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KOCHNEV, Fedor Petrovich, prof., doktor tekhn. nauk; MAKSIMOVICH, Boris Mikhaylovich; POMERANTSEV, Vladimir Vladimirovich; TIKHONOV, Konstantin Kuz'mich; CHERNOMORDIK, Georgiy Il'ich; DLUGACH, B.A., kand. tekhn. nauk, red.; PRIGOROVSKIY, B.F., inzh., red.; KHITROV, P.A., tekhn. red.

[Traffic management in railroad transportation] Organizatsiia dvizheniia na zheleznodorozhnom transporte. Pod obshchei red. F.P. Kocheneva. Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 491 p. (MIRA 11:10)

(Railroads--Traffic)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SELEZNEV, A.K., PRIGORNEV, I.G.

Preparation of β-chloroisopropyl ethyl ether from cracking-gas propylene by the vapor-phase method. Zhur.prikl.khim. 33 no.5: 1187-1192 My '60. (MIRA 13:7)

1. Laboratoriya organicheskoy khimii Groznenskogo neftyanogo instituta i laboratoriya Novogroznenskogo neftepererabatyvayushchego zavoda.

(Ether) (Propene)

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77671
SOV/80-33-2-46/52

AUTHORS: Seleznyev A. K., Prigorn v, I. G.

TITLE: Brief Communications. Synthesis of α -Methylvinyl Ethyl Ether

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 491-492 (USSR)

ABSTRACT: α -Methylvinyl ethyl ether (I) $CH_3-\underset{\underset{O-C_2H_5}{|}}{C}=CH_2$ was obtained from α -methyl-β-chlorodiethyl ether with alcoholic alkali, at 20-22 atm. and at 160-170°. The above reaction occurs with formation of I, in 30% yield and diethyl ether of propyleneglycol $\underset{C_2H_5O}{CH_3-\underset{|}{CH}}-\underset{OC_2H_5}{\underset{|}{CH_2}}$ (yield is not given).

Card 1/2

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Brief Communications. Synthesis of α-Methylvinyl Ethyl Ether

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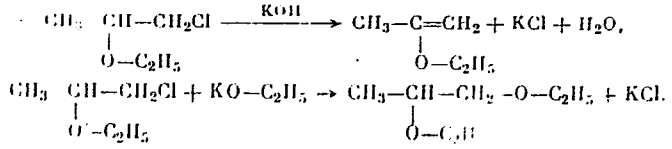
SOV/80-33-2-46/52



There are 8 references, 6 Soviet, 1 German, 1 U.S. The U.S. reference is: M. L. Sherril, G. F. Waller, J. Am. Soc., 58, 742 (1936).

ASSOCIATION: Groznyy Petroleum Institute and Novo-groznyy Petroleum Processing Plant (Groznenskiy neftyanoy institut i Novogroznenskiy neftepererabatyvayushchiy zavod)

SUBMITTED: March 5, 1959

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SELEZNEV, A.K.; PRIGORNEV, I.G.

Synthesis of α-methylvinyl ethylvinyl ethyl ether. Zhur. prikl.khim. 33 no.2:491-492 F '60. (MIRA 13:5)

1. Groznenskiy neftyanoy institut i Novogroznenskiy neftepererabatyvayushchiy zavod.
(Ether)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

AMERIK, B.K.; MATAYEVA, B.V.; MAYDEBOR, L.K.; PRIGORNEV, I.G.

Operation of 43-102 units for catalytic cracking and ways for increasing their capacity. Trudy GrozNII no.4:60-72 '59. (MIRA 12)

(Cracking process)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

Prigorovskiy, I.G.

11 (2, 4) PHASE I BOOK EXPLOITATION SOV/2213

Groznyy. Neftyanoy nauchno-issledovatel'skiy institut

Khimiya i tekhnologiya pererabotki nefti i gaza (Chemistry and Technology of Petroleum and Gas Refining Processes) Moscow, Gostoptekhizdat, 1959. 278 p. (Series: Its: Trudy, vyp. 4) 2,500 copies printed.

Executive Ed.: T.D. Yefremova; Tech. Ed.: A.S. Polosina; Editorial Board: A.Z. Dorogochinskiy (Chairman), B.K. Amerik, G.I. Kaz'min, N.M. Kazakin, V.I. Lavrent'yev, Ye.S. Levchenko, and M.G. Mitrofanov (Deputy Chairman).

PURPOSE: This book is intended for petroleum engineers and technicians in scientific research institutes, planning organizations, and refineries.

COVERAGE: This collection of technical papers on oil and gas refining were originally discussed at the petroleum refining section of the Third GroznNII Scientific-Technical Congress in 1957. The articles have been published to help further the development of the petroleum refining industry and petrochemical industry in the Chechen-Ingush ASSR. The history and significance of the petroleum refining industry in the Groznyy region is outlined by A.Z. Dorogochinskiy with emphasis on the interdependence of the refineries and the aircraft, automobile and rocket manufacturing industries. Change in modern engines demand a change in fuel and lubricating oil properties. The increased use of jet aircraft makes the production of high octane aviation gasoline less important than the production of the new type of fuel, aviation kerosene, the yield of which requires a quite different refinery run. Since crudes recovered at the Karabulak-Achaluki fields represent a valuable raw material for manufacturing lubricating oil and paraffin wax, their properties have been thoroughly investigated and results of analyses reviewed. The re-equipment of the fuel producing line of refineries at Groznyy has been carried out on the basis of findings obtained from tests and pilot plant operations, and a number of reforming and platforming units have been built to upgrade the low octane gasoline produced at Groznyy. Tests were also conducted to ascertain the advisability of applying the destructive distillation of residues, which yields solar fractions badly needed for catalytic cracking unit as feed stock. Catalytic cracking units of the 43-102 type were first put on stream in the Groznyy refineries in 1952, and since that time continuous efforts have been made to boost their processing capacity, and improve the regeneration of catalysts. The authors make a number of suggestions as to how the throughput of the above units might be increased. The production of different types of pelleted and bead catalysts, the contamination of catalysts and their reactivation are discussed. The operation of a contact coking reactor, its design, and products yielded by contact coking units are described. The authors also deal with the manufacture of lubricating oils, paraffin and ceresine wax and indicate way of improving their properties. Electrical dehydration and desalting of crude oil and of light products are discussed. The authors state that in recent years extensive studies were made on the chemical conversion of petroleum products, and particularly of gases. As a result, a number of gas fractionators and compressors were built and installed to produce phenol and acetone from propylene and benzene, to synthesize ethyl alcohol and oxidize paraffinic hydrocarbons. An article is devoted to problems of automating various processes and developing the related control and gage instruments. The book contains numerous tables with the characteristics of different petroleum products obtained from refinery processing units, pilot plants and petrochemical refinery sections. Each article is accompanied by references.

TABLE OF CONTENTS:

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

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contains numerous articles with the characteristics of different petroleum products obtained from refinery processing units, pilot plants and petrochemical refinery sections. Each article is accompanied by references.

TABLE OF CONTENTS:

Foreword 3

Dorogochinskiy, A.Z. Contribution of the Groznyy Oilmen to the Development of the Petroleum Industry 5

II. IMPROVEMENTS IN THE FUEL PRODUCING LINE OF REFINERIES

Amerik, B.K., N.B. Nazaretova, and A.A. Bashilov. Plan for Remodeling the Fuel Producing Line of the Groznyy Refineries

Nazaretova, N.B., A.A. Bashilov, B.K. Amerik, F.I. Krechetova, P.V. Ovsyannikov, and A.P. Sukhorebrikov. Refinery Experiments with Destructive Distillation of Mazout 48

Amerik, B.K., B.V. Matayeva, L.K. Maydebor, and I.G. Prikorney. Operations of Catalytic Cracking Units of the 43-102 type, and Possibilities of Increasing Their Yields 60

Kalita, L.A. Some Regular Recurrences in the Catalytic Cracking of Heavy Distillates 72

Ammanuilova, Ye.M., Ya.V. Mirskiy, I.I. Starostin, A.I. Mezhlumova, K.P. Bunin, and D.I. Mizyakov. Experimental Preparation of Industrial Catalysts from the Askani Clay by Acid Activation 82

Chemistry and Technology (Cont.) SOV/2213

Kamakin, N.M., I.K. Romankova, L.I. Ogloblina, and T.S. Nesmeyanova. The Reason Why Alumo-Silicate Catalysts Lose Their Activation Capacity 90

Amerik, B.K., Z.G. Orkina, N.V. Baryshev, I.A. Stanulis, and L.Z. Kutsenok. Possible Yields of the Contact Coking Reactor Section Operating Under Most Severe Conditions 101

Musnikova, D.M., and Z.G. Orkina. Granulated Coke Produced by Contact Coking and Used as Raw Material in the Electrode Manufacturing Industry and in Gas Production 113

Stanulis, I.A. Gas Flow Conditions in the Granulated Coke Bed Used as Heat Carrier 120

Nazaretova, N.B., V.P. Sukhanov, A.A. Bashilov, and P.K. Prolov. Thermal Cracking Yield of Intermediate Distillate Fractions 130

Drozdova, Ye.I., Z.G. Orkina, O.I. Svetozarova, V.V. Zhdanova, N.P. Mel'nikova, and P.V. Ovsyannikov. Refining of Intermediate Distillate Fractions Produced by Thermal Cracking 142

Chemistry and Technology (Cont.) SOV/2213

III. IMPROVEMENTS IN THE LUBE OIL AND PARAFFIN WAX PRODUCING LINE OF REFINERIES

Mitrofanov, M.G. Possibilities of Further Development and Improvement of the Lube Oil and Paraffin Wax Production in the Groznyy Refineries 157

Mitrofanov, M.G., and M.I. Logvinov. Rational Flow Scheme for Manufacturing Lubricating Oil, Paraffin and Ceresine Wax Obtained From Sulfurous Crudes of the Romashkino Type 163

Mitrofanov, M.G., S.I. Stepuro, V.V. Serov, and K.V. Kvashnin. Experimental Treatment of Sulfurous Petroleum Residue (Zoudron) With Tow-component Selective Solvent, as Applied in the Refining Industry 166

Kreyn, S.E., O.A. Artem'yeva, M.G. Mitrofanov, and A.G. Martynenko. Possibilities of Improving Operating Properties of Residual Oils 171

Card 7/9

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

contains numerous tables with the characteristics of [illegible] petroleum products obtained from refinery processing units, plant plants and petrochemical refinery sections. Each article is accompanied by references.

