

Section 341

REFER TO FILE NO.

QC/NTME (341)

NAVY DEPARTMENT

BUREAU OF SHIPS

WASHINGTON 25, D. C.



14 December 1945

Subj: Microfilm of German Technical Documents - Introductory Statement for.

1. During the course of its field trips to examine German synthetic oil plants and to interrogate German technical personnel, the members of the Oil Team of the U.S. Naval Technical Mission in Europe obtained a number of technical documents for examination. Some of these documents were directly related to certain subjects in which immediate reports were desired and were incorporated in Technical Reports as microfilm appendices. Other documents, while probably of equal technical value were, due to limitations of time and translation facilities, saved for more detail study and examination. These latter documents have been indexed and microfilmed by the Bureau of Ships to preserve the technical information therein for future use and to make possible the dissemination necessary to give each activity an opportunity to study the particular topics of interest to it.
2. The documents in this series cover a variety of subjects. They are not arranged in any particular sequence, but have been separated arbitrarily into sections of a convenient size. An index to each section has been prepared and appears at the beginning of the appropriate section. In addition, the indexes of all sections have been photographed at the beginning of the first reel.
3. The contents of this film are not to be taken as a complete record of the information on any subject obtained by the U.S. Naval Technical Mission in Europe. Rather, reference should be made to the complete set of films which have been prepared by the Bureau of Ships if it is desired to review all the data available.
4. The Bureau of Ships, Research and Standards Branch, would appreciate receiving, for its technical files, a copy of any translations made of these data.

A handwritten signature in dark ink, appearing to read 'T. A. Solberg'. The signature is written in a cursive, slightly slanted style.

T. A. Solberg
By-direction of
Chief of Bureau

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DRAWINGS

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HIGH PRESSURE EQUIPMENT DETAILS

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1. Heat Exchanger - Drawing #M710-1 Braunkohle-Benzin (#FA283-1) Scale drawing of parts and assembly connections noted on drawing (no date).
2. Assembly of Cylindrical Evaporator Drawing #M3525A-1 Ammoniakwerk, Merseburg 11/28/1940. Scale drawing of parts including bolt and thread details (2 copies).
3. ~~Intake Pressure Valve for Pump.~~ Drawing #M3565-1. Ammoniakwerk, Merseburg 10/14/1940 - Scale drawing of parts.
4. High Pressure Contact Chamber - Drawing #M4746-1 Ammoniakwerk, Merseburg 12/10/1941 Scale drawing of chamber, cover, and casing. (2 copies).
5. Heat Exchanger - for methanol and Isobutanol. Drawing #M4941A-4 Ammoniakwerk, Merseburg 4/17/39 Scale drawing of heat exchanger.
6. Preheater for air and Fractionated Gas (1600 atmos.) Drawing #M5479b-1 Ammoniakwerk Merseburg 4/22/43 Scale drawing with complete details of a preheater.
7. Heat Exchanger (in methanol works) - Drawing #M5612-1 Ammoniakwerk Merseburg 8/14/44 - Scale drawing with complete details of a heat exchanger (2 copies).

8. (Title not readable) Drawing #M5661a-2
Ammoniakwerk, Merseburg 2/10/39 Scale drawing showing
flanges and tube connection.
9. Separatory Arm with Column Head. Drawing #M5788a-2
Ammoniakwerk 3/14/39 - A scale drawing of arm and body
attachment.
10. Experiment Hydroforming Contract, Converter. (300 atmos.
operating pressure). Drawing #M5793-4 Ammoniakwerk,
Merseburg 3/15/40. Scale drawing (2 copies).
11. Stuffing Box Body for Old and New Slurry. Drawing
#M5892-2 Ammoniakwerk 2/15/39. A scale drawing.
12. Pressure Reduction Valve from 220-0 atmos.
Drawing #764292-2 Ammoniakwerk 9/22/39. A scale
drawing with complete details. (2 copies).
13. Immersion Type Preheater Drawing # 7211-2 Ammoniakwerk
4/29/40. A scale drawing (2 copies) Hair pin bends.
14. "D. H. D" Casing Drawing #M7545b-4 Ammoniakwerk
3/27/41 Scale drawing of casing.
15. High Pressure Diaphragm Valve Drawing #M9823-2
Ammoniakwerk 3/2/42 A scale drawing.
16. Contact Chamber with Coke Filter Drawing #M11649-2
Ammoniakwerk 9/25/43 A scale drawing (2 copies).

