"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGAUANU, P.

Specialization in the national ecomomy; causes and possibilities of ecomomic specilization with a concrete example, the Urals. p. 22. NATURA. Bucresti. Vol. 7, no. 3, May/June 1955.

SOURCE: East European Accessions List (EEAL) Library of Congress Vol. 5, No. 7, July 1956.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGAUANU, P., cercetator (Bucuresti)

"West Germany's economic expansion in Africa" by P. Polsikov (P. Polshikov). Reviewed by P. Birgauanu. Natura Geografie 13 no. 5:83-86 S-O '61.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGAOANU, P., lector; IUNGAN, R., prof. (Bucuresti)

Curricula and textbooks on geography in Rumania. Natura Geografie 16 no.5:59-64 S-O'64

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

NIKOLAYEV, A.N.; GLADCHENKO, I.P.; BIRGAUZ, G.O.; DOBKIN, R.D.; SPEKTOR, E.I.

Window casements made of glass plastics. Plast. massy no.7:60-63 '65. (MIRA 18:7)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGEL', V.E.

A 2000 kg/cm^2 hydraulic press. Izm. tekh. no.1:58 Ja-F '55.
(Hydraulic presses) (MLRA 8:9)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGEL', V.E.

Apparatus for the experimental study of precision scales. Izm. tekh. no.1:43-46 Ja-F '56. (MLRA 9:5)
(Scales (Weighing instruments)--Vibration) (Oscillograph)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGEL', V.E

Contacts of balance knife-edges with supports. Izm.tekh.no.1:32-36 Ja-F '57. (MLRA 10:4)

(Balance)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

Yudin, N.I.

3(8) PHASE I BOOK EXPLOITATION SOV/1575

Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil

Ocherki osadochnykh mestorozhdeniy poleznykh iskopayemykh (Description of Sedimentary Mineral Deposits) Moscow, Izd-vo AN SSSR, 1958. 84 p. 5,000 copies printed.

Resp. Ed.: L.V. Pustovalov, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: G. I. Nosov; Tech. Ed.: S. G. Markovich

PURPOSE: This publication is intended for mining geologists, stratigraphers, petrographers, and mineralogists.

COVERAGE: This collection of articles is devoted to a description of several minerals found in Eastern Siberia, and a discussion of the conditions of their deposition by regions. Individual articles report on the Berezovskoye iron ore deposits, the titaniferous minerals of the Bakal'skoe deposit, the iron ore deposits of the Angaro-Pitskiy basin and the Khoperskiy region. The articles are accompanied by diagrams, tables, and bibliographic references.

Card 1/3

Serdyuchenko, D.P. Devonian Iron-bauxite Oolitic Formation 3

Yeroshchev-Shak, V.A., and N.Kh. Platonov. Native Iron From Devonian Iron Ores of the Khoperskiy Region 25

Glebov, A.V. Tourmaline and Magnetite Quartzites of the Amdzishi River in Southern Yakutiya 28

Pavlov, V.A. Polimineral Pseudomorphs After Ludwigite 43

Yudin, N.I. Iron Ores of the Angaro-Pitskiy Basin 47

Card 2/3

~~Kirgalya~~, M.K. Titaniferous Minerals From the Bakal'skoye Deposit 61

Sokolova, Ye.I., and A.A. Ryabinina. Physicochemical Study of Iron Ores and Their Mother Rocks at the Berezovskoye Deposit in Zabaykal'ye 73

AVAILABLE: Library of Congress

Card 3/3

MM/mtl
4-30-59

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, A.

New details and construction elements for completely prefabricated building. Na stroi.Mosk. 2 no.11:3-5 N '59.
(MIRA 13:3)

1. Glavnyy inzhener Opytnogo zavoda pri spetsial'nom konstruktorskom byuro "Prokatdetal'" Glavmosstroya.
(Moscow--Precast concrete construction)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, A., inzh.; KLOPOVSKIY, A., inzh.; LEYBOVICH, D., inzh.

Using industrial methods in electric-wiring operations. Zhil. stroi. no.7:16-19 Jl '60. (MIRA 13:7)
(Electric wiring, Interior)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

AZIMOV, S.A.; BIRGER, A.G.; POLYNOV, V.N.; SLAVATINSKIY, S.A.

Nature of the penetrating particles in electron-nuclear showers. Dokl. Akad. Nauk SSSR 85, No.2, 287-90 '52. (MLRA 5:8)
(PA 56 no.671:7757 '53)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, A.I.

KOZLOV, Nikolay Yakovlevich, inzh.; BOL'SHAKOV, Vitaliy Mikhaylovich, inzh.; KAZARNOVSKIY, Zinoviy Iosifovich, inzh.; BIRGER, A.I., inzh., nauchnyy red.; KRYUGER, Yu.V., red. izd-va.; SOLNTSEVA, L.N., tekhn. red.; KL'KINA, E.M., tekhn.red.

[Rolled partitions and facing panels; production and use] Prokatnye, peregorodochnye i oblitsovochnye paneli; proizvodstvo i primenenie. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 110 p. (MIRA 11:12)

(Concrete slabs)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, A.I., inzh.; SAMSONOV, D.D., inzh.; KLOPOVSKIY, A.F., inzh.

Making prestressed panels by vibration rolling. Bet.i zhel.-bet. no.12:551-553 D '60. (MIRA 13:11)
(Concrete slabs)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

5(4) SOV/76-33-1-2/45

AUTHORS: Stepukhovich, A. D., Birger, B. I.

TITLE: Kinetics and Mechanism of the Decomposition of Hydrocarbons (Kinetika i mekhanizm raspada uglevodorodov) XIII. Kinetics of the Butane Cracking Inhibited by Propylene Additions (XIII. Kinetika krekinga butana, zatormozhennogo dobavkami propilena)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 8-14 (USSR)

ABSTRACT: The theory of the chain cracking of hydrocarbons inhibited by additions of various inhibiting agents was developed already some years ago (Refs 1-4). According to Hinshelwood (Ginshel'-vud) (Ref 6) and the results of some investigations (Ref 5), the butane cracking is carried out in a complicated kinetic process. This assumption is , however, unfounded considering the decomposition of the radical chains of the alkanes and the structure of butane. The present tests were carried out to clarify this question, to determine the activation energies of the inhibiting reaction, and to establish the working mechanism of propylene. The cracking of butane with propylene additions was carried out in a vacuum unit the description of which has

Card 1/3

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

already been given together with the working method (Ref 7). The pressure was measured by means of a diaphragm pressure gage, the temperature by means of a potentiometer PP. Two series of investigations were made at 540° and 580°C respectively (Table 1). The results of the investigations showed, after a treatment of the reaction walls (quartz glass) with HF, that an enlargement of the specific surface intensifies the inhibiting reaction which points to a heterogeneous origin of the chain formation and, on the other hand, to a homogeneous fission of the chains in the cracking reaction (Refs 1,8). According to the calculations by A. D. Stepukhovich, the value 13.4 kcal is given for the activation energy of the admission of CH_3 radicals at the walls of the quartz vessel. The determinations made according to the method of inhibiting additions showed a value of 2.7 kcal for the activation energy of the reaction of propylene with H radicals, and a value of 11 kcal for the reaction with CH_3 radicals. The decomposition of butane does not constitute an exception from the general laws of reaction kinetics of the inhibited radical chain

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

SOV/76-33-1-2/45

Kinetics and Mechanism of the Decomposition of Hydrocarbons. XIII. Kinetics of the Butane Cracking Inhibited by Propylene Additions

cracking. There are 3 tables and 11 references, 10 of which are Soviet.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet im. N. G. Chernyshevskogo (Saratov State University imeni N. G. Chernyshevskiy)

SUBMITTED: November 30, 1956

Card 3/3

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

GODNEV, I.N.; BIRGER, B.N.

