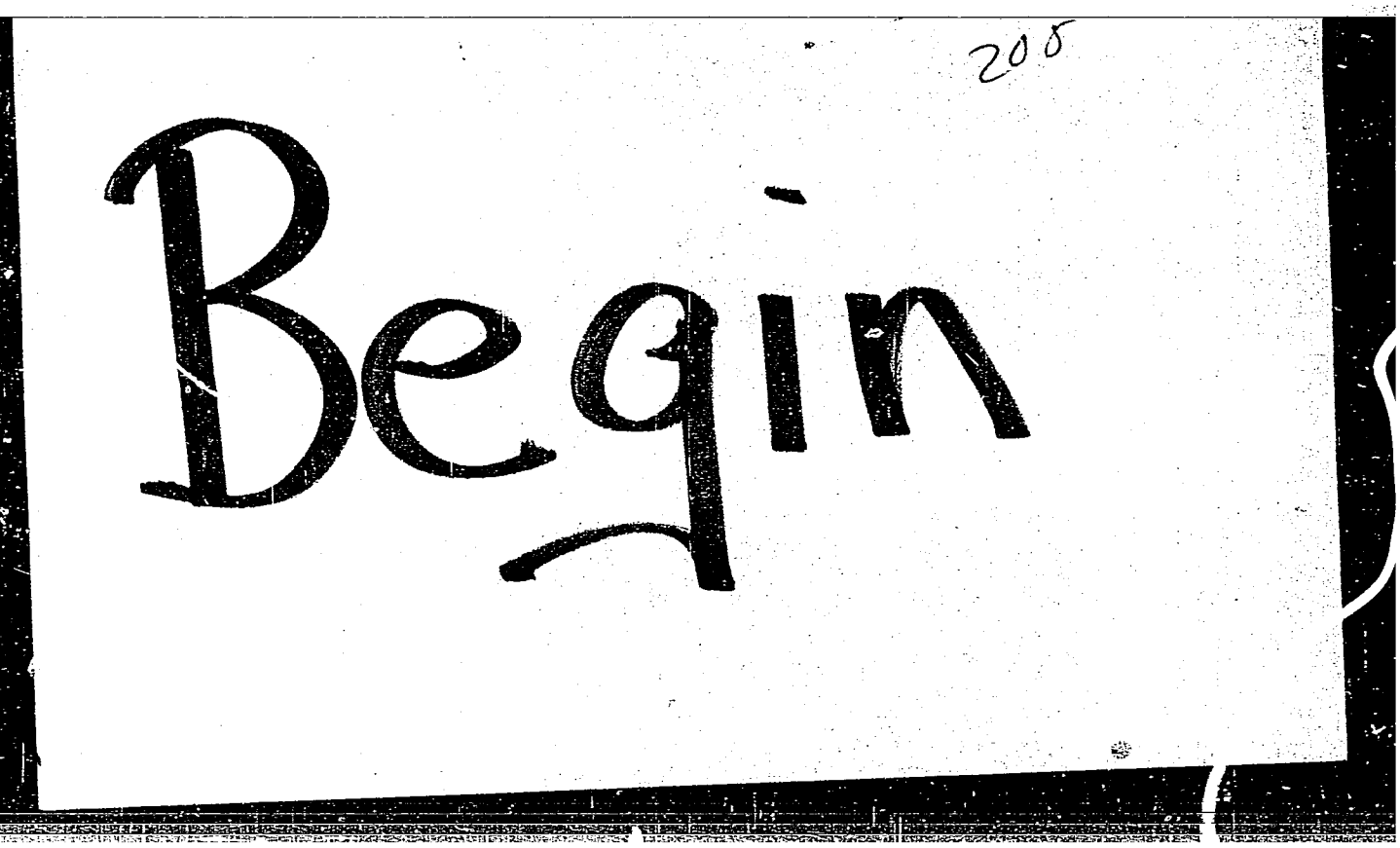
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1



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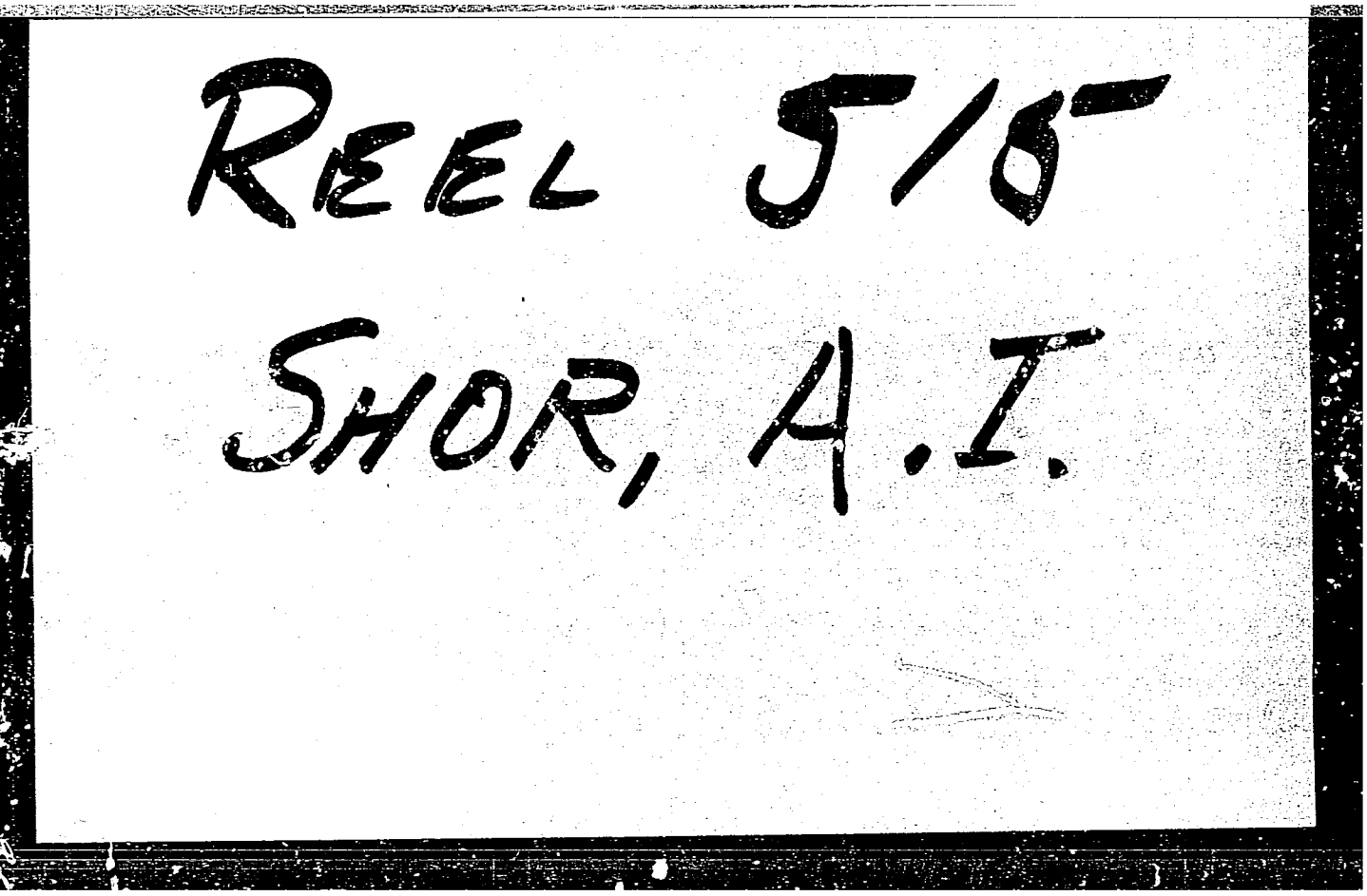

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZEMLYAK, Yu.I.; SHOR, A.I.

Five more canning plants. Kons.i ov.prom. 17 no.12:35 D '62.
(MIRA 15:12)

1. Glavnyy inzh. upravleniya mestnoy promyshlennosti pri Sovete Ministrov Moldavskoy SSR (for Zemlyak). 2. Starshiy inzh. proizvodstvenno-tekhnicheskogo otdela upravleniya mestnoy promyshlennosti pri Sovete Ministrov Moldavskoy SSR (for Shor).
(Moldavia—Canning industry)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

OSNOVICH, L.D., inzh.; SHOR, A.M., inzh.

Capacitance in asymmetrical system of cylinders with alternating polarity. Izv. vys. ucheb. zav.; energ. 6 no.2:35-41 F '63. (MIRA 16:3)

1. Novosibirskiy elektrotekhnicheskiy institut. Predstavlena kafedroy teoreticheskikh osnov elektrotekhniki.
(Electric machinery) (Magnetic circuits)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, Arkadiy Mikhaylovich, starshiy prepodavatel'

Calculation of eddy current losses in the printed windings of d.c. machines. Izv. vys. ucheb. zav.; elektromekh. 8 no.5:510-519 '65. (MIRA 18:7)

1. Kafedra teoreticheskikh osnov elektrotekhniki Novosibirskogo elektrotekhnicheskogo instituta.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

L 05711-67
ACC NR: AR6010623 SOURCE CODE: UR/0196/65/000/010/I007/I007

AUTHOR: Shor, A. M.; Kazanskiy, V. M.; Osnovich, L. D.

TITLE: Selection of the optimal width of an active conductor of a disk printed armature

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10I46

REF SOURCE: Izv. Tomskogo politekhn. in-ta, v. 132, 1965, 93-98

TOPIC TAGS: printed circuit, conductor, armature

ABSTRACT: A method is presented for the selection of the optimal width of an active conductor of a disk printed armature. The optimal width is determined from the conditions of the minimum electromechanical time constant and the minimum electrical losses in the armature winding. A definition is made of the degree of the influence of the active conductor width deviation from the optimal on the intertial and thermal qualities of the machine. A definitive solution is made on the basis of a quality comparison. In most cases the dominant influence is exerted by the inertia optimum. [Translation of abstract] Bibliography of 6 titles. G. Salgus

SUB CODE: 09

Card 1/1 UDC: 621.3045.21.001.24:621.3.049.75

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ACC NR: AR6029474 SOURCE CODE: UR/0196/66/000/006/I011/I011

AUTHOR: Shor, A. M.; Parshukov, B. A.; Matsanova, A. L.; Churkin, V. S.

