M I N I S T R Y O F F U E L A N D P O W E R

TECHNICAL MISSION TO GERMANY

P E R F O R M A N C E A N D U T I L I Z A T I O N G R O U P

LIST OF DOCUMENTS

The attached list gives the document reference number, the document title and a short summary of contents for all the German Documents considered by the Group in writing its Final Subject Reports. Most of these documents have been abstracted (denoted by A) and many have been translated in full (denoted by F.)

The original German Documents are available on application to:-

Board of Trade,
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Lansdowne House,
Berkeley Square, London,W.1.

quoting the F.D. Reference Number and Item Number.

U.S. recipients of this list should apply to the Department of Commerce, Bureau of Publications, quoting the CIOS Reference Number.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2866/46 Item 1	1893/A1	1.12.40.	Application of the ring system to a B.M.W. 132N cylinder.	Study of the operating conditions. Oppau - Leib - A.F.
Item 2	1893/A2	24. 1.41.	Wear tests on injection spray valves and fuel pump pistons with fuel R.300 and gas oil.	A continuous run of 700 hours was carried out. Oppau - Kohler - A.F.
Item 3	1893/A3	3. 2.41.	Knock behaviour and anti-knock value determinations of engine fuels.	Distinction between O.N. and the blending value of a fuel determination of latter. Oppau - Singer -A-
Item 4	1893/A4	10. 3.41.	Research on injectors using the "quantitative stroboscope"	The "quantitative stroboscope" measures the fuel injected per degree crank angle. The injector, viscosity, pump piston, and pressure were varied. Oppau - Kohler - A -
Item 5	1893/A5	18. 2.41.	Testing of lubricating properties of oils in three different instruments.	4-Ball machine, wear machine and Wieland machine are used with 6 synthetic hydrocarbons. Oppau - Halder - A.F.
Item 6	1893/A8	27. 2.41.	The determination of knock intensity.	Two methods of measuring knock intensity with a piezo-electric crystal. Oppau - Schuch - A.F.
Item 7	1893/A9	3. 4.41.	The effect of temp. on the running of aero-engines employing the ring system.	The minimum and optimum temps at various points in the engine were investigated. Oppau - Leib - A.F.
Item 8	1893/A10	10. 4.41.	Revised test method for aviation fuels.	Small changes in the Oppau method enable values comparable to those of the DVL super-charge method to be obtained. Oppau - Singer - A.F.
Item 9	1893/A11	15. 4.41.	Testing of aviation greases at low temperatures.	Low temp. torque testing of greases in bearings using the I.G. cold chamber and the Schwaiger low temp. viscosimeter. Oppau - Halder - A.F.
Item 10	1893/A12	21. 4.41	Examination of one aromatic and one paraffinic blend with respect to temperature - lead - and mixture sensitivity in the supercharged single cylinder engine. Oppau - Witschakowski - A -	
Item 11	1893/A13	23. 4.41.	Testing of polyglycol ethers of polyhydric alcohols as lubricants.	A polyglycol ether L.K.2200 was tested as a lubricant. Oppau - Halder - A.F.
Item 12	1893/A14	1. 5.41.	Maximum and optimum pilot injection quantities for the "Ring" operation of a Jumo 211-A cylinder.	Oppau - Leib - A.F.

DOCUMENT NO	CIOS REF NO.	DATE	TITLE	CONTENTS
FD 2866/46 Item 13	1893/A16	23. 6. 41	Reference fuels and accuracy of O.N. determination.	Advantages of the single reference fuel Z.. Oppau - Singer - A -
Item 14	1893/A17	23. 6. 41	Road test on Diesel freight lorry with fuel TZ100	Examination of the suitability of the fuel for road use. Oppau - Kohler - A -
Item 15	1893/A18	7. 7. 41	Research on the combustion of ignition fuels.	Determination of pressure peak and gradient and how these are affected by additions. Oppau - Kohler - A -
Item 16	1893/A19	10. 8. 41	Comparative Engine tests with synthetic Motor Oils.	Two motor oils from the I.G. Mersburg. Oppau - Lauer - A -
Item 17	1893/A21	20. 8. 41	Comparative experiments with aero-engine lubricants Mixtures A - F	Engine test with and without inhibitors of a number of mixtures of synthetic components from Leuna and one mineral oil component. Oppau - Lauer - A.F.
Item 18	1893/A22	16. 8. 41	Test of lubricating properties of R200 and R300	Four different test instruments are used. Oppau - Halder - A.F.
Item 19	1893/A23	25. 8. 41	A contribution to the knock tests of aviation fuels in small Engines.	Description of tests with the I.G. test Diesel used as a supercharge engine. Mixture response curves compared with those of the BMW 132 single cylinder. Oppau - Witschakowski-AF
Item 20	1893/A24	1. 9. 41	The electrical indication and recording of detonation waves.	Oppau - Schuch - A.F.
Item 21	1893/A25	25. 8. 41	Comparative experiments with I.G. Test Diesel engines 1941.	Four Diesel fuels were tested in I.G. Test Diesel engine at twelve different stations. Oppau - Kohler - A -
Item 22	1893/A26	10.10. 41	Comparative tests with gear oils .	Four gear oils were tested in the Almen Wieland and in that of the Oppau laboratory; 4 ball machine was also used for a test. Oppau - Halder - A -
Item 23	1893/A26	10.10. 41	An instrument to test the lubricating properties of oils by wear measurements.	The wear measurements are well reproducible investigation of dependence of wear on sliding velocity, additions, and ageing. Oppau - Halder - -
Item 24	1893/A27	1.11. 41	Half yearly comparative Knock tests.	Oppau - Singer - A -
Item 25	1893/A30	25.11. 41.	Starting of Diesel engines with the aid of heating tablets.	Improved starting at low temps. Oppau - Halder - A -
Item 26	1893/A31	12.12. 41	Tests with the four ball machine.	Concerns mainly the range and cause of variation in the results. Oppau - Halder - A -
Item 27	1893/A32	12.12. 41	Investigation of lubricants in the I.G. cold chamber.	Behaviour of oil pumps, effect of pour point depressants breaking free power of oils. Oppau - Penzig - A.F.

DOCUMENT NO	CIOS REF NO.	DATE	TITLE	CONTENTS.
F.D. 2866/46 Item 28	1893/A32A	17. 2. 42.	The evaluation of data for O.N. determinations made by the Oppau method.	Practical details of the Oppau method of fuel rating and the associated experimental error. Oppau - Singer - A -
Item 29	1893/A33	24.10. 42	Result of correlation tests made with the Oppau and the DVL methods.	Oppau - Singer - A -
Item 30	1893/A34	9.10. 43	Result of correlation tests made with the Oppau method.	6 test stations tested two commercial aviation fuels and one reference fuel. Oppau - Singer - A -
Item 31	1893/A35	13. 2. 42	Tests on the "ring" system of different compression ratios.	Oppau - Penzig - A.F.
Item 32	1893/A36	28. 1. 42	Technical lubricating oil testing.	States of lubrication testing of E.P. additives by four ball machine. Low temp. properties. Ring-sticking. Sludge formation, thickening and consumption of oil. Oppau - Halder - A.F.
Item 33	1893/A37	20. 4. 42	Pre-heating of lubricating oil in car engines by means of "Startkohle" (Start Coal)	An arrangement in the oil sump of the engine which, using a solid fuel, preheats the oil and keepts it warm in the standing engine. Oppau - Leib - -
Item 34	1893/A37	18. 3. 42	A device for inlet air heating of Diesel engines.	Pre-combustion of fuel in the inlet manifold to heat inlet air and combustion chamber. Oppau - Leib - A -
Item 35	1893/A38	1. 9. 42	The "ring" method.	Oppau - Penzig - A.F.
Item 36	1893/A39	25. 5. 42	Peak pressures with the ring system.	Comparison with the Otto cycle. Oppau - Penzig - A.F.
Item 37	1893/A40	5. 6. 42	An electrical instrument for the acoustic or optical determination of the starting of knock.	Development of arrangement described in report 475. Eliminates basic noise Works with automatic adjustment. Some comparison curves are given. Oppau - Schuch - A.F.
Item 38	1893/A41	1. 7. 42	The use of the I.G. test-engine in lubricating tests.	Ring-sticking is determined. Reproducibility is satisfactory. Oppau - Halder - A.F.
Item 39	1893/A43	1. 7. 42	Experiences in lubricant test runs on ring-sticking behaviour.	Review of position. Deficiencies are shown up. Many unexplained effects. Method as a whole is usable. Oppau - Lauer - A.F.
Item 40	1893/A44	13. 6. 42	Comparative knock tests using the secondary reference fuels benzene and Z.	Deals with the effect of the kind of ref. fuel on the reproducibility in the same engine, the magnitude of variations for diff. engines and the agreement for I.G and C.F.R. eng. Oppau - Singer - A-
Item 41	1893/A45	19. 6. 42	Half yearly comparative knock tests.	Oppau - Singer - A -

CUMENT NO 2866/46	CIOS REF NO	DATE	TITLE	CONTENTS
tem 42	1893/A47	15. 7. 42.	Testing of anthracite and liqnite coke and coal in the Daimler - Benz. generator.	Oppau - Kohler -.-.
tem 43	1893/A49	15. 7. 42	Engine fuels.	Discussion of fuels for spark ignition and compression ignition engines. Relation between performance and volatility, O.N, ignitability. Oppau - Penzig - A.-.
tem 44	1893/A50	20. 8. 42	Apparatus for measuring lubr. props in limiting friction.	Good reproducibility, suitable for quick tests, suitable to investigate effect of additives. Oppau - Halder - A.F.
em 45	1893/A51	24. 8. 42	The behaviour of starting fuels for Diesel engines with inlet manifold injection.	Rating of some starting fuels. High C.N. and high vapour pressure are desirable. Oppau - Leib - A.F.
em 46	1893/A53	25. 9. 42	A method of investigating flame propagation in internal combustion engines.	Use of an ionisation gap with a cathode ray tube for recording. Oppau - Schuch - A.-.
tem 47	1893/A54	20.10. 42	Experiments with the photo-cell deflection apparatus of Dr. Nier.	Description of instrument. Discussion of usefulness, accuracy and disadvantages. Oppau - Schuch - A -.
tem 48	1893/A55	13.10. 42	Testing of high temperature coke in the Mercedes Benz. and the Stinnesgenerators.	Oppau - Kohler -.
tem 49	1893/A56	5. 1. 43	Testing lubricants by means of wear measurements.	An instrument is described which executes reciprocating motions. Investigation of effect of time of exp., load, temp, working substance roughness of surface. Oppau - Halder - A.F.
tem 50	1893/A57	2.11. 42	Testing lignite and liguite coke from the Sudetenland supplied by Eberhard Wurbs & Co., Reichenberg in car generators.	Tested in Imbert(charcoal) gas generator, a Mercedes Benz. and a Stinnes generator. Oppau - Kohler -.
tem 51	1893/A58	20.11. 42	An instrument based on the carrier wave principle for the measurement of (small rapid) movements.	General properties of instrument, suited for observing movements occurring in the needle stroke of injectors. Experiments on the needle stroke are then given. Oppau - Schuch - A -.
em 52	1893/A59	21.11. 42	Investigation of knock with alkyl-benzenes in the B.M.W. 132 supercharge engine.	Deals with the effect on knock of (1) different synthesis (Catalyst) (2) boiling characteristics, (3) chemical constitution of alkyl benzenes. Oppau - Bahr - A -.
em 53	1893/A60	18. 3.43	Properties of Glysantin - water mixtures.	Finding the operationally relevant data for low temp. Oppau - Roth - A -.
em 54	1893/A61	4.12. 42.	Trial of six cokes from Upper-Silesian coal in a car generator.	Oppau - Kohler -
em 55	1893/A62	1. 2. 43	Trial of three cokes from Upper-Silesian coal.	Oppau - Kohler -

DOCUMENT NO. FD.2866/46	CIOS REF.NO.	DATE	TITLE	CONTENTS.
Item 56	1893/A63	4.1.43.	Investigation of various materials with respect to their suitability as coolants for liquid cooled engines.	Search for coolant of lowpour-point, high boiling point and good behaviour in the cooling system. Oppau - Lauer - A. -
Item 57	1893/A65	14.4.43.	Trial of Denetz Anthracite in a car generator.	Oppau - Kehler -
Item 58	1893/A66	10.2.43.	Trial of briquette-coke from Wald Schact coal in a car generator.	The experiments were carried out in a Stinnes generator. Oppau - Kehler -
Item 59	1893/A67	5.4.43.	Trial of high temperature coke from the carolus magnus mine in a car generator.	Oppau - Kehler -
Item 60	1893/A68	10.4.43.	Examination of generator fuels, generator anthracite, Blechhammer coke and Bruxer coke in car generator.	Oppau - Kehler -
Item 61	1893/A69	1.3.43.	The development of a radiant material to give a small heat output over a long period.	A base [illegible] from Brux lignite was used. The additives are readily available substances. Oppau - Leib - A -
Item 62	1893/A70	8.3.43.	The testing of lubricants in laboratory apparatus.	The agreement between various instruments measuring a given property, and the relation between the properties themselves. Oppau - Halder - A.F.
Item 63	1893/A71	15.5.43.	Testing of Koxit in a Mercedes - Benz car generator.	Oppau - Kehler -
Item 64	1893/A72	30.6.43.	Testing of generator cokes washed by various methods.	Three methods of washing were employed. Oppau - Kehler -
Item 65	1893/A73	14.5.43.	Capacity measurements of "Mole" Pumps under working conditions.	An 800 and a 600 "Mole" pumps were compared. Data being the throttle curves capacity diagram and efficiency curves. Oppau - Kling -
Item 66	1893/A74	15.5.43.	The use of a pre-chamber with the ring system.	Oppau - Leib - A.F.
Item 67	1893/A75	21.6.43.	An instrument for the determination of metal abrasion during lubrication.	Good reproducibility and resolving power. A relation is found between abrasion and the coeff.of friction. Oppau - Halder - A.F.
Item 68	1893/A76	21.6.43.	Examination of finned tubing 5th part.	Measurement of heat transfer on a piece of V-shaped pipe after 2 years of operation. Heat conducting calc. for outer shell. Influe of fins on wall temp-measurement. Oppau - Kling -
Item 69	1893/A77	15.7.43.	On ethers of higher cetane number.	Tables and discussion of C.N. and chemical constitution. Supplied compounds are included. Oppau - Roth - A. -

DOCUMENT NO.	CIOS REF NO	DATE.	TITLE	CONTENTS
FD 2866/46 Item 70	1893/A78	1. 7. 43.	Investigation of the critical state of a Multicomponent mixture.	Laboratory determination of the critical state of the residualgas from a high pressure polymerisationprocess using a butane butylene feed. Oppau - Kling - A -.
Item 71	1893/A80	5. 7. 43.	Testing of Barsinghaus and Oberkirchen high temp coke in the vehicle generator.	Oppau - Kohler -
Item 72	1893/A81	1. 7. 43.	The Kybol value and its estimation.	The improvement in the supercharge knock behaviour on addition of 40 % vol. of commercial diethylbenzene was investigated. Oppau -Witschakowski-Schuch - A -.
Item 73	1893/A82	29. 6. 43	Lubricant testing by means of wear measurement.	The effect on the rating of the working material is shown. Difference between continuous abrasion and wear by seizure. Oppau - Halder - A.F.
Item 74	1893/A83	20. 9. 43.	Liquid levelindication by an induction instrument.	A short survey of the known instruments and description of a new arrangement. Oppau - Schuch - A. -.
Item 75	1893/A84	15.10. 43	The suitability of briquette coke and Nut coke for vehicle generators.	Oppau - Kohler -
Item 76	1893/A85	10.10. 43	Testing of 3 cokes of the Ferdinand Nordbahn in vehicle generators.	Oppau - Kohler -
Item 77	1893/A86	7.12. 43	Testing of Rhine district normal grain and fine grain briquettes of different sizes in the Zeuch HB generator.	Oppau - Kohler -
Item 78	1893/A87	9.12. 43	Testing of Estonian Peat briquettes in the Zeuch HB generator.	Oppau - Kohler -
Item 79	1893/A88	14.12. 43	Testing of charcoal briquettes in the Zeuch H.B. generator.	Oppau - Kohler -
Item 80	1893/A89	3. 1. 44	Methanolas an Engine fuel.	Comprehensive examination e.g. latent heat V.P., calorific value and engine tests chief difficulty is pre-ignition. Oppau - Penzig - A -.
Item 81	1893/A90	1.12. 43	1. Halfyearly comparative tests on knock 2. Determination of Reid vapour pressure.	First co-op V.P. determinations on a larger scale. Mean variation of ± 0.05 x atm Oppau - Rheinpreusser - Singer and Dannefelser - A. -.
Item 82	1893/A91	1. 2. 44	The Falex oil tester in comparison with the four ball machine and the Almen - Wieland machine.	The Falex oil tester works under conditions milderthan those of the four ball machine but more sever than those of the Wieland machine. Three test methods are used. Oppau - Halder - A.F.
Item 83	1893/A92	10. 2. 44	Sulphur in the operation of vehicle gas generators.	Attempt to retain sulphur by using lime. General considerations. Oppau - Kohler -
Item 84	1893/A93	6. 3. 44	Nitroalkyls as fuels.	Tests in which mixture calorific value, weight and volume requirements, combustion temps and other quantities are measured. Anti-knock value and cetane number are also measured and discussed. Oppau - Penzig - A.F.

DOCUMENT NO. FD.2866/46	CIOS REF.NO.	DATE	TITLE	CONTENTS
Item 85	1893/A94	7. 3.44.	Test of Myslowitz coke in the Mercedes Benz generator.	Oppau - Kohler -
Item 86	1893/A95	20. 4.44.	The practical lubrication investigation of eleven aero-engine oils.	Five different test machines are used. Natural synthetic and oils with additives are tested. Oppau - Halder - A.F.
Item 87	1893/A96	12. 7.44.	Tests on mixtures of anthracite with (a) Bruxer coke, and (b) Blechhammer coke in the A.K. generator.	Oppau - Kohler -
Item 88	1893/A97	20. 7.44.	Investigation of the pump ability of motor oils.	10 different engine oils under conditions corresponding to the cold engine. Oppau - Halder - A.F.
Item 89	1893/A98	25. 7.44.	Comparative experiments with a briquette coke and a unit coke in the A.K. generator.	Oppau - Kohler -
Item 90	1893/A99	5. 8.44.	Observations on Wear and friction tests.	Relation between abrasion and seizure. The effect of lubr. additives in practice and experiment. Oppau - Halder - A.F.
Item 91	1893/A102	12.10.44.	Test of Waldenburg Non-caking coal in the A.K. generator.	Oppau - Kohler -
Item 92	1893/A104	22. 1.42.	The Oppau method of determining the octane number.	Application of the Appau method to aviation gasolines to be tested in the I.G. test engine. Oppau - Singer - A.F.
Item 93	1893/A106	31.10.41.	Test with a Bellay generator.	Improvements in cleansing the gas and in the generator. Oppau - Kohler -
FD.2867/46 Item 94	1893/B1.	24. 4.39.	Thermal calulations on Worth's proposal on the transportation of viscous oils.	250 t/hour have to be carried 3300 m. Oppau - Kling -
Item 95	1893/B2	1. 6.39.	Humidity measurements on steam condensers Nos.3 to 8 in Op 99a	Oppau - Kling -
Item 96	1893/B3	2. 6.39.	Supplement to B1	Oppau - Kling -
Item 97	1893/B4	30. 6.39.	Heat conduction calulation for two lagged containers, tubes No. 105 and 108b. Extract from Report No. 391.	Oppau - Kling -
Item 98	1893/B5	28. 7.39.	Measurement of heat loss of two muffle furnaces and decomposer in an Iron Powder Factory.	Oppau - Kling -
Item 99	1893/B6	15. 1.41.	Heat insulation materials made with fly-ash.	Roughly half of the kieselguher in asbestos kieselguher insulators was replaced by light ashes and the product compared with the original. Oppau - Schenker -
Item 100	1893/B7	18. 3.41.	Flow resistance of F - coal.	Calculation and table. Oppau - Kling -
FD.2867/46 Item 1	1893/B10	1. 7.41.	Heat insulation materials made with fly-ash.	Variations in the percentage of light flue ashes. Oppau - Schenker -
Item 2	1893/B11	1. 7.41.	Investigation of insulators made of slag wool and glass wool.	Oppau - Schenker -

DOCUMENT NO. FD.2867/46	CIOS REF.NO.	DATE	TITLE	CONTENTS
Item 3	1893/B12	19. 7.41.	Acceptance test of two high pressure pumps in Op 87 on 11th and 18th June 1941.	Oppau - Kling -
Item 4	1893/B13	10. 9.41.	The viscosity of water which contains gases.	Special apparatus set up. Viscosity measured with CO2 content. Oppau - Kling -
Item 5	1893/B14	27.10.41.	Test of slag wool dishes "Isola m.Z" (mZ - with cellulose) containing cellulose from Isola, Essen.	Tested at 200°C and at 145° and 150°. Oppau - Schenker -
Item 6	1893/B15	27.10.41.	Test of Rock Wool "Silan" of Grunzweig & Hartmann, Ludwigshafen.	The heat conductivity and the highest temps of operation were measured. Oppau - Schenker -
Item 7	1893/B17	16. 1.42.	Heat conductivity of ground flue ashes.	Oppau - Schenker -
Item 8	1893/B18	12. 1.42.	Investigation of the size analysis of flue ashes.	Investigation of the flue ashes collected behind the revolving filter and comparison with ground flue ashes. Oppau - Schenker -
Item 9	1893/B20	5. 2.42.	Measurement of the thermal conductivity and specific heat of oils.	Five synthetic oils and one mineral oil. Oppau - Kling - A -
Item 10	1893/B21	12. 3.42.	Measurement of heat transfer in automobile radiator with different coolants.	Water, Glycol-water solution and Diesel fuel were used as coolants. Oppau - Kling - A -
Item 11	1893/B23	10.11.42.	Measurement of thermal conductivity, sp. heat and heat transfer coeffs. of coolants.	The coolants were: Water, "G.A". glycol, Ethyl triglycol and diesel - oil. Oppau - De Vries - A.
Item 12	1893/B24	29. 3.43.	The behaviour of mineral fibres under vibrations.	
Item 13	1893/B27	12. 1.44.	Analysis of sieved flue ashes.	Oppau - Schenker -
Item 14	1893/B28	29. 7.43.	Compressibility of hydrocarbons	Heat conductivity of ashes of various size grading Content of silicic acid and iron exide as function of size grading. Oppau - Schenker -
Item 15	1893/B32	10.12.40.	Investigation of 2 distillate fuel oils as to suitability for engine use.	General discussion of the problems connected with the compressibilities of hydrocarbons under practical conditions. Oppau - Kling -A
Item 16	1893/B33	11.12.40.	Comparison of cetane numbers and the Jeutsch ignition test values for organic oxygen compounds (especially R - compounds).	The oils are a fuel oil from gas scrubbing and one from hydrogenation. Oppau - Wischakowski
Item 17	1893/B34	19. 2.41.	The effect of aromatic, naphthenic, ether and alcohol additions to a base gasoline on the super-chargeability.	Oppau - Roth - Knock limit curves were run according to the supercharge method and compared with reference fuel curves. Oppau - Witschakowski
Item 18	1893/B35	3. 3.41.	Temperature sensitivity and lead susceptibility of 60/40 blends of VT 705 with ET 100 and CV 2b-aromatics.	Interim report on data fully reported in ref. A.12, I.G. Oppau Report 454. Oppau - Witschakowski-

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2867/46 Item 19	1893/B36	8. 5. 41.	Ring sticking properties of L.45.	The synthetic lubricant was compared to Retring D in the BMW 132N single cylinder engine. Oppau - Lauer - A -
Item 20	1893/B37	25. 6.41.	Injection of a low viscosity fluid against a high back pressure.	The effect of back pressure on length of jet and atomisation and the effect of increased output. Influence of non return valve. Oppau - Leib - A -
Item 21	1893/B38	25. 7.41.	Ring sticking characteristics of fuel blends containing aromatics.	Purpose of elucidating the effect of aromatics on residue formation and ring sticking in aero-engines. Oppau - Lauer - A -
Item 22	1893/B39	27. 9.41.	Investigation in the Somua-Hesselman engine of brown-coal tar fuel oil obtained from the Kohlenveredelung and Schwelwerke Aktien gesellschaft.	Oppau - Witschokowski -A-
Item 23	1893/B40	5.11.41.	Measurement of Cetane numbers above 100.	A new reference fuel whose C.N. is estimated by extrapolating curves of blending C.N. Oppau - Kohler -A-
Item 24	1893/B41	15.12.41.	The effect of ethylene dibromide on the O.N.	The motor method O.N. with and without addition of V.T. 706, C.V_2.B, and UT702 were measured. Oppau - Singer - A -
Item 25	1893/B42	26. 1.42.	Investigation in the Somua-Hesselman Engine of a brown coal tar fuel oil obtained from the Hefrag Braunkchlen in Schwelkraftwerk Hessen Frankfurt - A.G. Wolfersheim.	
Item 26	1893/B43	5. 2.42.	Use of hydrogen in internal combustion engines.	Oppau - Witschakowski -A-
Item 27	1893/B44	23. 2.42.	Small supercharged engines developed in relation to the DVL supercharge method with the BMW132N single cylinder engine.	Oppau - Witschakowski -A- Mixture response curves were obtained for 6 fuels on the I.G. test engine, the Hirsh and I.G. Research Engine and compared with results on the BMW 132N. N.S.U. engine trials were also made. Oppau - Witschakowski-A.F.
Item 28	1893/B45	3. 3.42.	Use of methane in the automobile engine.	Use of methane as engine fuel compared with gasoline and "bottled gas". Oppau - Witschakowski-A-.
Item 29	1893/B46	26. 3.42.	Rating of fuels in the I.G. test engine.	Unspecified alterations in the Oppau method result in good correlation with the DVL supercharge method. Oppau - Singer - A. -.
Item 30	1893/B47	26. 4.42.	Investigation of two fuel oils D635 and D636 in the Somua-Hesselman engine.	Repetition of results given in short reports No. 311 and 315. Oppau - Witschakowski -A-.
Item 31	1893/B48	11. 5.42.	Starting properties of R -fuels.	Experiments with the I.G. test Diesel with 20° cold engine and the HWA engine. Oppau - Roth - A -.
Item 32	1893/B49	8. 6.42.	Small gasoline burner.	Simple manufacture from tin can and absorbing material gives a luminous flame to serve as candle subst. Oppau - Penzig - A -.

DOCUMENT NO. FD 2867/46	CIOS. REF. NO.	DATE	TITLE	CONTENTS
Item 33	1893/B50	11.7.42	Trial of Ruhr coke in the Daimler-Benz generator.	Oppau - Köhler .
Item 34	1893/B51	20.7.42	Testing a synthetic lubricant (K-10-r) in automobile engine.	Oppau-Lauer -.
Item 35	1893/B52	30.7.42	Investigation o f inflammability of wood charcoal by electric current.	To find the reason for the inflammability of some wood charcoal and to produce the inflammable form from the non-inflammable. Oppau-Gluck - A -.
Item 36	1893/B53	27.6.42	Vapour Pressure measurements on ether and hydrocarbons at low temperatures.	In connection with search for new starting fuels. Oppau-Bauer - A. -.
Item 37	1893/B54	15.7.42	Investigation on the corrosion of exhaust valve steels by lead and lead oxide	Immersion tests for up to 24 hours between 420° and 850°. Oppau-Bauer - A. -.
Item 38	1893/B55	7.8.42	Viscosity of some gasolines at low temps.	Use of Ubbelohde viscometer which reads down to - 70°C. Theoretical discussion of results and importance for operation at low temps. Oppau-Seidel - A. -.
Item 39	1893/B56	20.8.42	Development of a small gasoline burner.	For heating thebattery in the car. Oppau-Thiel -.
Item 40	1893/B57	17.8.42	Effect of various bromides on the O.N.	Extension of No.313 to ethylene dichloride, amyl bromide, bromoform, bromobenzene, bromonaphthalene. Oppau-Singer & Roth -A-.
Item 41	1893/B58	17.8.42	The thermal decomposition of T.E.L. in leaded gasoline.	Construction of special apparatus and experiments. Oppau-Schmacke
Item 42	1893/B59	19.8.42	The knocking of fuels in gasoline engines and its prevention.	Introductory training course for mineral oil chemists in the Luftwaffe. Oppau-Thiel -.
Item 43	1893/B60	20.8.42	Gasolines and lubricants and the methods of analysing them in the laboratory.	Introductory training course for mineral oil chemists in the Luftwaffe. Oppau-Bauer -.
Item 44	1893/B61	20.8.42	Engine lubrication and the properties required of lubricant.	" Oppau-Seidel -.
Item 45	1893/B62	20.8.42	Determination of the anti-knock value.	" Oppau-Wilhelmi -.
Item 46	1893/B63	22.8.42	Relation between fuel density, antiknock value and mixture response curves of supercharge engines.	Oppau-Wilhelmi - A. -.

