"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 19392-63 EWT(l)/EWP(q)/EWT(m)/EWP(B)/BDS AFFTC/ASD/ESD-3/IJP(C) JD
ACCESSION NR: AT3001926 S/2912/62/000/000/0285/0288

AUTHORS: Borisov, V. T.; Dukhin, A. I.

TITLE: Effect of the thermal regime on the shape of columnar crystals

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 285-288

TOPIC TAGS: crystal, crystallization, crystallography, maximum-rate principle, front, growth, growth rate, spherolite, salol, fissure

ABSTRACT: The paper describes results of an experimental investigation of the maximum possible rate of displacement (RD) of the crystallization (CR) front (F) under given external thermal conditions. The RD of the CR F depends on the degree of supercooling at the surface of the growing crystals. The tests were made on salol. The crystal growth was observed and photographed for different bath temperatures (T). It is noted that the structures characteristic for each T are readily reproducible. The multiplication of the number of crystals per unit length of the CR F appears to be due to the formation of fissures, near which fan-shaped groups of small slightly-disoriented crystals are formed. A decrease in the number of crystals per unit length is occasioned by the development of pinching-out processes.

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ACCESSION NR: AT3001926

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The results of the present study show that the equilibrium between these two counteracting factors is regulated by the heat regime in accordance with the principle of maximum growth rate. A schematic graphic plot shows that the rate of growth of the crystals vs.T achieves a certain plateau-like constant region with a drop-off at either side. Experimental data supporting this conclusion are cited. It is postulated that the appearance of the plateau is linked with a change in the structure of the CR F and, more specifically, a comminution of the crystals with a decrease in the bath T. It is also concluded that if an experimental determination is made simultaneously of the RD of the CR F and its structure as functions of the bath T, then the crystals must be large on those segments of the curve where an increase in rate of growth occurs, must then progressively decrease in size as the T is reduced over the segments of constant rate of growth, and must invariably have a fine structure (with a planar CR F) along the descending branches of the curve. The experimental results of the measurements of the linear rate of growth and of the size of the crystals, adduced in a graph, support this postulated relationship. Orig. art. has 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 16Apr63 ENCL: 00

SUB CODE: CH, PH, MA NO REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T., kand.fiziko-matematicheskikh nauk; BUKHIN, A.I., kand. fiziko-matematicheskikh nauk

Mechanism of the growth of metal crystals. Probl.metalloved.i fiz.met. no.7:363-374 '62. (MIRA 15:5)
(Metal crystals--Growth)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T., kand.fiziko-matematicheskikh nauk; GOLIKOV, V.M., kand.tekhn. nauk; SHCHERBEDINSKIY, G.V., kand.fiziko-matematicheskikh nauk

Effect of the interface on diffusion in polycrystals. Probl. metalloved.i fiz.met. no.7:501-521 '62. (MIRA 15:5)
(Metal crystals) (Diffusion)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

S/070/62/007/002/012/022
E132/E160

24.7100

AUTHORS: Borisov, V.T., and Dukhin, A.I.

TITLE: Influence of thermal regime on the structure of the crystalline front in one-component systems

PERIODICAL: Kristallografiya, v.7, no.2, 1962, 280-285

TEXT: The principle of the maximum rate of growth is numerically applied to establish the relationship between the dimensions of the crystals in the crystallisation front and the rate of advance of the front (velocity V). In the part of the theoretical curve of V against supercooling, the appropriate form for the crystals to take where the curve rises is that of coarse needles, and in the part of the same curve where V falls, fine needles. The change of the dimensions of the crystals in the intermediate region leads to the appearance of a plateau. Observations made on crystals of salol growing in a film between two glass plates or on a thick copper plate confirm the theoretical deductions.
There are 5 figures.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

Influence of thermal regime on the ... S/070/62/007/002/012/022
E132/E160

ASSOCIATION: Institut metallovedeniya i fiziki metallov (Institute of Science of Metals and Physics of Metals,)

Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I.P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I.P. Bardin)

SUBMITTED: June 27, 1961

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

18.7500 1555 1418 1413

32816
S/020/62/142/001/012/021
B104/B102

AUTHOR: Borisov, V. T.

TITLE: Kinetic diagrams of alloy crystallization

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 1, 1962, 69-71

TEXT: On the condition that the compositions of the liquid and solid phases remain unchanged, equations describing the velocity, v, of the crystallization front were derived for a binary alloy within the thermodynamics of non-equilibrium processes:

$$B_a(1-x)\,[x^2V' - y^2V'' + RT\ln((1-x)/(1-y)) + q_a(1-T/T_a)] = v(1-y)$$
$$B_b x\,[(1-x)^2V' - (1-y)^2V'' + RT\ln(x/y) + q_b(1-T/T_b)] = vy. \qquad (4),$$

where x and y denote the concentrations of the component b of the binary alloy in the liquid and the solid phase, respectively, V is the energy of displacement. The coefficients B_a and B_b, related to atomic mobilities, are functions of the composition and other variables. If v = 0, (4) describes the alloy equilibrium diagram. If v ≠ 0, (4) determines the stable concentrations in the phases contacting at an interface moving at

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32816
S/020/62/142/001/012/021
B104/B102

Kinetic diagrams of alloy ...

a given velocity. For a given v, the functions x(T) and y(T) represent a non-equilibrium diagram. The diagrams as a whole determine the crystallization kinetics of the alloy under different conditions. The derivatives $(\partial x/\partial v)_{v=0}$ and $(\partial y/\partial v)_{v=0}$ indicate the deviations of the non-equilibrium solidus and liquidus lines from those of equilibrium. If the state of the crystallizing alloy is described by a phase point on the equilibrium solidus line, crystallization is always accompanied by a change in composition. There are 1 figure and 7 references: 4 Soviet and 3 non-Soviet. The reference to the English-language publication reads as follows: K. A Jackson, Canad. .. Phys., 36, 683 (1958).

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I. P. Bardina (Institute of Metallography and Physics of Metals of the Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

PRESENTED: July 20, 1961, by G. V. Kurdyumov, Academician

SUBMITTED: July 14, 1961

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

34747

S/020/62/142/003/014/027
B142/B138

18.7520

AUTHOR: Borisov, V. T.

TITLE: Two-phase zone during crystallization of an alloy in unsteady conditions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 581-583

TEXT: The diffusion supercooling which always precedes a moving flat interface diminishes as the unevenness of the crystallization front increases. The two-phase zone formed is thus due to the striving of the crystallizing system toward a state of equilibrium. Assuming the establishment of such equilibrium throughout, the liquid, solid, and two-phase parts of the alloy can be described phenomenologically. The present paper deals with unsteady conditions when the crystallization front shifts according to the $t^{1/2}$ law and all functions describing the state of the alloy depend only on $x/t^{1/2}$. The equations for the diffusion, heat conductivity, and liquidus curve of a two-phase medium

$$\varepsilon(SC')' - 2\xi CS' + 2\varepsilon(SC)' = 0, \quad T'' + 2\xi(S' + T') = 0, \quad T = T_A - C. \quad (3)$$