TITLE: Eddy-current loss in printed conductors of electric-machine windings

SOURCE: Ref. zh. Elektronika i energetika, Abs. 6I66

REF SOURCE: Sb. dokl. k Nauchno-tekhn. konferentsii po elektr. mashinam s pechatn. obmotkami. Novosibirsk, 1965, 56-70

TOPIC TAGS: electric machine, printed winding, eddy current loss, electronic manufacturing machinery

ABSTRACT: Formulas have been developed for determining the eddy-current loss in printed-winding conductors, in disk-type and cylindrical d-c machines. At first, a curve of magnetic induction in the interpole space (which essentially differs from the straight line) has been plotted by using the method of conformal transformation and also experimental data. The losses are calculated on a digital computer for various dimension ratios of the magnetic system. In the case of disk armature, the loss was determined in copper-foil segments pasted on a disk which was rotated in a magnetic field by an auxiliary motor at a constant rpm. The losses were calculated from the braking torque measured by a spring-type

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ACC NR: AR6029474

sensor on the shaft of the auxiliary motor. In measuring the losses by thermocouples, the temperature of the segments was noted, and its effect on the segment resistance was taken into account. The losses were measured in the straight and slant conductors, in cross-slot conductors, etc. Ten figures. N. Astakhov
[Translation of abstract]

SUB CODE: 09

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ACC NR: AR6029473 SOURCE CODE: UR/0196/66/000/006/I010/I010

AUTHOR: Shor, A. M.; Matsanova, A. L.; Parshukov, B. A.

TITLE: Distribution of eddy-current loss along the printed-winding conductor in a d-c machine armature

SOURCE: Ref. zh. Elektronika i energetika, Abs. 6I165

REF SOURCE: Sb. dokl. k Nauchno-tekhn. konferentsii po elektr. mashinam s pechatn. obmotkami. Novosibirsk, 1965, 71-78

TOPIC TAGS: electric ~~machine~~ motor, dc machine, printed winding, electronic ~~manufacturing~~ machinery

ABSTRACT: The distribution is considered of specific eddy-current loss along the active portion of the armature conductor. It is assumed that the magnetic-induction vector is perpendicular to the conductor surface and remains constant along the conductor. In the interpole space, the induction varies linearly. The loss-distribution calculation includes determining the components of the electric-field strength, from which the loss-vs.-coordinate relation is derived. Formulas are derived of specific-loss distribution along the conductors in disk- and cylindrical-armature machines; curves are plotted from these formulas. The curves show that, in the disk printed windings, the eddy-current loss in the conductor is distributed practically as the square of the disk radius. In the cylindrical-armature conductors, the eddy-current loss is distributed uniformly along the conductor. Four figures. N. Astakhov.

[Translation of abstract]

SUB CODE: 09

Card 1/1 UDC: 621.313.13.024.001.24:621.3.017.22

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ACC NR: AP6021063 (A,N) SOURCE CODE: UR/0292/66/000/003/0061/0062

AUTHOR: Shor, A. M.; Matsanova, A. L.

ORG: none

TITLE: Selection of voltage for motors with printed rotor winding

SOURCE: Elektrotekhnika, no. 3, 1966, 61-62

TOPIC TAGS: electric motor, disk rotor motor, electric rotating equipment

ABSTRACT: In most cases the eddy-current loss sets the lower limit to the disk-motor voltage. Based on thermal relations in the motor, this formula is deduced for optimal voltage: $U_a = \frac{1.2P\,fB}{a_\delta a \eta^* W}\sqrt{\frac{k_\delta}{1-a_p}}$, where P - motor rated power, B - average induction, f - frequency, W - permissible heat loss in the armature, η^* - motor efficiency; other symbols, various design coefficients. The latter were determined on a digital computer for average conditions and the motor design of the Novosibirsk Electrotechnical Institute; plots of voltage vs. power for various pole-pair numbers are shown. Orig. art. has: 4 figures and 15 formulas.

SUB CODE: 09 / SUBM DATE: none

UDC: 621.313-13.161.4.001.2

Card 1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

L 42912-66 EWT(1)

ACC NR: AR6010524 | SOURCE CODE: UR/0196/65/000/010/I007/I007

AUTHOR: Shor, A. M.

TITLE: Calculation of the influence of vortex currents on the primary excitation field of a direct-current machine with a printed armature

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 10I48

REF SOURCE: Izv. Tomskogo politekhn. in-ta, v. 132, 1965, 106-112

TOPIC TAGS: dc generator, printed circuit, external magnetic field

ABSTRACT: A calculation is presented of a resultant magnetic field in the region of printed coil conductors. The results obtained make it possible to conduct a more accurate calculation of the losses and to evaluate the degree of influence of vortex currents on the primary field of the machine. The calculation is performed with the following assumptions: 1) no account is taken of the nonuniform distribution of the intensity of the external magnetic field across the conductor, which appears during the movement of the conductor in this field; 2) the calculation is performed relative to the first harmonic of the external magnetic field; 3) the reaction of the vortex currents of an individual conductor is taken into account; 4) the conductor of rectangular cross section is replaced by an infinite cylindrical conductor of elliptical cross section; and

Card 1/2 UDC: 621.313.13.024.001.24:621.3.014.4

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L 42912-66

ACC NR: AR6010524

5) no account is taken of the displacement currents both within and without the conductor, which is fully permissible considering the low frequencies in d-c machines. [Translation of abstract]
G. Salgus

SUB CODE: 09,20

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

MIRVIS, Ya.G.; SHOR, A.O.

Algorithm and program for designing reinforced concrete elements for an oblique eccentric compression with the BESM-2M electronic computer. Vych. i org.tekh. v stroi. i proekt. no.3:44-48 '64. (MIRA 18:10)

1. Gosudarstvennyy institut tipovogo i eksperimental'nogo proyektirovaniya i tekhnicheskikh issledovaniy Gosstroya SSSR.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

IGNAT'YEV, V.A.; IGNAT'YEV, N.I.; SHOR, A.Ya.; SIDOROVA, L.A., red.

[Problems in arithmetic, textbook for elementary school teachers] Sbornik zadach po arifmetike; posobie dlia uchitelei nachal'noi shkoly. Izd.4., ispr. Moskva, Prosveshchenie, 1965. 277 p. (MIRA 18:7)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ANDREYEV, V.P., polkovnik; BORISOV, D.S., polkovnik; SHOR, D.I., dotsent, kand.tekhn.nauk, inzh.-polkovnik zapasa; ZHELEZNYKH, V.I., dotsent, kand.tekhn.nauk, general-leytenant inzhenernykh voysk, otv.red.; KHRENOV, A.F., general-polkovnik inzhenernykh voysk, red.; NAZAROV, K.S., dotsent, general-polkovnik inzhenernykh voysk v otstavke, red.; KOVALENKO, L.P., red.; STREL'NIKOVA, M.A., tekhn.red.

[Military engineering and the Corps of Engineers in the Russian Army; a collection of articles] Voenno-inzhenernoe iskusstvo i inzhenernye voiska russkoi armii; sbornik statei. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 209 p. (MIRA 12:6)
(Military engineering)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ANDREYEV, V.P., polkovnik; BORISOV, D.S., polkovnik; ZHELEZNYKH, V.I., dotsent, kand.tekhn.nauk, general-leytenant inzhenernykh voysk v otstavke, otv.red.; NAZAROV, K.S., dotsent, general-polkovnik inzhenernykh voysk v otstavke, red.; KHRENOV, A.F., general-polkovnik inzhenernykh voysk, red.; SHOR, D.I., dotsent, kand. tekhn.nauk, inzhener-polkovnik zapasa, red.; HOSSAL, N.A., polkovnik, red.; KHLYSTALOV, S.I., polkovnik, red.; SOLOMONIK, R.L., tekhn.red.

[The Soviet military engineers, 1918-1940; collection of articles] Sovetskie inzhenernye voiska v 1918-1940 gg.; sbornik statei. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 141 p. (MIRA 13:4)
(Military engineering)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, D.I., kand. tekhn. nauk

Study of the stability of unsupported galleries. Trudy TSNIIPod-zemshakhtstroia no.1:204-216 '62. (MIRA 16:8)

(Rocks—Testing)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

GRIGOR'YEV, Ye.A.; MURAVIN, A.V.; TANKILEVICH, A.G.; SHOR, D.I., kand. tekhn.nauk, starshiy nauchnyy sotrudnik

Urgent problems of underground construction in the city. Gor. khoz.Mosk. 36 no.6:23-25 Je '62. (MIRA 15:8)

1. Glavnyy inzhener Tresta gornoprokhodcheskikh rabot (for Grigor'yev). 2. Zamestitel' nachal'nika Upravleniya dorozhno-mostovogo stroitel'stva Glavnogo upravleniya po zhilishchnomu i grazhdanskomu stroitel'stvu v g. Moskve (for Muravin). 3. Glavnyy spetsialist tresta "Mosorgstroy" po stroitel'stvu podzemnykh sooruzheniy (for Tankilevich). 4. TSentral'nyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut podzemnogo shakhtnogo stroitel'stva (for Shor).

(Moscow--Underground construction)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

MARSHAK, S.A., kand.tekhn.nauk; SHOR, D.I., kand.tekhn.nauk

Assortment of reinforced concrete pipes of large diameter. Vod. i san. tekh. no.10:20-21 O '64. (MIRA 18:3)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, D.I.; BARANOV, V.V.; GORYUSHKIN, V.N.; LEV, M.A.

Basic parameters for sectional reinforced-concrete linings in the horizontal underground mining by the shield method. Trudy TSNIIPodzemshakhtstroia no.3:144-158 '64. (MIRA 18:9)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E. M.

"Data on the Functional Condition of the Liver During Certain Infectious Diseases." Cand Med Sci, Dnepropetrovsk Medical Inst, Dnepropetrovsk, 1953. (RZhBiol, No 7, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

LYSKOVTSEV, M.M.; SHOR, E.M.