DOCUMENT NO. FD2867/46	CIOS REF NO	DATE	TITLE	CONTENTS
Item 47	1893/B64	20 . 8. 42.	Gasoline and its manufacture.	Oppau - Gluck -
Item 48	1893/B65	31. 8. 42	Behaviour of dissolved water in gasoline fuels at low temp.	Water (ice) is prevented from depositing on cold pipes by adding about 1% ethyl alcohol. Oppau - Seidel -
Item 49	1893/B66	9. 9. 42	The low temp props of glysantin-w ater mixtures.	Equilibrium conditions of system-cooling curve and volume changes. Size of the crystals. Oppau - Roth - A -
Item 50	1893/B67	11. 9. 42	Detection of carbon tetrachloride in gasolines.	The quickest method involves the flame colouration in the presence of Cu. method described. Oppau - Wilhelmi - A -
Item 51	1893/B68	22. 9. 42	Checking the rate of flow of three rotating pistons gas meters by means of an adjustable diaphragm.	Oppau - Witschakowski - A -
Item 52	1893/B69	28. 9. 42	The behaviour of leaded gasolines in soldering lamps.	Finding the reason for the blocking of boring and orifice. Oppau - Penzig -
Item 53	1893/B70	2.10. 42	Dependence of starting properties on the C.N. in Diesel fuels.	Two test Diesels at - 25°, 12 fuels with C.N. from 23 to 80: 100 Revs/min. Oppau - Leib - A.F.
Item 54	1893/B71	30. 9. 42	Radiant materials for the prolonged warming of apparatus.	Necessity of keeping certain parts warm is discussed The most suitable heating agent is found to be coke breez e briquetted with other components. Oppau - Penzig - A -
Item 55	1893/B72	4.11. 42	Investigation of the sensitivity of "cottonid and "sack" fuel containers to water and organic solvents	To find a satisfactory substitute for gasoline for quick release experiments. Oppau - Grunwald - A -
Item 56	1893/B73	23.11. 42	The corrosion of various metals by liquid sodium.	To test whether sodium could be used as a jacket coolant. Oppau - Pirscher - A -
Item 57	1893/B74	23.11. 42	Behaviour of lubricants at low temps.	The following test apparatus were employed:- the plain bearing apparatus for measuring starting torque, the Schwaiger viscometer; the I.G. starting torque apparatus; and the I.G. cold chamber. Oppau - Halder - A-
Item 58	1893/B75	23.11. 42	Determination of octane number by delay period method on I.G. Test Diesel engine.	Oppau - Witakowski - A.-.
Item 59	1893/B76	14. 1. 43	O.N. determination of gaseous fuels.	A standard method is suggested. Oppau - Singer - A -
Item 60	1893/B77	18. 1. 43	Tests with an accumulator heater in the use of automobile fuels containing gasoline.	Oppau - Finger -
Item 61	1893/B78	5. 2. 43	An electromagnetic counter for rapid damped electric impulses.	Designed for direct rapid counting of discharges from condensers. Oppau - Schuch - A —

DOCUMENT NO. FD 2867/46	CIOS REF NO	DATE.	TITLE	CONTENTS
Item 62	1893/B79	23. 2. 43.	The stability of oil films on cylinder running faces.	Dipping and draining - for 24 hours - experiments at 80°C with aero-oils. Oppau - Halder - A. -.
Item 63	1893/B80	8. 3. 43	Production and use of colloidal lead in gasoline.	Oppau - Schuch - A. -.
Item 64	1893/B81	23. 3. 43	Experiments on the draining of lubricant from main bearings of the DB605.	Similar to previous experiments. Rough and smooth surfaces were compared. Oppau - Penzig - A -.
Item 65	1893/B82	26. 3. 43	Manufacture of the incandescent material TP12.	The components are coke, brick bats, cinder, waste sulphite liquor sol. and nitre. Oppau - Penzig - A -
Item 66	1893/B83	30. 3. 43	The suitability of Di-isopropyl ether as an aviation fuel.	Tests on mixtures of ET 100, AT. 244 and di-isopropyl ether with DHD gasoline. Oppau - Witschakowski and Roth - A -.
Item 67	1893/B84	20. 7. 43	The regularity of the commencement of sparking.	A special oscillograph circuit was described in detail. Oppau - Schuch - A -.
Item 68	1893/B85	2. 7. 43	Test of a protective coating against acid for use with accumulator heaters.	A test board was exposed to accum. acid and the heat applied under practical conditions. Oppau - Leib - A -
Item 69	1893/B86	13. 7. 43	Testing the accum. warming lamp " Dorfel".	Experiments were carried out with various kinds of automotive gasoline. Oppau - Leib - A -.
Item 70	1893/B87	17. 7. 43	Improvements in the lubricating oil system of a B.M.W. 132 single cylinder engine.	Reduction of the rate of oil circulation. Oppau - Lauer - A -.
Item 71	1893/B88	20. 8. 43	Investigations on the corrosion Preventive H01/136 Na	Tests were made with regard to corrosion, behaviour in the engine and effect on the fuel. Oppau - Lauer - A.F.
Item 72	1893/B89	5. 8. 43	Oppanol as addition agent in Winter Motor oils.	Effect on viscosity temp. curve as well as on carbon deposits and rate of oil consumption. Oppau - Halder - A.F.
Item 73	1893/B91	13. 9. 43	An arrangement for measurement of Temp.	Red-sensitive photocells were used to measure temperatures in the combust. chamber. Oppau - Schuch - A -
Item 74	1893/B92	19.10. 43	The Widmaier iodometric method for the rapid determination of T.E.L.	Only the results are given. Oppau - Nitschmann - A. -.
Item 75	1893/B93	19.10. 43	Experiments with Rudolph Nut coal in the Imbert generator.	Oppau - Kohler -
Item 76	1893/B94	19.10. 43	Experiments with Upper Silesian (Karsten Zentrum) generator.	Bituminous coal Nut I and Nut II in the Imbert Generators Oppau - Kohler - -
Item 77	1893/B95	20.10. 43	Test of a corrosion preventative for fuel tanks.	Tests with regard to corrosion, residue formation, effect on properties of fuel, behaviour in the engine. Oppau - Lauer & Roth - A.F.
Item 78	1893/B96	21.10. 43	The suitability of Pinacoline as an anti-knock component in aviation gasolines.	Oppau - Witschakowski and Worliczek - A. -

DOCUMENT NO FD 2867/46	CIOS REF NO	DATE	TITLE	CONTENTS
Item 79	1893/B97	2 6.11.43	The suitability of various chemicals for causing engine trouble.	Quantities were not to exceed 0.1%. No suitable substance was found. Oppau - Lauer - A -
Item 80	1893/B98	21. 12.43	Report on a 10-hour test run on a B.M.W. 132 single cylinder supercharged engine running on leaded iso-octane.	Oppau -Witschakowski - A -
Item 81	1893/B99	5. 1.44	Ignition tests in a chamber with a stream of fuel-air mixture.	Oppau - Worliczek - A -.
Item 82	1893/B101	25. 1.44	Investigation into the improvement of Diesel oils by increasing their ignitability.	Groups studied are alkyl nitrates and nitrites, aromatic nitro-compounds, peroxides, diazo compounds and metallo-organic compounds. Oppau - Drexler -Kohler,Lang -A-
Item 83	1893/B102	11.2.44.	Supercharge testing of aviation fuels under main engine conditions.	Four fuels were tested and found to leave room for considerable output increase of the German engines. Oppau - Witschakowski-A.F.
Item 84	1893/B103	15.2.44.	Testing of Mixtures of High-Ash-Content "Brux Coke" with Blechhammer Coke in Mercedes-Benz generator.	Oppau - Kohler —
Item 85	1893/B104	22.2.44.	Various fuel components and their most important properties.	Tables giving properties of compound which are used or seem suitable as fuel components. Oppau - Worliczek - A -
Item 86	1893/B105	3.4.44.	The A.F.B. method of investigating aviation fuels of octane numbers higher than 87 on the CFR engine.	Oppau - Witschakowski A -
Item 87	1893/B106	6.5.44.	Testing of briquettes made from fir cones.	Oppau - Kohler —
Item 88	1893/B107	20.5.44.	Ignition test on the BMW single tube combustion chamber.	A flame is obtained from a special fuel ignited by a glow of light. Detailed description and drawings. Oppau - Penzig - A -
Item 89	1893/B108	23.5.44.	Knock behaviour of glycols and glycol ethers.	Modification of the I. G. test engine for substances of low cal. value. The ignitability was also determined. Oppau - Worliczek - A -
Item 90	1893/B109	6.6.44.	Ignition test with gasoline-N_2O- air mixture.	Investigation of flame velocities in the presence of N_2O as a function of mixture ratio, sparking plug, tube diameter. Oppau - Penzig - A -
Item 91	1893/B110	15.6.44.	The conversion of a 4 - cylinder gas engine in oppau - 12 water-works.	The gas engines are to be converted to liquid gas operation (propane mixture) from power gas operation. Oppau - Kirsch - A -

DOCUMENT NO	CIOS REF. NO.	DATE	TITLE	CONTENTS.
FD 2867/46 Item 92	1893/B116	15.10.44.	The cetane number of multivalent Thioethers and polysulphides.	Engine tests for the detection of nozzle troubles were also made. Oppau - Roth - A -
Item 93	1893/B117	2.11.44.	Tests on heavy fuels for use in I.C. turbines.	Oppau - Witschakowski - A -
Item 94	1893/B118	4.11.44.	Test of gas cokes from Dresden-Reick and Posen in the Mercedes Benz and Stinnes LKW generators.	Oppau - Kohler -
Item 95	1893/B119	20.2.45.	Gasoline-water emulsions.	An emulsifier FM18 is described, and the properties of the emulsion quoted. Oppau - Finger - A.F.
Item 96	1893/C1	29.10.25. and 10.8.25.	Monobenzylaniline as an antiknock agent and The antiknock agent MOTYL.	Oppau - Wilke - -
Item 97	1893/C2	27.3.26.	Combustion of explosive gases and vapours in a bomb.	An indicator and thermocouple were fitted to a 6 litre bomb. Oppau - Wilke - -
Item 98	1893/C3	11.8.26.	On Motalin.	Contains Iron carbonyl and is recommended with evidence as an antiknock agent. The velocity of evap. of iron carbonyl was also measured. Oppau - Wilke - -
Item 99	1893/C4	13.11.26.	Influence of compresion ratio on operation with various fuels.	Experiments carried out with the Dentz gas machine type MO126 fitted with a carburetter. Oppau - Boesler - -
Item 100	1893/C5	28.6.26.	Investigations on the Knock Measuring Apparatus.	The apparatus is an imitation of the Midgley and T.A. Boyd's "bouncing pin". Oppau - Wahl - -
FD 2868/46 Item 1.	1893/C6	20.11.25. - 7.1.26.	Report on a continuous running test on the Benz Engine Gr 3-2 10/30 PS.	Investigation into the behaviour of various sparking plugs in operation with Motalin. Oppau - Wilke - -
Item 2	1893/C7	14.10.26.	Current Report on Tests with gas on the 10/30 Benz engine.	Oppau - Wahl - -
Item 3	1893/C8	12.11.25.	Floculation trouble in operation with MOTYL.	Oppau - Wilke - -
Item 4	1893/C9	14.1.27.	Investigation of Heat Transfer on the Schalen regenerator I.	Oppau - Wilke - -

DOCUMENT NO FD.2868/46	CIOS REF. NO.	DATE	TITLE	CONTENTS.
Item 5	1893/C10	4.2.27	Bursting pressure of lead safety discs.	Dependant on duration, diameter thickness. Oppau - Wahl - -
Item 6	1893/C11	23.6.26.	Experiments with Methanol on the test bench of Daimler Benz Co.	For use as a fuel to prevent the high temperatures in M836 and thus increase the power. Oppau - Wahl - -
Item 7	1893/C12	20.4.27.	Compression ratio and engine power.	Theoretical considerations. Oppau - Bossler - -
Item 8	1893/C13	10.5.27.	Investigation of the heat transfer in regenerators.	Oppau - Wilke - -
Item 9	1893/C14	23.3.27.	Continuous test No.1 from 30.11.26 until 8.12.26 on the 6/25 H.P. "Stellarn" No.73 without additive.	Adler-engine. Fuel: Oppau-Wilke - -
Item 10	1893/C14a	23.3.27.	Continuous test No.2 from 10.12.26 until 20.12.26 on the 6/25 H.P. "Stellin" No.73 plus 0.15% Fe (co) 5 (motalin)	Adler-engine. Fuel: Oppau-Wilke - -
Item 11	1893/C15	25.3.25. & 18.3.27.	Literature on water injection and compression.	Oppau - - -
Item 12	1893/C16	7.6.27.	Tests with glass insulators in the explosion chamber of an automobile engine.	Preliminary favourable results. Oppau - Wilke /Penzig - -
Item 13	1893/C17	10.6.27.	Acetylene Production.	Calculation of the heat changes involved in the production of acetylene from coal gas. Oppau Wilke - -
Item 14	1893/C18	8.6.27.	Additions of oil to motalin.	For lubrication of valves. Oppau - Penzig - -
Item 15	1893/C19	1.7.27.	Experiments with ethyl in a Maybach engine.	Oppau - Schwenk - -
Item 16	1893/C20	9.8.27.	Experiments with glass as sparking plug insulator.	Oppau - Penzig - -
Item 17	1893/C21	1.8.27.	Experiments with S-Z plugs (glass works).	Oppau - Penzig - -
Item 18	1893/C22	21.9.27.	Consumption trials with heavy fuel and gas oil in a W.D. tractor.	Oppau - Wilke - -
Item 19	1893/C23	24.9.27.	Reduction of iron carbonyl percentage in special Motalin.	Replacing the Fe (co) 5 by methanol. Oppau - Muller - -
Item 20	1893/C24	26.9.27.	Note on W.T.A. Report No.691.	Varying percentage of Xylidine addition to baku gasoline. Oppau - Muller A -
Item 21	1893/C25	24.9.27.	Determination of anti-knock value of various anti-knock agents.	Carried out in 10/30 Benz engine II for Benzene Xylodine alchohols. Iron carbonyl used as reference substance. Oppau - Wilke/Muller - -
Item 22	1893/C26	10.11.27.	Experiments with the tractor, fuel "Energin" of the "Deutsch" Gasoline Co.	Detailed analysis and consumption runs. Oppau - Wilke - -

DOCUMENT NO. FD.2868/46	CIOS REF.NO.	DATE	TITLE	CONTENTS
Item 23	1893/C27	4.10.27.	The anti-knock values of benzene for various gasolines and various ignition timing.	Oppau Muller A-
Item 24	1893/C28	16.11.27.	Indicator diagram on the 10/30 H.P. Benz-NI	The Maihak rapid indicator was used. The effect of iron carbonyl and of the speed rotation. Oppau Wahl/Wilke --
Item 25	1893/C29	23.11.27.	Effect on combustion of additions of benzene.	Influence on pressure diagram. Benzene and iron carbonyl. Oppau Wahl --
Item 26	1893/C30	26.11.27.	A new method of measuring knock.	A rapid method is based on observing the mean maximum pressure of 5-6 runs. Oppau Wahl --
Item 27	1893/C31	27.12.27.	Continuous tests on the Benz I with comparative determination of the oil carbon deposits using Leuna gasoline 144 and Dapolin 143.	Oppau Wilke --
Item 28	1893/C32	13. 3.28.	Experiments with synthetic lubricant.	Tested in the roller and the Benz engine. Oppau Penzig --
Item 29	1893/C33	11. 2.28.	Water shut-off for tanks.	Oppau Penzig/Wilke --
Item 30	1893/C33a	9. 7.28.	Construction and investigation of new Heat Exchangers (Plate regenerators).	
Item 31	1893/C34	11. 2.29.	Starting tests with the gasoline samples R518 R519 R521 and R523.	Bench tests with cold and warm engines, and cold car. Evaporation experiments and one continuous experiment. Oppau-Wilke/Penzig - -
Item 32	1893/C35	25. 2.29.	Experiments with tube regenerators.	To investigate the mechanism of the heat transfer. Oppau-Wilke - -
Item 33	1893/C36	20. 4.29.	Experiments with addition of oil to motalin.	For the lubrication of the valves. Oppau-Penzig - -
Item 34	1893/C37	5. 6.29.	Experiments with windscreen-wiper liquids.	Oppau - - -
Item 35	1893/C38	21. 6.29.	Experiments on residue formation with various coal gasolines.	(Engine and evaporation exps). Oppau -Penzig/Wilke - -
Item 36	1893/C39	29. 7.29.	Road tests with synthetic rubber tyres.	16000 km in a Mercedes car checked by weighing. Oppau-Penzig/Wilke - -
Item 37	1893/C40	21. 8.29.	Investigation of acceleration rate on a Ford car with various fuels.	Synthetic gasoline was compared with Stellin and Dapolin. Oppau-Beubner/Wilke - -
Item 38	1893/C41	15.11.29.	Tables on the polytropic compression in combustion engines with appendix: table of max. combustion pressure.	Oppau-Schwenk/Wilke - -
Item 39	1893/C42	29.11.29	Experiments with Methanol as an additive in gasoline.	Torque, power, consumption and heat prod. are measured as a function of fuel-air mixture ratio. Oppau-Rabes - -
Item 40	1893/C43	18.11.29.	Sparking plug tests (Stemens-Schuckert)	Improvement of the insulating body, Oppau-Penzig - -
Item 41	1893/C44	14.12.29.	Experiments on formation of residues, with various gasolines.	Continuation of report 166. Oppau-Penzig - -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
D 2868/46 Item 42	1893/C45	15.11.29.	Experiments with Albers sparking plugs.	Oppau - Penzig - -
Item 43	1893/C46	13. 1.30.	Experiments with additive A.	Added to gasoline. Power and consumption are measured with variable fuel-air ration, other conditions being constant. Oppau - Raber/Wilke - -
Item 44	1893/C47	20. 1.30.	Experiments with sparking plugs in Motalin operation. (Synopsis).	Oppau - Penzig - -
Item 45	1893/C48	12. 2.30.	Experiments with engine oils of same viscos. and different origin.	Oil pressure, temperature; output; and consumption of oil were observed. Oppau - Penzig - -
" "	" (attached)	8. 2.30.	Comparative experiments with synthetic and natural lubricant.	The formation of oil coke and wear of piston rings as well as consumption of oil were measured. Oppau - Penzig - -
em 46	1893/C49	19. 2.30.	Fuel tests with the Horch 6-cylinder car.	Oppau - Wilke - -
em 47	1893/C50	17. 2.30.	Investigation of pure hydrocarbons to derive a fixed point on the knock scale.	Methyl cyclohexane was found to be suitable. Oppau - Rabes - -
em 48	1893/C51	25. 2.30.	Comparison of the American knock-scale with ours.	Oppau - Wilke - -
em 49	1893/C52	14.12.27.	Road tests with Leuna gasoline.	Oppau - Wilke - -
em 50	1893/C53	21. 2.30.	Experiments with sparking plugs.	Zirconium oxide is used as insulator. Oppau - Penzig/Wilke - -
em 51	1893/C54	7. 3.30.	Experiments with sparking plugs.	Pure corundum is used as insulator. Oppau - Penzig/Wilke - -
em 52	1893/C55	15. 3.30.	Experiments with sparking plugs.	Further experiments with corundum. Oppau - Penzig - -
em 53	1893/C56	11. 3.30.	Experiments on the formation of residues in various gasolines.	Various mixtures of mineral coal gasoline and synthetic gasoline were used. Oppau - Penzig - -
em 54	1893/C57	29.4.30.	"	Continuation of exp. in report 190. Oppau - Penzig - -
em 55	1893/C58	20. 5.30.	Experiments on aromatised gasoline and Aral.	Road tests with 8/40 H.P. Opel and test stand trial with a Magirus engine. Oppau - Bentner - -
em 56	1893/C59	11. 6.30.	Temperature conditions in the exhaust pipe of carburetter engines, with special reference to the installation of contact substances.	Oppau - Rabes - -.
em 57	1893/C60	17. 7.30.	Experiments with upper cylinder lubricant.	To try and obtain numerical valves for the effect of upper cylinder lubricant . Oppau - Penzig - -
em 58	1893/C61	24. 7.30.	Experiments with the fuel improver "Orlisso".	To test the claim made for the effect of the Sub. on combustion, anti-knock valve and output. Oppau - Rabes - -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2868/46 Item 59	1893/C62	17. 7.30.	Test of the compressed air plants I and II in Op.1 on the 21st and 22nd May '30.	Running-in and taking of indicator diagrams. Measuring consumption of steam and output of compressed air. Oppau-Lehmann - -.
Item 60	1893/C63	11. 9.30.	Tests on the use of Isobutyl crude oil in the carburetter engine.	Oppau-Penzig - -.
Item 61	1893/C64	25. 9.30.	Tests with Preparation 1464 and with Adacin.	To test the claim made for the effect of the substance on the engine conditions. Oppau-Rabes - -.
Item 62	1893/C65	25. 9.30.	Tests with "Surplus" tablets.	To test the claim made for the effect of the substance on the engine conditions. Oppau-Rabes - -.
Item 63	1893/C66	5.11.30.	Tests on replacing additive A in Motalin by xylidine.	The equivalent quantity of xylidine was found in knock experiments. Oppau-Penzig/Wilke A -.
Item 64	1893/C67	30.10.30.	Experiments with various Diesel oil samples.	The following were observed: starting, power and consumption under various loads, type of combustion and formation of coke at the nozzle. Oppau-Penzig - -.
Item 65	1893/C68	11.11.30.	Experiments with various denaturants.	Collidin A and a mixture of piccolin II crude and collidin B. Oppau-Penzig - -.
Item 66	1893/C69	23.12.30.	Tests with various Diesel fuel samples.	Same tests as in Report 204. Oppau-Penzig - -
Item 67	1893/C70	15.10.31.	Test of various Derop gasolines from Vb. Stuttgart of the Deutsche gasoline A.G.	Boiling characteristics and anti-knock value were observed in order to obtain an idea of the uniformity of the Derop gasolines. Oppau-Beutner - -.
Item 68	1893/C71	15. 1.32.	Starting tests with various fuels.	Detailed investigation of various factors. Oppau-Penzig - -.
Item 69	1893/C72	30.10.31.	Tests on residue formation with various tractor fuels.	For the selection of those with little tendency to form residues. Oppau-Penzig - -.
Item 70	1893/C73	17.11.32.	Investigation of gasoline-alcohol mixtures.	Effects of ethyl and methyl alcohol on engine data. Oppau-Ruhrberg - -.
Item 71	1893/C74	9. 1.35.	Report on the methanol content of exhaust gases from an engine using a 4-component mixture. (Benzol, ethanol, methanol-gasoline).	The quantity of unburnt methanol in the exhaust was to be determined at full load and at no-load. Oppau-Wilke - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2868/46 Item 72	1893/C75	13.9.32	Experiments with two component mixture.	Test stand and road experiments to measure the consumption and output. Oppau-Penzig - -.
Item 73	1893/C76	7.11.32	Report on cleaning of radiator.	Detailed discussion and investigation. Oppau-Wilke - -.
Item 74	1893/C77	10. 1.33	Exps. with diacetyl as an additive to gas oil and fuel oil.	Full load tests on output, consumption and character of combustion. Oppau-Wilke - -.
Item 75	1893/C78	10. 4.33	Fuel (Hyd Me 139 & 140) as a Diesel oil.	Tested in the engine. Oppau-Penzig - -.
Item 76	1893/C79	14. 9.33	Comparative investigation on a tubular regenerator with pure streamline flow and with turbulent flow.	Oppau-Wilke - -.
Item 77	1893/C80	13. 3.34	Test of fuels 1933 O.N; specific gravity, boiling characteristics; alcohol addition for gasolines and mixtures.	Oppau-Wilke - -.
Item 78	1893/C81	15. 1.35	Methanol tests with the Deutz gas engine D III.	Oppau-Gaupp - -.
Item 79	1893/C82	20.12.34	Measuring the vapour pressure of gasolines.	By meansof an apparatus similar to Reid's V.P. bomb. Oppau-Wilke - -.
Item 80	1893/C83	7. 2.35	Test of fuels 1934.	This includes aviation gasolines. Oppau-Wilke - -.
Item 81	1893/C84	21. 2.35	Aviation gasoline No.663.	Comparison with stanavo in Sp.Gr.boiling characteristics, starting characteristics and anti-knock value. Oppau-Penzig - -.
Item 82	1893/C85	22. 2.35	Experiments on the effect of pour point depressants on Diesel oil.	Oppau-Penzig A.F.
Item 83	1893/C86	29. 3.35	German fuel consumption in the operation of carburetter and Diesel engines 1933 and 34.	Subdivided into gasoline and gas oil, light fuels and heavy fuels. Oppau-Wilke - -.
Item 84	1893/C87	26. 9.27	Experiments with nickel and cobalt carbonyl as anti-knock agents.	Oppau-Wilke - -.
Item 85	1893/C87	28. 6.26	The effect of operation with motalin on the lubricant.	Taking samples from used oil and making a special exp.run. Oppau-Wilke/Wahl - -.
Item 86	1893/C87a	15.11.26	Experiments with alcohol-gasoline mixtures.	Oppau-Boesler - -.
Item 87	1893/C88	3. 3.28	An analysis of Motalin sales.	Oppau-Wilke - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2868/46 Item 88	1893/C89	13.8.28	The Motalin additive "Stabilisator II" (Dr.Steigerwald,)(Ammonia Lab:)	For the purpose of making Motalin stable to light. Oppau-Penzig - -.
Item 89	1893/C90	31. 8.28	Temperature of cooling water in operation with Motalin.	Test carried out with a 416 H.P. Opel, to show that the engine does not get hotter than with other fuels. Oppau-Penzig - -.
Item 90	1893/C91	27. 9.28	Experiments on carburettor adjustment.	The variation of the output was observed as well as temp.of cooling water and exhaust. Oppau-Penzig - -.
Item 91	1894/C92	17.12.28	Influencing the temperature by the addition of Mono Methyl Aniline.	Temperature of mixture, cooling water, exhaust and sparking plugs was measured, also the tor ue. No effec was found. Oppau-Penzig - - .
Item 92	1893/C93	5.12.28	Tests with sparking plugs in Motalin operation.	To find the most suitable insulating material. Oppau-Penzig - -.
Item 93	1893/C94	24. 7.29		The anti-knock value of standard gasoline. Oppau - - -.
Item 94	1893/C95	14. 3.29	Continuous run with Leuna gasoline No.183 and 0.05% Fe(co) 5 and 2% A in the 6/25 Adler-engine.	To test whether additive A causes valve blocking or other trouble. Oppau-Wilke - -.
Item 95	1893/C96	26. 4.29	Valve sticking test with coal gasoline No.187 from tank waggon Koln 539444 in the Motosacoche engine.	To test whether this fuel causes sticking of the valves. Oppau-Penzig - -.
Item 96	1893/C97	2. 8.29	Continuous Exp. with Ethyl gasoline in the 4/16 H.P.Opel engine.	To compare engine conditions and sparking plug behaviour in particular with the behaviour with Motalin. Oppau-Penzig/Lucas - -.
Item 97	1893/C98	28.10.29	Continuous Exps.with and without additive A.	To find out whether trouble of any kind is caused by the additive. Oppau-Penzig - -.
Item 98	1893/C99	25.10.33	Experiments with Hydrogenated lignite middle oil from Leuna.	Operation compared with two commercial Diesel fuels. Oppau-Wilke - -.
Item 99	1893/C100	10. 2.34	Report on Octane number.	Definition, explanation. Oppau-Wilke/Singer - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2868/46 Item 100	1893/C101	28. 3.34.	Development of the methods of determining the anti-knock values of carburetter fuels.	Oppau-Wilke - -.
FD 2869/46 Item 1	1893/C102	27.11.34.	The aviation gasoline No. 498.	Sp.gr; boiling characteristics; glass dish test, starting properties, anti-knock value and ways of improving it; also V.P. Oppau-Penzig/Wilke - -.
Item 2	1893/C103	29. 6.34.	Anti-knock value and test methods.	The throttle-, Research- and engine methods. Oppau-Wilke - -.
Item 3	1893/C104	15. 3.35.	The operation of carburetter engines by injection of liquid butane into the engine suction.	Oppau-Wilke - -.
Item 4	1893/C105	5. 4.35.	Operation of a Hanomag engine by injection of methanol into the working cylinder.	Oppau-Wilke - -.
Item 5	1893/D1	15. 1.43.	The effect of gasoline vapour on the pressure ratio of an aero-engine blower and the temps. in the boost line.	The effects are calculated and applied to a practical case. (one of nine reports). 1942 Year Book of German Avn. Research. Hössel - A -.
Item 6	1893/D2	15. 3.43.	(1) The adsorption of dissolved dipolar molecules on solid metals. (2) Laboratory test procedures for the ageing of lubricating oil. (3) Friction and wear tests of lubricating oils in engines.	(Three of ten Reports) 1942 Year Book of German Avn. Research. Dunken/Halle - A.F. Mayer-Bugström - A. -. Krienke A. -.
Item 7	1893/D3	15.10.42.	Examination of lab. methods of determining lead in fuels.	The T.E.L. content of the fuels was tested according to 9 methods. Accuracy and time are compared. (One of eight Reports). 1942 Year Book of German Avn. Research. Widmaier - A. -.
Item 8	1893/D4	1.12.43.	Control of the Piston temp. in endurance tests.	Importance of accurate control and sources of error are discussed. Description of the DVL method. (one of eight Reports). 1942 Year Book of German Avn. Research. Glaser A.-. (six reports-).
Item 9	1893/D5			
Item 10	1893/D6	15.12.44.	The photoelectric meas. of the pollution of lubricating oil.	Curves are given for the effect of various engine conditions. ZWB Techn. Reports Vol.11, No.12, 1944 - Kluth - A. -.
" "	"	"	The exhaust thrust of aero-engines.	A new rapid method for determining the value of an arbitrary factor determining the thrust which gives the optimum auxiliary power. (Two of eleven Reports) ZWB Techn. Reports Vol. 11, No. 12, 1944. Baugerter - A.-.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2869/46 Item 11	1893/E.1	1.8.42	Effect of the lead content of fuels on the constructienal parts of aero-engines.	Damage to exhaust valve and piston is compared for lead additives of 0.12% and 0.09%. D.V.L - Denkmeier/Kerwien - A -.
Item 12	1893/E.2	26.10.42	part II of E.1.	Same experiments carried out with a different engine - DVL - Denkmeier/Kerwien - A -.
Item 13	1893/E.3.	1. 8.42	Description of the Russian aero-engines "AM-35" and "AM-38"	Constructional characteristics pointed out: report on examinatic of the working. Materials and altitude test stand experiments DVL - Denkmeier/Gross - A -.
Item 14	1893/E.4	2 0.10.42	Measurement of piston temperature	The method uses thermo-couples according to the counter-current method. DVL - Glaser - A -.
Item 15	1893/E.5	25. 3.43	Experiments with a four-ball test apparatus.	Examining the usefulness and the range of application. The seizing times and wear of a pure mineral oil, a compounded oil and mineral oil plus 5 addition were measured. DVL - Krienke - A.F.
Item 16	1893/E.6	10. 7.43	Measurement of co-efficient of friction with P.T.R. apparatus	By changing the original experimental conditions, the range of variation could be considerably reduced. A number of substances were then tested, two at elevated temperatures. DVL - Eckardt/ Krienke - A.F.
Item 17	1893/E.7	28. 7.43	Sulphur content and lubricant suitability of aero-engine oils.	DVL - Philippovich - -.
Item 18	1893/E.8	28. 8.43	The DVL fuel test stand	Thorough description of the stand which tests the knock properties of fuels according to the DVL super-charge test method DVL - Seeber-A-.
Item 19	1893/F.1 PPS.1 - 9	1.10.40	The use of the dualfuel system in the Diesel engine.	Bench tests with a four cylinder magirus pre-chamber Diesel engine. gas oil and butane or town gas were used. German Motor Vehicle Research - Pothoff - A -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD.2869/46 Item 19	PPS. 9 - 25	1.10.40.	Liquid and producer gas operation of the Diesel engine	Summary of present experience and research. German Motor Vehicle Research - Rixmann - A -
	PPS.25 - 39		Efficiency and combustion in the Diesel engine	Discussion of the compression ignition engine cycle. Causes of loss of efficiency. German Motor Vehicle Research - List - A -
	PPS.39 - 43		Supercharging of transport Diesel engines	Attemptsto increase the peak performance. G.M.V.R. Ernst - A -
	PPS.43 - 61		Mixture formation and combustion in the bomb. Methods of control of combustion in injection engines	The uses of the bomb in examining mixture formation, ignition delay, pos. of initial combustion rel. to type of spray; wall effects etc. are discussed and examined. German Motor Vehicle Research-Blume- A -
	PPS.61 - 95		Losses in mixture formation and combustion in an engine and observations on the possible speeds of engines.	Mechanical friction losses, losses due to air movements, Excessive times of combustion in high speed engines independence on piston speed and stroke. German Motor Vehicle Research - Ullmann - A -
	PPS.95 -113		Further knowledge on jet formation and disintegration	Sprays formed in a bomb and recorded by spark photographs. - German Motor Vehicle Research - A - . - Oschatz.
	PPS.113-119		Ignition delay measurement and fuel evaluation	German Motor Vehicle Research - Ernst -A -
	PPS.119-122		The Diesel Engine with side valves	German Motor Vehicle Research - Ernst -A -
	1893/F2			
Item 20				
	PPS.1 - 5	20.5.41.	Tests and aims of the working group.	Introduction to the papers which follow - German Power Transport Research - Föttinger -A -
	PPS.5 -17		Test results on a small two-stroke gasoline engine, with unsymmetrical timing.	Changes in crank case and cylinder scavenge time were examined over a range of speeds, leads and mixture strengths. German Power Transport Research - Zeman - A -
	PPS.17-25		New Piezo - Quartz instrument of high natural frequency.	For the study of detonating combustion. German Power Transport Research - Schmidt - A -
	PPS.25-35		Relation between charging changes and performance	Factors involved in scavenging efficiency are defined and discussed. Methods of determining scavenging efficiency and performance are discussed. - German Power Transport Research - Niedermayer - A -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2869/46				
	PRS. 35 - 49	20.5.41	Quantitative evaluation of scavenge flow phenomena by means of slow-motion films.	German Power Transport Research - Wille - A -.
	PPS 49 - 57	"	Tests on Dust Filters.	Factors determining officiency of filtration. German Power Transport Research - Schmidt - A -.
	PPS 57 - 65	"	Stand	
Item 21.	1893/F.3	1942	Trials and results using an apparatus for research on the scavenging process in two stroke engines.	The apparatus is based on a stroboscopic method. Development of the apparatus and results referring specially to the influence of scavenging air pressure and rotational speed. German Power Transport Research - Kluge/Spannhake - A -.
Item 22	1893/F.5	25.3.44	The temperature behaviour of passenger car tyres as a function of speed and tyre pressure	German Power Transport Research - Zoeppritz.
Item 2 3	1893/F.6	29.5.35	Investigation for the purpose of elucidating the problems of piston and piston rings. Development and construction of an instrument measuring piston temperatures - first part.	Measuring the temperatures in high-speed engines by means of thermo-couples. Instruments constructed specifically for the watercoolod DVL monocylinder test stand with BMW 1V-cylinder and the Horbot monocylinder test-stand. ZWB - Schunnemann - -
Item 24	1893/F.7	1.11.35	Influence of the operating conditions of a single cylinder engine on the behaviour of the lubricant.	Running time before ring-sticking (or something corresponding to it) occurs, was observed as a function of the operating conditions. Z.W.B. - Wenzel - -
Item 25	1893/F.8	29.12.36.	Testing of various lubricants of definite origin in the single cylinder engine	To find out how much the various properties of a lubricant relative to the engine depend on the origin of the lubricant. Z.W.B. - Wenzel - -
Item 26	1893/F.9	1. 8.37	As F.6 (Part II)	Z.W.B. - Schunemann/Birle - -
Item 27	1839/F.10	31. 5.37	Development of a fuel test method. Knocking of fuels in aero-engine single cylinders.	Development of a thermocouple for the combustion chamber, built into the plug. A new knock test method based on measuring permissible boost pressure. DVL - Dehn - -
Item 28	1893/F.11	18.12.39	Knock measurement with the DVL method of pressure accel-eration.	Theoretical basis of method given as well as experimental application. DVL - Seeber/Lichtenberg. A -.