TABLE OF CONTENTS:

Foreword 3

Dorogochinskiy, A.Z. Contribution of the Groznyy Oilmen to the Development of the Petroleum Industry 5

I. STUDY OF CRUDES AND THEIR PRETREATMENT

Bortsova, M.P., P.B. Gamayunova, A.B. Poplavskaya, and M.P. Shpichko. Choice of Demulsifiers for Crudes Processed at the Groznyy Refineries 17

Levchenko, Ye.S., Ye.N. Bobkova, O.A. Artem'yeva, and Ye.V. Karaybog. Study of Crudes from the Karabulak-Achaluki Deposits in the Chechen-Ingush ASSR 27

Card 4/9

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Mitrofanov, M.O., O.A. Artem'yeva, and Ye.V. Karaybog. Production of the MK-8 Lube Oil From Malgobekskaya, Zhirnovskaya, and Anastas'yevskaya Crudes 183

Bogdanov, N.F., T.I. Praven'kaya, M.I. Sergeyeva, and Ye.M. Breshchenko. Removal of Aromatics From Petroleum Products by Using the Alumo-silicate Adsorbent in a Propane Solution 189

Mitrofanov, M.O., and F.A. Berezyuk. Refining Petroleum Products by Applying Electrical Separation 198

IV. DEVELOPMENT OF THE PETROCHEMICAL INDUSTRY IN GROZNYY

Dorogochinskiy, A.Z. Prospects for Further Development of the Petrochemical Industry in Groznyy 203

Lyuter, A.V., Ye.G. Vol'pova, and Yu.A. Gol'dshteyn. Efficient Ways of Organizing the Production of Washing Agents of the Alkylaryl Sulfonate Type 218

Card 8/9

Chemistry and Technology (Cont.) SOV/2213

Igonin, P.G., I.D. Desyatova, M.A. Pashenko, and V.I. Zavidov. Some Data on the Oxidation of Hard Paraffin Wax in the Presence of Permanganate, Naphthenate, and Manganic Carbonates 224

Svetozarova, O.I. On the Question of Extracting Alkylbenzene C8 and Orthoxylene From the Petroleum Products Produced at Groznyy 236

V. AUTOMATION OF PROCESSES AND DEVELOPMENT OF CONTROL AND MEASURING DEVICES

Votlokhin, B.Z., A.Z. Dorogochinskiy, and N.P. Mel'nikova. Radioactive Indicators as Applied for Controlling Consecutive Piping of Various Petroleum Products Through Trunk Pipelines 253

Votlokhin, B.Z. New Instruments Developed by the Groznyy Scientific Research Institute for Controlling and Regulating Conditions of Petroleum Refining Processes 265

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Card 9/9

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SELEZNEV, A.K.; PRIGORNEV, I.G. Prinimali uchastiye: YAKOVLEVA, T.P.; VASILEVSKAYA, Ye.Ye.

Obtaining β-chloro-ethers from unsaturated hydrocarbons of vapor-phase cracking. Izv.vys.ucheb.zav.; neft'i gaz 3 no.3:63-68 '60. (MIRA 14:10)

1. Groznenskiy neftyanoy institut i Novogroznenskiy neftepererabatyvayushchiy zavod.

(Ethers) (Cracking process)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

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MOROZOV, Konstantin Yevgen'yevich, kand. fil. nauk; VORONOV, A.I., red.; PRIGORODOV, G.I., red.; GUDRYAVTSEVA, O.V., tekhn. red.

[Philosophic aspects of mathematics] Filosofskie voprosy matematiki. Moskva, Izd-vo "Znanie," 1963. 47 p. (Novoe v zhizni, nauke, tekhnike. II Seriia: Filosofiia, no.24) (MIRA 17:1)

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PRIGORODOV, V.N.; NIKITINA, S.A.; [illegible], [illegible].B.

Stability of concentrated emulsions stabilized by nonionogenic emulsifiers. Koll. zhur. 27 no.6:[illegible] N-D '65. (MIRA [illegible])

1. Institut fizicheskoy khimii AN SSSR, Moskva. Submitted July 18, 1964.

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TAUBMAN, A.B.; NIKITINA, S.A.; PRIGORODOV, V.N.

Role of quasi-spontaneous emulsification in the process of stabilization of emulsions. Koll. zhur. 27 no.2:291-292 Mr-Ap '65. (MIRA 18:6)

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Connection between the teaching of physics and the practial aspects of the building-up of communism. Fiz. v shkole 20 no.3:26-32 My-Je '60. (MIRA 13:11)

(Physics--Study and teaching)

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PRIGOROVSKIY, M.

"Obzor Glavneishikh Mestorozhdenii Uglei i Goryuchikh Slantsev SSSR," by M. Prigorovskiy, V. Yarovskiy, et al., Leningrad, 1930

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PRIGOVA, O.M.

Chronic ulcerative-vegetative pyoderma. Vest. vener. No.3:40-41 May-June 50. (CLML 19:4)

1. Of the Skin Division (Head -- Docent S.I.Furmanov), Ukrainian Scientific-Research Skin-Venereological Insitute)Director -- Prof. A.M.Krichevskiy)

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PRIGOROVSKIY, M.M.

Map of known and presumed occurrences of coal in the U.S.S.R. (MLRA 9:11)
Trudy Inst. geol.nauk. no.90:195-201 '47.
(Coal geology--Maps)

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RT-1249 (The coal base of the USSR) Ugol'naia baza SSSR. Pages 68-80 from: GEOLOGICHESKAIA IZUCHENNOST' I MINERAL'NO-SYR'EVAIA BAZA SSSR. I.M.Gubkin, ed. Moscow-Leningrad, 1939.

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Results and problems of the study of the coal sources of the U. S. S. R. M. M. Prigorovskii. *Problems Soviet Geol.* 7, 583-95(1937). Known resources are estd. as 1000 billion tons.

F. H. Rathmann

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M. M. Prigorovskii. *Problems of Soviet Geology* 7, 403 (1937).—The coal resources of the Karaganda are estd. at 30,000,000 tons and those of Tenis Kurzhinkulskii at 5,000,000 tons. Data on the oil-shale campn. are also given.

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PRIGOROVSKII, Mikhail Mikhailovich, 1881- ed.

Ugol' Coal Leningrad, Glav. red. geologo -razvedochnoi i geodezicheskoi lit-ry, 1935. 231 p. (Mineral'no-syr'evaia baza SSSR, vyp. 25) (53-590)

TN85.M43 vol. 25

1. Coal - Russia.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKII, Mikhail Mikhailovich, 1881- ed.

A brief study of coal and oil shale deposits in the USSR. Moskva, Gos. nauch.-tekhn. geologorazvedochnoe izd-vo, 1933. 478 p. maps. (49-44396)

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SO:LC, Soviet Geography, Part I, 1951, Uncl.

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PRIGOROVSKII, Mikhail Mikhailovich.

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"Nastoiashchii sbornik iavlietsia dopolneniem ... sostavlennykh b. Uzol'nym geologorazvedochnym institutom 'Obzorov glavneishikh mestorozhdenii uglei i goriuchikh slantsev' ... 1931 g."

"Glavneishaia literatura o shungite": p. 96.

DLC: TN808.R9P72

SO: IC, Soviet Geography, Part I, 1961, Uncl.

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SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

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PRIGOROVSKIY, F.Y.

Explanation of topics related to the sixth five-year plan in class instruction. Fiz. v shkole 16 no.4:30-38 Jl-Ag '56. (MLRA 9:9)

1.Poselok Elektrougli Moskovskoy oblasti, 65-ya srednyaya shkola.
(Russia--Economic policy) (Physics--Study and teaching)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, F.V.

A-3

Category : USSR/General Problems - Problems of Teaching

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 2773

Author : Prigorovskiy, F.V.
Title : Explaining the Materials of the Sixth Five-Year Plan in the Classes

Orig Pub : Fizika v shkole, 1956, No 4, 30-38

Abstract : No abstract

Card : 1/1

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

13

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"Optically active" material for the experimental investigation of the theory of elasticity. N. I. Prigorovskii and N. A. Kurochkina. *Vestnik Inzhenerov Tech.* 1938, 699-703; *Chem. Zentr.* 1939, I, 4092.—The prepn. of a phenoplastic from 500 g. phenol, 1050 g. formalin, and 12.5 g. oxalic acid (the last as a catalyst) is described. The polymerization product, Wischomlit, is especially suitable for the making of models for the study of strains with the aid of optical polarization. The mech. and optical properties of the product are described. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

SERENSEN, S.V.; TETEL'BAUM, I.M.; PRIGOROVSKIY, N.I.

[Dynamic strength in machine construction] Dinamicheskaia prochnost' v mashinostroenii. 2. perer. izd. Moskva, Gos. nauch.-tekhn. izd-vo mash-stroit. lit-ry, 1945. 327 p. (MIRA 8:6)
(Machinery--Testing)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, Nikolay Ivanovich,

Sci. Assoc., an Inst., -1950-.

Mbr., Inst. Machine Studies, Dept. Tech. Sci., Acad. Sci. -1948-49-.

"Small-Size Polarization Equipment Type IMASh-KB2 for Studying the Tensions in Machine Parts," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 10, 1948;

"Investigation of the Stressed State in Transparent, Three-Dimensional Models in a Beam of Parallel Rays of Polarized Light," ibid., No. 5, 1949;

"The IMASh-KB2 Polarization Unit for the Study of Stresses," Zavod. Lab., 15, No. 3, 1949.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

FROCHT, M.M.; BOKSHTEYN, M.F. [translator]; KRASONTOVICH, Yu.F., [translator]; PREYSS, A.K. [translator]; PRIGOROVSKIY, N.I., professor, redaktor; SNITKO, I.K., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor.