Some clinical characteristics of severe forms of epidemic hepatitis in children. Pediatriia no.5:7-12 '61. (MIRA 14:5)

1. Iz kafedry infektsionnykh bolezney (zav. - dotsent M.M. Lyskovtsev) Stalinskogo instituta usovershenstvovaniya vrachey (dir. - dotsnet G.L. Starkov).
(HEPATITIS, INFECTIOUS)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

Shor, E R.

POLIN, IA. M., and E. R. SHOR.

Termic eskaia obrabotka stalei dlia samoletostroeniia. Pod red. N. M. Skliarova. Moskva, Oborongiz, 1948. 346 p.

Title tr.: Heat treatment of steels for aircraft construction.

NCF

SO: Aeronutical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHEET, E.K

AUTHOR: Solomonov, M. SOV/24-58-4-36/39

TITLE: Application of Technological Lubricants and Special Coatings During Shaping of Metals by Applying Pressure (Primeneniye tekhnologicheskikh smazok i spetsial'nykh pokrytiy pri obrabotke metallov davleniyem)

PERIODICAL: Conference at the Institute for Mechanical Engineering of the Ac.Sc. USSR (Soveshchaniye v Institute mashinovedeniya Akademii nauk SSSR)
Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, p 153 (USSR)

ABSTRACT: The conference was held in December, 1957. The following papers were read: "General Relations and the Mechanism of Operation of Lubricants During Shaping of Metals by Applying Pressure" by F.I. Likhtman, S.Ya. Veyler (Institut fizicheskoy khimii AN SSSR - Institute of Physical Chemistry of the Ac.Sc.USSR); "Application of Principles of the Hydrodynamic Theory to the Process of Cold Stamping" by Ye.I. Znachenkov (MVTU); "New Stamping Lubricants for Deep and Particularly for Very Deep Drawing of Components made of Sheet Steels" by M.A. Shtilerman (Gor'kovskiy avtozavod - Gor'kiy Automobile Works); "Lubricants for Stamping Sheet of Steel and of Various Alloys" by Yu.P. Davydov (VILM);

Card1/4

Application of Technological Lubricants and Special Coatings During Shaping of Metals by Applying Pressure
Conference at the Institute for Mechanical Engineering of the Ac.Sc.USSR

"New Lubricants for Wire Drawing" by K.G. Smirnyy (TsNIICHERMET); "Investigation of Technological Lubricants Applied for Hot Stamping of Metal Components" by G.A. Doyar (Minskiy politekhnicheskiy institut im. I.V. Stalina - Minsk Polytechnical Institute imeni I.V. Stalin); "Investigation and Testing of Certain Technological Lubricants and Methods of Applying these on the Dies of Presses During Hot Stamping of Aluminum Alloys" by E.K. Shor (TsNIITMASh); "Lubricants Used in Shaping of Metal by Pressure" by Ye.B. Zhuravskiy (Aviatsionnyy zavod - Aviation Works). The Conference

Card2/4

given in the individual papers show the increasing use of liquid, paste and solid technological lubricants and special coatings in highly efficient processes of shaping metals by applying pressure in the production of complicated components from various heavy and light non-ferrous alloys. The undertakings of the chemical and the oil industries have so far not organized the production of the appropriate lubricants and the instrument industry does not produce instruments for determining the main parameters of these lubricants. So far, investigations by individual institutes of the Ac.Sc.USSR on technological lubricants have not been carried out on a sufficiently large scale and have not been adequately co-ordinated. The same applies to

S.Ya. Veyler (Institut fizicheskoy khimii AN SSSR - Institute of Physical Chemistry of the Ac.Sc.USSR) reported on work in the field of lubricants for cold stamping. Since the result of this work is little known, it was proposed to devote to it a specially convened extended seminar at the Institute of Mechanical Engineering of the Ac.Sc.USSR.
Co-ordination was urged of the research work in the use of lubricants for shaping of metals by pressure and this

Card3/4

task should be undertaken by the Laboratoriya obrabotki metallov davleniyem Instituta mashinovedeniya AN SSSR (Laboratory for Shaping of Metals by Pressure of the Institute of Mechanical Engineering of the Ac.Sc.USSR). The importance was pointed out of the Ac.Sc.USSR). market instruments for determining the main parameters of lubricants and also of putting onto the dies with technological lubricants. It is necessary to work out standard specifications for technological lubricants and also recipes and methods of automatic equipment for coating such lubricants and to increase the manufacture by the industry of standard technological lubricants. At regular intervals, symposia should be published on technological lubricants and special coatings used in the shaping of metals by applying pressure.

17

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R.

Planetary metal rolling abroad. Biul.tekh.-ekon.inform. no.2:82-85 '58. (MIRA 11:4)
(Rolling (Metalwork))

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R.

High-grade structural stainless and heat resistant steels. Biul.tekh.-ekon.inform. no.7:87-88 '58. (MIRA 11:9)
(Steel, Structural)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, Emmanuil Romanovich, kand. tekhn. nauk; OL'SHANSKAYA, I.V., inzh., ved. red.; L'VOV, D.S., kand. tekhn. nauk, red.; SMIRNOV, B.M., tekhn. red.

[Selecting metal lubricants and equipment for their mechanized application during the forging of aluminum alloys] Vybor tekhnologicheskikh smazok i oborudovanie dlia ikh mekhanizirovannogo naneseniia pri goriachei shtampovke aliuminievykh splavov. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 30 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 5. No.M-58-43-4) (MIRA 16:3)
(Metalworking lubricants) (Aluminum forgings)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R.

Coating metals with plastics. Biul.tekh.-ekon.inform. no.1:92-93 '59. (MIRA 12:2)
(Plastics) (Protective coatings)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SOV/130-59-2-8/17

AUTHOR: Tselikov, A.I., Corresponding member of AS USSR, Rokotyan, Ye.S., Doctor of technical sciences, Shor, E.R., Candidate of technical sciences

TITLE: New Rolling Mills (Novyye prokatnyye stany)

PERIODICAL: Metallurg, 1959, Nr 2, pp 21-25 (USSR)

ABSTRACT: It has been planned to increase the output of rolled iron and steel products to between 65 and 70 million tons per year by 1965 in the USSR, which represents an increase of 52 to 64% in comparison with the output for 1958. A large increase in the output of rolled non-ferrous metal products has also been planned, especially with reference to alloys of aluminium, magnesium, copper and titanium. These increases will be required mainly in connection with the production of sheet metal, tubes, formed sections, steel girders etc and will necessitate the construction of new rolling mills as well as improvement of many already in use, under the following headings:-

Sheet Rolling Mills

Continuous rolling mills for the production of broad

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New Rolling Mills

sheet, 1.5 to 10 mm in thickness, are considered to be of greatest advantage in return for capital outlay and the construction of such mills will therefore receive the main attention during the next 10 to 15 years. These mills will weigh up to 18,000 tons complete and will be fitted with rolls having a barrel length of 1700 to 2100 mm. Each mill will roll up to 250 tons of sheet per hour (3.5 million tons per year) from slabs weighing up to 15.5 tons and the output speed of rolled sheet will be up to 15 m per sec. These basic specifications exceed the capacities of similar mills already in operation at home and abroad. New rolling mills for cold reduction of thin sheet have also been planned and will be of the modern 5 stand type, capable of reducing 1000 mm wide sheet from an original thickness of 1.8 to 4 mm to a finished thickness of 0.18 to 0.60 mm. The sheet will be rolled at a maximum output speed of 35 m per sec and will leave the mill in the form of coils, weighing up to 15 tons. The main units of these mills will be driven by motors with a total h.p. of

Card 2/10 27,000. An electrolytic de-greasing plant capable of

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New Rolling Mills

cleaning the sheet at a speed of 5 m per sec and continuous annealing furnaces will be provided behind each such mill. New 2 stand cold reduction mills are planned for increasing the tensile strength of sheet metal at an output speed of up to 32 m per sec and with a yearly output of about 700,000 tons, in the form of tin-plate and galvanised iron sheet, which will be processed at up to 7.5 and 15 m per sec respectively. New reversing mills are now being built, which will be equipped with coilers or roll feed tables, working within re-heating furnaces. The roughing stands of such mills will roll the strip to between 20 and 30 mm in thickness and the finishing stand will reduce the thickness to 1.5 mm. These mills will be made for rolling stainless or heat resisting steels and special alloys, which all require a narrow range of temperature during the rolling process. Much attention has been given to the development of special rolling mills incorporating a planetary action of 20 small diameter rollers, which are spaced equally around one support shaft and are capable of reducing the thickness of the

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New Rolling Mills

rolled bar by 95 to 98% at a single pass. The output speed of the rolled bar from such mills is slow and the main advantage lies in the reduced relative weight of the complete mill. Planetary mills differing from ones developed abroad will be built to give a more efficient performance and it is expected that continuous casting of steel will be possible in conjunction with the use of such mills.