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are obtained after introducing dimensionless parameters. If the temperature is eliminated, the equations

$$\varepsilon(SC')' + 2\xi((1-k)S'C + SC') = 0, \quad C'' + 2\xi(S' - C') = 0, \qquad (4)$$

are obtained for the two-phase zone, the solution of which,

$$C = C(\xi; \xi_1, C_1, p_1), \quad S = S(\xi; \xi_1, C_1, p_1) \qquad (5)$$

determines the section, concentration and temperature in the section $0 \leq \xi \leq \xi_1$ (liquid zone). $\xi = x/2(at)^{1/2}$. The solutions of the first two equations, $\varepsilon C'' + 2\xi C' = 0$, $T'' + 2\xi T' = 0$, for the liquid zone give the coordinates of the starting point of crystallization in the equilibrium diagram. Together with T_2 determined from the equation for the liquidus curve, concentration C_2 and the section S_2 at the end of the two-phase zone give the end point. The solidified alloy is inhomogeneous. The distribution function for the crystallizing liquid is:

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$L(C) = -dS/dC + S_2\delta(C - C_2)$. The solidified alloy shows composition inhomogeneities in the direction traversed by the crystallization front. The temperature equation is solved for the solid zone in $0 \leq \xi \leq \xi_2$. $T(0)$ is the constant temperature at the outer boundary of the ingot. The range of the two-phase zone is determined by eliminating C_1 and ξ from

$$\psi(\beta\xi) = \frac{C_1 - C_0}{(1-k)C_1}, \quad \frac{\psi(\xi)}{\varphi(\xi)} = \frac{T_0 - T_A + C_1 + \psi(\xi)}{T_A - T(0) - C_1}, \quad \psi(s) = \varepsilon\frac{T_0 - T_A + C_1}{(1-k)C_1}.$$

If T_0, the initial temperature, is high enough, no transition zone will be formed as the third equation will not then be fulfilled. [Abstracter's note: To understand this paper Ref. 2 (V. T. Borisov, DAN 136, no. 3, 1961) must be used, as the definitions are given there.] There are 2 Soviet references.

Card 3/4

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I. P. Bardina (Institute of Metal Science and Physics of Metals of the Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

PRESENTED: August 21, 1961, by G. V. Kurdyumov, Academician

SUBMITTED: August 14, 1961

Card 4/4

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.

Labor productivity and how to increase it in the production of gas. Gaz. delo no.10:67-70 '63. (MIRA 17:4)

1. Shebelinskoye gazopromyslovoye upravleniye.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.; VINTAYKIN, Ye.Z.; POTAPOV, L.P.

Characteristics of the thermal vibration spectrum. Fiz. tver tela 5 no.9:2530-2537 S '63. (MIRA 16:10)

1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo ihstituta chernoy metallurgii im. I.P.Bardina, Moskva.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.

Causes leading to failure in starting the engines of TE1 and TE2 diesel locomotives. Elek. i tepl. tiaga 7 no.4:34-35 Ap '63. (MIRA 16:5)

1. Obshchestvennyy mashinist-instruktor depo Moskva-Kiyevskaya-Passazhirskaya.

(Diesel locomotives)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

S/020/63/149/006/012/027

L 16970-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

AUTHOR: Borisov, V. T., Golikov, V. M., and Shcherbedinskiy, G. V.

56

TITLE: Statistical calculation of the self-diffusion coefficient in metals

PERIODICAL: Akademiya nauk SSSR. Doklady. v. 149, no. 6, 1963, 1307-1310

TEXT: The analysis of experimental results on the basis of the formula of diffusion coefficients provided by the theory of absolute reaction rates does not make it possible to directly associate the values of the preexponential factor and activation energy with some definite physical characteristics of a substance. This is achieved by more detailed analysis of activated state on the basis of a suitable model or a statistical calculation. Therefore, the authors describe a statistical examination of self-diffusion of atoms over the vacancies or positions of penetration in pure metals or weak solutions. A formula for the equilibrium concentration of vacancies is presented. It is found that the coefficient of diffusion over the vacancies does not explicitly depend on the characteristics of vacancies in equilibrium state but is determined by the potential energy and normal frequencies of activated state. There are 2 figures.

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I. P. Bardina (Institute of Metallography and Metal Physics, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

SUBMITTED: December 4, 1962

Card 1/1

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 12878-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD
ACCESSION NR: AP3000515 S/0020/63/150/002/0294/0296 55

AUTHOR: Borisov, V. T.

TITLE: Conditions for a diffusionless crystallization of alloys

SOURCE: AN SSSR. Doklady, v. 150, no. 2, 1963, 294-296

TOPIC TAGS: diffusionless crystallization of alloys, Onsager relation

ABSTRACT: In the treatment of the kinetics of a diffusionless phase transformation, the possibility of the latter was postulated in recent papers. The present paper deals with the conditions which are necessary and sufficient for the compositions of the original and the new phases to be identical.

Kinetic equations for a binary system are given for the general case, with coefficients satisfying the Onsager relation. Kinetic diagrams for various rates of growth for the diffusionless process are given. Orig. art. has: 2 figures and 10 formulas.

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I. P. Bardina (Institute of Metallography and Physics of Metals, Central Scientific Research Institute for Ferrous Metallurgy)

Card 1/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.

Mechanism underlying the normal growth of crystals. Dokl. AN SSSR 151 no.6:1311-1314 Ag '63. (MIRA 16:10)

1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I.P.Bardina. Predstavleno akademikom G.V.Kurdyumovym.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T. (Moskva); GOLIKOV, V.M. (Moskva); DUBININ, G.N. (Moskva)

Determining the coefficients of diffusion in alloys in presence of several phases. Izv. AN SSSR. Met. i gor. delo no.4:147-152 Jl-Ag '64. (MIRA 17:9)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 23474-65 EWT(m)/T/EWP(t)/EWP(b) JD

ACCESSION NR: AP4043924 S/0279/64/000/004/0147/0152

AUTHOR: Borisov, V. T. (Moscow); Golikov, V. M. (Moscow); Dubinin, G. N. (Moscow)

TITLE: The determination of the diffusion coefficient in alloys in the presence of several phases

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 4, 1964, 147-152

TOPIC TAGS: chromium diffusion, iron, chromizing, multiphase medium, diffusion coefficient, diffusion coating

ABSTRACT: Despite the extensive information available on the diffusion coating of alloy surfaces with metals and metalloids, insufficient attention has been paid to the computation of the diffusion constant in thermochemical treatment. The authors propose a method of determining the diffusion coefficient for the case in which a multiphase diffusion layer forms on the surface zones of the impregnated metal. For that purpose iron specimens containing 0.03% C were chromized at 900, 1000, 1100, and 1200C for 3 and 6 hours (see Fig. 1 of the Enclosure). The concentration of Cr in each surface layer was determined by spectral analysis. The authors arrived at the following equation describing the diffusion coefficient:

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L 23474-65

ACCESSION NR: AP4043924

$$4D_1 t = y_1^2 \ln\left(\frac{m_0}{m_1 + c_1 y_1}\right)'$$

Orig. art. has: 15 equations and 3 figures.