[Photoelasticity; polarization-optical method of stress analysis] Fotouprugost'; poliarizatsionno-opticheskii metod issledovaniia napriazhenii. Perevod s angliiskogo M.F.Bokshtein, IU.F.Krasontovicha, A.K.Preiss. Pod red. N.I.Prigorovskogo. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry. Vol. 1. 1948. 432 p. Vol. 2. 1950. 488 p. (MLRA 8:2) [Microfilm]

(Photoelasticity) (Strains and stresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

A

Q

9-103. Small Polarizing Apparatus Designated "IMASh-PB2" for Investigation of Stress in Structural Members of Machines. (In Russian.) N. I. Prigorovskii and M. F. Bokshtein. *Izvestiya Akademii Nauk SSSR. Otdelenie Tekhnicheskikh Nauk* (Bulletin of the Academy of Sciences of the USSR. Section of Technical Sciences), Oct. 1948, p. 1599-1605.

An apparatus, using the polarization optical method of investigation with a transparent model, for study of stress distribution in structural parts.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PA 21/49T34

PRIGOROVSKIY N. I.

USSR/Engineering Oct 48
Stress Analysis
Machinery - Design

"Small-Size Polarization Equipment Type IMASh-KB2 for Studying the Tensions in Machine Parts," N. I. Prigorovskiy, M. F. Bokshteyn, Inst Mach Studies, Acad Sci USSR, 6½ pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 10

Equipment is designed for studying stress distributions in machine parts by optical polarization method using transparent models. Describes construction of apparatus, and investigates errors resulting therefrom, with three photographs, and three diagrams. Submitted 8 Jul 48. FDB 21/49T34

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

FRIGOROVSKIY, N. I.

No. 37365--Eksperimenial' nye issledovaniya raspredeleniya napryazheniy v svyazi s povysheniem prochnosti detaley. V sb: Povyshenie prochnosti detaley mashin. M.-L., 1949, S. 104-09--Bibliogr: 8 nazv.

So: Letopis' Zhurnel'nykk Statey, Vol. 7, 1949.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

May 49

USSR/Physics
Material Test Techniques

PA 51/49T68

"Investigation of the Stressed State in Transparent, Three-Dimensional Models in a Beam of Parallel Rays of Polarized Light," N. I. Prigorovskiy, A. K. Preyss, Inst of Mach Studies, Acad Sci USSR, 15 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 5

Gives method to measure stresses in models using a plate cut from three-dimensional models "frozen" under load. Optical properties of a point on the model reflect its tension state in a definite

51/49T68

pattern. Crystallooptical methods are used to determine optical characteristics, and these are converted to stress measurements. Also gives simplification of method which may be used for standard machine parts (shafts, discs, etc.). Submitted by Acad Ye. A. Chudakov, 8 Jul 48.

51/49T68

PRIGOROVSKIY, N. I.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PROCESSES AND PROPERTIES INDEX

A

9-170. Contemporary Development of an Optical Polarization Method for Determination of Stresses. (In Russian.) N. I. Prigorovskii. *Zavodskaya Laboratoriya* (Factory Laboratory), v 15, Mar. 1949, p. 308-321.

Use of transparent models, both two and three dimensional, for the determination of the distribution and value of stresses. Theoretical bases of this method and formulas for calculation. 19 ref.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

C.A.

3/

A material for models for the photoelastic method of stress analysis. N. L. Prigorovskij, A. K. Preiss, and O. D. Slutsker. *Zavodskaya Lab.* 15, 330-8(1949).—Reflux 1 kg. of PhOH, 2 kg. of 40% formalin, 25 g. of $(COOH)_2$ and 0.5 kg. of EtOH on a 300-350° sand bath for ~1.5 hrs. The resin is allowed to settle for 20 hrs., and then dried by boiling at 105-130° for 1 hr. The material is then cast into forms and polymerized to the desired hardness. Methods of testing optical and mech. properties are given.

Cyrus Feldman

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N. I.

PA 48/49T39

Mar 49

USSR/Engineering
Testing Equipment
Stress Analysis

"The IMASh-KB2 Polarization Unit for the Study of Stresses," N. I. Prigorovskiy, M. F. Bokshteyn, Inst of Mach Sci, Acad Sci USSR, 9 pp

"Zavod Lab" Vol XV, No 3

Subject unit makes it possible to perform measurements on flat models as well as on cross sections of three-dimensional models, utilizing the "freezing" method. Complete description of IMASh-KB2 unit, with illustrations and diagrams.

48/49T39

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

1. PRIGOROVSKIY, N. L.; PREISS, A. K.; RUTOVSKIY, B. N.; SHCHEGOLEVSKAYA, N. A.

2. USSR (600)

4. Models and Modelmaking

7. Material for models used in the "Freezing" method. Izv. AN SSSR. Otd tech. nauk no 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N. I.

Technology

Measurement of mechanical values by electrical methods, Moskva, Mashgiz, 1952

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N. I. Aug 52

USSR/Engineering - Structural Analysis, Modeling

"Material for Models in the 'Freezing' Method," N.I.Prigorovskiy, A.K.Preyss, B.N.Rutovskiy, N. A. Shchegolevskaya

Iz Ak Nauk SSSR, OTN, No 8, pp 1189-1192

Describes new optical material, MIKhM-IMASh, developed jointly by Inst of Machine Sci and Moscow Inst of Chem Machine Building, for models used in studying stress distribution with aid of polarized light. Material is based on triple copolymers which contain, together with poly esters of bivalent alcohols and dibasic acids, styrol and methyl methacrylate or allyl ethers capable of being polymerized. Outlines advantages of using new material, such as absence of boundary effect, possibility of making blocks entirely uniform in their optical-mechanical properties, possibility of making models of intricate shape, etc. Presented by Acad I.I.Artobolevskiy 11 Dec 51.

262T12

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

1. PRIGOROVSKIY, N.I., PROF.: BORTKEVICH, V.I.: MISOZHINIKOV, V.M.

2. USSR (600)

4. Forging

7. Determination of stresses in upset forging by the tensometer method. ~~Eng.~~ Vest. mash. 32, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

UMANSKIY, A.A.; AFANAS'YEV, A.M.; VOL'MIR, A.S.; GRIGOR'YEV, Yu.P.; KODANEV, A.I.; MAR'IN, V.A.; PRIGOROVSKIY, N.I.; SNITKO, I.K., redaktor; AKHLAMOV, S.N., tekhnicheskiy redaktor.

[Collection of problems on the strength of materials] Sbornik zadach po soprotivleniiu materialov. Moskva, Gos. izd-vo tekhn.-teoret. lit-ry, 1954. 480 p. (MLRA 7:12)
(Strength of materials)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N. I.

S/5
621.98
.19

Izmereniye napryazheniy i usiliy v detalyakh mashin (Measuring stress and force in parts of machines, edited by) N. I. Prigorovskiy.
Moskv , Mashgiz, 1955.
222 p. diagrs., tables.
Includes bibliographies.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

ANDREYEV, L.Ye., kandidat tekhnicheskikh nauk; BIDERMAN, V.L., kandidat tekhnicheskikh nauk; BOYARSHINOV, S.V., kandidat tekhnicheskikh nauk; VOL'MIR, A.S., doktor tekhnicheskikh nauk; DIMENTBERG, F.M. kandidat tekhnicheskikh nauk; ZASELATELEV, S.M., inzhener; KINASOSHVILI, R.S., doktor tekhnicheskikh nauk, professor; KOVALENKO, A.D.,; MAKUSHIN, V.M., kandidat tekhnicheskikh nauk MALININ, N.N., kandidat tekhnicheskikh nauk; PONOMAREV, S.D., doktor tekhnicheskikh nauk; PRIGOROVSKIY, N.I., doktor tekhnicheskikh nauk; TETEL'BAUM, I.M., kandidat tekhnicheskikh nauk; UMANSKIY, A.A., doktor tekhnicheskikh nauk, professor; FEODOS'YEV, V.I., doktor tekhnicheskikh nauk; SERENSEN, S.V., redaktor; TRAPEZIN, I.I., kandidat tekhnicheskikh nauk, redaktor; KARGANOV, V.G., inzhener, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor.

[Mechanical engineer's manual; in 6 volumes] Spravochnik mashinostroitelia; v shesti tomakh. Izd.2-e, ispr. i dop. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, Vol.3, 1955. 563 p. (MLRA 8:12)
(Mechanical engineering)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-57-5-6120

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 5, p 156 (USSR)

AUTHORS: Prigorovskiy, N. I., Vasil'yev, A. A., Bortkevich, V. I., Daychik, M. L.