Tube Rolling Mills

Tube rolling mills of more efficient design are planned for use on pre-formed tubes of large diameter, with seams which have been arc-welded or welded by means of electric heating. Mills (as shown in Fig 1 giving layout of mill for spiral welding of tubes up to 650 mm dia, in use at the Plant im. Il'icha 1) coil unwinder; 2) roller leveller; 3) end shears; 4) butt welder; 5) pinch rolls; 6) edge trimmer; 7) edge shot blaster; 8) flash trimmer; 9) feed rollers; 10) tube former; 11) spiral seam welder; 12) tube cutter) have been built

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New Rolling Mills

in the USSR for the production of spiral welded thin walled tubes with large diameters up to 100 to 1 in proportion to thickness of wall and continuous rolling is possible owing to the use of butt-welded tubes. New mills for the continuous rolling of welded thin-walled tubes of small diameter will be built and will have output speeds of over 7 m per sec. It is expected that a planetary mill (as shown in Fig 2 giving layout of tube welding mill combined with planetary and reduction mills: 1) slab; 2) feed rollers; 3) tunnel furnace; 4) flying welder; 5) flash trimmer; 6) de-scaler; 7) pinch rolls; 8) planetary mill; 9) finishing stand; 10) rotary shears; 11) edge trimmer; 12) feed rollers; 13) induction furnace; 14) welding mill; 15) reduction mill; 16) pinch rolls; 17) flying shears; 18) conveyor rollers to finishing department) can be combined with a continuous tube rolling mill, which will have a welding speed of 2 m per sec and an output speed of 12 m per sec for the finished tube. This totals up to 250,000 tons per year. A demand for large quantities of high quality seamless tubes up to 100 mm diameter, and other

Card 5/10

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New Rolling Mills

sections, made from titanium, special heat resisting alloys and stainless steels, is foreseen in connection with the building of modern reactor plants and gas turbines. Planetary rolling mills (as shown in Fig 3, being planetary mill for cold rolling of tubes at the Moscow Tube Works) are suitable for this work and can produce tubes with thin walls. Such mills, of improved design, are also planned for the hot rolling of seamless tubes from 80 to over 160 mm dia. New mills (as shown in Fig 4 giving design of mill stand for cold rolling of tubes: 1) measuring plate; 2) roller; 3) feed stroke; 4) tube; 5) mandril) for the cold rolling of tubes, have been developed in the USSR. These are capable of rolling seamless tubes with very thin walls (under 0.01 of diameter size) from hard metals and alloys. A continuous mill with 10 reduction stands has been developed for similar work and is capable of cold rolling 25 to 40 mm dia tubes at an output speed of 3 m per sec or between 20 and 50 times faster than ordinary cold reduction mills.

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New Rolling Mills

Rolling Mills for Profiled Sections with Thin Walls

A continuous rolling mill, containing 18 stands, has been planned for the production of profiled sections with thin walls. This mill is fed with square bars, 12 m long, which are re-heated and joined into a continuous strip, by means of a flying welder. The output speed at the final stand is up to 12 m per sec or equivalent to 350 tons of formed sections per hour and exceeds the output from similar existing mills, relatively to the heavier equipment of the latter.

Bending Mills for Profiled Sections

Among several new mills, planned for cold bending of profiled sections, is one which is fed with strip, measuring 1600 mm in width and 1 to 4 mm in thickness, supplied in coils weighing up to 10 tons. The mill consists of 20 stands, driven by two 280 kW motors working at 700 to 1400 rpm. The speed of profiling is between 0.75 and 3 m per sec and the use of this method, instead of hot rolling, is estimated to give a

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saving of 15 to 35% in the consumption of steel. The output of profiled sections from such mills is planned to exceed 800,000 tons per year in the near future.

Rolling Mills for Thin Metal Tape

Owing to the expanding demand for large quantities of steel and special alloy tape between 0.2 and 0.001 mm in thickness, new multi-roller cold reduction mills (similar to the type with 20 working rollers shown in Fig 5 where the main stand is indicated at "a") will be built in the near future for rolling the following kinds and sizes of tape, from coils weighing 15 tons, at an output speed of 8 to 10 m per sec or about 125,000 tons yearly per mill:-

1) stainless steel tape, 0.1 mm thick by 1000 mm wide;
2) high carbon steel and hard alloy tape, 0.02 mm thick by 400 mm wide;
3) tape, 0.001 mm thick by 30 to 50 mm wide, made from alloys with special physical properties.

 The main action of the above mills and regulation of the

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tape thickness will be fully automatic, in order to maintain the required accuracy. The use of such mills enables a saving of between 30 and 40% to be made in the weight of equipment, in comparison with 4 high multi-stand cold reduction mills and gives a higher output, since there is less need for intermediate annealing of the tape. In the near future, hard alloy rollers will be widely used to give greater rigidity and a longer working life between each regrinding operation.

Mills for Rolling of Repetition Circular Profiles and Formed Rotating Parts

A wide variety of manufactured parts may be produced more efficiently by means of rolling a required shape closely to the finished size. For this purpose, rolling mills which have a high output are already in use in the USSR and their number will be increased considerably in the near future for the production of parts such as: (a) ball and roller crushers for cement mills (as shown in Fig 6); (b) formed hubs (similar to bicycle back

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hub as shown in Fig 7); (c) shouldered rolls, railway wagon axles, loom spindles and other similar hollow or solid parts (by means of the 3 roller type mill as shown in Fig 8). Such mills have produced 400,000 wagon axles per year and have equalled the output of 10 forging hammers or 7 presses, whilst the consumption of metal required for the production of each axle was reduced by approximately 20%. Another advantage is in the saving of floor space. If, for example, 6700 sq m is necessary for the new type of mill, 15000 or 20,000 would be necessary for forging hammers or presses, with an equivalent output. In the near future, automatic production lines, incorporating the use of such mills, will be built in the USSR for the rolling and subsequent finishing of typical machine parts, as described above. There are 8 figures.

ASSOCIATION: TsNIITMASh

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TSELIKOV, A.I.; ROKOTYAN, Ye.S., doktor tekhn.nauk; SHOR, E.R., kand. tekhn.nauk

New techniques in rolling. Metallurg 4 no.3:23-26 Mr '59. (MIRA 12:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya. Chlen-korrespondent AN SSSR (for TSelikov).
(Rolling (Metalwork))

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R.

Advanced metal-rolling techniques. Biul.tekh.-ekon.inform. no.5:94-96 '59. (MIRA 12:8)
(Rolling (Metalwork))

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PHASE I BOOK EXPLOITATION SOV/5103

Shor, Emmanuil Romanovich, and Izabella Romanovna Shor, Stalin Prize Winners

Profili prokata (Rolled Shapes) Moscow, Izd-vo "Znaniye", 1960. 47 p. 39,500 copies printed. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya 4, Nauka i tekhnika, no. 27

Ed.: T.F. Islankina; Tech. Ed.: Ye. V. Savchenko

PURPOSE: This booklet is intended for technical personnel of rolling mills and for general readers.

COVERAGE: Some information on production of pig iron, steel, and rolled stock is given and the manufacture of structural shapes, sheets, tubes, and bars of various types is outlined. Rolling mills and their principal equipment are described. The development of rolled-stock production is reviewed and probable future types of rolling mills are described. No personalities are mentioned. There are 5 references, all Soviet.

Card 1/3

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TABLE OF CONTENTS:

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

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SHOR, E. R.

PHASE I BOOK EXPLOITATION SOV/5060

Tselikov, Aleksandr Ivanovich, and Shor, Emmanuil Romanovich

Razvitiye proizvodstva prokata v 1959-1965 gg. (Development of Rolled-Stock Production in 1959-1965) Moscow, Metallurgizdat, 1960. 110 p. 2,700 copies printed.

Ed. of Publishing House: V. M. Gorobinchenko; Tech. Ed.: P. Islent'yeva.

PURPOSE: This book is intended for technical personnel of metallurgical and machine industries. It can also be used by skilled workers and students of schools of higher technical education.

COVERAGE: The book deals with basic developmental trends in the production of rolled stock and pipe in the period 1959-1965. New rolling methods are described, providing maximum increase in rolled stock and pipe production. Automation and mechanization of rolling processes are also treated. Technical-economic indices of new rolling equipment, now being designed and installed in Soviet mills under the Seven-Year Plan, are shown. There are 18 references, all Soviet.

Card 1/3

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TABLE OF CONTENTS:

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PHASE I BOOK EXPLOITATION SOV/3480

Shor, Emmanuil Romanovich

Novyye protsessy prokatki (New Rolling Processes) Moscow, Metallurgizdat, 1960. 385 p. 4,200 copies printed.

Ed.: A. A. Korolev; Ed. of Publishing House: A. L. Ozeretskaya; Tech. Ed.: P. G. Islent'yeva.

PURPOSE: This book is intended for metallurgical engineers, mechanics and designers of rolling mills and rolled stock. The book will be of interest to students of higher technical schools and tekhnikums.

COVERAGE: The author discusses new techniques in hot, cold, longitudinal, and cross rolling. He describes various processes of rolling sheet and shapes of variable cross section. He also describes cross rolling of solid and hollow periodic shapes on three-roll mills and on mills with helically grooved rolls. Processes of rolling spur and bevel gears, coarse treads, and making finned tubes as well as other finished and semi-finished products are explained. The author presents the theoretical side of these processes, the methods of calculating power parameters, the equipment and productivity of new rolling mills, and methods for analysis of mill operation. He defines commercial sizes and pro-

Card 1/6

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

perties of end products. He also indicates technico-economic indices by which the new processes might be evaluated. Materials in the book were compiled by Tselikov, A. I., Corresponding Member of the USSR Academy of Sciences; Candidates of Technical Sciences at the VNIIMETMASH - Granovskiy, S. P., Son'kin, M. A. and Druzhinin, N. N.; Engineers at VNIIMETMASH - Gurevich, A. Ye., Sarychev, A. A., Kogos, A. M., Dobkin, V. L., Mekhov, N. V., Yefanov, V. I., and Kozlov, B. N. The following Candidates of Technical Sciences also contributed: Kuz'min, A. D., Vasil'chikov, M. V., Barbarich, M. V., Ansifirov, V. P., Livshits, G. A., Kazanskaya I. I., Zhavoronkov, V. A., Polukhin, P. I., Rokotyan, Ye. S., Kruglikov, V. F., Livanov, V. A., Smirnov, V. V. The following engineers are also named: Kirpichnikov, F. P., Vznuzdayev, L. D., Zhukevich-Stosha, Ye. A., Solodukho, Ya.Yu., Reyfizov, M. I., Belov, A. F., Golovin, I. L., Brunov, A. G., Kovnerist, K. S., Rubinshteyn, I. B., Maskileyson, A. M., Bardzilovich, P. P., Polovikov, V. V., Zak, G. M. [deceased], Stepanov, V. N., Kreydlin, N. N., Romanchikov, B. F. and Konshin, G. M. There are 78 references: 75 Soviet, 2 English, and 1 Polish.

