L 7034-66 EWT(1)/EWA(h)
ACC NR: AP5026808 SOURCE CODE: UR/0286/65/000/017/0091/0091

25
23

INVENTOR: Rudnitskiy, B. L.

ORG: none

TITLE: A bridge-type square-law function generator. 25 Class 42, No. 174437

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 91

TOPIC TAGS: electromagnetic wave generator, resistance bridge

ABSTRACT: This Inventor's Certificate introduces a bridge-type square-law function generator with a transformer input. Two adjacent arms of the bridge contain vacuum-tube triodes operating in the region where R_i is a linear function of U_g while fixed resistances are connected in the other two arms. Conversion accuracy is increased by making the control circuit of the generator from two transformer windings connected in opposite phase. The voltage from these windings is fed to the control grids of the tubes. The control circuit also contains a modulating winding which is connected in series with the power supply of the bridge. A compensating winding cophased with the modulating winding is connected in the circuit of the output diagonal.

SUB CODE: EC/ SUBM DATE: 13Jul64/ ORIG REF: 000/ OTH REF: 000
Card 1/1 UDC: 621.314.58.083

09011974

86214
S/103/60/021/012/001/007
B012/B064

16.9500(1024,1031,1132)

AUTHOR: Rudnitskiy, B. Ye. (Leningrad)

TITLE: Determination of the Transmission Functions of Some Systems With Variable Parameters

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 12, pp. 1565-1575

TEXT: The present paper gives a method of determining the transmission functions of systems expressed by ordinary differential equations of the n-th order with variable coefficients if these coefficients are polynomials. The paper (Ref. 1) shows that the transmission function of the dynamic system investigated here is a particular solution of the following differential equation (3): $\sum_{k=0}^{n} \frac{1}{k!} \frac{\partial^k N(t,p)}{\partial p^k} \frac{\partial^k Y(t,p)}{\partial t^k} = M(t,p)$. $Y(t,p)$ is the transmission function of the system investigated. $N(t,p)$ and $M(t,p)$ are obtained from the operators $N(t,D)$ and $M(t,D)$ by substituting p for the operator $D = d/dt$. t is an independent variable and p is a parameter.

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86214

Determination of the Transmission Functions of Some Systems With Variable Parameters

S/103/60/021/012/001/007
B012/B064

In the region of the variable p, relations are derived which determine the transmission function Y(t,p), and a special case of equation (3), equation (5), is investigated. In this connection two theorems are confirmed: Theorem 1): If $Y_1(t,p)$ is the solution of equation (5), the function, formula (6), is a solution of equation (3). Theorem 2): There is a solution Y(t,p) of equation (5), which represents the solution of equation (7). - Such systems are investigated the equations of which have coefficients which are polynomials of the first and second degree. Equation (7) for such systems is solved. - The transmission function of the following three cases is investigated: In equation (3), the coefficient of N(t,p) is 1) linear with respect to t, 2) it is a polynomial of the second degree, and 3) a polynomial of the q-th degree. - It is pointed out that in the general case the use of both theorems instead of equation (3) is convenient in determining the transmission function of a system with variable parameters, if the condition $q < n$ is fulfilled. q is the degree of the polynomial coefficient and n the order of the equation. - By the method described here it is possible to determine the transmission function of a connection in series consisting of inertia-free units (the amplification

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Determination of the Transmission Functions of Some Systems With Variable Parameters

changes in accordance with the polynomial laws) and units with constant parameters (the last unit may have variable parameters). - The method suggested here can be used also in cases where the parameters change quickly and where L. A. Zade's method (Ref. 2) cannot be applied. - The author thanks N. A. Lebedev for his advice. - Two examples are given to illustrate the method suggested here. There are 3 figures and 2 Soviet references.

SUBMITTED: May 23, 1960

Особый интерес будет представлять частный случай уравнения (3):

$$\sum_{k=0}^{n} \frac{1}{k!} \frac{\partial^k N(t, p)}{\partial p^k} \frac{\partial^k Y(t, p)}{\partial t^k} = 1. \tag{5}$$

Теорема 1. Если $Y_1(t, p)$ есть решение уравнения (5), то функция

$$Y(t, p) = \frac{\sum_{v=0}^{s} \frac{1}{v!} \frac{\partial^v M(t, p)}{\partial t^v} \frac{\partial^v Y_1(t, p)}{\partial p^v}}{\frac{1}{q!} \frac{\partial^q N(t, p)}{\partial t^q} \frac{\partial^q Y(t, p)}{\partial p^q} + \frac{1}{(q-1)!} \frac{\partial^{q-1} N(t, p)}{\partial t^{q-1}} \frac{\partial^{q-1} Y(t, p)}{\partial p^{q-1}} + \ldots} \tag{6}$$

$$\ldots + N(t, p) Y(t, p) = 1. \tag{7}$$

RUDNITSKIY, B.Ye. (Leningrad)

Transfer functions of systems with parameters varying in periodic steps. Avtom. i telem. 25 no.9:1285-1293 S '64. (MIRA 17:10)

ACC NR: AP6024371 SOURCE CODE: UR/0280/66/000/002/0121/0126

AUTHOR: Rudnitskiy, B. Ye. (Leningrad)

ORG: none

TITLE: Determining the optimal system according to the maximum probability criterion of incidence

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1966, 121-126

TOPIC TAGS: probability, optimal control, automatic control system, signal analysis

ABSTRACT: The criterion of the maximum probability of incidence in a given region of the output quantity of an automatic control system is here taken as an indicator of the system's efficiency. In this connection, the article defines certain common features of systems optimal with respect to this criterion and presents a finite form of the pertinent solution. The problem is to find the system's parameters assuring the maximum probability P of the incidence of the output quantity x in a given zone $(m+s-\alpha < x < m+s+\beta)_m$ (where $m+s$ is the useful signal) in the region of $m+s$. Thus, the maximum-approximation criterion is

$$P(m+s-\alpha < x < m+s+\beta) = \max, \qquad (1)$$

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ACC NR: AP6024371

where $\alpha + \beta$ is the width of the incidence zone. The degree of approximation of the output quantity x to the overall useful signal m + s is a function of the error $\epsilon = (m + s) - x$. It is shown that criterion (1) may be used to determine optimal approximation in the presence of "white" noise. The transfer function of a system optimal with respect to (1) is calculated. The equation of a selective filter optimally separating signal from noise is derived as a particular example of the applicability of this criterion. "The author is indebted to N. L. Andreyev for valuable suggestions during the execution of this project." Orig. art. has: 44 formulas.

SUB CODE: 12, 09/ SUBM DATE: 08May64/ ORIG REF: 007/ OTH REF: 001

Card 2/2

RUDNITSKIY, B.Ye. (Leningrad)

Problem of the synthesis of systems with variable parameters.
Avtom. i telem. 26 no.2:208-215 F '65.

(MIRA 18:4)

L 8510-65 APGC(b)/ASD(a)-5/SSD/AFWL/AFETR/BSD/ESD(c)/RAEM(1)/ESD(gs)/RAEM(t)

ACCESSION NR: AP4045342 S/0103/64/025/009/1285/1293

AUTHOR: Rudnitskiy, B. Ye. (Leningrad)

TITLE: Transfer functions of systems step-changing their parameters periodically

SOURCE: Avtomatika i telemekhanika, v. 25, no. 9, 1964, 1285-1293

TOPIC TAGS: transfer function, discriminator, synchronous detector, parametric amplifier

ABSTRACT: A method is suggested for determining the transfer functions of dynamic systems whose parameters periodically undergo step-changes, such as time and phase discriminators, coincidence and anticoincidence amplifiers, synchronous detectors, parametric amplifiers, etc. The transfer function of a system $Y(t,p)$ with $M(t,D) \neq 1$ can be found, if the transfer function $Y_1(t,p)$ is known, as a transfer function of a parallel connection of $(m+1)$ variable-gain

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L 8510-65

ACCESSION NR: AP4045342

circuits, where m is the order of the operator M(t,D) of the right-hand member of the system differential equation. Hence, the transfer function is determined for the case when the variable gain can be represented by periodic rectangular pulses or by a periodic sequence of δ-functions. A complicated final formula for $\Gamma(t,p)$ is supplied, and 3 examples illustrating its use are given. Orig. art. has: 3 figures, 41 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 26Mar63 ENCL: 00

SUB CODE: EC, NP NO REF SOV: 007 OTHER: 000

Card 2/2

L 31979-65 EWT(d) IJP(c)

ACCESSION NR: AP5006272 S/0103/65/026/002/0208/0215

AUTHOR: Rudnitskiy, B. Ye. (Leningrad)

TITLE: Synthesis of systems with variable parameters

SOURCE: Avtomatika i telemekhanika, v. 26, no. 2, 1965, 208-215

TOPIC TAGS: variable parameter system, system synthesis, transfer function, impulse response function