ASSOCIATION: none

SUBMITTED: 07Oct63 ENCL: 01 SUB CODE: MM

NO REF SOV: 011 OTHER: 004

Card 2/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

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L 23474-65

ACCESSION NR: AP4043924

ENCLOSURE: 01

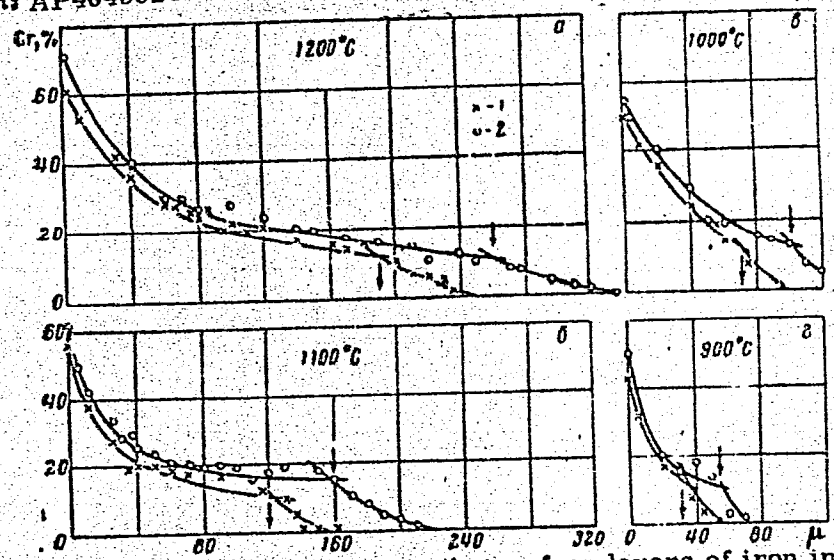

Fig.1: Changes in the Cr concentration in the surface layers of iron impregnated with Cr from a gaseous environment at 900 to 1200C for (1) three and (2) six hours

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L 62921-65 EWT(l)/EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) IJP(c)
JD/JG

ACCESSION NR: AP5018857 UR/0126/65/020/001/0069/0077
539.219.3

AUTHOR: Borisov, V. T.; Golikov, V. N.; Dubinin, G. N.

TITLE: Kinetics of diffusion in binary systems with several phases

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 1, 1965, 69-77

TOPIC TAGS: metal diffusion, solid solution, chromium steel, binary alloy, metal phase system

ABSTRACT: Several theoretical methods for determining the coefficient of diffusion and the thickness of phase layers are presented for binary systems. No experimental work is done and the analysis is mathematical in nature. Both exact and approximate methods are presented for the determination of the above parameters, the method used being dependent upon the known conditions of the system. Specific formulas and methods for calculation of the diffusion coefficient are given for the following cases: (1) when the distribution of the diffusing material is known to a great degree of accuracy and graphical differentiation is possible; (2) when the concentration distribution is known well enough that integral diffusion fluxes can be de-

Card 1/2

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L 21-65

ACCESSION NR: AP5018057

termined; (3) when the thickness of the phase layer is known, when there is very little or no mutual solid solubility of the two components, and when the concentration of the diffusing element does not change through the phase layer. An example is given for diffusion of chromium into steel. This example falls into category (3) above. Orig. art. has: 4 figures, 20 formulas.

ASSOCIATION: Institut metallovedeniya i fiziki metallov (Institute of Metal Science and Physics of Metals); TsNIIChM im. I. P. Bardina; Moskovskyy aviatsionnyy institut, im. S. Ordzhonikidze (Moscow Aviation Institute)

SUBMITTED: 16Mar64 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 16450-65 EWT(1) ESD(gs)/SSD/AFWL/ASD(m)-3

ACCESSION NR: AP4042046 S/0126/64/017/006/0881/0885

AUTHOR: Borisov, V. T.; Golikov, V. M./ Shcherbedinskiy, G. V.

TITLE: The relationship between diffusion coefficients and grain boundary energy

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 6, 1964, 881-885

TOPIC TAGS: atomic mobility, B F alloy, surface energy, nuclei formation, volumetric diffusion, lattice vacancy, B redistribution

ABSTRACT: Few data are available on the surface energy of grain boundaries. Therefore, the authors carried out a study of the relationship between volumetric and boundary diffusion and boundary energy. The considerably higher atomic mobility at grain boundaries as compared to the grain itself may be attributed to the excessive concentration of vacancies and low activation energy. The authors studied the selfdiffusion of Fe in an Fe-B alloy (other additives were C -- 0.001; Si -- 0.01; S -- 0.001 and P -- 0.01%). Boron did not appreciably affect volumetric diffusion of iron but inhibited boundary diffusion. Rising temperatures lowered the effect of B. Experimental values of volumetric and boundary diffusion provided the calculation of boundary energy at different temperatures. The authors

Card 1/3

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L 16450-65
ACCESSION NR: AP4042046

consider the redistribution of boron between the grain and the boundary. They contend that the solubility of B in Fe being very low, the B atoms occupy the defective sites in the crystal lattice. Consequently, they argue, boron solubility depends on the concentration of defects. Boundaries are depleted of boron and the subsequent increase in the concentration of boundary vacancies may lead to nuclei formation of a new phase and lower the stability of austenite. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIIChM (Institute of Metallography and Metal Physics, Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 12Dec62 ENCL: 01

SUB CODE: MM NO REF SOV: 004 OTHER: 004

Card 2/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 16450-65
ACCESSION NR: AP4042046

ENCLOSURE: 01

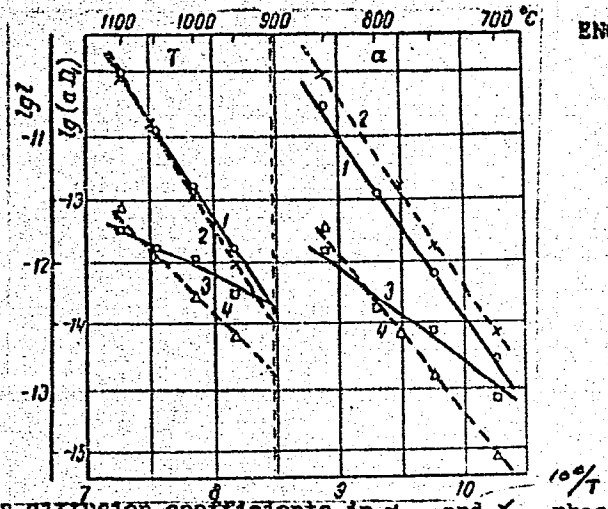

Fig. 1. Temperature versus diffusion coefficients in α- and γ- phases: (1) volumetric selfdiffusion of Fe; (2) volumetric Fe diffusion in the Fe-B alloy; (3) boundary selfdiffusion of Fe; (4) boundary Fe diffusion in the Fe-B alloy

Card 3/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.; GOLIKOV, V.M.; DUBININ, G.N.

Kinetics of diffusion in binary systems in the presence of several phases. Fiz. met. i metalloved. 20 no.1:69-77 Jl '65. (MIRA 18:11)

1. Institut metallovedeniya i fiziki metallov, Moskva; TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina i Moskovskiy aviatsionnyy institut imeni S.Ordzhonikidze.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.

Unit for cooling test pieces down to low temperatures. Zav. lab. 31 no.2:232-233 '65. (MIRA 18:7)

1. Moskovskiy institut khimicheskogo mashinostroyeniya.

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L 61504-65 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWP(l)/EWA(c) Pf-4 MJW/JD

ACCESSION NR: AP5012498 UR/0032/65/031/005/0597/0598

620.178.2

AUTHOR: Borisov, V. T.