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A006/A002

18.5100

AUTHORS: Shor, E.R., Candidate of Technical Sciences, Merenkov, A.I., ~~Engineer~~

TITLE: The Manufacture of Bent Shapes

PERIODICAL: Metallurg, 1960, No. 5, pp. 26-29

TEXT: Information is given on the manufacture of bent shapes on a roll bending mill by passing a sheet or strip through a series of rollers bending the blank progressively to the desired shape. Bent shapes may be produced from 0.2 - 20 mm thick and up to 2,000 mm wide sheets of various materials (steel, ferrous metals and their alloys etc), for use in the automobile industry, in agricultural machinebuilding, etc. The roll bending process is continuous and can be performed at speeds of up to 200 m/min. The rollers are mounted on one bed and are driven by one motor (Figure 2). They are fixed on the upper and lower drive shafts of the roll bending mill stands. Keys on the drive shafts and key way on the roller hubs, are used for transmitting the required torque to the rollers. The number of rollers depends on the shape of the profile to be bent. A higher number of rollers reduces wear and provides a better quality

Card 1/3

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The Manufacture of Bent Shapes

of the product, but raises the equipment costs. The rollers may consist of a single piece or may be composite. They are made of structural steel or alloyed cast iron for bending plain shapes without acute angles. High-carbon or high-chromium [9X and X12M (9Kh and Kh12M)] steel rollers are used for hot rolled sheets because of their resistance to abrasive wear. High-strength rollers are made of heat-treated instrument steel " 10 " (U10A) and " 8 " (U8A). The gap between the rollers is adjusted by the vertical displacement of the upper rollers in respect to the fixed lower rollers. Entering guides are mounted in front of the first roller pair. Lateral vertical idle rollers are placed between the mill stands to prevent the vertical or horizontal bending of the blank; they are also employed for producing side pressure when additional bending is required. The final forming of semi-closed or closed shapes is performed by bronze roller or slide mandrels. The delivery end of the last stand is equipped with guides. The amount of accessory equipment of the mill depends on the shape to be bent. An example is given, showing the roll bending of a shape for sashes from 135 mm wide and 1 mm thick strips. The use of roll bending mills has not yet been sufficiently developed in the USSR, and the equipment has not been mechanized. It is planned to construct seven standard types of roll bending

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A006/A002

The Manufacture of Bent Shapes

units on which a wide range of bent shapes will be produced. The units will be mounted at the metallurgical plants. Two roll bending mills were put into operation at the "Zaporozhstal" Plant in 1959. There are 3 figures.

ASSOCIATION: VNIIMETMASh

Card 3/3

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SHOR, E. R.

The development of the production of rolled metal, from 1959--1965, by A.I. Tselikov and E.R. Shor. New York, USJPRS, 1961.

ii, 178 p. illus., diagrs., tables. (JPRS: 11544: CSO: 6428-D)

Translated from the original Russian: Razvitiye proizvodstva prokata v 1959-1965 gg, Moscow, 1960.

Bibliography: p. 150-150a.

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SHOR, E.R.

Automation of reversing rolling mills. Biul.tekh.-ekon.inform. no.1: 88-93 '61. (MIRA 14:2)
(Rolling mills) (Automatic control)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R., kand.tekhn.nauk

Production of economical rolled sections and their use in the machinery industry. Biul. tekh.-ekon. inform. no. 4:3-8 '61. (MIRA 14:5)

(Rolling (Metalwork))

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SHOR, E. R.

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PHASE I BOOK EXPLOITATION SOV/6044

Rokotyan, Ye. S., Doctor of Technical Sciences, Ed.

Prokatnoye proizvodstvo; spravochnik (Rolling Industry; Handbook) v. 2. Moscow, Metallurgizdat, 1962. 685 p. 8500 copies printed.

Authors: P. A. Aleksandrov, Doctor of Technical Sciences; V. I. Bayrakov, V. P. Anisiforov, Candidate of Technical Sciences; M. V. Barbarich, Candidate of Technical Sciences; B. P. Bakhtinov, Candidate of Technical Sciences [deceased]; B. A. Bryukhanenko, Candidate of Economic Sciences; M. V. Vasil'chikov, Candidate of Technical Sciences; A. I. Vitkin, Doctor of Technical Sciences; S. P. Granovskiy, Candidate of Technical Sciences; P. I. Grudev, Candidate of Technical Sciences; I. V. Gunin, Engineer; M. Ya. Dzugutov, Candidate of Technical Sciences; V. G. Drozd, Candidate of Technical Sciences; N. F. Yermolayev, Engineer; G. M. Katsnel'son, Candidate of Technical Sciences; M. V. Kovynev, Engineer; M. Ye. Kugayenko, Engineer; N. V. Litovchenko, Candidate of Technical Sciences; Yu. M. Matveyev, Candidate of Technical

Card 1/14

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(46)

Rolling Industry; Handbook SOV/6044

Sciences; V. I. Meleshko, Candidate of Technical Sciences; N. V. Mekhov, Engineer; A. K. Minburg, Candidate of Technical Sciences; V. D. Nosov, Engineer; B. I. Panchenko, Engineer; O. A. Plyatskovskiy, Candidate of Technical Sciences; I. S. Pobedin, Candidate of Technical Sciences; I. A. Priymak, Professor, Doctor of Technical Sciences [deceased]; A. A. Protasov, Engineer; M. M. Saf'yan, Candidate of Technical Sciences; N. M. Fedosov, Professor; S. N. Filipov, Engineer [deceased]; I. N. Filippov, Candidate of Technical Sciences; I. A. Fomichev, Doctor of Technical Sciences; M. Yu. Shifrin, Candidate of Technical Sciences; E. R. Shor, Candidate of Technical Sciences; M. M. Shternov, Candidate of Technical Sciences; M. V. Shuralev, Engineer; I. A. Yukhvets, Candidate of Technical Sciences; Eds. of Publishing House: V. M. Gorobinchenko, R. M. Golubchik, and V. A. Rymov; Tech. Ed.: L. V. Dobuzhinskaya.

PURPOSE: This handbook is intended for engineering personnel of metallurgical and machine-building plants, scientific research

Card 2/14

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Rolling Industry; Handbook SOV/6044

institutes, and planning and design organizations. It may also be used by students at schools of higher education.

COVERAGE: Volume 2 of the handbook reviews problems connected with the preparation of metal for rolling, the quality and quality control of rolled products, and designs of roll passes in merchant mills. The following topics are discussed: processes of manufacturing semifinished and finished rolled products (the rolling of blooms, billets, shapes, beams, rails, strips, wire, plates, sheets, and the drawing of steel wire), hot-dipped tin plates, lacquered plates, floor plates, tubes made by different methods, and special types of rolled products. Problems of the organization of rolling operations are reviewed, and types of rolled products manufactured in the USSR are shown. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: [Abridged]:

Card 3/14

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

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BAKSHEYEV, Sergey Mikhaylovich, kand. tekhn. nauk; SAMOKHOTSKIY, A.I., inzh., ved. red.; SHOR, E.R., kand. tekhn.nauk, red.; SOROKINA, T.M., tekhn. red.

[Deformability of structural carbon steel] Deformiruemost' konstruktsionnoi uglerodistoi stali. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 15 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 5. No.M-58-247/13) (MIRA 16:3)
(Steel, Structural—Testing)
(Deformations (Mechanics))

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

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E193/E383

AUTHOR: Shor, E.R.

TITLE: Rolling process in which the gap between the rolls varies continuously

SOURCE: Novyye protsessy obrabotki metallov davleniyem; doklady Soveshch. po novym prots. obrab. met. davleniyem v mashinostr., 1960. Ed. by V. D. Golovlev. Moscow, Izd-vo AN SSSR, 1962. 29 - 33

TEXT: This is a general discussion of the application of rolling in the fabrication of products with continuously varying cross-section. By making provision for continuously varying the gap between the rolls while the metal rolled is passing between them and by synchronizing the variation in the gap with the roll speed, any given variation in cross-section can be obtained. The engineering solution of the problem of rolling tapered sheet and strip is relatively simple, greater difficulties being presented by more complex profiles. Thus, for instance, two stands in tandem are required for rolling T-sections: one stand comprising

Card 1/3

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Rolling process in which ....

four rolls in which the continuous variation in the width of the rim and the web are effected (Fig. 3a) and the other in which the thickness of these parts is reduced in a similar manner (Fig. 3б). Continuous variation in the cross-section is achieved by lowering the top roll and decreasing the distance between the side rolls in the four-roll stand and by raising the bottom roll and lowering the two top rolls in the three-roll stand. Application of this new rolling process in the fabrication of tapered profiles has considerably reduced the metal consumption (40 - 50% of the initial weight of metal is lost when machining is used for this purpose) and brought about 40 - 50-fold increase in productivity. The process is most widely used in the Soviet Union for rolling aluminum and its alloys. Typical products are represented by plate, 7 - 12 m long, 0.75 - 2 m wide, 0.7 - 1.5 mm thick (at the thin end) with a maximum taper of 1.5 mm/m. There are 4 figures and 2 tables.

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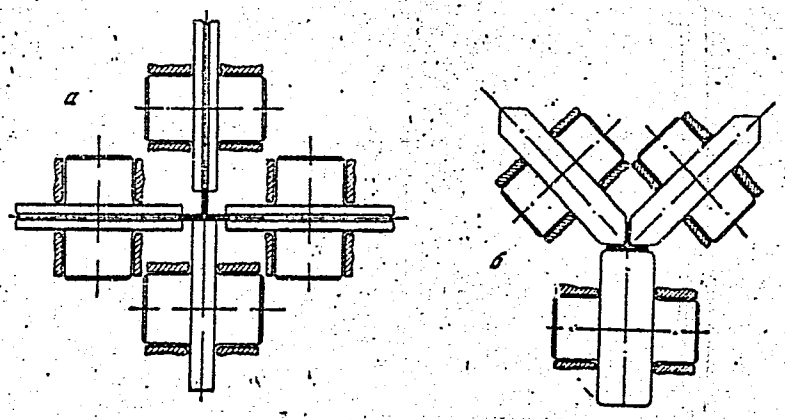
Rolling process in which ....