ABSTRACT: The problem of constructing a differential equation with variable coefficients on the basis of a known transfer function Y(t, p) is analyzed. The equation sought is written in the form

$$N(t, D)x(t) = M(t, D)f(t), \quad (1)$$

where

$$N(t, D) = \sum_{k=0}^{m} a_k(t)D^k; \quad M(t, D) = \sum_{k=0}^{n} b_k(t)D^k,$$

where D = d/dt is a differential operator, $a_k(t)$ and $b_k(t)$ are the unknown variable coefficients, and x(t) is the reaction of the system to a certain disturbance f(t). Two methods for calculating the coefficients $b_k(t)$ and $a_k(t)$, corresponding to two different forms of the transfer function Y(t, p) are presented. Determination of

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L 31979-65
ACCESSION NR: AP5006272

$a_k(t)$ is reduced to solving a system of linear algebraic equations. It is indicated that though the method for determining $b_k(t)$ looks simple, it requires certain ingenuity and its application in general cases can lead to certain difficulties. The method for determining the coefficients of (1) on the basis of the given transfer function Y(t, p) and under the assumptions that $p = 0$, $b_0(t) = 1$ is presented. After certain preliminary steps, the process of calculating $a_k(t)$ and $b_k(t)$ is reduced to the solution of a system of $2n + 1$ linear algebraic equations with $2n + 1$ unknowns. It is shown how, by using the results obtained, equation (1) can be constructed on the basis of the known impulse-response function. Orig. art. has: 36 formulas.

[LK]

ASSOCIATION: none

SUBMITTED: 23Sep63 ENCL: 00 SUB CODE: MA

NO REF SOV: 003 OTHER: 001 ATD PRESS: 3201

Card 2/2

RUDNITSKIY, B.Ye. (Leningrad)

Some correlations for the transfer functions of systems with variable parameters and their applications. Avtom. i telem. 23 no.7:881-889 Jl '62. (MIRA 15:9)
(Automatic control)

RUDNITSKIY, B.Ye. (Leningrad)

Determination of transfer functions of some systems with variable parameters. Avtom. i telem. 21 no. 12:1565-1576 D '60. (MIRA 14:1)

(Automatic control) (Differential equations)

PEROV, Vitaliy Pavlovich; YAKHONTOV, G.K., kand. tekhn. nauk, retsenzent; RUDNITSKIY, I.F., nauchnyy red.; NIKITINA, R.D., red.; TSAL, R.K., tekhn. red.

[Designing of radar tracking systems with consideration of random actions] Raschet radiolokatsionnykh slediashchikh sistem s uchetom sluchainykh vozdeistvii. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1961. 167 p. (MIRA 14:8)

(Radar)

VANIN, Aleksandr Ivanovich; PRAVDIN, L.F., prof., retsenzent; RUDNITSKIY, I.N., prepodavatel', retsenzent; STEL'MAKHOVICH, M.L., red.; ARNOL'DOVA, K.S., red.izd-va; BACHURINA, A.M., tekhn.red.

[Dendrology] Dendrologiia. Moskva, Goslesbumizdat, 1960. 248 p. (MIRA 14:1)

1. Institut lesa Akademii nauk SSSR (for Pravdin). 2. Chuguyevo-Babchanskiy lesnoy tekhnikum (for Rudnitskiy).
(Trees)

KOLPIKOV, M.V.; NESTEROV, V.G., professor, retsenzent; RUDNITSKIY, I.N., retsenzent; TIMOFEYEV, V.P., redaktor; ARNOL'DOVA, K.S., redaktor; KARASIK, N.P., tekhnicheskiy redaktor

[Forestry and dendrology] Lesovodstvo s dendrologiei. Izd. 3., dop. i perer. Moskva, Goslesbumizdat, 1954. 495 p. (MLRA 7:10)
(Trees) (Forests and forestry)

VANIN, Aleksandr Ivanovich; PRAVDIN, L.F., professor, retsenzent; RUDNITS-KIY, I.N., prepodavatel' tekhnikuma, retsenzent; STEL'MAKHOVICH, M.L., redaktor; KARASIK, N.P., tekhnicheskiy redaktor

[A guide to trees and shrubs] Opredelitel' derev'ev i kustarnikov. Moskva, Goslesbumizdat, 1956. 211 p. (MLRA 9:10)
(Trees) (Shrubs)

KOLPIKOV, Mikhail Vasil'yevich; TIMOFEYEV, V.P., prof., retsenzent; RUDNITSKIY, I.N., retsenzent; DANILOV, M.D., red.; SVETLAYEVA, A.S., red.izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Forestry]Lesovodstvo. Izd.4., dop. i perer. Moskva, Goslesbumizdat, 1962. 400 p. (MIRA 16:3)
(Forests and forestry)

ZONN, V. [Zonn, Wlodzimierz], prof.; RUDNITSKIY, K. [Rudnicki, Konrad], doktor; PARENAGO, P.P., red.; PAVLOVSKAYA, Ye.D., kand.fiziko-matemat.nauk, red.; REZCUKHOVA, A.G., tekhn.red.

[Stellar astronomy] Zvezdnaia astronomiia. Pod red. P.P. Parenago. Moskva, Izd-vo inostr.lit-ry, 1959. 448 p. (MIRA 13:1)

1. Direktor astronomicheskoy observatorii Varshavskogo universiteta (for Zonn).

(Stars)

ZOMM, V.; RUDNITSKIY, K.

Development of the theory of subsystems in stellar cosmogony.
Ist.-astron.issl. no.7:181-210 '61. (MIRA 14:9)
(Stars) (Cosmogony)

STROYEVA, S.S.; RUDNITSKIY, L.A.; FOMIN, O.K.; KUL'KOVA, N.V.; GEL'BSHTEYN, A.I.

Surface properties of a catalyst for oxidizing ammonolysis of propylene. Kin. i kat. 5 no.2:355-356 Mr-Ap '64.
(MIRA 17:8)

1. Fiziko-khimicheskiy institut imeni Karpova.

RUDNITSKIY, L.A.; KUL'KOVA, N.V.

Kinetics of oxygen adsorption on silver at low pressures. Dokl. AN SSSR 162 no.6:1330-1332 Je '65. (MIRA 18:7)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Submitted February 1, 1965.

RUDNITSKIY, L.A.; KUL'KOVA, N.V.

Variation in work function of electrons in the adsorption of oxygen on a silver catalyst. Dokl. AN SSSR 162 no.3:617-620 My '65. (MIRA 18:5)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Submitted January 11, 196.

Krivosheyev, A. Ya. and Zudnikl'ir, I. S. - "On the melting of cast iron in a flame furnace," Mareh, Trudy (Dnepropetr. metallurg. in-t im. Stalina), Issue IV, Litejnoye proizvodstvo. Metallovedeniye. 1948, p. 31-43.

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

RUDNITSKIY, L.S.:

RUDNITSKIY, L.S.: "Investigation of the effect of smelting technology and of cast-iron modifications on the service qualities of sheet-rolling rolls". Dnepropetrovsk, 1955. Min Higher Education Ukrainian SSR. Dnepropetrovsk Order of Labor Red Banner Metallurgical Inst imeni I.V. Stalin. (Dissertations for the Degree of Candidate of Technical Sciences).

SO: Knizhnaya letopis' No 44, 29 October 1955. Moscow.

- RUDNITSKIY, L S

Centralized production of magnesium alloys. A. B. Krivosheev, G. B. Belal, and L. S. Rudnitskii. *Liteinoe Proizvodstvo* 1956, No. 3, 24–5.—Presently used Mg-Si alloys employed for nodulizing cast iron are made by immersing Mg ingots in a ladle of molten FeSi provided with a lid and an immersing device. In making 5.5–14.5% Mg alloy, the reaction takes place in 20–30 sec. and is very quiet, provided the ingots are freed from oil and are dry. The device is described. J. D. Gat

KAL'YANOV, T.A., inzhener; BREZHNEV, Ya.I., inzhener; RUDNITSKIY, L.S., inzhener; KOTESHOV, N.P., inzhener; YEZERSKIY, B.B., inzhener; CHERKUN, N.A., inzhener; SUSLOVICH, Z.I., inzhener; ZABELIN, N.K., inzhener.