DOCUMENT NO. FD 2869/46	CIOS REF. NO.	DATE	TITLE	CONTENTS
Item 29	1893/F.12	29.8.40	The Evaluation of lubricating ability by engine tests.	Z.W.B. Krienko - A.F.
Item 30	1893/F.13	18.4.41	Invest. of Lab. methods for determination of lead content of fuels	F.K.F.S Widmaier - A.F.
Item 31	1893/F.14	19.11.41	Detection and estimation of ageing products of T.E.L. in fuels	DVL - Morghen - A.F.
Item 3 2	1893/F.14A	10. 1.42	Investigation of the pre-reactions in the Otto engine	An externally driven, mixture compression engine without ignition is used, pre-reactions being detected by the heat they produce. - Air Research Inst. Hermann Göring Mühlner A -.
Item 33	1893/F.15		The effect of different oils on the mixture response curve	6 different oils are used with paraffinic leaded and aromatic fuels DVL - Franke - A -.
Item 34	1893/F.16	8. 6.42	Quantitative determination of the composition of liquids (multi-component mixture) based on s elective absorption in the infra-red. DVL Siebald - A -.	
Item 35	1893/F.17	17. 6.42	The effect of various fuels and valve overlaps on the engine.	Constructional data of engines, data of fuels. Mixture loops are taken, also cylinder head temperatures. Percentage departure from max. power. DVL - Franke - A -.
Item 36	1893/F.18	23. 2.43	The influence of operating conditions on piston temperature	DVL Glaser A.F.
Item 37	1893/F.19	31.12.42	Diagrams for the determination of heat content, temperature after adiabatic expansion, and adiabatic heat drop, between 0° and 3000°C. DVL Lutz/ Noeggerath A.F.	
Item 38	1893/F.20	31.12.42	Tables for the determination of the velocity of sound, the critical pressure ratio and the characteristics for expansion and thrust nozzles up to 3000°C. DVL Noeggerath A -.	
Item 39	1893/F.66	April 1931	The processes of ignition and combusion in the coal dust engine	Experiments with a specially designed bomb. VDI - Wentzel - -
Item 40	1893/E.I.	16. 4.41	Investigation of knocking behaviour under boosted conditions	Mixture response curves are given for several reference fuels on the B.M.W. 132. Oppau - Witschakowski - A -.

DOCUMENT NO. FD 2869/46	CIOS REF. NO.	DATE	TITLE	CONTENTS
Item 42	1893/G.2	20.5. 41	Correlation tests with Daimler Benz on the watercooled supercharge engine DB 601	Mixture response curves with BMW 132 compared with curves obtained from the DB 601. Oppau - Witschakowski A -.
Item 43	1893/G.3	1.8. 41	Correlation tests between Intava and Oppau on the fuels H S 619 - 627	Oppau - Witschakowski A -.
Item 44	1893/G.4	8.8. 41	Correlation between results obtained at the DVL, Intava and Oppau, using the Pölitz fuel P 1001.	Oppau - Witschakowski A -.
Item 45	1893/G.5	19.8. 41	Comparison of results obtained at Intava and Oppau on the Scholven gasolines H S 629 - 632.	Oppau - Witschakowski a A -.
Item 46	1893/G.6	20.8. 41	The influence of the BMW 132 test conditions on the shape and position of the mixture response curves.	Variables were magneto or battery, short or long spark plugs, spark advance, speed, A.I.T., cooling air pressure, exhaust back pressure and T.E.L. and oil content of fuel. Oppau - Witschakowski A -.
Item 47	1893/G.7	22.9. 41	Testing the knock properties of the alkyl octanes WI and W II in mixtures with B 4 and CV 2B according to the supercharge method.	Oppau - Witschakowski A -.
Item 48	1893/G.8	17.11.41	The knock behaviour of a DB 601 single cylinder unit on alteration of valve timing.	Oppau - Witschakowski A -.
Item 49	1893/G.9	1.12.41	Tests on a DB 601 single cylinder unit using double injection	The effect of variations in proportions of fuels and of injection time. Oppau - Witschakowski A -.
Item 50	1893/G.10	18.11.41	The knock behaviour of fuels in air and water-cooled aero-engine cylinders.	Oppau - Witschakowski A -.
Item 51	1893/G.11	22.11.41	Tests of the gelsenberg A G fuels 139, 140, 141, tested in the I. G. Research engine and the B M W 1 32 N.	Oppau - Witschakowski A -.
Item 52	1893/G.12	10.12.41	The effect of T.E.L. and iron carbonyl on the knocking behaviour of C 3 and V T.70 2.	Oppau - Witschakowski A -.
Item 53	1893/G.13	24.12.41	Knock tests on various fuels.	Oppau - Witschakowski A -.
Item 54	1893/G.14	2 2.1.42	DVL comparison tests.	Oppau - Witschakowski A -.
Item 55	1893/G.15	11. 5.42	Variation of valve timing in a B M W 132 single cylinder unit.	The overlap was varied from 51° to 81°. Oppau - Witschakowski A -.
Item 56	1893/G.16	29. 7.42	Mixture response curves on BMW 801 single cylinder units at F F K M and O ppau	The fuels were B4, C1 and C3. Oppau - Witschakowski A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2869/46 Item 57	1893/G.17	31.7.42	Comparison between B M W 132 single cylinder units at Intava and Oppau	CV_2B aromatics were used. Oppau - Witschakowski A -.
Item 58	1893/G.18	4.9.42	The supercharge performance of ET 110, T 52 and A T 244 in mixtures with C V 2B in a B M W 132 single cylinder unit	The fuel blends were so chosen that they all give the same mixture response curve Oppau - Witschakowski A -.
Item 59	1893/G.19	19.9.42	The supercharge performance of ET 110, T.52 and A T 244.	Fuels used unblended and in blends with a D-H D gasoline. Mixture response curve for the B M W 132 N unit. Oppau - Witschakowski A -.
Item 60	1893/G.20	18.9.42	The Knock Behaviour of Various Kybolenes (Alkyl benzoles) in a B M W-132 unit.	Oppau - Witschakowski A -.
Item 61	1893/G.21	28.1.43	The knock behaviour of Triptane in the I.G. test engine	Mixture response curves for Triptane, di-isopropyl ether, iso-octane, and aviation gasoline Br. 2662. Oppau - Witschakowski A -.
Item 62	1893/G.22	8.2.43	The supercharge performance of hydrogenated Polymer gasolines in Blends with E.T. 110, Toluene and dicthyl benzene	The I.G. test engine and the B M W 132 N single cylinder unit were used. Effects of hydrogenation on temperatures Sensitivity are shown. Oppau - Witschakowski A -.
Item 63	1893/H.1	4.10.39	The reconstruction of the Technical Experimental Station	Oppau - Penzig - -
Item 64	1893/H.2	15.10.39	Improvements in the use of gasoline in the Diesel engine.	To raise the ignition point and improve the lubricating power. Oppau - Köhler A -.
Item 65	1893/H.3	16.10.39	Power gas as a Diesel fuel.	No alterations were to be made to the engine. Oppau - Köhler A -.
Item 66	1893/H.4	18.10.39	Examination of "Butyl - oils" (M1 and M2 fractions) as blending agents with Leuna gasoline.	Oppau - Leib - A -.
Item 67	1893/H.5	6.11.39	A simplification of the adjustment for constant ignition delay in the I.G. Test diesel engine in the measurement of the cetane number.	Oppau - Schuch A -.
Item 68	1893/H.6	15.11.39	Ignition behaviour of some fuels and lubricants	O.N. and C.N. of gasoline and Diesel oil mixtures were obtained. Oppau - Singer A -.
Item 69	1893/H.7	1.12.39	Ignitability of gasolines	The effect of additions to gasoline on the ignitability and the use of some characteristic gasolines in the Diesel engine. Oppau - Köhler A -.

DOCUMENT NO. FD 2869/46	CIOS REF. NO.	DATE	TITLE	CONTENTS
Item 70	1893/H.8	11.12.40	Starting tests in a Diesel engine	Investigation of the various factors affecting starting. Oppau - Köhler A -.
Item 71	1893/H.9	15.12.39	Alkyl benzenes as blending agents for Aviation fuels	Oppau - Penzig A -.
Item 72	1893/H.10	2. 1.40	Evaluation of the equation of combustion.	Computation of total air required, max CO_2 and water formed, increase in volume and calorific value. Oppau - Penzig a -.
Item 73	1893/H.11	25. 1.40	Investigation of two oils with synthetic fatty additives for their suitability for aero engines.	Oppau - Lauer - A.F.
Item 74	1893/H.12	20. 1.40	The measurement of cetane numbers over 100	Blends of dibutin and cetane were used to extrapolate the curve relating C.N. with compression ratio. A master blend was made up and used as a ref. fuel. Oppau - Köhler A -.
Item 75	1893/H.13	24. 1.40	Conversion of a Henschel Diesel car to operation by gas.	Oppau - Köhler - -
Item 76	1893/H.14	9. 3.40	Examination of Aviation fuels with the I.G. test engine	The behaviour of various fuels under varying operating conditions. Oppau - Singer A -.
Item 77	1893/H.15	15. 6.40	Experiments with safety fuels.	Behaviour in Diesel and gasoline engines was tested. Oppau - Köhler A -.
Item 78	1893/H.15A	1. 4.40	Experiments with TZ 100 - safety fuels and a spindle oil ex Deutsche gasoline A.G.	Four fuels were tested in Diesel engines. C.N.S. were determined in the I.G. Diesel engine. Oppau - Köhler A -.
Item 79	1893/H.16	26. 4.40	A stroboscope for nozzle research.	Oppau - Schuch A -.
Item 80	1893/H.19	5. 6.40	Measurement of cetane numbers down to zero	By decreasing the recess in the piston crown the max. compr. ratio was increased. Oppau - Köhler A -.
Item 81	1893/H.21	2 5.8.40	Lubricant oil testing in the B M W 132 single cylinder Engine	Describes alterations to be made to the engine the additions and the experimental conditions for lubricant testing. Oppau - Lauer A -.
Item 82	1893/H.22	30. 7.40	Ignition delay measurement with the F K F S ignition delay instrument.	The commencement of inflammation is detected by a photocell. Oppau - Schuch A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2869/46 Item 83	1893/H.25	21. 8.40	Relationship between cetane numbers determined in the I.G.test diesel and in the H.W.A. engines.	Five independent test series in both engines. Oppau - Singer - A -.
Item 84	1893/H.27	15.11.40	Experiments with R - fuels	Essentially the same as Q 35 but with data and references to R 200. Oppau - Penzig A -.
Item 85	1893/H.30	25.10.40	A new apparatus for determining knock intensity	A lead tube (Schusskanal) conducts the vibrations to a pick - up and electrical circuit. Oppau - Schuch A -.
Item 86	1893/H.31	31.10.40	The observation of knock vibrations in multi-cylinder engines.	This is easily accomplished by using the "body ring" with a specially constructed pick-up. Oppau - Schuch A -.
Item 87	1893/H.32	5. 6.40	Criteria for assessing Aviation fuels and Engines.	A pos-coeff is proposed giving the increase in O.N. as the engine method conditions are made less stringent. Engines to be rated at max. power for the knock rating requirement and with two different fuels. Oppau - Singer A -.
Item 88	1893/H.34	3. 4.41	The effect of temperatures in the operation of aero-engines according to the ring method.	Cylinder, cooling water and intake air temperatures. Oppau - Leib - -.
Item 89	1893/H.37	9.10.43	Result of comparative tests according to the Oppau method.	Six test-stands investigated same three fuels each. Oppau - Singer - -.
Item 90	1893/H.38	25. 7.44	Comparative exps. with briquette coke and unit coke in the A.K. generator.	Oppau - Köhler - -.
Item 91	1893/I.1	1.11.30	Output tests with gasoline and benzene in a low compression engine.	Oppau - Penzig - -.
Item 92	1893/I.2	15.11.30	Residue formation tests with brown-coal gasoline.	5 air cooled gasoline engines were used. The sulphuric acid and the dish test were carried out. Oppau- Penzig - -.
Item 93	1893/I.3	16. 1.31	The high and low pressure air pre-cooling system 1 and 3 in Op.119 of the 15.12.30.	Operational testing. Oppau - - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2869/46				
Item 94	1893/I.4	21.1.31	Use of methyl formate as an Engine fuel.	Oppau, Penzig - -.
Item 95	1893/I.5	5.8.30	Experimental run with Orlisso addition.	Oppau, Singer - -.
Item 96	1893/I.6	16.2.31	Report on an engine with variable compression ratio.	Oppau, Rabes - -.
Item 97	1893/I.7	24.4.31	The effect of iron carbonyl on various hydrocarbons.	The engine of No.213 was used; 7 exps. for every hydrocarbon. Oppau, Rabes/Wilke - -.
Item 98	1893/I.8	5.6.31	Experiments with a Diesel oil condensate from Chamber 504 of 21st April,1931.	Oppau, Penzig - -.
Item 99	1893/I.9	30.9.31	Measurement of fuel consumption in the 8/40 H.P. Opel - I7 33151.	Oppau - Roeser - -.
Item 100	1893/I.10	19.11.31	Test of output and knock resistance of an engine changing the ignition timing and compression ratio.	Oppau - Wilke - -.
FD 2870/46				
Item 1	1893/I.11	22.12.31	Experiments with gasoline saving tablets "Mobetha".	Measured were anti-knock valve, engine power and fuel consumption. Oppau - - -.
Item 2	1893/I.12	31.12.31	Road tests with the 1.8 litres Opel car IV.B 75564, on 28.12.31.	Nozzle dimensions, acceleration, consumption and speed. Oppau - Morgenthaler --.
Item 3	1893/I.13	25. 1.32	Tests of vapour pressure, starting properties and water sensitivity of the"four component mixture" in comparison with "Motorin" and Leuna gasoline.	Oppau - Wilke - -.
Item 4	1893/I.14	8. 2.32	Determination of steam consumption of the steam engine for the copper lye pump I in Op.65.	Oppau - Lehmann - -.
Item 5	1893/I.15	10. 3.32	Output, consumption and fuel costs of an engine using gasolines and mixtures.	Adjustments in compression ratio, fuel nozzle and preignition when changing over from gasolines to mixtures Oppau - Wilke - -.
Item 6	1893/I.16	10. 3.32	The highest useful compression ratio as a measure of the antiknock value of a fuel.	Oppau - Wilke - -.
Item 7	1893/I.17	10. 3.32	Tests with a Diesel fuel oil sample "grünol" from Dr.Schweemberger Op.94.	Oppau - Penzig - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FIA 2870/46 Item 8	1893/I.18	15.3.32	Report on tests with two Diesel fuel samples Nos.181 and 182, from Dr.Montfort, High Pressure Research Lab., Ludwigshafen	A Krupp. two-stroke Diesel engine was used. Starting, output, fuel consumption under various loads and type of combustionwere observed. Oppau - Penzig/Lehmann -F.
Item 9	1893/I.19	16.3.32	Road tests with Dr.Kaupp's 1.8 litres Opel car.	To test the antiknock valve of a specific fuel sample. Oppau - Singer - -.
Item 10	1893/I.20	23.5.32	Investigation of diethylperoxide as an additive for gas oil and coal tar oil.	Output and running of the engine with respect to knock. Max.pressure and ignition delay were observed. Oppau - Wilke A -.
Item 11	1893/I.21	29.7.32	Investigation of di-acetylene as an additive for Diesel fuels (tar oil and gas oil).	Running of the engine with respect to uniformity and knock, the peak pressure and ignition delay as well as the course of the combustion were observed. Oppau - Wilke A -.
Item12	1893/I.22	10.3.33	The Diesel engine in automotive operation (Supplement to report of 1.11.32)	Repair, distribution and smell of the Diesel engine. Oppau - Wilke - -.
tem 13	1893/I.23	10.2.33	Experiments with different fuel ad ditives with the purpose of improving the odour of the exhaust gases.	Oppau - Singer A -.
tem 14	1893/I.24	27.1.33	Knocking behaviour of coal tar oil with diacetylene additive after storage.	Oppau - Singer A -.
tem 15	1893/I.25	20.3.33	Tests with a Diesel oil from Leuna (Hg. Me No.459)	Boiling characteristics, Gum content, Flash point and engine behaviour. Oppau - Singer - -.
em 16	1893/I.2 6	17.5.33	Report on tests with various Diesel oils from the high pressure tests.	Output, consumption, knock, ratio of height of indicator diagram peak to its width. "Oppau - Wilke"-Benzig - -.
em 17	1893/I.2 6A	6.3.42	The knock behaviour of polymer gasolines in the I.G. supercharged test engine.	To find the effects of hydrogenation and catalysts, the lead susceptibility and sensitivity to air intake temperatures. Oppau - Witschakowski A -.
em 18	1893/I.27	13.6.33	Tests at the Maybach Motor Works G.m.b.H. Friedrichshafen, in June 1933.	Occasioned by reclamations on account of unsatisfactory Leuna- gasoline. Oppau - Jantsch/Penzig - -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2870/46 Item 19	1893/I.28	11. 6.33.	Experiments with a 3-Component-mixture on using a base-gasoline from Leuna.	Reduction of the percentage of benzene in the current "Motorin". Oppau - Penzig - -/
Item 20	1893/I.29	13. 6.33.	Test report on filling station hoses.	Resistance to 3 component mixture. Oppau - Dünschnabel/Penzig
Item 21	1893/I.31	22. 6.34.	Measurement of heat conductivity of interior insulation for high pressure furnaces.	Conductivity is plotted against temperature at various pressures in an atmosphere of hydrogen. Oppau - Wilke - -.
Item 22	1893/I.32	2.10.33.	Investigation of a coal-gasoline No.394, blend from Oven 410.	Oppau - Penzig - -.
Item 23	1893/I.33A	27. 6.34.	Methanol as an engine fuel.	Discussion of higher O.N., increased thermal efficiency, increase in mass of charge, low calorific value, low velatility. Oppau - A -.
Item 24	1893/I.33	12.11.34.	Test of "Leuna II" gasoline with various additives.	For improving the anti-knock value. Oppau - Wilke/Singer - -.
Item 25	1893/I.34	30. 1.35.	Experiments with Jentzsch's tester of ignition quality.	To examine the possibility of using the instrument for rating the anti-knock value of fuels. Oppau - Gaupp A -.
Item 26	1893/I.35	15. 2.35.	Behaviour of lubricating oils with methanol fuel.	Oppau - Penzig A -.
Item 27	1893/I.36	5. 4.35.	Operation of a Hanomag engine by injection of methanol into the cylinder.	Oppau - Wengler A -.
Item 28	1893/I.37	30. 4.35.	Investigation of reducing valves for use with gaseous motor fuels (propane and butane).	Oppau - Wengler A -.
Item 29	1893/I.38	25. 4.35.	Starting of engines running on Methanol.	Starting on gasoline, additives, electric heater, catalytic decomposition, evaporation by partial combustion. Oppau - Penzig A -.
Item 30	1893/I.39	28. 4.35.	Experience to date with leaded-gasoline.	Summary of test-stand and read experience and experiments. Oppau - Wilke A -.

DOCUMENT NO. FD.2870/46	CIOS REF.NO.	DATE	TITLE	CONTENTS
Item 31	1893/I.40	3. 6.35.	Effect of compression ratio when using methanol in a single-cylinder carburetter engine.	Oppau - Wengler A -
Item 32	1893/I.41	8. 7.35.	Comparative tests on the knock test benches of the I.G.	Oppau - Singer A -
Item 33	1893/I.42	18. 7.35.	Comparative tests on the C.F.R. engines of the I.G.	Oppau - Singer A -
Item 34	1893/I.43	2. 9.35.	On the behaviour of spark plugs using methanol as a fuel.	Plugs of various characteristics were tried, the effect of load and carburetter adjustment and of various additions on the electrode temperature was investigated. Oppau - Penzig A -
Item 35	1893/I.44	13.12.35.	The spark plug voltage necessary when using methanol and gasoline.	To find value of the voltage and the factors determining this valve. (measurements with ionisal at spark gap). Oppau - Wengler A -
Item 36	1893/I.45	22.11.35.	Comparative experiments with a single cylinder M.W.M. pre-chamber engine with middle, light and heavy oil, from Leuna on the one hand and commercial gas oil on the other.	Oppau - Wengler - -
Item 37	1893/I.46	1. 9.36.	Experiments with aero engine oils in the B.M.W. engine, 5th series.	Ringsticking, residues, oil consumption, investigation of used oil were observed and amodified sligh test made. Oppau - Penzig A -
Item 38	1893/I.46A	27.12.38.	Experiments with aero-engine oils in the B.M.W. engine, 8th series.	Brown coal oil made by low temperature hydrogenation followed by dewaxing and treatment with anhydr. alum.chloride. Oppau - Halder A -
Item 39	1893/I.46B	15. 6.37.	Experiments with aero-engine oils in the B.M.W. engine, 7th series.	Ethylene oils" Oppau - Penzig A -
Item 40	1893/I.46C	3.11.36.	Experiments with aero engine oils in the B.M.W. engine (6th series)	Mineral and synthetic oils containing up to 3% Oppanol Oppau - Penzig A -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2870/46 Item 41	1893/I.47	5.12.35.	Variable-compression test engine.	Examination for suitability in anti-knock value determinations. Oppau-Singer A -.
Item 42	1893/I.48	17. 1.36	Report on the investigation of fuels 1935	Mainly gasolines and mixtures both blended with alcohol some alcohol free samples and several commercial aviation gasolines. Oppau-Singer A -.
Item 43	1893/I.50	2 3.6.36	Experiments with a motor vehicle Diesel engine, type Daimler-Benz, OM67 converted to run on methanol.	Data on insertion of spark plugs. Improvements in performance at low rotational speeds. Development of starting installation. Oppau-Penzig, A -.
Item 44	1893/I.50A	9.3.36	Conversion of a Diesel motor vehicle engine, type Daimler-Benz O M67 to run on methanol.	Oppau-Penzig A -.
Item 45	1893/I.51	19.10.37	Report on the present experiences in operating automotive vehicles of the I.G. Ludwigshafen with leaded gasolines.	Oppau-Ohlendorf. - -.
Item 46	1893/I.51A	15. 6.36	"	Oppau-Ohlendorf - -.
Item 47	1893/I.52	16. 6.36	Correlation tests with the I.G. test unit.	Correlation tests on 16 fuels with various C.F.R. Units. Oppau-Singer A -.
Item 48	1893/I.53	3. 7.36	Reference fuels for knock rating.	Mixtures were directly calibrated against iso-octane-heptane mixtures. Oppau-Singer A -.
Item 49	1893/I.54	1. 3.38	The I.G. test engine for the determination of the antiknock value of light fuels.	Part 1. Comparative experiments and calibration of a set. Oppau-Singer A -.
Item 50	1893/I.55	13. 8.36	Investigation of Aero-engine oils and olive oil at low temps.	The shaft: bearing apparatus of report No.269 is used. It measures resistance to turning. Oppau-Penzig A -.
Item 51	1893/I.56	27. 8.36	The use of TZ 900 as fuel for engines with carburetters.	TZ 900 is a very viscous-poly-isobutylene which may be decomposed into mono-di and tri isobutylene. Oppau-Aldinger A -. Oppau-Tannewald A -.
Item 52	1893/I.57	18. 9.36	Tests with heavy oil carburetter (vaporiser) with porous brick and with pipe coil (ultro-carburetter)	
Item 53	1893/I.58	10. 9.36	Temperature-measurements on motor car tyres.	Oppau-Beutner - -.