S/902/62/000/000/001/015
E193/E383

Fig. 3:



Card 3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R., kand.tekhn.nauk

Thermomechanical and thermomagnetic steel treatment abroad.
Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform.
16 no.6:86-88 '63. (MIRA 16:8)
(Steel--Hardening)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

L 8752-65 EWT(m)/EPF(c)/T/EWP(k)/EWP(b) Pf-4/Pr-4 IJP(c)/ASD(m)-3 MJW/JD/HW/DJ

ACCESSION NR: AP4045812 S/0148/64/000/009/0088/0094

AUTHOR: Pavlov, I. M.; Burkhanov, S. F.; Shor, E. R.; Osipov, E. Ye.; Chinenov, A. M.

TITLE: Effect of lubricants on cold rolling of thin strips and foil from VT-14, VT-15 and VT-16 titanium alloys

SOURCE: IVUZ. Chernaya metallurgiya, no. 9, 1964, 88-94

TOPIC TAGS: titanium alloy, VT 14 alloy, VT 15 alloy, VT 16 alloy, alloy cold rolling, strip rolling, foil rolling, lubrication effect

ABSTRACT: Titanium-base VT-14, VT-15, and VT-16 alloys with a tensile strength and elongation (in the aged condition) ranging from 115 to 160 kg/mm^2 and from 3 to 10%, respectively, were rolled to an initial thickness of 1.5 mm, vacuum annealed, and then cold rolled in five passes using various lubricants. The thinnest strip, 0.66—0.69 mm thick, was obtained with the LZ-203 lubricant, a synthetic compound of the type of complex esters containing amines. Castor oil and an LZ-171 lubricant were next in effectiveness. The rest of the

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ACCESSION NR: AP4045812

lubricants tested produced no effect. Compared with rolling without a lubricant, the most effective lubricant reduces roll pressure by 20—30%, depending on the alloy rolled. In rolling alloy foils, the strip was first rolled to a thickness of 0.5 mm, vacuum annealed, and then rolled to the minimum thickness possible. Castor oil and a synthetic LZ-142[a] lubricant (a triethyleneglycol ester of complex fatty acids with a 10% addition of oleic acid) were the best and were equally effective for foils 1.5—0.5 mm thick, especially in rolling VT-14 alloy. In rolling foil thinner than 0.5 mm, castor oil produced the best results. Foil 0.13 mm thick with a good surface and uncracked edges was obtained. The authors believe that with process annealing and a better rolling equipment, foil thinner than 0.1 mm can be readily obtained. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute for Steel and Alloys)

Card 2/3

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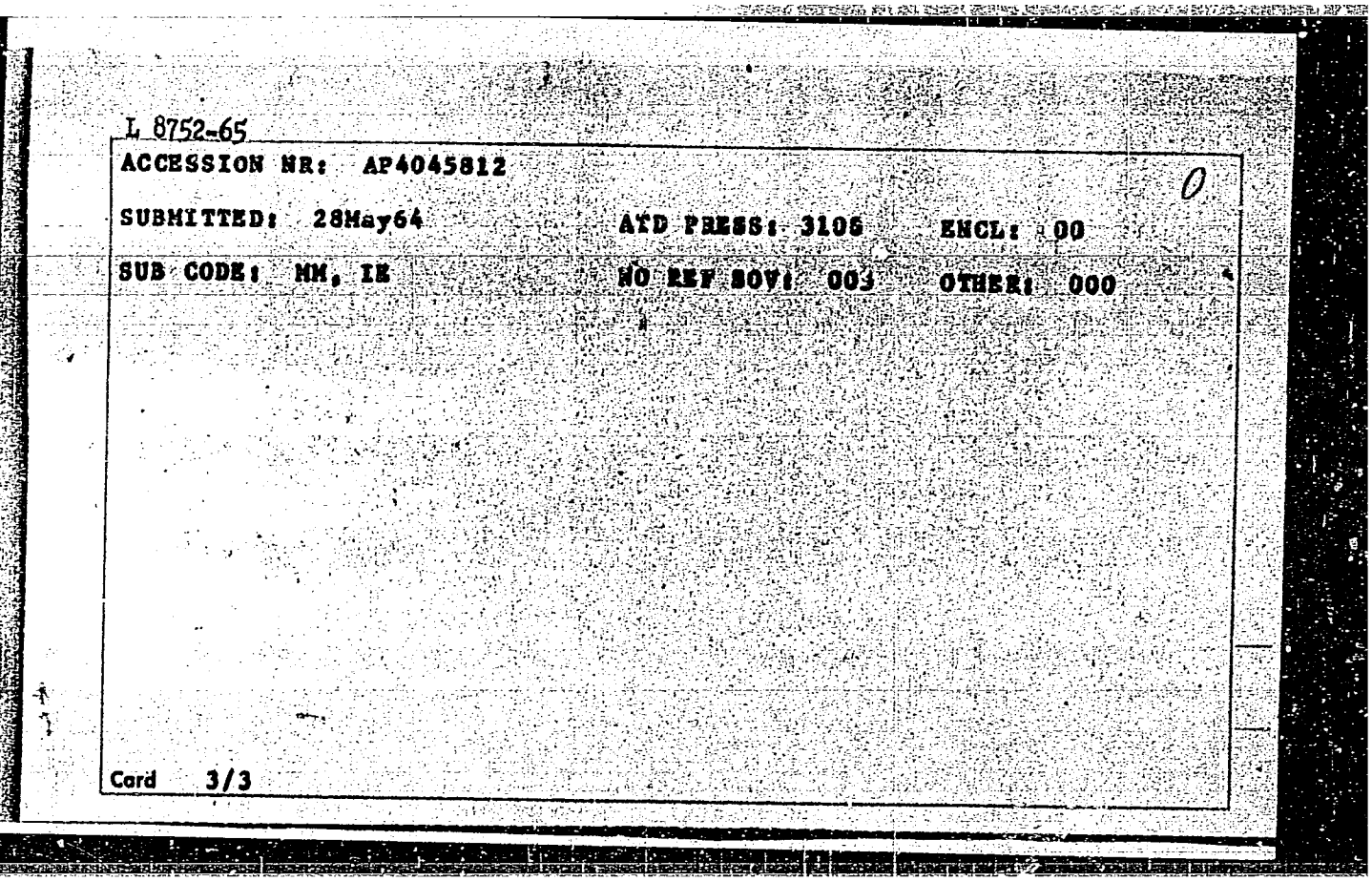

L 8752-65

ACCESSION NR: AP4045812

SUBMITTED: 28May64 ATD PRESS: 3106 ENCL: 00

SUB CODE: MM, IE NO REF SOV: 003 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.F., kand. tekhn. nauk

Strip rolling on mills with a pendulum mechanism and on the "Quarto" mill. Byul. tekh.-ekon. inform. Gos. nauch.-issl. nauch. i tekh. inform. 17 no.9:88-90 S '64 (MIRA 18:1)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, E.R., kand.tekhn.nauk; CHINENOV, A.M.

Rolling thin strips of heat-treated t'tanium alloys. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform 17 no.11:8-9 N '64. (MIRA 18:3)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

L 22347-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k) IJP(c) JD/HW

ACC NR: AP6012728 SOURCE CODE: UR/0136/66/000/004/0072/0073

AUTHOR: Pavlov, I. M.; Burkhanov, S. F.; Shor, E. R.; Osipov, E. Ye.; Chinenov, A. M.

ORG: none

TITLE: Study of resistance to deformation during cold rolling of VT14, VT15, and VT16 alloy strips

SOURCE: Tsvetnyye metally, no. 4, 1966, 72-73

TOPIC TAGS: titanium, titanium alloy, titanium alloy strip, strip rolling, cold rolling, titanium clad alloy/VT14 alloy, VT15 alloy, VT16 alloy

ABSTRACT: The roll pressure and resistance to deformation during cold rolling of clad and unclad VT14, VT15, and VT16 titanium-alloy strips has been investigated. Unclad 1.8 x 250 x 500 mm strips were rolled into strip 1 mm thick at a rate of 30—90 m/min with a reduction of 3—6% in the first and 1—2% in the final passes. All the alloys were relatively easily reduced in the first passes, but in the last passes the edges of VT14 alloy strip began to tear at 40% total reduction. Rolling of this alloy was accompanied by intensive strain hardening. VT15 alloy had less resistance to deformation than VT14 alloy. The lowest pressures were required for VT16 alloy. The average pressure at 30% reduction was 230 kg/mm^2 for VT14 alloy, 220 kg/mm^2 for VT15 alloy, and 180 kg/mm^2 for VT16 alloy. Alloy strips clad on each side with VT1 commercial-grade titanium were easily reduced to 30—40% of the

Card 1/2 UDC: 669.295-124.2:620.1

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ACC NR: AP6012728

initial thickness with the average pressure reduced by 20%. Resistance to deformation of clad and vacuum-annealed VT14 alloy strips decreased by 30%. Thus, VT16 alloy has the best technological properties. Cladding significantly reduced resistance to deformation. Orig. art. has: 2 figures. [AZ]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 4242

Card 2/2 dda

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ACC NR: AP7004811 SOURCE CODE: UR/0413/67/000/001/0169/0169

INVENTOR: Tselikov, A.M.; Shor, E.R.; Rokotyan, Ye.S.; Kruglikov, A.V.; Gurevich, A.Ye.

ORG: none

TITLE: Two or four-high mill for rolling variable-section sheets and strips. Class 7, No. 87892

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no.1, 1967, 169

TOPIC TAGS: metal rolling, [redacted] rolling mill

ABSTRACT: This Author Certificate introduces a two or four-high mill for rolling one or two-way wedge-shaped sheets and strips from steel and light alloys by means of changing the working rolls' spacing. To increase rolling mill efficiency, a powerful automatic pressure device is used which ensures a constant relation between the rotation speed of the screw-down drives and the working rolls. [AZ]

SUB CODE: 13/ SUBM DATE: 11Mar49/ ATD PRESS: 5116

UDC: none

Card 1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, F.I., red.; GOLYATKINA, A.G., red.izd-va; ISLENT'YEVA, P.G. tekhn. red.

[New machines and apparatus for the testing of metals] Novye mashiny i pribory dlia ispytaniia metallov; sbornik statei. Moskva, Metallurgizdat, 1963. 199 p. (MIRA 17:1)
(Metals--Testing) (Testing machines)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHEPELYAKOVSKIY, K.Z.; SHOR, F.I.