Improving the quality of cast-iron rolls for shape rolling. Stal' 16 no.7:647-649 Jl '56. (MLRA 9:9)

1. Zavod imeni Dzerzhinskogo, Dnepropetrovskiy chugunoval'-tsedelatel'nyy zavod i Dnepropetrovskiy metallurgicheskiy institut.
(Rolls (Iron mills)--Quality control)

18(4) SOV/128-59-7-23/25

AUTHOR: Krivosheyev, A.F., Doctor of Technical Sciences, Rudnitskiy, L.Z., Candidate of Technical Sciences and Belay, G.Ye., Engineer

TITLE: Up-to-Date Methods in Producing Magnesium Master-Alloys

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 7, pp 45-47 (USSR)

ABSTRACT: The preparation of industrial castings from magnesium cast iron with spheroidal graphite formation (spheroidal cast iron) requests an improvement of the cast iron processing method. So far the Mg-Alloy is produced by the consumer and according to different methods of production. It is urgently necessary to accomplish an immediate central production of Mg-alloys. Out of the many domestic and foreign patents in this field the silicon-Mg and the nickel-Mg alloys have found the widest propagation. The various methods described in the literature are uneconomic. During 1955/56 the Metallurgical Plant in Zaporozh'ye had elaborated a

Card 1/2

Up-to-Date Methods in Producing Magnesium Master-Alloys

method for the central production of alloys (Liteynoye Proizvodstvo, 1956, Nr 3). This plant has produced 20 tons of Si-Mg alloy with a contents of 6 to 14% of magnesium. The "new" method suggested by the author D. Ye. Mikhukhin and Belousov L.A(Liteynoye Proizvodstvo, 1958 Nr 5) is incorrect, too expensive, and, following this suggestion, it is not possible to produce alloys of equal value. The authors of this article suggest an improved method and do not agree with the quoted authors fighting a central production of alloys. The authors of this article request from GOST the elaboration of uniformly binding work specifications, but not based on the method suggested by Mikhukhin and Belonsov. There are 2 diagrams and 9 Soviet references

Card 2/2

GOL'DSHTEYN, L.B., inzh.; RUBNITSKIY, L.S., kand. tekhn. nauk

Defects in the working surface of rolls made of magnesium cast iron. Lit. proizv. no.1:5-6 Ja '66.

(MIRA 19:1)

L 24692-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c) JD

ACC NR: AP6015829 SOURCE CODE: UR/0286/65/000/019/0072/0072

INVENTOR: Kribosheyev, A. Ye.; Koteshov, N. P.; Parshin, A. I.; Rudnitskiy, L. S.; Knyazhanskiy, M. U.; Rudnev, O. N.; Gandzha, G. A.

ORG: none

TITLE: Alloyed cast iron. Class C 22c; 40b, 37 sup oo B 21b; 7a,19, No. 175236

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 72

TOPIC TAGS: cast iron, hardness, wear resistance, chemical composition, iron alloy

ABSTRACT: An alloy cast iron is proposed with high wear resistance and hardness which has the following chemical composition (in %): 3.8 C (max), 0.3-0.7 Si, 2.0-3.5 Mn, 0.05-0.3 Cr, 1.2-2.2 Ni, 0.3 Ti (max) and 0.4 P (max). [JPRS]

SUB CODE: 11, 20, 07 / SUBM DATE: none

Card 1/1 FW UDC: 669.15-196:771.2-233.12

SHILOV, P.M., doktor tekhn.nauk; KRIVOSHEYEV, A.Ye., doktor tekhn.nauk; DEMIDOVICH, N.S., kand.tekhn.nauk; RUDNITSKIY, L.S., kand.tekhn.nauk; FLOROV, K.V., kand.tekhn.nauk; SHAPOVAL, I.M., kand.tekhn.nauk; OLEYNICHENKO, V.G., inzh.; ZAIKIN, N.A., inzh.; TITOV, A.I., inzh.

Replacing alloyed steels by high-strength cast iron in manufacturing machine parts. Mashinostroenie no.4:59-61 Jl-Ag '65.
(MIRA 18:8)

KRIVOSHEYEV, A.Ye.; LEV, I.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.

Distribution of cerium between the phases of cast iron. Lit.proizv. no.7:23-24 Jl '64. (MIRA 18:4)

KRIVOSHEYEV, A. Ye.; LEV. I. Ye.; RUDNITSKIY, L.S.; BELAY, G. Ye.

Distribution of cerium among phases in gray cast iron and its effect on the structure. Izv. vys. ucheb. zav.; chern. met. 8 no.1:130-135 '65 (MIRA 18:1)

1. Dnepropetrovskiy metallurgicheskiy institut.

KRIVOSHEYEV, A.Ye., doktor tekhn.nauk; RUDNITSKIY, L.S., inzh.; BELAY, G. Ye., inzh.; NIKOLAYEV, N.A., inzh.

Rolls made of low-phosphorus cast iron with spheroidal graphite. Mashinostroenie no.4:44-47 Jl-Ag '63. (MIRA 17:2)

1. Dnepropetrovskiy metallurgicheskiy institut.

KRIVOSHEYEV, A.Ye.; LEV, I.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.

Cerium distribution among phases in white cast iron. Fiz. met. i metalloved. 16 no.2:313-316 Ag '63. (MIRA 16:8)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Cast iron--Metallography)
(Cerium--Metallography)

KRIVOSHEYEV, A.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.; NIKOLAYEV, N.A.; Prinimali uchastiye: PARSHIN, A.I.; KNYAZHANSKIY, M.U.; BELYY, N.I.; CHERKUN, N.A.; NECHAYEVA, Z.A.; LEV, I.Ye.; BUNINA, Yu.K.

Iron mill rolls of cerium cast iron. Stal' 23 no.3:278-282 Mr '63. (MIRA 16:5)

1. Dnepropetrovskiy metallurgicheskiy institut (for Krivosheyev, Rudnitskiy, Belay, Nikolayev, Lev, Bunina). 2. Dnepropetrovskiy chugunoval'tsedelatel'nyy zavod (for Parshin, Knyazhanskiy, Belyy, Cherkun, Nechayeva).

(Rolls (Iron mills))

S/137/61/000/007/034/072
A060/A101

AUTHORS: Krivosheyev, A. Ye., Rudnitskiy, L. S.

TITLE: Perspectives for increasing the durability of working and idling rolls of continuous thin-sheet mills

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1960, 16, abstract 7D124 ("Tr. Konferentsii: Tekhn. progress v tekhnol. prokatn. proiz-va". Sverdlovsk, Metallurgizdat, 1960, 418-434)

TEXT: On the basis of observations carried out upon the operation of thin sheet hot-rolling mills 1680 and 1450 it was established that in the stands 5-8 it is expedient to use two-layer working rolls made of medium alloy iron (2.6-3.2 pc Ni and 0.5-0.8 pc Cr) with working layer hardness 66-72 H_{sh}, in the stands 9-10 - higher alloy iron (3.8-4.5 pc Ni and 0.8-1.0 pc Cr) and working layer hardness 78 - 83 H_{sh}. For the stands 5-8 the rolls should be tempered at 180 - 250°C and for stands 9 - 10 at 100 - 150°C.

A. Bulanov

[Abstracter's note: Complete translation]

Card 1/1

21(2) PHASE I BOOK EXPLOITATION SOV/2708

Atomnaya energiya i flot; sbornik statey (Atomic Energy and the Navy; Collection of Articles) Moscow, Voyenizdat, 1959. 232 p. (Series: Nauchno-populyarnaya biblioteka) Number of copies printed not given.

Ed.: Ya. M. Kader; Tech. Ed.: A.M. Gavrilova; Ed. and Compiler: L. D. Chernous'ko, Engineer, Captain.

PURPOSE: This book is intended for the general reader.

COVERAGE: The papers in this collection discuss in popular style, and on the basis of data published in the Soviet and non-Soviet press, problems of the use of atomic and hydrogen weapons in combat operations at sea. The collection includes reports on the damaging factors of a nuclear explosion and on the immense power of this weapon of mass destruction. A number of articles are devoted to the antinuclear defense of ships and of shore objects, and to the introduction of nuclear power plants in naval vessels. Also included in the collection are papers dealing with the future prospects for naval use of nuclear energy, and with the construction of the world's first atomic icebreaker, the "Lenin", which is expected to play an important part in the further conquest of the Arctic regions. The collection also contains papers published in the journal Sovetskiy flot in 1955 - 1958, in revised and supplemented form.

AVAILABLE: Library of Congress (U767.C59)

PAKHOMOV, S.; RUDNITSKIY, M.

Outmoded wage terms. Sots.trud. no.9:63-66 S '56. (MLRA 9:12)
(Copper mines and mining) (Wages)

RUDNITSKIY, M.

Monograph on the organization of labor and production ("Organization and planning in nonferrous metallurgical plants" by I. Gratsershtein, R. Malinova. Reviewed by M. Rudnitskii). Sots. trud no.12:119-122 D '56. (MLRA 10:2)

(Nonferrous metal industries--Production standards)
(Gratsershtein, I.) (Malinova, R.)

KORYAGIN, N.; RUDNITSKIY, M.; SUCHILIN, A.

Progressive forms of labor organization in mines of the metallurgical industry. Sots.trud. no.1:60-64 Ja '57. (MLRA 10:4)
(Mines and mineral resources)

SMIRNOV, Ye.; RUDNITSKIY, M.