DOCUMENT NO. FD 2870/46	CIOS REF. NO.	DATE	TITLE	CONTENTS
Item 54	1893/I.58	28.10.36	The behaviour of a very heavy oil as a Diesel fuel.	Oppau-Samewald A -.
Item 55	1893/I.60	2.11.36	Experminets with additives for the prevention of cold corrosion caused by T.E.L.	To neutralise hydrochloric and hydrobromic acids had been produced which are soluble in gasolines and mineral oils. Oppau-Penzig A -.
Item 56	1893/I.61	27. 9.36	Dodecane as a direct injection engine fuel.	Mixture loops and exhaust temps. are plotted at various conditions of injection timing, coolant temp. and engine speed. Oppau-Schwitzer A -.
Item 57	1893/I.62	16.11.36	The conversion of a Daimler Benz Diesel engine Type O.M.59 to run on methanolwhen fitted with a carburetter.	Oppau-Aldinger A -.
Item 58	1893/I.63	25.11.36	Road tests on oil and without oppanoladditive.	Oppau-Penzig A -.
Item 59	1893/I.64	15.12.36	Temperature measurements on motor car tyres.	Oppau-Beutner - -. &
Item 60	1893/I.66	9.12.36	Experiments with graphite in a gasoline engine.	Two engines run with oil and graphite and two with oil only. Oppau-Wilke A -.
Item 61	1893/I.67	28.12.36	Tests with lubricating oil for two stroke engines.	Two air cooled engines (2/3 and full load) and one watercooled D.K.W. Exhaust, cylinder head and sparking plug temps. were measured. 8 oils and several additives. Oppau.Zorn/Wilke/ Penzig A -.
Item 62	1893/I.68	13. 1.37	Tests on 5 Diesel fuels supplied by High Pressure Research Labrotary, Ludwigshafen.	1 brown coal tar middle oil; 1 fisher oil 2 mineral coal middle oils blended with extracts from brown coal; 1 highly hydrogenated mineral coal Diesel oil. Oppau-Kohler - -.
Item 63	1893/I.69	14. 1.37	Report on road tests with synthetic lube oil.	Oppau-Penzig-Zorn - -.
Item 64	1893/I.70	26. 1.37	Investigations on light fuels 1936	Gasolines and mixtures with and without alcohol addition. Oppau-Singer A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2870/46 Item 65	1893/I.71	8.3.37	Tests with nitrated pott-extract as fuel for the coal dust Diesel engine.	Dentz mono-cylinder Diesel engine was converted into a coal dust engine. Pure pott extract, nitrated pott-extract, brown coal and gasoil were used. Oppau-Aldinger A -.
Item 66	1893/I.72	10.3.37	Experiments with the hesslemann engine. Test of various fuels and injection nozzles.	Oppau-Witschakowski A -.
Item 67	1893/I.73	25.6.37	Investigation on suitability andknock-behaviour of various fuels in the hess lmann engine intake/and compression/injection as well as for carburetter operation.	Oppau-Witschakowski A -.
Item 68	1893/I.74	15.6.38	Temperature measurments for motor-car tyres.	Sumarising report. Oppau-Schmidt/Wilke - -.
Item 69	1893/I.74A	1.2.38	Tempera ture measurements for motor-car tyres.	Third test run of the Heeresw affenamt Oppau-Schmidt/Wilke - -.
Item 70	1893/I.75	17.8.42	Thermal decomposition of T.E.L. in leaded gasoline.	Apparatus for measuring decomposition in absence and presence of metals is used to find max.temp. at which leaded gasoline may be used for a blowlamp. Oppau-Schnacke A -.
Item 71	1893/I.76	7.7.37	Second report on experiments with the coal-dust Diesel engine.	Output, consumption and indicator diagrams were observed at various rot-speeds and for various fuels. Oppau-Aldinger A -.
Item 72	1893/I.77	20.8.42	Gasolines and lubricating oils and themethods of their investigation in the laboratory.	Introductory course for mineral oil chemists in the Luftwaffe. Oppau-Bauer - -.
Item 73	1893/I.78	11.8.37	Experiments in the use in the Diesel engine of highly viscous and solid fuels, such as TZ 900 gas oil with addition of wax acid. parrafin.	Oppau-Witschakowski-Penzig A -.
Item 74	1893/I.79	20.8.42	Determination of antiknock value.	Introductory course for mineral oil chemists in the Luftwaffe. Oppau-Wilhelmi - -.
Item 75	1893/I.80	20.8.42	Gasoline and its production.	" Oppau-Gluck - -.
Item 76	1893/I.81	30.11.37	Comparison method for the gasoline engine. Computation for methanol and benzene as fuels.	A.according to method by Nisselt. B.graphic method by Pflaum. C. a simple method adapted from"Huttc"vol.1,25.ed., p.474. Oppau-Halder A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2870/46 Item 77	1893/I.81A	31. 8.42.	The behaviour of water dissolved in gasoline fuels, at low temps.	Study and measure for prevention of ice formation on inner walls. Oppau - Seidel A -
Item 78	1893/I.82	18.12.37.	Tests with spark plugs using Metalin as fuel.	After use the causes of deterioration of failure were examined. Oppau - Schweizer A -
Item 79	1893/I.83	20. 2. 38.	Experiments with the coal-dust Diesel engine. Third report.	Variations in pott-extract const. ret-speeds nitration of various coals. Various addition to peak dust. Variation in the revs./min. Oppau - Aldinger - .
Item 80	1893/I.84	24.10.42.	A contribution to the evaluation of the fourth series of comparative experiments on the B.M.W. 132 single cylinder supercharged test engines. Oppau - Witschakowski - A -	
Item 81	1893/I.85	15. 2.39.	Tests on various lubricating oils in Opel engines.	Oppau - Halder/Wilke - -
Item 82	1893/I.86	20.10.38.	Investigation of deflection apparatus for cathode ray tubes.	This enables the production of stationary pressure diagrams of combustion engines. Oppau - Schuch - A -
Item 83	1893/I.87.	21.10.38.	The development of the I.G. test engine.	Various aero-engine cylinders can be mounted, the cylinder may be adjusted to give a diff. compr. ratio during the exp. Special equipment for fuel tests. Oppau - Penzig - A -
Item 84	1893/I.88	10.11.38.	Pressure diagrams in the Diesel engine for gas oil and two hydrogenation products. Effect of compression ratio and injection timing. Oppau - Kohler - A -	
Item 85	1893/I.90	10. 1.39.	Experiments with Iganyl as a bearing material..	Oppau - Halder -A.F.
Item 86	1893/I.91	30.12.38.	Radiation measurements in the Hesselmann engine by means of a photo cell and cathode-ray, oscillograph.	Observation of onset of radiation relative to onset of pressure rise and independence on various other factors. Oppau -Schuch-Witschakowski-A-
Item 87	1893/I.92	25. 1.39.	Tests on light fuels, 1938	Mainly gasolines and mixtures for automotive operation, including some Austrian fuels. Oppau - Singer. A.-
Item 88	1893/I.93	1. 2.39.	Break-away torque experiments on an automobile engine.	Experimental set-up for the determination of the forces involved in breaking away. Oppau - Elflein. A -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2 870/46 Item 89	1893/I.94	2.2.39	Investigation of the combustion process in the Hesselman engine by means ooo of an I.G. piezo quartz-cathode-ray indicator.	Oppau-Witschakowski A -.
Item 90	1893/I.95	5.2.39	Test of apre-chamber inset developed for Diesel fuels of low octane number.	Oppau-Witschakowski A -.
Item 91	1893/I.98	31.5.39	Tests with R.C.H -Diesel -oil.	Tests in the I.G. test Diesel with variation of compression, time of injection and size of pumping piston. Oppau-Köhler, A -.
Item 92	1893/I.99	17.3.39	Influencing the flow-resistance of liquids of high viscosity.	Method based on forming a very thin film of thin oil on the walls of the tube. Oppau-Kling, A -1.
Item 93	1893/I.100	28.3.39	Tests on four fuel mixtures.	Components; gasoline, benzene, alcohol, lead. Determined: Knock rating, performance and fuel consumption at diff. throttle settings and consumption at diff. speeds with open throttle. Oppau-Lauer, A -.
Item 94	1893/I.101	31.3.39	Tests on 3 TTH - Diesel fuels.	Bench test and road test as to suitability. Oppau-Köhler, A -.
Item 95	1893/I.102	15.5.39	Correlation tests on I.G. test diesels.	5 I.G. test diesels, a Delft Thomesson and a gardner engine, 3 C.F.R. and 4 H.W.A. engines for measuring C.N.S. Oppau-Köhler, A -.
Item 96	1893/I.103	1.6.39	Tests with aero-engine oils in a B.M.W. engine, SeriesVIII a.	Oppau.Zorn/Wilke/Halder,A.F.
Item 97	1893/I.104	1.6.39	Examination of gasolines richin olefines with special referenee to their arnmatic content.	Thorough discussi on. Oppau.Roth/Timm, A -.
Item 98	1893/I.106	3.6.39	The significanee of cetane number (The combustion process in relation to the cetane number).	Tests on fuels with C.N. from 20 - 90. a). at constant compression and variable ignition delay B.) constant ignition delay and variable compression. Pressure rise, peak pressure, exhaust temp. and output are also measured. Oppau-Köhler. A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2870/46 Item 99	1893/I.107	5.6.39	The effect of injection quantity, coolant temperature, speed, and temperature and pressure of the intake air on the combustion cycle in the Diesel engine.	Oppau-Köhler, A -.
Item 100	1893/I.108	12.5.39	Correlation tests on knock test engines.	6 fuels on SC.F.R. and 12 I.G. test engines by means of motor and research methods at 14 different laboratories. Oppau-Singer, A -.
FD 2871/46 Item 1	1893/I.109	15.6.39	An instrument for testing the lubricating properties of oil by a wear determination .	Wear produced on a testpiece by means of a revolving drum. Various lubricating oil and lubricating oil additions were studied. Oppau-Wilke/Halder, A -.
Item 2	1893/I.111	6.7.39	Road tests on a six cylinder Hesselman engine.	To test fuel consumption, lubricating oil dilution, starting, acceleration, ease of operation etc. Oppau. Witschakowski/Lauer.A -.
Item 3	1893/I.112	20.7.39	Test of a synthetic motor gasoline Dr.Michael's syntheses.	Output, consumption and anti-knock value were to be tested. Oppau-Lauer, A -.
Item 4	1893/I.113	16.8.39	Knock behaviour of light fuels of low octane number in anengine having external ignition and compression stroke injection.(Hesselman engine).	Oppau-Witschakowski, A -.
Item 5	1893/I.113A	25. 1.41	Determination of the anti-knock value of gasolines by measuring the delay period.	Comparison with other methods and discussion. Oppau-Witschakowski/Kohler, A -.
Item 6	1893/I.114	1.9.39	The "time marker" as an additional appliance for the I.G. test Diesel.	This marks the location of any event in the cycle. Gives greater accuracy in measurement of ignition delay. Oppau-Singer, A -.
Item 7	1893/I.115	30.9.39	Examination of the flue ash from the Oppau steam plant.	Heat conductivity, fineness of mesh. Oppau-Schenker, - -.
Item 8	1893/I.116	21.9.39	Tests with Leuna gasoline as a Diesel fuel.	Leuna 5058 was tested in the I.G. test Diesel, the M.W.M prechamber monocylinder engine, the Deutz prechamber monocylinder engine and a Hanomag Diesel tractor. Oppau-Köhler, A -.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2871/46 Item 9	1893/I.117	7.2.27	Tests with the Dumanois Stepped piston.	To try the effect on knock of stepping the piston. Oppau-Wahl, A -.
Item 10	1893/I.118	11.3.29	Tests with the graetzin double vaporiser and the catalex vaporiser on the Hanomag truck.	To compare output and consumption for the two vaporisers with gas oil as a fuel. Oppau-Wilke, A -.
Item 11	1893/I.119	23. 2.44	Ignition delay and knock resistance of fuels.	To test the formula for the ignition delay $I = c \frac{b/T}{p^m}$ Oppau-Witschakowski, A -.
Item 12	1893/I.120		Personnel of Op.471	Oppau - - - .
Item 13	1893/I.121	3.4.41	The effect of temperature on the running, of aero-engines using the Ring system.	Deals with a system employing a special igniting fuel in place of spark ignition. (Same report as Ref.No.A-9) Oppau-Leib. A.F.
Item 16	1893/I.124	4.8.41	Comparisong of ring sticking characteristics of 3 aviation fuels.	All fuels containing 0.12% by vol, T.E.L. One hydropetrol; a blend containing iso-propyl-benzene. Oppau.-Lauer, A -.
Item 17	1893/I.125	4.8.41	Ring-sticking times with a gasoline benzene aviation fuel mixture.	1). A bland containing 50% aviation benzene. 2). As 1). but benzene refined with Al cl 3. 3). A paraffinic structure reference fuel. Oppau-Lauer, A -.
Item 18	1893/I.126	7.8.42	The viscosity of some gasolines at low temperatures.	An experimental arrangement using the Ubbelohde viscometer usable to - 70°C. Walther's equation $\log r - A - \frac{B}{T}$ and practical troubles are discussed in view of the results obtained. Oppau-Seidel, A -.
Item 19	1893/I.127	1.6.42	Application of the I.G.Test engine to lubricant experiments.	Conditions, preparation and procedure of ring sticking exps. are briefly described. End point is discussed. Oppau-Halder, A -.
Item 20	1893/I.128	9.12 .43	Test of Estonian peat briquettes in the Zeuch H.B.generator.	Oppau-Köhler. - -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD.2871/46 Item 21	1893/I.134	2. 2.45.	Examination of aviation fuel M A1 with respect to its knock behaviour in the 801 - single cylinder engine (compression ratio 7:2).	B.M.W./I.G., Himmelbach, A -.
Item 22	1893/I.135(1)	18.5.44.	Report on the inaugural meeting of the research group "measuring instruments" at the F.K.F.S. Stuttgart-Unterturkheim. Paper ready by Birmelin on the work of the group.	F.K.F.S.- - -
Item 23	1893/I.136	14/15.4.42.	Special committe for standardising the engine testing of Diesel fuels at the D.V.M.	Lecture on method of measurements; on measuring instruments, on engines and their manipulation. Discussion and resolutions. Deutscher Verband,f. Materialprüfungen der Technik, -, A.F.
Item 24	1893/I.137	2. 5.42.	Knock rating of leaded and unleaded Hydrocarbon blends in the B.M.W. 132 super-charge engine.	Fuels were tested with the object of comparing the results given by the C.F.R. Motor, the C.F.R. Research and the B.M.W. supercharge methods. Oppau-Witschakewski A -
Item 25	1893/L.3	31.10.40.	Power Plant maintenance.	Running and output, cooling, lubrication, fuel, literature. Air Ministry, Koppe, A -
Item 26	1893/L.4	15. 5.40.	High tensile aero-engine steels.	Air Ministry, Matthaes. - -
Item 27	1893/L.5	15. 5.40.	Directions for the testing of constructional parts and apparatus of aircraft mechanical plant.	Air Ministry. Telto, - -
Item 28	1893/L.6	30.11.39.	Non-destructive testing of materials in the construction of aircraft and engines.	Air Ministry, Stendel, -
Item 29	1893/L.7	31. 1.41.	Synthetics and their use in aircraft construction.	Air Ministry, Kuch/Riechers, - -
Item 30	1893/L.8	Oct.1939.	Piston rings.	Air Ministry, Englisch, - -
Item 31	1893/L.9	16. 2.40.	Principles of the design and operation of injection pumps and nozzles for Diesel and Otto aircraft engines.	Air Ministry, Heinrich - -
Item 32	1893/L.11	12. 4.40.	The design of the combustion chamber for aero-engines.	Review of position of research with regard to processes occurring in the combustion chamber of spark, ignition of diesel engines. The bearing of these on the design of the chamber. Air Ministry, Caroselli -

DOCUMENT NO.	CISO REF.NO.	DATE.	TITLE	CONTENTS
FD 2871/46 Item 33	1893/L.12	31.10.40	Operation of the exhaust manifold and duct in aeroengines.	Air Ministry, Martin, - -.
Item 34	1893/L.13	15.5.30	Design and operation of aero-engine valve springs.	Air Ministry, Hussmann, - -
Item 35	1893/L.14	15.5.40	Aero-engine carburetters.	Air Ministry, Kemper, - -.

(Continued Overleaf)

DOCUMENT NO	CIOS REF. NO.	DATE	TITLE	CONTENTS
O 2871/46 Item 36	1893/L15	15.5.40	Design and construction of in-line aero-engines.	Air Ministry. Kurtz -.-
Item 37	1893/L16	-	Separation of water by fuel filters in aircraft and tank installations.	Buschmann/Basilico A.-
Item 38	" /L17	15.5.40	Fuel pumps.	-ditto-
Item 39	" /M1	15.6.39	Technical specifications for aviation gasoline "B4" for internal consumption.	Air Ministry. -. A.-.
Item 40	" /M2	15.6.39	Technical specifications for aviation gasoline VT 702 for internal consumption.	Air Ministry -. A. -
Item 41	" /M3	Sept. '39	Technical specifications for aviation gasoline V.T. 810 for internal consumption.	Air Ministry -. A. -
Item 42	" /M4	Sept. '39	Technical specifications for aviation gasoline V.T. 705 for internal consumption.	Air Ministry.-. A. -
Item 43	" /M5	15.6.39	Technical specifications of aviation gasoline A3 for internal consumption.	Air Ministry - A. -.
Item 44	" /M6	17.12.43	Tests on oil additives 1/3.(1.9.891)	- Helver. - -.
Item 45	" /M7	March-Oct. 1943.	De-leading of B4 experiments for the R.L.M.	Correspondence, various data, manuscript notes regarding above. IG. - A. -
Item 46	" /M10	20.8.43	Lubricating oil investigation with the Almen-Wieland machine.	- Lewen/Gaisch - -.
Item 47	" /M12	10.6.43	Specifications for Diesel fuels for supply to the German Navy.	-. -. A. -
Item 48	" /M13	8.6.43	Table giving chemical and engine data of some captured English and American fuel-types.	-. -. -. -.
Item 49	" /M15	17.4.43	Investigation of valve corrosion by leaded aviation gasolines B4.	Continuation of tests in M16 (C.I.O.S.). Increasing severity of test conditions led to a decrease in exhaust valve corrosion. Oppau, Winck A. -.
Item 50	" /M16	18.3.43	-ditto-	Tests made on various engines with addition of ethylene dibromide to B4 to show if this makes it suitable for tank engines. Oppau -. A. -.
Item 51	" /M17	30.1.41	Provisional Army specifications (TL 6021) for gun oil.	Army -. A. -

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2871/46 Item 52	1893/M19	28.3.41	Engine testing of an aero-engine oil blended from synthetic and mineral oil components without inhibitor.	The chemico-physical properties and the behaviour in the engine are examined. — Inteva, Hamburg, Meinhard A. - - Hoffmann - -.
Item 53	" /M20	21.5.40	Dilution of lubricating oil by fuel in the Daimler Benz 601 N.	
Item 54	" /M21	July-Sept 43	Additives for torpedo and weapon oils.	Op au -. -. -.
Item 55	" /M22	Jan'37- July '40.	Miscellaneous correspondence, reports of visits and meeting.	On the development of fuels and oils 1936-1941. I.G./R.L.M. -. A. -.
Item 56	" /M24	1935(?)	Alkoxy - alkylchlorides etc.	Scrappy notes on the attempts to synthesize halogenated ethers. — I.G., Roth, A. -.
Item 57	" /M26	20.8.40	Dilution of lubricant by fuel in the DB 601 N.	C2, C3 and 3900 H fuels were examined with respect to their tendencies to dilute the lubricant. - Hoffmann. -. -.
Item 58	" /N1	Sept.'44	Test directions for solid fuels for vehicle generators.	Comprising tests of physical and chemical characteristics. Oppau - A. -.
Item 59	" /N9			Collection of data on German and foreign fuels between 1928 and 1937. -. -. A. -
Item 60	" /N13	'39 - '44	Coal and oil laboratory special tests.	Correspondence references and manuscript notes. Hydrogenation; smoke-screens; analysis of tars, road oils and residues from B4 also of coal pastes. Union-Kraftstoff Wesseling - A. -
Item 61	" /N15	20.7.41	Thermo-electrical method of making comparative investigations on the friction of lubricants in the state of limiting friction. Phy.Tech. Reichsanstalt, Vieweg/Kluge Maske, - F.	
Item 62	" /N15	7.5.42	Recent knowledge on 'oiliness' and its measurement.	German Academy of Aeronautics, Kluge - F.
Item 63	" /N15	22.4.43	Sliding tests on metals in the region of boundary lubrication.	Phys.Tech Reichsanstalt, Kluge/ Bochmann/Muller, - F.
Item 64	" /Q2	27.9.44	Vapour pressures of aliphatic amines.	Curve sheet giving V.P. against temp. abs. between - 100 ° to 300° C. pressure range 0.001 to 100 atm. Oppau. Drawing/Kling. A -.

DOCUMENT NO.	CIOS REF.NO.	date	TITLE	CONTENTS
FD 2871/46 Item 65	1893/Q4	17.6.43	Captured Anglo-American fuels. Evaluation of experimental results (1940 - June 1943).	To define any consistent tendencies in the physical and chemical properties of captured fuels. DVL Seeber A. -
Item 66	" /Q5	9.6.44	Fuels and lubricants for aero-engine.	Instructions regarding fuels and lubricants to be used in various engines. Air Ministry, Kouba. A. -
Item 67	" /Q6	31.7.44	Gasoline burner (diagram)	I.G.Ludwigshafen -. -. -.
Item 68	" /Q8	3.4.44	Extract from the R.L.M. pamphlet of 27.3.44 85 g GL/A-M II (D).	Specifications for V.T. 341 Oppau - A. -.
Item 69	" /Q9	10.7.44	Lubrication of internal combustion engines.	Patent draft: A hydrocarbon oil together with an ether immiscible with the oil at ordinary temps, heavier than oil, of low setting point and specified viscosity. I.G. Ludwigshafen, Halder A -.
Item 70	" /Q10	3.4.44	Drawings appended to a report apparently dealing with a wear testing machine designed by Siebel plus Kohl.	-. -. A. -
Item 71	" /Q11	1.9.44	Contribution on non-hydro-dynamic lubrication.	DVL. Morghen - F.
Item 72	" /Q12	1944	Various.	Lists of test-stations. -. -. -. -.
Item 73	" /Q13	22.5.44	Test of the lubricating oil additive I.G. 1586/80 BS in DB 605 engines in the Genshagen Works.	Test stand experiment in which the appearance of the bearing is observed. D.B. works, Halver A -.
Item 74	" /Q14	31.1.44	Tests of the lubricating oil additive I 3 (I.6.891) in DB 605 engines in the Genshagen works on test stands without centrifuges.	The bearing appearance of 23 engines was judged. D.B. works, Halver A -.
Item 75	" /Q18	19.1.44	Testing the lubricating oil additives D2 (Diphenylphosphate) and I3 (IG891) in the DB 605 engine.	Observed were main bearings, big end bearings, piston rings, filter discs hydraulic coupling. D.B. Works, Halver A -.
Item 76	" /Q19	6.4.44	Testing of Lubricating Oils.	D.B. Anders - -.
Item 77 A	" /Q24	13.2.43	Lubricant testing.	D.B. Wilke/Schmidt - -
Item 77	" /Q20	10.6.43	Specification for Diesel fuels for supply to the German Navy. Identical to M.12.	-. -. A .-

DOCUMENT NO.	CIOS REF. NO.	DATE.	TITLE	CONTENTS.
FD 2871/46 Item 78	1893/Q21	22.6.43	Supercharged mixture response curves.	Fuel VT 702 plus amyl nitrate, methyl nitrate, isobutyl nitrate, and butanone peroxide. I.G. Ludwigshafen -. -. -.
Item 79	" /Q22	Aug '43	Technical specifications for FL after-running fuel.	Mineral Oil Dept. - A -.
Item 80	" /Q23	15.8.43	Acceptance instructions for inspectors appointed by the Ministry.	Air Ministry - A. -.
Item 81	" /Q25	'38 - '44	Lubrication studies and correspondence.	-. -. -. -.
Item 82	" /Q25A	'41 - '44	Correspondence on testing of lubricants, together with some data.	IG/DVL/B.M.W. etc. -. -. -.
Item 83	" /26	28.7.43.	Sulphur contents and lubricating quality of aero-engine oils.	Measurements carried out with various oil test machines and correlated with physical and chemical properties. DVL. Philippovich -. -.
Item 84	" /Q28			
Item 85	" /Q29	'38 - '41	Lubrication studies and correspondence.	-. -. -. -.
Item 86	" /Q30	29.5.41	Half-yearly comparative knock tests April 1941.	The secondary reference fuels "Eichbenzen" as well as "Z" were used for the first time together with only one evaluation table for the O.N. determination. Oppau Singer, A.-
Item 87	" /Q31	12.11.41	Examination of a crude gasoline.	Central Bureau for Min.Oil, Roth, A -.
Item 88	" /Q32	9.5.41	Lubricant testing in the B.M.W. - single cylinder.	Oil L15082 composed of Intava aero-engine oil "Rotring" plus 0.02% of inhibitor 'R'. Intava Hamburg. Meinhard, A.-
Item 89	" /Q33	'37 - '41	Lubricants.	-. -. -. -.
Item 90	" /Q35	15.11.40.	Experiments with R.fuels.	Physical properties of R.300 behaviour in the engine (valve over lap, starting, consumption, etc.). Oppau.Penzig. A.F.
Item 91	" /Q36	During or after 1936.	Instructions for the investigation of fuels and lubricants with Jentsch's "ignition - value' instrument.	Apparatus described in I.34 Pamphlet explains calculation of various properties from the instrumental data. -. -. -. -.
Item 92	" /Q36	1939	Comparative experiments with ignition value instrument and some correspondence on the tests.	Oppau -. -. -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2871/46 Item 93	1893/Q36A	22.11.39	Minutes of the conference on 22.11.39	Summary of test results of the universal oil SS 1170. 100 hour test in a 132 N engine. Oil inlet temp. 80° C, outlet temps. 100 - 110° C. BMW. -. A. -.
Item 94	" /Q37	6.3.43	Experiments with "Wankel" piston ring sealing.	Electron Co., -. A. -.
Item 95	" /Q37A	15 Sept.37	Technical delivery requirements for the inland aviation spirit VT200.	Air Ministry - A. -
Item 96	" /R1	1945	Correspondence on I.G. Laboratory dispersal.	-. -. -. -.
Item 97	" /R5	-	Physical data for iron and nickel carbonyl.	Contai. s references to published literature and includes original exp. Ammonia Lat.Wilke, A. -.
Item 98	" /R6		The Egersdorf Navy oil equipment.	Concerns injection pump and nozzle to solve heavy oil combustion in a "mixture" engine, and be suitable for diesel engine use. -. -. A. -
Item 99	" /U1	22.2.44.	The ignition of combustible gas-air or vapour-air mixtures by spark produced by grinding.	The action of sparks on combustible mixtures was investigated using a specially constructed apparatus. The mixtures were mostly at room temp. Leuna Works. Gaulrappe A.-
Item 100	" /U2	15.9.44	Results of investigations of captured equipment - Fuels and lubricants.	Results and discussion of samples of British, American and Russian fuels and lubricants. Air Force High Command, Schwenk AF
FD 2872/46 Item 1.	" /U4	16/17.2.43	Report on the 5th session of the working group for knock testing.	
	pps 5-11		I: Report on the completed comparative tests of the working group for knock testing.	The accuracy of the O.N. determination of less stable gasolines was investigated; synthetic gasolines were included for the first time. IG Oppau Journal 1943 No.3 Singer.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 1.	1893/U.4 pps 11-19	16/17.2.43	Observations made in testing synthetic gasolines.	Discussion of effects on knock rating of physical and chemical changes and differences between testing engines. IG Oppau Journal 1943 No.3. Dannefelser -. -.
	pps 19-24	"	O.N. determinations on 'liquid gases'	To determine the O.N. under various conditions and propose a standard method. IG Oppau Journal 1943 No.3. Ruess. - -.
	pps 24-28	"	The influence of operating conditions on the knock characteristics of fuels.	Variations in conditions greater than those between Motor and Research methods were made and tested with gasolines of high paraffin, benzene and alcohol content, leaded and unleaded. IG Oppau Journal 1943 No.3. Singer - -.
	pps 28-33	"	Bench tests on the usefulness of the Research and Motor methods in actual practice.	IG Oppau Journal 1943 No.3. Unverhan - -.
	pps 33 - 35	"	Motor or Research Method for Petroleum fuels.	Comparison of the two methods for road vehicles and test engines. IG Oppau Journal 1943 No.3. Waldemann -.
	pps 35-38	"	Preparation of T.E.L. sols for leading gasolines in the lab.	Standardisation of the components. IG Oppau Journal 1943 No.3 Ruess -.-.
	p 38	"	Summary of the results of the conference.	IG Oppau Journal 1943 No.3 - - -
Item 3	1893/U5 pp 11 -19	28/29.1.43	Single cylinder tests with Internal cooling.	Effect of additional injection of water, water-methanol, mixtures and pure methanol max. power, consumption, heat and mechanical demands on engine, sensitiveness of operation, etc. Lilienthal Gesellschaft Triebnigg. A.F.
Item 4	pp 20-24	28,29.1.43	Experiments to increase the power of a four stroke Diesel engine.	Injection of water and alcohol Lilienthal Gesellschaft Muhlner, -. -.
Item 5	pp 25-36	-ditto-	Fundamental problems in the use of oxygen carriers to increase the power of aero-engines.	Thermodynamical and some practical considerations. Calculations for hydrogen peroxide, nitric acid, nitrous oxide and tetranitromethane. Lilienthal Gessellschaft, Lutz. A.F.
Item 6	pp 37-48	-ditto-	Test results with oxygen carriers (GM1) in aero-engines.	Tests on full-scale engines with and without injection of alcohol as coolant. Lilienthal Gessellschaft, Willich, A.F.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 7	1893/U5 pp 49-59	28,29.1.43	The "ring" method	A cross between gasoline and Diesel engines. Fuel air mixture is compressed and a special fuel injected ("R") which then starts ignition. Comparative tests are made. Lilienthal Gesellschaft, Penzig A.F.
Item 8	pp 60-67	-ditto-	Tests with the ring method in the air cooled aero-engine BMW 323.	Tests on single cylinder at 1 : 8 spark plugs being replaced by injection nozzle and on 9 cylinder engine at 1 : 8 and 1 : 9. Lilienthal Gesellschaft, Peter, A.F.
Item 9	pp 68-70	-ditto-	Some special problems of the ring method.	Starting, use of a pre-chamber and injection of the R - fuel without the use of a pump. Lilienthal Gesellschaft, Bentele, A.F.
Item 10	pp 71-82	-ditto-	Engine operation with safety fuels.	Discusses the use of T2.900/2 and T2 900/5. In conjunction with R.fuel ignition tests are made. Lilienthal Gesellschaft, Holfelder, A.F.
Item 11	pp 83-87	-ditto-	Research on safety fuels at the Technical Experimental Station.	Description of lay-out for catalytic decomposition of TZ 900 in the engine Tests were made on a ring engine. Lilienthal Gesellschaft, Penzig, A.F.
Item 12	pp 88-89	-ditto-	The effect of bullets on safety fuels.	Extensive tests on a range of fuels from gasoline to safety fuels. Lillenthal Gesellschaft, Schmutzer, A.F.
Item 13	1893/U6	13.6.39	Research on pistons.	V.D.I. Stuttgart, Koch - -.
Item 14	1893/U7	18.7.42	Symposium on the work of the Technical Test Stand Oppau.	Oppau -
	pp7-9	-ditto-	The development of the Technical Experimental Station Oppau.	Oppau Jantsch - -.
	pp10-15	-ditto-	Work of the thermal technology department.	Comprises thermodynamics heat transfer and hydrodynamics. Practical and theoretical studies. Oppau Kling - -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
D 2872/46 Item 14	1893/UZ pp 16-19	18.7.42	The nature and uses of flue ash.	Work on the particle size, structure and chemical composition. Attempts to use the ash in insulators. Oppau Schenker - -.
pp19-22	-ditto-		The development of knock rating for light fuels.	Oppau, Singer - -. Oppau, Kohler - -.
pp23-24	-ditto-		Testing of diesel fuels.	
pp25-27	-ditto-		On starting aids for Diesel engines at low temps.	Development of "start coal" which consists of ash-free coal extract, oxygen carriers and ignition promoter. Y Oppau Leib - -.
pp27-30	-ditto-		The Hesselman engine and its fuels.	The general character of the Hesselman engine. Oppau, Witschakowski - -.
pp30-32	-ditto-		Experiments with vehicle generators.	Tests with various fuels and methods of improving the efficiency of the fuel. Oppau, Kohler - -.
pp32-34	-ditto-		Engine tests on lubricating oils.	Description of the BMW 132 N mono-cylinder and the various means by which the test stand measures the various characteristics of a lubricant. Oppau Lauer - -.
pp35-37	-ditto-		Friction and wear in lubrication.	Describes one instrument each for the measurement of friction and wear and discusses the results obtained with the instruments. Oppau, Helder - -.
pp37-41	-ditto-		The I.G. test engine	Oppau Penzig - F.
pp41-44	-ditto-		Supercharge tests and the corresponding test bench installations.	Significance, equipment, procedure and evaluation of supercharge testing in the B.M.W. 132. Oppau, Witschakowski - F.
pp45-48	-ditto-		Electrical measuring methods used at the Technical Experimental Station.	Comprising measurements of pressure flame progress, injection processes and knock measurements. Oppau. Schuch - -.
pp49-52	-ditto-		Refractive index and dispersion as aids in the examinations of gasolines and Diesel oils.	Explains and discusses the value of the two methods. Oppau Roth - -.
pp52-55	-ditto-		Evaluation of the equation of combustion.	Calculation or estimation of the thermal data and those referring to inlet and exhaust composition. Oppau, Penzig - -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 15	1893/U8	18.7.42		Preprint of U.7. OPPA U- A. -
Item 16	1893/U9 p. 1-19	May,1941.	Problems in fuel evaluation.	A general discussion of both spark and compression ignition fuel measurements. Tech.High School Munich, Schmidt A -.
	pp.20-66	-ditto-	The evaluation of Diesel fuels.	The physical and chemical aspects of ignition delay. Review of methods of rating. Inter-relation of C.N.rate of pressure rise and knock. Significance of direct knock-measurements. Tech.High School Munich, Kneule A -.
	pp67-85	-ditto-	Report on the further development of the knock measuring instrument.	Change of microphone and direct conducti on of sound by wire. Different frequency selectors. Tech.High School, Munich, Funck A -.
	pp86-113	-ditto-	Experiments on the use of the acoustic-electric method for knock measurement with single and multicylinder engines in the lab. and on the road.	Discussion of installation. Test on single cylinder engines described. Road tests on various cars. Discussion of the electrical equipment. Tech.High School Munich, Funck A -.
Item 17	1893/U10	Lecture held: 21.11.41.	The interrelation of fuel research and supply.	The demands made on fuels are discussed in relation to the ways of meeting these demands. German Air Research Academy, Philippovich, A.F.
Item 18	1893/U11	1941	Research on fuel flow through an injection nozzle.	Based on study of the form of flow of the jet, the various factors of the formati on are discussed, including properties of the liquid and the external air. German Automobile Research, Osehutz A.-
Item 19	1893/U12	15.5.40	The properties and testing of aviation fuels.	The basis and practice of testing the properties of fuels Air Ministry Wilke/ Jantsch, A.-
Item 20	1893/U13	Paper read 1.2.40	The gasoline-diesel engine.	Description of new method and discussion of advantages. Oppau Penzig, A.F.
Item 21	1893/U14	24,25.6.38	Sound-proofing engine test rooms.	Lilienthal Geselleschaft, Zeller/Willms, etc. A.-

DOCUMENT NO.	AIOS REF.NO.	DATE	TITLE	CONTENTS
D 2872/46 Item 21	1893/U14 p.3.	24,25.6.38	Principles, experiences and results in silencing engine test beds.	Discussion of a) porous substances and b) resonators, either oscillating plates or columns of air. Lilienthal Geselleschaft, Zeller A.F.
	p.6.	-ditto-	A highly efficient sound-proofing material for test beds.	The theoretical advantage of a damaged resonator is discussed and a certain arrangement described and exps. with it are carried out. Lilienthal Gesellschaft, Willms A.F.
	p.8.	-ditto-	Sound-proofed engine test beds.	Report on test stand of Hirth Motor Co. incorporating cylindrical plates over inlet and exhaust towers and a special sound proofing material. Lilienthal Gesellschaft, Berrer, A.-
	p.13.	-ditto-	Sound-proofed test stations abroad.	Some data on test-stands by Pratt and Whitney and by Wright. Lilienthal Gesellschaft, Schmoller A -.
	p.14.	-ditto-	Comparative sound measurements on various test bed structures.	Study of sound intensity at three stands in relation to their constructions. Lilienthal Gesellschaft, Wehner A -.
	p.19.	-ditto-	Sound measurements of the sound-proofed test-stand of the DVL.	Lilienthal Gesselschaft Burger A -.
	p.21.	-ditto-	Experiences with various tower test stands of the D.B., Unterturkheim.	Towers alone were unsatisfactory. Plaster of paris plates and resonators were then used. "Heraklith" was tried as a substitute for Plaster of Paris. Lilienthal Gesellschaft Binder A -.
	p.24	-ditto-	Proofing arrangements and constructions which have been applied in practice.	Separate foundation, holed bricks, double doors, filled with concrete, rubber pads, subdivided inlet and exhaust towers. Lilienthal Gesellschaft, Ruckenbauer A -.
	p.26	-ditto-	General discussion.	Contains recommendations referring to measuring instruments, working materials, resonator dampers, height of tower etc. Lilienthal Gesellschaft - A -.
22	1893/U15 p.3.	28.12.37.	Results of sound proofing Passenger cabins in aircraft.	Detailed measurements on the effects of using porous materials and resonance. Lilienthal Gesellschaft. Wehner/Willms, A.-

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 22	1893/U15 p.9	28.12.37	Sound proofing of motor vehicles and its application to aircraft	Analysis of the factors producing sound inside the body of the car and means of eliminating its structure of the body to avoid resonance. Lilienthal Gesellschaft, Hoffmeister A -.
	p.12	-ditto-	Effect of vibrations on the Human organism.	Physological effects following a rapid power dive. Lilienthal Gesellschaft, Ruff A -.
	p.13	-ditto-	Recent investigations on the noise of Air screws.	The spectrum of the air-screw noise and mathematical analysis of the potential flow round the air screw and the intensity of sound. Lilienthal Gesellschaft, Willms/Ernstha sen A -
	p.21.	-ditto-	Increase of intensity of sound with circumferential vel.of airscrews or fans.	Establishes an empirical relation for the intensity of sound L. L - 68 log vu - 20 log a - 32. v - vel. in metres/sec and a - dist. metres. Lilienthal Gesellschaft, Lubcke A -.
	p.22	-ditto-	A quantitative method of investigating the intensity of sound in air-craft and results obtained with the method.	A complete sound spectrum is obtained by passage through a series of filters and amplifiers leading to a series of oscillographs. Lilienthal Gesellschaft, Schmoller, A -.
	p.26	-ditto-	The analysis of non-periodic vibrations.	A short note on the methods used for analysing such oscillations. Lilienthal Gesellschaft, Tronddenburg, A.-
	p.26	-ditto-	Frequency characteristics and penetration of noise from air-craft.	Physics of the propagation of sound dealing with intensity and the spectrum sound detectors. Lilienthal Gesellschaft Fischer/Kutzscher, A.-
	p.30	-ditto-	Note on the absorption of sound in fog.	Effect of increased humidity and of the particles of the fog. Lilienthal Gesellschaft, Heidemann, A -.
	p.31	-ditto-	Reduction of air-screw noise.	Resolution of source and synthesis of source of smaller intensity. Lilienthual Gesellschaft, Backhaus/Weymann. A.-

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
ED 2872/46 Item 22	1893/U15 p.34	28.12.37	Intercommunication in aircraft.	Discussion of position and construction of suitable microphones. Lilienthal Gesellschaft, Janovsky A -.
	p.38	" -ditto-	Communication in Aircraft.	Similar to previous paper. Lilienthal Gesellschaft, Sealmayer/Darre A -.
	p.42	-ditto-	Silencers for pipes.	Mentions the various possible methods and discusses in detail those suitable for aircraft Lilienthal Gesellschaft, Reiher A -.
	p.48	-ditto-	Summary of the results of the proceedings.	Lilienthal Gesellschaft, - A -.
Item 23	1893/U16 p.3.	22.4.38	Joint meeting of the German Chemical Society (Oil and Fuel Chemistry Group) and the German Society for Petroleum Research. The lubrication of gasoline engines in automobiles.	Characterises the performance of various oils and describes methods of testing oils. - Muller A -.
	p.13	-ditto-	Behaviour of lubricants in Diesel engines.	Continuous tests in a single cylinder engine with periodic withdrawals of oil. -, Kern, A. -
	p.21	-ditto-	Practical running tests on gear oils.	Experiments with rear exle and transmission gears, temp. rise and wear being measured at various loads trying out various types of oil. -, Muller, A .-
	p.31	-ditto-	Lubricating oil from Brown Coal.	A proposal to produce a lub.oil of 4° E at 50°C from brown coal tar by refining and dewaxing. -, Bube, A.-
	p.33	-ditto-	Changes in Diesel engine lubricant during operation.	Describes road tests. Examines causes of ageing and selects most suitable oils and means of reducing ageing. - Heinze/Widdecke, A.-
Item 24	1893/U17	March/April 1936.	The processes occurring in the injection systems of high-speed Diesel-engines.	The oscillating nature of the process is shown. Exp. results of general validity show how the main characteristics of the injection process may be simply predicted. V.D.I. Dresden, Blaum - -.

