"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/089/61/011/006/004/014
B102/B138

Critical heat flows for...

have no essential influence on q_{cr} if the internal diameter is more than 4 mm, the width of annular gaps more than 1 - 2 mm, and that of plane gaps more than 1.3 mm. If $x \gtrsim 0$, q_{cr} is a hyperbolic function of the relative length l/d_{equ}. Since this is not a characteristic parameter, the quantity $\sqrt{\sigma/(\gamma'-\gamma'')}$ is chosen as characteristic length l_o. (The singly primed quantities refer to the liquid, the doubly primed ones to the vapor). The effect of λ' on q_{cr} is negligible. If the parameter $w_o l_o/a'$ exists, $w_o l_o/a'$ can be omitted. The rate of mass flow, w_g (kg/m^2·hr) is chosen as the characteristic of flow rate and phase composition of the boiling medium so that, instead of (1)

$$\frac{q_{cr} l_o}{\sigma r \gamma'} = f\left(\frac{w_g}{\sigma \gamma' \mu'}, \frac{r}{c'_p T_s}, \frac{\gamma'}{\gamma''}, \frac{l_o}{r}\right) \quad (2)$$

can be taken as new "criterial system". The first parameter may be defined by

$$\frac{W_{0i}\gamma'}{\sigma\gamma'} = \frac{F_r^*}{A_r^*} \qquad F_r^* = \frac{W_0^2}{g}\sqrt{\frac{\gamma'-\gamma''}{\sigma}}$$

$$w A_r^* = \frac{g}{\gamma'^2}\left(\frac{\sigma}{\gamma'-\gamma''}\right)^{3/2}\left(1-\frac{\gamma''}{\gamma'}\right)^2 \quad (A)_1$$

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Critical heat flows for...

$r/c_p'T_s$ may be regarded as a measure of thermodynamical similarity, $i/r = x$ is the relative enthalpy of the flow. The actual relations holding within system (2), as determined experimentally and given in the table. These relations are evaluated and discussed for the following special cases: (1) A non-pulsating system with $x > 0$, (2) a pulsating system with $x > 0$, and (3) a non-pulsating system with $x < 0$. The result of the last case, for instance, is given by

$$\frac{q_{cr}\mu'}{\sigma\gamma'r} = 0{,}174\left(\frac{c_p'T_s}{r}\right)^{0.8} K_w^{0.8} \left[1 - 0{,}45x\left(\frac{\gamma'}{\gamma''}\right)^{0.85}\right] \quad (7).$$

It is valid if $q_{cr} > q_s$, and the thermal flow is given by

$$q_s = 0{,}023\frac{\lambda}{d} Pr^{0.4} \left(\frac{W_0 d}{\nu_{\mu g}}\right)^{0.8} (t_s - t_m). \quad (7).$$

The relations are illustrated by graphs. There are 4 figures, 1 table, and 14 references: 10 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: H. Jacket, J. Hourty,

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/0[illegible]/61/011/006/002/014
B102/B138

Critical heat flows for...

J. Zerbe. Trans. ASME, 80, 2, 301, 1958; L. Bell. Nuclear Science and Engr., v. 7, No. 3, 243 (1960); H. Buchberg. Studies in boiling heat transfer Final Report 1951. U. S. Atomic Energy Commission.

SUBMITTED: April 8, 1961

Legend to the Table: (1) Shape of channel, (2) cross-sectional dimensions, (3) l/d_{equ}, (4) p, (5) w_g, kg/m²sec; (a) tube, (b) flat gap, (c) annular channel (measurements carried out by the authors together with I. L. Mostinskiy and L. Ye. Faktorovich).

Fig. 3. q_{cr} in dependence on w_g and p for a pulsating system. ● - cylindrical tube, o - annular channel (cf. Table).

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

26.5200

AUTHORS: Styrikovich, M. A., Corresponding Member AS USSR
Miropol'skiy, Z. L., and Shen Chao-Yuan

TITLE: Effect of nonuniform heating along a tube on the [illegible] critical thermal convection

PERIODICAL: Akademiya nauk SSSR. Doklady, v. [illegible]

TEXT: In connection with the design of high-power heat exchangers, the authors studied the effect of a nonuniform heating along a tube on the occurrence of a boiling crisis. Experiments were made with steam-water mixture and/or with water moving upward in a tube not heated up to saturation temperature; pressures ranged from 100 - 180 at. The flow rates were 400, 850, and 2,000 kg/m^2·sec. The experimental setup has been described in an earlier paper by Miropol'skiy et al. (Teploenergetika, [illegible], 80 [illegible]). The arrangement consists in an open circuit with superheater. Pressure and flow rate can be adjusted by valves. Two types of nonuniform heating of the tubes were employed. Data are given obtained with tubes with a ratio of the maximum thermal flow to the mean flow of [illegible]. The minimum [illegible] maximum

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S 010 [illegible] 004 [illegible]

Effect of nonuniform heating

thermal flow ratio was 4.9. Occurrence of the [illegible] crisis was determined visually. The local value of specific thermal [illegible] at the point of the arising crisis is regarded as the critical thermal convection. The q^{nonu}_{crit} values are listed in Fig [illegible] in contrast to the [illegible] values [illegible] thermal convection in the case of nonuniform heating of the tubes [illegible] is found to surmount the critical values in the case of uniform heating of the tubes (q^{u}_{crit}) by about twice their amount. A rather complex dependence was obtained only when pulsations (100 at, 400-[illegible] kg/m²/sec) developed. In this case, when incompressible water in the space at the entrance of the test tube is replaced by elastic water-vapor mixture, the q^{nonu}_{crit} values drop jumplike. The ratio between q^{nonu}_{crit} and q^{u}_{crit} is then nearly reciprocal to that given above. Experiments with decreasing thermal flow in the direction of the moving medium showed that q^{nonu}_{crit} was only half of q^{u}_{crit} when the cri-

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Effect of nonuniform heating

sis was located near the exit of the tube. On the other hand, q_{crit}^{nonu} lay considerably above the q_{crit}^{u} valuc when the crisis was near the entrance of the tube. The authors show in the discussion of the results that the latter are determined by the percentage of vapor in the boundary layer. There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo Akademii nauk SSSR (Institute of Power Engineering imeni G. M. Krzhizhanovskiy , Academy of Sciences USSR)

SUBMITTED: May 5, 1961

Card 3/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROPOL'SKIY, Z.L.; FAKTOROVICH, L.Ye.

Generalization of experimental data on the effect of a heated channel length on critical heat flows. Dokl. AN SSSR 141 no.6:1353-1356 D '61. (MIRA 14:12)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo AN SSSR. Predstavleno akademikom V.I.Glushko.
(Heat--Transmission) (Hydrodynamics)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/862/62/002/000/007/029
A059/A126

AUTHORS: Miropol'skiy, Z.L., Shitsman, M.Ye.

TITLE: Critical heat flows in the boiling of water in channels

SOURCE: Teplo- i massoperenos. t. 2: Teplo-i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh. Ed. by A.V. Lykov and B.M. Smol'skiy. Minsk, Izd-vo AN BSSR, 1962, 87 - 93

TEXT: Experimental data obtained by various authors on critical heat flows are treated with the aid of dimensionless criteria, and recommendations are given for the calculation of these heat flows involving that of a steam-and-water mixture and of water underheated below saturation temperature in tubes, ring- and flat-slit channels. The following criticalsystem for the onset of critical boiling with forced liquid flow in channels has been previously derived (ref. 1: ZhTF, v. 23, vyp. 2, 1953):

$$\frac{q_{cr} l_0}{a' r \gamma'} = f\left(\frac{w_0 l_0}{\nu'}, \frac{w_0 l_0}{a'}, \frac{r}{c_p T_s}, \frac{w_0''}{w_0'}, \frac{\gamma''}{\gamma'}\right). \quad (1)$$

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Critical heat flows in the boiling of ....

where q_{cr} is the respective critical heat flow, l_0 the characteristic linear dimension, a' the temperature coefficient of the thermal conductivity of the liquid, r the heat of evaporation, γ' and γ'' the specific gravities of the liquid and the steam, respectively, on the saturation line, w_0' and w_0'' the reduced velocities of the liquid and the steam, respectively, on the saturation line, ν' the kinematic viscosity of the liquid, c_p' the thermal capacity of the liquid, and T_s the absolute saturation temperature. When channels with $d > 4$, the width of the flat slit $\delta_{slit} < 1.3$, and $l/d_{equ} < 100$ are exoluded, the geometric dimensions of the channel need not be considered in equation (1). For the forced flow of the boiling liquid in the channels,

$$l_0 = f(w_0, w_0', \gamma', \gamma'', \sigma),$$

where σ is the surface tension, and the criterion $w_0 l_0/a'$ in the system (1) can be excluded in the presence of the criterion $w_0 l_0/\nu'$. When the rate of mass flow, w_0, and the relative enthalpy, Δi, are introduced, we obtain

$$\frac{q_{cr} l_0'}{\sigma \gamma' r} = f\left(\frac{w_0 l_0'}{\sigma \gamma'}, \frac{r}{c_p' T_s}, \frac{\gamma'}{\gamma''}, \frac{\Delta i}{r}\right) \qquad (2)$$

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Critical heat flows in the boiling of ....

where μ is the dynamic viscosity. Two cases are to be considered: a) that with the free development of fluctuations and a compressible medium between the heated section and the throttling member or the circulation impeller, and b) that with a limited development of fluctuations, in the presence of an incompressible medium at this place. Under non-fluctuating conditions and with $x\ (= \Delta i/r) > 0$ in tubes and annular channels,

$$\frac{q_{cr}}{d\gamma'}\frac{\mu'}{r} = 0.174\left(\frac{c_p' T_s}{r}\right)^{0.8} K_w^{0.4}\,(1 - x)^n, \qquad (3)$$

where $K_w = \frac{w_g \mu'}{d\gamma'}\left(\frac{\gamma'}{\gamma''}\right)^{0.2}$, and, in flat-slit channels,

$$\frac{q_{cr}\mu'}{\sigma\gamma' r} = 0.224\left(\frac{c_p' T_s}{r}\right)^{0.8} K_w^{0.4}(1-x)^n. \qquad (4)$$

Under fluctuating conditions and $x > 0$,

$$\frac{q_{cr}\mu'}{\sigma\gamma' r} = 0.7\left(\frac{c_p' T_s}{r}\right)^{0.8} K_w(1-x)(1+4x); \qquad (5)$$

and under non-fluctuating conditions and $x \leq 0$,

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Critical heat flow in the boiling of ....

S/862/62/002/000/007/029
A059/A126

$$\frac{q_{cr}\mu'}{a\gamma' r} = 0{,}174\left(\frac{c'_p T_s}{r}\right)^{0{,}8} K_w^{0{,}4}\left[1 - 0{,}45\,x\left(\frac{\gamma'}{\gamma''}\right)^{0{,}85}\right]. \qquad (6)$$

A satisfactory agreement was found between calculated and experimental data. At high velocities of flow and high negative values of x, the equation

$$q_s = 0{,}023\,\frac{\lambda}{d}\,\mathrm{Pr}^{0{,}4}\left(\frac{w_f d}{\mu g}\right)^{0{,}8}(t_s - t_f) \qquad (7)$$

holds, where λ is the coefficient of heat conduction, g acceleration due to gravity, t_s the saturation temperature, and t_f the temperature of flow when $q_{cr} > q_s$. I.L. Mostinskiy and L.Ye. Faktorovich are mentioned. There are 4 figures and 1 table.

ASSOCIATION: Energeticheskiy institut im. G.M. Krzhizhanovskogo (Power Engineering Institute imeni G.M. Krzhizhanovskiy)

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

3194

S/855/62/000/000/005/005
E194/E435

AUTHORS: Alad'yev, I.T., Doroshchuk, V.Ye., Miropol'skiy, Z.L., Styrikovich, M.A.