Observe state directives concerning wage payments strictly. Sots. trud 5 no.2:65-69 F '60. (MIRA 13:6)
(Nonferrous metal industries--Production standards)
(Wages)

ACC NR: AP6036777 (N) SOURCE CODE: UR/0401/66/000/011/0028/0029

AUTHOR: Rudnitskiy, M. (Engineer-Rear Admiral)

ORG: None

TITLE: In the depths of the planet "Ocean"

SOURCE: Starshina-serzhant, no. 11, 1966, 28-29

TOPIC TAGS: oceanographic equipment, oceanographic expedition, oceanographic personnel, oceanographic research facility, oceanographic ship, oceanography

ABSTRACT: A short survey of the development and achievements of special underwater research apparatus, beginning with the Hartman spherical bathysphere of 1911, is made. The Beebe and Barton bathyspheres, the USSR-developed "Hydrostat," "Sever-1," and "Atlant-1," are mentioned and the research submarine "Severyanka" is cited as the first to provide mobility for underwater research. Foreign-made apparatuses and the depths they have achieved, including Cousteau's "Denise," the U.S. "Alvin" and "Aluminant," the "Trieste," and "Archimede" are described in brief. Current Soviet ships engaged in oceanographic research, including the 6,800 ton "Akademik Kurchatov," which began operations in 1966, and certain of the Soviet scientists whose works are well known in the field of oceanography, such as Yu. M. Shokal'skiy, V. V. Shuleykin, M. V. Klenova, L. A. Zenkevich and V. P. Zenkevich, are mentioned. The next 20 to

Card 1/2

ACC NR: AP6036777

30 years will see mankind putting to use a considerable part of the wealth contained in the seas and oceans. Orig. art. has: 2 figures.

SUB CODE: 08,13/SUBM DATE: None

Card 2/2

RUDNITSKIY, M.A.; KANAYEV, V.F.

Reviews and bibliography. Okeanologiia 5 no.1:[illegible]

L 04712-67 EWT(1) SCTB TCH/DD/GW

ACC NR: AP6026984 (N) SOURCE CODE: UR/0029/66/000/007/0005/0006

AUTHOR: Rudnitskiy, M. A. (Retired rear admiral; Engineer; Submarine designer) 18

ORG: none 17

TITLE: Underwater ships of science 13

SOURCE: Tekhnika-molodezhi, no. 7, 1966, 5-6

TOPIC TAGS: oceanographic ship, submarine, shipbuilding engineering

ABSTRACT: In a discussion of prospects for scientific deep-sea submersibles, retired Rear Admiral M. A. Rudnitskiy, a well-known Soviet submarine design engineer, points out that the problems of building deep-submergence vessels differ substantially from those of building military submarines. The main capability required of deep-sea submersibles is that of submerging to great depths. It is recommended that they be classified according to their operating depths, which are as follows: up to 1000 m for operations in coastal waters, on continental shelves, and on some continental slopes; 2000, 6000, and 11,000 m for operations on continental slopes and in ocean basins. The vertical maneuvering of deep-sea submersibles must be performed by vertical

Card 1/2

L 04712-67

ACC NR: AP6026984

screw propellers or by disposing of ballast. Based on experience with the world's four bathyscaphes, new designs will feature improved maneuverability, seaworthiness, automation, and living conditions, a higher underwater speed, and the replacement of the gasoline presently used for buoyancy. Pyrocerams and glass-reinforced plastics are considered promising materials for future submersibles and 0.82—0.84-specific gravity diesel fuel will be used in buoyancy tanks. The future bathyscaphe will consist of a streamlined exterior hull of glass-reinforced plastics and several durable spheres or cylinders of a weldable alloy steel. All submersibles with diving depths of 2000, 6000, and 11,000 m will be equipped with an additional sphere on deck for observation purposes. A ballast tank in the bathyscaphe's center will provide a living area during surface operations. Mounted on the exterior hull of the 2000- and 6000-m depth vessels will be 2 spheres and 2 cylinders. These cylinders will carry small diesel generators and storage batteries. On 11,000-m depth vessels will be mounted 4 spheres. The relatively high freeboard of the new bathyscaphes will increase their seaworthiness. The submersibles will be towed to their base of operation, but when necessary they will be able to navigate under their own power.

Orig. art. has: 2 figures. [ATD PRESS: 5083-F]

SUB CODE: 13, 08 / SUBM DATE: none

Card 2/2 fv

SHESTEPEROV, I.A.; RUDNITSKIY, M.A.

Reviews and bibliography. Okeanologiia 5 no.5:928-930
'65. (MIRA 18:11)

26

JUN 25 1963

RUDNITSKIY, M.

PHASE I BOOK EXPLOITATION SOV/6261

Kernenergie und Flotte; Artikelsammlung (Nuclear Energy and the Navy; Collection of Articles) [Berlin] Deutscher Militarverlag [1961]. 232 p. Errata slip inserted. 2000 copies printed.

Translation from the Russian of: Atomnaya energiya i flot.

Translator: Erika Steuk, Lieutenant Commander. Responsibility for German edition: Claus Gruszka, Engineer; Ed.: Klaus Krumsieg.

PURPOSE: This collection of articles is intended for officers of the army, coast guard, and merchant marine.

COVERAGE: The book, a translation from the Russian, contains 25 articles dealing with the application of nuclear weapons to naval combat operations. Chapters 19 and 25 have been supplemented with additional data for this edition. The devastating features of nuclear explosions are discussed. Attention is also given to the protection of personnel, ships, and coastal facilities against nuclear weapons, and to the present and future applications of nuclear

Card 1/3

Nuclear Energy and the Navy (Cont.) SOV/6261

power plants to shipping. No personalities are mentioned. There are 16 references: 10 Russian (including 3 translations from English-language sources), 1 French, 1 German, 1 English, 1 American, and 2 either English or American.

TABLE OF CONTENTS:

Card 2/6

POGOSTIN, S.; RUDNITSKIY, M.

"Organizing and planning the industrial enterprises of nonferrous metallurgy" by I.M. Gratsershtein, R.D. Malinova. Reviewed by S. Pogostin, M. Rudnitskii. Sots.trud. 7 no.6:152-155 Je '62. (MIRA 16:2)

(Nonferrous metal industries)
(Gratsershtein, I.M.) (Malinova, R.D.)

RUDNITSKIY, M.

Nonferrous metallurgy after the transfer to a shortened workday and the new wage system. Sots. trud 5 no.11:52-59 N '60.
(MIRA 14:1)
(Nonferrous metal industries) (Hours of labor)
(Wage payment systems)

RUDNITSKIY, M.

A book about new labor conditons and wages at enterprises of nonferrous metallurgy ("Shortened workday and new wages at enterprises of nonferrous metallurgy" by E.S. Shteinberg and others. Reviewed by M. Rudnitskii.) Sots.trud 5 no.4:155-158 Ap '60. (MIRA 13:9)
(Nonferrous metal industries) (Wages)
(Shteinberg, E.S.)

RUDNITSKIY, Mikhail L'vovich; SUDRAB, Viktor Aleksandrovich; SUROVA, V.A., red. izd-va; MINSKER, L.I., tekhn. red.

[Handbook for miners engaged in underground mining of nonferrous ores, diamonds, and mica]Pamiatka dlia rabochikh, zaniatykh na podzemnykh rabotakh po dobyche rud tsvetnykh metallov, almazov i sliudy. Moskva, Gosgortekhizdat, 1962. 153 p. (MIRA 15:10)

(Mine management)

ARKHIPTSEV, D.A., kand. tekhn. nauk; KUDRITSKIY, M.P., inzh.; SKLYAROV, Yu.S., inzh.

Selection of optimal wire sizes in power network design. Elektrichestvo no.8:44-48 Ag '65. (MIRA 18:9)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

ARZAMASTSEV, Dmitriy Aleksandrovich, kand.tekhn.nauk, dotsent; RUDNITSKIY, Mstislav Petrovich, assistent

Use of elliptical functions in the analysis of the dynamic stability of synchronous machines. Izv.vys.ucheb.zav.; elektromekh. 8 no.3:291-299 '65. (MIRA 18:5)

1. Zaveduyushchiy kafedroy elektricheskikh stantsiy, setey i sistem Ural'skogo politekhnicheskogo instituta (for Arzamastsev). 2. Kafedra elektricheskikh stantsiy, setey i sistem Ural'skogo politekhnicheskogo instituta (for Rudnitskiy).

AKZAMASTSEV, D.A., dotsent, kand. tekhn. nauk; KRICHENOVA, I.A., dotsent, kand. tekhn. nauk; RUDNITSKIY, M.P., assistent

Some problems in studying asynchronous connections and resynchronization regimes in power systems. Sbor. nauch. trud. Ural. politekh. inst. no.122:216-225 '61. (MIRA 17:12)

RUDNITSKIY, M.P.