DOCUMENT NO.	CIOS REF.NO	DATE	TITLE	CONTENTS
FD 2872/46 Item 25	1893/U18	15.10.32.	The injection process in Diesel engines.	Relevant are: fuel pump, pressure line and nozzle. Exps. on injection delay and jet formation. Time studies by means of shadow photographs. V.D.I. Dresden, Holfelder -.
Item 26	1893/U19	Dated: 15.4.31 Issued: 3.1.33.	Measurement of the antiknock value of fuels.	Directions forthe C.F.R. Motor method. Standard Oil Development Co. (S.I.L.) Becker/Stacey, - -.
Item 27	1893/U20	-	DVL Thermoccuple.	Description of instrument for measuring combustion chamber and exhaust gas average temperatures. DVL, -, A, -
Item 28	1893/U21	-	Instructions for the DVL exhaust gas analyser for internal combustion engines.	General explanation of principles, together with detailed operating instructions and component lists. DVL - A -.
Item 29	1893/U22	-	Instructions for mounting the DVL automatic coolingshutter system.	DVL -, - -.
Item 30	1893/U23	1937 - 44	Graphs and data for fuel tests.	Oppau, Penzig A -.
Item 31	1893/V1	-	Theory of refrigerators.	Hand-written note books - Halder - -.
Item 32	1893/V2	-	Electricity.	Hand-written notes referring mainly to electric power engineering. - Halder - -.
Item 33	1893/V3	-	Heat engines.	Hand written notes. - Halder - -
Item 34	1893/V4	-	Combustion engines. Steam turbines.	Hand written notes. - Halder - -
Item 35	1893/V5	-	Theory of piston steam engines.	- Halder - -
Item 36	1893/V6	-	The I.G. test engine - instruction book.	Antiknock value determinations in the I.G. test engine. Description and test instructions. Oppau, Singer, A.-
Item 37	1893/V7	22.5.41 - 22.1.42.	Mixture - response curves.	Belonging to various reports and fuel tests. Oppau - A.-

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
BIOS 2872/46 Item 38	1893/X4	10.8.44.	Knock properties of an American aviation gasoline.	Mixture response curve by the Oppau method compared with those of some German gasolines. Oppau, Singer, A.-
Item 39	1893/X7	4.4.44.	Test of the oil additive I6(IG 1536) in DB 605 engines at the Genshagen Works (without centrifuge).	Observation of main bearing, Hublager, and piston rings when run with and without addition. Daimler-Benz. Halver. A -.
Item 40	1893/X9	30.3.43.	Review of the development work done by the Technical Experimental Station, Oppau, in the field of aviation.	Oppau, -, A.F.
Item 41	1893/X10	16.3.44.	Correspondence with Dr.Penzig.	Resistance of lacquers to ethyl fluid and a lacquer mixture as insulating material for a aparking plug. I.G. Ludwigshafen, -. A.-
Item 42	1893/X11	22.3.44	Report on the investigation of the composition and lubricating properties of U.S. aero-engine oil.	Spectrum analysis, friction and seizing limit measurement. Institute fur Metallphysik. Glocker, A.-
Item 43	1893/X13	20.3.44.	Comparison of a sample of captured American aero-engine oil with a German aviation oil.	Test of oil on the Siebel-Kehl wear machine under various conditions. S.M.P. Stuttgart, Brockstedt/ Willingen A -
Item 44	1893/X14	3.4.44.	Technical specifications for German aviation spirit VT 341.	Air Ministry, -, A -
Item 45	1893/X15	17.3.44.	Engine tests using a corrosion inhibitor (HO 1/136)	O.N. determination, supercharge test; deposit formation; ring sticking time. Test Station Rechlin Scroka /Schum, A.-
Item 46	1893/X23	16.2.44.	Lubricant additive I.G. 691 (solid without solvent).	Instructions for the preparation of the most favourable lubricant-additive mixture. D-B, Anders/Halver A -.
Item 47	1893/Z4		Technical specifications for Diesel aviation fuels.	Air Ministry - A -
Item 48	1893/Z5	4.2.44.	Conf.on tube testing into B.M.W. 132 N single cylinder engine.	Air Ministry, Glaser, A.F.
Item 49	3966/SA1	16.12.42.	The effect of peroxide in engines and its determination.	Starting with the thiocyanate method of Toule and Wilson, some improvements on it are made. Tech.High Schl Stuttgart, Widmaier - F.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
) 2672/46 tem 50	3966/SA2	5.2.43.	The effect of aldehyde on engines and its quantitative determinati on.	Review and test of various known methods. Best results were obtained with hydroxylamine hydrochloride. Tech.High Schl Stuttgart, Widmaier - F
tem 51	3966/SA3	10.2.44.	Vapour-lock properties of fuels.	An apparatus for measuring the V.P. of fuels at low temp. and equipment for observing the formation of vapour bubbles. Curves are given for V.P. and for altitude equivalent to bubble formation against temp. Tech.High Schl Stuttgart, Widmaier A -
tem 52	3966/SA4	19.6.43.	FKFS method for the determination of the bromine content of aviation fuels.	A volumetric method which takes 40 mins. and uses K-alcoholate to decompose the ethylene bromide in a bomb. Tech.High Schl Stuttgart, Widmaier - F.
tem 53	3966/SA5	10.1.44.	Loading and lubrication in recent in-line aero-engines of German and foreign origin.	Critical examination. Tech.High Schl Stuttgart, Hampp/Dorflinger -
tem 54	3966/SA6	10.3.44.	Fundamental Exps with a Master Con - rod bearing for Aero-Engines on the Plain Bearing Testing Machine.	Effect of oil inlet on oil flow and temp clearance, pos. of oil inlet and the relation between lubrication, bearing temp. and load capacity were investigated on a D.B. - 605 master rod bearing. D-B. Hampp/Seyboldt, A -
tem 55	3966/SA8	19.5.44.	Temp. Distribution in an aero-engine master con-rod bearing in the plain bearing Testing Machine.	The axial temp. distribution was measured at three points in the zone of max.bearing pressure, also the temp. of the oil leaving the bearing D-B, Hampp, A.-
tem 56	3966/SA9	20.6.44.	The running-in behaviour of piston rings with protective layers in Pearlite iron cylinders.	Various metallic and non-metallic surfaces were used in a monocylinder engine and also on a wear-test machine. FKFS. Rossenbeck - -
tem 57	3966/SB1	15.5.43	The mechanism of jet propulsion - Part II. The operation of a jet unit made up of blower and turbine.	Investigation of thermodynamic process determining the thermodynamic efficiency. Determination of thrust. FKFS, Weinig - -
tem 58	3966/SB2	15.8.43.	Extension of the FKFS rapid method of determining the T.E.L. content of fuels.	To obviate difficulties due to unsats.peroxides and resins, treatment with 70% H2So4, washing and drying with NA2So4 is recommended. FKFS, Widmaier - -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 59	3966/SB3	16.8.43.	Performance of electro-plated silver bearings in an engine.	FKFS, Rossenbeck/Starkm A.-
Item 60	3966/SB4	15.10.43.	Regulation of an Aero-engine blower by tapping.	Theoretical discussion of the idea. FKFS, Weinig - -
Item 61	3966/SB5	3.4.44.	Axial flow compressor.	Deals with the principles of calculating the properties and the possibilities of development of the axial compressor. FKFS.Eckert/Weinig - -
Item 62	3966/SB6	11.4.44.	The economic limits of super-chargin of the 2-stroke engine without utilising Exhaust gas.	Represents the relation between scavenging pressure and fuel consumption and then considers the prospects of high loading without exhaust turbine from new angles. FKFS. Fezer/Schmitz. - -
Item 63	3966/SB7	4.9.44.	Increase in the output of combustion engines by subdivision of the swept-volume.	Examines the causes for the dependence of output on the number of cylinders and demonstrates with practical examples. FKFS. Dorrer - -
Item 64	3966/SC1	6.9.38.	The two st oke ball valve engine with uni-flow scavenging characteristics.	and its power and FKFS, Kuhn - -
Item 65	3966/SC2	18.12.40.	Present position in the development of the Rieseler method.	FKFS, Rieseler/Durr - -
Item 66	3966/SC4	29.3.41.	Investigations into the development of self ignition operation for mixture compression engines.	To determine the conditions of operations from the point of view of fuel and engine and to establish the mechanism of combustion with self-ignition. FKFS. Ernst/Dorr, A.F.
Item 67	3966/SC5	3.4.41.	Calculations for a 7 stage axial blower.	FKFS Eckert/Weinig - -
Item 68	3966/SC6	12.11.41.	Rapid starting exps. on pistons with various protective coatings on their running surfaces.	FKFS. Rossenbeck/Platz - -
Item 69	3966/SC7	3.3.42.	Testing protective coatings on piston running faces in the quick starting test.	Various metallic and non-metallic coatings as well as surface treatments were tested. FKFS, Rossenbeck/Platz, - -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 70.	3966/SC8	18.5.42.	Exp. in the engine in the temp. conditions in aero-engine piston heads.	FKFS, Rossenbeck/Speer, - -
Item 71.	3966/SC11	28.8.42.	Quick starting tests with various running surface protective coatings for the BMW 132 piston.	FKFS, Rossenbeck/Speer, - -
Item 72.	3966/SC12	22.6.43.	Pressure and temp. measurements on the main bearings and the lubricating system of a DB605.	Observation of any small irregularities which give indications as to the causes of so far unexplained isolated failures in bearings. FKFS, Hampp, A.-
Item 73.	3966/SC13	20.1.45.	Improvement of the lubricating properties of oils by chemical additions.	Tests on the Siebel Kehl machine on the effectiveness of phosphorous compounds as additives. Instit fur Metallphysik, Glocker, - F.
Item 74.	3966/SD 1	24.4.41.	Operating instructions for the fuel test engine.	FKFS, Gross A -
Item 75.	3966/SD2.	30.3.43.	Instrument for the measurement of ignition delay (Model 1943).	Electrical circuit with photocell Description of instrument and instructions for using it with various engines. FKFS, Staiger, - F.
Item 76.	3966/SD3. pps.121-126	20.6.40.	Determination of T.E.L. bytwo methods.	a) gravimetric: Br2 in C Cl4; weight as PbCrO4. b) Volumetric: elimination of olefines by C Cl3. COOH. FKFS, Widmaier/Wenninger - -
	pps.126-130.	20.6.40	Effect of PbBr2 on light metal Alloys.	24 hours tests under various conditions. FKFS, Widmaier/Wenninger - -
	pps.130-131.	"	Measurement of temp of air cooled engines with the "Thermocolor" colours of the I.G.	Cert in temps at the surface change the quality of the colour which has been applied to it. FKFS, Gussmann/Berndorfer - -
	pps.131-132	"	The cause of breakages of valve springs.	FKFS, Stark, - -
	pps.132-135	"	Demonstrating a cylinder scavenging current with a sectional model in the water - tunnel.	FKFS, Siegel - -
	pps.135-159	"	Valve with shrouded guide.	FKFS, Siegel - -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46. Item 77	3966/SD4	1939-40	Tenth Annual Report.	Short summaries of the work under taken by the various groups comprising: A. automobile research (driving mechanism, carriage fuels and lubricants, tyres, chemical, special purposes etc. B. Aero-engines (vibrations, engines, chemistry, roller bearings, measuring technique, flow machines, etc. FKFS, -, - -
Item 78	3966/SD5	1940-41.	11th Annual report of the FKFS.	Fundamental research and development work in automobile engineering. FKFS. -. - -
Item 79	3966/SE1	-	Thesis for the "Diploma".	The starting properties of fuels to be investigated. The FKFS test engine is used together with various ignition accelerators and the results evaluated. FKFS. Demmer, - -
Item 80	3966/SE2	-	Thesis for the "Diploma".	The effect of the operating conditions on the anti-knock value of fuels is experimentally investigated with the aid of various instruments. FKFS, Kessler
Item 81	3966/SE3	-	Thesis for the "Diploma".	The ignition properties of hydrocarbon air mixtures in the Diesel engine and the effect of ethyl nitrate. FKFS, Schutze, - -
Item 82	3966/SE4	20.10.43	Thesis: To carry out investigations on the effect of the chemical pre-reaction on the starting characteristics in Diesel operation.	An arrangement is to be developed which returns the unignited, but compressed exhaust gases of the starting to the bombustion chamber. FKFS, Gerschler - -
Item 83	3966/SE5.	-	Thesis set: To examine the residue of the lubricating oils formed in engine runs, to determine the quantity formed in unit time and to determine the structure and sp.wt of residue.	FKFS, Haase, A.-
Item 84	3966/SE6	15.8.39	Testing cylindrical plain bearings at high rotational speeds.	Testing various working substances at 10,000 to 14,000 revs./min. measuring high output loss, oil consumption, temps. distribution, etc. Evaluation of results. Tech. High Schl Stutt art Dollhopf/Stephan.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2872/46 Item 85	3966/SE9	20.2.45.	On the effect of pressure and of sliding velocity as well as of the hardness of the working substance on the wear resistance when quartz dust is used as an abrasive in engine oil.	T.H.S. Wellinger/Brockstedt A -.
Item 86	3966/SF1	May '39	Comparative exps. on Bearing materials (interim report).	Tests on materials, including synthetic resins under conditions of limiting friction and attempts at evaluation in terms of physics and chemistry. German Fuel Research, Doring - -
Item 87	3966/SF2		Interim report on the running test of a car engine with a crank shaft bonded with synthetic resin.	A 100 hours duration test for general operational safety and in particular, for the effect of the material on the Schale, oil temp., for plastic deformations etc. German Fuel Research, Doring - -.
Item 88	3966/SF3	April '40	Interim report on new methods of evaluating the lubricating ability of oils and greases.	Method and discussion of results of the "break off" method measuring the break-off viscosity and a method which measures the efficiency or durability. German Fuel Research, Pietsch - F
Item 89	3966/SF4	Oct 1941	Methods of determining the technical merits of lubricant.	Tries to demonstrate methods by means of which the lubricating ability may be found, by approximating practical conditions; mainly applied to bearings and gears. German Fuel Research, Heidebrock - F.
Item 90	3966/SF5	1942	Hydrogen as a motor fuel.	The properties of hydrogen in relation to and the possibilities of operating a specially constructed engine. German Fuel Research, Ochmichen.
Item 91	3966/SF6	1.4.41	Interim report on the production of lubricating oils from Brown coal tar.	Chemical methods of treatment. German Fuel Research. Marder/Feichtinger
Item 92	3966/SF7	10.4.42	-ditto-	German Fuel Research - - -
Item 93	3966/SF8	-	-ditto-	German Fuel Research - - -
Item 94	3966/SF9	-	The applicability of ignition accelerators for Diesel fuels.	C.N. measured with various additives. Examination of the effect of storage corrosive properties, coking properties. German Fuel Research/H.Einze/Marder, Weidt, - F
& 95	3966/SF10	June, 1940	Tests on dust filters for internal combustion engines (first part)	Investigation of various filter-ing substances with respect to filter efficiency and filter resistance. German Fuel Research, Schmidt, A -

CUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
2872/46 m 96	3966/SF11		Testing the effect of fuel additives and their combustion products on the metals used in engine construction.	German Fuel Research, Schikorr/Alex, - -
m 97	3966/SF12	March,1944	Intermediate report on the test on an oil filter made of fibrous material.	Test of oil filter on a 160 vehicles, using various engines, fuels and oils. Tech.High Schl, Berlin, Schwarz, A -
m 98	3966/SG1	12.6.39	Experiments on the behaviour in the engine of synthetic fuels for spark ignition engines.	50-hour runs with three fuels of same anti-knock value. Samples of lubricant were taken out at regular intervals and examined. The formation of oil carbon was observed and the relation between oil and fuel thus investigated. German Fuel Research, Widmaier, - -
m 99	3966/SG2	31.3.41	Experiments on a carburettor engine with self-ignition.	Using a 4/spark ignition engine the usual carburettor. The ignitability of the fuel was raised by 100% by ethyl nitrate. Power consumption and combustion pressure were measured at various compressive ratios. German Fuel Research, Ernst/Dorr, -F
100	3966/SG3	1.10.41	Mixture formation and combustion.	Position of research in the field of working methods on the principle of the Diesel engine.
	pps 1-9		Application of the two fuel method to the Diesel engine.	Butane and town gas were used as second fuels. The following were measured: output, rotational speed, pressure peak, gradient of pressure rise, pressure of fuel line, motion of valves needle, temperatures of exhaust cooling water entry and exit and fuel consumption. German Fuel Research, Pothoff, - -
	pps 9-25	↓	Operation of the Diesel engine on liquid fuel and on generator gas. Summary up to date, of experiences and experimental results.	German Fuel Research, Rixmann, - -
	pps 25-39		Efficiency and mode of combustion in the Diesel engine.	Discussion on the basis of thermodynamics. German Fuel Research, List, - -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2572/46 Item 100	3966/SG3 pps 39-43		Supercharging of motor car Diesel engines.	Increasing output by addition of oxygen, or by supercharging. German Fuel Research, Ernst, - -
	pps43 - 61		Mixture formation and combustion in the bomb.	Ways of controlling the course of the combustion in injection engines, referring to: jet formation, ignition mixture formation, velocity of combustion and burning time. German Fuel Research, Blume, - -
	pps61-95		The losses in mixture formation and combustion and remarks on the rotational speeds of engines.	Mainly these have been investigated. Frictional losses as a function of the course of combustion hydraulic losses due to "extra-flow" in engines with divided combustion chambers; losses due to transfer of heat; losses due to excessive time of reaction. German Fuel Research, Ullmann, - -
	pps 95-113	25.7.40	Recent progress in the knowledge of jet formation and jet breakdown.	Referring to: effect of initial perturbation due to nozzle; effect of physical properties of liquid; effect of physical properties of air; effect of pressure of liquid. German Fuel Research - Oschatz -
	pps 113-119		Measurement of ignition delay and rating of fuels.	Various methods of measurements. Relation of ignition delay and rating of anti-knock value. German Fuel Research/Ernst -
	pps 119-122		The diesel engine with side valves.	Constructional features and results. German Fuel Research/Ernst -
2573/46 Item 1	3966/SG4	11.10.41	Second conference of the working group for problems relating to combustion in engines.	German Fuel Research
	pps. 1-21		Effect of the shape of the nozzle on shape of jet and mixture formation.	Experiments in the bomb to determine the effect of the initial disturbance due to the nozzle, the properties of the liquid and of the air. German Fuel Research-Oschatz -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
ED 2873/46 Item 1	3966/SG4 pps 21-47		The effect of air movements and jet formation by the nozzle on output and consumption of a high speed vortex chamber Diesel engine.	German Fuel Research-Ullmann -
	pps 47-55		Adaptation of vortex chamber engines to operation with Diesel wood gas.	German Fuel Research-Kohlepp -
	pps 55-68		Combustion in the engine using the Diesel gas method.	The effect and significance of the air excess number and the ignition delay. German Fuel Research, Rixmann -
	pps 68-75		Knock rating in a multi-cylinder, spark ignition engine by bracketting.	German Fuel Research - Schutz
	pps 75-89		On the theory of the process of combustion in engines.	Combustion in Diesel engines, discusses the behaviour of a single drop and then applies the results to jets. German Fuel Research - Dreyhampt -
	pps 89-96		Combustion of "liquid gas" (producer gas/propane-butane mixture) in a normal Diesel engine.	Deals mainly with experiments on the injection system. German Fuel Research - Dreyhampt -
Item 2.	3966/SG5	4,5/12.42.	Third conference of the working group on problems relating to combustion in the engine.	German Fuel Research -
	pps 1-15		Investigation of losses due to heat transfer in bombs resembling the combustion chamber.	Determines the heat transfer number as a function of pressure, abs. temp. combustion turbulence, piston and gas movement turbulence, size and shape of combustion chamber, radiation. German Fuel Research - Just -
	pps 15-19		Electric precision methods for investigations on engines.	German Fuel Research - Ullmann
	pps 19-23		Fuel consumption of carburetter engines.	Note on development and difference between German and American engines. German Fuel Research - Richter
	pps 23-39		Investigation on suction lines of multi-cylinder carburetter engines.	German Fuel Research - List
	pps 39-53		Demands on the carburetter of automobile spark ignition engines.	Analysis of the way in which the carburetter should be developed. German Fuel Research - Eberau

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
D 2873/46 item 2	3966/SG5 pps 53-61		The effect of the airfilter on the output and fuel consumption of the engine.	Theoretical treatment of the effect of the static pressure difference due to the flow resistance of the air filter. German Fuel Research - Schmidt
	pps 61-79		The thermodynamics of composite combustion engines.	Definitions and symbols and energy calculations. German Fuel Research - Dreyhampt.
item 3	3966/SG6		Research plan 1939/40	Subdivided into: working substances, engines and gears, cars, fuels and lubricants, tyres. German Aviation Research.
item 4	3966/SH1	August 1942	Instructions for the D.V.L. exhaust gas tester for internal combustion engines.	Description, mounting, use and servicing. D.V.L. - Broicher-A.-
item 5	3966/SH2	4.11.42.	Investigation of the running props of radially loaded segment bearings with lead bronze and light alloy surfaces.-	Running tests carried out in the D.V.L. bearing test machine. D.V.L. - Siedenburg -
item 6	3966/SH3		1941 year book of German Aviation Research. Contains the following sections: Physical basis of engine operating methods, constructional parts, jet engines, cooling, working substances, for the power plant, Fuels and lubricants, and measuring technique. There are 62 reports in the volume of which the 7 reports of the Fuel & Lubricant Section are listed here.	Part II Power Plant. German Aviation Research - Phillippovitch -
	pps 419-433		Engine and lab.tests methods for rating the antiknock value of fuels.	Review of methods and comparison with DVL supercharge method as standard. German Aviation Research - Philippovitch -
	pps 433-441		Antiknock value determinations for highly aromatic fuels.	Investigation of the effect of the type of aromatics on the supercharge knock limit in the BMW 132 at boost air temp.80°C. German Aviation Research - Mayer- Bugstrom, Seeber -
	pps 441-448		Effect of sulphur compounds on the antiknock value and residue form of leaded fuels.	German Aviation Research - Widmaier -

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2873/46 Item 6	3966/SH3 pps.448-453		Damage caused by detonation, its causes and prevention.	Experiments to find out the conditions for and location of knock damage. German Aviation Research - Kuhm, Zimner -
	pps.453-456.		FKFS rapid method of determining the lead content in aero-engine fuels.	Reaction with iodine and iodometric titration. German Aviation Research - Widmaier -
	pps.456-460.		An exact rapid method for determining lead in fuels.	Decomposition of T.E.L. by SO_2 CL_2 dissolving P.P.T. in weak alkali and titration against dithizone carbon. Tetrachloride solution. German Aviation Research, Morghen -
	pps.460-470.		Investigation of the boiling and ageing properties of lubricants.	Physico-chemical investigations of six oils and their fractions artificial ageing, effect of metals and gases. German Aviation Research-Widmaier/ Nenninger -
Item 7	3966/SH4		Part II has the sub-headings, constructional parts; jet engines cooling; working substances; and fuels and lubricants as follows:- (There are 23 Reports, of which only the 6 Reports in the Fuel and Lubricant Section are considered here).	
	pps.141-149		Testing the lab.methods of determining the lead content in fuels.	Nine different methods are tested and the results compared. German Aviation Research-Widmaier - -F.
	pps.149-156		Determination of "I - T" fluid and of its ageing products in aviation fuels.	Simplification of the lead method given in year book 1941 p.456; a rapid ethylene bromide method and description and determination of T.E.L. decomposition products. German Aviation Research - Morghen - -F.
	pps.156-162		Testing lubricants by friction and wear tests on engines.	Lub.oils of equal viscosity were tested under the most unfavourable conditions on single cylinder test stand engines. German Aviation Research - Krienke - -F.
	pps.162-170		Supervision of piston temperature during endurance testing.	German Aviation Research - Glaser - - F.
	pps.170-179	1942	Laboratory method of testing the ageing of lubricating oil.	Classification of available method according to whether they measure: ring sticking, sludge in crank-case or residue formation and experiences made with the common methods. German Aviation Research - Bugstrom - F.
	pps.179-187		Quantitative determination of the composition of liquids (multicomponent mixtures) based on their selective absorption in the infra-red region.	Evidence for the applicability of the method to pure liquids and multi component systems. Description, with examples of method of experimentation and evaluation.G.A.R.S.-Gibbald- F