TITLE: Wire Strain Gages (Provolochnyye tenzometry)

PERIODICAL: V sb.: Izmereniye napryazheniy i usiliy v detalyakh mashin. Moscow, Mashgiz, 1955, pp 5-43

ABSTRACT: A description is given of the properties of wire-type strain-gage pickups; experimentally plotted curves are given for hard and annealed constantan and Nichrome wire, curves showing the dependence of the stress and of the relative change in the electrical resistance on the relative elongation ϵ (for elongations ϵ up to 0.8%). The authors examine the actual process of transmission of the strain-producing forces from a metal specimen or machine part to a strain gage that has been glued to it, making due allowance for the stiffness of the glue used. The matter of selecting for the strain-gage pickup the gage of wire, current, and electrical resistance most compatible with the type of electrical meter being used is analyzed, and formulas and graphs are given to facilitate that selection; analyzed also are various methods of moisture-proofing the strain-gage pickups, and

Card 1/3

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-57-5-6120

Wire Strain Gages

experimentally plotted curves are given showing the relationship between the amount of creep exhibited by the glue that is used and the temperature of the strain-gage pickup wire. Included,too, are: a) data on the varying degrees of error due to mechanical hysteresis exhibited by different strain-gage pickups pasted on with different types of glue; b) formulas permitting calculation of the maximum allowable length of a pickup intended for recording strains induced by high-frequency dynamic loads; c) a brief listing of the properties of the metals employed to make the strain-sensitive wires used as pickups; and d) a number of glue recipes. A description is given of the techniques and equipment used in the manufacture of wire strain-gage pickups; described also is a design for pickups capable of functioning at temperatures of up to 800°C. Describing, in addition, three types of electron-tube equipment suitable for use with wire pickups, the authors give: 1) a full circuit diagram for and essential data on all the elements of, the ISD static-strain gage developed by the Institut mashinovedeniya AN SSSR (Institute of Machine Construction, Academy of Sciences, USSR) [ISD = izmeritel' staticheskikh deformatsiy = static-strain gage; Transl. Note]. Operating either on 6N2P, 6Kh2P, or 6Ts4P radio tubes or on 6N1P television tubes and having a 50-cps measuring-bridge power supply, this instrument is sensitive to strains as small as 10^{-5} cm/cm. (Reviewer's Note: In the circuit diagram given for this instrument an error

Card 2/3

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-57-5-6120

Wire Strain Gages

appears; the indicated anode connection points of the 6Kh2P radio tube should be reversed); 2) a full circuit diagram of an automatic strain recorder that makes strain recordings at 120 different points in the course of 80 seconds; included is a diagram of the instrument's 120-point switch; 3) a summary account of the full-beam-deflection parameters on 2-500 μa current loads of the high-sensitivity frame-type vibrators put out by the "Geofizika" plant [Geofizika = geophysics; Transl. Note], plus a detailed description of a UD-3 type strain-testing laboratory capable of recording dynamic strains of frequencies up to 1,500 cps. A brief description is given also of a cathode-ray oscillograph specially designed to record impact strains.

P. V. Novitskiy

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-58-5-6248

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 164 (USSR)

AUTHORS: Prigorovskiy, N.I., Bortkevich, V.I., Grigor'yev, L.Ya.

TITLE: A Method of Stress and Force Investigation of Components of Impact-type Mechanisms (Metodika issledovaniya napryazheniy i usiliy v detalyakh mekhanizmov udarnogo deystviya)

PERIODICAL: V sb.: Izmereniye napryazheniy i usiliy v detalyakh mashin. Moscow, Mashgiz, 1955, pp 188-213

ABSTRACT: A description of measuring, amplifying, and recording devices is given for measuring impact parameters as applied to the investigation of an electric hammer. The recording was performed on an oscillograph with a mechanical tape-transport attachment with speeds of up to 10m/sec and filmed cinematographically. Test results for an OMG-10-type hammer are given.

N.P. Rayevskiy

1. Power hammers--Stresses 2. Power hammers--Impact shock 3. Power hammers--Testing equipment 4. Motion picture photography--Applications

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I., professor, doktor tekhnicheskikh nauk, redaktor; POMEDIMSKIY, V.V., redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Optical polarization method for investigating stresses; collection of articles] Poliarizatsionno-opticheskii metod issledovaniia napriazhenii; sbornik statei. Moskva, 1956. 279 p. (MLRA 9:6)

1.Akademiya nauk SSSR. Institut mashinovedeniya.
(Polarization (Light)) (Strains and stresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

9349

NEW MATERIAL "GLIFTAMAL" FOR TESTING STRESS OF FLAT MODELS BY USING POLARIZATION-OPTICAL METHOD. M. F. Bokshtein, N. I. Prigorovskii, S. I. Sokolov and N. A. Shchegolevskaya. Izvest. Akad. Nauk S.S.S.R. Otdel. Tekh. Nauk No. 2, 139-41(1956) Feb. (In Russian)

A new type material "gliftamal" was developed for testing flat models at room temperature with reduced polymerization. "Gliftamal" is the product of pentaerythrite, glycerin, and diethylene glycol condensation with maleic and phthalein anhydrides. The material has a solidification time of 2 months. Disk-shaped samples were tested in polariscopes under diameter compression. The relations of m layers to the stresses and to the length of time render stress were determined. Selected samples showed optic proportionality of 30 bands calculated for 7 mm thickness. Tabular results are given. (R.V.J.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-58-3-3482

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 127 (USSR)

AUTHORS: Prigorovskiy, N. I., Mazitov, Sh. S.

TITLE: Techniques and Apparatus for Experimental Investigation of Stresses and Forces Appearing During Collision Impacts Between Machine Components (Metodika i apparatura dlya eksperimental'nogo issledovaniya napryazheniy i usiliy pri soudarenii detaley mashin)

PERIODICAL: Izv. Otd. yestestv. nauk. AN TadzhSSR, 1956, Vol 15, pp 25-51

ABSTRACT: In the course of investigations impact phenomena were studied with the aid of wire strain gages and special two-ray cathode oscillographs capable of registering deformations ranging from 0.1 to 3% at frequencies of 35-25,000 cps. Experimental procedures are described, and the following four varieties of impact conditions, the solutions to which have been derived by other authors, are compared: 1) Transverse impact of a weight striking a beam or a ring made of photoelastically active material; 2) longitudinal collision of two steel rods, and 3) a transverse-impact produced by a weight impinging on a steel H-beam. V. N. Maksimov

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-57-3-3669

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 147 (USSR)

AUTHOR: Prigorovskiy, N. I., Khesin, G. L.

TITLE: The Investigation of the Stress Distribution in the Indoor Powerhouse Structure of a High-pressure Hydroelectric Plant (Issledovaniye napryazheniy v bloke vysokonapornoy GES vstroyennogo tipa)

PERIODICAL: Tr. Mosk. inzh.-stroit. in-ta, 1956, Nr 16, pp 123-140

ABSTRACT: The paper analyzes the advantages of the method of model tests performed with models made of a material having a low modulus of elasticity as compared to the photoelastic method. The authors submit suggestions relative to a material (organic glass), to a procedure of tensometry (electric strain gages, stresscoat, etc.), and on similarity criteria. Procedural details and the results of a test investigation of a dam model are adduced.

I. K. Snitko

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I., professor doktor tekhnicheskikh nauk; VASIL'YEV, A.A., inzhener.

Review of the book of S. P. Goncharov and others "Measuring strains and stresses." Zav. lab. 22 no.9:1137-1138 '56. (MLRA 9:12)
(Strains and stresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-58-1-1236

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 154 (USSR)

AUTHORS: Prigorovskiy, N. I., Preyss, A. K., Daychik, M. L., Bortkevich, V. I., Kustanovich, M. S., Komov, N. N.

TITLE: Full-scale Measurements of the Stresses and Pressures Exerted on Component Parts of the Hydraulic Turbines of the Hydroelectric Power Station on the River Dnepr (Napryazheniya i davleniya na detalyakh gidroturbiny Dneprovskoy GES po dannym naturnykh izmereniy)

PERIODICAL: V sb.: Gidroturbostroyeniye. Nr 4. Moscow-Leningrad, Mashgiz, 1957, pp 103-126

ABSTRACT: Measurements of the actual values of the strains and pressures at a number of points of the runner and of the forces acting on various shaft sections as obtained for the fundamental operational regimes of the turbine.

From the résumé

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I., doktor tekhn. nauk; PREYSS, A.K., kand. tekhn. nauk; ZHUKOVSKIY, V.S., inzh.; ZABUGINA, N.A., inzh.; BEZKHODARNYY, B.N., starshiy laborant.

Use of models to determine stresses and displacements of parts in the hub of hydraulic-turbine runners. [Trudy] LMZ no.4:145-176 '57. (MIRA 11:4)

1. Institut mashinovedeniya AN SSSR.
(Hydraulic turbines) (Hydraulic models)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PETROVSKIY, M.I.
Institute of Mechanical Engineering, USSR Academy of Sciences, Moscow.

"Study of Stresses on Complex Elastic Models,"
paper presented at Third National Congress of Applied Mechanics at The Indian Institute of Science, Bangalore, December 1957/[redacted],

Comment: B 3,102,544, 16 April 1958

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SOV/124-58-1-1239

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 155 (USSR)

AUTHORS: Prigorovskiy, N. I., Preyss, A. K., Zhukovskiy, V. S., Zabugina, N. A., Bezkhodarnyy, B. N.

TITLE: Stress and Strain Determination in Parts of the Runner Hubs of Hydraulic-turbine Models (Opredeleniye napryazheniy i permeshcheniy v detalyakh vtulok rabochikh koles gidroturbin na modelyakh)

PERIODICAL: V sb.: Gidroturbostroyeniye, Nr 4, Moscow-Leningrad, Mashgiz, 1957, pp 145-176

ABSTRACT: Presentation of the fundamental results of strain-gage investigations of stresses and strains in models of various versions of runner-hub casing design. The investigations were performed during the design stage of the variable-pitch blade turbines for the Kuybyshev and Stalingrad Hydroelectric Power Stations. Basic remarks on the investigative techniques are also adduced.

From the résumé

Card 1/1

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.; PREYSS, A.K.; AKUTIN, M.S.; GRACHEVA, B.S.

Models fo ED-6 epoxy resin in the polarization-optical method for studying stresses. Zav. lab. 23 no.4:488-492 '57. (MLRA 10:6)

1. Institut mashinovedeniya Akademii nauk SSSR, Moskovskiy institut plastmass.
(Strains and stresses) (Resins, Synthetic)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

AUTHOR PRIGOROVSKIY, N.I., Doctor of Technical Sciences, Professor 32-6-51/54

TITLE Letter to the Editor.
(Pismo v redaktsiyu)

PERIODICAL Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 765 - 765 (U.S.S.R.)

ABSTRACT In the publication "Polarization-Optical Method for the Investigation of Stresses" (published by the Academy of Science of the U.S.S.R., 1956), misprints were found on page 12 which are said to cause "serious complications" in the production of the material "MIKHN-IMASH". It is therefore recommended that the lines 25-31 (from the top) should, when being re-edited by Mme.N.A.Shchegolevskaya, cand.tech.sc., should run as follows: "Purification and Preparation of Raw Material". For the purpose of purification and drainage diethylenglycol is mixed with the same quantity of benzol in a.2 l fractional distillation flask with a water collecting device. Heating is carried out in such a manner that uniform boiling is attained. After the separation of water has ended and after the distillation of benzol the diethyl englycol is divided and under the effect of the vacuum and the fraction is taken out at boiling temperature 123-124° (at 7mm final pressure and n_D^{20} =1,4495 and d_4^{20}=1,1o73. As diethylanglycol is at present qualified as "pure" in production a purifying operation appears to be superfluous in this case.