Conference of the readers of "Elektromekhanika." M.P. Rudnitskii.
Izv. vys. ucheb. zav.; elektromekh. 6 no.4:531 '63.
(MIRA 16:7)

1. Uchenyy sekretar' sektsii energetiki i elektrotekhniki
Ural'skogo nauchno-tekhnicheskogo soveta.
(Electric engineering--Periodicals)

RUDNITSKIY, M.P., inzh.; BOGATYREV, L.L., inzh.

Periodizing attachments to analog computers. Izv. vys. ucheb. zav.; energ. 6 no.2:42-44 F '63. (MIRA 16:3)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova. Predstavlena kafedroy elektricheskikh stantsiy, setey i sistem.
(Electronic analog computers)

ACCESSION NR: AP4019506 S/0075/64/019/003/0312/0315

AUTHOR: Malkova, O. P.; Zhukova, A. N.; Rudnevskiy, N. K.

TITLE: A chemical spectrographic method for determining indium, gallium, bismuth, antimony, arsenic in germanium films

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 3, 1964, 312-315

TOPIC TAGS: spectrographic analysis, chemical-spectrographic analysis, indium, gallium, bismuth, antimony, arsenic, germanium, quantitative analysis

ABSTRACT: A method was developed for determining In, Ga, Bi, Sb, and As impurities in germanium films spray-coated on a glass plate. The impurities are first extracted from the germanium into carbon powder of spectral purity; the germanium is distilled off as the tetrachloride. The spectrographic analysis is carried out in a d. c. arc, using synthetic standards on a carbon powder base with impurity elements added. The absolute sensitivity of a determination is

ACCESSION NR: AP4019506

from 5 x 10^{-7} for As to 5 x 10^{-9} for Ga and In. The accuracy of the method is ± 15%. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry of Gor'ky State University)

SUBMITTED: 23May63 DATE ACQ: 31Mar64 ENCL:00

SUB CODE: CH NO REF SOV: 004 OTHER: 003

Card 2/2

RUDNITSKIY, N.L.

Classification of vacillary dysentery. Zhur.mikrobiol.epid. i immun. no.11:69-70 N '55. (MLRA 9:1)

1. Iz kliniki infektsionnykh bolezney Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.
(DYSENTERY, BACILLARY, classification)

RUDNITSKIY, N. M., (Engr)

Dissertation: "An Investigation of the Endurance of the Materials for the Heavily Loaded Bearings of Automobile Engines." Cand Tech Sci, State Union Order of Labor Red Banner Sci Res Automobile and Automotive Inst, 30 Jun 54. (Vechernyaya Moskva, Moscow, 22 Jun 54)

SO: SUM 318, 23 Dec 1954

RUDNITSKIY, N.M., kandidat tekhnicheskikh nauk; OSIPYAN, A.V., kandidat tekhnicheskikh nauk, redaktor; KOZLOVSKIY, I.S., kandidat tekhnicheskikh nauk, redaktor; ZIL'BERBERG, Ya.G., inzhener, redaktor; BRILING, N.R., doktor tekhnicheskikh nauk, professor, redaktor; KALISH, G.G., doktor tekhnicheskikh nauk, professor, redaktor; PEVZNER, Ya.M., doktor tekhnicheskikh nauk, professor, redaktor; KRUSHCHEV, M.M., doktor tekhnicheskikh nauk, professor, redaktor; RAMAYYA, K.S., doktor tekhnicheskikh nauk, redaktor; LIPGART, A.A., professor, redaktor; PRYADILOV, V.I., kandidat tekhnicheskikh nauk, redaktor; ROZANOV, V.G., kandidat tekhnicheskikh nauk, redaktor; CHISTOZVONOV, S.B., inzhener; BROKSH, V.V., inzhener, redaktor; BAUMAN, I.M., redaktor; UVAROVA, A.F., tekhnicheskiy redaktor.

[Endurance of materials for automobile engine sliding friction bearings] Vynoslivost' materialov dlia podshipnikov skol'zheniia automobil'nykh dvigatelei. (Moscow. Gosudarstvennyi nauchno-issledovatel'skii i avtomobil'nyi institut. [Trudy], no.76) 1955 54 p. (MLRA 9:4)

1. Direktor Nauchno-issledovatel'skogo avtomotornogo instituta (for Osipyan). 2. Chlen-korrespondent AN SSSR (for Briling).
(Bearings (Machinery)) (Automobiles--Engines)

RUDNITSKIY, N.M.

New Method of Evaluating the Fatigue-Strength of Surface Layers and Coatings. N. M. Rudnitskii. (*Zavodskaya Laboratoriya*, 1955, 21, (5), 590–594). [in Russian]. The effects of electrolytic and other deposits on the fatigue behaviour of the parts they cover are discussed and the evaluation of such effects on the basis of the deformation-properties of the deposited material is considered. The deposition of alloys rather than pure metals is recommended.

VMH

AID P - 4260

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 18/33

Authors : Lakedemonskiy, A. V., Engineer, B. V. Pogozhev, Engineer, N. M. Rudnitskiy, Kand. Tech. Sci., and I. Ye. Fokin

Title : Results of operational tests of the new anti-friction alloy SOS 6-6.

Periodical : Vest. mash., #1, p. 55-56, Ja 1956

Abstract : The new anti-friction alloy SOS 6-6 is analysed as sleeve bearing metal for carburetor engines. Its composition is 5.5-6.5% Sn, 5.5-6.5% Sb and the rest Pb. This alloy proved to be quite satisfactory and much cheaper than the previously used tin-base babbit B-89 and lead-base babbit BT.

Institution : None Moscow Automobile Plant and Automobile-Engine Sci Inst.

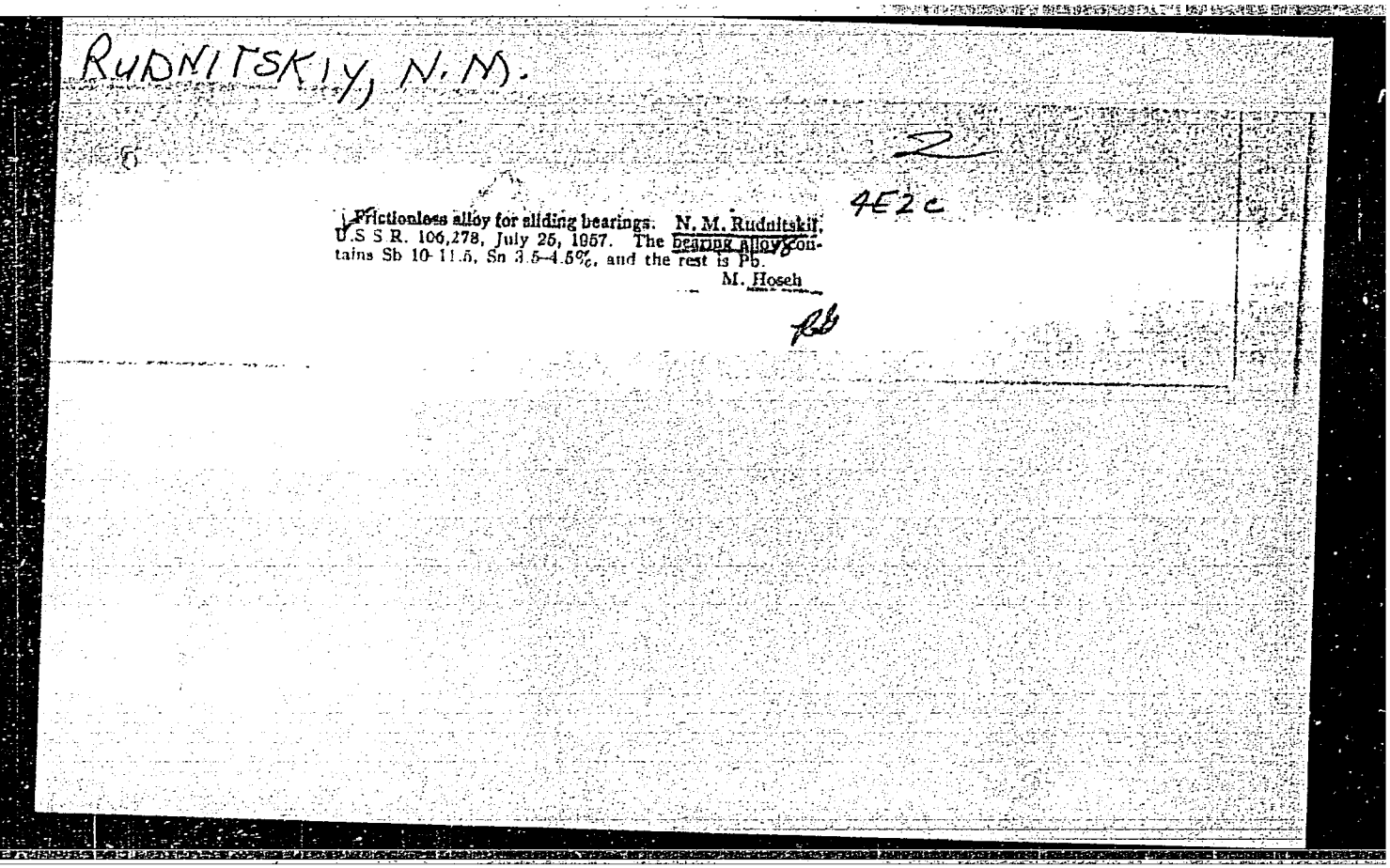
Submitted : No date

Rudnitskii, N. M.