Increase in entropy dis in the irreversible course of chemical reactions. Zhur. fiz. khim. 37 no.11:2553-2554 N'63. (MIRA 17:2)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

GRISHKEVICH, V.M.; BIRGER, B.N.; BOYNILO, Ye.U.

Anaerobic phlegmon and gangrene of the scrotum. Vest. khir. 92 no.6:127-128 Je '64. (MIRA 18:5)

1. Iz Oshmyanskoy rayonnoy bol'nitsy (glavnyy vrach - G. Zaboyev) Grodnenskoy oblasti. Adres avtora: Oshmyany, Grodnenskoy oblasti, rayonnaya bol'nitsa.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BORISOV, A.; BIRGER, G.; VOLKOV, A.; DICH, S.; DUSEYEVA, Ye.; KONKIN, A.A.; MEOS, A.; MIKHAYLOV, N.; MOGILEVSKIY, Ye.; POKSHVER, A.; ROGOVIN, Z.; SERKOV, A.; SHIFRIN, L.

On the 60th birthday of an honored worker. Khim.volok. no.2:79 '62. (MIRA 15:4)

(Grumdev, Vasilii Alekseevich, 1902-)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

SOV/137-59-12-27806

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 12, p 293 (USSR)

AUTHORS: Birger, G.I., Brazhnikov, N.I.

TITLE: Determination of Boundaries of Pressure Shrinkage Holes in Brass and Bronze Rods by the Method of Ultrasonic Flaw Detection

PERIODICAL: Sb. materialov po avtomatiz. proizv. protsessov i dispetcherizatsii, Nr 3, Moscow, 1958, pp 68 - 83

ABSTRACT: Information is given on results of studies carried out to determine the boundaries of pressure shrinkage-holes with the use of ultrasonic waves. The possibility was established of using for this purpose (for rods of ≤ 70 mm in diameter) the "UZD-37"-device. The ultrasonic control diminishes the number of breaks in testing the rods and reduces metal loss. For a number of alloys ultrasonic control is the only method to determine precisely the boundaries of a deficient area in the rod. The author analyzes in detail characteristics and variety of defects in pressed rods.

Card 1/1

Ya.O.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

80783

S/137/60/000/01/07/009

A Universal Ultrasonic -38 (UZD-38 Type) Flaw-Detector for Detection of Defects in Titanium, Non-Ferrous and Ferrous Metals

the piezoplates under operational conditions. The design of the equipment was devised for the operation in shops. The dimensions are 505 x 315 x 235 mm, the weight is 20 kg. The flaw detector may be used in enterprises of the non-ferrous metallurgy for 1) detection of defects in ingots of Ti and its alloys; 2) detection of defects in work-pieces of non-ferrous metals and their alloys; (Al, brass, bronze and others); 3) for the checking of technological equipment as to the absence of internal defects; 4) for measuring the wall thickness of work pieces made of ferrous and non-ferrous metals with one-way access (boilers, pipes, reservoirs, etc). The main electrical circuit diagrams of the device are given and special features in its design are described.

V.O.

Card 2/2

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

(Figure 3). For the continuous analysis of hydro-metallurgical solutions, the KB TsMA in 1957 developed (Figure 4) an automatic polarographic concentration-meter, type KAP-225, with a transducer type DAPK-226: this device has been successfully used at the "Elektrotsink" Works for analysing for cadmium in zinc electrolyte and is based on alternating-current polarography. The KB TsMA have developed a series of radioactive methods, particularly for level indication over a wide (type URP) (Figure 5) and a relatively narrow (type URPR) (Figure 6) range. A radioactive density-meter, type PR-150, independent of the mineralogical and size composition of pulp over a wide range has been successfully tested at the Zolotushinskaya obogatitel'naya fabrika (Zolotushinskaya Beneficiation Works) (ranges 1.5-2.5 and 1-2 kg/litre). Work is proceeding on other radioactive meters including a moisture meter, for concentrates and similar materials. Based on corrosion-resistant, differential, thermo-electric anemometer (electrical circuit proposed by engineers V.A. Drozdov and A.M. Listov), a flowmeter for pure or air-diluted chlorine has been developed by the

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

SOV/136-58-6-3/21

New Means for Automatic Testing and Control in Non-ferrous Metallurgy

KB TsMA; they have also developed an analyser (type GAKh-239) for chlorine which is accurate to ± 3% and these two instruments are to be used in an integrated automation system being devised for the magnesium industry. The KB TsMA have developed an automatic installation for (Figures 7 and 8) controlling a single pump in relation to the liquid level. Another recent activity of this organisation has been the development of the type ATV-229 overheating protective device (Figure 9) and a twelve-point temperature signalling device (Figure 10). The ATV-229 device is to be produced by the Tsvetmetpribor Works. In collaboration with the Institut gigiyeny truda i profzabolevaniy AMN SSSR (Institute of Work Hygiene and Occupational Diseases of the AMS USSR), the KB TsMA have developed a device (Figure 11) for continuous measurement and recording of mercury-vapour concentration in air in the range 0.1 - 0.6 mg/m^3. This instrument (IKRP-445) (Figure 11) also gives an alarm signal if the concentration becomes excessive and its range is being extended in both directions.

Card3/4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.I.

Fundamentals of the general theory of ultrasonic flowmeters. Izm. tekh. no.4:42-48 Ap '61. (MIRA 14:3)
(Flowmeters) (Ultrasonic waves—Industrial applications)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

42662

S/115/62/000/010/002/002
E073/E535

26.2190

AUTHOR: Birger, G.I.

TITLE: Some problems of calibrating ultrasonic flowmeters

PERIODICAL: Izmeritel'naya tekhnika, no.10, 1962, 53-55

TEXT: Ultrasonic flowmeters indicate the average speed of flow along the ultrasonic beam and not the average across the section. For circular pipes an ultrasonic flowmeter will give a higher reading of about one-third if the flow is laminar. Under industrial conditions the flow is usually turbulent and the velocity across the section varies with the Re number. In this case the velocity along the ultrasonic beam is also a function of Re. The ratio between the ultrasonically measured velocity and the average velocity will also not remain constant and will be a function of Re. In contrast to the formula published by J. Kritz

$$v = \bar{v}(1 + 0.19\ Re^{-0.1}), \qquad (2)$$

where v - ultrasonically measured velocity and $\bar{v}$ - average

Card 1/2

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.I.

Selecting the type of ultrasonic flowmeter for contaminated liquids and pulps. Izm. tekh. no.7:41-43 Jl '63. (MIRA 16:8)

(Flowmeter)
(Ultrasonic waves--Industrial applications)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

S/046/63/009/001/001/026
B104/B186

AUTHORS: Birger, G. I., Brazhnikov, N. I.

TITLE: Temperature errors and the calculation of some parameters of ultrasonic flowmeters

PERIODICAL: Akusticheskiy zhurnal, v. 9, no. 1, 1963, 5-9

TEXT: In two-channel ultrasonic flowmeters the main temperature error is caused by simultaneous temperature variations both of the controlled medium and of the acoustic line material; in single-channel flowmeters the main error is caused by a similar effect. Another temperature error arises in the asymmetric electronic systems. In flowmeters of the two-channel phase circuit type with refraction the main temperature error is determined by

$$|\delta\varphi_{t_0}| = \frac{b_1 + b_2(1 - 2n_0^2\sin^2\alpha)}{1 - n_0^2\sin^2\alpha}\Delta\varphi\delta t, \qquad (1),$$

where b_1 and b_2 are the relative temperature coefficients of the ultrasonic

Card 1/2

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

velocities in the acoustic line material and in the controlled medium; $n_0 = c_{20}/c_{10}$ is the index of refraction of the ultrasonic waves on the boundary material - controlled medium; α is the angle between the acoustic line axis and the normal to the tube axis; $\Delta\varphi$ is the phase shift of the ultrasonic vibrations; δt is the temperature variation of the controlled liquid. By selecting a material for the acoustic line with proper c_{10} and b_1 the main temperature error could be kept small. An automatic compensation of the main temperature error is achieved by the condition

$$\sin\alpha = \frac{1}{n_0}\sqrt{\frac{b_1 + b_2}{2b_2}} \qquad (3).$$

Therefore, if $b_1 < 0$ an automatic compensation of the main temperature error may be obtained for most of the liquids with $b_2 < 0$. Finally the design of pickups with temperature compensation at $b_1 > 0$ is discussed. There are 3 figures and 1 table.