TITLE: Critical boiling in tubes

SOURCE: Teploperedacha. Energ. inst. AN SSSR. Ed. by M.A.Mikheyev. Moscow, Izd-vo AN SSSR, 1962. 124-132

TEXT: A good many critical boiling tests have been made in recent years, usually whilst water is being pumped through an electrically heated stainless steel pipe. It is usually considered that the critical heat transfer rate is uniquely determined by the pressure, rate of flow and the enthalpy of the medium at the place of critical boiling. This article considers the effects of other factors, such as the distribution of heat flow over the perimeter and length of the pipe, the dimensions of the test length and of neighbouring parts of the system and the compressibility of the fluid in neighbouring parts of the system. This latter point is important because flow pulsations can develop during the tests and when neighbouring spaces are filled with compressible substances, whereas if neighbouring spaces are

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S/855/62/000/000/005/005
E194/E435

Critical boiling in tubes

filled with incompressible substances pulsations do not develop. Pulsating conditions are the least favourable and they must often be suppressed. It sometimes does not suffice to fit a resistance between the expansion vessel and the heated pipe. If the internal diameter of the test pipe is reduced from 8 to 3 mm there is some increase in the critical heat transfer rate. The length of the test piece can have various effects depending upon the flow conditions, particularly when pulsation is present. The thickness of the duct walls (0.4 and 2 mm respectively) and the roughness of the inner surface (even 0.12 to 0.15 mm deep transverse grooves) had little influence on the critical heat flow. The effects of increasing the pressure, the rate of flow and the enthalpy of the fluid in increasing the critical heat transfer rate are discussed. Experimental work on determination of critical heat transfer rates during the flow of water and steam/water mixtures in pipes is briefly reviewed. Although several methods of generalizing experimental results have been proposed in the USSR the empirical formulae are complicated and often contain numerous empirical constants. Reliable generalizations will only

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be possible when the actual mechanism and physical laws of critical bubble-wise boiling are understood, which is not yet the case. There are 7 figures.

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MIROPOL'SKIY, Z.L., kand.tekhn.nauk

Heat transfer in case of high-pressure steam condensation within pipes. Teploenergetika 9 no.3:79-83 Mr '62. (MIRA 15:2)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo.
(Heat--Transmission)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

STYRIKOVICH, M.A.; MIROPOL'SKIY, Z.L.; EVA, V.K.

Critical boiling as affected by local rises of heat flows along the channel. Dokl.AN SSSR 145 no.1:93-96 Jl '62. (MIRA 15:7)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo.
2. Chlen-korrespondent AN SSSR (for Styrikovich).
(Ebullition)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/096/63/000/005/004/011
E194/E455

AUTHOR: Miropol'skiy, Z.L., Candidate of Technical Sciences

TITLE: Heat transfer in steam-raising tubes during filmwise boiling of steam-water mixture

PERIODICAL: Teploenergetika, no.5, 1963, 49-52

TEXT: With forced circulation the transition from bubble to film-wise boiling is not always associated with a great rise in tube-wall temperature. Available experimental data on this point relates to a fairly narrow range of pressure and flow rate, and little has been published about the influence of tube geometry. Accordingly a study was made of heat transfer during film-wise boiling in a vertical tube of 8 mm inner diameter electrically heated over a length of 1500 mm, with wall temperature measurement at 11 distances from the start of the heated section. Super-critical steam delivered from a single-pass boiler was cooled and throttled before passing through the experimental rig. Thereafter the steam was cooled in a heat exchanger and passed to a measuring tank. The temperature distribution was determined at the 11 check sections with constant flow conditions. Then the heat

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Heat transfer in steam-raising ...

input to the tube was gradually raised to a new value until further increase was prevented by the tube wall temperature reaching 600°C. At pressures below 180 atm in the initial sections of the heated tube, the impairment of temperature conditions occurred at higher steam contents than in sections further away from the start of the heating. When $\ell/d > 100$, conditions ahead of the tube had no appreciable influence. The experimental curves which are given show that in the region of steam content where normal bubble boiling occurs, the wall temperature is only a few degrees above the saturation temperature whatever the speed or the steam content of flow. Beyond the critical point the wall temperature reaches maximum values with steam contents close to the critical value, but the temperature gradually falls and when the steam content reaches unity the wall temperature may be calculated by

$$Nu_{\Pi} = 0.023 Re_{\Pi}^{0.8} Pr_{ct}^{0.8} \qquad (2)$$

where Π denotes steam and ct denotes wall. This form of expression signifies that during critical boiling the normal

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Heat transfer in steam-raising ...

transfer of heat from the nucleus of the flow to the boundary layer is disturbed and heat transfer is governed mainly by the properties of the steam in the layer near the wall and its speed. For a given mass rate of flow, as the heat flux increases the heat-transfer conditions are worse at low steam contents and then wall temperatures are very high. The heat-transfer coefficient to a steam-water mixture with steam content above the critical value is approximately proportional to the change in linear speed of steam-water mixture to the power of 0.8. On the basis of the results the following formula is recommended for calculating heat-transfer coefficients during the flow of steam-water mixture in pipes beyond the critical boiling condition

$$Nu_x = 0.023 Pr_{ct}^{0.8} Re''^{0.8} \left[x + \frac{\gamma''}{\gamma'} (1 - x) \right]^{0.8} y \qquad (7)$$

where $Nu_x = \frac{\alpha_x d}{\lambda''}$ and $Re'' = \frac{wgd}{\mu'' g}$. When available experimental results are plotted in suitable dimensionless coordinates, most of them lie within ± 25% of the curve represented by the above

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Heat transfer in steam-raising ...

S/096/63/000/005/004/011
E194/E455

equation. There are 6 figures.

ASSOCIATION: ENIN

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

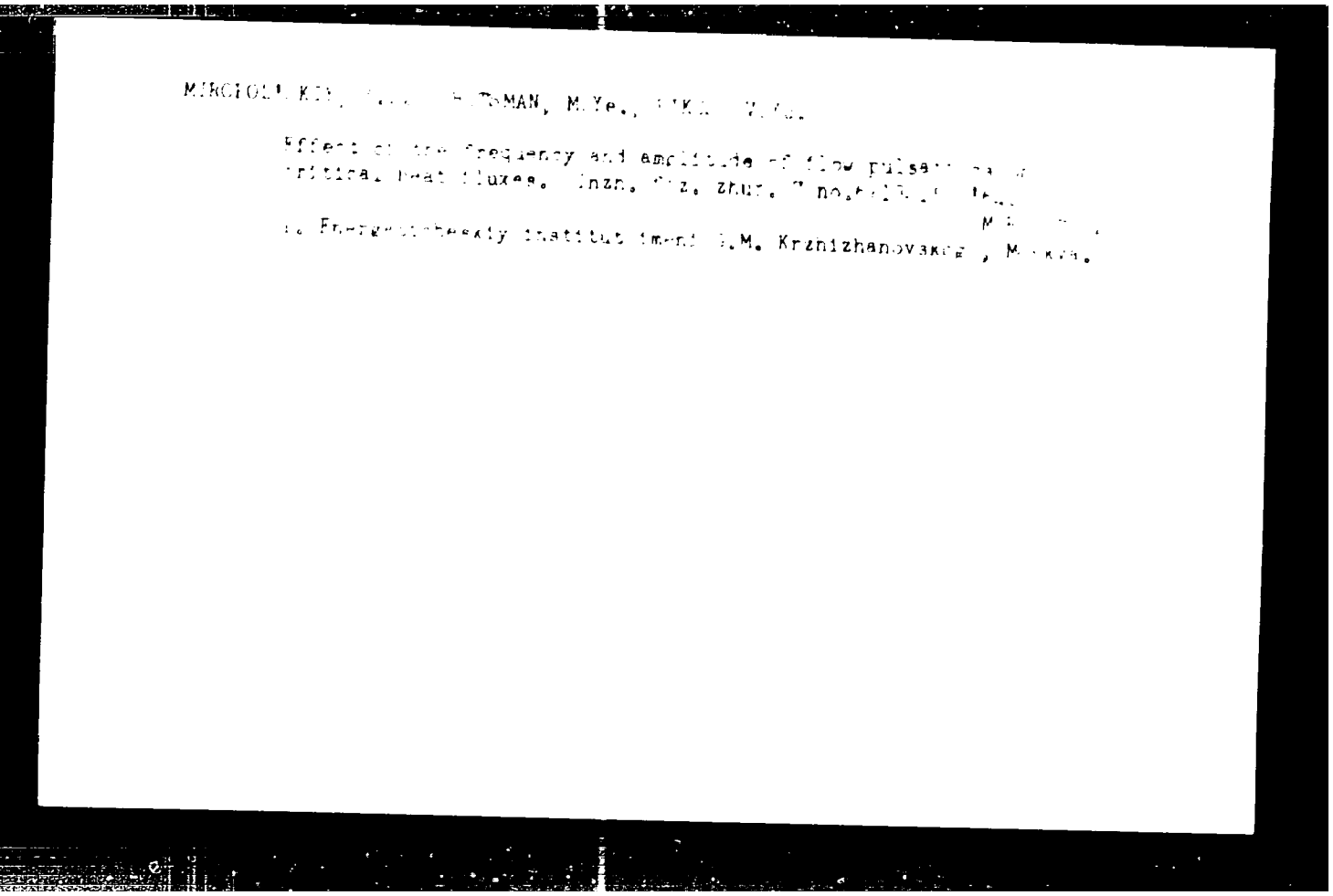
MIROPOL'SKIY, Z.L.; SHNEYEROVA, R.I.

Use of bremsstrahlung in studying the phase composition of a steam-water mixture in a heated tube. Teplofiz. vys. temp. 1 no.1:[illegible] Jl-Ag '63. (MIRA 16:10)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



MIROPOL'SKIY, [illegible] [illegible]SMAN, M.Ye., [illegible] [illegible]

Effect of the frequency and amplitude of flow pulsations on critical heat fluxes. Inzh. fiz. zhur. [illegible] no.[illegible] [illegible]

[illegible] Energeticheskiy institut imeni G.M. Krzhizhanovskogo, Moskva.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 15049-65 EWT(1)/EWP(m) Pd-1 AEDC(a)/AFWL/ASD(f)-2/AFETR

ACCESSION NR: AP5001631 S/0170/64/000/008/0009/0015

AUTHOR: Miropol'skiy, Z. L.

TITLE: Fluctuation in the mass flow rate in boiler tubes containing an elastic fluid in the topping elements of the duct line B

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 9-15

TOPIC TAGS: fluid flow, compressible fluid, flow fluctuation, flow kinetics, duct, duct geometry

Abstract: Experimental data are given on the fluctuations of flow in the heated ductwork when the topping sections of the line contain a compressible fluid. The study includes the influence of duct geometry, intensity of heating, circulation parameters and compressibility of the medium in the topping sections on the characteristics of the fluctuations. Orig. art. has 3 figures and 21 equations.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, Moscow (Power Engineering Institute)