4

New bearing alloy. N. M. Rudnitskii and A. V. Lakedemonskii (Stalin Automobile Plant, Moscow). *Avtomobil. i Traktor. Prom.* 1956, No. 2, 9-12.—The proposed alloy contains 5-6% Sn and 5-6% Sb, the rest Pb, has a low modulus of elasticity which prevents its chipping in use and becomes corrosion-resistant in acidified lubricating oil after 50-80 hrs. I. D. Gat

Tank Sci Res. Automotive Inst.



RUDNITSKIY, N. M.

4E2c

Frictionless alloy for sliding bearings. N. M. Rudnitskii, U.S.S.R. 106,278, July 25, 1957. The bearing alloy contains Sb 10-11.5, Sn 3.5-4.5%, and the rest is Pb.

M. Hoseh

RUDNITSKIY, N.M., kand. tekhn. nauk; VEDENYAPIN, G.A., otv.red.; KOZLOVSKIY, I.S., kand.tekhn.nauk, red.; ZIL'BERBERG, Ya.G., inzh. zamestitel' otv.red. BRILING, N.R., doktor tekhn.nauk, prof., red.; KALISH, G.G., doktor tekhn.nauk, prof., red.; PEVZNER, YA.M., doktor tekhn.nauk, prof., red.; KHRUSHCHEV, M.M.; doktor tekhn.nauk, prof., red. RAMAYVA, K.S., doktor tekhn.nauk, red.; LIPGART, A.A., prof., red.; PRYADILOV, V.I., kand. tekhn. nauk, red.; ROZANOV, V.G., kand. tekhn nauk, red.; CHISTOZVONOV, S.B., inzh., red.; AVAKIMOV, G.G., red.izd-va; SHIKIN, S.T., tekhn. red.

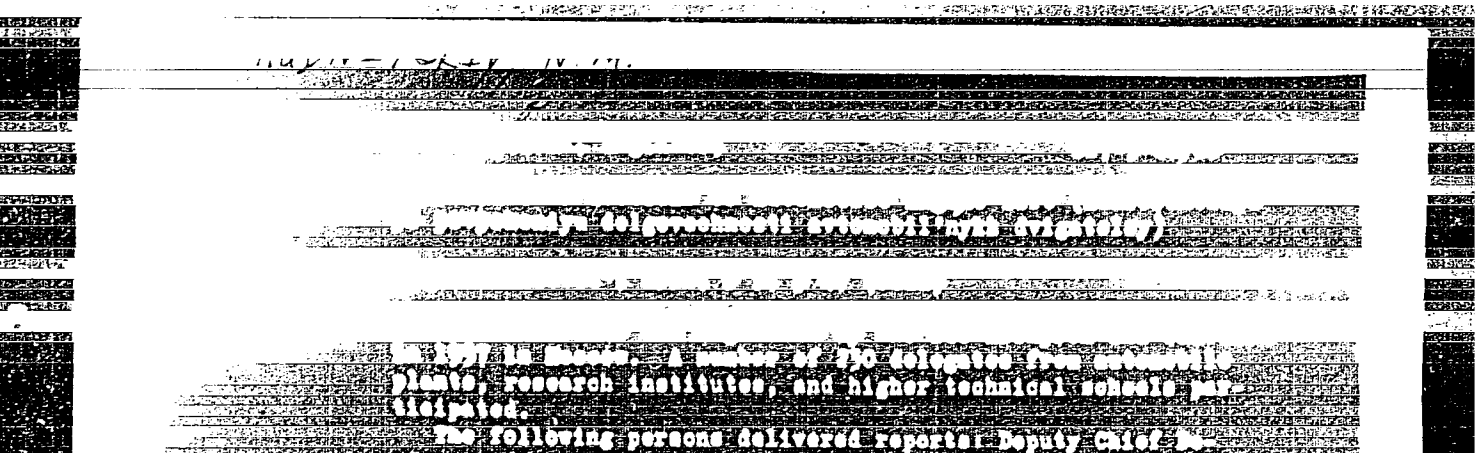
[Investigating the durability of crankshafts in IAAZ diesel engines] Issledovanie vynoslivosti kolenchatykh valov dizelei IaAZ Moskva, Gos. nauchn.-tekhn. izd-vo mashinostroitel'noi lit-ry, 1957. 30 p. (Moscow. Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i avtomotornyi institut [Trudy], no.8a). (MIRA 11:4)

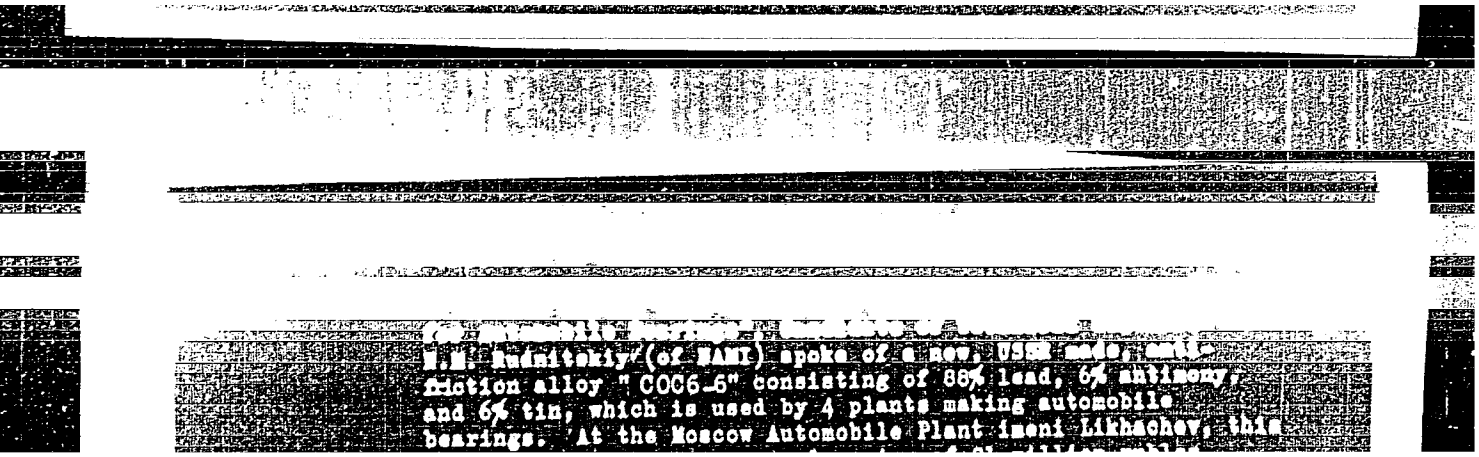
1. Direktor Gosudarstvennogo soyuznogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo avtomobil'nogo i avtomotornogo instituta (for Vedenyapin). 2. Zamestitel' direktora po nauchnoy chasti Gosudarstvennogo soyuznogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo avtomobil'nogo i avtomotornogo instituta (for Kozlovskiy). 3. Chlen-korrespondent AN SSSR (for Briling).
(Cranks and crankshafts) (Diesel engine)