ASSOCIATION Not Given.

PRESENTED BY

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Card 1/1

PA - 2883
03/14/2001 CIA-RDP86-00513R001343020001-7

AUTHOR: Not given

TITLE: Prizes Amounting to 5.000.- Roubles Each Awarded by the President of the Academy of Science of the U.S.S.R. - Department of Technical Sciences. (Otdyeleniye tyekhnicheskikh nauk, Russian)

PERIODICAL: Vestnik Akademii Nauk, SSSR, 1957, Vol 27, Nr 2, pp 96-96 (U.S.S.R.)
Received: 5 / 1957 Reviewed: 7 / 1957

ABSTRACT: Prizes were given to:
(Jointly) I.B.BOROVSKIY, Dr.phys.math.sc. and 2 further collaborators (Institute for Metallurgy "A.A.BAYKOV) for the work: "Radio-Spectral Method of Investigating the Chemical Composition of Smelts in the Molecular Domain".
(Jointly) I.V.KRAGYELSKIY, Dr.tech.sc. and 7 further collaborators (Institute for Machine Construction) for the work: "Production of New Friction Materials on the Basis of the Molecular-Technical Friction Theory).
A.A.BULGAKOV, cand.tech.sc. (Institute for Automation and Telemechanics" for works within the field of the frequency control of asynchronous motors.
(Jointly) N.I.PRIGOROVSKIY, Dr.tech.sc., and further 8 collaborators (Institute for Machine Construction) for the work: " Measuring of Power Output and Deformation in the Hydroturbine Wheel of the Dnyeprov Hydroelectricity Plant".

Card 1/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

25(2) PHASE I BOOK EXPLOITATION 1165

Prigorovskiy, Nikolay Iosifovich and Preyss, Aleksandr Karlovich

Issledovaniye napryazheniy i zhestkosti detaley mashin na tenzometricheskikh modelyakh (Investigation of Stresses and Rigidity of Machine Parts With the Use of Stress Models) Moscow, Izd-vo AN SSSR, 1958. 230 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp. Ed.: Kovalev, N.N., Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: Grigorash, K.I.; Tech. Ed.: Polyakova, T.V.

PURPOSE: This book is intended for engineers and technicians working in the field of experimental stress analysis.

COVERAGE: A technique is described for investigating distribution of stresses and the rigidity of machine parts and subassemblies by the use of elastic stress models made from materials with low modulus of elasticity. It is stated that this method may also be applied

Card 1/4

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in the design of complex machine parts and structures. According to the author this method was developed, tested and initially used by the Laboratory for Investigation of Stress and Deformations of the Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the Academy of Sciences, USSR) in the solution of problems presented by Corresponding Member of the USSR Academy of Sciences N.N. Kovalev in connection with the design of powerful hydraulic turbines. Later it was applied in the investigation of stresses in complex parts of heavy presses which were being developed under the direction of corresponding member of the USSR Academy of Sciences A.I. Tselikov. There are 51 references, of which 34 are Soviet, 11 English, 3 German, and 1 French.

TABLE OF CONTENTS:

Foreword 3

PART I. METHODOLOGY OF INVESTIGATION

1. Principles of Model Testing 5

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

Investigation of Stresses (Cont.) 1165

2. Materials for Models and Their Properties 27

3. Methods of Model Making 33

4. Model Loading 50

5. Strain Measurement With the Use of Brittle Lacquer Coatings 72

6. Static Strain Measurements With Strain Gages 85

7. Measurement of Displacement 107

8. Investigations on Models [Model Testing] 112

9. Checking On the Simplest Problems the Application of Models Made of Materials With Low Modulus of Elasticity 135

PART II. USE OF MODELS FOR DETERMINING STRESSES AND DISPLACEMENTS IN MACHINE PARTS AND STRUCTURES

Card 3/4

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

Investigation of Stresses (Cont.) 1165

10. Load-carrying Metal Structures of Hydraulic Turbines 161

11. Rotor Housings of Hydraulic Turbines 174

12. Principal Subassemblies and Parts of Hydraulic Presses 200

13. Construction of the Dam of Built-in Variant 215

14. Design of Composite Structure 220

Bibliography 230

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Card 4/4

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

Prigorovskiy, N. I.

98-1-7/20

AUTHORS: Gubin, F.F., Prigorovskiy, N.I., Doctors of Technical Sciences, Professors and Khesin, G.L., Engineer

TITLE: Investigations of a Built-in Hydroelectric Power Plant With a High Massive Dam (Issledovaniya vstroyennogo varianta gidroelektrostantsii s vysokoy massivnoy plotinoy)

PERIODICAL: Gidrotechnicheskoye Stroitel'stvo, 1958, # 1, pp 29-36 (USSR)

ABSTRACT: Tensions occuring within the structure of built-in type hydro-electric power plants during the periods of construction and operation are influenced by several factors, of which the most essential are the pressure of the water from the head water and the weight of the installation itself. The strains which might occur at various transverse profiles in the design of the Bratsk Hydroelectric Power Plant were examined in detail for the preparation of the technical project. As a result of these studies a profile was developed for future projects which showed a more favorable distribution of stress than previous designs. The article deals with the methods of research

Card 1/5

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Investigations of a Built-in Hydroelectric Power Plant With a High Massive Dam

and the results obtained. Investigations were facilitated and analyses were simplified by making pressure measurements of weight and hydrostatic pressure separately. The authors present several formulas of the effects produced by pressure from the outside and by the weight of the installation. Experiments were conducted on flexible models which were subjected to strains up to the limits of elasticity. To insure reliability of results, the following two types of three-dimensional and flat models were used: 1) Tensometric models consisting of materials with a low modulus of longitudinal elasticity (organic glass, neoleucorite). 2) Optical models of transparent, optically active materials.

The deformations were measured by means of stress transducers with 10, 5 and 3 mm basis, glued onto the surface of the model or placed inside the model. The errors at measuring the deformation of the attached stress transducer by means of the electronic device "ИСД-2 ИМАШ " do not exceed 2 - 4%. The authors present several formulas by which the tension inside the models given by the stress transducer can

Card 2/5

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Investigations of a Built-in Hydroelectric Power Plant With a High Massive Dam

be computed. By using the data obtained from the inside loads, the hydrostatic pressure at different water levels of the reservoir can be established. The testing of tensometric models under realistic load conditions was carried out by a centrifugal machine of 2.6 m in diameter and by means of applying several concentrated loads to the gravity centers of the volumes of the model. New methods were made possible by using new "optically" active materials: styrene alkyd resin (material МИХМ-ИМАШ) and epoxymal (with resin ЭД-6 or Э-40). Special research, conducted with the Candidate of Technical Sciences N.A. Shchegolevskiy, showed the feasibility of producing optically active materials based on epoxy-type resin and "inoculated" polymers with a broad range of elasticity moduli. The separation of main stresses within the models which are subjected to the combined pressure of hydrostatic loads and their own weight is accomplished by numerical integration over the increments of tangential stresses. Besides, a less complicated method for separating the main stresses in flat models was developed with electric models using

Card 3/5

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

98-1-7/20

Investigations of a Built-in Hydroelectric Power Plant With a High Massive Dam

current-conducting paper. Isolines obtained on electric models are shown in figure 1. Research conducted on flat optical models of stresses subjected to combined action of their own weight and hydrostatic load were carried out on models made from epoxymal, which permit to carry out the "freezing" of the model and to subject it subsequently to hydrostatic load at indoor temperatures. Volumetric tensions existing in different sections of the model were determined by means of cuts taken from "frozen" models, (figure 2) Examinations of the cuts were conducted by means of a polarization microscope "МП-2 ", and by applying a double-beamed light in the polarization device. The conducted experiments made the evaluation of the tensions prevailing in this type hydroelectric power plant at the combined stress from its own weight and hydrostatic pressure, during periods of operation, possible, as well as at different stages of construction. They further permitted evaluation of the effect of different structural changes on the tension pre-

Card 4/5

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98-1-7/20

Investigations of a Built-in Hydroelectric Power Plant With a High Massive Dam

vailing in the installation, and, in conformity with the findings, made it possible to recommend the most favorable structural shape. The tests also showed the relation existing between the tension within the installation and the filling of the reservoir and the sequence of pouring cement. The examinations disclosed the effects of various structural changes on the stress status of the building, and made possible the selection of the most favorable shape, dimensions and location of the machine hall. An analysis of the tests led to the general conclusion that tensions occuring within the hydroelectric power plants, both during the time of construction and operation, do not exceed safety limits. The stability of the installation or its component parts is not endangered, and there is no need for reinforcing.

There is 1 table, 6 figures and 4 Russian references.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SHCHEGOLEVSKAYA, N.A., kand. tekhn. nauk; SOKOLOV, S.I., doktor tekhn. nauk, prof.; KHESIN, G.L., inzh.; PRIGOROVSKIY, N.I., doktor tekhn.nauk, prof.

Optically active materials with various elastic moduli used in investigating stresses by polarization-optical methods. Izv. vys. ucheb. zav.; mashinostr. no.3/4:72-83 '58. (MIRA 12:5)

1.Moskovskiy institut khimicheskogo mashinostroyeniya (for Sokolov). 2.Moskovskiy ordena Trudovogo Znameni inzhenerno-stroitel'nyy institut im. V.V. Kuybysheva (for Khesin). 3.Institut mashinovedeniya AN SSSR (for Prigorovskiy).
(Resins, Synthetic) (Strains and stresses)

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SOV/32-24-11-24/37

7(6), 14(11)

AUTHORS: Prigorovskiy, N. I., Filimonova, Ye. N., Dedovets, G. S.