Mechanical properties of low-hardenability steels following hardening and low tempering. Metalloved. i term. obr. met. no.6:35-42 Je '63. (MIRA 16:6)

(Steel--Testing)
(Induction hardening)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, F.I.; CHISTOV, S.F.

Hardenability of steels characterized by high critical rates of hardening. Metalloved. i term. obr. met. no.6:42-45 Je '63. (MIRA 16:6)

(Steel—Hardening)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, G. I.

(2)

✓ 1142. INVESTIGATION OF ANTI-WEAR PROPERTIES OF LUBRICATING OILS WITH RADIOACTIVE INDICATORS. Zaslavskii, Yu. S., Shor, G.I. and Lebedeva, F.B. (Izv. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), Nov. 1953, 1598-1608). Experiments are recorded with a friction machine and with a petrol engine whose top piston ring was made radioactive by irradiation, or by deposition of radioactive zinc in a groove machined in its outer surface. Rates of wear were measured by sampling the crank case oil every ten minutes and putting a test tube of it in a ring of six counters.

10-14-54 ggp

TRANSLATION D 178252, Nov 53 RL

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

Shor, G. I.

USSR/Engineering FD 267

Card 1/1

Authors : Zaslavskiy, Yu. S., Shor, G. I., Lebedeva, F. B.

Title : Accuracy of testing engines for wear by the radioactive-indicator method

Periodical : Iz. Ak. Nauk SSSR, OTN, 1, 54-60, Jan 1954

Abstract : Gives method and results of experimental study of accuracy of testing engine for wear by the radioactive-indicator method. Compares results obtained by simultaneous testing of the piston ring of single-cylinder engine L-3/2 for wear by the following methods: radioactive indicators, weight of piston ring, holes stamped in ring, and iron in oil. Four references: 2 U.S.S.R.; all 1953. Graphs, tables.

Institution :

Submitted : December 23, 1953. Presented by Academician V. I. Dikushin.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

USSR/Engineering -- Metallography FD-2617

Card 1/1 : Pub. 41-3/21

Author : Zaslavskiy, Yu. S. and Shor, G. I., Moscow

Title : Quantitative determination of machine parts wear by the radioactive tracer method

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 4, 43-52, Apr 1955

Abstract : Describes two methods developed by the All Union Scientific Research Institute of Petroleum for the quantitative determination of the wear of friction surfaces in machines. One method consists of the removal of oil specimens from the machine, the measurement of their radioactivity, and their reinsertion back into the machine. In the other method a meter is inserted into the oil circuit of the machine. Presents a description of a meter for the automatic, continuous registration of radioactivity in the circulating oil. Developes a method for the rapid evaluation of fuel and lubricant quality on engine wear. Graphs, tables, diagrams of equipment. Fifteen references, 6 USSR.

Institution :

Submitted : December 12, 1954

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

Ispol'zvaniye Atomnoy Energii v Neftyanoy Promyshlennosti (Use of Atomic Energy in the Petroleum Industry), by Yu. S. Zaslavskiy and G. Shor, Moscow, Gostoptekhizdat, 1956, 88 pp (from a standard [illegible]f the USSR State Library imeni V. I. Lenin, No 6P1.6 + 6P7.4)

"Problems of utilizing the achievements of nuclear physics in the petroleum industry are discussed as follows: exploration, prospecting, and development of petroleum fields; processing, transport, storage, and properties of petroleum products. List of references follows each section of the book. Written for engineering and technical workers in all branches of the petroleum industry and readers interested in peaceful uses of atomic energy." (U)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

Shor, G. I.

Use of labeled atoms in the study of the action of anticorrosive additives in oils. Yu. S. Zaslavskii, S. E. Krein, R. N. Shneerova, and G. I. Shor. Khim. i Tekhnol. Topliva 1956, No. 4, 37-49.--In expts. carried out by the GOST-5162-49 method, films deposited on Pb, Cu, Pb bronze, and steel III plates by lubricating oils of the type MK-22, contg. 0.5% $Ph_3P^{32}O_3$ (I) and 0.5% sulfonated (S^{35}) oil were measured after 1, 5, 10, 15, 20, 25, 30, 40, 50, 60, 90, 120, 150, 180 min. and afterwards every hr. at 90, 110, 140, 170, 200, and 220° for a total of 10 hours at each temp. The wt. of the film was calcd. from the equation $x = mg/n$, where m is the measured impulse/min. for the tested plate, g the wt. (mg.) of the deposited radioactive substance on the plate, n the av. radioactivity of the control plate detd. every day. The sensitivity of the method was 10^{-7}-10^{-5} g. For every temp. the wt. of the film contg. I rapidly increased to a value characteristic for each metal, and then leveled off. With an increase in temp., the rate of film formation sharply increased; however, the wt. of the film decreased. Analogous results were obtained with the sulfonated oils. Analysis of the plates showed that they contained S^{35}; the depth of penetration for each metal was directly related to the temp., reaction time, and concn. of the additive. The penetration was greatest (about 0.01 mg./sq.cm. 140 μ deep after 8 hrs. at 140° with 1% S^{35} in the oil) for Pb bronze. The kinetics of film formation were also followed by measuring the radio-activity of the oils (MT-16, MT-16p, MK-22) induced by Pb, cast iron, and steel plates contg. about 0.001% Sb^{124} after 30 hrs. at 110, 140, 170, 185, 200, and 220°. Max. corrosion for each metal and each oil occurred at about 170°. The addn. of inhibitors first decreased the corrosion but after the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

Zaslavskii, Yu. S., Krein, S. E., Shnecrova, R. N.

point corresponding to the max. gain in wt. of the protective film was reached, the intensity of the corrosion increased and the wt. of the film decreased. From these results it is concluded that the principal effect of the additives in the oils consists of the formation of a protective film on the metal surface. Two competing processes occur simultaneously: (1) film formation between the additive and the metal and the increase in the thickness of the film caused by addnl. adsorption; (2) oxidation of oil which leads to the formation of acids, phenols, etc., and their salts, which gradually destroy the protective film.

A. P. Kotloby

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gfm

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, Yu.S.; SHNEYEROVA, R.N.; SHOR, G.I.

Radiochemical method of investigating the stability of additives in lubricating oils. Zav.lab.22 no.4:417-418 '56. (MIRA 9:7)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i proizvodstvu iskusstvennogo zhidkogo topliva. (Lubrication and lubricants--Testing) (Radiochemistry)

Temperature effects, the action of water, and other properties are determined using radiation.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, G. I. ~~Doc~~ Cand Tech Sci -- (diss) "Experiment# concerning ~~the~~ application of the method of radioactive indicators to the study of ~~activity~~ the mechanism of action of anti-corrosion ~~agents~~ additives to motor oils." Mos, 1957. 15 pp 20 cm. (Min of ~~Oil~~ Petroleum Industry. All-Union Scientific Research Inst for the Processing of Petroleum and Gas and for the Production of Synthetic Liquid Fuel (VNII NP)), 100 copies (KL, 21-57, 103)

tracers

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR, G.I.

Zaslavskiy, Yu. S.; Shor, G. I.; Kirillov, I. G.; Lebedeva, F. B; Yevstigneyev, Ye. V.; and Zlobin, O. A. "The Application of Radioactive Indicators (Tagged Atoms) in the Investigation of Wear Resistant Properties of Lubricating Oils." p. 58.

Zaslavskiy, Yu. S.; Kreyn, S. E., Shneyerova, R. N.; and Shor, G. I. "Radiochemical Investigation of the Action of Oil Additives," p. 85.

Zaslavskiy, Yu. S.; Shneyerova, R. N.; Shor, G. I.; and Kuznetsova, A. I.,' "Radiochemical Investigation of the Stability of Solutions of Additives in Oils." p. 107

in Study and Use of Petroleum Products,"Moscow, Gosteptekhizdat, 1957. 213pp.

This collection of articles gives the results of the sci. res. work of the AU Sci. Res. Inst. for the Processing of Petroleum and Gas for the Production of Synthetic Liquid Fuel.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, Yu.S.; SHOR, G.I.; KIRILLOV, I.G.; LEBEDEVA, F.B.; YEVSTIGNEYEV, Ye.V.; ZLOBIN, O.A.

Using radioactive tracers (tagged atoms) for studying wear properties of lubricants. Trudy VNII NP no.6:58-84 '57. (MIRA 10:10)
(Lubrication and lubricants) (Radioactive tracers)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, Yu.S.; KREYN, S.E.; SHNEYEROVA, R.N.; SHOR, G.I.

Radiochemical study of the mechanism of action of additives for oils. Trudy VNII NP no.6:85-106 '57. (MIRA 10:10)
(Lubrication and lubricants) (Corrosion and anticorrosives)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, Yu.S.; SHNEYEROVA, R.N.; SHOR, G.I.; KUZNETSOVA, A.I.

Radiochemical analysis of the stability of additives in oil.
Trudy VNII NP no.6:107-116 '57. (MIRA 10:10)
(Lubrication and lubricants) (Radioactive tracers)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOR G.I.,

ZASLAVSKIY, Yu.S.; SHOR, G.I.

Radiochemical investigation of the action of additives for reducing corrosive wear in motor cylinders and pistons. Khim. i tekh. topl. i masel no.9:41-49 S '57. (MLRA 10:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.
(Corrosion and anticorrosives) (Radiochemistry)
(Lubrication and lubricants)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, YU., SHOR, G. and SHNEYEROVA, R.

SHOR, G. I.

"Researches into the Mechanism of Protection of Friction Surfaces from Corrosive Wear."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

21(8) [illegible]

V[illegible] [illegible] 1958.

Trudy... [illegible] All-[illegible] the Use of Radioactive [illegible] and Radiation in the National Economy and Science; [illegible] Instrument Manufacturing) Moscow, Izd-vo AN SSSR, 1958. 318 p. 4,500 copies printed.

Sponsoring Agencies: USSR. Glavnoye upravleniye po ispol'zovaniyu atomnoy energii, and Akademiya nauk SSSR.