ASSOCIATION: Konstruktorskoye byuro "Tsvetmetavtomatika", Moskva (Design Office "Tsvetmetavtomatika", Moscow)

SUBMITTED: October 13, 1961

Card 2/2

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

L 20082-65

Ch. XVI. Electronic measuring schemes -- [illegible]
Ch. XVII. Comparative analysis of ultrasonic flowmeters -- 262

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

ANFILOV, A.A., inzh ; BAKALEYNIK, Ya.M., inzh.; BIRGER, G.I., inzh.; BRUK, B.S., inzh.; BUROV, A.I., inzh.; GINZBURG, V.L., inzh.; ZABELIN, V.L., inzh.; ZAPLECHNYY, Ye.G., inzh.;ISAYEV, D.V., inzh.; KLIMOVITSKIY, A.M., inzh.; KRYUCHKOV, V.V., inzh.; KOTOV, V.A., inzh.; LEYDERMAN, A.Ye., inzh.; PODGOYETSKIY, M.L., inzh.; SAZHAYEV, V.G., inzh.; SEVASTIYANOV, V.V., inzh.; FILIPPOV, S.F., inzh.; FROMBERG, A.B., inzh.; SHNEYEROV, M.S., inzh.; ERLIKH, G.M., inzh.; VERKHOVSKIY, B.I., red.; ZUBKOV, G.A., red.; KARKLINA, T.O., red.; OVCHARENKO, Ye.Ya., red.; ANTONOV, B.I., ved. red.

[New means of automatic and centralized control for nonferrous metal mines] Novye sredstva avtomatizatsii i dispetcherskogo upravleniia dlia rudnikov tsvetnoi metallurgii. Moskva, Nedra, 1965. 93 p. (MIRA 18:4)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BRUK, Bronislav Solomonovich; BIRGER, G.I., red.; SHUMILOVSKIY, N.N., red.

[Polarographic methods] Poliarograficheskie metody. Pod obshchei red. N.N.Shumilovskogo. Moskva, Energiia, 1965. 111 p. (MIRA 19:1)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

KONKIN, A.A.; BIRGER, G.Ye.; GRUZDEV, V.A.; PAKSHVER, A.B.; TSVETKOVA, N.F., red.; SHPAK, Ye.G., tekhn.red.

[Synthetic fibers] Khimicheskie volokna. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1959. 50 p. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

PHASE I BOOK EXPLOITATION SOV/4054

Akademiya nauk SSSR. Institut nauchnoy informatsii

Khimicheskaya promyshlennost' SSSR (The Chemical Industry of the USSR) Moscow, Goskhimizdat, 1959. 457 p. Errata slip inserted. 4,100 copies printed.

Sponsoring Agency: USSR. Gosudarstvennyy nauchno-tekhnicheskiy komitet.

Ed.: R. S. Romm; Tech. Ed.: P. V. Pogudkin; Editorial Board: A. P. Vinogradov, S. I. Vol'fkovich, N. M. Zhavoronkov, M. I. Ivanov, V. S. Kiselev, I. A. Lunacharskaya (Scientific Secretary), S. S. Medvedev, S. D. Mel'nik, A. N. Planovskiy, A. Ts. Ryabenko (Chief Ed.), and A. V. Topchiyev.

PURPOSE: This book is intended for the personnel of the chemical industry. It will be of interest to the general reader interested in the development and structure of the Soviet chemical industry.

COVERAGE: This book contains 13 articles on various aspects of the Soviet chemical industry. Among the developments in the production of raw materials for the manufacture of chemical products discussed are: 1) the use of raw materials synthesized from natural gas and petroleum to replace food products in the production of synthetic rubber, alcohol, detergents, etc.; 2) the production of acetylene from natural and petroleum gases for the synthesis of vinyl chloride, acrilonitrile, chloroprene, trichloroprene, 1, 4-butadiene and other organic substances, based on methods developed by M. G. Kucherov, A.Ts. Neverskiy and others; 3) the production of acetylene from saturated hydrocarbons by cracking methane (and its homologs) at 1450° in an electric arc between two special electrodes in a gas reactor, by pyrolysis (thermal oxidation) of methane in an improved furnace designed by B. S. Gribenko, by high-temperature pyrolysis of propane and butane in tubular furnaces, or by other methods of producing acetylene for the production of synthetic rubber, ethyl alcohol, and other organic substances; 4) the synthesis of halogen derivatives of aliphatic hydrocarbons for the production of solvents, refrigerants, pharmaceutical products, etc., and 5) the production of rubber accelerators from nitrogen-containing aliphatic hydrocarbons. The history of plastics production in the Soviet Union is reviewed, and names, locations, and products of plants as well as the names of outstanding personalities in the field are given. The technical level and prospects of further development of different branches of the plastics industries are also discussed along with methods of manufacturing plastic articles. A special apparatus designed by Ts. M. Moglevskiy and designated "VA" which permits preparation of viscose solution in one operation is discussed. It is being used to replace the complex, conventional equipment with great savings in space. General trends in the technology of synthetic fiber production are also discussed. A historical review of synthetic rubber production and the achievements of outstanding Soviet scientists in this field are given as well as names, locations and products of synthetic rubber plants. Rubber production and the manufacture of rubber goods are similarly reviewed. Statistical data and outstanding personalities in the development of the aniline dyes, paints and lacquers, mineral fertilizers, insecticides and fungicides, sulfuric acid, soda, mineral salts, radioactive and stable isotopes, and chemical reagents industries are given. Catalytic processes and automation and automatic devices used in the chemical industry are also discussed. Thirty-eight photographs included in the book show outside and interior views of some Soviet chemical industry plants, as well as their manufacturing, material-handling and laboratory equipment. Numerous personalities and facilities are identified in the body of the text. References accompany individual articles.

Gartar, M. I. The Plastics and Synthetic Resins Industry 75

Birger, G.Ye., and A.A. Konkin. The Chemical Fibers Industry 111

Zakharchenko, P.I. The Synthetic Rubber Industry 137

Sazlyakov, A.V. The Resin Industry 168

Korolev, A.I. The Aniline Dye Industry 197

Belovitskiy, A.A. The Production of Lacquers and Paints 219

Mel'nikov, N.N. Chemical Means of Protecting Plants and Eliminating Weeds 254

Romashov, G.K., and V.S. Chesalova. Catalytic Processes in the Chemical Industry 409

Yelshin, N.N., and N.Ts. Pasta. Automation of the Chemical Industries 438

AVAILABLE: Library of Congress

12

BIRGER, G.YE.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.; BORISOV, A.L.

Prospects and basic trends in the development of the synthetic fiber industry from 1959 to 1965. Khim.volok. no.1:3-8 '59. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.(for Birger). 2. Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (for Borisov).
(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.

World production of synthetic fibers in 1957. Khim.volok. no.1:54-58 '59. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.; NOVIKOVA, N.D.

Problem of the economic efficiency of the manufacture of acetate silk. Khim.volok. no.3:58-60 '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Rayon)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.; IVANOVA, Ye.P.

Distribution and location of enterprises of synthetic fibers in the U.S.S.R. Khim.volok. no.5:68-70 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.