TITLE: Models for Testing Tensions in Optically Insensitive Transparent Material With Insets of the Material ED6-M (Modeli dlya issledovaniya napryazheniy iz opticheski nechuvstvitel'nogo prozrachnogo materiala s vkleykami iz materiala ED6-M)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 11, pp 1396-1400 (USSR)

ABSTRACT: The distribution of tensions in metal samples of machine parts and constructional units are tested in transparent elastic models by means of polarized light according to the method of "freezing" (Refs 1,2) or the method of dispersed light. It has been suggested (Ref 3) to produce models of optically indifferent glass for tests of space tensions and to insert cubes of common optically sensitive glass in the point to be tested. In the case under review, an optically inactive plastic material with a modulus of elasticity and Poisson coefficient equal to those of the optically active material used was obtained and used; also a reliable method of gluing (without

Card 1/2

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SOV/32-24-11-24/37

Models for Testing Tensions in Optically Insensitive Transparent Material With Insets of the Material ED6-M

initial tensions) was developed. ED6-M (Ref 4) was used as optically active material. The optically inactive plastic material was produced according to a method, which is described, of metacrylic acid methylester and dibutylphthalate (11% - as plasticizer). The material (Brand "ONS") is produced by the Chelyabinskiy zavod plastmassy (Chelyabinsk Plastics Plant) in sheets (8-18 mm, 1000 x 1200 mm) and blocks (20-100 mm, 600 x 650 mm). A methanol glue is used for the gluing of ED6-M and "ONS". The determination of the extension of the shaft of a hydro-turbine is given as an example.
There are 4 figures, 1 table, and 5 references, 4 of which are Soviet.

ASSOCIATION: Institut mashinovedeniya Akademii nauk SSSR i Chelyabinskiy zavod plastmass (Institute of Mechanical Engineering of the AS USSR and the Chelyabinsk Plastics Plant)

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

7(6)

AUTHORS: Prigorovskiy, N. I., Professor. Doctor of Technical Sciences, Krupin, A. V. SOV/32-24-11-33/37

TITLE: Conference on Polarizational Optical Methods of Testing Tensions (Konferentsiya po polyarizatsionno-opticheskomu metodu issledovaniya napryazheniy)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 11, pp 1422-1423 (USSR)

ABSTRACT: The above conference which had been proposed by the Leningradskiy universitet (Leningrad University) and the Leningradskoye otdeleniye NTO mashinostroyeniya (Leningrad NTO Department of Machine Manufacturing) was held in Leningrad in March, 1958. Members of the Leningradskiy gosudarstvennyy universitet (Leningrad State University), of the institut nefti (Petroleum Institute , the fiziko-tekhnologicheskiy institut AN SSSR (Institute of Physical Technology of the AS USSR), the Vsesoyuzno nauchno-issledovatel'skiy institut Gidrotekhniki (All-Union Scientific Research Institute of Hydraulic Engineering), the Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine Manufacturing , the Moskovskiy

Card 1/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

Conference on Polarizational Optical Methods of Testing Tensions SOV/32-24-11-33/37

institut inzhenerov transporta (Moscow Transport Engineering Institute), and others participated in the conference, as well as experts from the German Democratic Republic, Poland, Czechoslovakia , and the Chinese People's Republic. More than 60 contributions were submitted. Amongst others, the following subjects were discussed: The improvement of existing and the development of new transparent materials, as well as their testing under different testing and stress conditions. The development of polarizational optical measuring methods of elastic transparent models. The development of methods of investigation and their application in testing elastic deformations. The investigation of deformations and tensions in the field of elastic and plastic materials in relaxation and creeping. Transparent materials already developed were mentioned: Styrene alkyde resin "MIKhM-IMAShch", the material ED6-M (basing on epoxy resin), the optically inactive material ONS , and "elastopleks" which was developed in Czechoslovakia. New apparatus were explained, such as e.g. the polariscope for direct transillumination and determination in dispersed light, e.a. In the contributions of the visitors

Card 2/3

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Conference on Polarizational Optical Methods of Testing Tensions

S07/32-24-11-33/37

from abroad the results of research in their countries were reported. A color film of the Lennau-film for universities was shown, which dealt with the qualities and investigation possibilities of various methods.

Card 3/3

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PRIGOROVSKIY, N.I.

25(2); 24(6) PHASE I BOOK EXPLOITATION SOV/2591

Akademiya nauk SSSR. Institut mashinovedeniya

Kolebaniya v turbomashinakh; sbornik statey (Vibrations in Turbomachines; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 117 p. Errata slip inserted. 2,300 copies printed.

Resp. Ed.: S. V. Serensen, Academician, Academy of Sciences, USSR; Ed. of Publishing House: Ya. A. Klimovitskiy; Tech. Ed.: V. V. Volkova.

PURPOSE: This collection of articles is intended for scientific research workers, engineers, and designers in the field of turbomachinery.

COVERAGE: This collection of articles deals with vibrations in turbomachinery. The following topics are discussed: vibrations and stresses in the rotor and bearings of a turbogenerator, vibrations and stability of beams, flexural vibrations of a rotating shaft, whirling speeds of a flexible rotor with two unbalanced masses, acceleration through resonance of a nonlinear system, whirling speed and clearance in bearings, dynamic stresses in blades of an axial compressor, and damping of vibrations. No personalities are mentioned. References follow several of the articles.

Dzychik, M.L., F.M. Dimentberg, A.S. Zil'berman, G.L. Lyudin, N.I. Prigorovskiy, and K.Ye. Sakhirov. Investigation of Vibrations and Stresses in the Rotor and Bearings of a High-power Turbogenerator During Operation 5

The authors discuss an experimental investigation made on a high-power turbogenerator in order to analyze the real state of stress of the rotor and vibrations of the rotor and bearings. The dynamic behavior of the whole system of joined rotors and bearings is treated. The influences of bases and foundations are not taken into consideration.

Bolotin, V.V. Vibration and Stability of Beams Under Action of Nonconservative Forces 23

A cantilever rectilinear beam loaded by uniformly distributed following forces acting in the plane of its maximum rigidity is analyzed for stability at planar deformation. Critical parameters of the loading with and without consideration of damping are established.

Ousarov, A.A. Acceleration Through Critical Speeds of a Flexible Rotor With Two Unbalanced Masses in the Presence of Friction 51

The author derives a system of two complex differential equations as a solution to the problem. The solution is based on the following assumptions: that the mass of the shaft, the gyroscopic movements of masses caused by deflections of the shaft, and the initial deflections of the shaft are negligible; that the shaft supports are absolutely rigid; that the shaft itself is torsionally rigid; and that the acceleration through critical speeds is uniform.

Rubanik, V.P. Acceleration Through Resonance in One Case of a Nonlinear System 75

Analysis is made of a nonlinear vibrating system with one degree of freedom having a nonlinear restoring force and excited by a low-frequency sine-shaped disturbing force. The effect of the rate of acceleration on amplitudes of the motion is discussed.

Natanson, V.Ya. (Deceased). Critical Speeds of a Rotor and Clearances in Bearings 81

The effect of the clearance in rolling contact bearings on the motion and whirling speed of a rotor is discussed. Rotors having no critical speed are described together with an experimental checking installation for selecting eccentricities of disks.

Rusanova, Ye.I. Investigation of Dynamic Stresses in Blades of an Axial Compressor With a Wide Control Range 104

The basic results of an experimental investigation of dynamic stresses in blades of an axial compressor by means of wire resistance transducers placed in the root sections are presented. The behavior of the blade at various speeds, including resonance, is described.

Sergeyev, S.I. Damping of Vibrations of Anisotropoelastic Rotors 114

Conditions for successful damping of a rotor with unequal elasticity coefficients along its principal axis are discussed. The inertia and

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

KOVALEV, N.N.; PRIGOROVSKIY, N.I., doktor tekhn.nauk; RUDASHEVSKIY, G.Ye., kand.fiz.-mat.nauk; EDEL', Yu.U., kand.tekhn.nauk

Investigating pressures and stresses in rotor blades of a hydraulic turbine at the Narva Hydroelectric Power Station. Energomashinostroenie 5 no.1:29-32 Ja '59. (MIRA 12:2)

1. Chlen-korrespondent AN SSSR (for Kovalev).
(Narva Hydroelectric Power Station--Hydraulic turbines)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I., prof., doktor tekhn. nauk

Using models made of plastics in determining stresses and displacements in machine parts. Vest. mash. 39 no.1:56-69 Ja '59. (MIRA 12:1)
(Machine tools--Models) (Strains and stresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

BOKSHTEYN, M.F.; kand. tekhn. nauk; ZABUGINA, N.A., inzh; PRIGOROVSKIY, N.I., prof., doktor tekhn. nauk; KHURSHUDOV, G.Kh., inzh.

Using models made of plastics in investigating stresses in large-size presses. Vest. mash. 39 no.1:69-74 Ja '59. (MIRA 12:1)

(Power presses--Models) (Strains and stresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.

PHASE I BOOK EXPLOITATION SOV/4042

Leningrad. Universitet

Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy; trudy konferentsii 13-21 fevralya 1958 goda (Optical Polarization Method for Stress Analysis; Transactions of the Conference of February 13-21, 1958). [Leningrad] Izd-vo Leningradskogo univ., 1960. 451 p. Errata slip inserted. 2,400 copies printed.

Resp. Ed.: S.P. Shikhobalov; Ed.: Ye.V. Shchemeleva; Tech. Ed.: S.D. Vodolagina; Editorial Board: S.G. Gutman, L.M. Kachanov, V.M. Krasnov, T.D. Maksutova, N.I. Prigorovskiy, V.M. Proshko, N.S. Rozanov, and Ye.I. Edel'shteyn.

PURPOSE: This collection of 58 articles is intended for scientists and engineers concerned with experimental stress analysis of machine parts and structural components.