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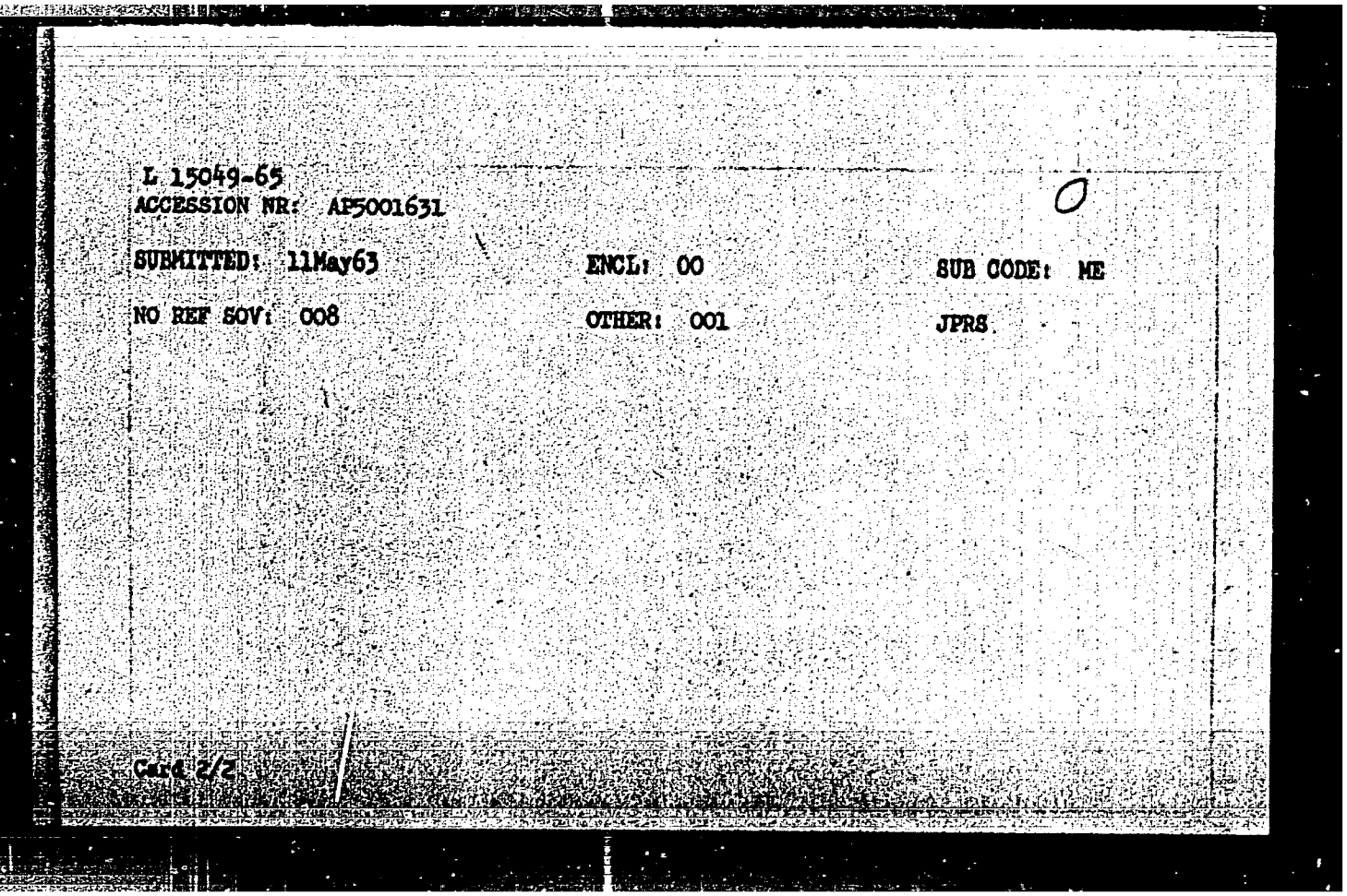
APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



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ACCESSION NR: AP5001631

SUBMITTED: 11May63 ENCL: 00 SUB CODE: ME

NO REF SOV: 008 OTHER: 001 JPRS

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SHNEYEROVA, R.I., inzh.; SHVARTS, A.L., kand. tekhn. nauk; MIROPOL'SKIY, Z.L., kand. tekhn. nauk; LOKSHIN, V.A., kand. tekhn. nauk

Hydraulic resistance in the upward motion of a steam and water mixture in inclined pipes. Teploenergetika 11 no.7:24-26 Jl '64. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut i Energeticheskiy institut im. Krzhizhanovskogo AN SSSR.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

AKOL'ZIN, P.A.; GERASIMOV, V.V.; KASPEROVICH, A.I.; MAMET, A.F.; MAN'KINA, N.N.; MARGULOVA, T.Kh.; MARTYNOVA, O.I.; MIROPOL'SKIY, Z.L.; Prinimali uchastiye: DYATLOVA, N.M.; BIKHMAN, B.I.; STYRIKOVICH, M.A., retsenzent; KOSTYRKIN, Yu.M., red.

[Water system of thermal electric power plants (ordinary and atomic)] Vodnyi rezhim teplovykh elektrostantsii (obychnykh i atomnykh). By] P.A.Akol'zin i dr. Moskva, Energiia, 1965. 382 p. (MIRA 18:3)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSEVIC, Ive

Properties and application of polyester resins in shipbuilding industries. Brodogradnja 14 no. 5: 173-177 '63.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHANSKIY, A.S.

Electric detonators for the salt industry. Vzr/v. delo no.48/5:19-21 '62. (MIRA 15:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut solyanoy promyshlennosti.
(Detonators) (Salt mines and mining)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHCHENKO, Stepan Makarovich; TUR, Viktor Aleksandrovich; YEREMEYEVA, G., red.; LEBEDEV, A., tekhn. red.

[Procedure for computing and paying the turnover tax] Poriadok ischisleniia i uplaty naloga s oborota. Moskva, Gosfinizdat, 1961. 114 p.

(Sales tax--Accounting) (MIRA 14:8)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHENKO, Svyatoslav Stepanovich; GULEMIN, Nikolay Mikhaylovich, TIKHONOV, N.V., kandidat tekhnicheskikh nauk, retsenzent; VORONIN, L.N., gornyy inzhener, retsenzent; VAYNBERG, P.B., gornyy inzhener, retsenzent; SMOLDYREV, A.Ye., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor

[Operator of the PML loading machine; tekhtbook for industrial and technical instruction of workers] Mashinist pogruzochnoi mashiny PML; uchebnoe posobie dlia proizvodstvenno-tekhnicheskogo obucheniia rabochikh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 190 p.
(Mining machinery) (MLRA 10:10)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

TR , A. I.

POLAND/Radio Broadcasting
Radio stations

Apr/May 1946

"Construction of a Radio Center at Warsaw," A. I. Miroshin, 1½ pp

"Vestnik Svyazi - Elektro Svyaz'" No 4/5 (73-74)

Discusses the rebuilding of the radio center at Warsaw at the town of Rashin (some 24 km from Warsaw) with special emphasis on the aid given by Soviet radio men to "friendly" Poland.

1959

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, A. I.

USSR/Electronics - Plate modulation

Card : 1/1

Authors : Miroshin, A. I., Senior Project Eng. of the Designing Institute of the Ministry of Communications.

Title : Automatic plate modulation of high-frequency transmitters

Periodical : Vest. Svyaz, 5, 14 - 15, May 1954

Abstract : The article describes the first experiment in the application of automatic plate modulation to high-frequency (short wave) transmitters and the qualitative characteristics, obtained in the experiment, are given. A table and a circuit diagram are included.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, A.I.

Antenna commutator for short wave radio transmission centers.
Vest.sviazi 14 no.1:30-31 Ja '54. (MLRA 7:5)

1. Inzhener Proyektnogo instituta Ministerstva svyazi.
(Radio--Antennas)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, A. I.

"Further Utilization of Plate Self-Modulation," by A. I. Miroshin, chief engineer of a project, Planning Institute of the Ministry of Communications USSR, Vestnik Svyazi, No 11, Nov 56, pp 8-11

At present there are in the USSR several medium-wave and short-wave transmitting stations operating on the principle of plate self-modulation, which proved to be 20-35% more efficient in power consumption. The transmitting power of these stations was almost doubled with the change-over from grid modulation to plate self-modulation.

In 1954 the Planning Institute of the Ministry of Communications USSR developed general circuits for plate self-modulation, suitable for 10- and 100-kw stations. These new circuits for the plate self-modulation of radio transmitters were tested under actual operating conditions and proved to be quite satisfactory from all angles.

On one of the powerful transmitting stations, where plate self-modulation was tested, the coefficient of nonlinear distortion was less then 5% at 95% modulation in the frequency range of 100 to 5,000 c.

At present three powerful long-wave radio stations are being reconstructed for operation on the plate self-modulation principle.

Sum 1258

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, A.I.

USSR/ Miscellaneous - Conferences

Card 1/1 Pub. 133 - 16/18

Authors : Lokshin, A. M.; Adyakin, N. M.; Kisel'nikov, A. M.; and Miroshin, A. I., Engineers

Title : To improve the performance stability of transmitting installations

Periodical : Vest. svyazi 2, 28 - 29, Feb 1955

Abstract : Minutes are presented of a discussion held on the subject of improving the performance stability of telephone-telegraph and radio transmitting installations in the USSR.

Institution: .....

Submitted: .....

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

AUTHOR: Miroshin, A. I.

TITLE: Introduction of Auto-Plate-Modulation (Vnedreniye avt. modnoy modulyatsii)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 3, pp. 15 - 20 (USSR)

ABSTRACT: A number of short-, medium- and especially of long-wave transmitters have been adapted to auto-plate-modulation owing to an initiative by the GSPI and the Radio Administration at the Ministry for Postal and Telecommunication Service of the USSR as well as by the specialists. The introduction of this change and the elaboration of a scheme for it was achieved by the reconstruction of existing transmission stations with grid modulation. This was achieved at great expenses. At present 4 schemes of auto-plate-modulation are introduced: 1) for medium- and long-wave transmitters of medium and great power 2) ditto, of smaller power. 3) ditto, with strong cascade according to the two-block scheme. 4) for short-wave transmitters with strong cascade according to a scheme with earthened grid. The description of the scheme follows. Experience shows

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that the transmitters with auto-plate-modulation are not less stable in operation than the old stations. Practice shows that in using auto-plate-modulation there are real possibilities for abandoning compensating valves. The given schemes - Figures 5 and 6 - can be recommended as schemes without compensation valves. By their means high acoustic parameters are obtained at increased efficiency this way V. G. Kruglov's invention is at present being realized. There are 6 figures, 4 tables, and 2 references 2 of which are Soviet.

SUBMITTED: August 9, 1957

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

6(4); 9(8) PHASE I BOOK EXPLOITATION SOV/ 1066

Mirosnin, Aleksandr Ivanovich

Nastroyka radioperedatchikov s avtomaticheskoy modulyatsiyey (Tuning of Radio Transmitters With Automatic Plate Modulation) Moscow, Svyaz'izdat, 1959. 73 p. (Series: Biblioteka po tekhnike svyazi) 10,000 copies printed.

Sponsoring Agency: Ministerstvo svyazi SSSR. Tekhnicheskoye upravleniye.

Resp. Ed.: G. A. Fedunin; Ed.: Ye. S. Nikolayeva; Tech. Ed.: S. F. Karabilova.

PURPOSE: The booklet is intended for radiobroadcasting personnel engaged in introducing the new modulation method.

COVERAGE: The author explains the principles of modernizing radio transmitters by a method developed by N. S. Krylov, called "automatic plate modulation". On the initiative and with the assistance of the Main Administration of the Ministry of Communications, USSR, and GSPI, several short-, medium- and long-wave radio-broadcasting

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Tuning of Radio Transmitters (Cont.) SOV/3966

stations have been converted to this system of modulation. The change-over, accomplished with comparatively low outlays, has resulted, according to the author, in an increase of power (by 70 to 100 per cent), efficiency (from a previous 15-20 per cent to 37-40 per cent) and in an improvement of performance of transmitters. The author describes the results of his own experience in converting several powerful broadcasting transmitters and presents calculations for some circuit components and stage operating conditions. He also presents recommendations on the regulation of [illegible]. No personalities are mentioned. There are 11 references, all Soviet (1 [illegible]).