Editorial Board of Set: V.I. Dikushin, Academicain (Resp. Ed.), N.N. Shumilovskiy (Deputy Resp. Ed.), Yu. S. Zaslavskiy (Deputy Resp. Ed.), L.K. Tatochenko, B.I. Verkhovskiy, S.T. Nazarov, L.I. Petrenko, and N.G. Zelevinskaya (Secretary).

Ed. of Publishing House: P.N. Belyanin; Tech. Ed.: T.P. Polenova.

PURPOSE: This book is intended for specialists in the field of machine and instrument manufacture who use radioactive isotopes in the study of materials and processes.

COVERAGE: This collection of papers covers a very wide field of the utilization of tracer methods in industrial research and control techniques. The topic of this volume is the use of radioisotopes in the machine- and instrument-manufacturing industry. The individual papers discuss the applications of radioisotope techniques in the study of metals and alloys, problems of friction and lubrication, metal cutting, engine performance, and defects in metals. Several papers are devoted to the use of radioisotopes in the automation of industrial processes, recording and measuring devices, quality control, flowmeters, level gauges, safety devices, radiation counters, etc. These papers represent contributions of various Soviet institutes and laboratories. They were published as Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science, April 4-12, 1957. No personalities are mentioned. References are given at the end of most of the papers.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

SHOK, G.L.

PHASE I BOOK EXPLOITATION SOV/5055

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskaya teoriya smazki. Opory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication. Lubricant Materials) Moscow, Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR, 1959. 422 p. Errata slip inserted. 3,800 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences; and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section, "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Gus'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in Hydrodynamic Theory (Cont.) Use of Lubricant Materials

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Card 1/17

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SHOR, B.I.

(4) PAGE 1 BOOK EXPLOITATION SOV/2713

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; polucheniye i primeneniye izotopov (Reports of Soviet Scientists; Production and Application of Isotopes) Moscow, Atomizdat, 1959. 588 p. (Series: Its: Trudy, vol. 6) 8,000 copies printed.

Eds. (Title page): G.V. Kurdyumov, Academician, and I.N. Butslov, Corresponding Member, USSR Academy of Sciences; Ed. (Inside book): Z.D. Andreyenkov; Tech. Ed.: Z.D. Andreyenko.

PURPOSE: This book is intended for scientists, engineers, physicians, and biologists engaged in the production and application of atomic energy to peaceful uses; for professors and graduate students of higher technical schools where nuclear science is taught; and for the general public interested in atomic science and technology.

COVERAGE: This is volume 6 of a 6-volume set of reports delivered by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy held in Geneva from September 1 to 13, 1958. Volume 6 contains 32 reports on: 1) extern methods for the production of stable radioactive isotopes and their labeled compounds, 2) research results obtained with the aid of isotopes in the field of chemistry, engineering, machine building, and agriculture, and 3) dosimetry of ionizing radiation. Volume 6 was edited by: G.V. Kurdyumov, Academician, and I.N. Butslov, Corresponding Member, USSR Academy of Sciences; and V.V. Gedov, Candidate of Medical Sciences. See Sov/2681 for titles of volumes of the set. References appear at the end of the articles.

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ZLOBIN, O.A.; YEVSTIGNEYEV, Ye.V.; KADUSHIN, A.A.; SHOR, G.I.

Automatically maintaining the separation level of media of different densities. Khim. i tekh.topl. i masel 4 no.1:20-24 Ja '59. (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftyanoy promyshlennosti.
(Radioisotopes--Industrial applications) (Petroleum--Refining)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001549910001-1

ZASLAVSKIY, Yu.S.; SHOR, G.I.; MONASTYRSKIY, V.N.

Neutralizing action of anticorrosive additives in motor oils.
Khim.i tekh.topl.i masel 4 no.2:51-56 F '59. (MIRA 12:2)
(Lubrication and lubricants--Additives)

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AUTHORS: Zaslavskiy, Yu. S., Shor, G. I., Shneyerova, R. N.

SOV/20-128-5-42/67

TITLE: Mechanism of the Destruction of Protective Films Formed by Anticorrosive Admixtures

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 5, pp 1010 - 1011, (USSR)

ABSTRACT: The authors investigated this mechanism of chemical destruction so far unknown which limits the service life of the admixtures as lubricating oils in the engine. The problem in question is the protection of the bearing bush in combustion engines against corrosion caused by the oxidation products of the lubricating oil. The authors used the Pinkevich apparatus (GOST 5162-49) and a radiometric method worked out already earlier (Ref 2). Film destruction was investigated on the surface of lead. Lead plates were put into Mt-16 oil. In the first case, 2.8% of diphenyl sulphide labeled with S^{35} and C^{14}, and 0.066% of stearic acid were introduced into that oil; in the second case, the same amount of nonlabeled admixture and 0.05% of tridecanoic acid labeled with C^{14} were introduced. Figure 1 shows

Card 1/3

4

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the experimental results at 140°C. It appears that there is a synchronism in the formation and destruction of the film. It may be assumed that the synchronism of the vanishing of the acid together with the radicals of the admixture from the lead surface is related to the fact that the acid formed the metal-admixture complex by solvation due to its polarity. Thereby the acid carries over the radicals - because sulphur is more strongly bound to the metal than to the radicals - and disappears with them from the surface. The synchronism of the vanishing of the film formed by the acid and the film observed from sulphur radiation seems to be related to the chemical interaction of the acid with lead sulphide (it takes place after destruction of the complex of the admixture with the metal, i.e. with formation of a lead salt soluble in oil (Refs 1,3,4)). Reaction diagrams of formation and destruction of the protective film on the lead surface are given. Vanishing of the acid and radicals of the admixture in experiments with a phosphorus-containing admixture also showed synchronism (Fig 2). In this case, however, the film caused by the acid and the radicals of the admixture disappear completely and simultaneously. The acid

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seems not to react with the lead phosphide formed in the destruction of the admixture complex with metal due to solvation. This may explain why phosphorus remains on the lead surface so long after the radicals of the admixture have disappeared (Ref 4). There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva

(All-Union Scientific Research Institute for Petroleum and Natural Gas Refining and the Production of Synthetic Liquid Fuels)

PRESENTED: May 18, 1959, by V. I. Dikushin, Academician

SUBMITTED: May 18, 1959

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E194/E184

AUTHORS: Zaslavskiy, Yu.S., Shor, G.I., Monastyrskiy, V.N., and Reznikov, V.D.

TITLE: The Effects of Suppression of Functional Activity when the Components of Oil Additives are Mixed

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No 9, pp 51-57

TEXT: Engine oil additives often contain components with different functions such as neutralising, wetting, anti-corrosion, etc. Tests have shown that a combination of a neutralising component with a protective one gives less engine wear than does the neutralising component alone with the same total metal content in the oil. However, in many cases mixing of additives has resulted in loss of some of their effectiveness. For example, on mixing additives VNII-NP-350 (barium alkylphenolate), TsIATIM-339 (barium disulphide alkylphenolate) and VNII-NP-360 (barium alkylphenolate mixed with zinc dialkyldithiophosphate) suppression of functional activity is observed as will be seen from the test results plotted in Fig 1. This shows results of determinations of the duration of neutralisation of corrosive wear of radioactive sliding parts in a

Card 1/5

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The Effects of Suppression of Functional Activity when the Components of Oil Additives are Mixed

laboratory rig in corrosive acid vapours as function of the barium concentration in oil grade AS-9.5 NKZ. The duration of neutralisation is a linear function of the metal content. Ash determinations on the used oil showed that the tests depleted all the barium in each of the three additives but, with equal initial barium contents in the oil, additive VNII-NP-350 gave much longer neutralisation time than additive TsIATIM-339 and VNII NP-360. This is presumably because the barium in the last two additives was expended not only in neutralising the corrosive acid but also in reacting with other components of the additives, probably those containing sulphur. To verify this, tests were made with specially synthesized additives containing various amounts and kinds of sulphur compounds, as shown in Fig 1. These additives were blended with oil grade AS-9.5 NKZ to constant barium content: the test results are given in Table 1 and Figs 2 and 3, which show the duration of effective neutralisation and the angle of slope of the wear curve of radioactive components after neutralisation, as functions of the sulphur content in the oil for various additives. It will be seen that the neutralising action of barium alkylphenolate varies

Card 2/5

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The Effects of Suppression of Functional Activity when the Components of Oil Additives are Mixed

inversely as the sulphur content of the additive. The different effects of the various sulphur compounds used in the tests are described. It is considered that in some cases the sulphur compounds can easily be split off when the additive is attacked by acid and that the free sulphur evolved interacts with the barium ions to form barium sulphide, so reducing the barium available for neutralisation of acids. The formation of barium sulphide is confirmed by the high rate of wear after effective neutralisation. However, when sulphurised oil is used it may form a protective film after the barium additive is used up, so reducing wear. Interaction between additive components alters the electrical conductivity of oil containing these components as compared with that of the same oil containing each component separately. Fig 4 shows a graph of the electrical conductivity of oil grade AS-9.5 NKZ containing 5% barium alkylphenolate as function of the sulphur content of the blend when sulphurised oil is added to it. The direct current conductivity was measured at a temperature of 100 °C with a microammeter. It will be seen that adding sulphur reduces the conductivity and the curve

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The Effects of Suppression of Functional Activity when the Components of Oil Additives are Mixed

corresponds closely to that of reduction in duration of neutralising effect. Interaction of components with suppression of neutralising effect was also observed on mixing barium alkylphenolate and basic calcium sulphonate with dialkyldithiophosphate, and here too correspondence was observed between the decrease in electrical conductivity and that of duration of neutralising effect. The results of duration of neutralising effect tests given in Table 1 were compared with hundred hour engine tests using a type D-35 engine; see Table 2. The engine test conditions are stated; the fuel contained 1% sulphur. It will be seen that the minimum wear obtained with barium alkylphenolate additive results from the more effective neutralisation. The high barium and low iron content of the deposits is evidence of greater use of barium for neutralisation. Tests with other additives revealed similar correlation between engine tests and those of duration of neutralising effect. Similar correlation was observed in tests on used oil. Fig 5 shows graphs of the change in neutralising effectiveness of oil DS-11 plus additives as function of the operating time of the oil in a diesel

Card 4/5

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