es ist heikel, mit solchen Themen auf Quotenjagd zu gehen.

SZ: *Was sagen Sie den Leuten, die sich mit ihren Schreckensvisionen an Sie wenden?*

Kock: Zunächst: Je konkreter die Wahrsager der Endzeit werden, desto größer ist ihre Fehlerquote. Rational muss man den Leuten versuchen zu erklären, dass diese Endzeitpropheten versuchen, aus der Angst Kapital zu schlagen. Und man muss erklären, dass Weltflucht kein Programm ist. Aber die Ängste sitzen häufig tiefer, als rationale Erklärungen reichen.

SZ: *Deswegen fällt es der Kirche ja auch schwer, mit solchen Erklärungen die Verängstigten zu erreichen.*

Kock: Wir wollen den Menschen die Gewissheit vermitteln, dass Gott die Welt in den Händen hält und es daher keinen Grund zur Angst gibt. Auch die Apokalypse, das Buch der Offenbarung in der Bibel, ist bei allen schrecklichen Bildern, Zeichen und Symbolen die tröstliche Geschichte davon, dass Gott den Menschen eine Zukunft verheißt. Das ist – bei aller voraufklärerischer Terminologie – eine aufklärerische Botschaft. Eine einfache Welterklärung, wie es viele Endzeitpropheten anbieten, haben wir aber nicht, das macht es den Kirchen tatsächlich nicht leicht.

SZ: *Was werden Sie voraussichtlich am 11. August denn so gegen Mittag machen?*

Kock: Wir haben im Rheinland keine totale Sonnenfinsternis, und ich habe an dem Tag leider keinen Termin in Stuttgart oder München. Ich werde eine Pause machen, die Schutzbrille aufsetzen und beobachten, wie eine neunzigprozentige Sonnenfinsternis aussieht. Viele meiner Bekannten fahren übrigens nach Süden, um die totale Sonnenfinsternis zu sehen. Vielleicht hilft es ihnen, Gottes Schöpfung zu preisen.

Tückische Hausmittel

Es geht auch ohne Finsternisbrille – aber viele Tipps sind gefährlich

So mancher ist in diesen Tagen verzweifelt. Da will er sich umfassend informieren, und die Ratgeber widersprechen sich. So empfehlen im Web Schüler vom Friedrich-Fröbel-Gymnasium aus Bad Blankenburg neben den Finsternisbrillen „Filme, Disketten, CD-ROM oder berußtes Glas" als Schutz für die Augen. Oder die VDI-Nachrichten preisen „ein Schweißerschutzglas oder ein doppeltes schwarzes Dia" als sichere Möglichkeit, während viele andere Quellen vor solchen „Hausmitteln" warnen.

Tatsächlich enthält sogar der Gymnasiasten-Tipp ein Körnchen Wahrheit, trotzdem ist er gefährlich. „Es gibt in manchen Disketten Magnetscheiben, die als Sonnenfilter taugen", stellt Chefredakteur Thomas Pyczak nach einer Mess-Serie fest, die die Computerzeitschrift „Chip" auf einem Spektralfotometer des Münchner Brillenspezialisten Rodenstock vorgenommen hat. Einige Exemplare blieben unter den Grenzwerten, die Augenärzte für zulässig halten (Chip 9/99, S. 214). Das Problem ist allerdings, dass niemand mit bloßem Auge beurteilen kann, welche Diskette dunkel genug ist und welche nicht. Daher das Fazit der Computerzeitschrift: Finger weg von Disketten und CD-ROM.

Auch bei berußten Gläsern kann der Laie den Deckungsgrad und die Homogenität der Rußschicht kaum beurteilen. Dasselbe gilt auch für schwarz belichtetes Filmmaterial. Rodenstock-Mitarbeiter Robert Schmid warnt auch hier vor Schwankungen, die die Lichtdurchlässigkeit dramatisch beeinflussen können. „Woher weiß ich, ob so ein Film ausreichend lange entwickelt wurde?" Dagegen kann bei Schweißerbrillen die „Europäische Norm 169" Klarheit schaffen. Sie definiert Schutzstufen von 1 bis 16. Mit „Stufe 12" markierte Brillen verfehlen das von Augenärzten als sicher eingeschätzte Niveau um Haaresbreite. Stufe 13 wird als akzeptabel angesehen und Stufe 14 entspricht etwa der Filterwirkung einer Finsternisbrille.