Preliminary data on the world production of synthetic fibers in 1958. Khim.volok. no.5:70-72 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER,G.Ye.; KATSMAN,A.B., red.; GONCHAROV,N.G., tekhn.red.

[Manufacture of synthetic fibers and their uses] Proizvodstvo khimicheskikh volokon i ikh primenenie. Moskva, Vses. in-t nauchn. i tekhn.informatsii, 1959. 25 p. (MIRA 14:5)

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ya.; IVANOVA, Ye.P.; KIRSANOVA, G.A.; KOCHETKOV, L.M.; NOVIKOVA, N.D.; PURUSOVA, G.A.

Labor productivity in synthetic fiber factories. Khim.volok. no.1:40-43 '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)
(Textile factories--Labor productivity)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, [illegible].

Preliminary data on the world production of synthetic fibers in 1959. Khim.volok. no.3:68-69 '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.
(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.YE.

PHASE I BOOK EXPLOITATION SOV/4579

Konferentsiya po razvitiyu proizvoditel'nykh sil Vostochnoy Sibiri, 1958. Khimicheskaya sektsiya

Khimicheskaya promyshlennost'; trudy konferentsii (Chemical Industry; Transactions of the Conference on the Development of Production Forces in Eastern Siberia) Moscow, Izd-vo AN SSSR, 1960. 202 p. (Series: Razvitiye proizvoditel'nykh sil Vostochnoy Sibiri) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. Sibirskoye otdeleniye.

Editorial Board: I.P. Bardin (Deceased) Chief Ed., Academician; M.A. Lavrent'yev, Academician; S.I. Vol'fkovich, Academician, V.I. Dikushin, Academician; V.S. Bunchinov, Academician; V.I. Veyts, Corresponding Member, Academy of Sciences USSR; O.D. Levitskiy, Corresponding Member, AS USSR; N.N. Nekrasov, Corresponding Member, AS USSR; L.V. Pastovalov, Corresponding Member, AS USSR; T.S. Khachaturov, Corresponding Member, AS USSR; N.F. Rostovtsev, Academician, VASKHNIL; A.N. Popov, Corresponding Member, Academy of Building and Architecture USSR; L. Ye. Grafov, Deputy Chairman, Gosplan RSFSR; A.D. Gashev, Member, Gosplan RSFSR; A. Ye. Probst, Professor; V.F. Vasyutis, Professor; V.A. Krotov, Professor; F.V. Vasil'yev, Doctor of Economic Sciences; G.I. Lyudogovskiy, Candidate of Technical Sciences; P.A. Letunov, Candidate of Geological and Mineralogical Sciences; and R.G. Shkol'nikov, Candidate of Economic Sciences; Editorial Board of this volume: S.I. Vol'fkovich (Resp. Ed.); G.V. Ovarov, Deputy Chairman, State Committee on Chemistry, Council of Ministers USSR; and V.P. Komarov, Docent; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: V.V. Bruzgul'.

PURPOSE: This book is intended for chemical engineers and economic planners concerned with the industrial development of Eastern Siberia.

COVERAGE: This volume is one of a series of 13 containing the Transactions of the Conference on the Development of the Productive Forces in Eastern Siberia. The Conference took place in August 1958. The volume contains summaries of 20 reports presented at the meetings of the Chemical Section of the Conference, brief summaries of pertinent discussions, and the text of resolutions taken by the Chemical Section. The reports deal with the possibilities of developing chemical industries in Eastern Siberia capable of producing artificial fibers, acetylene, plastics, synthetic detergents, synthetic rubber, mineral fertilizers, sulfuric acid, nitrogen, soda, chlorine, etc. No personalities are mentioned. There are no references.

Birger, G. Ye. [Candidate of Economic Sciences, VNIIV], and Z.A. Rogovin [Professor, Moskovskiy tekstil'nyy institut (Moscow Textile Institute)]. Ways of Developing the Artificial and Synthetic-Fiber Industry in Eastern Siberia 57

Petrov, A.D. [Corresponding Member, AS USSR, Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR (Institute of Organic Chemistry imeni N.D. Zelinskiy, AS USSR)]. Ye. A. Chernyshev [Candidate of Chemical Sciences, Institute of Organic Chemistry imeni Zelinskiy, AS USSR], V.F. Mironov [Candidate of Chemical Sciences, Institute of Organic Chemistry imeni Zelinskiy, AS USSR], and B.A. Sokolov [Candidate of Chemical Sciences, Institute of Organic Chemistry imeni Zelinskiy, AS USSR]. Prospects for the Development of the Synthesis of Monomeric Organosilicon Compounds 65

Gruchkin, D.B. [Candidate of Technical Sciences], and V.V. Veselov. Prospects for the Production of Synthetic Detergents in Eastern Siberia 72

Rudkovskiy, D.M. [Candidate of Chemical Sciences, VNIINeftekhim]. Production of Flotation Agents for Nonferrous and Rare-Metal Ores 78

I.B. Rapoport [Professor, VNIINP (All-Union Scientific Research Institute for the Processing of Petroleum and Gas and for the Production of Synthetic Liquid Fuel)], V. Ya. Kruglikov [Candidate of Technical Sciences, VNIINP], and Ye. M. Kheyfets [Candidate of Technical Sciences, VNIINP]. Prospects of Using Gases Containing Carbon Monoxide and Hydrogen for the Synthesis of Chemical Products and Fuels 85

Card 5/10

(9)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.; KIRSANOVA, G.A.

R.Robson's book "The man-made fibres industry" reviewed by G.E.Birger, G.A.Kirsanova. Khim.volok. no.3:78-79 '60. (MIRA 13:7)

(Textile fibers, Synthetic)
(Robson, R.)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

KONKIN, Aleksandr Arsen'yevich; BIRGER, Georgiy Yefimovich; KAPLUNOV, A.S., red.; SAVCHENKO, Ye.V., tekhn.red.

[Miracle fibers] Chudesnye volokna. Moskva, Izd-vo "Znanie," 1961. 43 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.10, Molodezhnaia, no.5). (MIRA 14:3)

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

S/183/61/000/001/002/006
B101/B205

AUTHORS: Konkin, A. A., Rogovina, A. A., Birger, G. Ye.

TITLE: Present stage and prospects of tire cord production

PERIODICAL: Khimicheskiye volokna, no. 1, 1961, 3-14

TEXT: This is a review of publications on the production of tire cord, which bases primarily on Western literature. In the Soviet Union, tire cord is produced from cotton, viscose and caprone fibers. As the Seven-year Plan (1959-1965) provides for a substantial increase of the production of viscose cord (2.8 times) and caprone cord (22 times), 91% of all tire cord will be made from synthetic fibers in 1965. The review is divided into five sections: 1) Achievements in the field of viscose and polyamide cord production. This section bases chiefly on Western literature. 2) Physicomechanical properties of viscose, caprone, and nylon cord. Besides several Western publications, mention is made of a paper by V. A. Kargin and a paper by M. B. Lytkina, Ye. Ya. Yaminskaya, V. F. Yevstratov, and Ye. V. Troshkina on impact tests: BX (VKh) cord withstood 50 impacts, cord "Super-super", 129, and caprone cord, 850. The optimum modulus and elongation have not yet

Card 1/4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

been determined. Tests made by A. V. Motorina, A. A. Konkin, N. V. Mikhaylov, and others confirmed that the behavior of polyamide heated in an inert atmosphere differs from that heated in air. 3) Brief analysis of data on the testing and practical use of tires made from different types of cord. It is noted that the NIIShP (Scientific Research Institute of the Tire Industry) has made several tests of tires which showed that caprone cord is best suited for the purpose. This is ascribed to the poor quality of viscose cord. 4) Technical and economic data on the use of viscose and polyamide cord. This section deals with an investigation carried out by VNIIV (All-Union Scientific Research Institute of Synthetic Fibers) in cooperation with the Scientific Research Institute of the Tire Industry, in the course of which the highly stable cord no. 5.45/2/1 was compared with caprone cord no. 10.7/2/1. Both types were assumed to have a lifetime of 63,000 km. When putting the cost of viscose cord as 100%, the following figures are obtained for caprone cord:

Capital cost
Creation of the raw-material basis 138
Production of raw material and fiber 142

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

Production of cord referred to a distance of
1000 km covered by the tire 96.7
Expenditure of work needed to produce the
cord tissue 116
Prime Cost
Raw material 216
Cord tissue 181
Cord and rubber (per 1000 km) 101.8

The costs for sulfate cellulose and caprolactam were taken from planning figures. According to estimates of GIAP (State Design and Scientific Research Institute of the Nitrogen Industry) and of the All-Union Scientific Research Institute of Synthetic Fibers, the corresponding figures for anide fiber are 107% and 120%, respectively, when putting capital cost and prime cost of caprone cord fiber as 100%. The high price is due to the costs of AГ("AG") salt. According to I. Ye. Krichevskiy and N. P. Fedorenko, a price cut is possible by using non-aromatic starting materials, such as furfurol and butadiene. 5) Prospects of the use of other fibers in the production of tire cord. Reference is made to Western data on polyester, polyvinyl

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

alcohol, polypropylene, and polyurethane fibers. The authors state that further research work would be necessary. They recommend caprone cord for the production of truck tires, and viscose cord for automobile tires. The development of caprone cord production intended in the Soviet Union does not exclude the production of nylon cord. V. L. Biderman and P. Kh. Drozhzhin are mentioned. There are 5 figures, 10 tables, and 53 references 17 Soviet-bloc and 34 non-Soviet-bloc.

ASSOCIATION: MTI (Moscow Textile Institute): A. A. Konkin VNIIV (All-Union Scientific Research Institute of Synthetic Fiber): A. A. Rogovina, G. Ye. Birger

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.

World production of synthetic fibers in 1959. Khim.volok. no.3:50-55 '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.; KIRSANOVA, G.A.

"Location of the synthetic fiber industry in the U.S.A." by J.Airov. Reviewed by G.E.Birger, G.A.Kirsanova. Khim.volok. no.5:71-73 '61. (MIRA 14:10)
(United States--Textile fibers, Synthetic)
(Airov, J.)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.

World production of synthetic fibers in 1960. Khim.volok. no.2:2-9 '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G. Ya.; IVANOVA, Yu. P.; KIRSANOVA, G. A.

Prospects for the development of the production and uses of synthetic fibers. Khim. volok. no.6:2-6 '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye., kand.ekonom.nauk; SAVINSKIY, E.S., kand.ekonom.nauk; FEDORENKO, N.P., doktor ekonom.nauk

Development of the production of synthetic polymer materials in capitalist countries. Zhur.VKHO 7 no.2:212-216 '62. (MIRA 15:4)

(Polymers)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, G.Ye.

World production of man-made fibers during 1961. Khim.volok. no.2:1-4 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Textile fibers, Synthetic)

KHIM. VOLOK, no 5: 65-68 - 64

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

1965

BIRGER, G.Ye.[deceased]; IVANOVA, Ye.P.; NOVIKOVA, A.V.; ARNOL'DOVA, Ye.N.; LITVINOVA, N.I.; ZOLKINA, N.S.

Use economically the raw materials in the production of viscose fibers. Khim.volok.no.5:65-68 '64. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

KOTOMKIN, A; BIRGER, I., TERNOVAYA, R.P., redaktor; KRASHENINNIKOVA, V.F., tekhnicheskiy redaktor.

[Builders of hydroelectric power plants] Gidrostroevtsy; rasskazy peredovykh liudei Stalingradgidrostroia. Stalingrad, obl. kn-vo, 1952. 73 p. (MLRA 8:8)
(Hydroelectric power stations)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

SEMENOV, A.; BIRGER, I.

A uniform guide for the standardization of time and automobile repair estimates is necessary. Avt.transp. 32 no.12:27 D '54. (MLRA 8:3)

1. Stalingradgidrostroy.
(Automobiles—Repairing)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

I. Birger

Krupneyshaya v mire; k istorii sozdaniya Volzhskoy GES imeni XXII S" yezda KPSS (by) M.A. Bukin (1) I. Birger. Pod. red. S.R. Medvedeva. Moskva, Sotsekgiz, 1962.

225 p. illus., ports.

Bibliographical footnotes.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I. A., Engineer

"Strength Calculation of Screw Threads." Sub 20 Feb 47, Central Sci Res Inst of Aircraft Engine Building (TsIAM)

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I. A.

"Reserves of Strength at Variable Stresses. Vestnik Mashinostroyeniya No. 6, (1948)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A.

Technology

Calculation of threaded couplings
(Moskva?), Oborongiz, 1951.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A.

Elasticity

One error in Timoshenko's text on the theory of elasticity
Insh. sbor, 10, 1951

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

KINASOSHVILI, R. S.; BIRGER, I. A.

Strains and Stresses

Once more about the margin of strength in variable stresses. Vest. mash. 33, No. 2, 1953.

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

OVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I. A., Cand Tech Sci

"The Structural Mechanics of Turbines." Dr Tech Sci, (Scientific Council of the) Central Sci-Res Inst of Aircraft Engine Building imeni P. I. Baranov, 22 Nov 54. (VM, 11 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

USSR/Engineering - Structural analysis

Card 1/1 : Pub. 128 - 3/38

Authors : Birger, I. A.

Title : Comparison of failure theories for fatigue strength criteria

Periodical : Vest. mash. 9, 14-20, Sep 1954

Abstract : The fatigue strength under combined stresses, especially normal and shear stresses which vary asymmetrically, were considered. Various theories of failure were applied to the cases of pure tension, pure torsion, alternating flexure and constant torsion, alternating torsion and constant flexure, alternating torsion and bi-axial constant tension and compression. The advantages and drawbacks of each of the five theories discussed are pointed out. Seven USSR references (1938-1954). Graphs.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A.

AL'SHITS, I.Ya., kandidat tekhnicheskikh nauk; BABKIN, S.I., kandidat tekhnicheskikh nauk; BALAKSHIN, B.S., doktor tekhnicheskikh nauk, professor; BEYSEL'MAN, R.D., inzhener; BELYAYEV, V.H., kandidat tekhnicheskikh nauk; BEREZINA, N.I., inzhener; BIRGER, I.A., doktor tekhnicheskikh nauk; BOGUSLAVSKIY, Yu.M., kandidat tekhnicheskikh nauk; BOROVICH, L.S., kandidat tekhnicheskikh nauk; GONIKBERG, Yu.M., inzhener; GORDON, V.O., professor; GORODETSKIY, I. Ye., doktor tekhnicheskikh nauk, professor; GROMAN, M.B., inzhener; DIKER, Ya.I., kandidat tekhnicheskikh nauk; DOSCHATOV, V.V., inzhener; IVANOV, A.G., kandidat tekhnicheskikh nauk; KINASOSHVILI, R.S., doktor tekhnicheskikh nauk, professor; KRUTIKOV, I.P., kandidat tekhnicheskikh nauk; LEVENSON, Ye.M., inzhener; MAZYRIN, I.V. inzhener; MARTYNOV, A.D., kandidat tekhnicheskikh nauk; NIBERG, N.Ya., kandidat tekhnicheskikh nauk; NIKOLAYEV, G.A., doktor tekhnicheskikh nauk, professor; PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N., dotsent; PONOMAREV, S.D., doktor tekhnicheskikh nauk, professor; PRONIN, B.A. kandidat tekhnicheskikh nauk; RESHETOV, D.N., doktor tekhnicheskikh nauk, professor; SATEL', E.A., doktor tekhnicheskikh nauk, professor; SIMAKOV, F.F., kandidat tekhnicheskikh nauk; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., doktor tekhnicheskikh nauk, professor; STOLBIN, G.B., kandidat tekhnicheskikh nauk; TAYTS, B.A., doktor tekhnicheskikh nauk; CHERNYSHEV, H.A., kandidat tekhnicheskikh nauk; SHMEYDEROVICH, R.M., kandidat tekhni-