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-3-

17. High Pressure - Special Valve for reduction station
Drawing #MI2037-2 Ammoniakwerk 1/24/44 A scale
drawing (2 copies).
18. Assembly of High Pressure Stuffing Box.
Drawing #M2541-2 Ammoniakwerk 6/22/36. A scale
drawing.
19. Oil Stuffing box with leather collar. Drawing #MI0234-2
Ammoniakwerk 7/9/42 A scale drawing.
20. Stuffing Box Body. Drawing #MI0907-2 Ammoniakwerk
9/30/1943 A scale drawing.
21. Nozzel - Drawing #MI1754-2 Ammoniakwerk 11/2/43
A scale drawing.
22. Heat Exchanger without cooling coil. Drawing #MI1776a-2
Ammoniakwerk 11/2/43.
23. High Pressure Diaphragm Valve (325 atmos).
Drawing #MI2056-2 Ammoniakwerk 2/5/44 A scale
drawing with details of each part.
24. Stuffing box with X2 Packing. Drawing #MI2806-2
Ammoniakwerk 2/4/45.
25. Gas (co) Purification and analysis. Drawing #M(Sk28-345)
-1 Ammoniakwerk 3/28/45 A flow diagram.
26. Gas (Co) Purification Drawing #M(SK26245)-1 Tracing
paper diagram for item #25.

02540

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27. Tube Bundle for 500 atmos. Regenerator
Drawing #M12621-2 Ammoniakwerk 8/28/35. A scale drawing.
28. Insulation for Heat Exchanger (1000-atmos.)
Drawing #M1698-2 Ammoniakwerk 8/28/35. A scale drawing.
29. Bottom Throat of Hot Separator Drawing #M11663-2
Ammoniakwerk 9/17/43.
30. High Pressure Diaphragm Drawing #M12056-2
Ammoniakwerk 2/5/44. A scale detail drawing.
31. Cylinder and Head for Expansion Engine Drawing #M1567-1
Ammoniakwerk 5/14/36. A scale detail drawing.

- Part 1. Notes on the work conference of Synthesis plants in Berlin on 13 Sept. 1940. 164 pages.
Lectures by various technical people on aspects of synthesis including some tables. Dr. Feist.
- Part 2. Conference of 8 Nov. 1939. 16 pages. Coarse purification. Dr. Feist.
- Part 3. Industry Conference on 14 July 1939. 15 pages. Catalyst questions, Gas purification. Dr. Feist.
- Part 4. Industry Conference of 5 May 1939. 13 pages. Contact catalyst assemblies gas purification, date on emptying contact ovens. Dr. Feist.
- Part 5. Report on: Division of annual yield of hydro carbons in the gasoline synthesis for the establishment of the average monthly values. Dr. Schuff. 6 April, 1939.
5 pages.
- Part 6. Industry Conference on 3 March 1939. 9 pages. Delivery of catalysts, experimental catalysts, catalyst quality, yield. Contact extraction, contact investigation problems, corrosion questions, mechanical process of the synthesis ovens. Dr. Feist.

- Part 7. Industry Conference on 6 Jan. 1939. 16 pages.
Report on burning of a storage tank, separation of mixed catalysts, new catalysts, comparison of mixed catalysts with Thorium catalyst contact. Dr. Feist.
- Part 8. Industry Conference on 4 Nov. 1938. 20 pages.
Extraction of catalysts. cost questions. Dr. Feist.
- Part 9. Industry Conference on 26 August 1938. 15 pages.
Monthly yield graph. Comparison of mixed catalysts and Thorium contact. Average monthly yield.
Physical characteristics of mixed catalysts.
Emptying the ovens. Regeneration with Oxygen or methods of extraction with Thorium and mixed catalysts
Catalytic requirement in Sept. 1938. Dr. Feist.
- Part 10. Industry Conference on 8 July 1938. 6 pages.
Catalysts - physical characteristics, reduction conditions, use in synthesis, regeneration, life cycle, emptying. Dr. Schuff.
Conference on 17 June, 1938. 23 pages - Gas purification synthetic production. Catalysts (Thorium-Manganese) Dr. Feist.
- Part 11. Industry Conference on 5 May 1938 . 17 pages. Co-ThO₂-MgO Catalysts. Experimental catalysts with Co-Kgr - 1:1 ratio. General questions. Dr. Feist.

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Part 12. Industry Conference on 25 March 1938. 12 pages.
Delivery & quality of catalysts. Normal CoThO_2
catalysts. Co-ThO_2 - MgO catalysts. Dr. Feist.
The influence of Cobalt, Content and Keisel earth
content on the effectiveness of gasoline synthesis
catalysts. 12 pages. 2 graphs. Dr. Kolbel.

Report on Hydrogenation and its production value.
8 pages. Correspondence.

Basic Concept.-- Catalysts and their characteristics.
2 pages.

Report of the conference on lubricating material Part 2 - Ageing
Held in Berlin May-7-8, 1942. 269 pages.

The report consists of 15 individual reports and a discussion.
The reports deal mainly with ageing and testing of lubricating oils.

Property test of the synthetic lubricant code # SS 962-15Fr (final
stage). Lubricant tested in aircraft diesel engine. Jumo 205 D.
Dr. Scheibe, Dr. Rode, Date: 17 Mar. 1941 10 pages text 1 graph 3
illustrations 2 tables. Experimental report prepared under the
auspices of Junkers Aircraft and Motor Co.

"Lubricants technique" meeting of technical men on 29 June 1943.
Frictional problems 23 pgs. test 11 illustrations. Dr. Heidebroek,
Dr. Kraft. Report made for VDI technical group.