Schweißerbrillen als Alternative

Profi-Schweißerbrillen sind vor allem für Brillenträger ideal, da sie meist das Seitenlicht abhalten und so störende Reflexionen vermeiden. Vor Überraschungen können sich Brillenträger schützen, indem sie den Sitz der Finsternisbrille vorher überprüfen und durch selbstgebastelte Abschirmungen störendes Licht von der Seite unterdrücken. Diejenigen, die auf Finsternisbrillen zurückgreifen, sollten sie vor ihrer normalen Brille anbringen, um deren Korrekturwirkung nicht zu stören.

Gerade wenn die Finsternisbrille nicht nah am Auge auf der Nase sitzen kann, sollte man große Folienflächen bevorzugen. Bei Testkäufen fand die SZ die in Kaufhof-Filialen vertriebene „ProtecSolar". Im Unterschied zu den üblichen Modellen hat sie große runde Folienfelder, die zudem an der Innenseite schwarz sind, also kaum spiegeln. Alle bei Testkäufen im Handel gefundenen Brillen trugen das „CE-Zeichen" und garantieren damit eine maximale Lichtdurchlässigkeit von einem Hunderttausendstel.

Rund 30 Millionen Finsternisbrillen gehen in Deutschland über den Ladentisch, schätzt Thomas Baader. Seine auf Astronomiebedarf spezialisierte Firma „Baader Planetarium" lieferte für etwa 75 Prozent davon die beidseitig mit Metall bedampften Polymer-Folien. Zum Schutz vor Abrieb sind sie von einem weiteren Kunststofffilm bedeckt. Die teilweise aus den Lebensmittelverpackungen entwickelten Folien anderer Modelle sieht Baader kritisch: „Wenn die Schichten einfach verklebt werden, ist der Käufer der Dumme, weil er am Schluss ein unscharfes Bild von der Sonne sieht."

Es gibt noch eine andere Projektionsmethode: Ein kleines Loch in einen Karton bohren, und schon erscheint das Bild der Sonne auf einer weißen Fläche am Boden. Das bewahrt vor steifen Hälsen, vor Bodenhindernissen und rutschenden Finsternisbrillen. Wer keine solche Lochkamera basteln mag, kann ein anderes Hausmittel ausprobieren: Ein großes Plastik-Küchensieb ist nicht nur äußerst robust, sondern besticht durch die vielen Sonnenbilder. *Karlhorst Klotz*

Warten auf eine neue Chance?

Die häufigsten Fragen zur Sonnenfinsternis

Wo soll ich beobachten? Nur im etwa 110 Kilometer breiten Kernschatten lassen sich *alle* Facetten der Finsternis beobachten. Auf der Zentrallinie in Deutschland dauert das Schauspiel mit gut 2 Minuten am längsten. Wer einen Standort mit Panoramablick aufsucht, sieht den Kernschatten von Westen her als dunkle Wand auf sich zurasen.

Was hat es mit den speziellen Finsternis-Brillen auf sich? Diese Brillen sind für eine gefahrlose Beobachtung vor und nach der Totalität unbedingt notwendig, weil ihre Folien das Licht dämpfen und die schädlichen Ultraviolett- und Infrarotstrahlen abblocken. Sie lassen sich auch vor einer gewöhnlichen Brille befestigen. Sobald die Sonne am Ende der partiellen Phase durch die Brille nicht mehr sichtbar ist, darf diese abgenommen werden. Während der Totalität ist der freie Blick zur schwarzen Sonne erlaubt. Sobald sich an ihrem Rand wieder der erste Lichtstrahl zeigt, muss die Brille erneut aufgesetzt werden.

Was kann ich beobachten? Der Mondrand mit Bergen und Tälern zerschneidet das Sonnenlicht unmittelbar vor der Totalität in eine Kette (Perlschnureffekt), von der schließlich nur eine helle „Perle" (Diamantringeffekt) übrig bleibt. Ist das letzte Fünkchen verloschen, leuchtet die äußere Atmosphärenschicht der Sonne auf, die Korona. Zum Ende der Totalität wiederholen sich die Phänomene in umgekehrter Reihenfolge.