TITLE: Method of evaluating the influence of mechanical aging properties of steel on its brittleness and cold brittleness

SOURCE: Zavodskaya laboratoriya, v. 31, no. 5, 1965, 597-598

TOPIC TAGS: metal cold working, metal aging, metal property, metal brittleness, impact strength / MK 30 testing machine, 09G2 sheet steel

ABSTRACT: The effects of cold working and aging on the impact strength of sheet steel 09G2 (12 mm thick, 0.09% C; 1.28 Si; 0.78 Mn, 0.013 S, and 0.021% P) were experimentally investigated. Specimens (10 x 10 x 55 mm) with notches (t = 2 mm, ρ = 1 mm) were studied in the testing machine MK-30 at temperatures of 60 to -40C (4-5 specimens each at 20C intervals). Some specimens were subjected to cold working by tension (10 ± 0.5% elongation) with subsequent aging at 250C for 1 hour, others by bending with residual deformation of 2, 3, and 5 mm (at center of 50-mm long specimen) with subsequent aging at 100C for 1 hour. The impact strength as a function of temperature, aging, and cold working is shown in Fig. 1

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ACCESSION NR: AP5012498

on the Enclosure. This figure also includes the results of a specimen cold worked at -196C (curve 5). It was found that specimens cold worked by bending (in a simple fixture) give results which are comparable to those obtained with tensile cold working (requiring complicated machinery). The work was performed under the supervision of Prof. N. P. Shchapov. Orig. art. has: 2 figures.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute for Chemical Machinery Construction)

SUBMITTED: 00 ENCL: 01 SUB CODE: MM

NO REF SOV: 002 OTHER: 001

Card 2/3

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L 61504-65
ACCESSION NR: AP5012498

ENCLOSURE: 01

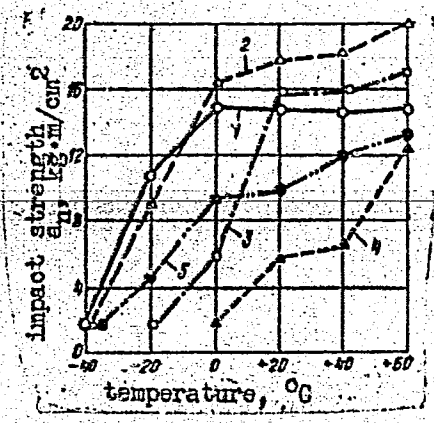

Fig. 1.

1- tensile cold worked, 10%; 2, 3, 4- bending cold worked, 2, 3, and 5 mm residual deformation; 5- bending cold worked at -196C, residual deformation 3 mm

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GOLIKOV, V.M.; BORISOV, V.T.; SHCHERBEDINSKIY, G.V.

All-Union scientific conference on diffusion in metals and alloys. Metalloved. i term. obr. met. no. 2:58-61 F '65.
(MIRA 18:12)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

L 09020-67 EWT(m)/EWP(t)/ETI IJP(c) FDN/JD/JG/DJ
ACC NR: AP6027801 SOURCE CODE: UR/0126/66/022/001/0159/0160

AUTHOR: Borisov, V. T.; Golikov, V. M.; Shcherbedinskiy, G. V.

39

ORG: TsNIIChERMET im. I. P. Bardin

TITLE: Diffusion of molybdenum in iron and in an iron-molybdenum alloy

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 1, 1966, 159-160

TOPIC TAGS: metal diffusion, molybdenum, surface active agent, molybdenum containing alloy

ABSTRACT: It is of interest to investigate the diffusion of a surface-active component in an alloy already containing the same component. Theory indicates that for surface-active substances, under the conditions of a thermodynamic equilibrium, the coefficients of volume diffusion and diffusion along grain boundaries should not markedly differ from each other. If, on the other hand, the component diffuses through a pure solvent, it chiefly penetrates along the grain boundaries. Therefore, if the concentration of the active element is increased (to its equilibrium value), its mobility along the grain boundaries must decrease. Mo is a surface--active element with respect to Fe. In this connection, the authors investigated the diffusion

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of Mo (i.e. of the radioactive isotope Mo^{96}, electrolytically deposited on the surface of specimens) in polycrystalline specimens (with nearly uniform grain size: 5-10 μ) of pure Fe and Fe-Mo (0.7% Mo) alloy. The mean diffusion coefficient D_{av}, averaged for both volume diffusion and diffusion along grain boundaries, was determined by laminar analysis, while the coefficients for volume diffusion D_{vol} and diffusion along grain boundaries were separately determined by the absorption-kinetic method. Findings: for diffusion of Mo in pure Fe: $D_{av} = 0.3 \exp(-49,000/RT)$, and $D_{vol} = 7.8 \cdot 10^3 \exp(-73,000/RT)$. For diffusion of Mo in Fe-Mo alloy: $D_{av} = 2.24 \cdot 10^2 \exp(-64,000/RT)$ and $D_{vol} = 1.3 \cdot 10^4 \exp(-75,000/RT)$. The temperature dependence of D_{av} and D_{vol} (Fig. 1) indicates that the values of D_{av}, determined by laminar analysis, are higher, and the activation energy is lower, compared with the corresponding characteristics for purely volume diffusion. This is associated with the effect of grain boundaries, which is much smaller in the case of the Fe-Mo alloy. And indeed, the findings obtained by the absorption method indicate that, while activation energy and D_{vol} are similar in both pure Fe and in Fe-Mo alloy, the mobility of Mo atoms along grain boundaries is higher in pure Fe than in the Fe-Mo alloy. These findings confirm the above reasoning on the effect of surface-active elements.

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ACC NR: AP6027801

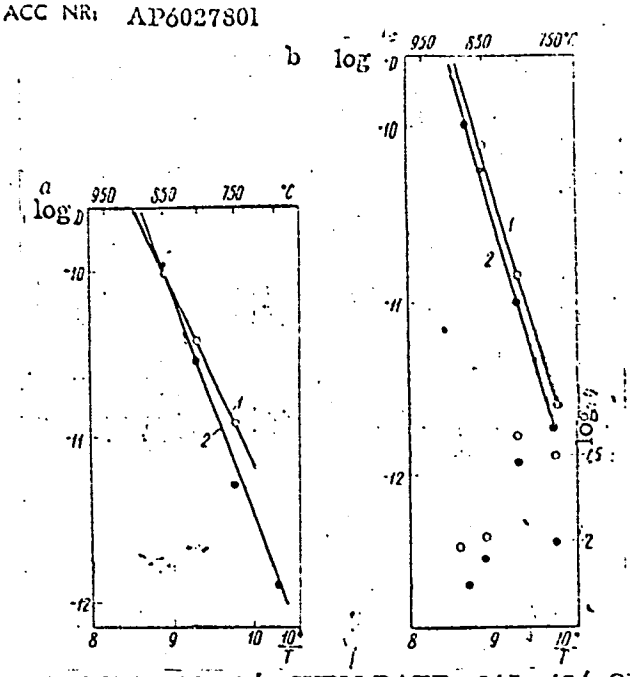

Fig. 1. Temperature dependence of D_{av} (a) and D_{vol} (b) for molybdenum:

1 - pure Fe; 2 - Fe-Mo; 2a - width of intergranular layer; $\theta = D_1/D$ (D_1 is the coefficient of diffusion along grain boundaries).

SUB CODE: 11, 20/ SUBM DATE: 26Jun65/ ORIG REF: 004/ OTH REF: 001

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BORISOV, V.T.; DUKHIN, A.I.; MATVEYEV, Yu.Ye.

Problems in the theory of crystal growth in metal systems. Probl. metalloved. i fiz. met. no.8:269-280 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.; GOLIKOV, V.M.; SAVILOV, Ye.S.; SHCHERBEDINSKIY, G.V.