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
~~D~~ 2873/46 Item 8.	3966/SH5 pps.2-11	26.9.41.	Recent investigations on the self-ignition of fuels by adiabatic compression.	D.V.L. - Jost, Rogener & Von Weber - F -
	pps.11-19		Correlation of the results of laboratory investigations on self-ignition of fuels with behaviour in engines.	D.V.L. - Rogener - F.
	pps.28-56		Pre-ignition reactions in the gasoline engine.	D.V.L. - Schmidt and Muhlner - -F.
	pps.56-71		Reaction kinetics in the oxidation of n- and iso-paraffins.	D.V.L. - Muffling - F.
	pps.77-89		The effect of individual factors on engine detonation.	D.V.L. - Schmidt - F.
	pps.91-109		Isentropic change of state in dissociating gases, and the application of the method of sound dispersion to the investigation of very rapid, homogeneous gas reactions.	D.V.L. - Damkohler - F.
	pps.112-127.		Physico-chemical problems in the ignition of gas mixtures in engines. Self-ignition and knocking.	D.V.L. - Zeise - F.
	pps.127-141.		Measuring the rate of ignition of an air-fuel stream.	D.V.L. - Unger - F.
Item 9.	3966/SH6.	5.4.41.	The preperties of rubbers at low temps.	Tests with commercial and new synthetic rubber brands at-70 under pressure. Also swelling test. German Aviation Research - Kuch, Telschow -
Item 10.	3966/SJ1.	5.6.44.	Deposits in the cleaner of the closed circuit method.	Examination of physico-chemical properties. F.K.F.S. - Widmaier - - F.
Item 11.	3966/SJ2.		Ring movements and ring breakages.	F.K.F.S. - Kuhm -
Item 12.	3966/SJ3.		Observation windows in engines.	Summary of experience gained so far. Detail description of construction of small round quartz windows. F.K.F.S. - Graff -
Item 13.	3966/SJ4.	22.5.41.	Experiments with G.M.1. in the D.B. 601F.	Varying quantities of GM1 were injected at various heights. F.K.F.S.- Held - A.F.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
D 2873/46. Item 14.	3966/SJ5.			Reprint from Year Book 1941. Deutsche Luftfabrtforschung. Part II 462. German Aviation Research -F.
Item 15.	3966/SJ6.	1940.	Artificial ageing of lubricants and ageing in the engine.	Description and discussion of known methods and some exps. with Noacks instrument. German Aviation Research - Widmaier - A.
Item 16.	3966/SJ7.		Report of activities of the F.K.F.S. in the report year 1940/41.	F.K.F.S. - Kamm -
Item 17.	3966/SJ8.		Test apparatus for Diesel fuels.	Description of test engine with accessory equipment suitable for investigation of the relations between fuels and engines. F.K.F.S. - A. -.
Item 18.	3966/SJ9. Draft for SA7.	22.9.43.	Addition of Phos-phenylchloride to the lubricant to check wear and friction results obtained with apparatus and automobiles in aero-engine stand.	-F. See page 97
Item 19.	3966/SK1	1.9.42.	Development and importance of T.E.L. as an anti-knock addition. Also other articles of aero-dynamic interest.	Critical review of literature on T.E.L. its properties, production, use and effect as well as its detection. Z.W.B. Tech.Repot - Widmaier, Nenninger.
Item 20.	3966/SK2	24.10.42.	The effect of residual gas scavenging and mixture stratification on the power and consumption of a four/gasoline engine.	Z.W.B. Tech.Report - Siezel.
Item 21.	3966/SK3	March 1939	Test directions for Aero engines for use in Diesel engines.	R.L.M. A -.
Item 22.	3966/SK4	May 1943	Experience with Electroacoustic knock detection in Aero-engines.	Explains the principle and application of the method. Possibilities and limits of the method and experience with it. Inst. for chemical technology of the technische Hochschule Munich. P. Funck - A -.
Item 23.	3966/SK5	30.8.44.	The bearings of the British Aero-Engine Bristol "Hercules XI".	Airforce Perret, Endres -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2873/46 Item 24	3966/SK6	1.3.37.	Production of valuable lubricating oils from Indigenous crudes.	Precipitating of asphalt with propane. Distillation and more detailed description of various experiments with selected solvents. Inst.chem. Technology Tech. Hochschule Berlin - F -.
Item 25	3966/Sk7		Effect of atmospheric pressure on the examination of fuel by means of the ignition value instrument.	Chemico-physical experimental station of the Navy. - - -.
Item 26	3966/SK8		On the principles of temp. measurement and its shortcomings.	Description and discussion (errors, limits and applicability) of known methods of temp. measurement. (one of 8 reports) -
Item 27	3966/SK9	31.7.42	Improvement of the cold-starting properties and performance in winter of automobiles.	Methods for heating batteries coolant and intake air, for freeing starter drive and cranking by external means. Dilution of engine oil, gear oil, etc. Low temp. starting fuel. Summary of results of management group of Motor Vehicle Industry A -.
Item 28	3966/SK10	Jan/Feb 1940.	Cold starting tests on automobile Diesel engines.	D.V. in direct injection and A.H.N. direct injection engines at-15°C test with various starting aids. Central Lab. for "Postkraftwagon", Mellintin, Fenerhalm, Martiensen A -.
Item 29	3966/SK11	May 1934.	On the relation between lubrication and wear in lubricated sliding friction.	Examination of existing and proposal of new concepts for lubrication states. Analysis of title state, discussion of measuring instruments. E. Heidebrock - A -.
Item 30	3966/SK12		The Spherical piston K.V.P. 0501 and 0505.	Spontaneously tightaing piston ring and piston and special tightening cylinder are tried. T.H.Dresden - - -.
Item 31	3966/SK13		List of reports.	Army research station, Peenemunde Travermunde, Rechlin - - -.
Item 32	3966/SK14	27.10.44.	Wear measurements in the BMW oil testing engine.	To determine the wear properties of various aero-engine oils by evaluation of data obtained in acceptance tests on the BMW oil test engine. Intarva, Wenzel Borchert A -.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
FD 2873/46 Item 33	3966/SK15	30.6.43	F.K.F.S. rapid method of determining the lead contents of aviation fuels. (One of five reports)	
Item 34	3966/SK16			German Aviation Research - Widmaier
Item 35	3966/SL1	30.7.40		Receipts for special additions. See H.22 (identical).
Item 36	3966/SL2	22.11.40	The standard fuel Z as a secondary reference fuel in anti-knock measurements.	Oppau - 200 - - Schuch. Comparison with and advantages over Benzene. Tests by 24 stations. I.G.Oppau Singer.
Item 37	3966/SL3	22.11.40	Comparative experiments with knock engines. (v.v.82).	Co-operative tests to find out if the accuracy is increased by using a mixture of Eichbenzin and standard fuel Z. I.G.Oppau - Singer -
Item 38	3966/SL4			Same as Q.30.
Item 40	3966/SL6			Same as A.27.
Item 41	3966/SL7	25.11.42.	Half-yearly comparative knock tests.	Tests as 65 stations using 107 engines. I.G.Oppau - Singer
Item 42	3966/SL8	25,26.11.41.	Report on the meeting of the Working Group for knock measurement.	I.G. Oppau - -.
Item 42	pps.5-11		Result of the deductions from experiments in October 1941.	Refers to comparative (accuracy) O.N. tests according to research and motor method. I.G. Oppau - E.Singer.
Item "	pps.11-15		Knock measurements with synthetic gasoline.	Discussion of discrepancies found in the knock measurements with synthetic gasoline. I.G.Oppau W.Dannefelser.
	pps.15-18		Calibration of knock test engines against seven engines of German test engines.	I.G.Oppau H.H.Newmann -.
	pps.18-22	25,26.11.41	Test methods and octane number.	Short general review. I.G.Oppau - W.Witschakowski.
	pps.22-29		On apparatus for knock measurement.	The experience gained at the I.G.Laboratories with the Midgley Apparatus. I.G.Oppau-E.Singer -.
	pps.29-36		Experience in the supervision of test engines.	Recounts the methods used and discusses their merits. I.G.Oppau - W.Dannefelser.

DOCUMENT NO.	CIOS REF.NO.	DATE	TITLE	CONTENTS
ED 2873/46 Item 42	3966/SL8 pps.36-39	26.11.41.	Experience in and working with the "Oppau Lattice".	I.G. Oppau - L Kohler -.
Item 43	3966/SL9			Same as U4.
Item 44	3966/SL10	37.4.40	Comparative tests with knock testing engines. (V.V.75).	Eight carburetter fuels were tested at 23 stations using 37 engines, and the motor and research methods. I.G.Oppau Singer -.
Item 45	3966/SL11	22.5.41.	Effect of boost air temp. and compression ratio on the mixture response curves in the supercharge method.	Experiments and analysis of exp. results. I.G. Oppau - Witschakowski - A -.
Item 46	3966/SL12	4.8.41	Fuel rating in the small single cylinder engine. (Oppau method).	Showing that the same fuel rating can be obtained in the I.G. test engine as by the supercharge method. I.G. Oppau - Singer - .
Item 47	3966/SL13	10.10.41		Same as A.26. I.G.Oppau R.Helder -.
Item 48	3966/SM1	Oct.44	Starting aero engines in Winter (instruments handbook)	Gives instructions and discusses difficulties. Airforce A - -.
Item 49	3966/SM2	Feb.1939	Technical and Scientific advisory body.	GIVes a list of institutes, laboratories available, and their respective working fields. T.H.Stuttgart - - -.
Item 50	3966/SM3		The field covered by the work of the Z.W.B.	Extract of T.B. vol. 8(41) No.2. — H.Dominke.
Item 51	3966/SM4	1942	Construction of parts of Engines A	5 photographs. F.K.F.S. - W.Kamm -
Item 52	3966/SM5	15.4.44.	Oil additions.	Two pages of hand written notes.
Item 53	3966/SM6	25.5.45.	List of documents M8870...M10691.	
Item 54.	3966/SN1		Power Measuring Instrument.	F.K.F.S. -
Item 55.	3966/SN2		Pressure measuring appliance.	F.K.F.S. -
Items 56 - 61	3966/SN3-8		Files of drawing of electrical and other parts.	

MENT NO. 73/46.	CIOS REF NO.	DATE	TITLE	CONTENTS.
62.	3996/1	April '45.	Specifications for fuel F2.	
63.	"/1A	Nov. '44.	Specifications for aviation fuels B4, C3.	Air Ministry - F.
64.	"/2.	Oct. '44.	Specifications for fuel J2 and running-in fuel J2 etc.	Air Ministry - F.
65.	"/2A.	Aug. '44.	Specification for aviation Diesel fuel K-1 and its components.	Air Ministry - F.
66.	"/3.	Nov. '44.	Specifications for aviation fuel A3.	Air Ministry - F.
67.	"/4.	5.10.44.	Supplement to fuel specification for A3 and B4.	Air Ministry - F.
68.	"/5.	1.11.43.	Specification for Diesel fuel and carburettor fuel.	Air Ministry - F.
69.	"/6.	Summer '44.	Specifications for Diesel fuel and carburettor fuel for German Amy.	F.
70.	"/7.	May '44.	Specifications for aviation fuels A3 and B4 and their components.	Air Ministry - F.
71.	"/8.	April '44.	Specification for aviation fuels - Same as 3996-63, 65, 66.	Air Ministry - F.
72.	"/9.	22.1.43.	Gum determination in aviation fuels.	Air Ministry - F.
73.	"/10.	June '44.	Specification for gasoline blending components.	Air Ministry -
74.	"/11.	-ditto-	Determination of inhibitors in aviation gasoline.	Air Ministry - F.
75.	"/12.		Spe cification for blending components of aviation lube oil S3.	Air Ministry - F.
76.	"/13.	Feb. '44.	Specification for starter fuels for spark ignition engines.	Air Ministry - F.
77.	"/14.	May ' 42.	Specification for aviation fuels.	Air Ministry - F.
78.	"/15.	June '44.	Specification for gear and motor oil.	Air Ministry - F.
79.	"/16.	July '44.	Specifications for motor oil (winter) .	Air Ministry - F.
80.	"/17.	July '44.	Specifications for motor oil (summer).	
81.	"/18.	-ditto-	Specifications for water pump grease.	
82.	"/19.	June '44.	Specifications for protective greas e 40 L	Army.
83.	"/20.	"	Specifications for airplane instrument grease.	Air Ministry.
84.	"/21.	"	Specification for coolant pump grease.	Air Ministry.
85.	"/22.	"	Specifications for aeroplane axle grease.	Air Ministry.
86.	"/22A.	"	Specifications for aeroplane grease (blue)	Air Ministry.
87.	"/23.	"	Specifications for aeroplane rocker arm grease.	Air Ministry.
88.	"/2 4.	May '44.	Specifications for chassis grease.	Air Ministry.
89.	"/25.	20. 1.43.	Specifications for low temp. gun oil. Same as ZDM32 of 3996-41.	Army.
90.	"/26.	March '43.	Specifications for aeroplane lube oil SS607.	Army.
91.	"/27.	"	Specification for aviation lube oil ASM(V2)	Air Ministry.
92.	"/27A.	May ' 43.	Specifications for aviation lube oil components S3.	Air Ministry.
93.	"/28.	March '43.	Specifications for aviation lube oil S3 and V2.	Air Ministry.
94.	"/29.	"	Specifications for aviation lube oil S3 (SS960)	- Air Ministry.
95.	"/30.	"	Specification for aviation lube oil SS1006.	- Air Ministry.
96.	"/31.	"	Specification for instrument grease.	- Air Ministry.
97.	"/32.	28. 12. '42.	Specification for hydraulic oil (brake fluid).	- Army.
98.	"/33.	25. 10. '42.	Specification for rust preventive oil.	- Army.
99.	"/34.	"	Specification for hydraulic oil (impulse oil).	- Army.
100.	"/35.	30.10.41.	Specification for rifle cleaning oil for use at low temp. Same as ZDM31 of 3996 - 41.	- Army.

DOCUMENT NO.	CIOS REF NO.	DATE.	TITLE	CONTENTS.
D2874/46.				
Item 1.	3996/36.	20.9.41.	Specification for protective grease 40.	Army.
Item 2.	" /37.	20.9.41.	Specification for protective grease 40 (Tropical). Same as ZDM 33 of 3996-41.	Army.
Item 3.	" /38.		Specification for gun oil.	Army.
Item 4.	" /39.	May '39.	Specification for rust prevention oil 39.	- Air Ministry.
Item 5.	" / 40.	15. 8.38.	Specification for gun grease.	- Army.
Item 6.	" / 41.		German Navy specifications.	- Navy F.
Item 7.	" / 42.	1942.	Research Report 1942.	I. Synthesis of lubricants. II. Utilisation of by-products - ZEA.
Item 8.	" /43 .	1941.	Research Report 1941.	Synthesis of lubricants - utilisation of by-products lubricating oil, Bitumen, Analysis, co-operative work with other firms. - ZEA.
Item 9.	" /44.	1940.	Research Report 1940.	" - ZEA.
Item 10.	" /45.	1939.	Research Report 193 9.	" - ZEA.
Item 11.	" /46.	16.10.43.	Analysis of synthetic lubricating oils by selective absorption.	Rhenania Ossag - Hamburg - Hoter.
Item 12.	" /47.	15. 6. 43.	Effect of various cracking conditions on the course of cracking, the quality of the cracked distillate, case of polymerisation, and the quality of the synthetic oil.	Rhenania Ossag - Hofmann -.
Item 13.	" /48.	5. 6.43.	The structure of gel greases and their changes.	Discussion of experience gained with the various types of gel greases. ZEA LAB. Wgr. - LEHMANN
Item 14.	" /49.	11.5.43.	Effect of hydrochloric acid concentration on the rate of polymerisation and oil viscosity.	Rhenania Ossag - Hamburg - Hofmann -
Item 15.	" /50.	18.9.42.	Processes for the polymerisation of cracked distillates to form synthetic lubricating oils.	Rhenania - Ossag - Marcus -
Item 16.	" / 51.	7.7.42.	Preliminary report on the chromatographic analysis of mineral oils.	To test the possibilities of the method. ZEA - Hoter.
Item 17.	" / 52.	30.12.41.	Regeneration of used oils containing Voltol.	ZEA.
Item 18.	" / 53.	15. 9.41.	Regeneration of filter clay.	Discusses mainly the composition of the extraction solvent. Rhenania Ossag - Hofmann -
Item 19.	" / 54.	8. 9.41.	On the decomposition of sludges accumulated during polymerisation.	To find the conditions under which the sludge may be decomposed by water organic acids, and bases. Rhenania Ossag - Zerbe -
Item 20.	" / 55.	6. 9.41.	Use of Al Cl 3 sludge as a contact substance in the cracking of paraffins.	Testing the efficiency of the sludge and analysis of the cracked products. Rhenania Ossag - Marcus -
Item 21.	" / 56.	3. 9.41.	The composition of sludge oil and its refining.	The details of refining sludge oil and the products obtained. Rhenania Ossag - Zerbe -
Item 22.	" / 57.	15. 8.41.	Reactions in the cracking plant.	The reaction products are collected in three stages. These are analysed and the bearing of their composition on the reactions is discussed. Rhenania Ossag - Zerbe.

DOCUMENT NO. FD2874/46	CIOS REF. NO.	DATE	TITLE	CONTENTS
Item 23.	3996/58.	1.8.41.	Resistance of tank linings against spent sulphuric acid.	Vulcanite and "Hyhand" were tested with 70°- 80° acid for 40 days. Rhenania Ossag - LEHMANN -
Item 24.	" /59.	17.7.41.	Chemical composition of voltolized oil and the reactions during voltolization - Pt. I.	Separation of voltolized oils into an oil of a resin part by methyl-ethyl-Ketone - Rhenania Ossag.
Item 25.	" /60.	30.9.41.	As Item 24, Pt. 2. Concerning the chemical composition of voltol and the process of voltolization.	Fractional separation of voltolized oils by methyl-ethyl-ketone - Rhenania Ossag - Burmeister.
Item 2 6.	" /61.	28.7.41.	Filter aids in the dewaxing of oils.	A number of subst. were tried. The velocity of filtration and the oil content of the remaining paraffin were observed. Rhenania Ossag ZEA - Whr - Hoter.
Item 27.	" /62.	1.7.41.	Regeneration of filter clay.	To find the most effective solvent mixtures for the removal of resins. Rhenania Ossag ZEA - Whr- Hofmann.
Item 28.	" /63.	16.5.41.	Experience in the extraction of filter clay at the Wilhelm plant of the Harburg works.	To remedy excessive time of extraction and excessive oil content at the plant. Rhenania Ossag - Hofmann.
Item 29.	" /64.	18.6.41.	Neutralisation and refining of crude polymerisation products.	Rhenania Ossag - Zerbe after test by H. Burmeister.
Item 30.	"/65.	31.3.41.	Polymerisation of cracked distillates to synthetic lubricating oils.	Rhenania Ossag - Zerbe -
Item 31.	"/66.	16.12.42.	The effect of peroxides on the engine and their determination.	Testing of Joule and Wilson's thio-cyanate method, some suggestions for its improvement and corresponding expriments. German Aviation Research - FKFS - Widmaier.
Item 32.	"/67.	1.8.42.	The effect of the lead content of fuels on the constructional parts of aero-engines.	Testing the durability of outlet valve and piston at two different concs. of T.E.L. in the fuel with the Jumo 211. German Aviation Research - DVL - Denkmeier- Kerwien-
Item 33.	"/68.	26.10.42.	Second part of U.M.688.	Similar experiments with DB 605A. German Aviation Research - Denkmeier - Kerwien.
Item 34	"/69.	7,8,5. 42.	Report on lubrication conference 2nd Part: Ageing.	
pps 5 - 29.			On the ageing of oil and its changes in use.	Discussion of mechanism and the important factors as well as means of reducing the effect. DVL - Philippovich - F.
pps.29-41.			On the mechanism of the ageing of hydrocarbon oils.	Investigation by means of a special apparatus and discussion. DVL - I. Morghen - F.
pps.41-57.			The ageing of lubricants in the aero-engine.	This discusses the point to be observed when testing lubricants in a main engine. DVL - Griessmann -
pps.57-89.			Laboratory test methods for the ageing of lubricating oil.	Critical review of laboratory methods and their relation and behaviour of oils in the engine. DVL. Meyer BUgstrom.
pps.89-103.			Artificial and engine ageing of lubricating oil.	Refers particularly to DVL and Noack apparatus plus methods and discusses agreement with engine tests. DVL - Widmaier.

UMENT NO.	CIOS REF. NO.	DATE	TITLE.	CONTENTS.
874/46. m 34 td.	3996/69. pps.103-111	7,8.5.42.	Principles of ageing tests of lubricating oil.	Discussion of the discrepancy existing between lab. ageing tests and practical tests. DVL - Baader.
	pps.111-129		The question of the determination of the asphalt content in aged lubricating oils.	Describes the orthodox and a simplified DVL method of analysis, also the effect of quantity of oil absorbed in the filter in the determination of asphalt by precipitation with benzene. DVL - H. Tramm.
	pps.129 - 151		Control of piston temperature in continuous fuel test.	Discussion of available methods and description of DVL temperature control apparatus. DVL - Glaser.
	pps.151 - 173.		Experiences with lubricant test runs for ring-sticking.	The test bench of the I.G. Oppau has been used. DVL - W. Lauer.
	pps.173 - 183.		The use of the I.G. test engine for the examination of lubricants.	DVL - Halder.
	pps.183 - 191.		Exprriments on piston ring sticking in the N.S.U. engine.	Description of engine, procedure and some of the results. DVL - Schaub - F.
	pps.191 - 205.		Testing aviation oils in the D.K.W. engine.	Description of engine and discussion of suitability for tests. Test results. DVL - H. Wenzel - F.
	pps.205 - 211.		Experiments on sludge formation in the N.S.U. engine.	Alterations to engine to obviate interference by and facilitate collection of sludge. Procedure of tests and results. DVL - F. Schaub.
	pps.211 - 237.		Engine lubricant ageing in the V.S.A.	DVL - C.F. Krienke.
	pps.237 - 242.		Application of the test results to practical conditions.	Summary of results obtained with monocylinder engine tests over 2 - 3 years. DVL - Adam - F.
	pps.243 - 269.		Discussion.	DVL - Dunken - F.
35.	3996/70.	11,12.12. 41.	Report on lubrication conference 1st part: Friction, wear and low temp. properties.	DVL -
	pps. 5 - 15.		The problem of lubrication from the point of view of aviation.	General review of specific aviation problems, compared with machines and discussion of measurement of lubricating properties. DVL - Philippovich.
	pps. 15 -23.		The nature of the process of lubrication.	Deals mainly with lowering friction. Discusses mechanical problems in measuring instruments. DVL - Vogelpohl - F.
	pps. 23 -43.		The arrangement of molecules in liquids, and the mechanical properties of liquids.	Review of position of fundamental research. DVL - H. Harms - F.
	pps. 43 -59.		The arrangement of molecules in boundary faces (particularly metallic ones).	Discussion on the basis of 'adhesive strength' (permanent dipole, polarisability) "tear off strength", general absorption etc. DVL Dunken - F.
	pps. 59 -63.		Heat conductivity and sp. heat of liquids.	Discussion of available literature on connection between molecular structure and heat conductivity and sketch of problems to be investigated. DVL - H.S. Stuart.
	pps.63 -77.		The nature of wear.	DVL - E. Siebel - F.
	pps.77 -91		Technical methods for determining the lubricating properties of oils.	Gives the essential characteristics of the various methods. DVL - E. Hildebrock -
	pps.91 -107.		Temperature rise, friction and wear in boundary lubrication and its relation to "oiliness".	New apparatus by means of which the three title quantities are measured independent of viscosity effects. Tests carried out with steel-cast iron. DVL - Kluge - F.

ENT NO. 14/46	GICS REF NO.	DATE	TITLE	CONTENTS
35	3996/70 pps.107-113.	11,12.12.41.	Boundary lubrication and Coulomb's law.	Pressures necessary to obtain boundary lubrication with various surface roughnesses and tests on the validity of Coulomb's law in boundary lubrication. DVL - Bochmann.
pps.113-119.			The extent to which bearings may be loaded as a function of their constructional features.	Reasons for varying max. permissible loads shown by examples. General rules derived and a standard bearing developed therefrom which shows exp. results to be compared. DVL - Busko.
pps.119-149.			Boundary lubrication with chemical compounds.	Tests as above with compounds of different characters to find out which components of oils give rise to their characteristics in boundary lubrication. DVL Eicke - F.
pps.149-159.			Static friction and lubricating properties.	Discussion and fundamental experiments. DVL. A.Bartel -F.
pps.159-169.			The influence of breadth on the load carrying capacity and friction of a plain bearing.	Critical review of theoretical solutions so far proposed. DVL. K. Bauer. A. Bartel.
pps.169-185.			Experiments with the four-ball machine.	The effect of additives on the reproducibility of results and some test results for surface treatment. DVL—R.Halder.
pps.185-191.			The oil test machine of the Z.F.	Description and characteristics of the machine. DVL. O. Soden - F.
pps.191-203.			Test methods and the influence of lubricating oils in false brinelling of ball and roller bearings.	Description of test apparatus. Investigation of effect of viscosity, moisture, lubricating oil additives. General conclusions. DVL. A.H.W. Hampp-F.
pps.203-223.			Lubricant tests by means of friction and wear experiments in engines.	Lubricating oils of same viscosity, were tested for wear and friction in DVL momocylinder test engines and an aero-engine monocylinder and the results compared and evaluated. DVL — C. Krienke.
pps.223-227.			Viscosity and low temperature properties.	General discussions. DVL — Philipovich.
pps.227-239.			On the viscosity polar height.	Explanation, definition and discussion of its uses and significance. DVL -- H.W.Schmidt.
pps.239-245.			Anomalies in the low temp. properties of oils.	Shows up sources of error in current measurement; e.g. neglecting time factor in many different aspects. DVL - H. Baader.
pps.245-271.			Investigation of lubricants in the I.G. cold chamber.	Review of experiments on various aspects of low temp. lubrication. DVL - F.Penzig -F.
pps.271-287.			Low temp. properties of lubricants.	To find relation between the 'apparent viscosity N and mechanical and thermal history, flow point (?) dimensions of capillary and shearing stress. DVL - J.Hennenhofer -F.
pps.287-299.			Behaviour of lubricating oils at low temperatures.	Description of instrument (concentric roller bearings) and investigation of low temp. characteristics of greases in relation to composition and to the instrument. DVL. Glaser - F.
pps.299-313.			The viscosity of lub. oils and the starting of engines at low temp.	Experiments and discussion. DVL. K. Schwaiger - -
pps.313-352.			Summary of general discussion.	DVL - F.

MENT NO. 74/46.	CIOS REF.NO.	DATE.	TITLE	CONTENTS.
36.	3996/71	16,17.6.41.	Report of the conference on knock and ageing of fuels.	
	pps1-19.		Principles of determining the knock characteristics of fuels.	Review of existing methods and of their characteristics. DVL
	pps.19-25.		Physico-chemical considerations in the determination of anti-knock values.	Discussion of conditions under which knock could be determined from physico-chemical data and the application of this to practice. DVL - Philipovich - -
	pps.25-27.		Chemico-physical explanation of the supercharge characteristics of fuels.	1) Theoretical understanding of mixture response curves (position, shape and temperature dependence). 2) Calculation of mixt. response curves from O.N. of residual gasoline and the content of aromatics (naphthenes). DVL - W.Jost - -
	pps.27-51.		Knock measurements according to the DVL supercharge method.	General description and discussion including experimental material. DVL - H. Frommberg - -
	pps.51-55.		The reproducibility of results obtained with the DVL supercharge method.	DVL - F. Seeber - -
	pps.55-65.		Reproducibility and comparability in the supercharge method.	DVL - H. Wenzel - -
	pps.65-77.		Experiments with liquid cooled cylinders.	To improve reproducibility in the supercharge method and to examine the behaviour of fuels under these conditions. DVL - Witschakowski - -
	pps.77-83.		The DVL knock test method of pressure acceleration.	Foundation and description of the DVL Zeiss Ikon Instrument. DVL - Penzig.
	pps.83-85.		The knock characteristics of engines with large valve overlap and of engines with the DVL injection method with divided injection.	DVL. H. Wende.
	pps.85-97.		The supercharge test in the NSU engine of the Ruhrbenzin. A.G.	DVL. P. Kornacker.
	pps.97-105.		Fuel-rating in the small monocylinder engine. (Oppau method).	Description and discussion of characteristics with the aid of fuel tests. DVL - F. Schaub -.
	pps.105-107.		Calibration (reference) fuels.	Development: present procedure and comparison with DVL method. DVL. Singer -.
	pps.107-109.		Temperature sensitivity of reference fuels for O.N. determinations.	Conditions for O.N. measurement; supercharge test; continuous exps. DVL. Philippovich.
	pps.109-111.		Oil tests by supercharging.	Mixtures were preheated to various temperatures. DVL. Knaffl.
	pps.111-119.		General discussion of papers delivered. 16.6.41.	Short note on the present position with regard to this question. DVL. Philippovich.
	pps.119-123.		Practical storage properties and their chemical characteristics.	DVL.
	pps.123-135.		Formation of low volatile substances in the storage of aviation fuels.	Review of requirements and difficulties encountered; use of inhibitors. DVL. Philippovich.
	pps.135-141.		Storage properties of fuels.	Causes of instability and review of laboratory methods of assessing it. DVL. I. Morghen.
	pps.141-143.		Storage stability of fuels.	Experience s gained in storing primary products of synthetic and cracking processes. (chemical changes only). DVL. H. Velde.
				Experiences at Travemunde. Comparison with bomb tests. DVL. Wallner.

CUMENT NO	CIOS	DATE	TITLE	CONTENTS
02874/ 46	REF NO.			
tem 36	3996/71		Inhibitors.	Short note quoting stability and corrosion tests.
ontd.	pps.143-145.			DVL. - I. Morghen.
	pps.145-149.		Experiences with determination of aromatics and of iodine number.	Critical review of methods tested or used by Ruhrbenzin.
	pps.149-153.		Estimation of aromatics by the BVM 1940 method.	DVL - H. Velde.
	pps.153-157.		On the determination of aromatic and olefin content in gasolines according to the "Banoorschriften 1940".	Mayer-Bugstrom. Critical discussion illustrated by experimental data.
	pps.157-165.		Determination of the aromatic content of gasolines by the aniline point method.	DVL - Hirschberger. Detailed investigation of the A.P. method for various blends.
	pps.165-175.		F.K.F.S. rapid method for determining the lead content in aviation fuels.	DVL - Hirschberger. Iodometric analysis.
	pps.175-181.		General discussion of papers read on June 17th.	DVL. O. Widmaier.
m 37.	3996/72.	28.9.38.	Investigations on piston ring sticking in the Siemens oil test engine using a light metal piston.	Comparison with the B.M.W. 132 single cylinder and comparative measurements in the piston ring zone. Aviation Research DVL. H. Schokel.
m 38.	"/73.	7.10.44.	Lubricant oil testing in the B.M.W. (N) single cylinder engine.	ZEA experimental oils SP8 to 10 were tested in order to determine the effect of combined wet and contact refining. Rhenania. Ossag. Reichel.
m 39.	"/74.	13. 7.44.	Oil testing in the B.M.W. 132N single cylinder engine II.	Report on the test of the lubricant SS1006 (N-G 606-32) Neumann-Rhenania Ossag. Engine Test Lab.
m 40.	"/75.	28. 3.44.	Oil testing in the B.M.W. in single cylinder.	Survey of the delivery test runs of Batches 16-23. Results connected with raw materials of the (synthetic) oils, their production and additives. Rhenania Ossag Neumann -.
m 41.	"/76.	21.10.43.	-ditto-	Effect of inhibitors on ring sticking and sludge formation. Rhenania Ossag. Neumann.
m 42.	"/77.	4.10.43.	-ditto-	Tests of lubricant SS1006 (N-G 603-13) new batch delivered 23.9.43. Rhenania Ossag Reichel.
m 43.	"/78.	18. 9.43.	-ditto-	Army winter oil with and without addition of Oppanol Rhenania Ossag Report Reichel.
m 44.	"/79.	10. 6.43.	-ditto-	All tests up to 90/43 (Data). Rhenania Ossag. Reichel.
m 45.	"/80.	25. 6.43.	-ditto-	The effect of compounding (addition of 4% special Voltol) on Rotring D-Eichol. Rhenania Ossag-Reichel.
m 46.	"/81	7. 2.44.	Letter to Mr. Roloff of W ifo.	Analyses of Tank B.2 and Tank C1 "special superheated steam cylinder oils" with handwritten note on "gas oil analysis 1944". Mineral Oil Works Stettin.
m 47.	"/82	6.12.44.	Flow sheet of Politz plant.	Mineral Oil Works Stettin.
m 48.	"/83.	13. 1.44.	Conference at Politz Banmeister (I.G.) Hartmann and Voigtlander (Mineralol werke).	Cracking plant and polymerisation output and other experiences. Also Memo on specifications for paraffins from petroleum refineries. Mineral Oil Works Stettin. Hartmann Alpeter.