TABLE OF CONTENTS:

Foreword

Introduction 2

Principle of Plate Modulation 3

Circuits of Automatic Plate Modulation and Practical Use 5

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APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Tuning of Radio Transmitters [illegible]

SOV/3066

Automatic Plate Modulation in Transmitters Operating With Tetrodes and Pentodes

Preparatory Work and Basic Calculations Connected With Converting Radio Stations to Automatic Plate Modulation 21

Regulation of Transmitters With Automatic Plate Modulation 26

Bibliography 49

AVAILABLE: Library of Congress (TK [illegible]) 74

Card 3/3

JP/mg
2-8-60

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

35059

S [illegible]
D [illegible]

9.1912

AUTHOR: Miroshin, A.I., Chief Engineer

TITLE: Passive radio relay stations

PERIODICAL: Vestnik svyazi, no. 1, 196[illegible]

TEXT: A passive relay station is described. The design formula are derived and a numerical example - given. A [illegible] cal relay station widely used in Japan. Other figures show an experimental passive relay-station in the form of a reflecting plate, developed by Chinese specialists. Fig. 4 shows a diagram of a relay line using a passive relay-station in the form of a plate. This relay line has the following characteristics. The power arriving at the relay station from station no. 1, is $P_r = P_1 A_1 A_r d^{[illegible]}$ watt, where P_1 denotes the power emitted by station no. 1, A_1 - the effective aperture of the antenna of station no. 1 in square meters, A_r - the effective area of the relay station, [illegible] the wavelength in meters. An analogous formula holds for the power P_r arriving at

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Passive radio relay-stations S [illegible] D299 D[illegible]

station no[illegible] from the relay station. Formulas are [illegible] for the attenuation. These show that the attenuation [illegible] relay-station is weaker, the larger its effective area [illegible] smaller the term $d_1 d_2 / (d_1 + d_2)$. The design of the relay station amounts in fact to calculation of its area proceeding from the permissible attenuation. The latter depends on the length of the relay line, the type of radio-relay equipment used and the international noise-level standards for telephone channels. Formulas are derived for the permissible attenuation and for the minimum power required at the receiver input. The noise level at the relay line Tokyo-Osaka (with 240 telephone channels) is 4[illegible] db. After the area of the relay-station has been calculated, its inclination is being determined. In practice, one takes an angle of aperture of the relaying surface equal to 1°. For reducing the wind pressure, the relay plate can be perforated. With λ = 4.5 cm, angle of arrival [illegible] 38°, hole-diameter 5mm and distance between holes [illegible] of the energy received at the relay-station is [illegible]. The [illegible] relay-stations can have one or two metallic plates; the [illegible] depends on the desired angle of incidence. A formula is given for the

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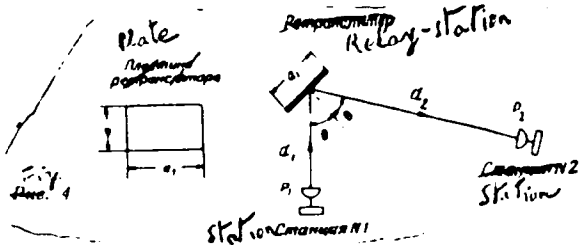
S/111/62/000/004/001/001
D299/D302

Passive radio-relay-stations

distance d_r between the 2 plates of a two-plate relay-station. There are 6 figures.

ASSOCIATION: GSPI (State All-Union Design and Planning Institute of the Ministry of Communications USSR)

Fig. 4.



Card 3/3

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ANTONYUK, B.N.; DENESYUK, I.P.; KUROV, Yu.P., [illegible]
VEYTSMAN, M.B.; IVANOV, A.A.; [illegible]
L.K.; KOZEL'TSEV, L.T.; [illegible]
ZUBKOVSKIY, B.P.; IZYUMOV, B.N.; [illegible]
BUBLIKOV, A.V.; DYKHANOVSHIY, V.A.

Patents. Bum. 1 der. prom. no.1, 1963.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

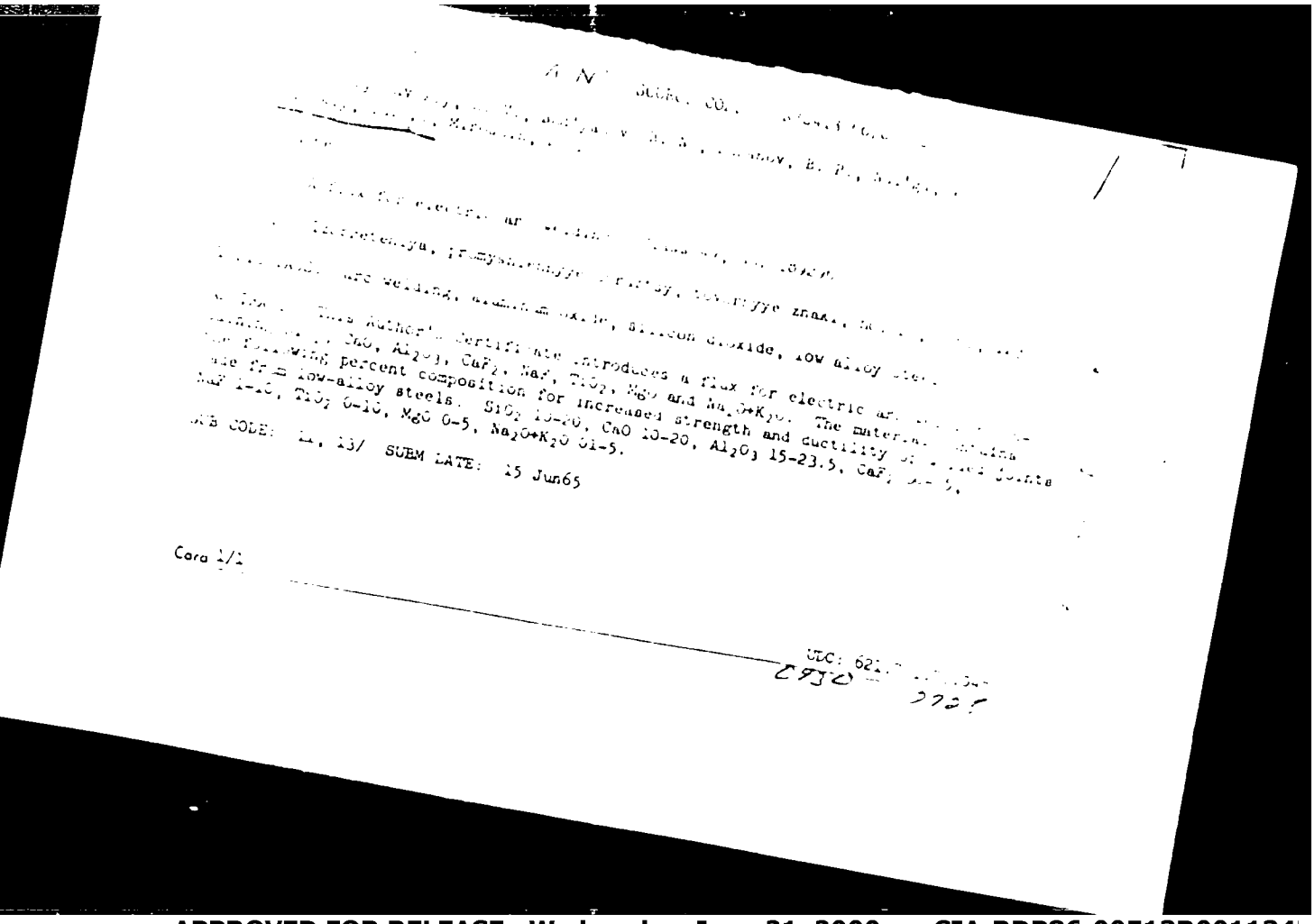
MIROSHIN, D.

Birth of a piece of goods. Prom.koop. 13 no.1:27-28 Ja '59.
(MIRA 12:2)

(Siauliai, Lithuania--Factory and trade waste)
(Leather industry)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



A N SOURC. CO.

[illegible]

A flux for electric arc welding [illegible]

[illegible] Izobretenlya, Promyshlennyye [illegible], tovarnyye znaki, [illegible]

[illegible] arc welding, aluminum oxide, silicon dioxide, low alloy steel

[illegible] This Author's Certificate introduces a flux for electric arc [illegible] CaO, Al_2O_3, CaF_2, NaF, TiO_2, MgO and Na_2O+K_2O. The material contains the following percent composition for increased strength and ductility of welded joints made from low-alloy steels. SiO_2 10-20, CaO 10-20, Al_2O_3 15-23.5, CaF_2 [illegible], NaF 1-10, TiO_2 0-10, MgO 0-5, Na_2O+K_2O 01-5.