Studying the diffusion of carbon in iron. Probl. metalloved. i fiz. met. no.8:305-310 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.T.; VINTAYKIN, Ye.Z.; POTAPOV, L.P.

Determining the characteristics of the spectrum of thermal vibrations by X-ray measurements. Probl. metalloved. i fiz. met. no.8:413-422 '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.; LAPUK, Ya.I.; MELIK-ADAMYAN, V.R.; SHUTOV, M.Ye.; ANDREYEVA, N.S.

X-ray diffraction study of pepsin. Dokl. AN SSSR 156 no. 2: 363-364 My '64. (MIRA 17:7)

1. Institut biologicheskoy fiziki AN SSSR. Predstavleno akademikom M.M. Shemyakinym.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V., inzh., red.; NEMIROVSKIY, B.S., kand. voyen. nauk, red.; LETSKAYA, N.M., inzh., red.; SHIFRIN, A.Sh., inzh., red.; RUDENKO, L.D., inzh., red.; DYATLOV, T.D., inzh., red.

[Construction specifications and regulations]Stroitel'nye normy i pravila. Moskva, Stroiizdat. Pt.3. Sec.D. ch.11, Pt.3. Sec.M. ch.4. 1964. (MIRA 18:4)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Borisov). 3. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Nemirovskiy, Shifrin). 4. Gosudarstvennyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut Grazhdanskogo Vozdushnogo Flota (for Letskaya). 5. Proyektnaya organizatsiya Gosudarstvennogo komiteta po sudostroyeniyu SSSR (for Dyatlov, Rudenko).

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Valeriy Vasil'yevich; BAL'YAN, Kh.V., prof., nauch. red.; FEDOROVICH, N.V., nauchn. red.; UGAL'SOV, G.A., red.

[Miracles performed without "miracles"; with addenda describing chemical experiments] Chudesa bez "chudes"; s prilozheniem opisaniia khimicheskikh opytov. Leningrad, Ob-vo "Znanie" RSFSR, 1965. 39 p. (MIRA 18:10)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

AID P - 2862

Subject : USSR/Engineering-Electricity

Card 1/1 Pub. 28 - 2/7

Author : Borisov, V. V.

Title : Utilization of wind energy on the main pipelines

Periodical : Energ. byul. 9, 10-12, S 1955

Abstract : The author describes several wind-motor installations of 0.1 kw and up to 1.0 kw generating capacity for lighting and other purposes. They also supply current for anti-corrosion protection of the pipeline in those spots where a local source of electric energy is lacking. Three pictures and 1 table are attached.

Institution : Central Aero-Hydrodynamical Institute im. Zhukovskiy (TsAGI)

Submitted : No date

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V., inzh.

Laying underwater pipelines by the method of drawing. Biul. stroi. tekh. 12 no.1:14-15 Ja '55. (MIRA 11:12)

1.Ministerstvo neftyanoy promyshlennosti SSSR.
(Pipelines)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.

Washing paraffin deposits from main oil pipelines. Neftianik 1 no.11:18 N '56. (MLRA 9:12)

1. Starshiy inzhener otdela ekspluatatsii magistral'nykh truboprovodov Glavneftesbyta Ministerstva neftyanoy promyshlennosti.
(Petroleum--Pipelines)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V., inzhener.

Electrical protection of pipelines against corrosion. Energetik 4 no.7:21-22 Jl '56. (MLRA 9:9)
(Pipelines) (Electrolytic corrosion)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V., inzhener.

Electric welded pipes with spiral joints for pipelines. Gidr.stroi. 25 no.10:56 N '56. (MLRA 9:12)
(Pipe--Welding)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BOGAISOV, Vladimir Vasil'yevich; NOVIKOV, M.M., inzh., vedushchiy red.; POLOSINA, A.S., tekhn. red.

[Repair of pipelines] Remont magistral'nykh truboprovodov. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 108 p. (MIRA 11:9)
(Petroleum--Pipelines)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V., inzh.

ETU-353 excavator. Stroi.truboprov. 3 no.12:26-27 D '58.
(MIRA 12:1)

(Excavating machinery)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

14(5) SOV/93-58-12-14/16

AUTHOR: Borisov, V.V.

TITLE: Aerial Supervision of Main Petroleum Lines
(Vozdushnoye nablyudeniye za magistral'nymi nefteprovodami)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 12, pp 67-69 (USSR)

ABSTRACT: The length of Soviet main pipelines exceeds 13,500 km and together with the connecting local pipelines exceeds 15,000 km. These pipelines are maintained by about 500 men living in settlements near the tracts. This type of supervision was satisfactory 5-10 years ago when the diameter of a pipeline did not exceed 10-14" but is unsuitable for pipelines of 20-28" and larger diameters. Under present maintenance conditions losses due to leakage amount to hundreds of tons per 1 km of a 28" pipeline containing 278 cu m of petroleum product. Therefore, they suggested that the main pipelines be supervised by means of two-seater Ka-15 gyroplanes. One gyroplane can replace 25 maintenance men and guard such pipelines as the Ufa-Chelyabinsk (400 km), Ufa-Kuybyshev (525 km), Al'met'yevsk-Kuybyshev-Saratov (650 km), and Al'met' yevsk-Gor'kiy (580 km).

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

9(2) SOV/92-59-3-17/44

AUTHOR: Borisov, V.V., Staff Member

TITLE: Ultrasonics Help Pipeline Personnel (Ul'trazvuk na sluzhbe u truboprovodchikov)

PERIODICAL: Neftyanik, 1959, Nr 3, p 18 (USSR)

ABSTRACT: According to this article, the determination of the length of the pipeline section which is to be overhauled is a very important job. Until recently, the thickness of pipes and the depth of their internal cavities have been determined on the basis of the sound produced by knocking the outside surface of the pipeline. This method was inaccurate and as a result it was often necessary to repeat the overhauling of the pipes. Now, an ultrasonic defectoscope of the UZD-7N type is being used for this purpose. This instrument operates according to laws similar to those of geometric optics. The ultrasonic signals are depicted by luminous curves. The use of the instrument contributes to the safety of overhauling operations and makes the overhaul of pipelines much more

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expedient. It is expected that the ultrasonic defectoscope will find wide application in refineries and bulk plants, and will help to reveal defects in the walls of various apparatus, storage tanks, pipelines, etc.

ASSOCIATION: Rosglavneftesnabsbyt (The Rosglavneftesnabsbyt Organization)

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28(1) SOV/92-59-3-23/44

AUTHOR: Borisov, V.V., Staff Member

TITLE: Trunk Pipelines Should Be Provided With Phototelegraphic Communication (Fototelegrafnuyu svyaz' -- na magistral'nyye truboprovody)

PERIODICAL: Neftyanik, 1959, Nr 3, pp 20-21 (USSR)

ABSTRACT: The author states that the pipeline network of the Soviet Union extends for many thousands of kilometers and is now used for transporting hundreds of thousands of tons of petroleum from oilfields to refineries as well as carrying petroleum products from the refineries to the regions where they are consumed. The job of transporting petroleum by trunk pipelines, distributing various petroleum products, and transshipping them requires the services of highly skilled personnel. Orders issued by the management of pipeline organizations are usually transmitted to transshipment points, control offices and terminals by telephone. This takes much time and interfers with the primary duties of the pipeline personnel. The control of pipeline operations could, however, easily be facilitated by installing phototelegraphic apparatus

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at pipelines. With their help orders and instructions could be transmitted. Presently, Soviet industry turns out phototelegraphic apparatus of the FTAP type, FTAM-2 type, and the "Record" type. These apparatus transmit texts, tables, sketches and maps using existing wire lines. They are fed by a.c. current with 127 or 220 voltage and a frequency of 50 cycles. The carrier frequency is 1900 cycles. These apparatus are designed to transmit black-white pictures which are reproduced at the receiving point on a photographic or electrochemical paper. The text and pictures can be transmitted directly to the receiving point at a distance of 100-120 km. The apparatus could also be useful for connecting oilfield administrations with the oilfield units they control.