Einem Diamanten gleich blitzt Sonnenlicht durch ein Mondtal auf. Foto: AP

Wie kann ich fotografieren? Während der partiellen Phase mit Glas- oder Folienfilter vor dem Objektiv. Belichtung zum Beispiel 1/500 Sekunde bei Blende 8 und 100-ASA-Farbfilm. Auf einem Film derselben Empfindlichkeit sollte die Korona ohne Filter bei Blende 8 zwischen 1/60 und einer Sekunde belichtet werden.

Wie reagiert die Natur? In der Schattenzone sinkt die Temperatur um bis zu sechs Grad, Tau kann sich über die Wiesen legen und der Finsterniswind wehen. Wegen der Dunkelheit schließen manche Blumen ihre Kelche, Insekten verstummen, Vögel suchen das Nest auf.

Wie dunkel wird es? Das lässt sich nicht genau sagen und hängt vom Zustand der Erdatmosphäre ab. Ein guter Vergleich ist der mit einer klaren Vollmondnacht, wobei der Horizont aufgehellt ist. Merklich dunkler wird es übrigens erst ab einer Sonnenbedeckung von etwa 80 Prozent.

Was passiert bei schlechtem Wetter? Auch dann wird es um die Mittagszeit dunkel – das ist der einzige Effekt.

Gab es im 20. Jahrhundert über Deutschland schon einmal eine totale Sonnenfinsternis? Selbst wenn sich viele Menschen an eine zu erinnern glauben: nein! Die letzte totale Sonnenfinsternis ereignete sich am 19. August 1887 – frühmorgens unter sehr schlechten Beobachtungsbedingungen.

Wann ist die nächste Chance, eine totale Sonnenfinsternis zu sehen? Der Kernschatten der nächsten totalen Sonnenfinsternis zieht am 21. Juni 2001 über den Südatlantik, Angola, Zambia, Zimbabwe, Mozambique und Madagaskar. Über Süddeutschland wird der Mond die Sonne am 3. September 2081 erneut verdunkeln. *Helmut Hornung*

Zenit – Pollux – Castor – Merkur – Regulus – Venus – Sonne/Mond – Procyon – Sirius
SSO SÜD SSW

Während der Totalität sind bei guter Sicht Sterne zu erkennen. Östlich der schwarzen Sonne steht *Regulus* im *Löwen*, westlich blinken *Kastor* und *Pollux* in den *Zwillingen*, schräg darunter *Prokyon* im *Kleinen Hund* und im Südwesten *Sirius* im *Großen Hund*. Als helle Gestirne fallen in Sonnennähe die *Venus* (östlich) und *Merkur* (westlich) auf. *hor*

Sonne im Internet

Wer die Sonnenfinsternis nicht live beobachten kann, kann das Ereignis auf den Internet-Seiten der SZ verfolgen. In Zusammenarbeit mit Bayern 3 liefern drei Kameras vom Deutschen Museum in München aus Bilder ins Netz. Eine davon holt die Sonne per Teleskop als Großaufnahme in den Computer. Animationen erklären das Prinzip der Finsternis. In einem Diskussionsforum „Sonnenfinsternis – spektakuläres Ereignis oder kommerzieller Humbug?" können Fragen gestellt werden, die Helmut Hornung, SZ-Redakteur und preisgekrönter Autor von Astronomiebüchern, beantwortet.