COVERAGE: The collection contains reports presented at the conference on optical polarization methods in stress analysis held February 13 - 21, 1958, in Leningrad and attended by 324 delegates including representatives of the People's Republic of China, the Polish People's Republic, the German Democratic Republic, and the Republic of Czechoslovakia. The reports discuss general theoretical

Card 1/~~12~~ 2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

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problems and new methods of investigation and describe apparatus and materials used in the optical method. Solutions of specific two-dimensional and three-dimensional problems occurring in shipbuilding, aircraft design, engine construction, in various branches of heavy and precision machine design, in mining, metallurgy, hydraulic structures, railroad transport, in structural mechanics, geodynamics, in the control of stresses in products of the glass and electronic industry, etc., are given. Solution of the three-dimensional problem by means of the method of photoelasticity is introduced and the use of this method for the solution of problems associated with plasticity, creep, dynamics, hydrodynamics, etc., is demonstrated. Reports previously published elsewhere are printed here in abbreviated form. No personalities are mentioned. References are found at the end of 47 of the reports.

TABLE OF CONTENTS:

From the Editors 3

1. Davidenkov, N.N. Introduction 5

I. SUMMARIES OF THE REPORTS OF SEVERAL LABORATORIES ON EXPERIMENTAL STRESS ANALYSIS

2. Prigorovskiy, N.I. Analysis of Stresses in Machine Parts and Assemblies 7

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N. I.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

201. N. Ia. Mikhailov (Moscow): An experimental study of the load carrying capacity of thin-walled nickel tubes subjected to various combinations of tension, torsion, and internal pressure.

202. S. G. Mikhlin (Leningrad): Variational methods in the theory of elasticity.

203. A. A. Movchan (Moscow): The stability of motions of solids — Lagrange's theorem for solids and its inversion.

204. A. A. Movchan (Moscow): Axisymmetric supersonic flutter of a circular cylindrical shell.

205. N. F. Morozov (Leningrad): On the uniqueness of the solution of the problem of large deflections of a circular plate under rotationally symmetric loading.

206. G. M. Mukhadze (Tbilisi): The determination of the deformation of trusses without diagonals.

207. Sh. M. Mushtari, I. G. Teregulov (Kazan): A theory of moderately thick plates and shells.

208. A. G. Nasarov (Yerevan): Some problems in the theory of seismic stability.

209. U. K. Nigul (Tallin): Vibrations of an elastic circular cylindrical shell under concentrated impact loading.

210. U. K. Nigul (Tallin): More accurate equations of motion for circular cylindrical shells.

211. V. A. Nikitin (Leningrad): Approximate treatment of cylindrical shells under concentrated loads.

212. S. N. Nikiforov (Moscow): Redistribution of reactions at the edge of a simply supported rectangular plate under gradually increasing loading.

213. W. Nowacki (Warsaw): Some dynamical problems of thermoelasticity.

214. S. K. Nosov (Moscow): Investigation of the viscous behavior of elastic, visco-plastic materials in vibrations.

215. Ia. I. Rudzian, I. A. Klasinsk (Cracow): Problems of the non-linear theory of elasticity.

216. I. P. Ovsyannikov (Moscow): An application of the variational method to the dynamical [illegible] structures.

217. K. I. Ogurtsov (Leningrad): Complete computation of a wave field in homogeneous elastic media with parallel plane boundaries.

218. H. Okubo (Nagoia): The method of electroplating and its applications.

219. W. Olszak (Warsaw): Two-dimensional problems in the theory of plasticity of non-homogeneous and anisotropic media.

220. V. G. Osipov (Moscow): The state of stress in a deformed curved bar.

221. V. Ia. Pavilainen (Leningrad): A membrane theory for a toroidal shell.

222. V. P. Pavlov (Moscow): Creep, elastic properties and anisotropy of plastic lubricants.

223. O. V. Palchinskii (Kharkov): A practical method of designing reinforced concrete structures with reference to creep.

224. Ia. G. Panovko (Riga): The problem of structural damping.

225. P. I. Perlin (Moscow): An approximate method for solving elastic-plastic problems.

226. P. I. Perlin, I. A. Shofman (Moscow): Application of the theory of rigid, plastic solids to problems of metal forming.

227. G. N. Polozhii (Kiev): On the axisymmetric problem in the theory of elasticity.

228. D. N. Polshin (Moscow): A method for studying the plane field of relative volume strains in soils.

229. G. Ia. Popov (Novosibirsk): The application of some new methods of the theory of integral equations to the solution of contact problems of the theory of elasticity.

230. V. A. Postnov (Leningrad): Free and forced vibrations of frames taking into account shear deformations and energy dissipation.

231. V. N. Paturaev (Dnepropetrovsk): Investigation and calculation of internal friction in elastic members of vibrating machines.

232. W. Prager (Providence): An elementary discussion of definitions of stress rate.

233. N. I. Prigorovskii (Moscow): Photoelastic investigation of stresses in three-dimensional layered solids.

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B124/B203

AUTHORS: Prigorovskiy, N.I., and Bogdyl', P.T.

TITLE: Determination of permanent deformation by the method of transparent, optically sensitive layers

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 6, 196[illegible], 72[illegible]-[illegible]

TEXT: To study the states of stress and deformation on the surface of parts, a method with transparent, optically sensitive films has [illegible] been used; a thin layer of optically sensitive material is applied [illegible] surface of the part during its loading; this thin layer is deformed simultaneously with the surface. Polarized light passes the layer [illegible] reflected from the metal (or other) surface, and passes once more the layer and the analyzer. The phase difference of the rays, due to birefringence, $\delta = 2t_{layer}C(\sigma_1 - \sigma_2)_{layer}$, where δ is the linear phase difference, $C = \lambda/\sigma_0^{(1,0)}$ the optical stress coefficient of the layer material, t_{layer} the thickness of the layer, $\sigma_0^{(1,0)}$ the optical material

Card 1/5

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constant of the layer with respect to stress, and λ is the wavelength of the light used. A level state of stress ($\sigma_3=0$) exists on the surface of the piece and in the layer; therefore, $(\sigma_1 - \sigma_2)_{layer} = [(\varepsilon_1 - \varepsilon_2)_{layer} \cdot E_{layer}] / [1 + \mu_{layer}]$ where E_{layer} is the elastic modulus, and μ_{layer} the Poisson coefficient of the layer. On the premise that the deformation of the layer and that of the piece surface are equal, the following holds: $(\varepsilon_1 - \varepsilon_2)_p = (\delta/2t_{layer}) \cdot [(1 + \mu_{layer})/C \cdot E_{layer}] = [\varepsilon_o^{(1,0)} (1 + \mu_{layer})/E_{layer}] \cdot (m/2t_{layer})$. And, after introduction of the optical deformation constant of the material: $(\varepsilon_1 - \varepsilon_2)_p = \varepsilon_o^{(1,0)} m/2t_{layer}$, where m is the order of the interference band. By this method, it is possible to measure deformation in the elastic, the elastoplastic, and the plastic ranges since the proportionality between the deformations of the layer and the order of the interference band for the majority of optically sensitive materials used for this purpose (including the ЭД6-М (ED6-M) material most used in the Soviet Union) at room temperature holds, up to ε =2. until 3%, and at

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100 - 130°C, up to ε =5, until 7%. By the same method, it is also possible to measure the permanent deformation under loads beyond the flow limit; here, the layer is applied before loading the part, the part is loaded, and after release the optical phase difference due to permanent deformation is measured. An МП-7 (MP-7) polarization microscope was used for accurately measuring the order of the interference bands in the layer and determining the permanent deformation. As an example, the authors describe the determination of permanent deformation after releasing a flat specimen subjected to pulling stress with a width of the working part of 12.2 mm, a thickness of 2.9 mm, and a central opening of 4.6 mm diameter. The specimen was made of Д1АТ (D1AT) aluminum alloy ($E = 7.1 \cdot 10^3$ kg/mm^2; $\sigma_s = 19$ kg/mm^2; $\sigma_B = 38$ kg/mm^2). A plate, 1.4 mm thick, made of cold-hardening ЭД6-М (ED6-M) adhesive, is glued onto the specimen before loading. After aligning the edges of the plate with those of the specimen, and drilling the hole, the specimen is loaded with P = 610 kg beyond the flow limit. The nominal mean load in the weakened cross section $\sigma'_{nom} = \left[610/(12.2 - 4.6)\cdot 2.9\right] = 27.6$ kg/mm$^2 > \sigma_s$. Fig.3 shows a diagram

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of the V-shaped reflection polariscope used for taking the interference bands of the whole specimen. The order of the bands m on the circumference of the opening in the specimen and in the interspace between the bands were measured with the compensator of the microscope. The optical deformation constant of the layer material $\varepsilon_0^{(1,0)} = 0.44 \cdot 10^{-3}$ was determined on a calibrated specimen in the form of a band, without an opening, subjected to pulling stress. There are 4 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The two references to English-language publications read as follows: K. Kawata. J. Scient. Res. Inst., Tokio, 52, March (1958). F. Zandman and M.R. Wood. Product Engineering, v. 27, no. 9, September (1956).

ASSOCIATION: Institut mashinovedeniya Akademii nauk SSSR (Institute of Science of Machines of the Academy of Sciences USSR)

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S/032/61/027/009/006/019
B117/B101

AUTHORS: Prigorovskiy, N. I., and Vardanyan, G. S.