ASSOCIATION: Rosglavneftesnabsbyt

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BORISOV, V.V., inzh.

The ETU-353 excavator for main pipelines. Bezop.truda v prom. 3 no.1: 24-25 Ja '59. (MIRA 12:3)
(Pipelines--Maintenance and repair)
(Excavating machinery)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

MITROFANOV, S.I.; MELIK-STEPANOV, Yu.G.; SOKHIN, Yu.M.; BORISOV, V.V.

Ore dressing on a shaker trough. TSvet.met. 33 no.1:17-22 Ja '60. (MIRA 13:5)
(Ore dressing--Equipment and supplies)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Vladimir Vasil'yevich; SOLGANIK, G.Ya., vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Remote control of pipelines] Dispetcherskoe upravlenie magistral'nymi truboprovodami. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 119 p. (MIRA 13:12)

(Petroleum pipelines) (Remote control)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

S/137/61/000/011/037/123
A060/A101

AUTHORS: Mitrofanov, S. I., Melik-Stepanov, Yu. G., Sokhin, Yu. M., Borisov, V. V.

TITLE: On a new application of movable heavy media for the concentration of minerals with specific gravity exceeding three

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 7, abstract 11G50 ("Nauchno soobshch. Yakutskiy fil. Sib. otd. AN SSSR", 1960, no. 3, 50 - 61)

TEXT: One of the problems of this work was the finding of the cheapest, but sufficiently efficacious materials for the moving layer. The following ore materials were studied: hematite-magnetite dredge slimes, magnetic fraction of jigging concentrate - 1 mm, ground up magnetic fraction of the jigging concentrate - 1 mm and even - 1 + 0.5 mm. The best results were obtained with a moving layer of ilmenite-magnetite material. Its high specific gravity of 4.75 makes it possible to vary the specific gravity of the moving layer between wide limits depending on the grist fineness. In course of the investigations the necessary parameters were studied. When the volume of the weighting compound is great then the

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A060/A101

On a new application of movable heavy media...

vibratory action on the heavy moving medium in "ВТ" ("VZh") apparatus acts to render it denser and raise its specific gravity to 3.15 - 3.2. An electronic apparatus has been worked out for the control of the specific gravity of the medium, using a capacitance transducer as the density indicator. A semi-industrial installation "VZh-3" has been designed and constructed, and is being tested. The schematic diagrams are given.

A. Shmeleva

[Abstracter's note: Complete translation]

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22487
S/186/61/003/003/005/018
E071/E435

21,3200

AUTHORS: Karpacheva, S.M., Adamskiy, N.M. and Borisov, V.V.

TITLE: Extraction of Cesium With Carbonic Acids

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.3, pp.272-283

TEXT: The distribution of microquantities of cesium^{134} between its aqueous solutions and fatty acids (or solutions of fatty acids in benzene and isooctane) was investigated. A mixture of fatty acids obtained by redistilling a technical fraction (C_7 - C_9) was used. Specific gravity of the mixture was 0.917 g/cm^3; refractive index was 1.4260; mean molecular wt. was 140; acidity was 6.59 M. The extraction was carried out at 25°C. The contact time was 30 minutes, settling time not less than 12 hours. The distribution coefficients α were determined as the ratio of the γ activities of the organic and the aqueous phases. The γ activity of aqueous solutions before extraction was 1.2×10^{-4} g/equiv. of Ra; the pH of the aqueous phase was varied by adding various quantities of NaOH or HNO_3. The starting solution was prepared by solving chemically pure sodium nitrate to which radioactive Cs^{134} was added. The experimental data are

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

Extraction of Cesium ...

tabulated and also given in Fig.1 to 4. Fig.1 is a plot of log α vs pH with the $NaNO_3$ concentration as a parameter. Curves 1, 2,3 and 4 relate respectively to 0, 2 N, 4 N and 6 N . Fig.2 gives log α for Cs vs pH of the aqueous phase for various diluting media: (1 - 4 isooctane, $(NaNO_3) = 0$; 5 - 8 benzol $(NaNO_3) = 2$ N). Fig.3 gives log α for Cs vs log $(HR)_o$, i.e. the logarithm of the concentration of the monomers in the diluent for pH = const: 1 - 4 isooctane $(NaNO_3) = 0$, pH = 50; 5 - 8 benzol $(NaNO_3) = 2$ N, pH = 4.4. Fig.4 shows $K_1 = (S)_B/(HR)_o$ vs the $NaNO_3$ concentration in the aqueous solution. On studying the dependence of the distribution of cesium between the aqueous phase and fatty acids on the concentration of sodium nitrate within a range of 0 - 6 M and pH of aqueous phase within a range of 0.2 to 6.3, it was established that the dependence of logarithm of the distribution coefficient on pH is not completely covered by the linear sector, characteristic for the middle part of the curves. At all concentrations of sodium nitrate, the curves obtained begin with a section with an insignificant gradient and end with a sector on which the increase of the distribution coefficient stops and then

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even begins to decrease. It was found that the slope of the middle section of curves $\log \alpha = f(pH)$ = about 0.9. It was shown that the deviation from its theoretical value of 1 can be explained by the fact that with increasing pH the concentration of HR in the organic phase decreases. At pH above 5, the coefficient of distribution passes through a maximum; this can be explained by a considerable decrease in the concentration of HR due to the passage of sodium into the organic phase and increase in the solubility of water in the latter. As regards the dependence of the distribution of cesium between the aqueous phase (at a constant ionic force and pH) and solutions of fatty acids in benzene and isooctane on their concentration in the organic phase, it was found that for the section with a proportional relationship $\log \alpha = f(pH)$, the slope of the curves $\log \alpha = f\{\log(HR)_o\}$ is nearly 8. Therefore, it is possible that on extraction of cesium, the compound $CsR \cdot 7HR$ is formed in the organic phase. It is shown that with increasing concentration of sodium nitrate in the aqueous phase the coefficients of distribution are decreasing. This can be explained by the

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Extraction of Cesium ...

following two main causes: a decrease in the solubility of fatty acids in the aqueous phase; decrease in the activity of cesium with increasing ionic force of the aqueous solution. On studying the distribution of fatty acids at equilibrium with aqueous solutions containing various amounts of sodium nitrate, it was found that on varying the concentration of sodium nitrate from about 0 to 6 M, the coefficient of distribution K_1 = (HR) aqueous/(HR) organic decreases from 0.085 to 0.022. Whereupon the solubility decreases from 0.068 to 0.018 mole/l. On the basis of literature data a rough evaluation of the activity coefficients of cesium in sodium nitrate solutions was made. On increasing sodium nitrate concentration from about 0 to 6 M, the activity coefficient of cesium decreases from 1 to 0.2. The extraction constant of cesium from sodium nitrate solutions was calculated as $(3.55 \pm 0.35) \times 10^{-3}$. There are 6 figures, 8 tables and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: A.Katchalsky, H.Eisenberg, S.Lifson, J.Am.Chem.Soc.,73, 12, 5889 (1951).