(Continued on next card)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

AL'SHITS, I.Ya., kandidat tekhnicheskikh nauk (and others)..... Card 2.

cheskikh nauk, EYDINOV, V.Ya., kandidat tekhnicheskikh nauk; ERLIKH, L.B., kandidat tekhnicheskikh nauk; ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; MARKUS, M.Ye., inzhener, 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.4, 1955. 851 p. (MLRA 8:12)
(Mechanical engineering)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

HINGER, Isaak Aronovich

Academic degree of Doctor of Technical Sciences based on his defense, 22 November 1954, in the Council of the Central Sci-Res Inst of Aircraft Motor-Construction imeni Baranov, of his dissertation entitled: "Construction Mechanics of Turbodynamos".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 9, 16 April 55, Byulleten' MVO SSSR, No. 14, Jul 56, Moscow, pp 4-22, Uncl. JPRS/NY-429

ROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A.

BABKIN, S.I., kandidat tekhnicheskikh nauk; BALAKSHIN, B.S., professor, doktor tekhnicheskikh nauk; BEYZEL'MAN, R.D., inzhener; BELYAYEV, V.N., kandidat tekhnicheskikh nauk; BIRGER, I.A., kandidat tekhnicheskikh nauk; BOGUSLAVSKIY, P.Ye., kandidat tekhniceskikh nauk; BOROVICH, L.S., kandidat tekhnicheskikh nauk; VOL'KIR, A.S., professor, doktor tekhnicheskikh nauk; GONIKBERG, Yu.M., inzhener; GORODETSKIY, I.Ye., professor, doktor tekhnicheskikh nauk; GORDON, V.O., professor; DIMENTBERG, F.M., kandidat tekhnicheskikh nauk; DOSCHATOV, V.V., inzhener, IVANOV, A.G., kandidat tekhnicheskikh nauk; KINASOSHVILI, R.S., professor; KODNIR, D.S., kandidat tekhnicheskikh nauk; KOLOMIYTSEV, A.A., kandidat tekhnicheskikh nauk; KRUTIKOV, I.P., kandidat tekhnicheskikh nauk; KUSHUL', M.Ya., kandidat tekhnicheskikh nauk; LEVENSON, Ye.M., inzhener; MAZYRIN, I.V., inzhener; MALININ, N.N., kandidat tekhnicheskikh nauk; MARTYNOV, A.D., kandidat tekhnicheskikh nauk; NIBERG, N.Ya., kandidat tekhnicheskikh nauk; NIKOLAYEV, G.A., professor, doktor tekhnicheskikh nauk; PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N., dotsent; PONAMOREV, S.D., professor, doktor tekhnicheskikh nauk; PRIGOROVSKIY, N.I., professor, doktor tekhnicheskikh nauk; PRONIN, B.A., kandidat tekhnicheskikh nauk; RESHETOV, D.N., professor, doktor tekhnicheskikh nauk; SATEL', E.A., professor, doktor tekhnicheskikh nauk; SERENSEN, S.V.; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., professor, doktor tekhnicheskikh nauk; STOLBIN, G.B., kandidat tekhnicheskikh nauk; TAYTS, B.A., kandiat tekhnicheskikh nauk; TETEL'BAUM, I.M., kandidat tekhnicheskikh nauk; UMANSKIY, A.A., professor, doktor tekhnicheskikh nauk; FEODOS'YEV, V.I., professor, doktor tekhnicheskikh nauk;

(Continued on next card)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BABKIN, S.I.--- (continued) Card 2.
KHAYT, D.M., kandidat tekhnicheskikh nauk; ZYDINOV, V.Ya., kandidat tekhnicheskikh nauk; SHRAYBER, M.N., inzhener, nauchnyy redaktor; SHEDROV, V.S., kandidat tekhnicheskikh nauk, nauchnyy redaktor; TSVETKOV, A.P., dotsent, nauchnyy redaktor; SLESNIKOV, G.I., inzhener, nauchnyy redaktor; MARKUS, M.Ye., inzhener, nauchnyy redaktor; KARGANOV, V.G., inzhener, nauchnyy redaktor; ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Manual of machinery manufacture] Spravochnik mashinostroitelia; v trekh tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.3. 1951 1098 p. (MLRA 10:9)

1. Deystvitel'nyy chlen Akademii nauk USSR (for Serensen)
(Machinery)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A. (Moskva)

Vibrations of rings with attached masses. Inzh.sbor. 24:17-23 '56. (MLRA 10:5)

(Vibration) (Strains and stresses)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

PHASE I BOOK EXPLOITATION 871

Belyayev, V. N., Candidate of Technical Sciences; Birger, I. A., Doctor of Technical Sciences; Demidov, S. P., Candidate of Technical Sciences; Korotkov, V. P., Candidate of Technical Sciences; Kudryavtsev, V. N., Doctor of Technical Sciences, Professor; Martynov, A. D., Candidate of Technical Sciences; Niberg, N. Ya., Candidate of Technical Sciences; Ponomarev, S. D., Doctor of Technical Sciences, Professor; Pronin, B. A., Candidate of Technical Sciences; Push, V. E., Candidate of Technical Sciences; Sleznikov, G. I., Engineer; Stolbin, G. B., Candidate of Technical Sciences; Tayts, B. A., Doctor of Technical Sciences

Spravochnik metallista. t. 2 (Metals Engineering Handbook. v. 2) Moscow, Mashgiz, 1958. 974 p. 100,000 copies printed.

Ed.(title page): Chernavskiy, S. A., Candidate of Technical Sciences; Ed. (inside book): Markus, M. Ye., Engineer (deceased); Tech. Ed.: Sokolova, T. F.; Editorial Board of the set: Acherkan, N. S., Doctor of Technical Sciences, Professor, Chairman of the Board and Chief Ed.; Vladislavlev, V. S. (deceased); Malov, A. N.; Pozdnyakov, S. N.; Rostovykh, A. Ya.; Stolbin, G. B.; and Chernavskiy, S. A.

PURPOSE: The book is intended for technicians and engineers working in the field of machine design and in production.

Card 1/19

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I. A.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A.

24-58-3-21/38

AUTHOR: Shneyderovich, R. M. (Moscow)

TITLE: Elasto-Plastic Bending of Bars and Systems of Bars (Uprugo-plasticheskiy izgib sterzhney i sterzhnevykh sistem)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 130-134 (USSR)

ABSTRACT: The relations between the stress and deformation components can be stated in relative co-ordinates referred to the yield point values. With this notation, the relations of the elastic region can be used in the plastic region, accepting variable elastic properties. This method, introduced by Birger, I.A. ("Certain General Methods for the Solution of Problems in the Theory of Plasticity", Prikl.Mat. i Mekh.,1951, Issue 6), reduces elasto-plastic problems to those of pure elasticity if the variable factors are known. These factors can be presented in families of curves, such as Fig.1 for the bending of round bars. The stress distribution over the cross-section is considered and formulae are given replacing the Mohr-Maxwell displacement formulae in energy theorems for the case of elasto-plastic deformation. These formulae are used for statically indeterminate systems of which an example is treated, namely a chain link with a central bridge. There are 6 figures, including 5 graphs, and 6 Soviet refer-

OVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

24-58-3-21/38

Elasto-Plastic Bending of Bars and Systems of Bars.

ences.

SUBMITTED: November 14, 1957.