Internet-Adresse: http://www.sueddeutsche.de/sonnenfinsternis

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Namibia: 1986 und später

Namibia: Unterwegs auf einem Weg voller Risiken und Unwägbarkeiten

Süddeutsche Zeitung Nr. 75 / Seite

Ein schwarzer König und weiße Bauern

Samstag/Sonntag, 1./2. April 1989

In einer Atmosphäre gespannter Ruhe beginnt unter dem Schutz der UNO ein ausgeklügelter Prozeß, der zur Unabhängigkeit für die ehemalige Kolonie Deutsch-Südwest führen soll

Von Peter Sartorius

Eine delikate Mission



WIRD DIE FAUST sich öffnen? Teilnehmer einer nächtlichen SWAPO-Demonstration am Rande von Windhuk in dieser Woche. Photo: Reuter

Die dominierende Kraft



HOFFNUNG auf ein Ende der Isolation: Auf dem Flughafen von Windhuk heißt eine Gruppe schwarzer Mädchen den UN-Sonderbeauftragten Martti Ahtisaari willkommen. Photo: Reuter

LUIS MURSCHETZ

Nur scheinbar abserviert



Nach letzten Besuchen in Namibia: Ich freue mich, dass der Übergang ruhig verlaufen ist.
2025: Schaffen wir es in D unabhängiger zu werden??

Allen Unkenrufen in den Medien zum Trotz: E-Mobilität könnte mit deutschen Autos bedient werden.

Lithium made in Germany

ROHSTOFFE: Deutschland will unabhängiger von China werden. Jetzt fließen 2,2 Mrd. € in die erste heimische Lithiumproduktion – der Bau beginnt in Kürze.

VON MAGNUS SCHWARZ

Das australische Unternehmen Vulcan Energy Resources hat die Finanzierung für sein „Lionheart"-Projekt im Oberrheingraben abgeschlossen. Insgesamt 2,2 Mrd. € fließen jetzt in die laut Unternehmen erste Lithium-Wertschöpfungskette Europas, die vollständig in einem Land stattfindet. Mehrere Geldgeber haben das Finanzierungspaket gemeinsam geschnürt: Der deutsche Rohstofffonds beteiligt sich mit 150 Mio. €, die Bundesregierung steuert Fördermittel in Höhe von 204 Mio. € für Geothermie und kommerzielle Lithiumanlagen bei. 1,185 Mrd. € trägt ein Konsortium aus 13 Parteien, darunter die Europäische Investitionsbank mit 250 Mio. € sowie Finanzinstitute aus Kanada, Dänemark, Frankreich und Italien. Industriepartner wie Hochtief, Siemens Financial Services und Demeter bringen zusätzliche 133 Mio. € ein. Vulcan selbst investiert 528 Mio. € Eigenkapital.

Der Bau der Anlagen soll in den kommenden Tagen beginnen. Das „Lionheart"-Projekt umfasst zwei zentrale Anlagen: In Landau entsteht eine kombinierte Geothermie- und Lithiumextraktionsanlage (G-LEP), die sowohl den Rohstoff als auch erneuerbare Energie gewinnt. In Frankfurt-Höchst wird eine „zentrale Lithiumanlage" (CLP) die Weiterverarbeitung übernehmen. Weitere Tiefenbohrungen in der Region Landau sowie Pipelines und eine Umspannstation sollen die Infrastruktur ergänzen.

Die geplante Kapazität: jährlich bis zu 24.000 t Lithiumhydroxidmonohydrat. Das reicht für rund 500.000 Elektrofahrzeuge. Zusätzlich soll das Projekt 560 GWh Wärme und 275 GWh Strom pro Jahr für die Region liefern. Die Laufzeit ist auf 30 Jahre angelegt.



So wird der Lithiumabbau in Deutschland nicht aussehen: Lithium verdampft in der bolivianischen Anlage Llipi am Salzsee von Uyuni. Foto: picture alliance/dpa

Die Industrie hat früh Interesse signalisiert. Bereits 2022 stieg der Automobilkonzern Stellantis als einer der größten Anteilseigner ein. Auch LG Energy Solution, Umicore, Renault und Volkswagen haben Abnahmeverträge unterzeichnet.