SUBMITTED: May 24, 1960
Card 4/6

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

S/186/61/003/003/007/018
E071/E435

AUTHORS: Karpacheva, S.M., Adamskiy, N.M. and Borisov, V.V.

TITLE: Extraction of Iron (III) With Carbonic Acids

PERIODICAL: Radiokhimiya, 1961, Vol.3, No.3, pp.291-294

TEXT: The dependence of the coefficient of distribution of trivalent iron between aqueous solutions of its nitrate and fatty acids on pH of the aqueous phase (within a range 0.48 to 2.5) was studied. As the extracting agent, a mixture of fatty acids (without a solvent), obtained by redistilling their technical fraction ($C_7 - C_9$), was used which had the following properties: mean molecular weight 140, sp.gr. 0.917 g/cm^3, refractive index 1.4260, acidity 6.57 M. The ratio of organic to aqueous phases was 1 to 5. The concentration of iron in the starting solution was 10 g/l. pH of the solution was varied by additions of sodium hydroxide. The experimental procedure is described in some detail. The experimental results show that at pH = 2.5, the aqueous phase is practically free from iron. The dependence of $\lg \alpha = f(pH)$ for iron is represented by a straight line $\lg \alpha = - 0.74 + 2.10 \cdot pH$. It appears from the analysis of the experimental data in which the

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hydrolysis and a decrease in the acid concentration in the organic phase was taken into consideration, that the interaction of iron with the extracting agent takes place with the formation of FeR_3 or $FeR_3 \cdot HR$. A compound of trivalent iron with organic acids was isolated; its chemical analysis showed that its composition corresponds to $Fe_3R_3 \cdot HR$. The results obtained agree with the distribution data. There are 1 figure, 1 table and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

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PHASE I BOOK EXPLOITATION SOV/6072

Mikhaylov, A. I., V. V. Borisov, and E. K. Kalinin

Gazoturbinnyye ustanovki zamknutogo tsikla; teoriya i raschet (Closed-Cycle Gas Turbine Plants; Theory and Design). Moscow, Izd-vo AN SSSR, 1962. 145 p. Errata printed on the inside of back cover. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut dvigateley.

Ed. of Publishing House: V. M. Klennikov; Tech. Ed.: G. A. Astaf'yeva.

PURPOSE: This book is intended for designers and for scientific and engineering personnel.

COVERAGE: The book reviews works on the method of calculation of closed-cycle gas turbine engines, with particular attention paid to the design of a stage of turbomachines working on various gases. Methods of calculating heat exchangers are given and means of reducing their weight and dimensions are indicated. Information on atomic gas turbine engines, based on non-

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Soviet sources, is included. No personalities are mentioned. There are 57 references: 26 Soviet, 28 English, and 3 German.

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Ch. III. Influence of the Properties of the Working Medium on the Basic Parameters of a CCGTE 29

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BORISOV, V.V.; KRASIL'NIKOV, V.N.

Scattering of waves on random inhomogeneities of a medium with a variable refractive index. Probl.dif.i raspr. voln 2:102-110 '62. (MIRA 16:4)

(Scattering (Physics)) (Radio waves) (Refractive index)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.; KORROL', V.V.; TUNKOV, V.P.; TVIROV, V.I.

Deoxidation of steel by aluminum-silicon. Stal' 25 no.8:810 S '65. (MIRA 18:9)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i Metallurgicheskiy zavod "Serp i molot".

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

A.C.S. Ceram. Abstr. 1944

W. Litteral

Once-fired sanitary ware. N. V. Bobrov and G. A. Kalantar. *Steklo i Keram. Prom.*, 1944, No. 6, pp. 15-16.—The great need for sanitary ware (toilet bowls, washbowls, etc.) and the need to economize on fuel have forced a search for a suitable composition and firing schedule that would permit combining the usual two firings (bisque and glaze) into one. Best results were obtained with a body of the following composition: SiO_2 71.08 (37.50), Al_2O_3 24.00 (5.40), Fe_2O_3 0.70 (0.10), TiO_2 0.67 (0.20), CaO 0.80 (0.35), MgO 0.47 (0.27), Na_2O 0.48 (0.18), K_2O 0.84 (0.20)%. The coefficient of acidity of this composition is 0.59, and the expansion coefficient is 0.99. Best results were obtained using a glaze of the composition SiO_2 62.50, Al_2O_3 11.07, Fe_2O_3 0.17, TiO_2 0.08, CaO 12.35, MgO 0.83, Na_2O 1.67, K_2O 4.28, B_2O_3 3.75, Sb_2O_3 0.05, and ZnO 3.50%. The cast body was dried to contain not over 2% moisture. The dry body was carefully wiped free of dust, preferably washed, and finished. It was then glazed by dipping and again kept till its moisture content was reduced to not over 2%. It was then fired. The temperature schedule is of paramount importance and should be carefully kept. It is brought up to 200° in 8 to 9 hr., from 200° to 500° in 6 hr., from 500° to 700° in 8 hr., from 700° to 850° in 5 hr., and from 850° to 1250° in 8 hr. At this temperature, 1250° to 1270°, it is kept for 3 to 4 hr. The products were entirely satisfactory. The one-firing method reduced the fuel consumption 35 to 40% and at the same time doubled the output of the furnaces. M.Ho.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

SOV/177-58-9-24/51

17(

AUTHOR: Borisov, V.V., Captain of the Medical Corps

TITLE: Application of Antitoxic Belen'kiy Serum in Furunculosis

PERIODICAL: Voyenno-meditsinkskiy zhurnal, 1958, Nr 9, pp 74-75 (USSR)

ABSTRACT: From 1956 on, the author treated 43 patients suffering from furunculosis with injections of Belen'kiy serum. For one injection he took from 100,0 to 400,0 and mostly 250,0 of the preparation. Prior to the application, the serum was warmed to body temperature. The first injections were performed directly from the ampules with the aid of a tube system and droppers, subsequently from the Bobrov apparatus. In 81 serum injections, 6 reactions were observed, the seriousness

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of which were determined by a scheme suggested by D.M. Grozdov. The results obtained confirm the good healing effect of Belen'kiy serum in chronic furunculosis. One case report is presented.

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BORISOV, V.V.

33861. Chastnoye Solnyechnoye Ztmyeniye 9 Maya 1948. Byullyetyen B Vsyesoyuz. Astron.-Gyeodyez. O-va, No 6, 1949, C 28-31.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

MITROFANOV, S.I.; MELIK-STEPANOV, Yu.G.; SOKHIN, Yu.M.; BORISOV, V.V.

New application of movable heavy media for the concentration of minerals having a specific gravity exceeding three. Nauch. soob. IAFAN SSSR no.3:50-61 '60. (MIRA 16:3)
(Ore dressing)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.

Simplified pumping stations. Stroi. truboprov. 8 no.5:30 My '63. (MIRA 16:5)

1. Glavnoye upravleniye po material'no-tekhnicheskomu snabzheniyu predpriyatiy neftyanoy promyshlennosti pri Sovete Ministrov RSFSR.
(Petroleum pipelines--Buildings and structures)
(Pumping machinery)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.

Practice of repairing pipelines. Neftianik 5 no.8:15-16 Ag '60. (MIRA 14:8)

1. Sotrudnik Glavneftesnabsbyta RSFSR.
(Pipelines—Maintenance and repair)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.V.