TITLE: Determination of thermoelastic stresses by the optical polarization method

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 9, 1961, 1129-1134

TEXT: The authors study a method of determining thermoelastic stresses and their concentration on transparent cold models by making optical polarization measurements. The problem of thermoelastic stresses for a given field of the temperature gradient may be solved in most cases by applying this method which uses "freezing" and "defrosting" of deformations in transparent polymers (Ref. 1: Spravochnik mashinostroitelya. (Handbook of Mechanical Engineer) t. 3, gl. XVI, Mashgiz (1961)). According to the given field of the temperature gradient $\Delta t_i = t_{i\ end} - t_{i\ start}$ in the respective part, and according to the values of the coefficient α of linear elongation, sections i of this part are marked, in the points of which the values $\alpha_i \Delta t_i$ may be assumed as being equal. According to the dimensions and shape of

Card 1/3

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the part and the intended size of the model, the scale of geometrical similarity is selected. Assuming that there is no connection between the sections i in the model, the corresponding "free" relative deformations $\bar{\varepsilon}_i = \alpha_i \cdot \Delta t_i$ are calculated in the connecting plane, and the scale for the load of the sections is selected. The sections i are "frozen" under stresses of $\sigma_i = \sigma_{min} + (\bar{\varepsilon}_i - \bar{\varepsilon}_{min})/\gamma$ (2). Here, $\bar{\varepsilon}_i = \alpha_i \Delta t_i$ and $\bar{\varepsilon}_{min}$ are the "free" deformations for the original part. When applying the stresses σ_i, relative deformations $\varepsilon_i = (\sigma_i/E_{freez})(1 - \mu_{freez})$ (3) develop in the section i of the model (in the case of universal elongation or compression in the plane of the section), or $\varepsilon_i = \sigma_i/E_{freez}$ (3a) (when stresses are only applied in the direction of the deformation investigated). The model is completed with the sections with "frozen" deformations, and "defrosted" by heating. As a result, stresses appear in it which correspond to the required, temperature-conditioned stresses in the original part. These stresses are "frozen" by cooling the model to room temperature. The difference of main stresses and stresses along the unloaded outlines are measured according to the points of the model. The

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stresses found in the model according to the law of similarity are transferred to the original. If the stress does not depend on Poisson's ratio, $\sigma_{orig} = \left[E_{orig}\,\bar{\varepsilon}_i/\sigma_i(1 - \mu_{freez})\right]\sigma_{mod}$ (4) holds for a case corresponding to equation (3), independent of the scale of geometrical similarity. The sign of σ_i is opposed to the sign of the stresses applied during "freezing" of the sections. If $\sigma_{min} = (1/\gamma)\,\bar{\varepsilon}_{min}$, then $\bar{\varepsilon}_i/\sigma_i$ is constant for all parts of the model. The material ЭД6-М (ED6-M) (Refs. 4 and 6: N. I. Prigorovskiy, A. K. Preyss, M. F. Bokshteyn, N. A. Kupryakova. Modeli iz novogo opticheski aktivnogo materiala ED6-M, (Models Made of the New Optically Active Material ED6-M) Izd. filiala VINITI, AN SSSR (1958)) was found to be suitable for conducting tests by the method described. The method was applied to flat models. The following stresses were determined: stresses during fitting of a ring on a disk of equal thickness; thermal stresses during heating to 200°C of plates soldered on edge; and thermal stresses in plates of uniform thickness with openings. There are 5 figures, 1 table, and 7 Soviet references.

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AGAMIROV, V.L., kand. tekhn. nauk; AMEL'YANCHIK, A.V., inzh.; ANDREYEVA, L.Ye., kand. tekhn. nauk; BIDERMAN, V.L., doktor tekhn. nauk; BOYARSHINOV, S.V., kand. tekhn. nauk; VOL'MIR, A.S., prof., doktor tekhn. nauk; DIMENTBERG, F.M., doktor tekhn. nauk; KOSTYUK, A.G., kand. tekhn. nauk; MAKUSHIN, V.M., kand. tekhn. nauk; MASLOV, G.S., kand. tekhn. nauk; MALININ, N.N., prof., doktor tekhn. nauk; PONOMAREV, S.D., prof. doktor tekhn. nauk; PRIGOROVSKIY, N.I., prof., doktor tekhn. nauk; SERENSEN, S.V., akademik; STEPANOVA, V.S., inzh.; STRELYAYEV, V.S., inzh.; TRAPEZIN, I.I., prof., doktor tekhn. nauk; UMANSKIY, A.A., prof., doktor tekhn. nauk; FEODOS'YEV, V.I., prof., doktor tekhn. nauk; SHATALOV, K.T., doktor tekhn.nauk; YUMATOV, V.P., kand. tekhn. nauk; BLAGOSKLONOVA, N.Yu., red. izd-va; YEVSTRAT'YEV, A.I., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manual for a mechanical engineer in six volumes] Spravochnik mashinistroitelia v shesti tomakh. Red. sovet N.S.Acherkan i dr. Izd.3., ispr. i dop. Moskva, Mashgiz. Vol.3. 1962. 651 p. (MIRA 15:4)

1. Akademiya nauk USSR (for Serensen).
(Machinery--Design)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

VARDANYAN, G.S. (Moskva); PRIGOROVSKIY, N.I. (Moskva)

Using the polarization method for simulating thermoelastic stresses. Izv.AN SSSR.Otd.tekh.nauk.Mekh. i mashinostr. no.4:146-149 Jl-Ag '62. (MIRA 15:8)

(Thermal stresses)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I.; BOGDYL', P.T.

Method of optically sensitive layers for measuring deformations on the surface of a part. Probl.proch.v mashinostr. no.8:5-43 '62. (MIRA 16:1)
(Photoelasticity) (Strains and stresses--Measurement)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

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E081/E435

18.9150

AUTHORS: Prigorovskiy, N.I., Vardanyan, G.S.

TITLE: Investigation of the thermoelastic stress distribution and concentration by the application of "freezing" and "thawing"

SOURCE: Akademiya nauk SSSR. Institut mashinovedeniya. Problemy prochnosti v mashinostroyenii. no.8, 1962, 56-68

TEXT: Continuing previous work, the authors deal with the application of the "frozen stress" method to the photoelastic determination of thermal stresses. The advantages and disadvantages of photoelastic experiments on transparent models are reviewed, and thermal and elastic properties of a suitable material ЭД6-М (ED6-M) are listed, together with the modifications to the method needed to deal with thermal stresses. A description is given of the apparatus required and of the procedure for making the models and carrying out the experiments; the necessary mathematical equations are also derived. Details of thermal stress determination are given for the following cases:

Card 1/2

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Investigation of the thermoelastic ... S/740/62/000/008/001/002
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a ring fitted in the hot state externally to a disc; a rectangular steel component subjected to a triangular temperature distribution across the section; a steel plate containing a circular hole; a steel plate with two semi-circular notches; a thin walled cylinder subjected to axial temperature variation. The interference figures are reproduced and the derived stress distributions are analysed in detail. There are 5 figures.

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

SERENSEN, S.V., akademik; PRIGOROVSKIY, N.I., doktor tekhn.nauk

Methods and means for measuring deformations and stresses. Vest. mashinostr. 42 no.11:78-84 N '62. (MIRA 15:11)

1. Akademiya nauk Ukrainskoy SSR (for Serensen).
(Strains and stresses—Measurement)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343020001-7

PRIGOROVSKIY, N.I., doktor tekhn. nauk, prof., otv. red.

[Methods for investigating stresses; problems of strength in the manufacture of machinery] Metody issledovaniia napriazhenii; problemy prochnosti v mashinostroenii. Moskva, Nauka, 1965. 141 p. (MIRA 18:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya.

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AUTHORS: Prigorovskiy, N. I. (Professor, Doctor of technical sciences); Bugayenko, S. Ye.

ORG: none

TITLE: A method for studying concentrations of stresses in shell nozzles placed under high pressure

SOURCE: AN SSSR. Institut mashinovedeniya. Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy; problemy prochnosti v mashinostroyenii (Polarizing-optical method of investigating stresses; problems of durability in machinery manufacture). Moscow, Izd-vo "Nauka", 1965, 82-93

TOPIC TAGS: ~~orifice outflow, nozzle geometry, nozzle test, stress measurement~~, stress analysis, photoelasticity, pressure vessel, stress analysis, nozzle area

ABSTRACT: A means of modeling stresses around nozzles in a pressure vessel is proposed. The authors distinguish between membrane and flexural stresses from: a) internal pressure in the shell causing meridianal and annular stresses in the top and bottom (shell is a surface of rotation); b) the instantaneous effect of pressure at the nozzle and rim wall of the outlet; c) nozzle pressures transmitted to the orifice through the flow tubes, each of which is treated by the method of "freezing" (see C. E. Taylor, N. C. Lind, and J. W. Schweiker. A three-dimensional photoelastic study of

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Card 1/3

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stresses around reinforced outlets in pressure vessels. Paper ASME, 1958, N 58-A-171) and must be investigated with the aid of separate models for the shear moment in meridianal and annular shell stresses, and for the torsional moment and axial force along the orifice. The physical model is described as a variant of a shell with a hemispherical top (or bottom) of constant thickness. Axial and torsional loads at the orifice are ignored as being negligible. Materials used in the model (see Fig. 1)

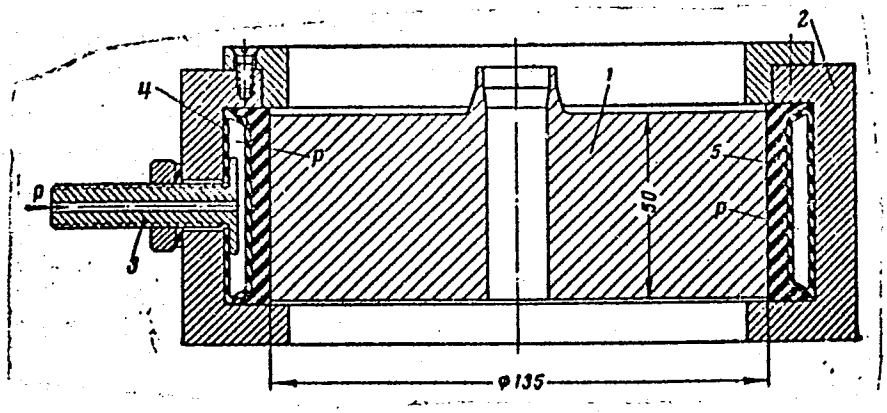

Fig. 1. Diagram of a nozzle model loaded with a uniform lateral surface pressure.

Card 2/3

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are classified as ED6-M and ED5-M. The model 1 is set in a core 2 of a loading (pressure) rig, with loads applied through the pressure feed 3 into the rubber chamber 4. Rubber collar 5 bears upon the model, transmitting pressure and creating deformations. Stress measurements are detailed for selected sections of the model. Measurements were taken using a BPUTMASh-KB2 polariscope. Interferential bands were photographed, and stresses were computed as functions of material dimensions, optical constants, and the order of the observed interference band. Stress contours are plotted for the several stresses mentioned and related to the model geometry and mode of applied loading. Orig. art. has: 8 figures and 3 equations.

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Card 3/3

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