Report on "Lubricant technique" meeting of technical men. on
29 Feb. 1944. Chemical lubrication of aircraft engines. The
problem of stirring friction - 29 Feb. 1944. 32 pages including
9 pages illustrations. Dr. Heidebroek, Dr. Kraft. Report made for
VDI technical group.

Photographs of various instruments - mainly testing of fuels.

Testing synthetic lubricants in aircraft engines. Report

5 # 450 Dr. Lauer.

42 pages including 24 tables 27 Mar. 1941.

Report # 450 prepared under the auspices of Technical testing station Oppau.

A book issued by the German Institute for Air - 1940

89 pages - Containing articles by:-

- 6
- 1- M. Pier - "Concerning Aromatic Fuels".
 - 2- W. Jost - Auto-Ignition of Fuel-Air Mixtures by Adiabatic Compression and its knock behavior in the Engine.
 - 3- H. List - Work of the Institute of Fuel Buring Machines of the Technical High School.
 - 4- E. Schmidt - Work of the Herman Göring Aircraft Engine Institute.
 - 5- G. Danköhler - Physical Chemical Problem of combustion Happenings.

7
Knocking investigations on a one cylinder motor with special consideration of knock retarding (delay) 42 pgs. test 35. Illustrations, diagrams and graphs. Dr. A. Süß.

Report prepared under the auspices of institute for chemical Technology of Technical Schools. Mineral Oil Experimental Laboratory.

I

① "The shape of contact chambers in catalytic exothermic and endothermic reactions" By Dr. Wirth. April, 1942. Leuna (14 pages).

A report on the most efficient design of catalytic chambers (Fischer-Tropsch Synthesis) from the view point of heat transfer.

② "The calculation and evaluation of chambers for catalytic exothermic and endothermic reactions which occur within a narrow temperature range" By Dr. Wirth July 4, 1942. Leuna (20 pages) (2 copies).

The report concerns an evaluation of different methods of heat transfer arrangements. Besides a mathematical discussion, photographs of the different arrangements are included.

③ Investigation:- "The stability of various working material against carbon-monoxide corrosion" - Wyszomirski and van Rossum - July 30, 1943 Ammoniakwerk, Merseburg (8 pages).

A report on investigation of substitutes for manganese-copper alloy used in methanol synthesis equipment. Tables and graphs illustrate corrosion effect. The materials tested are listed only by Code number.

④ "Report concerning the session of the work society for Knock measurement, Technical testing place at Oppau, No. 161, July 15, 1941, deals chiefly with octane measurement and knock measurements thirty-nine pages with charts.

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⑤ "Experiments on the preparation of triptane and several other isoparaffins." Bueren, high pressure test 558, 30 Oct. 1940 - nine pages with reactions.

⑥ "Comparison investigations on I.G. test diesels", Köhler, technical testing place Op200, report no. 381, May 15, 1939, tests on I.G. test diesels and other motors, ten pages with charts.

⑦ "Overload capability of isooctane and aromatics", Pier, high pressure investigation Lu 558, Nov. 15, 1941. The difference in motor behavior between paraffin and aromatic high test fuel, eight pages with charts.

⑧ "Fuel Injection," German automotive Research, technical research reports, performance of different compressions of fuels, 1938-1944.

⑨ "Investigations of knocking Combustion." Heinz Rögener, Investigations of spontaneous combustion in the gas phase, thirty-three pages with charts.

⑩ "Fuel-test of the over-load process in BMW one cylinder motor", H. Schökel, INTAVA work society of Hamburg, Sept. 13, 1941, report no. K.199, testing of aircraft fuel WLS14 in BMW over-load motor, three pages with charts.

13

⑩ Brochure giving history and development of the Leuna Werke in non technical language. Mostly descriptive in nature. 18 pages.

⑫ Preliminary cost report for Schwarzheide for May, 1944. dated 10 July, 1944. Gives production figures for Gasolines, oils, etc. - Dr. Kollmar. 5 pages.

⑬ Preliminary cost report for Schwarzheide for April, 1944. Give production figures for Gasolines, oils, etc. Dr. Kollmar. 8 pages, 1 graph.

⑭ Preliminary cost report for Schwarzheide for December 1943, Gives production figure for Gasolines, oils, etc. Dr. Kollmar. 6 pages, 1 graph.

⑮ Report on production of Böhlen Magdeburg, Zeitz, Schwarzheide, Werke, from Jan - March 1943. 26 June, 1943.
Production of gasolines, gases and oils, with master cost data.

⑯ Production reports on Schwarzheide, Böhlen. Magdeburg, Zeitz, from Oct. - Dec. 1943, and Jan - Dec. 1943.
Production of gasoline, gases, and oils, etc. with master cost and data.

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Production report on Schwarzherde Böhlen, Magdeburg-Weitz. July - September, 1943.

Production and cost data on Gasoline Gases, and Oils, etc.

18

Construction and yield of Böhlen Werk gives cost, figures and production of gasolines, oils, etc. 28 June, 1944. 25 pages, including tables and graphs. Dr. Kollmar.