Das Prinzip nutzt die geologischen Besonderheiten des Oberrheingrabens: In den Tiefengesteinen lagert lithiumhaltiges Thermalwasser, das mit etwa 165 °C an die Oberfläche gepumpt wird. In einem ersten Schritt entzieht ein Wärmeübertrager dem Wasser Energie, die mittels ORC-Prozess (Organic Rankine Cycle) zur Stromerzeugung genutzt wird. Anschließend durchläuft das Wasser eine sogenannte Direct Lithium Extraction (DLE). Dabei bindet ein spezielles Sorbens aus Lithiumchloridaluminat – Vulcan nennt es Vulsorb – die Lithium-Ionen aus der Sole. Ist der Filter gesättigt, werden die Ionen mit Wasser ausgespült. Das Sorbens kann dann wiederverwendet werden. Weitere chemische Substanzen kommen laut Unternehmen nicht zum Einsatz. Das so gewonnene Lithiumchlorid wird zur Weiterverarbeitung in den Industriepark Frankfurt-Höchst transportiert. Dort entsteht mittels Elektrolyse batteriefähiges Lithiumhydroxid (LiOH).

Deutschland ist beim Lithium derzeit vollständig von Importen abhängig. Sie kommen größtenteils aus Chile, Australien und China.

BMW Eisenach beweist Exzellenz im Werkzeugbau

EIP 2025: Erfolgreich in Krisenzeiten. Wie das gehen kann, zeigen Unternehmen im Wettbewerb „Excellence in Production". Der Werkzeugbau des Jahres 2025 befindet sich in Eisenach.

Der Krönungssaal im Rathaus ist bis auf den letzten Platz gefüllt. Die Anspannung ist hoch. Das hat nicht nur damit zu tun, dass die anwesenden Unternehmen aus dem Werkzeug- und Formenbau durch die wirtschaftlichen Schwierigkeiten ihrer Abnehmerbranchen vor großen Herausforderungen stehen. Sie warten auch auf die Bekanntgabe der Gewinner im Wettbewerb „Excellence in Production", der seit über 20 Jahren vom Werkzeugmaschinenlabor WZL der RWTH Aachen organisiert wird.

Das war die Atmosphäre am frühen Abend des 12. November 2025. Zunächst wurden dabei die Sieger der einzelnen Kategorien gekürt, die jeweils in Betriebe unter und ab 50 Mitarbeitende sowie interne und externe Dienstleitung unterteilt sind. Gegen 22:30 Uhr war es dann endlich so weit: Als Gesamtsieger erschien das Logo der BMW Fahrzeugtechnik GmbH am Standort Eisenach (Krauthausen) auf der großen Leinwand.

Selten war die Entscheidung so knapp wie in diesem Jahr. Nur wenige Bewertungspunkte trennten nach den Vor-Ort-Besuchen der Auditoren des WZL den Gesamtsieger in seiner Kategorie „Interner Werkzeugbau mit über 50 Mitarbeitenden" von den anderen Teilnehmenden.

Schon in seiner Begrüßungsrede hatte WZL-Direktor Günther Schuh auf das hohe Niveau in dem Wettbewerb hingewiesen. In der wirtschaftlichen Situation, in der sich die Branche aktuell befinde, seien alle Nominierten Vorbilder in Sachen Innovationsfähigkeit und Resilienz.

Ausschlaggebend für den Gesamtsieg im Wettbewerb „Excellence in Production 2025" waren laut Jury die ganzheitliche strategische Aufstellung, hohe Prozessreife und außerordentliche Innovationskraft des Werkzeugbaus der BMW Fahrzeugtechnik GmbH am Standort Eisenach. Der BMW-Werkzeugbau überzeuge durch eine klare Fokussierung auf designrelevante und hochkomplexe Außenhautumfänge und beliefere neben dem internen BMW-Netzwerk auch die Zulieferkette von BMW mit hochpräzisen Presswerkzeugen.

Darüber hinaus hob die Jury hervor, dass der Standort dazu konsequent auf Digitalisierung, Automatisierung und Simulationstechnik zur Werkzeugoptimierung setze. Das reiche vom robotergestützten Laserauftragsschweißen mit integrierter optischer Maßkontrolle über den gezielten Einsatz additiver Fertigung für ausgewählte Komponenten bis hin zu umfangreichen Werkzeug- und Prozesssimulationen. Im Fokus stünden dabei neben der Werkzeugqualität auch die Mitarbeitenden. ciu

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Uni-Prüfungen im KI-Zeitalter