11(1),26(1) PHASE I BOOK EXPLOITATION SOV/2391

Mikhaylov, Aleksandr Ivanovich, Georgiy Mikhaylovich Gorbunov, Vladimir Vladimirovich Borisov, Leonid Aleksandrovich Kvasnikov, and Nikolay Ivanovich Markov

Rabochiy protsess i raschet kamer sgoraniya gazoturbinnykh dvigateley (The Operation and Calculation of Combustion Chambers of Gas-Turbine Engines) Moscow, Oborongiz, 1959. 284 p. (Series: Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze. Trudy, vyp. 106) Errata slip inserted. 3,610 copies printed.

Ed.: S.I. Bumshteyn, Engineer; Ed. of Publishing House: S. I. Vinogradskaya; Tech. Ed.: V.P. Rozhin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for scientific workers and engineers engaged in designing combustion chambers of gas-turbine engines, and also for students in advanced courses in this general field.

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The Operation and Calculation (Cont.) SOV/2391

COVERAGE: The book contains experimental data on the aerodynamic structure of flow in combustion chambers, hydraulic calculations for gas and air conduits, distribution of fuel in the gas flow, and the description of the equipment used in the investigation. On the basis of the experimental data obtained, an analysis of the operation of combustion chambers is given. The book also contains a description of hydraulic design and verification calculations for combustion chambers, the calculation of the structure of flow, and the calculation of the concentration of the fuel mixture. Chapter I was written by N.V. Inozemtsev, Chapters II, IV and V by G.M. Gorbunov, Chapter III by A.I. Mikhaylov, Chapter VI by V.V. Borisov, Chapter VII by N.I. Markov, V.V. Borisov, and E.L. Solokhin. Section 5 of Chapter III was partly written by L.A. Kvasnikov, who also contributed to Chapter V. The experimental work and the preparation of experimental data was done by G.G. Gakhun, E.L. Solokhin, S.I. Shakhwin, V.V. Polyakov, Yu. P. Rykov, A.I. Vinogradov, V.A. Golubev, Ye. V. Trofimova, and A. V. Garyacheva. There are 34 references, all Soviet.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

MIKHAYLOV, A.I.; BORISOV, V.V.; KALININ, E.K.; KLENNIKOV, V.M., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Closed cycle gas turbines; theory and design] Gazoturbinnye ustanovki zamknutogo tsikla; teoriia i raschet. Moskva, Izd-vo Akad. nauk SSSR, 1962. 145 p. (MIRA 15:5)
(Gas turbines--Design and construction)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V. V. [Borysov, V. V.]

Youths study machinery. Mekh. sil'. hosp. 14 no.2:5-6 F '63.
(MIRA 16:4)

1. Zaveduyushchiy Dragobitskim otdeleniyem "Sil'gosptekhniki" L'vovskoy oblasti.

(Lvov Province—Agricultural machinery—Study and teaching)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Vasiliy Matveyevich; GORBACHEV, I.N., red.; MYAKUSHKO, V.P., red.izd-va; KARLOVA, G.L., tekhn. red.

[Fire prevention at enterprises of the woodworking industry] Pozharnaia okhrana na predpriiatiiakh derevo-obrabatyvaiushchei promyshlennosti. Moskva, Goslesbum-izdat, 1963. 101 p. (MIRA 17:2)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

USSR/Cultivated Plants. Potatoes, Vegetables, Melons. M

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77680.

Author : Borisov, V. Ya.
Inst : Crimea Agricultural Institute.
Title : Periods of Sowing and Planting of Vegetable Crops for Crimea.

Orig Pub: Tr. Krymsk. s.kh. in-ta, 1957, 4, 219-248.

Abstract: On the basis of an experimental study and generalization of leading experiments in the cultivation of vegetable crops in open and protected ground in Crimea Oblast, the department of vegetable growing recommends periods of sowing, planting and the start of harvesting of vegetable crops in the 7 zones of the oblast during spring and autumn sowing

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and during repeated cultivation. For realization in the earliest periods, it is recommended to sow spinach, sorrel, parsley, celery, onion-nutmeg flower, lettuce and some other crops such that before the onset of a stable autumn cold, the plants succeed in forming a root system and sprout above the ground. Onion-carline thistle and garlic should be set in later so as to form only a small root system. Winter planting of the Derbentskaya variety of cabbage is also possible in the oblast. The proposed agricultural engineering contributes to the decrease in quantity of bolting plants and assures an early and high harvest. Optimal periods are developed of planting and sowing and of a scheme of crop-rotations in the protected ground. Reversal

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, V.Ye.

Mercurimetric determination of chlorides in materials of plant origin. Uzb.khim.zhur. no.2:56-59 '61. (MIRA 14:10)

1. Samarkhandskiy sel'skokhozyaystvennyy institut imeni V.V.Kuybysheva.
(Chlorides) (Mercurimetry)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Yakov Borisovich; BEREZIN, I.A., red.

[Plans, initiative and life] Plany, initsiativa i zhizn'. Moskva, Izd-vo "Sovetskaia Rossiia," 1964. 95 p. (MIRA 17:8)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

1. BORISOV, YE.

2. USSR (600)

4. Hydroelectric Power Stations

7. Lights of communism. Sov.zhen. No. 1 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.

"Striking Equations," Znan. sila, No 7, 1952

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.

Automatic gambling machine. IUn.tekh. 5 no.4:57-58 Ap '61.
(MIRA 14:3)
(Games of chance (Mathematics)) (Electronic calculating machines)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, YEVGENIY

"Armor" of the TSimlyansk Dam
Znan sila no. 6, 1952

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.

In the economics section of the all-Union conference of department heads of social sciences. Vop. ekon. no.3:112-117 Mr '62. (MIRA 15:3)

(Economics--Study and teaching)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.

BORISOV, Ye.

New method of selling textile goods. Nov.torg.tekh. no.2:10-12 '57. (MLRA 10:8)
(Textile fabrics)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

Borisov YE.

BORISOV, Ye.; SHEMONAYEV, P., redaktor; IGNAT'YEVA, A., tekhnicheskiy redaktor.

[Basic index of the work of an enterprise] Osnovnoi pokazatel' raboty predpriiatiia. [Moskva] Moskovskii rabochii, 1954. 31 p. (MLRA 7:9)

1. Direktor zavoda imeni Vladimira Il'icha (for Borisov) (Industrial management)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.; ZOLOTAREV, A.; KASHUTIN, P.

Social and economic problems of technological progress. Vop. ekon. no.11:150-155 N '61. (MIRA 14:11)
(Technology and civilization--Congresses)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Ye.

Approaches in a helicopter. Kryl. rod. 14 no.2:22-23 F '63.
(MIRA 16:4)

1. Starshiy inspektor-letchik upravleniya aviatsionnoy podgotovki i sporta TSentral'nogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu.

(Helicopters—Piloting)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

BORISOV, Yevg.

Excellent in a "GRID" way. Znan.-sila 37 no.9:7 S '62.
(MIRA 15:12)
(Astronautics)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206410008-0

[redacted]

BOKIOV, Ye., general-mayor zapasa, kand.voyennykh nauk

Loyal fighter of the Leninist party; on the 70th anniversary of the birth of I.A. B.Gamarnik. Komm. Vooruzh. Sil 4 no.10:88-90 My '64. (MIRA 17:7)

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