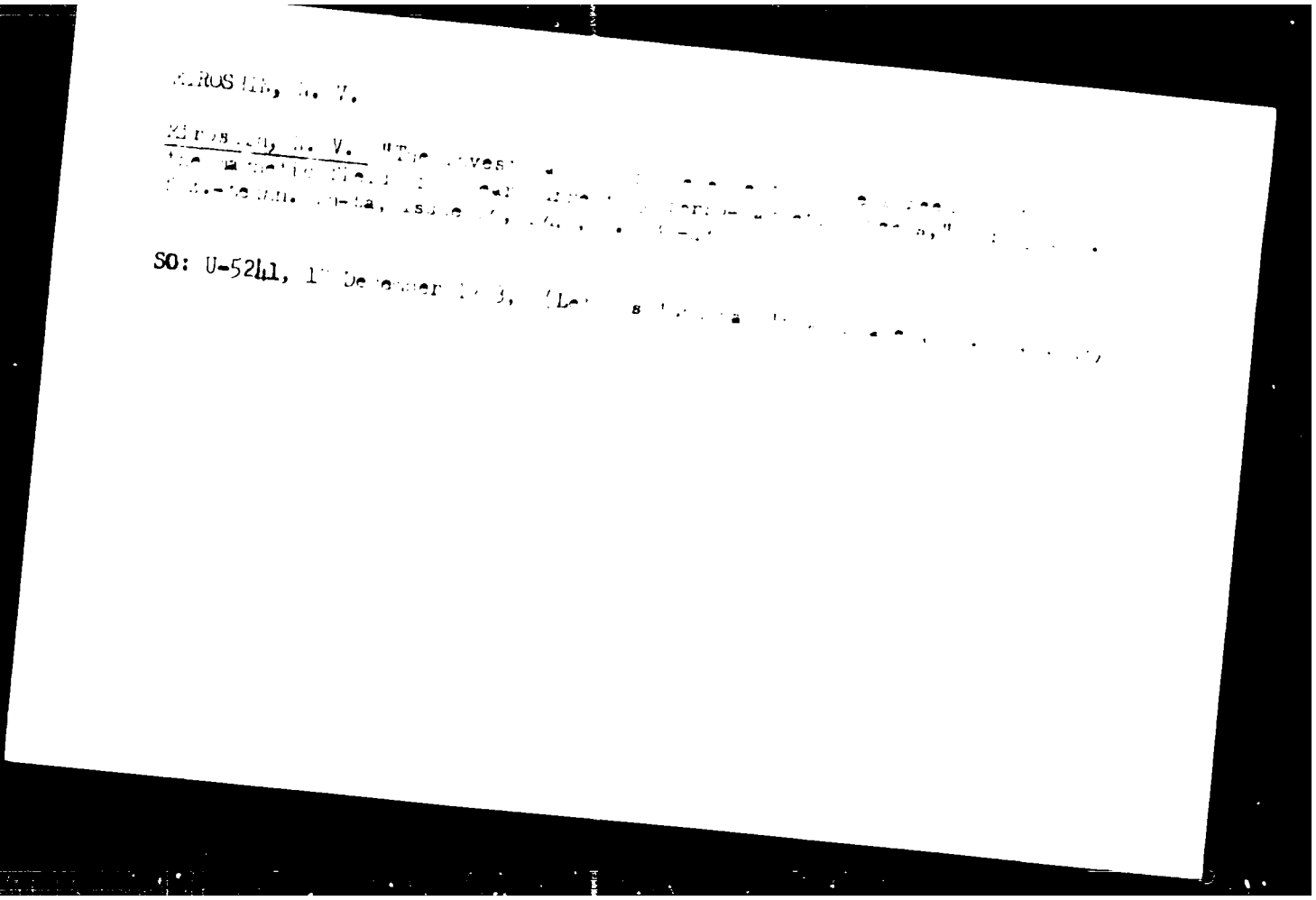
SUB CODE: 11, 13/ SUBM DATE: 15 Jun65

Card 1/1

UDC: 621.[illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



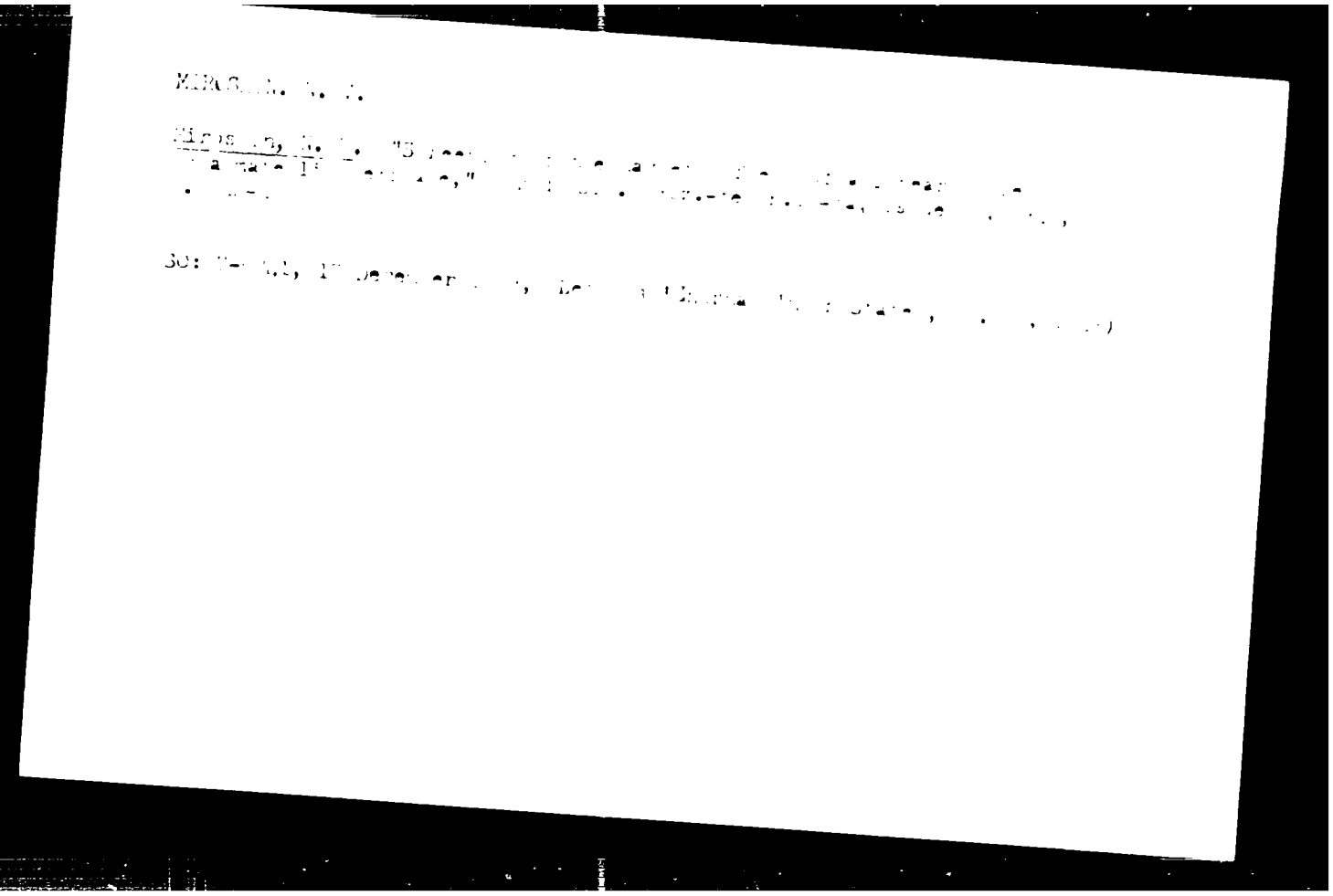
[illegible]ROS[illegible], [illegible]. V.

[illegible], [illegible]. V. "The [illegible] [illegible] [illegible]," [illegible]

SO: U-5241, 1[illegible] De[illegible]er [illegible]3, (Le[illegible] [illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

LEVASHKIN, G., MIROSHIN, N., STELMASHENKO, V., AND STELMASHENKO, M.

Detectability of Cavities in Iron Pipes

Experimental data concerning the detection of deep artificial defects of cylindrical shape in thick-walled pipes of magnetized steel and iron are given. The detectability of defects appeared to be three to four times worse in iron pipes than in those of soft steel. (RZhFiz, No. 8, 1955) Tr. Sibirsk. Fiz.-Tekhn. in-ta Pri Tomskom un-te, No. 2, 1953, 241-247.

SO: Sum. No. 740, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

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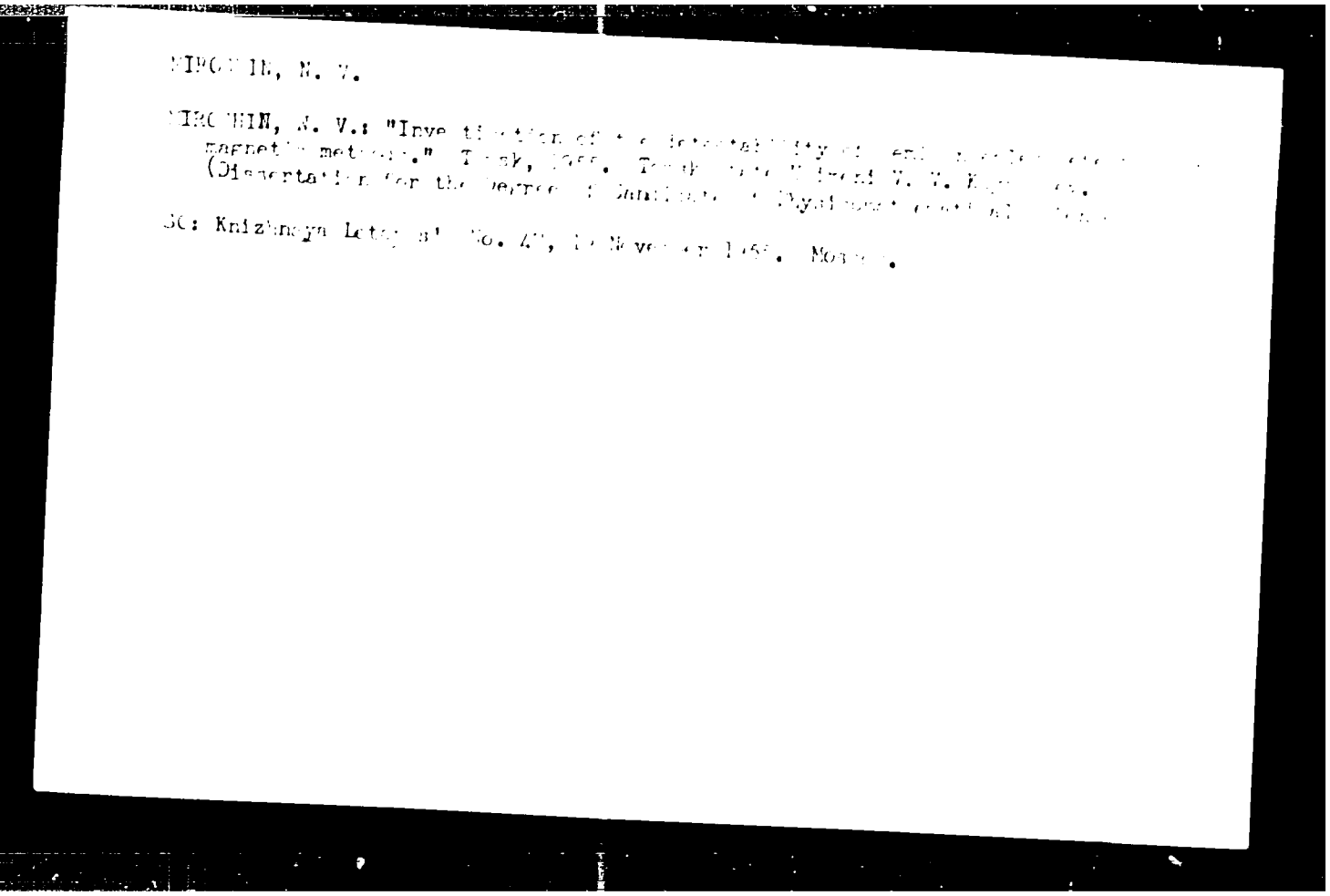


MIROSHIN, N. V.

MIROSHIN, N. V.: "Investigation of the detectability of semi-[illegible] magnetic meteors." Tomsk, 1955. Tomsk State Univ. V. V. Kuyb[illegible]. (Dissertation for the Degree of Candidate of Physicomathematical Sciences.)

SO: Knizhnaya Letopis' No. 4[illegible], 1[illegible] November 1955. Moscow.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

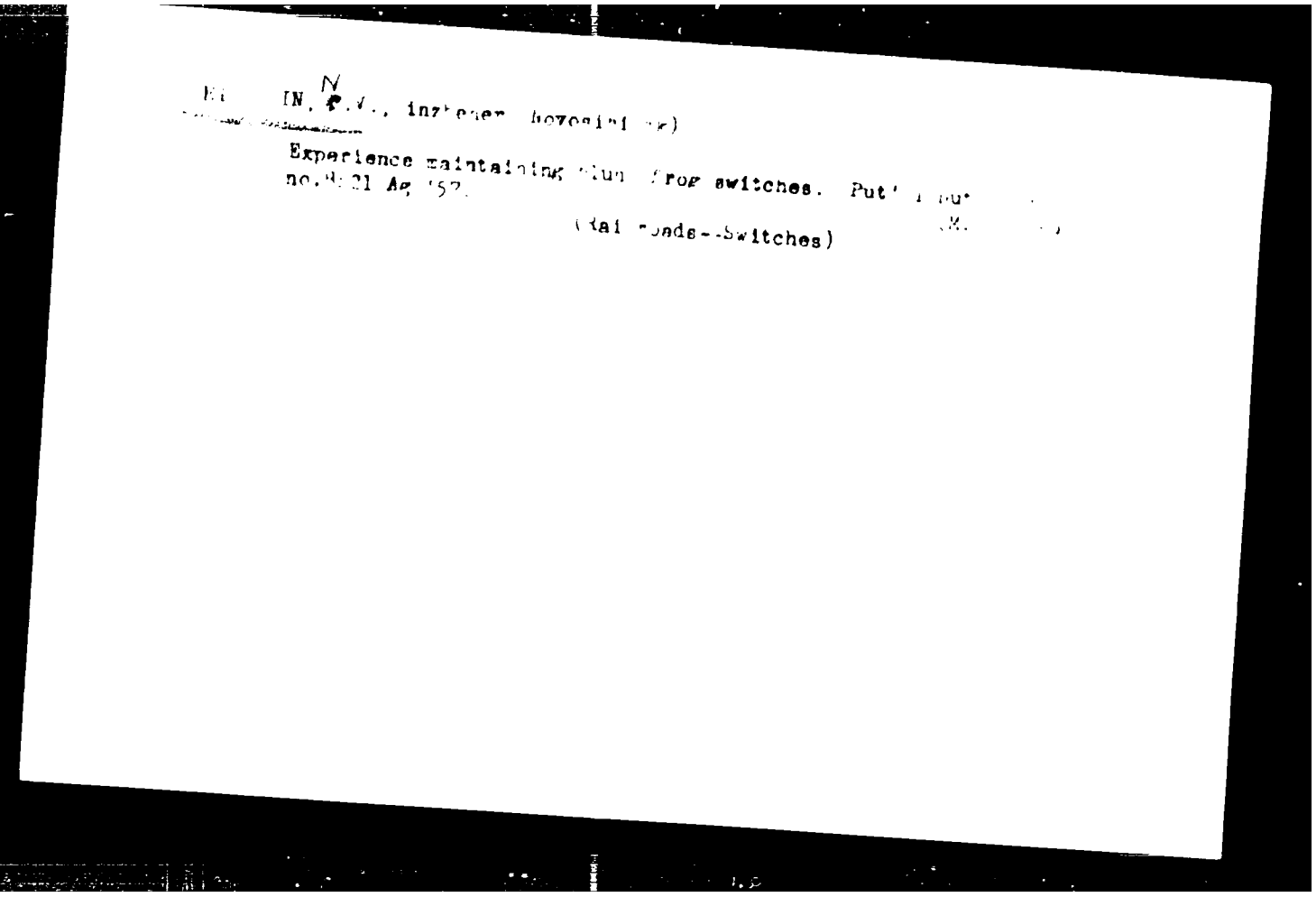
MIROSHIN, N.V.

Local magnetic powder flaw dectection. Zav.lab.21 no.10:1197-1198 '55. (MLRA 9:1)

1.Sibirskiy fiziko-tekhnicheskiy institut.
(Magnetic testing)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



[illegible] IN, N.V., inzhener (Novosibirsk)

Experience maintaining plus frog switches. Put' i put' [illegible] no.8:21 Ag '57. (M. [illegible])

(Railroads--Switches)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V. (Tomsk).

Amplitude-phase rail defectoscope. Zhel. dor. transp. 39 no.12:54-55 D '57. (MIRA 11:1)

(Railroads--Rails)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 269 (USSR) SOV 137-58-11-23759

AUTHOR: Miroshin, N. V.