Card 2/2 1. Bars--Deformation 2. Bars--Stresses 3. Bars--Elasticity
4. Bars--Mathematical analysis

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

Birger I.A.

AUTHOR: Ivlev, D.D. SOV/24-58-4-33/39

TITLE: Conference on Sustained Static Strength of Turbine Components Working at High Temperatures (Soveshchaniye po dlitel'noy staticheskoy prochnosti detaley turbomashin, rabotayushchikh pri vysokoy temperature)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 149 - 150 (USSR)

ABSTRACT: The Commission on the Strength of Gas Turbines from the Institut mekhaniki AN SSSR (Institute of Mechanics of the Ac.Sc.USSR) (Chairman - Yu.N. Rabotnov) and the Strength Section of the Leningrad Technical Committee on Turbine Construction (Chairman - V.K. Naumov) held a conference during November 20-22, 1957 on the sustained static strength of turbine components working at high temperature. The conference was opened by an introductory speech by the chairman of the Leningrad Technical Committee on Turbine Construction, S.A. Kantor.
The paper by I.A. Oding (Institute of Metallurgy, Ac.Sc. USSR) "Structural Theory of Creep" contained an account of the author's theory.

Card1/7 V.S. Ivanova and L.K. Gordiyenko (Institut metallurgii AN SSSR - Institute of Metallurgy of the Ac.Sc.USSR) in the paper "Experimental Investigation of Some Aspects of the Theory of Structural Creep" described results corroborating aspects of Oding's theory.
L.A. Kuznetsov (Kovskiy metallicheskiy zavod im. Lenina - Kovsky Metal Factory im. Lenin) in his paper "Problems in the Field of Static Strength of Turbine Components, Working at High Temperature" dwelt on data obtained in Leningrad industrial undertakings indicating the need for further improvement in design and constructional procedure.
The basic problem, in the author's opinion, is not so much the investigation of the stresses in individual components as the investigation of the limiting states of actual constructions. The author also noted the need for experimental investigation of model rotors, disks and frameworks of turbines and suggested setting before the Government the question of organising such an assembly in one of the factories with complete centralisation and co-ordination of work in this direction. The author criticised the inadmissible unplanned work taking place at the present time in extensometry, when each undertaking must itself solve problems relating to gauge, cements for them, methods of testing and appropriate apparatus.
I.A. Birger (TsIAM) presented a paper on "Standards of Strength of Components at High Temperatures"
A.P. Direrga (TsNIITMASh) gave a paper on "Experimental Investigation of the Bearing Capacity of Disks"
M.A. Koren' (Leningradskiy metallicheskiy zavod im. Stalina - Leningrad Metal Factory imeni Stalin) in the paper "Apparatus for Testing Sustained Strength of Some Turbine Stator Components" dealt with items of equipment constructed at his factory for investigating the stress state in a number of components: diaphragms, pin connections, etc.
V.S. Namestnikov (Moskovskiy gosuderstvennyy universitet - Moscow State University) gave a paper on "Creep of Heat-resistant Alloys at High Temperature". The author described experimental investigations on the behaviour of the steels EI-257 and EI-405 under conditions of complex stress and

Card3/7 high steady temperature.

8

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, I.A. (Moskva)

Method for solving integral equations associated with high parameter values. Prikl.mat. i mekh. 22 no.6:808-809 N-D '58. (MIRA 11:12)

(Integral equations)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

16(1);26(16) PHASE I BOOK EXPLOITATION SOV/2364

Birger, Isaak Aronovich

Variatsionnyye metody v stroitel'noy mekhanike turbomashin (Variational Methods in Structural Mechanics of Turbomachinery) [n.p.] Oborongiz, 1959. 27 p. 2,850 copies printed.

Ed.: Yu. I. Korostelev, Engineer; Ed. of Publishing House: S.I. Vinogradskaya; Tech. Ed.: L.A. Garnukhina.

PURPOSE: This booklet is intended for engineers dealing with problems of strength and dynamics of gas and steam turbines, axial compressors, and other turbomachinery.

COVERAGE: The author presents general principles of variational methods and describes their application to the problems of strength and dynamics of turbomachinery. Use of variational methods in the analysis of bending, vibration, and torsion of blades and disks is discussed. No personalities are mentioned. There are 13 references, all Soviet.

Card 1/3

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

Variational Methods in Structural (Cont.) SOV/2364

Origin of possible changes in stress conditions 25

Survey of Literature 27

Bibliography 28

AVAILABLE: Library of Congress

GO/ec
10-9-59

Card 3/3

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BIRGER, Isaak Aronovich; KOLOMIYTSEV, A.A., doktor tekhn.nauk, retsenzent [deceased]; KRYLOV, V.I., inzh., red.; BOGOMOLOVA, M.F., izdat. red.; ZUDAKIN, I.M., tekhn.red.

[Calculation of threaded joints] Raschet rez'bovykh soedinenii. Izd.2., perer. i dop. Moskva, Gos.izd-vo obor.promyshl., 1959. 251 p. (MIRA 12:12)

(Screw threads)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

25(2) PHASE I BOOK EXPLOITATION SOV/3096

Birger, I.A., B.F. Shorr, and R.M. Shneyderovich

Raschet na prochnost' detaley mashin; spravochnoye posobiye dlya konstruktorov (Design of Machine Parts for Strength; Manual for Designers) Moscow, Mashgiz, 1959. 459 p. Errata slip inserted. 25,000 copies printed.

General Ed.: I.A. Birger, Doctor of Technical Sciences, Professor; Reviewer: N.P. Dorogov, Engineer; Ed.: N.V. Manakin, Engineer; Managing Ed. for Reference Literature: I.M. Monastyrskiy, Engineer; Tech. Ed.: A.F. Uvarova.

PURPOSE: This manual is intended for engineers and designers.

COVERAGE: The book deals with practical methods of designing parts and units of machines for strength and vibration resistance. Special attention is given to threaded joints, tooth gearing, parts of turbines, and piston engines. Formulas for determining stresses in struts, thin plates, and shelves are presented. No personalities are mentioned.

Card 1/14

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

BSR

SOV/5972

PHASE I BOOK EXPLOITATION

Birger, Isaak Aronovich

Kruglyye plastinki i obolochki vrashcheniya (Circular Plates and Shells of Revolution) Moscow, Oborongiz, 1961. 367 p. Errata slip inserted. 3275 copies printed.

Ed.: Yu.G. Zakharov, Candidate of Technical Sciences; Ed. of Publishing House: N. A. Ageycheva; Tech. Ed.: A. Ya. Novik; Managing Ed.: A. S. Zaymovskaya.

PURPOSE: This book is intended for structural engineers and scientific research workers concerned with problems of the strength of plates and shells.

COVERAGE: The book is concerned primarily with the analysis of general problems of symmetrical, structurally orthotropic circular plates and shells of revolution with closely spaced stiffeners. Particular attention is given to the design of plates and shells for strength under conditions

Card 1/

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

of nonuniform heating. The elasticity parameters of the shell (plate) are assumed to be variable. In many cases, the calculation methods involve the use of "Ural" and "Strela" computers. Problems of the linear stability and vibrations of cylindrical shells are also discussed. No personalities are mentioned. There are 86 references: 78 Soviet (including 4 translations), 6 English, and 2 German.