UMENT NO. 874/46.	CIOS REF NO.	DATE	TITLE	CONTENTS.
n 49	3996/84.	4.1.44.	Changes and improvements 1942/43.	Mineral Oil Works Stettin.
n 50	" /85.		Various cracking experiments between April and Sept. 1943.	
n 51.	" /86.	13.5.43.	Report on exps. with the cracking tower B of the N.M. Stettin from 6.1. to 27.1.43.	With the purpose of displacing the point at which coking occurs in the tower. Mineral Oil Works Stettin.
n 52.	" /87.	18.1.40.	Layout of Politz plant.	I.G. Ludwigshafen.
n 53.	" /88.	14.10.43.	Proposed plan for a pressure oil wash plant for cracked gases.	
n 54.	" /89.	22.10.43.	Letter to Deutsche Vacuum Oel A.G.	On gas polymerisation Basis, products, method, corrosion and pressure, and economical aspect. Mineral Oil Works, Stettin. Hartmann Voigtlande
n 55.	" /90.		Further two letters on plant proposed in 89.	Mineral Oil Works Stettin.
n 56.	" /91.	18.10.43.	Memo Dr. Clemens on gas polymerisation Politz.	Mineral Oil Works, Stettin.
n 57.	" /92.	17.11.43 24.11.43.	Letters on the pressure oil wash to be erected at Politz.	Mineral Oil Works, Stettin.
n 58.	" /93.	9.3.44.	Report on a visit from Siebert (Lurgi) when the pressure oil wash to be erected at Politz was discussed.	Mineral Oil Works, Stettin.
n 59.	" /94.	1.2.44.	Proposed construction of the N.M. Stettin Politz for an additional production of aviation oil from cracked gases.	Mineral Oil Works, Stettin.
n 60.	" /95.	5.4.44.	Letter about plant for production of aviation lub. oil from cracked gases to Government Department.	Mineral Oil Works, Stettin. Hartmann.
61.	" /96.		Result of tests on samples of crude scale wax from Rhenania Ossag on 8.12.42.	Mineral Oil Works, Stettin.
62.	" /97.	8.9.42.	Memo on a conference at the N.M. Politz on aspects of cracking and polymerisation.	Mineral Oil Works, Stettin.
63.	" /98.	8.8.42.	Data on some oils sent by N.M. Stettin to I.G.	Mineral Oil Works, Stettin - Hartmann.
64.	" /99.	14.7.42.	Memo: Iodine number of Synthetic lubricants.	Mineral Oil Works, Stettin - Hartmann.
65.	" /100.		Calculations for evaporation furnaces according to the Wehde Werke A.G.	
66.	" /101.		Calculations for the S.P. plant.	
67.	" /102.	20.1.42.		Flow sheet for purification of wax.
68.	" /103	15.5.41.		Flow sheet for polymerisation unit.
69.	" /104	23 .4.40.		flow sheet for entire Politz plant.
70.	" /105	24.4.44.	Letter referring to the use of pumps for Al Cl3 sludge.	
Section VI				Ammonia Works.
71.	" /106		Memorandum on the transportation of and filling ops with AlCl3 and AlCl3 sludge.	
72.	" /107	21.7.44.	Sheet iron corrosion tests with an aqueous solution of AlCl3	Mineral Oil Works, Stettin.
73.	" /108	22.1.44.	Memorandum on the utilisation of AlCl3 sludge.	Mineral Oil Works, Stettin.
n 74.	" /109	7.1.44.	Memorandum on utilisation of AlCl3 sludge.	Mineral Oil Works, Stettin.
75.	" /110	Dec. '43.	Correspondence on the utilisation of AlCl3 sludge.	
76.	" /111	13.11.43.	Statement of quantities of waste products.	Mineral Oil Works, Stettin. Hartmann.
n 77.	" /112.	Jul-Nov. 1943.	Correspondence on the supply of AlCl3 sludge.	
n 78.	" / 113.	24.2.42.	Memo on lab. experiment on clay containing AlCl3 recovered from the sludge.	

UMENT NO. 874/46.	CIOS REF NO	DATE	TITLE	CONTENTS.
m 79.	3996/114.	1.9.41.	Referring to AlCl3 sludge from mineral oil syntheses.	I.G.
m 80.	" /115.	3.12.40	Memo on waste products from polymerisation and first wax purification.	I.G.
m 81. Section VII	" /116.	24. 8.42.	Memorandum on quality of products from Rhenania.	- - Trenge.
m 82.	" /117	12. 8.42.	Comparison of operations and products of I.G. and Rhenania.	
m 83.	" / 118	4. 1.40.	Laboratory tests on synthetic lub. oil manufacture from various cracked waxes.	- - Schewe.
84.	" /119.	10.11.39.	Plant experiments at Schulau.	- Schewe.
85.	" /120.	15.10.39.	-ditto-	- Schewe.
86. Section VIII	" /121.	1. 9.44.	The aniline point of mineral oil fractions.	Work on reproducibility, the A.P. of dark oils, A.P. for small quantities of oil and merits of max. separation and true critical separation temps. Batavia Petroleum Co. Leendertsee.
87.	" /122.	3. 7.44.	Relation between the U.O.P. characterisation factor and other properties of petroleum fractions (in Dutch).	Batavia Petroleum Co.Leendertsee Kuik-
88	" /123.	17. 7.44.	Short review of the work of the department of plant diseases.	Batavian Petroleum Co.
89.	" /124.	30. 5.44.	Investigation of the structure of unsaturated hydrocarbons in cracked distillates by the peracetic acid method.	Batavian Petroleum Co. Verheus.
90.	" /125.	24. 4.44.	Glueing of paper with Lubex.	Batavian Petroleum Co. Taderna.
91.	" /126.	21. 4.44.	Pilot plant manufacture of "propane peroxide".	Batavian Petroleum Co. Zerbe.
92.	" /127.	24.3. 44.	Use of the Raman spectrum for the analysis of hydrocarbons (in Dutch).	Batavian Petroleum Co. Vet.
93.	" / 128.	Aug-Sep.43.	Problems of synthetic lub. oil manufacture.	Batavian Petroleum Co.
94.	" /129.	Jun-Sep.43	Continuous manufacture of lime base greases.	Based on a highly concentrated master grease, and on the experience that production can very well be carried out in closed vessels. Batavian Petroleum Co. - R. de Bruyn.
95.	" / 130.	9.1.43.	Physico-chemical behaviour of a number of hydrocarbons having more than 20 carbon atoms.	X-ray photographs, and various temp solubility in some solvents and in 2, 2, 4 trimethylpentane, study of binary mixtures and viscosities. Bataviar Petroleum Co. Mazee.
96.	" / 131.	Jan '43.	Treatment of cracked distillates with selective solvents.	Partition coefficients for SO2 of the various components. Selective hydrogenation of extracts. Batavia Petroleum Co. Sweep Verheus.
97.	" / 132.	Oct-Nov. 1942.	The effect of cracking conditions on the polymerisation tendency of "crack distillates" and on the properties of the synthetic oils.	Preliminary cracking experiments with Balik Papan wax cake. For the purpose of getting acquainted with the characteristics of the apparatus. Batavia Petroleum Co. Van Westen.
98.	" / 133.	31.8.42.	The recovery of H2O2 from "propane peroxides" (in Dutch).	Batavia Petroleum Co. P. L. Kooijman.
99.	" /134.	Aug 42- Jul 43.	The effect of the conditions of polymerisation on synthesis.	Preliminary polymerisation experiments with "crack-distillates" in glass. Batavian Petroleum Co. Van Westen.
00.	" /135.	Jul '42.	Voltolization.	Nederbragh.

ENT NO 5/46	CICS REF. NO.	DATE	TITLE	CONTENTS.
1.	3996/136.	May '42 - Sep '43.	Glueing of paper.	To find an outlet for lubricating oil extracts. Fundamental investigation with microscope and detailed tests with extracts. Batavian Petroleum Co. Taderna.
2.	" /137.	Mar '42 - Sep '43.	III Constitution of lubricants. (General).	Collection of papers from March 1942 to Sept. 1943, composing an organised research project. Batavian Petroleum Co. - Various - Schaafma.
3.	" /138.	11.3.42.	The properties of greases as a function of composition and method of manufacture.	III: The influence of water in lime greases. IIIa: The dependence of the properties of lime greases on the water content at various soap concentrations. Batavian Petroleum Co. Vanolphen - Vos.
4.	" /139.	11.3.42.	-ditto-	Batavian Petroleum Co. Vanolphen- Vos.
5.	" /140.	18.2.41.	Preparation and improvement of rust-preventive greases (in Dutch).	Batavian Petroleum Co. - Van Olphen.
6.	" /141	Feb. '42.	Analysis and characterisation of hydrocarbon waxes.	Detailed investigation of methods for determining aniline point, elementary analysis, mean molecular weight surface tension; complete hydrogenation. Batavian Petroleum Co. Leendertse.
7.	" /142.	11.2.41.	Report of the work of the A.F.D.K.C. in the field of "propane peroxides" and other hydrocarbon peroxides during the second half of 1940 (Dutch).	Batavian Petroleum Co. Groenweld-Kooijman.
8.	" /143.	Apr.'33 - Feb.'37.	Research on synthetic lubricants in the period April 1933 to Feb. 1937.	Batavian Petroleum Co. Van Westen.
9.	" /144a		Principles and limits of accuracy of the Ring analysis of hydrocarbon mixtures.	The principles, questions of reproducibility and correction and interpretation of results for H.C. mixtures with molecular weight above 150. Examples and improvements. Ring analysis for gasolines. Batavian Petroleum Co. Leendertse.
10.	" /144b.			
11.	" /145.		The polymerisation of propene with AL CI3 as catalyst.	Investigation on the effect of the temp. of polymerisation and the type of reaction medium on the properties of the polymers. Batavian Petroleum Co. Meyer.
12.	" /146.	22.4.38.	Improving the ageing characteristics of synthetic bright stock and aero engine oils by vapour phase co-polymerisation of cracked distillate with aromatics or factions rich in aromatics.	Batavian Petroleum Co. Meyer.
13.	" /147.	22.4.38.	Improvement of the oxidation stability of synthetic Bright Stocks and aviation oils by polymerising vapour phase cracked distillate along with aromatics or fraction rich in aromatics.	Batavian Petroleum Co. Meyer.
14.	" /148.	Oct.1934.	The physical constants of the polymerisation product of unsaturated hydrocarbons	Investigates the relation between the viscosity-temperature characteristics of pure and mixed hydrocarbons and their structures. Delft University Lab. for Chemical Technology Waterman Leendertse.
15.	" /149.	16.9.36.	Investigation of the ageing stability of lubricating oils. particularly synthetic ones.	Search for the causes of the large increase in viscosity of synthetic oils and for possible remedies. Batavian Petroleum Co. Coltoff.
16	"/150	Mar/Apr.44.	Monthly report 10.	On: Production for the Dutch Works general research work mineral oil and petroleum. Research/
17.	"/151	Jan/Feb.44.	" " 9.	
18.	"/152	Nov/Dec.43.	" " 8.	
19.	"/153	Oct. 43.	" " 7.	
20	"/154	Sept.43.	" " 6.	

Contd.

DOCUMENT NO. 12875/46.	CIOS REF NO.	DATE.	TITLE	CONTENTS.
Item 21	3996/155	Aug. 43.	Monthly Report 5	
Item 22	" /156	Jul. 43.	" " 4	
Item 23	" /157	Jun. 43.	" " 3	
Item 24	" /158	May. 43.	" " 2	
Item 25.	" /159.	Apr. 43.	" " 1	on oil refining and working up of crudes and of its products. Applications of oil products. Preparation of industrial chemical goods from petroleum. Oil products for the preparation of plant chemicals.
Item 26.	" /160.	5.6.44.	Flow sheet for the manufacture of propane peroxide.	Various. Amsterdam Lab. of the Batavian Petroleum Co.
Item 27.	" /161.	29.8.44.	Summary report on the method of using the Mirasol apparatus in August, 1944.	Amsterdam Lab. of Batavian Petroleum Co. Pilot plant exps. mainly with the purpose of diminishing SbCl3 losses due to reaction with hydrocarbons. Amsterdam Lab. of Batavian Pet. Co. Sshaafsma.
Item 28.	" /162.	29.8.44.	Preparation of paraffin emulsions.	Short recipe using a waste sodium sulphite as emulsifier. Amsterdam Lab. of Batavia Petroleum Co. Blocker.
Item 29.	" /163.	11.8.44.	Chlorination of paraffins with the aim of obtaining a product suitable as caterpillar lime (adhesive).	Rhenania Ossag.
Item 30.	" /164.	28.7.44.	Referring to the conference with Prof. Zerbe on 25th, 26th July, 1944. (This touches very briefly on a large number of points.).	Amsterdam Lab. of Batavian Petroleum Co. Werre.
Item 31.	" /165.		Manufacture of gas oil from Trakand Tran crudes.	Amsterdam Lab. of Batavian Petroleum Co.
Item 32.	" /166.	11.1.44.	The manufacture of paraffin emulsions for use in the paper industry.	Amsterdam Lab. of Batavian Petroleum Co.Brunnemann.
Item 33.	" /167.		Personnel position Jan. 1944. Also work done.	Amsterdam Lab. of Batavian Petroleum Co.
Item 34.	" /168.	1.8.43.	Diagram of personnel pos. at Amsterdam Lab.	Amsterdam Lab. of Batavian Petroleum Co.
Item 35.	" /169.	28.6.43.	Short review of the position of the investigation on the preparation of propane peroxide.	Sketch of pilot plant, general data and uses for P.P.O. Amsterdam Lab. of Batavian Petroleum Co.Smithenberg
Item 36.	" /169A	28.5.40.	Investigations on the most favourable conditions of producing propane peroxide.	Amsterdam Lab. of Batavian Petroleum Co.Moijmann.
Item 37.	" /170	Apr. '43.	List of literature searches conducted by Patent Department since Jan. 1941.	Amsterdam Lab. of Batavian Petroleum Co.
Item 38.	" /171	Apr. '43.	List of subjects investigated by the patent department for patentability since Jan. 1941.	Amsterdam Lab. of B.P.C.
Item 39.	" /172.	"	List of memoranda submitted to the main office at the Hague during 1943.	Amsterdam Lab. of B.P.C.
Item 40.	" /173.		List of reports sent to the main office at the Hague since Jan.41.	Amsterdam Lab. of B.P.C.
Item 41.	" /174.	11.3.43.	Report about the position of the work of the Amsterdam Laboratory in May 1940 and about the development of work after that date.	Amsterdam Lab. of B.P.C.
Item 42.	" /175.	19.5.41.	Survey of the position of research in the oxidation group of the department KC (Ir. Kooijman and Dr. Ir.Degens) and the programme of this group as from 1st June 1941(Dutch).	Amsterdam Lab. of B.P.C. Smithenberg.
Item 43.	" /176.	4.8.41.	Survey of the work of the oxidation group of the department KC (Kooijman and Degens) during June and July 1941 and on the programme of work for the group from Sept. 1st 1941 (Dutch)	Amsterdam Lab. of B.P.C. Smithenberg.
Item 44.	" /177.	4.12.40. Trans dated.	Investigation of factors important in Pilot plan experiments.	The dewaxing of lubricating oils. Amsterdam Lab. of B.P.C.(translation)Kolvoort.
Item 45.	" /178.	24.5.40.	Manufacture of s odium perborate and other inorganic "per" compounds by means of propane peroxides (Dutch).	Ghijsen. Kooijman.

DOCUMENT NO.	CIOS REF NO.	DATE	TITLE	CONTENTS.
2875/46				
Item 46.	3996/179.	24.5.40.	Amplification of second part of 178 (Dutch).	
Item 47.	"/180.		Work of the Amsterdam Laboratory in the field of catalytic oxidation.	Phthalic anhydride; Adipic acid, Formaldehyde: Olefines to Glycols Alkyl chloride to monochlorhydrin and glycerin; oxid. of pentene, oxid. of Toluol to benzaldehyde. Ghijsen.
Item 48.	"/180A	18.8.44 14.7.44.	Conference at Oppau on the propane peroxide method. Conference at Merseburg on the P.P.O. method.	
Item 49.	"/181 Section IX	26.1.40.	Method of bringing about oxidation reactions of organic substances using peroxides as oxidants and with the possible use of catalysts, the oxidants being liquids produced by the combustion of propane and containing active oxygen.	Oppau - - -.
Item 50.	"/182.	5.8.41.	Method of producing hydrogen peroxide from products of incomplete combustion of gaseous hydrocarbons by fractional distillation after removal or transformation of the organic peroxides present.	Netherlands Patent No. 55114 - -
Item 51.	"/183.	10.4.40.	Method of producing hydrogen peroxide by incomplete combustion of gaseous saturated hydrocarbons with two or more carbon atoms.	Netherlands Patent No. 52522 - -
Item 52.	"/184.	1.5.40.	Method of producing dihydroxy compounds containing halogen.	Treatment with hydrogen peroxide in the presence of catalysis of aliphatic or cycloaliphatic halogen compounds having a double bond. Netherland Patent No. 53470.
Item 53.	"/185.	10.4.40.	Method of producing peroxides by incomplete combustion of hydrocarbons.	The walls of the combustion chamber to consist of non-rusting metal and the wall temp. not to exceed 200°C. Netherlands Patent No. 52521.
Item 54.	"/186.	13.7.44.	Discussion of a patent application by K.S. Nitsche "Method of fractionating hydrocarbon mixtures etc.".	B.P.M. Amsterdam Lab. Schaafsma -
Item 55.	"/187. Section X		Preparation of emulsifiable oils in paste form.	Rhenania Ossag Pat. Appl. R109211 IVIC/23C
Item 56.	"/188	9.6.42.	Method of producing E.P. lubricants.	Saturation of lubricants with sulphur or treatment with sulphur halogen compound. Rhenania-Ossag Pat. Appl. R113209 IVd/120.
Item 57.	"/189.		De tergent additive for mineral oil.	Rhenania Ossag Pat. Appl. R115016 IVd/23c.
Item 58.	"/190.		Method of manufacturing lubricating oils.	Separation of mineral oils boiling above 300°into high and low setting fractions by distillation in the pres. of a higher boiling or non boiling organic subst. giving an azeo tropic mixture with paraffin. R.O. Pat. Appl. R117368 - - - IVd/23b.
Item 59.	"/191		Method of producing E.P. lubricants.	Additives produced by the action of sulphur chloride on olefines at 25-85°. R.O. Pat. Appl. R118162 - - -
Item 60.	"/192.		-ditto-	Preliminary treatment of olefines with small quantities of polymerisation catalysts. R.O. Pat. Appl. - -
Item 61.	"/193.		-ditto-	Dissolving sulphur in the olefin at elevated temp. or in the sulphur monochloride. R.O. Pat. Appl. R118164. IVd/23c.- - -
Item 62.	"/194.		Method of producing E.P. lubricants.	R.O. Pat. Appl. R118847 - - - IVd/12a.
Item 63.	"/195.		-ditto-	R.O. Pat. Appl. R109307 - - - IVd/12c.
Item 64.	"/196.		Method of manufacturing lubricating oil.	Polymerisation of olefines with aluminium chloride in several stages. R.O. Pat. Appl. R114137 IVd/120 - - -
Item 65.	"/197.		Method of polymerising olefines.	Low molecular compounds from ordinary polymerisation are weakly chlorinated and returned to the process. R.O. Pat. Appl. R. 115924. IVd/120.

COMENT NO.	CIOS REF NO	DATE	TITLE	CONTENTS
2875/ 46				
em 66.	3996/198.		Method of producing high-grade lubricating oil.	Purification of olefins prior to polymerisation by allowing them to percolate in the gaseous phase through a tower filled with adsorption or condensation material. Rhenania-Ossag Pat. Appl. R116691.---IVd/120
em 67.	"/199.		Method of producing lubricating oils.	Fractionating to give low and high setting oils by additives which form azeotropic mixtures with paraffins. e.g. bitumen. R.O. Pat. Appl. R117368 - - - IVd/23B.
em 68.	"/200.		Addition to R109307 IVd/120.	Aluminium chloride vapour is sublimed into polymerised starting material and this is used instead of aluminium chloride. R.O. Pat. Appl. R118847 - - - IVd/120.
em 69.	"/201.		Manufacture of additions for rubber and synthetics.	RO. Pat. Appl. R109063. IVc/39b - - -
em 70.	"/202.		Improvement of synthetic rubber.	R.O. Pat. Appl. R109980. IVc/39c - -
em 71.	"/203.		Fillers for rubber goods.	R.O. Pat. Appl. R109981. IVc/39b - - -
em 72.	"/204.		Additives for rubber goods.	R.O. Pat. Appl. R112859. IVc/39b - - -
em 73.	"/205.		Method of manufacture of artificial resins.	Addition to reaction mixture (phenolformaldehyde) of substances obtained in the distillation of acid resins -viz. unsaturated hydrocarbons which tend to form resins with H2S04. R.O. Pat. Appl.114055 IVc/29c - - -
em 74.	"/206.		Use of condensation products from hydrocarbon oils	and aldehydes as additions to synthetic rubbers. Metallgesellschaft & Rhenania-Ossag Pat. Appl.R150937 IVc/39b.
em 75.	"/207.		Fuller's earth as filter for rubber.	Metallgesellschaft Pat. Appl. M115231. IVc/39B - - -
em 76.	"/208.			
	Section X1.	1943.	Works at Harburg.	
77.	"/209.	8.1.43.		Flow sheet of the Rhenania-Ossag. Rhenania - - -
78.	"/210.	1945.		Flow sheet for the Grasbrook works. Rhenania - - -
79.	"/211.	-	Production diagram of grease factory.	Flow sheet of the works at Wilhelmsburg. Rhenania - - -
80.	"/212.	-	Refining diagram.	Rhenania - - -
em 81.	"/213.	-	Dewaxing flow sheet.	Rhenania - - -
82.	"/214.	17.9.43.	Dewaxing flow sheet at Harburg.	Flow sheet. Rhenania - - -
83.	"/215.		-ditto-	Rhenania - - -
84.	"/216.		-ditto-	Rhenania - - -
85.	"/217.	11.4.40.	Flow sheet of plant C/Harburg.	(Synthetic lube oil Plant). Rhenania - - -
86.	"/218	13.5.45.	Survey of the work carried out in the experimental department of the works laboratory KW.	Rhenania - - -
	Section X11		1. Oxidation of paraffins: to produce emulsifiers and waxes. 2. Chlorination of paraffins: special lub. oil and boring oil. 3. Work on gasoline a) refining: b) storage of primary gasoline: c) vapour bubble formation: (d) distillation and selective decomposition of crude wax.	
87.	"/219.	30.5.41.	On the activation of methane by high pressure (Work done 1935-41)	Ruhrchemie - - - The theory and tests trying to obtain experimental evidence.
88.	"/220	13.6.44.	Note referring to reduction of corrosion in distillation plant.	Conclusion: negative. Ruhrchemie - - - Ruhrchemie, Rumpf - -

MENT NO	CIOS REF NO.	DATE	TITLE	CONTENTS
375/46. 89.	3996/221.		Refinery project MAORT (Translation).	Based on a sample of crude oil from (Hungarian) oilfields and plan of production has been worked out with particular reference to the use of the products. -- Lefevre - -
m 90.	" /222.		Statistics about Hungarian oil production and refining up to 1943.	D.A.P.G. - - -
m 91.	" /222a	2.10.43.	Letters referring to Raman spectrum analysis.	
		9. 3.43.	Report on analysis of the Raman spectrum of cracked distillates.	Rhenania-Ossag, Lutkemeyer - -
92.	" / 223	Dec.1940.	Personnel, cost and production figures and data.	R.O. Harburg - - -
Section XIII				
93.	" / 224	22.12.41.	-ditto-	R.O. Harburg - - -
94.	" / 225	1941	-ditto-	R.O. Harburg - - -
95.	" / 226	1939	Wilhelmsburg personnel, cost and production figures and data.	R.O. Wilhelmsburg - - -
96.	" / 227	1940	-ditto-	R.O. Wilhelmsburg - - -
97.	" / 228	1941	-ditto-	R.O. Wilhelmsburg - - -
98.	" / 229	1942	-ditto-	R.O. Wilhelmsburg - - -
99.	" / 230	1943	-ditto-	R.O. Wilhelmsburg - - -
100.	" / 231	1939	Personnel, cost and production figures and data.	R.O. Freitel - - -
376/46 1	" / 23 2	1940	-ditto-	R.O. Freitel - - -
2	" / 233	1941	-ditto-	R.O. Freitel - - -
3	" /234	1942	-ditto-	R.O. Freitel - - -
4	" / 235	1939	-ditto-	R.O. Grasbrook - - -
5	" / 236	1940	-ditto-	R.O. Grasbrook - - -
6	" / 237	1941	Personnel, cost and production figures and data.	R.O. Grasbrook - - -
Section XIII				
7	" / 238	1939	-ditto-	R.O. Manheim - - -
8	" / 239	1940	-ditto-	R.O. Manheim - - -
9	" / 240	1941	-ditto-	R.O. Manheim - - -
10	" / 241	1942	-ditto-	R.O. Manheim - - -
11	" / 242	1943	-ditto-	R.O. Manheim - - -
12	" / 243	1939	-ditto-	Shell, Floridsdorf - - -
13	" / 244	1940	-ditto-	Shell, Floridsdorf - - -
14	" / 245	1941	-ditto-	Shell, Floridsdorf - - -
15	" / 246	1942	-ditto-	Shell, Floridsdorf - - -
16	" / 247	1943	-ditto-	Shell, Floridsdorf - - -
17	" / 248	1939	-ditto-	Rhenania Ossag Rdsholz - - -
18	" / 249	1940	-ditto-	R.O. Reisholz - - -
19	" / 250	1941	-ditto-	R.O. Reisholz - - -
20	" / 251	1942	-ditto-	R.O. Reisholz - - -
21	" / 252	1943	-ditto-	R.O. Reisholz - - -
22	" / 253	Apr.'44	-ditto-	R.O. Harburg - - -
23	" / 254	Jun.'43	-ditto-	R.O. Harburg - - -
24	" / 255	Jul.'44	-ditto-	R.O. Harburg - - -
25	" / 256		List of Dutch reports on synthetic oil.	- - - -

DOCUMENT NO. CIOS REF NO		DATE	TITLE	CONTENTS.
Item 26	3996/257.	March '38.	Constructional directions for aero- engines. Test directions for aero-engines lubricating oils for use in spark ignition engines.	Air Ministry - - -
Item 27	" /258.	Oct. '40.	Test directions for aero-engine fuels.	Air Ministry - - -
Item 28	" /259		New photometric method of determining phosphoric acid.	Based on the comparatively high colour stability of an iron -salicylate solution. - - - -
Item 29	" /260		Method of producing lubricating oils.	Sublimation of Al.Cl3 on to the moving starting materials -.Pat.Appl. R109307 IVd/12O-
Item 30	" /261		Method of producing e mulsifiable oils in paste form.	By addition of hydrated aromatics, hydrated phenols or higher alcohols. Pat. Appl. R109211 IVc/23c - - -
Item 31	" /262		Detergent additions for mineral oils.	Addition of (crude) ozolserite. Pat.Appl.R115016 IVd/23c.
Item 32	" /263	Nov. '43.	Detailed directions for fuel tests including apparatus, chemicals, methods and notes.	Air Ministry - - -
Item 33.	U.M.757	21.2.44.	Method of producing liquids whose physical properties are largely independent of temp.	This is based on the temperature dependence of multiphase systems. Example referring to viscosity. Z.W.B. Harms - F.
Item 34	U.M.726	10.7.43.	Measurement of co-efficient of friction on the P.T.R. instrument.	Improvements in the reproducibility. Tests with various oils, additions and at various temperatures. Z.W.B. (D.V.L.) Eckardt/Krienke
Item 35	U.M.715	25.3.43.	Experiments with a four ball oil test instrument.	Testing the usefulness and range of application of the instrument. Z.W.B. (D.V.L.) Krienke - -
Item 36	U.M.695	20.10.42 .	Measurement of piston temperature in the engine whilst running.	Application of the U.S. and Dutch thermocouple method to DVL conditions and trials using the method. Z.W.B.(D.V.L.) Glaser - -
Item 37	U.M.690	1.8.42	Description of the Russian aero-engines " A.M.35" and "A.M.38".	Z.W.B. (D.V.L.) Denkmeier/Gross - -
Item 38	U.M.689.	24.9.42.	Behaviour of fuels in SG containers.	Z.W.B. (D.V.L.) Seeber/Morghen - -
Item 39	U.M.688.		Same as E1.	Z.W.B. (D.V.L.) - - -
Item 40	U.M.677.	30.6.42	Comparative supercharge test in the B.M.W. 132 single cylinder aero-engine IV exp. series.	To find the limits of exp. error. Z.W.B. (D.V.L.) Seeber,- -
Item 41	U.M.648.	8.12.41.	Tests on six fuels according to the Oppau and the D.V.L. the B.M.W. 132 N single Cylinder aero-engine.	supercharge test methods in the I.G. test engine and Z.W.B. (D.V.L.) Seeber - -
Item 42	U.M.574	18. 4.39	Testing of lubricants in the B.M.W. 132 F single cylinder engine.	Adaptation of conditions to correspond to results obtained with "C" engines. Experiments, results and discussion. Z.W.B. (D.V.L.) Schokel - -
Item 43	U.M.573.	18.4.39.	Development of a method for continuous testing of lubricants and fuels in the NSU engine.	Whether a normal air-cooled motor cycle is suitable. Investigation of temperature dependence of two oils. Z.W.B. (D.V.L.) Schokel - -
Item 44.	U.M.546.	30.8.38.	Improvement and simplification of lubricant tests in the B.M.W. 132 single cylinder aero-engine.	Changes to diminish costs and accelerate tests. Description of three pieces of accessory equipment. Z.W.B. (D.V.L.) Schokel - -
Item 45.	U.M.552.	28.9.38.	Investigations on piston ring sticking in the Siemens oil test engine when light metal pistons are used.	Comparison of conditions up to ring sticking for cast iron and for light metal pistons. The temps in the piston ring region are measured. Z.W.B. (D.V.L.) Schokel - -

DOCUMENT NO. CIOS REF NO 2876/46		DATE	TITLE	CONTENTS.
Dm 46	U.M. 523/7.	4.12.39.	Effect of constructional features and conditions of operation on the knock behaviour of fuels.	Z.W.B. (D.V.L.), Berg, - -
Dm 47	U.M.523/5	12.6.39.	-ditto-	Experiments with the B.M.W. VI single-cylinder engine, series 9 with carburettor. Z.W.B. (D.V.L.)Berg - -
Dm 48	U.M.523/2	-	-ditto-	Experiments with the Fiat monocylinder test stand with fuel injection. Z.W.B. (D.V.L.)Berg - -
Dm 49	U.M. 520	21.3.38.	Testing lubricants on the oil test machines of Almen, Wieland and Thoma.	Lubricating oils of varying composition and origin were tested on the machines to reveal any correlation between the results for the different machines. Z.W.B. (D.V.L.)Mayer-Bugstrom - -
Dm 50.	U.M. 518	21.3.38.	On the constitution and properties of lubricating oils and on its changes by oxidation.	Test of the Ring method of analysis on simple substances and title investigation. Z.W.B. (D.V.L.) Selter - F.
Dm 51	U.M. 485	16.11.37.	Experiments with the oil test engine developed in the D.V.L.	Trial of machine and laying down of test procedure. Investigation of dependence of bearing temp. and coeff. of friction on running time and the viscosity of the oil. Z.W.B. (D.V.L.)Schokel - -
Dm 52	U.M. 428	26.1.37.	Tests of various alkyl benzenes in a liquid-cooled single cylinder aero-engine.	Z.W.B. (D.V.L.) Glaser/Dehn - -
Dm 53	F.B.300.	10.1.45	Oil testing - Ring experiments.	Tests on four oils with the gear test machine, spring friction balance, abrasion apparatus, wear apparatus. Tech. High School Dresden, Putsch/Pabst/Haussler - F.
Dm 54.	F.B.308.	10.2.45.	Report on the examination of 9 oils from the oil laboratory of Dr. Zorn, Merseburg.	Tests with the spring friction balance the gear test machine and the break off test apparatus. Description, use of Heidebrock's oil test instrument and discussion of the significance of results from it. Tech. High School, Dresden, Putsch/Haussler - F.
Dm 55.	F.B.680.	27.8.36.	Test of a newly developed Diesel fuel RCH 5009 in the single cylinder Diesel engine.	To clarify the position of weight consumption of the fuel as compared to Derop gas oil. Z.W.B. (D.V.L.) Slowak - -
Dm 56.	F.B.822.	31.5.37.	Development of a fuel test method. Knock behaviour of fuels in the single cylinder aero-engine.	Development of a thermocouple for combustion chamber and of temperature measuring plug. Knock test method based on variation of boost pressure. Tests and comparison with results of other methods. Z.W.B. (D.V.L.) Dehn - -
Dm 57.	F.B.881	10.11.37.	Examination of oil ageing methods.	7 methods were used for tests, the results were compared among themselves and with the ring sticking times in an oil test engine. Z.W.B. (D.V.L.) Mayer-Bugstrom - -
Dm 58.	F.B. 893/2	18.1.39.	The boiling properties of aero-engine fuels.	Boiling properties were examined in a way which takes account of altitude conditions. Development of a three-stage method which was applied to 5 fuels. Z.W.B. (FKFS) Widmaier - -
Dm 59.	F.B. 893/3	18.1.39.	Residue formation with leaded fuels.	The effect of light on two commercial leaded fuels and the effect of the residues formed on the antiknock value of the fuels. Z.W.B. (D.V.L.) Widmaier - -