TITLE: Two-parameter Flaw Detection in Rails (Dvukhparametrovaya defektoskopiya rel'sov)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Fizika, 1958, Nr 1, pp 90-94

ABSTRACT: The author proposes to measure the phase of the voltage generated in an electromagnetic pickup probe together with its amplitude. It is established that depending upon the character of the flaw the change of phase is more pronounced; during the passage through a crack or a similar deep flaw the phase changes by 180°, whereas a surface flaw displaces it appreciably less. The author assumes that two simultaneous measurements would make it possible to determine the degree of danger presented by a flaw. The work was performed with two types of SFTI apparatus.

Card 1/1 P. S.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V.

Distribution of eddy currents in a conducting half-space during magnetization of concentration pole by a field. Izv. vys. ucheb. zav.; fiz. no.3:120-127 '58. (MIRA 11:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva.
(Electric currents, Eddy) (Magnetism)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/139/60/000/004/015/033
E073/E535

AUTHOR: Miroshin, N.V.

TITLE: Physical Fundamentals of the Method of Magnetic Detection of Defects by Means of Simultaneous Magnetization of the Specimen with Direct and Alternating Fields

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.139-146

TEXT: During development work on apparatus for defect detection in rails by induction methods, it was found that, in addition to defects, a.c. defectoscopes revealed very clearly sections of the rail which were magnetized by a d.c. field. This observation led to investigations on the problem of detection of local magnetic nonuniformities by the induction method. This is directly relevant to the problem of detecting hidden (internal) defects by means of a.c. fields. The possibility of detection of a defect by the induction method is determined fundamentally by the changes in the magnitude and distribution of the eddy currents in the defect zone. In this paper the changes are investigated of the density of a.c. eddy fields in the region of magnetic

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

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E073/E535

Physical Fundamentals of the Method of Magnetic Detection of Defects by Means of Simultaneous Magnetization of the Specimen with Direct and Alternating Fields

nonuniformities caused, by means of the polarization field of an internal crack, during magnetization of the specimen by a d c. field. The solution is reduced to the following two problems:
1) determination of the permeability of the material as a function of the field H in the specimen with an internal defect in the case of magnetization by a uniform d.c. field H_o;
2) calculation of the changes in the density j of eddy currents induced by the alternating field of an external lumped source (pole), in a conducting specimen which has an internal defect with the polarization field H_o. Both these problems are basically nonlinear ones. In view of the difficulty of accurate solution of nonlinear problems, a simplification is introduced, namely, each of the considered problems is partly linearized, i.e. where possible it is assumed, in calculating the field of the defect that the permeability of the material does not depend on H_o and, in calculating the density of the eddy currents, it does not depend on the alternating component of the field in the

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

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E073/E535

Physical Fundamentals of the Method of Magnetic Detection of Defects by Means of Simultaneous Magnetization of the Specimen with Direct and Alternating Fields

specimen. The solution arrived at on the basis of these assumptions yields useful calculating data which, together with experimental results, will yield generally valid relations for those values which determine the possibility of detecting a concealed magnetically polarized defect by means of the alternating magnetic field method. The calculation of the defect field and determination of $\mu(H)$ is described as well as the calculation of the density of the eddy currents in a magnetized semiconducting medium. On the basis of these calculations, optimum values of H_o and of the frequency of the alternating field are determined for which internal defects can be detected most easily. The theoretically derived relations were checked on rail steel specimens having artificial defects in the form of an eccentrically drilled 15 mm diameter hole into which two tightly fitting rods were driven in from both sides and the contact area represented the artificial internal defect. The experimental specimens were clamped to form a closed magnetic circuit and d.c. magnetization with currents

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

S/139/60/000/004/015/033
E073/E535

Physical Fundamentals of the Method of Magnetic Detection of Defects by Means of Simultaneous Magnetization of the Specimen with Direct and Alternating Fields

between 0 and 10 A was applied. As an a.c. source, the end of a straight-line solenoid was chosen. By means of this test-rig, the detection characteristics of the polarized internal defect were investigated for a.c. frequencies of 500, 1000 and 2000 c.p.s. The best conditions for detection of a concealed defect were obtained for a d.c. field of an intensity corresponding to the upper bend of the magnetization curve (Fig.5). Analysis of the effect of the frequency (Fig.6) shows that the possibility of detection in the case of an induction method follows a square law (curve 1), whilst in the case of detection on the basis of changes in the eddy currents the possibility of detection increases almost linearly with increasing frequency (curve 2, Fig.6). The experimental results are in satisfactory agreement with the theoretical conclusions There are 6 figures and 7 references: all Soviet.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Institute of Physics and Chemistry at the Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: June 20, 1959

Card 4/4

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V.

Detection of defects in rails by means of simultaneous magnetization by a constant and a variable moving field. Izv.vys.ucheb.zav.; fiz. no.2:92-97 '61. (MIRA 14:7)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.
(Railroads--Rails—Testing) (Magnetic fields)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V.

Measurement of magnetic induction without commutation of the magnetizing field. Izv. vys. ucheb. zav; fiz. no.1: 160-163 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.
(Magnetic induction—Measurement)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V.

Induction in a rail magnetized by the moving field of a horseshoe magnet. Izv.vys.ucheb.zav.;fiz.no.2:145-152 '63. (MIRA 16:5)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.
(Railroads--Rails) (Magnetic testing)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, N.V.

Dependence of the magnetization of a rail on the velocity of the moving field of a horseshoe electromagnet. Izv.vys.ucheb. zav.; fiz. no.3:41-47 '63. (MIRA 17:2)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

DANOVSKIY, L.M., dots, kand. tekhn. nauk; GROMOV, L.K., kand. tekhn. nauk; KONDAKOV, N.P., dots.; MIROSHIN, P.V., dots.; PECHUGIN, D.A., dots.; ANTONOV, Yu.A., inzh. (Novosibirsk)

What investigations and experience tell us. Put' i put. khoz. no.3: 10-12 Mr '59. (MIRA 12:6)

(Railroads--Track)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

DANOVSKIY, L.M., kand.tekhn.nauk; KOTYUKOV, I.A., kand.tekhn.nauk; KONDAKOV, N.P., kand.tekhn.nauk; SHATALIN, I.I., kand. tekhn.nauk; GROMOV, L.K., kand.tekhn.nauk; PECHUGIN, D.A., dots.; MIROSHIN, P.V., dots.; SHCHEPOTIN, K.I., assistent (Novosibirsk)

New textbook on tracks ("Tracks" by G.Al'brekht and others. Reviewed by L.M.Danovskii and others). Put' put.khoz. 4 no.4:45-47 Ap '60. (MIRA 13:7)

1. Sotrudniki kafedry "Put' i putevoye khozyaystvo" Nauchno-issledovatel'skogo instituta inzhenerov. (Railroads--Track) (Al'brekht, G.) (Liders, G.V.) (Nikiforov, P.A.) (Chlenov, M.T.) (Chernyshev, M.A.)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

DANOVSKIY, Leonid Mechislavovich, dots., kand. tekhn. nauk; GROMOV, L.K., kand. tekhn. nauk, dotsent; ANTONOV, Yu.A., dots.; MIL'CHAKOV, K.V., inzh.; KOTYUKOV, I.A., kand. tekhn. nauk, dotsent; CHASHCHIN, N.P., inzh.; MIROSHIN, P.V., dotsent; INOZEMTSEV, A.A., inzh.; PECHUGIN, D.A., dotsent; KOVALEV, N.F., inzh.; SINKIN, P.A., inzh.; POTOTSKIY, G.I., inzh., red.; USENKO, L.A., tekhn. red.

[Track work in sections with heavy freight traffic; from the experience of the Omsk and Tomsk Railroads] Putevye raboty na gruzonapriazhennykh uchastkakh; iz opyta Omskoi i Tomskoi dorog. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1961. 102 p. (MIRA 14:7)
(Railroads—Maintenance and repair) (Railroads—Freight)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, P.V., dotsent

Thirtieth anniversary of the Novosibirsk Institute of Railroad Transportation. Put' i put.khoz. 6 no.11:34 '62. (MIRA 16:1)

1. Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta.
(Novosibirsk—Railroad research)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

BARANTSEV, R.G.; MIROSHIN, R.N.

Approximate representations of the roughness operator. Aerodin. razrezh. gaz. no.1:152-161 '63. (MIRA 17:3)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHIN, R.N.

Dissipation of atoms of a gas on a rough wall formed by unevenesses of two scales. Vest. LGU. 18 no.10:154-156 '63. (MIRA 16:1)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

ACCESSION NR: AP4018864 S/0043/64/000/001/0099/0107

AUTHOR: Miroshin, R. N.

TITLE: Evolution equations of a rarified gas

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1964, 99-107

TOPIC TAGS: gas theory, rarified gas, Vallander equation, Markov process, rarified gas evolution

ABSTRACT: This paper attempts to derive a relationship between the theory of a rarified gas, developed on the basis of the integral equation of S. V. Vallander, and the theory of a purely discontinuous, random, Markov process, as studied by V. Feller and V. M. Dubrovskiy. The probability that an atom will be displaced from an initial point $(\bar{r}_0, \bar{u}_0)$ in phase space to a region E at the instant t, is expressed by $P(E, t|\bar{r}_0, \bar{u}_0, t)$. This probability satisfies the equation:

$$P(E, t\ \bar{r}_0, \bar{u}_0, t_0) = P(E, t\ \bar{r}', \bar{u}', t')P(dE', t'\ \bar{r}_0, \bar{u}_0, t_0).$$

The paper is then devoted to deriving equations for this probability and to

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ACCESSION NR: AP4018864

showing how they are related to the integral equations mentioned above. Orig. art. has: 36 equations.

ASSOCIATION: none

SUBMITTED: 02Feb63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

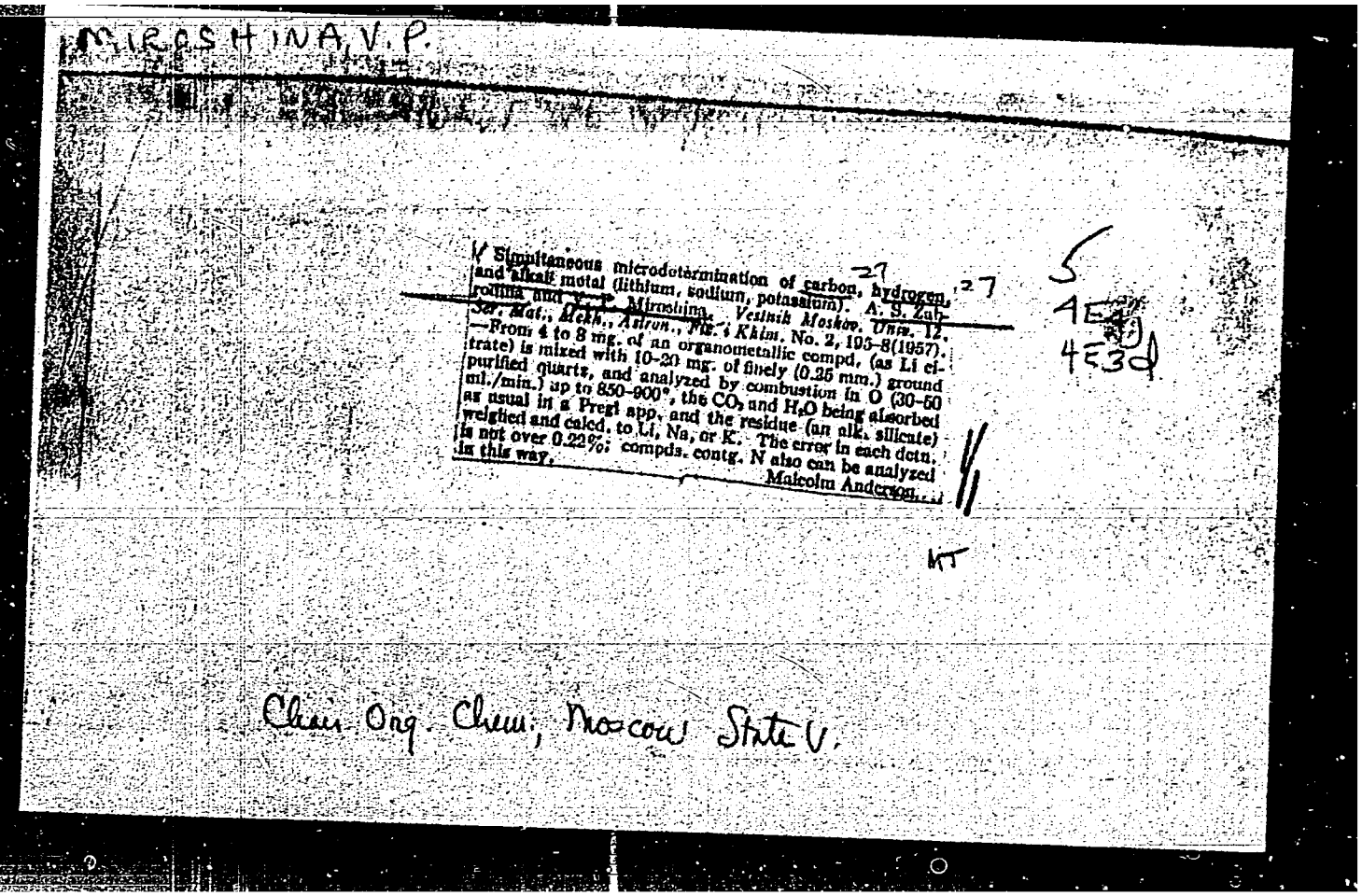
MIROSHIN, V.