TABLE OF CONTENTS:

Introduction 3

Ch. I. Circular Plates and Disks 5
1. Tension of circular plates (disks) 5
2. Tension and bending of circular plates (disks) 28
3. Tension and bending of circular plates under large deflections 72

Ch. II. Structurally Orthotropic Cylindrical Shells 100

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30372
S/572/61/000/007/003/006
D221/D302

24.4200 1327

AUTHOR: Birger, I.A., Doctor of Technical Sciences, Professor

TITLE: Unevenly heated beams with variable strength parameters

SOURCE: Raschety na prochnost'; teoreticheskiye i eksperimental'nyye issledovaniya prochnosti mashinostroitel'nykh konstruktsiy. Sbornik statey no. 7, 1961, 76 - 109

TEXT: The author considers the approximate theory of variable section beams which have changing strength parameters and are subject to external forces and uneven heating. On the basis of the hypothesis of plane sections, the displacement of an arbitrary point along the axis is analysed. It is assumed that no transversal normal stresses are present. After some mathematical elaboration

$$\sigma = E\left(\frac{N}{\int_F EdF} + y\frac{M_x}{\int_F Ey^2dF} - x\frac{M_y}{\int_F Ex^2dF}\right) +$$

Card 1/5

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30372

S/572/61/000/007/003/006
D221/D302

Unevenly heated beams with ...

$$+ E \left(\frac{\int_F Eat dF}{\int_F E dF} + y \frac{\int_F Eaty dF}{\int_F Ey^2 dF} + x \frac{\int_F Eatx dF}{\int_F Ex^2 dF} - at \right) \quad (15)$$

for the stress is deduced, in which the first part expresses stresses due to external load, and the second - the temperature stresses. In the next item, axes, x and y are determined in the usual manner, and an arbitrary system, x_2y_2, is chosen. This determines the reduced center of gravity of the section in the system. The extreme conditions at the end of beam are defined by Saint-Venant, i.e. the stresses have the same vector and main torque as the system of external forces. The use of Eq. (15) is illustrated by a numerical example. In the calculation of variable section beams it is assumed that the normal stresses are determined by Eq. (15) if all parameters are referred to the given section. This provides sufficient accuracy. The tangent stresses in the beam are assessed by the condition of equilibrium of its element. An equation is deduced which is compared

Card 2/ 5

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30372

S/572/61/000/007/003/006
D221/D302

Unevenly heated beams with ...

to the expression of stress in a beam with constant modulus of elastivity, and the latter is acceptable for practical purposes. When the normal force is zero, then a simplified form is obtained, whose first member represents the tangent stress in the section of a prismatic beam, whereas the second member takes into account the effect of variable section. This is followed by an analysis of distributed forces, including those that are parallel to the axis, and also cases of tangent stresses due to bending of thin-walled beams. The evaluation of errors in the case of an approximate solution is given in the example of bending and tension of a wedge. In the approximate theory of beams, the stress is disregarded. The author quotes equations for bending due to torque, and also bending of a wedge by a concentrated force, followed by the instance of distributed load. The comparative tabulated results indicate that the error of the approximate solution increases with greater angles , although it is acceptable in the majority of cases. The method of Saint-Venant is also applied in the problem of beam torsion, where the mathematical analysis provides

$$M_k = \int_F (\tau_{zy} x - \tau_{zx} y)\, dF = \lambda c \qquad (25)$$

Card 3/ 5.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30372

S/572/61/000/007/003/006
D221/D302

Unevenly heated beams with ...

for the torque (C is the rigidity of the beam). The solution can be obtained with the function of stress Φ (x,y). The simple problem of torsion of a round shaft with axial symmetry distribution of the modulus of elasticity is then discussed. It is followed by an example of an elongated rectangle section beam. The analysis provides the expressions for the normal stresses which comprise the stresses due to tension and bending as well as the normal stress of strained torsion. Tangent stresses distributed linearly along the wall are produced in the section of the beam. In this case the center of torsion coincides with that of stiffness. Curved beams are then considered. When their curvature is small then the relationship that were established for straight axis beams may be used. The author analyzes beams with larger curvature and symmetrical cross section. To determine the tangent stresses, consideration is given to the condition of equilibrium of a separated part of beam element. When the radius of curvature tends to infinity, then the equation of stress for this case coincides with that for a beam without distributed forces. The axial symmetry deformation of rings, subject to distributed loads and torques and with symmetrical distribution of temperature and strength parameters is analyzed. This assu-

Card 4/5

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30372

S/572/61/000/007/003/006
D221/D302

Unevenly heated beams with ...

med that the cross section of the ring is not distorted. An instance when the cross section of the ring is small in relation to the radius is considered. Finally, to calculate the work of beams in the elastic and plastic stage, use is made of the method of variable parameters of strength. The assumption of incompressibility of material simplifies the computation. Another method quoted is based on successive approximations which is in good agreement with the practice concerning beams, discs and cylindrical shells. There are 31 figures, 2 tables and 4 Soviet-bloc references.

X

Card 5/5

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30373

S/572/61/000/007/004/006
D221/D302

24.4200 1327

AUTHOR: Birger, I.A., Doctor of Technical Sciences, Professor

TITLE: Calculating flexural ring springs

SOURCE: Raschety na prochnost'; teoreticheskiye i eksperimental'nyye issledovaniya prochnosti mashinostroitel'nykh konstruktsiy. Sbornik statey. no. 7, 1961, 110 - 121

TEXT: It is assumed that the spring has n slots in each section, and therefore, an angle of $\alpha = 2\pi/n$ corresponds to each slot. (Fig. 3) The cross section of the ring is considered as small in relation to its radius, and thus usual methods of calculation are applied. Due to symmetry, the section of ring containing angle α is analyzed, and is separated by planes passing through A and C. The arbitrary section being discussed is determined by angle φ counted from the base radius OA.

$$M_{Kp}(\varphi) = - M_{u3}(0) \sin\varphi + \frac{PR}{2n}(1 - \cos\varphi). \qquad (3)$$

Card 1/4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

defines the bending moment. The ratio of maxima of the torsion and bending moments is $\frac{M_{t\ max}}{M_{b\ max}} = tg\frac{\alpha}{8} = tg\frac{\pi}{4n}$. This ratio decreases when n goes up. The most critical section of the ring must be calculated. The above is indicated for various cases. The contraction of the ring is determined by the theorem of Castiglione. The contraction is equal to the displacement of point B in relation to the straight line that connects A and C. When the section of spring contains i rings, then the contraction is δ, but the effort taken up by the former is iP. If the spring has several sections, then the total contraction is equal to the sum of contractions of the individual sections. In the case of a spring with connected rings the bridge pieces are considered as being rigid. At the supporting points, concentrated loads P/n and torques, M_c (Fig. 8) are applied. A section included by angle α is separated. Both bending and torsion moments may act in the end sections. The analysis brings out the coefficients Γ, $\varkappa$ and λ. The value of the coefficient for a ring with rectangular section and two slots in each section ($\alpha = \pi$) is $0.22 \leq \varkappa \leq 0.42$. When the latter magni-

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"

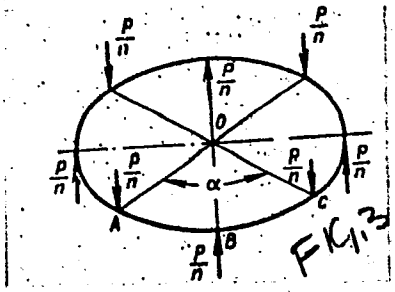
"APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4

30373
S/572/61/000/007/004/006
D221/D302

Calculating flexural ...

tude is found, then the bending and torsion moments can be computed. The comparison of curves of these moments reveals that the critical section in a connected ring rises sharply when compared to free rings. In the case of a ring section with large stiffness on bending, the contraction of spring is determined by its torsional rigidity. Finally, a comparison is made between the ring springs and the usual coiled helical units, and a numerical example is quoted. This demonstrates that the cylindrical slotted spring possesses a markedly larger carrying capacity than the helical spring of the same overall dimensions, but its deflexion is considerably lower. The compliance of free-ring spring can be increased by the choice of the latter's section. There are 11 figures, 1 table and 2 references. 1 Soviet-bloc and 1 non-Soviet-bloc.

Legend to Fig. 3: The diagram for calculating a free ring.



Card 3/4

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205320014-4"