RUDNITSKIY, N.M., kandidat tekhnicheskikh nauk

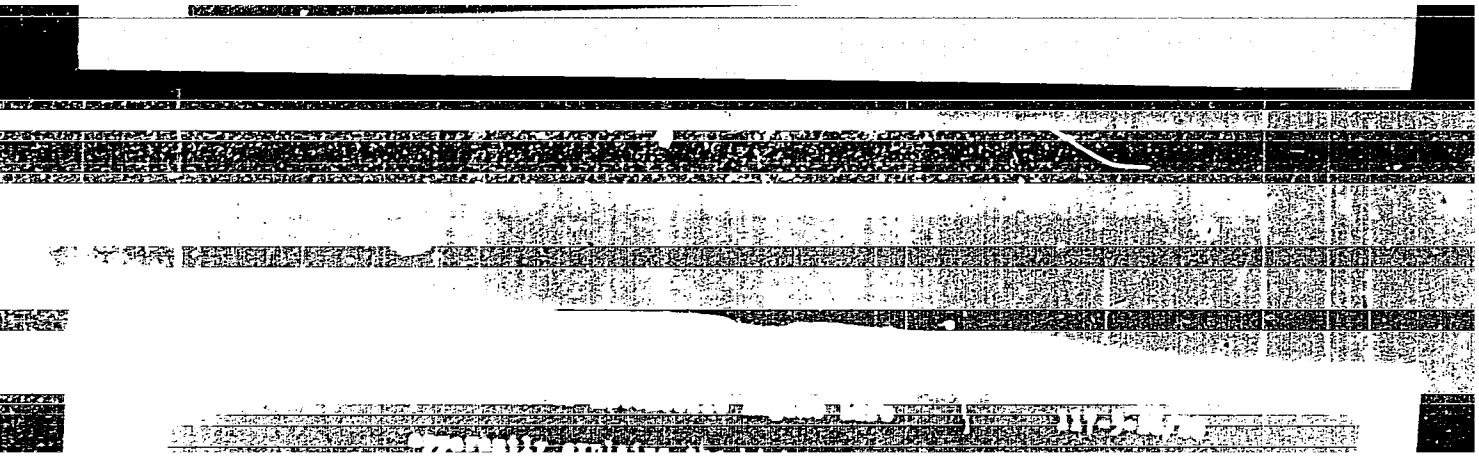
Effect of hardening agents on the strength of crankshafts.
Avt.i trakt.prom. no.3:21-26 Mr '57. (MLRA 10:5)

1. Nauchno-issledovatel'skiy avtomotornyy institut.
(Steel, Automobile--Testing)
(Cranks and crankshafts)





I.N. Kudinitskiy (of NAMI) spoke of a new, USSR-made, anti-friction alloy "COC6-6" consisting of 88% lead, 6% antimony, and 6% tin, which is used by 4 plants making automobile bearings. At the Moscow Automobile Plant imeni Likhachev, this



APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445930012-2"

AUTHOR: Rudnitskiy, N.M.

32-1-53/55

TITLE: A Device for the Determination of the Mechanic Properties of Lead Alloys at Increased Temperatures (Prisposobleniye dlya opredeleniya mekhanicheskikh svoystv svintsovykh splavov pri povyshennykh temperaturakh).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 120-121 (USSR)

ABSTRACT: The device recommended in this paper is an accessory device to be used with the well-known Soviet "Gagarin press" and is intended to be used for determining pressure on samples of 36 mm length and 12 mm diameter with a maximum expansion of up to 50%. In the case of the press mentioned, it is provided that only objects of up to 6 mm diameter can be dealt with. It is the purpose of this device to obtain particularly good results when subjecting samples of lead alloys (in this case lead-antimony-tin) to a tensile test in a hot oil bath (100°) or in an oil bath at room temperature. As the illustration of the accessory device shows, it consists of a thermostat of the type "TC-15", which warrants constant circulation of the hot oil in the oil bath in which the sample is

Card 1/2

A Device for the Determination of the Mechanic Properties of Lead Alloys at Increased Temperatures 32-1-53/55

subjected to the tensile test. Further, it has a vessel with oil which is equipped with the devices necessary for carrying out the test. A group of diagrams shows the results obtained. There are 2 figures.

ASSOCIATION: Scientific Research Institute for Automobiles and Automobile Motors (Nauchno-issledovatelskiy avtomobil'nyy i avtomotornyy institut).

AVAILABLE: Library of Congress

Card 2/2 1. Lead alloys-Mechanical properties-Determination

AUTHOR: Rudnitskiy, N.M. 32-3-28/52

TITLE: The Determination of the Resistibility of Soft Metals and Alloys (K opredeleniyu predela vynoslivosti myagkikh metallov i splavov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 331-332 (USSR)

ABSTRACT: A method was developed which is not liable to lead to any subjective errors of observation as was the case with methods hitherto employed, because it is carried out on standard machines up to the destruction of the bimetal sample. The sample to be investigated consists of a tinned piece of steel onto which the bimetal to be investigated is poured in an ingot mold. The steel sample narrows towards the middle and is accurately dimensioned. This sample was subjected to stress on Shenk's testing machines. In this way several alloys and babbitt samples were investigated; data concerning differences in quality and graphs are given as well as the results obtained by investigating lead bronze. There are 3 figures, and 4 references, 3 of which are Slavic.

Card 1/2

The Determination of the Resistibility of Soft Metals and Alloys 32-3-28/52

ASSOCIATION: Scientific Research Institute for Automobiles and Automobile Motors (Nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut)

AVAILABLE: Library of Congress

1. Metals-Resistivity-Determination

Card 2/2

PHASE I BOOK [illegible]

Ispytaniya detaley mashin na [illegible]
[illegible]
Articles. [illegible]
[illegible]
1960. 225 p. [illegible]

Reviewer: I.V. [illegible]
[illegible]
[illegible]
[illegible]

PURPOSE: This collection of articles [illegible]
at plant laboratories and [illegible]

COVERAGE: The articles [illegible]
[illegible]
for strength. A [illegible]
mental [illegible]
articles [illegible]

AVAILABLE: Library of Congress

Card 4/4

VK/mmb/gmp
9-7-60

(14)

RUDNITSKIY, N.M., kand. tekhn. nauk

Bearing materials of modern motor-vehicle engines. Avt. prom. 30 no.6:23-26 Je '64. (MIRA 17:12)

1. TSentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut.

RUDNITSKIY, N.M.; ZIL'BERG, Yu.Ya., kand. tekhn. nauk, retsenzent; KURITSYNA, A.D., kand. tekhn. nauk, retsenzent; KOZLOVSKIY, I.S., kand. tekhn. nauk, red.

[Materials for sliding bearings used in motor vehicles and tractors] Materialy avtotraktornykh podshipnikov skol'zheniia. Moskva, Mashinostroenie, 1965. 163 p. (MIRA 18:7)

KURITSYNA, A.D.; RUDNITSKIY, N.M.; KOROLEV, F.V.; KORSUNSKAYA, K.N.

Structure and properties of the antifriction alloy of aluminum with tin, following heat treatment. Metalloved. i term. obr. met. no.12:39-41 D'63. (MIRA 17:2)

ACCESSION NR: AP4005832 S/0129/63/000/012/0039/0041

AUTHOR: Kuritsy*na, A. D.; Rudnitskiy, N. M.; Korolev, F. V.; Korsunskaya, K. N.

TITLE: Structure and properties of heat-treated aluminum-tin aniifriction alloy

SOURCE: Metalloved. i termich. obrab. metallov, no. 12, 1963, 39-41

TOPIC TAGS: aluminum tin alloy, antifriction aluminum alloy, antifriction alloy, alloy structure, alloyproperty

ABSTRACT: Sully's study (A. Sully, "Journal of Institute of Metals", 1949, v. 76) pertaining to the structure and properties of heat-treated aluminum tin antifriction alloys which has applications in bearing for carburetor-type engines was reexamined. The microstructure examination showed that cast structure fails in proportion to increase in shrinkage which produced a very fine stannous eutectic. Obsertion with respect to sweating indicates that tin

Card 1/2

ACCESSION NR: AP4005832

sweating decreases parallel to the increase of shrinkage during annealing. A vigorous sweating of tin with large droplet formation can be observed with weakly deformed cast samples during annealing at 350C and holding time of 30 minutes. Alloys with 99% shrinkage can be annealed at 550-570C without high tin losses. Mechanical properties of alloys with 20 and 30% Sn have a high ductility after final shrinkage (99%) which increases after annealing at 350C (the aluminum grain recrystallization temperature). Application of high degrees of deformation (99%) for Al alloys containing more than 20% Sn assures a discrete distribution of the stannous phase after annealing at 550-570C with a holding time of 30 minutes. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 09Jan64 ENCL: 00

SUB CODE: ML, MA NO REF SOV: 000 OTHER: 001

Card 2/2

KURITSYNA, A.D., kand.tekhn.nauk; RUDNITSKIY, N.M., inzh.; KOROLEV, F.V., inzh.; KORSUNSKAYA, K.N., inzh.

Effect of treating certain bimetal materials on their cohesive strength. Metalloved. i term. obr. met. no.10:8-11 O '62. (MIRA 15:10)

(Laminated metals—Heat treatment)

KURITSYNA, A.D.; KOROLEV, F.V.; KORSUNSKAYA, K.N.; RUDNITSKIY, N.M.