CUMENT NO. 2876/46	CIOS REF NO.	DATE	TITLE	CONTENTS
em 60	F.B.912.	16.2.38.	Determination of the thermal stability of various aero-engine oils.	Changes in lubricants due to thermal treatment (W2 atmosphere) is investigated and discussed. Z.W.B.(D.V.L.) Richter - F.
em 61.	F.B.939.	31.5.38.	Ignitability of Diesel fuels in the engine.	Comparison of various methods of measuring ignitability of Diesel fuels, using the standard or reference fuels. Z.W.B. (D.V.L.)Seeber/Slowak - -
em 62.	F.B.952.	14.12.37.	Physico-chemical investigation on the process of combustion in the engine.	Theory of knocking and oxidation mechanism of hydrocarbons. Investigation of thermal decomposition, slow oxidation, spectroscopic invest. flame velocity, etc. Phys. Chem. Inst. Leipzig Univ. Just - F.
em 63.	F.B.1053.	3.5.39.	Control of the variables of state particularly of gas temps. at the end of long pipe lines.	Z.W.B.(D.V.L.) Pfriem - -
em 64.	F.B.1074	22.5.39.	Properties of safety fuels.	Z.W.B.(D.V.L) Meyer-Bugstrom/Seeber -F.
em 65.	F.B.1077.	12.7.39.	The chemistry of deposit formation in hydrocarbon oils.	Methods of determining the oxygen assimilated by heating the oils in air e.g. the s aponification number, the acid number, free hydroxyl group and "neutral" oxygen. Z.W.B.(D.V.L.) Morghen - F.
em 66.	F.B.804.	16.4.37.	Examination of a synthetic lub. oil of Ruhr Chemic in liquid cooled single cylinder experimental engine.	A continuous run is carried out till ring sticking occurs. Z.W.B.(D.V.L.) Dehn, - F.
em 67.	F.B.1106	11.10.39.	Low temperature behaviour of lubricating oils.	Z.W.B.(D.V.L.)Siebald - F.
em 68.	F.B.1144	22.12.39.	The effect of additives on the storage stability of fuels.	Evaporation residue, acid number, O.N. were measured at the start, after ageing in the bomb and after about 26 months' storage. Z.W.B.(D.V.L.) Mayer Bugstrom/Seeber - -
em 69.	F.B.1150.	18.12.39.	Knock measurement by the D.V.L. method of pressure acceleration.	Detailed description of method and review of other important methods. Tests. Z.W.B.(D.V.L.) Seeber/Lichtenberger-F
em 70.	F.B.1215	6.5.40.	Testing of various synthetic lubricating oils in the BMW 132 single cylinder engine.	Ring sticking times were observed as a function of the plug ring temp. and compared with Rotring D. Z.W.B.(D.V.L.) Glaser -.
em 71.	F.B.1244.	17.7.40.	The D.V.L. blow-by method of testing the behaviour of fuels and lubricants in continuous runs.	Description of the developmental tests. Comparison of results with those obtained by other methods. Z.W.B.(D.V.L.) Glaser - F.
em 72.	F.B.1250	29.8.40.	Assessing lubricating properties from engine experiments.	Tests in the B.M.W. 132 N, based on wear measurements are carried out and evaluated. Z.W.B.(D.V.L.) Krienke - -

CUMENT NO. 2876/46	CIOS REF NO	DATE	TITLE	CONTENTS
em 73.	F.B.1292.	14.10.40.	An exact rapid method of determining lead in fuels.	Based on treatment with sulfuryl chloride and a modified dithizone volumetric method. Z.W.B.(D.V.L.)Morghen - F.
em 74.	F.B.1327	6.1.41.	On laboratory and engine methods of testing the antiknock value of spark ignition fuels.	Comparison of D.V.L. supercharge method with other O.N. methods. Discussion of the nature of reference fuels. Z.W.B.(D.V.L.) Philippovich - -
em 75	F.B.1331	8.1.41.	On the low temp. properties of greases Diesel fuels, instrument oil and brake liquids.	Z.W.B.(D.V.L.) Siebald, - F.
em 76	F.B.1382	18.4.41.	Testing of laboratory methods of determining the lead content of fuels.	Z.W.B.(FKFS), Widmaier - -
em 77.	F.B.1406	1941	Effect of sulphur compounds in the antiknock value and residue formation of leaded fuels.	Carbon disulphide ethyl merkaptane and thiophene were tried out. Z.W.B.(FKFS) Widmaier - F.
em 78.	F.B.1442	20.7.41.	Thermo-electric method of making comparative friction experiments on lubrication in the state of boundary lubrication.	Z.W.B.(Phys.Tech.Reichanstalt)Vieweg/Kluge/Maske -F.
em 79.	F.B.1476	16.7.41.	Determination of the T.E.L. content of fuels by X-ray absorption.	Z.W.B.(FKFS) Gross/Staab - F.
em 80. 81.	F.B.1500		Covered by yearbook 1942 II pp.149-155.	Z.W.B.(D.V.L.) Morghen - - (same as F.14)
em 82.	F.B.1610.	17.6.42.	The effect of different fuels and of value overlap on engines.	Tests in the B.M.W. 132 N and DB 601A with fuels differing in calorific value C/H ratio and sp. gravity, measuring output consumption and air turnover. Same fuels with varying valve overlap. ZWB/DVL Franke - F.
em 83.	F.B.1657.	15.9.42.	Effect of valve overlap on the knock limit of various fuels in the DB 601 engine.	ZWB(DVL) Franke - -
em 84.	F.B.1679	23.2.43.	The effect of operating conditions on the temperature of the piston.	Tests carried out on engines used in ringsticking experiments. (Same as F.18) Z.W.B.(D.V.L.) Glaser - -
em 85.	F.B.1697	16.12.42.	The effect of peroxides in the engine and their determination.	Particular reference to Joule and Wilson's thicyanate method of peroxide determination. (Same as SA.1) Z.W.B.(FKFS) Widmaier - -
m 86.	F.B.1722	8.12.42.	The influence of various oils on the mixture response curve of aromatic fuels.	The effect of 3 lub. oils under modern main engine conditions. Description of experimental procedure and theoretical background. Z.W.B.(D.V.L.) Franke. - F.
m 87.	F.B.1815.	19.6.43 .	FKFS method of determining the bromine content in aviation fuels.	General discussion of methods and of the FKFS method based on decomposition with potassium ethylate in a bomb. (Same as SA 4) Z.W.B. (FKFS) Widmaier - -
m 88.	F.B.1859.	15.8.43.	Extension of the FKFS rapid method of determining the tetraethyl lead content of fuels.	Z.W.B.(FKFS) Widmaier - F.
m 89.	F.B.1869	15.7.44.	Difference in the knock behaviour of fuels of different chem constitution in the BMW 132 N and the DB 601E engines.	The effect of the formation of peroxides in the intake stroke depending on the valve overlap. Z.W.B.(D.V.L.) Franke - F
m 90.	F.B.1905	10.2.44.	The rating of fuels with respect to their tendency to vapour lock.	Description of an instrument measuring the absolute vapour pressure of fuels with suff-accuracy and register the formation of vapour bubbles as a function of the altitude. Z.W.B.(FKFS) Widmaier - F.
91.	PB 384	20.4.36	Examination of newly developed Diesel fuels in an aero engine.	A Diesel fuel developed by Ruhr-chemie and exhibiting very good ignition properties is compared with commercial derop gas oil. ZWB(DVL) Heidrich.

UMENT NO.	CIOS REF NO.	DATE	TITLE	CONTENTS
2876/46 m 92.			Report of the Lubricant Group.	Same as 3996-69 DVL
m 93.			Report of the Knock-rating Group.	Same as 3996-71 DVL
m 94 95	PG 25399 (a) and (b)	May 1941	RESEARCH REPORTS OF THE "FACHGLIEDERUNG" FUELS AND LUBRICANTS. Vol. I and II	Preparation of chemically pure hydrocarbons of known constitution. Substs. are examined and their occurrence in petroleum ascertained by comparison with fractions from petroleum.

I
Work on model substances for the synthesis of lubricating oil.
(a) New methods of synthesizing W-Diphenyl Alkane.
(b) Preparation of the isomeric Phenoldodecane.
(c) Preparation and properties of the p-alkyl toluenes.
(d) Preparation and properties of the l-olefines and n - paraffins.

II
Work on the chlorination of low molecular limit hydrocarbons in the gas phase and on the further treatment of the chlor alklys.
(a) On the treatment of chlor-alkyls. — General survey of first results:- Fuels of very high OZ(100) Lub-oils so far of low quality. Styrene, resin etc.
(b) Chlorination of gaseous hydrocarbons of the methane and olefin series as well as on the uses of the chlorinated hydrocarbons.
( ) control of the chlorination reaction.
( ) Technical applications.
(c) Investigations on the application of the chlorinated hydrocarbons as starting materials for the synthesis of fuels, oils and artifidal resins.
( ) Fuels
( ) Treatment and transformation of the oily and resinous products of the condensation reaction
( ) Artificial resins
"Chlorination with evaporation" of hexane and the condensation of the resulting chlorinated products with benzene.

III
Work on the high pressure hydrogenation of peat tar. Straight hydrogenation exps. with catalysts. Preliminary treatment with ozonised oxygen.

Tech High School Munich, Schmidt/Grosser/Scholler/Eberlein/Breck/Fleischman/Doll

96	NID/PG 25400		Same as U7	
97	NID/PG 25402	16,17 Jun.41	Same as 3996-71.	ZWB(DVL) F.
97A	NID/PG 25403	27.4.40.	Comparative experiments with knocking engines (V.V75)	Oppau, Singer
98	NID/PG 25404	15,16. 7.41.	Report on the conference of the working groups for knock measurements. Development, results and deductions from comparative exps. carried out so far. The blending value. Measuring the O.N. of fuels with a very high anti-knock value. Determining the lead sensitivity of fuels. Demands made on reference fuels. On experiments to determine the intensity of knock. Discussion and resolutions.	Oppau Singer/Jantsch/Witschakowski/Widmaier/Schuch.

DOCUMENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
2876/46				
Item 99.	NID/PG 25405	10.10.42.	Anti-knock value of aviation fuels.	Effect of fuel composition on CFR knock rating and rich mixture performance. High Pressure Tests LU 558 Dehn.
Item 100.	NID/PG 25406.	2. 3. 39.	Notes on knock-testing. Comparative table of CFR, Delco I.G. methods of knock testing.	Ammonia Works, Merseburg.
2877/46 Item 1	NID/PG 25407	2. 3. 39.		Graphs mainly on the U.P. of fuels. Ammonia Works, Merseburg, Ester.
Item 2.	NID/PG 25408	2. 2. 43.	On the development of aero engines particularly in relation to fuel problems.	High Pressure Lab. L.U.I.
Item 3.	NID/PG 25409	14,15 May 1942.	Meeting of the industrial group car industry about improvement of low temperature starting properties. Deals mainly with electrical and mechanical problems but the dilution of oil is also mentioned.	F.
Item 4.	NID/PG 25410	21.11.41.	Aviation gasolines and their manufacture.	The composition of gasolines and technical processes used in Germany for producing gasolines. Oppau-Pier-V for transl see app 6 - Bios Rep 373
Item 5.	PG 26137.	May 1942 Dec 1943.	Monthly reports of research and plant work at Hamburg. and treatment of pitch oils exps. Poly stage medium and Synthesis pressure experiments and pilot plant work. Research in lubrication.	Gaseous phase medium pressure syntheses exps. Distillation normal pressure syntheses. Lubricating oil plant. Ackermann/Edler/Langheim/Kobel/Ruschenbert/Ullmann.
Item 6.	NID/PG 26138	1942 Feb 1945.	Production of Dienes Production of higher gaseous olefins. Experiments on the production of H2O2 by the oxidation of organic compounds. Isomerisation of Butane. Production of gasolines of high anti-knock value by alkylation of aliphatic hydrocarbons (C4 alkylation) Enrichment or separation of olefin - paraffin blends. Carbon degradation (hydrogen degradation of lignite). Reforming experiments. Catalytic cracking experiments. Experiments on hydro-forming.	Dehydrogenation of C4
7.	NID/PG 26142a		Reactions of liquid hydrocarbons with aluminium chloride. Handwritten notes and data, by Dr. Koch etc.	Nowstny/Jochmki/Eckoldt/Pohl/Fessler/Faber/Weber/Barkow/ Legatke/Wetz/Hartmann/Weise/Ebender/Peham.
8.	NID/PG 26142b	1937-1943 1940-1942	Handwritten notes and data. Work of Dr. Koch. " " " " " "	Drs Koch and Campen.
	2744/4		Laboratory tests on the ageing of lubricating oil.	DVL Ins. B.S., Mayer-Bugstrom - F.
		19.7.44.	Artificial and engine lubricant ageing.	(see 3996-69) Ruhrchemie, Widmaier - F.
			Mechanism of the ageing of hydrocarbons.	(see 3996-69) Morghen - F.
				Ruhrchemie.
		27.7.39.	Directions for the purchase and testing of lubricating oils.	
			Ageing of oil in use.	(see 3996-69) - Philippovich - F.
		(29.11.40		Ruhrchemie Scheyen - F.
		(10. 2.40.	Use of RB Lubricants	Ruhrchemie Hartin - F
		16.12.40.	Use of RCH (?Ruhrbenzin) lubricants.	

.....Contd.

MENT NO 377/46	CIOS REF NO	DATE	TITLE	CONTENTS
9 d.	2744/4	27.1.40	Lubricant testing. Oil testing machine. Tests with the 4-Ball machine.	Extract from ZWB Rept. 3 19/1/40 Ruhrchemie Schaub - F. Meeting of Schaub, Vogelpohl and Fottinger. Ruhrchemie - F. See 3996-70 F.
10.	2744/10.	10,12 May,1942.	Laboratory fractionating columns for fine fractionation.	Report of the conference of the "Working Group" of consumers and manufacturers of laboratory fractionating columns for fine fractionation at Jena. Ammonia Works Merseburg Wetzer.
11.	2744/11.	5.4.40.	First meeting of the "working group".	Analytical and preliminary fine separation of hydrocarbon mixtures. State Dept. for Domestic Economy.
12.	2744/12.	11.2.42.	Specifications for power gas.	Issued Spring 1940, Reviewed Feb. 1941. Hand dated 11.2.42.
13.	2744/16.		Handwritten notes in English on the research programme dealing with refining of gasoline obtained from the Fischer Tropsch synthesis.	
14.	2744/23.	3.1.41	Analytical methods. Comparative experiments at the B.V.	Common analysis of fuel samples, (Rheinpreussen & BV) to compare the methods of determining physical and chemical constants.
		Memo 12.11.39.	Test methods for carburettor and Diesel fuels (agreed upon at a meeting with the BV)	Rheinpreussen. Dannefelser - F.
15.	2744/35	23.9.39.	Light fuel in Diesel engines.	Short summary of experience, and note on the commercial aspect. Army High Command.
16.	2744/68.		Mixed Diesel Oils.	Dannefelser.
17.	3439/1		Index to collection of engine test graphs.	
18.	3439/ 32.		Research suggestions for blended Diesel oil (storage stability, mixing and additions).	Ruhrbenzin.
19.	3439/88.	1944.	Intermediate report on "Investigation of the permissible rise in the boiling characteristics of carburettor fuels."	Experiments on wear and dilution. - Of oil in operation with fuels of varying boiling characteristics. Ruhrchemie.
20.	3440/1 p.103.	5.10.40.	Comparison of SS fuel with other Diesel oils with respect to coke formation at nozzles.	Tests carried out in the test Diesel built by the F.K.F.S. Ruhrbenzin Schaub.
	p.104.	9.12.40.	Experiments with fuels of varying density.	The dependence of intake volume on the fuel head and its density measured in the I.G. knock engine and the Opel Olympia engine. Ruhrbenzin Schaub.
	p.105.	14.12.40.	The development of an engine test method for aviation lub-oils in the NSU 501 OSL engine.	Ruhrbenzin Schaub.
	p.106	20.12.40.	Engine tests on some aviation oils in the NSU aviation oil test engine.	Ruhrbenzin Schaub.
	p.107	24.12.40.	Engine tests of Synthetic aviation oils of low polar height in the NSU engine.	Various samples differing in AlCl3 treatment penthiozin addition etc. Ruhrbenzin Schaub.
	p.108	10. 1.41.	Report on the engine tests of synthetic aviation oil of the Ruhrchemie.	Ruhrbenzin Schaub.
	p.109	15. 5.41.	Engine tests of synthetic aero engine oil K 1860.	Ruhrbenzin Schaub.
	p.110	26. 5.41.	The development of an engine test method for lubricants with respect to piston seizing.	Ruhrbenzin Schaub.
	p.111	7. 6.41.	Report on engine tests of the synthetic aero engine oil K 1880.	Ruhrbenzin Schaub.
	p.112	1. 8.41.	Tests of various " unit oils" of the Wehrmacht in the Triumph-engine with respect to piston seizing.	Ruhrbenzin Schaub.

DOCUMENT NO	CIOS REF NO	DATE	TITLE	CONTENTS
FD2877/46 Item 20 Contd.	3440/1 p.113.	6.9.41.	Supercharge - comparative measurements in the NSU engine of the Ruhrbenzin and the BMW 132 test engine of the Technical Experimental Station.	Oppau Ruhrbenzin Schaub - -
"	p.114.	7.1.42.	Engine test of the aero-engine oil K1929.	Ruhrbenzin Schaub - -
"	p.115.	15.1.42.	Development of a method of testing engine oils with respect to piston seizing.	Ruhrbenzin Schaub - - A -
"	p.116.	12.1.42.	Engine tests of synthetic oils for the purpose of observing the effect of viscosity and of various additions on the behaviour with respect to piston seiz ing.	Ruhrbenzin Schaub - -
"	p.117.	29.1.42.	Test of 4 engine oils with respect to piston seizing.	Ruhrbenz in Schaub - -
"	p.118.	30.3.42.	Ignitability of RCH - cetane.	Ruhrbenzin Schaub - -
"	p.119	25.4.42.	Oil tests in the NSO engine (Details of experimentation).	Ruhrbenzin Schaub - -
"	p.120	22.5.42.	Dilution of engine oil for use under wintry conditions.	Ruhrbenzin Schaub - -
"	p.121	9.7.42.	Development of a method of testing engine oils with respect to ring sticking, ageing and wear.	Ruhrchemie Schaub - -
"	p.122.	13.7.42.	The behaviour of various commercial aero and automotive engine oils with respect to piston seizing.	Ruhrchemie Schaub - -
"	p.123.	13.7.42.	Dilution of engine oils for winter conditions II.	Ruhrchemie Schaub - -
"	p.124.	10.9.42.	Aero oil mixture K1951 of RCH Brightstock and a mineral oil component of low viscosity from Nerag.	Ruhrchemie Schaub - -
"	p.125.	11.9.42.	Test of the experimental oil of HWA, 3370 (Me96-ester oil of the IG.)	Ruhrchemie Schaub - -
"	p.125a		-ditto-	Ruhrchemie Schaub. - -
"	p.126.	19.9.42.	The effect of viscosity on consumption of oil.	Ruhrchemie Schaub - -.
"	p.127	21.9.42.	On the lubricating properties of thin engine oils.	Ruhrchemie Schaub.A-(Winter oil)
"	p.128.	6.10.42.	Aero oil 3344 from the plant.	Ruhrchemie Schaub - -
"	p.129	4.1.43.	Aero oil 1979 from the "main lab".	Ruhrchemie Schaub - -
"	p.130.	27.2.43.	The effect of addition of Oppanol on the behaviour of engine oils.	Ruhrchemie Schaub - -
"	p.131.	11.3.43.	The effect of addition of Oppanol on wear.	Ruhrchemie Schaub - -
"	p.132.	8.4.43.	Aero-oil mixture K1951/2 of inhibited RCH Bright-stock and Nerag oil.	Ruhrchemie Schaub - -
"	p.133.	12.4.43.	Examination of engine oil 3698.	Ruhrchemie Schaub - -
"	p.134.	12.4.43.	Examination of Engine oils from Nerag (N1)	Ruhrchemie Schaub - -
"	p.135.	4.5.43.	Examination of a normal Wehrmacht Winter oil from Nerag (RCH code name: N2).	Ruhrchemie Schaub - -
"	p.136.	5.5.43.	Examination of 3 winter oils of I.G. Ma46, 48 and 49.	Ruhrchemie Schaub - -
"	p.138.	6.6.43.	Examination of ester oil E1 from the research lab.	Ruhrchemie Schaub - -
"	p.139.	17.9.43.	Test of engine oil 3993 with respect to piston seizing.	Ruhrchemie Schaub - -
"	p.140.	1.11.43.	Knock measurements of synthetic gasolines as a function of ignition timing.	Ruhrchemie Schaub -
"	p.141.	29.11.43.	On the pumpability of lubricants at low temps.	Ruhrchemie Schaub - - A.
"	p.142.	2.12.43.	Description and instructions for use of the vapour lock apparatus of the Ruhrchemie.	Ruhrchemie Schaub - -
"	p.143.	29.12.43.	Turning (durchdreh) experiments with Roumanian oil.	Ruhrchemie Schaub - -
"	p.144.	7.3.44.	Test of an aero-engine lubricant SS1060 with respect to piston seizing.	Ruhrchemie Schaub - -
"	p.145.	17.3.44.	Froth formation in lubricants.	Ruhrchemie Schaub - -
"	p.146.	17.6.44.	Test of the aero-engine oil sample K2015 of Molaj.	Ruhrchemie Schaub - -
"	p.147.	27.6.44.	Starting of spark-ignition engines at low temps. Injection and ignition timing.	Ruhrchemie Schaub - -
em 21.	3440/61.	8,12.41.	Note on the discussion between Dr. Buchner and "Holten" on the determination of the cetane number	- - -

ENT NO.	CIOS REF NO	DATE	TITLE	CONTENTS
77/ 46				
22.	3441/2.	1939-44.		Number of documents referring to research on peroxide formation of gasolines, storage stability and stabilisers. - Ruhrbenzin.
23.	" /76.	11.10.41.	The use of creosote and mixtures of creosote and crude oil in gas turbines for the Air Force.	
24.	" /119.	6.7.43. and 3.8.42.	Examination of ester oil E1 from research lab. R.C.H. Draft of patent application for lub. oil carboxylic acids.	Ruhrchemie -. Lubricants containing carboxylic acids or derivatives. Acids formed by addition of carbon monoxide and hydrogen to olefinic hydrocarbons having lub. properties and subsequent formation of acids.
25.	" /121.	20.5.36.	Letter about the properties and development of synthetic insulating oils including a chemical and electrical test report of sample produced by R.B.	Memo referring to examination of BVA oils treated with CO and H2. Ruhrchemie Schaub - -
26.	3445/1	1941	Preliminary instructions "fuel and lubricant testing detachments".	Ruhrbenzin Heinmann - -
27.	" /20		1) Galley proof of "standard lubricating oils" comprising "types and properties","applications" and "subject index". 2) Report of subcommittee for lubricant specifications 1942-1944.	Army High Command - - -
28.	" / 24	7.9.44 etc.	Knock measurements with synthetic gasolines. Report of the conference of the "west works" 9.3.44. Evaluation of seoond experimental series. Memo on a conference at the FKFS 4.10.43 and a report of the conference of the west works 16.11.43.	German Assoc. for Mineral Oil Research. - - -
29.	" /39	1941	Effect of additions on the resistance of fuels to low temps. and water and on their vapour pressure.	- - - - Effect of alcohol additions: homeogenizing additions to alcohol fuels, dimethylacetal effect of ethanol methanol and other compounds on the V.P. Heinze German Fuel Research Marder - - Trubetzkoy.
30.	" /58.	7.7.44.	The development of an apparatus for the determination of the gasoline vapour-lock temperature in aero engines.	Theoretical background to vapour lock measurements and the development of several instruments with their results given and discussed. State inst. for Petroleum Research,Grunewald-F
31.	" /58.	30.3.44. 30.10.44.	Grading of fuels with respect to vapour lock formation.	Description of and tests with new apparatus. Part II: Tests on 9 fuels. I.F.K. Dresden,Hager,AF.
32.	3446/14.	8.5.39.	Intermediate report II: Lubricating oil tests in the Opel 1.3 litre engine.	Continuous runs, mainly for synthetic oils the criteria being wear, ageing, piston ring sticking and consumption. Ruhrbenzin, Schaub - -
33.	" /15.	12.3.43. 16.9.38.	Memo on meeting with Junkers aero engine works: Fuel and lubricant tests in the Jumo Diesel aero-engine. Memo on meeting.	Future development of fuels and lubricants. - - -.
34.	3448/19.	20.1.42.	Conference with Dr. Bayer (R.L.M.) : Manufacture of aviation diesel oil.	Specifications for blended Diesel oils are discussed. Ruhrbenzin, Velde - - -
35.	" /27.	2.4.42.	Manufacure of Brightstock and " Winter oil".	Discussion of plant data and application of products. Ruhrchemie Tramm - - -
36.	" /28	23.2.42.	Oil samples (letter to P.T.R.) Memo on conf. with P.T.R.: Oil test apparatus of P.T.R.	Data of 13 oils derived from polymerisation of olefins. Description of instrument working with boundary lubrication. Testing and discussion of results obtained with the instrument. Ruhrchemie, Tramm - -

ENT NO.	CIOS REF. NO.	DATE	TITLE	CONTENTS
77/ 46				
37.	3448/34.	2.4.42.	Conference on aviation gasoline.	Discussion of supercharge curves obtained with R.4. R.5 - fuel. Discussion of the question of winter oil for the Wehrmacht. Ruhrchemie, Tramm - -
38.	" /43.	30.4.42.	Improvements in Podbielniaks method of gas distillation.	Ruhrchemie, Tramm - -
39.	" /61	12.8.38.	Investigations on lubricating properties. Diplomarbeit (summary)?	Dependence of lubricating properties on temp.,additions, ageing and after treatment; physical properties. Ruhrchemie,Tramm/Lediney - -
40.	" /62.		Report on comparative experiments at the Experimental Station with synthetic automobile oils and one commercial petroleum oil.	Ruhrchemie,Weicmann - -
41.	" /67	14.12.39.	Effect of β-naphthylamine on the storage stability of oils.	Ruhrchemie - - -
42.	" / 76	28.8.42.	Analytical work on an ester oil of I.G.	Ruhrchemie - - -
43.	" /89	8.4.41.	Manufacture of " S" material.	Ruhrchemie, Tramm - -
44.	3451/27.	29.4.42.	Ring tests on the breakpoint of gasolines.	Ruhrchemie,Martin - -
45	3452/27.	9.9.38.	Conference with firm "Robert Bosch". Further development of the cetane number determination in the army Diesel test engine (Throttle method).	Ruhrbenzin, Schaub - -
		30.11.38.	Lecture by Dr. Ernst of the FKFS on "the testing of Diesel fuels".	Ruhrbenzin, Schaub - -
		28.4.38.	Report on Diesel fuel tests as to miscibility and storage stability.	Ruhrbenzin,Roelen - -.
		25.3.39.	Note on the possibility of producing mixed Diesel oil from mineral coal tar oils and synthetic oils (mentioning patents).	Ruhrbenzin,Lochmann/Roelen.
		1.2.39.	Translations of foreign patents on increasing the storage stability of mixed Diesel oils by treatment with oxygen under pressure.	Ruhrbenzin,Lochmann/Roelen - -
		15.4.40.	Conference with R.L.M; on aviation Diesel oil.	Ruhrbenzin,Schaub - -
		3.11.39.	Production of mixed Diesel oil. General considerations and miscibility tests.	Ruhrbenzin, Velde - -
		-	Note on production and outlet for a fuel oil from mineral coal tar oil and Kogasin II.	Ruhrbenzin,Kolbel,- -
		20. 1.39	Note on the separation of solids from Diesel fuel.	
		8.10.43.	Plant tests on the production of mixed Diesel fuel having a high creosote content.	Ruhrbenzin,Struven - -
		30. 9.43.	On the production and properties of mixed Diesel fuel having a high creosote content.	Ruhrbenzin,Kolbel - -
		7.8.40.	Tests of the H.W.A. on vapour bubble formation.	Ruhrbenzin,Schaub - -
		17.4.42.	Setting of the Committee on the standardisation of engine testing of D.V.M. Diesel fuels.	Ruhrbenzin,Schaub - -
		28.8.39	Diesel oil complaint.	Ruhrbenzin, Roelen.
		12.12.38.	Improvements in Diesel engines.	Ruhrbenzin,Schaub - -
		13.8.38.	Storage stability of RCH cetane - RCH automotive Diesel oil.	Ruhrbenzin - - -
46	3452/42.	30.4.42.	Estimation of asphalt in aged lubricating oils.	Ruhrchemie, Tramm - -
47	3453/18.	1.9.38.	Principal physical data for the commoner hydrocarbons.	Ruhrchemie - - -
48.	3454/31.	15.6.42.	On the production of the R.4 and R.5 aviation fuel for Berlin (Description of process).	Ruhrchemie,Spiske/Tramm -
49.	3454/34.	30.9.42.	Conference with R.L.M.: Supply of aviation oil SS2003 or Brightstock SS2006.	Ruhrchemie, Tramm - -
		8.4.42.	Working group "petroleum mining and refining". Production of winter oils for the Wehrmacht using synthetic lubricating oils.	Ruhrchemie,Hagemann - -
		29.6.43.	Production of aviation Brightstock in place of normal aero-engine oil.	Ruhrchemie - - -
		20.1.41.	Analytical data for distillation oils.	Ruhrbenzin - - -
		13.1.41.	The possibilities for production of three synthetic cylinder oils specified by the G.H.H.	Ruhrbenzin Goethel - -
		7.5.42.	Report on DVL conference on ageing of lubricating oil.	Ruhrbenzin. Velde - -
		3.10.41.	Indiana tests on various oils.	Ruhrbenzin,Velde - -
		30 .1.42.	Conference with firm "Rheinmetall Brosig". Testing of gear oils.	Ruhrbenzin,Schaub - -

MENT NO	CIOS REF NO	DATE	TITLE	CONTENTS
877/ 46	3454/35	27.9.41.	Plant test with an inhibited lubricating oil.	Ruhrchemie - - -
m 50	3979/94	15.5.39.	Liquid gas for running in aero engines.	General principles and advantages. Detailed description of installation, consumption and output tests economics of liquid gas operation. Leuna, Scholz - -
n 52.	"/95	26.5.39.	-ditto-	Leuna, Huhn/Haug - -
m 53.		Sept. '45.	Report on more recent work of the institute.	DVL. Philippovich - F.
m 54.		Jan '46.	German organisation of fuel and lubricant. Research and development.	English with chart in German. - Philippovich - -
m 55.		26.2.43.	Preparation of tetra-hydrofurane polymers.	I.G. Leverkeusen - - F.
n 56.	B.93 II	31.10.44.	Evaluation of fuels with respect to vapour lock.	Tech. High School, Dresden, Hager -
n 57.		1.12.44.	Thesis on:- The preparation of phosphorus compounds and their use in lubricants.	Tech. High School, Stuttgart, Muller.
n 58.	-	11.10.38.	Lead susceptibility of fuels.	Oppau, Singer - -

Add to Item 57 3966/SJ9 See page 69