KÜNSTLICHE INTELLIGENZ: Der Einsatz künstlicher Intelligenz (KI) unter Studierenden ist mittlerweile die Norm. Seit dem Launch von ChatGPT Ende 2022 ist es für Lehrende eine ständige Herausforderung, KI als effektive Hilfe fürs Lernen zu betrachten, gleichzeitig aber Risiken für die Fairness von Bewertungen zu minimieren. Im Februar 2025 ergab eine Umfrage des Magazins Nature unter mehr als 1000 Vollzeitstudierenden im Vereinigten Königreich, dass 92 % KI in irgendeiner Form nutzen. Im Jahr 2024 waren es noch 66 % gewesen. 88 % der Studierenden gaben an, bei akademischen Arbeiten generative KI zu nutzen, letztes Jahr waren es noch 53 %.

Lesen oder programmieren – bei solchen grundlegenden Tätigkeiten ist die KI weiterhin besser als der Mensch. Gerade deshalb machen sich Expertinnen und Experten zunehmend Sorgen, wie sich die KI auf das Lernverhalten auswirkt. So wird beispielsweise der Wert herkömmlicher Aufsätze und anderer schriftlicher Leistungsbewertungen zunehmend hinterfragt. KI kann Texte produzieren, die oft die Qualität der meisten studentischen Arbeiten übertreffen. Weitere Bedenken betreffen eine übermäßige Abhängigkeit von Chatbots und deren mögliche Auswirkungen: oberflächliches Lernen, geringere Möglichkeiten zur Selbstreflexion und der Verlust der Eigeninitiative von Studierenden.

Die Universitäten haben daraufhin mit Tools reagiert, mit denen sie versuchen, die Nutzung generativer KI durch Studierende aufzudecken. Beispielsweise wurden kurzfristige Lösungen etabliert, wie der Einsatz von „Stresstests" bei schriftlichen Prüfungen oder deren Ersatz durch mündliche Examina. Weitere Formen waren die Verwendung von reflektierenden Formaten, wie Portfolios und Tagebüchern, sowie klare Richtlinien, in welchen Fällen KI genutzt werden darf und in welchen nicht.

Einer der Grundpfeiler der modernen Bildung ist die Prämisse „Schreiben ist Denken". Schreiben ist ein nicht linearer Prozess, der die intellektuelle Entwicklung des Menschen stimuliert: authentisches Engagement, kritisches Denken, Problemlösungskompetenz. Wenn KI jedoch genutzt wird, um Texte zu verfassen oder zu generieren, ist es beinahe unmöglich zu wissen, inwieweit das Endergebnis das eigene Verständnis und kritische Denken einer Studentin oder eines Studenten widerspiegelt. Diese Unsicherheit untergräbt die Verwendung des Schreibens als Nachweis für das Lernen.

Eine Möglichkeit, kritisches Denken zu fördern, besteht darin, Studierende und Dozierende strukturierte Gespräche führen zu lassen. Eine kontinuierliche Bewertung kann ebenfalls eine wirksame Alternative sein. In vielen akademischen Bereichen scheint es dringend erforderlich, Abschlussprüfungen durch eine Reihe miteinander verbundener Bewertungen zu ersetzen, die ein umfassendes Bild des Lernfortschritts der Studierenden vermitteln. Universitäten müssen möglicherweise auch ihren Fokus auf die Entwicklung höherer und zwischenmenschlicher Fähigkeiten der Studierenden verlagern, wie Kreativität, Zusammenarbeit und Empathie. Dies sind Bereiche, in denen menschliche Stärken nach wie vor deutlich und wertvoll sind.

Anstelle herkömmlicher schriftlicher Prüfungen könnten die Studierenden beispielsweise gemeinsam einen Nachhaltigkeitsplan für ihre Universität entwerfen, einen Prototyp für ein Produkt entwickeln oder ein reales politisches Problem analysieren. Im Gegensatz zu den heutigen Gruppenprojekten könnten die Studierenden dazu ermutigt werden, während des gesamten Prozesses KI-Tools zu nutzen, um Ideen zu sammeln, Daten zu analysieren oder ihre Präsentationen zu strukturieren, wobei die KI-Plattform als von der Universität autorisierter Partner im Lernprozess fungiert. ana