In a night dispensary. Sov. profsoiuzy 7 no.16:44 Ag '59.
(MIRA 12:12)

(Medicine, Industrial)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113



MIROSHINA, V. P.

Simultaneous microdetermination of carbon, hydrogen, and alkali metal (lithium, sodium, potassium). A. S. Zabrodina and V. P. Miroshina. *Vestnik Moskov. Univ.* 12, *Ser. Mat., Mekh., Astron., Fiz. i Khim.* No. 2, 195-8(1957). —From 4 to 8 mg. of an organometallic compd. (as Li citrate) is mixed with 10-20 mg. of finely (0.25 mm.) ground purified quartz, and analyzed by combustion in O (30-50 ml./min.) up to 850-900°, the CO_2 and H_2O being absorbed as usual in a Pregl app. and the residue (an alk. silicate) weighed and calcd. to Li, Na, or K. The error in each detn. is not over 0.22%; compds. contg. N also can be analyzed in this way.

Malcolm Anderson

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4E4

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Chair Org. Chem., Moscow State U.

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

CHUMACHENKO, M.N.; MIROSHINA, V.P.

Microdetermination of halogens and sulfur by catalytic destructive hydrogenation. Zav.lab 26 no.10:1084-1087 '60. (MIRA 13:10)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley.

(Halogens) (Sulfur--Analysis)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

BAKHMETOVA, T.Ye., inzh.; DOVGER, F.F., inzh.[deceased]; MIROSHINA, Yu.N., inzh.; PROKHOROV, A.N., inzh.; SMIRNOV, P.A., inzh.; SHUMAKOV, I.A., inzh.; SHAGALOV, Ye.S., red.

[Album of drawings of stock equipment for the erection of structural elements]Al'bom chertezhei inventarnykh prisposobleniĭ dlia vozvedeniia stroitel'nykh konstruktsiĭ. Moskva. Pt.2.[Scaffolding, trestles, trench shoring]Lesa, podmosti, krepleniia transhei. Utverzhden resheniem tekhnicheskogo upravleniia. No.61 ot 19 marta 1960 g. 1962. 113 p. MIRA 15:2

1. Vsesoyuznyy institut po proyektirovaniyu organizatsiĭ energeticheskogo stroitel'stva "Orgenergostroy." Moskovskiy filial.
(Scaffolding) (Shoring and underpinning)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

BAKHMETOVA, T.Ye.; DOVGER, F.F.[deceased]; SMIRNOV, P.A.; PROKHOROV, A.N.; SHUMAKOV, I.A.; MIKOSHINA, Yu.N.; SHAGALOV, Ye.S., red.;

[Album of sketches of stock equipment for the erection of structural elements]Al'bom chertezhei inventarnykh prispособlenii dlia vozvedeniia stroitel'nykh konstruktsii. Moskva. Pt.1.[Cradles, stagings, ladders, guard rails. Approved by a resolution of the technical administration No.163 of Dec. 30, 1959]Liul'ki, ploshchadki, lestnitsy, ograzhdeniia. Utverzhden resheniem tekhnicheskogo upravleniia No.163 ot 30 dekabria 1959 g. 1962. 141 p.
(MIRA 15:10)

1. Vsesoyuznyy institut po proyektirovaniyu organizatsii energeticheskogo stroitel'stva "ORGENERGOSTROI." Moskovskiy filial.

(Building)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHINA-TONKONOGAYA, Ye.P.

Conditioned reflexes from the visual analysor in monocular asymmetry. Uch.zap.Len.un. no.185:143-151 '54. (MLRA 8:10)
(Conditioned response) (Sight)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKIN, A. O., tekhnik-mekhanik; KHOROSHKEVICH, N.F.

Automatically controlled windlass reels. Bezop. truda v prom. 2 no.2:35-36 F '58. (MIRA 11:2)

1. Nachal'nik Privolzhskoy gornotekhnicheskoy inspektsii Gosgortekhnadzora SSSR (for Khoroshkevich).
(Oil fields--Safety measures)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 7028-66

ACC NR: AP5026830 SOURCE CODE: UR/0286/65/000/017/0116/0116

AUTHOR: Lemarin'ye, K. P.; Drobny, B. V.; Chebalak, A. N.; Miroshkin, F. Ya.; Petryanov-Sokolov, I. V.; Basmanov, P. I.; Farber, L. D.; Khalupnaya, L. I.

ORG: none

TITLE: An installation for aseptic preservation of liquid and puree-type foodstuffs in large storage tanks. Class 53, No. 174520

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 116

TOPIC TAGS: food technology, food product machinery, food sanitation

ABSTRACT: This Author's Certificate introduces: 1. An installation for aseptic preservation of liquid and puree-consistency food products in large storage tanks. The unit consists of interconnected sterilizer pipelines made according to Author's Certificate No. 168108, a vacuum cooler, hermetically sealed tanks equipped with locking devices made according to Author's Certificate No. 168109, and bacteriological filters. The unit is designed for continuous operation and for preventing admission of any unsterilized product. The unit is equipped with a discharge reservoir and with an intermediate collector connected to the reservoir and to the sterilizer. 2. A modification of this installation in which connections are simplified by using a disconnectable pipe between the hermetically sealed tanks and the vacuum cooler, and a portable pump with a flexible hose for unloading the food products from the tanks.

Card 1/2 UDC: 664.8.03

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 7028-66

ACC NR: AP5026830

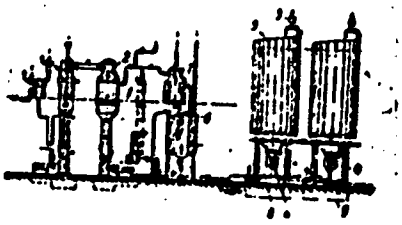

Fig. 1. 1--sterilizer; 2--vacuum cooler; 3--hermetically sealed tanks; 4--locking devices; 5--bacteriological filters; 6--discharge reservoir; 7--intermediate collector; 8--disconnectable pipe; 9--portable pump

SUB CODE: GO,IE,LS/ SUBM DATE: 16Mar64/ ORIG REF: 000/ OTH REF: 000

Card 2/2

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKIN, M.M., inzh.

[illegible] signal to the apartment of the operator on duty. Energetik 8 no.4:28 Ap '60. (MIRA 13:8)
(Electric apparatus and appliances)
(Electric substations)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKIN, P. .

KANDEL', Ye.A., inzhener; MIROSHKIN, P.P., inzhener.

New method of heating motors used in mine drainage. Energetik 2 no.6:31-32 Je '54. (MLRA 7:7)
(Electric motors) (Electricity in mining)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKIN, P.M., inzh.

Determining the economic diameters of water mains for regional water-supply systems. Vod. i san. tekh. no.7:7-9 Jl '64 (MIRA 18:1)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKIN, P.M., inzh.

Mura group water pipeline. Vod. i san. tekh. no.11:12-13 N '64.
(MIRA 18:2)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

Translation from: Referativnyy zhurnal. Geologiya, [illegible], Ap 10, p 3 (USSR)

AUTHOR: Abesadze, B. I., Miroshkin, V. I.

TITLE: Gregory Antonovich Tsulukidze [illegible]
(Grigoriy Antonovich Tsulukidze [illegible])

PERIODICAL: Tr. Gruz. politekhn. in-t, 1956, Nr 4 (47), PP 3-20

ABSTRACT: G. A. Tsulukidze, an active member of the Academy of Sciences Gruzinskaya SSR, was an outstanding Soviet scientist in the field of mining. Scientific [illegible] of G. A. Tsulukidze includes the [illegible] study in mining technology and in mechanization of the coal-extracting industry, and works on the method [illegible] underground exploitation of mining [illegible] in Georgia, all of these were originally published in the Georgian language (they dealt with [illegible] manganese, roofing shale, petroleum and others). His other works pertained to

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Gregory Antonovich Tsulukidze

explorations for mining resources, to the [illegible] exploration in the Gruzinskaya SSR and to the future of mining in the republic; his writings also deal with the subject of mechanization of mining, with mining structures, mine ventilation, safety, enrichment of ores and the utilization of manganese, [illegible], etc. After studying the existing classifications by native and foreign authors, he worked out, in a number of his writings, an original classification for the subsurface methods of ore extraction. Tsulukidze clarified the complicated problem of dealing with soil pressures in mining works and particularly in the Chiaturskiy manganese mine which he used as an example. His works on the extraction of petroleum by means of shafts and his analysis of the Tkvibul'skoye hard coal mine are also well known. The main work of G. A. Tsulukidze, "Metody podzemnoy razrabotki mestorozhdeniy poleznykh iskopayemykh (Methods of Underground Extraction of Ores)" was published between 1941 and 1952 as a textbook in the Georgian, Russian and Hungarian languages. The bibliography of 62 titles is included.

Card 2/2 [illegible] Gorshyev

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

SYSOYEV, F.F., dotsent; BERDNIKOVA, F.S.; MIROSHKINA, K.M.

Synthomycin therapy of trachoma. Vest.oft.34 no.4:3-5 Jl-Ag '55.
(MLRA 8:10)

1. Iz kliniki glaznykh bolezney Izhevskogo meditsinskogo instituta i Respublikanskogo trakhomatoznogo dispansera.
(TRACHOMA, therapy,
chloramphenicol, statist.analysis)
(CHLORAMPHENICOL, therapeutic use,
trachoma, statist. analysis)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKINA, N.M.

V.I.Lenin on the interrelation between philosophy and natural science. Uzb.biol.zhur. no.4:3-9 '59. (MIRA 13:1)
(Science--Philosophy)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

DELYAGINA, L.P.; KRAVCHENKO, N.A.; TER-AVAKYAN, N.P.; MIROSHKINA, S.K.

Significance of the agglutination reaction as a method for differentiating diphtheria from tonsillitis of different etiology in carriers of dephtherial germs. Pediatriia 39 no.4:28-30 Jl-Ag '56. (MLRA 9:12)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok imeni I.I.Mechnikova (dir. M.I.Sokolov)
(TONSILLITIS, differ. diag.
diphtheria, hemagglut. reaction in carriers of Corynebacterium diphtheriae)
(DIPHTHERIA, differ. diag.
tonsillitis, hemagglut. reaction in carriers of Corynebacterium diphtheriae)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKINA, S.K.; BUNIN, K.V.

Outcome of toxic diphtheria. Sov.med. 24 no.11:18-19 N '60.
(MIRA 14:3)

1. Iz 1-y Moskovskoy klinicheskoy infektsionnoy bol'nitsy (glavnyy vrach N.G.Zaleskver).
(DIPHTHERIA)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIROSHKINA, Ye. M.

Hardness of Gamma Solid Solution of Iron-Carbon Systems at High Temperatures

K.A. Osipov, E.M. Miroshkina

Dokl. Akad. Nauk 94(6), 1065-1067 1954

U.S.S.R.