Procedure for producing the bimetal "Aluminum antifriction alloy - steel." TSvet. met. 34 no.2:66-68 F '61. (MIRA 14:6)
(Metal cladding)

S/122/60/000/012/008/018
A161/A130

AUTHORS: Radzikovskiy, N. M.; Koritsyna, A. D., Candidates of Technical Sciences; Korolev, P. V., and Korchunskaya, T. N., Engineers

TITLE: Investigation of steel - bi-Sn aluminum alloy bimetal

PERIODICAL: Vestnik mashinostroyeniya, No. 12, 1960, 33 - 35

TEXT: The aluminum-base bearing alloy most-used in the USSR is AC1(ASM) that, like other of this kind, is comparatively cheap, has high resistance to fatigue pitting and corrosion, but can only be used for low-speed shafts because of scoring at insufficient lubrication. The ASM is used for tractor engine crankshaft bearings with 2.5% Sn, but was a failure in automobile crankshafts. The authors point out that this problem can be solved by bonding aluminum alloy with a special "sandwich" 1% - 2% micron layer of an alloy of lead with tin or with indium or simply pure tin, as is practiced by General Motors, U.S.A. Bearings with bushings coated with aluminum alloy with 20 and 30% Sn had been tested in 1959 on "Pobeda" cars, and wear of crankshaft journals was same as in work with babbitt-lined bearings, but the bond of lining with the base was poor and the coating layer separated after 20 - 40 thousand km, despite an interlayer of AM1 (AMK) al-

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Investigation of steel - high-Sn aluminum alloy bimetal

loy. The AMK alloy contains (%): 0.5 - 1.0 Si; 0.2 - 1.0 Mn, the rest is Al. It was stated in experiments that rolling with 60 - 80% reduction practically did not have any effect on the bond, and rolling with higher reduction destroyed bimetal, annealing of bimetal with Sn in aluminum antifriction alloy weakened bond. Raised Sn content in antifriction alloy had a strong negative effect on the bond. The experimental data demonstrated that bond between high-Sn aluminum and base can be considerably improved by reducing the Sn content in the surface of blanks preliminarily to rolling together with base. The authors have developed a method for squeezing liquid Sn out of about 1 mm deep surface layer of high-Sn aluminum alloy at 300 - 400°C. The result is Sn content in the surface reduced from 20 - 30% to 2 - 3%, and Sn distribution in metal as shown in Fig. 3. This alloy contained 20% Sn, the curve shows Sn distribution in 1 mm depth on the surface. Annealing at 550°C needed for recrystallization of steel band improved bond very much when the high-Sn layer was so treated, and mechanical strength in the joint was higher than of the antifriction alloy. Blanks of high-Sn aluminum alloy with a layer of AMK coated on were annealed at 350°C and rolled together with armco iron with about 60% reduction. Bimetal bands were subsequently finally rolled to gage and annealed at 500 - 570° to recrystallize steel. It is expected that the method will make aluminum antifriction alloys applicable for a wider range of friction couples.

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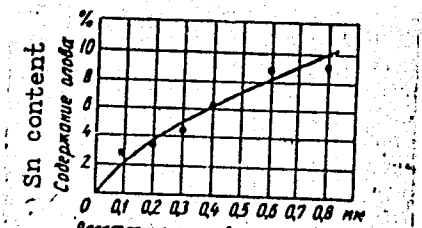
Addition of other metals (e.g., copper) is suggested for applications where the fatigue resistance of binary Al-Sn alloys is not sufficient. There are 3 figures and 1 Soviet-bloc reference.

Fig. 3.



Distance in mm from the surface

Рис. 3.

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SHKOL'NIKOV, E.M.; RUDNITSKIY, N.M.

Durability of cast crankshafts on the "Volga" automobile.
Lit. proizv. no. 8:40-41 Ag '60. (MIRA 14:2)
(Iron founding) (Cranks and crankshafts)

RUDNITSKIY, N.M., kand.tekhn.nauk; KURITSYNA, A.D., kand.tekhn.nauk;
KOROLEV, F.V., inzh., KORSUNSKAYA, K.N., inzh.

Investigating the bimetal composed of steel and high-lead aluminum alloy. Vest.mash. 40 no.12:33-35 D '60. (MIRA 13:12)
(Laminated metals--Testing)

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S/136/61/000/002/002/006
E021/E335

18 1200

AUTHORS: Kuritsyna, A.D., Korolev, F.V., Korsunskaya, K.N. and Rudnitskiy, N.M.

TITLE: The Technology of the Production of a Bimetal of Aluminium Antifriction Alloys and Steel

PERIODICAL: Tsvetnyye metally, 1961, No. 2, pp. 66 - 68

TEXT: The technology of the process of producing bimetals of steel and high-tin aluminium alloys was investigated and a comparison of the technological properties of antifriction aluminium and intermediate alloys was given.
A semicontinuous method of casting was tried. The table gives the compositions and conditions used. Melting was carried out in a high-frequency furnace. The weight of the melt was 70 - 80 kg and billets 70 x 260 mm were cast. The rate of casting was 10 - 13 m/h except for pure aluminium which had a rate of 3 m/h. The billets were water-cooled. Pouring was carried out through a funnel with a 12 mm diameter hole. From the results it was shown that the high-tin alloys and the Moren 400 alloys had good casting properties and a low

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temperature of casting. The billets were rolled to 10 mm strip. The surface had no porosity or cracks before rolling. Alloys with 20 and 30% tin were cold-rolled. Reduction of the first pass was 10% and on subsequent passes - 15%. The remaining alloys were hot-rolled after holding at 450 °C for two hours. Moren 400 alloy exhibited hot shortness during hot rolling, and deep cracks when cold-rolled.
It was shown that to produce a good joint in the bimetal, the tin content on the surface of the high-tin alloys should be decreased. The alloys were hot-rolled with AMK alloy with reduction of 70% on the first pass and 28% on the second pass to give a good joint, and subsequently rolled to 2 mm.
The strength of the joint between the alloy and AMK alloy was tested before forming a bimetal with steel by heating to 550 °C for 30 minutes. Steel strip 6 mm thick was used for the bimetal. The joint between the steel and the AMK alloy was produced by a first pass in the cold state with 60% reduction, a second pass with 30% reduction, and then it was cold-rolled to 1.9 mm. The joint was tested by heating

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to 550-570 °C for 10-30 minutes. The strip produced in this way was used for the production of bushings for bearings in experimental ГАЗ (GAZ) and ЗИЛ (ZIL) motors.
There are 1 table and 2 Soviet references.

Table: The Composition of Alloys and the Regime of Casting of Aluminium Alloys

Name of Alloy	Chemical Composition		Casting temperature, °C	Rate of drop of billet, m/h	Pressure of cooling water, atm.
	Charge	Billet			
Pure Al АВ000 (AV000)	-	Cu-0.0016 Fe-0.04 Si-0.04 Al- rest	800	3	0.8
High-tin alloy	Sn-20 Al-rest	Sn-17.32 Al-rest	740	13	0.8

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High-tin alloy Moren 400	Sn-30 Al-rest Si-4 Cd-0.5 Al-rest	Sn-26.3 Al-rest Si-4.26 Sn-0.13 Cd-0.50 Al-rest	740 800	10 10	0.8 0.8
AMK	Mn-0.5 Si-0.5 Al-rest	Mn-0.5 Si-0.8 Al-rest	780	9-10	0.8
АЛ6-5 (ASS 6-5)	Sb-6 Pb-5 Mg-0.5 Al-rest	Sb-4.57 Pb-4.52 Mg-0.94 Al-rest	920*	9-10	0.9
Морен 400 (Moren 400)	Si-4 Al-rest	Si-3.8 Al-rest	800	10	0.9

* Antimony added to aluminium heated to 1 000 °C.

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PHASE I BOOK EXPLOITATION SOV/5053

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

Iznos i iznosostoykost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 273 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: T. V. Polyakova.

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 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

[illegible] WEAR RESISTANCE

Bushe, N. A., and A. K. D'yachkov. Fields of Rational Use of Various Antifriction Alloys (Sb. "Podshipnikovyye splavy" Trudy VNIIZhDT, vyp. No. 157, under the title "Fields of Rational Use of Various Types of Bearing Alloys", Transzheldorizdat, 1958) 272

Rudnitskiy, N. M. Experience of Using New Antifriction Alloys for Automobile Bearings ("Vestn.mashinostr.", No. 7, 1959) 272

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3

KONOVALOV, P.A.; RUDNITSKIY, N.Ya.

Coefficient of the variability of the modulus of soil deformation. Osn., fund. i mekh. grun. 6 no.3:16-17 '64 (MIRA 17:7)

RUDNITSKIY, N.Ya., inzhener; AKUBULATOV, Sh.F., kandidat tekhnicheskikh nauk.

Deformations in a large-panel frameless apartment house. Stroi. prom. 35 no.5:9-11 My '57. (MLRA 10:6)

1. Institut osnovaniy i podzemnykh sooruzheniy i Institut zhilishcha.
(Apartment houses) (Strains and stresses) (Soil mechanics)