Experiments (described in detail) were carried out with austenite in the intervals 910-1,100 deg.C. Hardness was determined with the aid of a four-faced diamond pyramid in vacuo. Pressure on the diamond pyramid was 1 kg. and the time varied between 15 and 600 sec. Brief tests showed that hardness of austenite was proportional to the carbon content. Longer tests at high temperatures showed that deformation of austenite grew proportionally to the carbon content. Solid solutions with stronger inter-atomic bonds and minimum distortions of the lattice should, therefore, have greater resistance to plastic deformation. (Bibl. 5)

Evaluation B-80678, 22 Nov 54

Inst. Metallurgii im. A.A. Baykova AS USSR

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

OSIPOV, K.A.; MIROSHKINA, Ye.M.; SOTNICHENKO, A.N.

Heat resistance of Ni-Cu system alloys. Trudy Inst.met. no.3:152-159 '58. (MIRA 12:3)

(Heat-resistant alloys)
(Copper-nickel alloys)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

OSIPOV, K.A.; MIROSHKINA, Ye.M.

Investigating nickel-chromium system alloys by the hot hardness method.
Trudy Inst.met. no.3:160-164 '58. (MIRA 12:3)
(Nickel-chromium alloys--Testing)
(Metals at high temperatures)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

OSIPOV, K.A.; MIROSHKINA, Ye.M.

Investigating the resistance to plastic deformation of alloys of the nickel - iron system. Issl. po zharopr. splav. 3:388-393 '58. (MIRA 11:11)

(Nickel-iron alloys--Testing) (Deformations (Mechanics))

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001134

"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

L 11291-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3000917 S/0279/63/000/002/0146/0152

AUTHOR: Osipov, K. A. (Moscow); Miroshkina, Ye. M. (Moscow); Sotnichenko, A. L. (Moscow)

TITLE: Investigation of the creep of α- and β-modifications of Ti-Zr alloys

SOURCE: AN SSSR. Izv. otd. tekh. nauk. Metallurgiya i gornoye delo, no. 2, 1963, 146-152

TOPIC TAGS: titanium-zirconium alloys, α-alloys, β-alloys, creep, activation energy, creep mechanism

ABSTRACT: The creep behavior of α- and β-modifications of polycrystalline Ti-Zr alloys in a vacuum of about 1 x 10^{-4} mm Hg under a constant tensile stress has been studied in an effort to determine the mechanism of steady-stage creep. The alloys (25.15, 50.01, and 75.50 at% Zr, 0.006% max N, 0.03% max C and O_2, and 0.03% max Fe) were vacuum-arc melted, forged into rods, annealed for 24 hr at 800C and for 168 hr at 450C (alloy with 50 at% Zr) or at 550C (alloys with 25 and 76 at. % Zr). The α-modification alloys were tested at temperatures from

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"APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

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ACCESSION NR: AP3000917

20 to 200C under a stress of 30 to 70 kg/mm². The activation energy ΔH of the steady-stage creep, determined from ln ε-1/T curves (ε, rate of the steady-stage creep; T, absolute temperature), was found to be constant at stresses higher than 40-50 kg/mm² (depending on alloy compositions) and equal to 8100, 6900, and 8000 cal/mol for Zr contents of 25, 50, and 75 at%, respectively. These values are very close to the limiting values of activation energy calculated under the assumption that in α-Ti-Zr alloys the creep-induced activated state of atoms or ions corresponds to that of a local allotropic transformation. This leads to the conclusion that the creep of α-Ti-Zr alloys under high stresses is affected by a mechanism directly associated with a local allotropic transformation. Creep tests of the β-modification of Ti-Zr alloys were carried out under a constant tensile strength of 0.5 kg/mm². Analysis of the data obtained shows that the steady-stage creep of the β-modification of Ti-Zr alloys occurs through a mechanism directly associated with melting. Orig. art. has: 2 formulas, 6 figures, and 4 tables.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 29Nov62 DATE ACQ: 12Jun63 ENCL: 00

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OSIPOV, K.A.; MIROSHKINA, Ye.M.; SOTNICHENKO, A.L.

Investigating the steady creep of the β-modification in titanium-zirconium alloys. Issl. po zharoprocch. splav. 10:105-109 '63. (MIRA 17:2)

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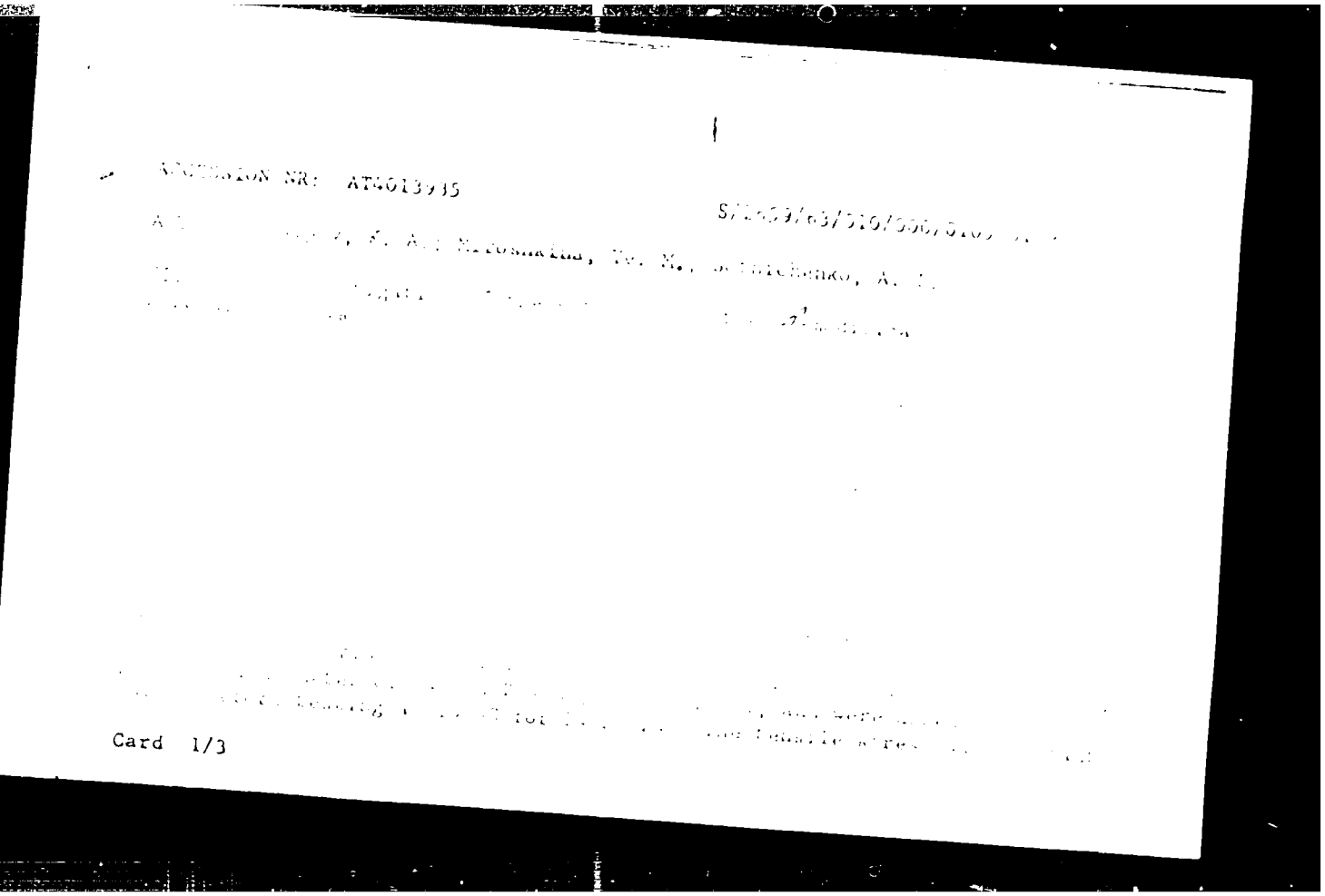

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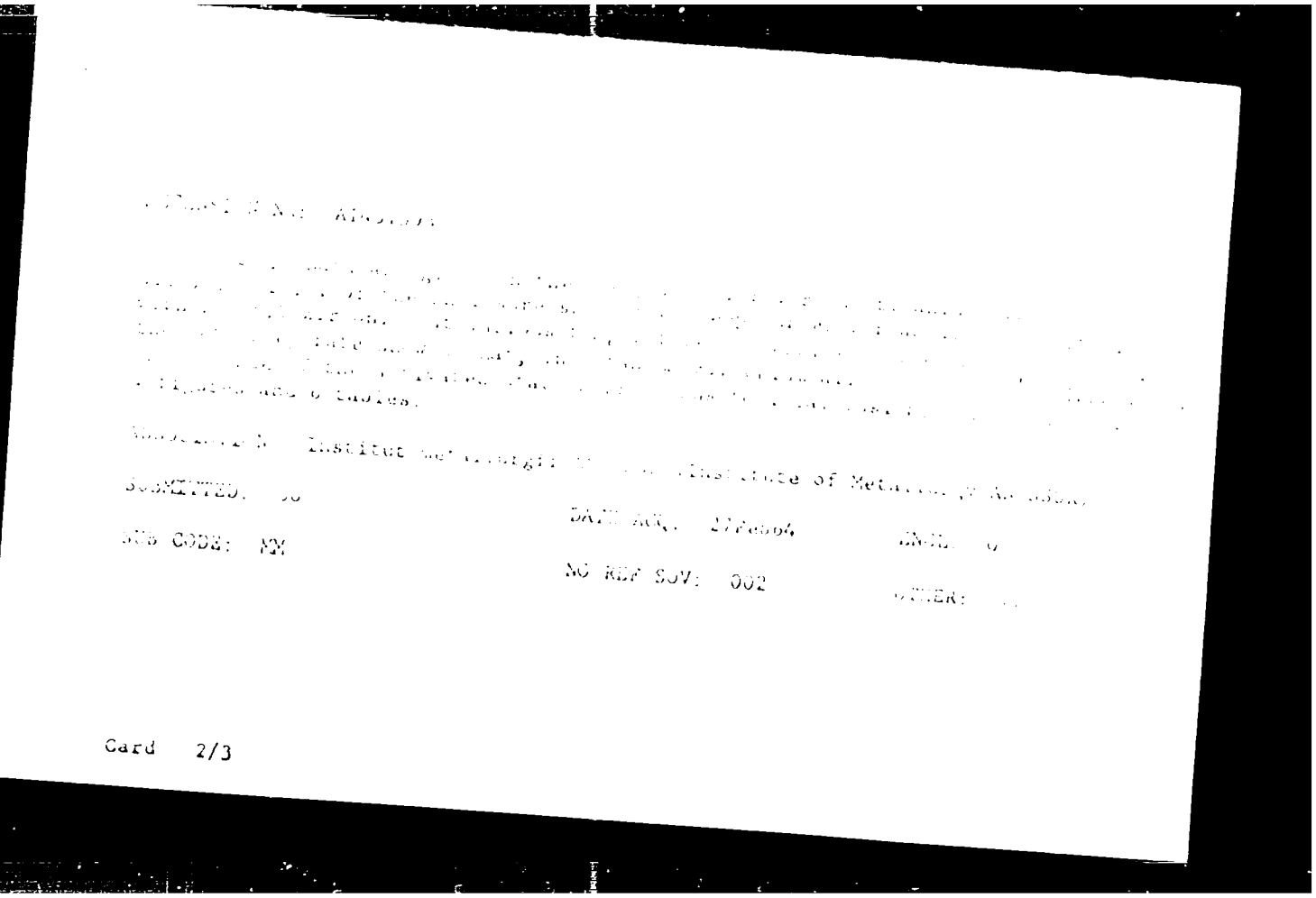

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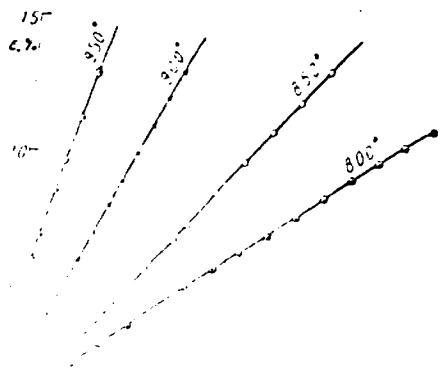
ENCLOSURE : 01



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