L 01463-66 EWT(1)/EPF(n)-2/EWG(m) EPA(w)-2 IJP(c) AT

ACCESSION NR: AP5016651 UR/0382/65/000/002/0035/0043 533.9.082

AUTHOR: Iskol'dskiy, A. M.; Kurtmullayev, R. Kh.; Luk'yanov, V. N.; Nesterikhin, Yu. Ye.; Ponomarenko, A. G.

TITLE: Some properties of the behavior of plasma heated by collisionless shocks

SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 35-43

TOPIC TAGS: plasma shock wave, shock wave heating, plasma diagnostics, microwave, plasma containment

ABSTRACT: The generation of collisionless shocks in plasma with quasistatic axial magnetic field by use of theta-pinches (powered by a storage system with maximum energy of about 3000 J) is discussed. Plasma density in the experiments was about 10^{13} cm^{-3}. Magnetic and optical measurements indicate the formation of a cylindrical "magnetic piston" driving the collisionless shocks which concentrates along the plasma axis. Also studied are the accompanying phenomena of X-ray and microwave (8 mm) noise emission. The diagnostic instrumentation (magnetic and scintillation probes and image-converter camera) is described in detail and typical results are shown (e. g. collisionless shock is shown to run ahead of the current sheet). It

Card 1/2

L 00305-66
ACCESSION NR: AP5016650

for flows around a T-shaped obstacle is described. Orig. art. has: 4 formulas, 3 figures.

ASSOCIATION: none

SUBMITTED: 020ct64 ENCL: 00 SUB CODE: ME, OP

NO REF SOV: 004 OTHER: 004

Card 2/2

L 00305-66 EWT(1)/EPF(n)-2/EWG(m)/EPA(w)-2 IJP(c) AT
ACCESSION NR: AP5016650 UR/0382/65/000/002/0031/0034
533.9.082.5

AUTHOR: Kruglyakov, E. P.; Malinovskiy, V. K.; Nesterikhin, Yu. Ye.

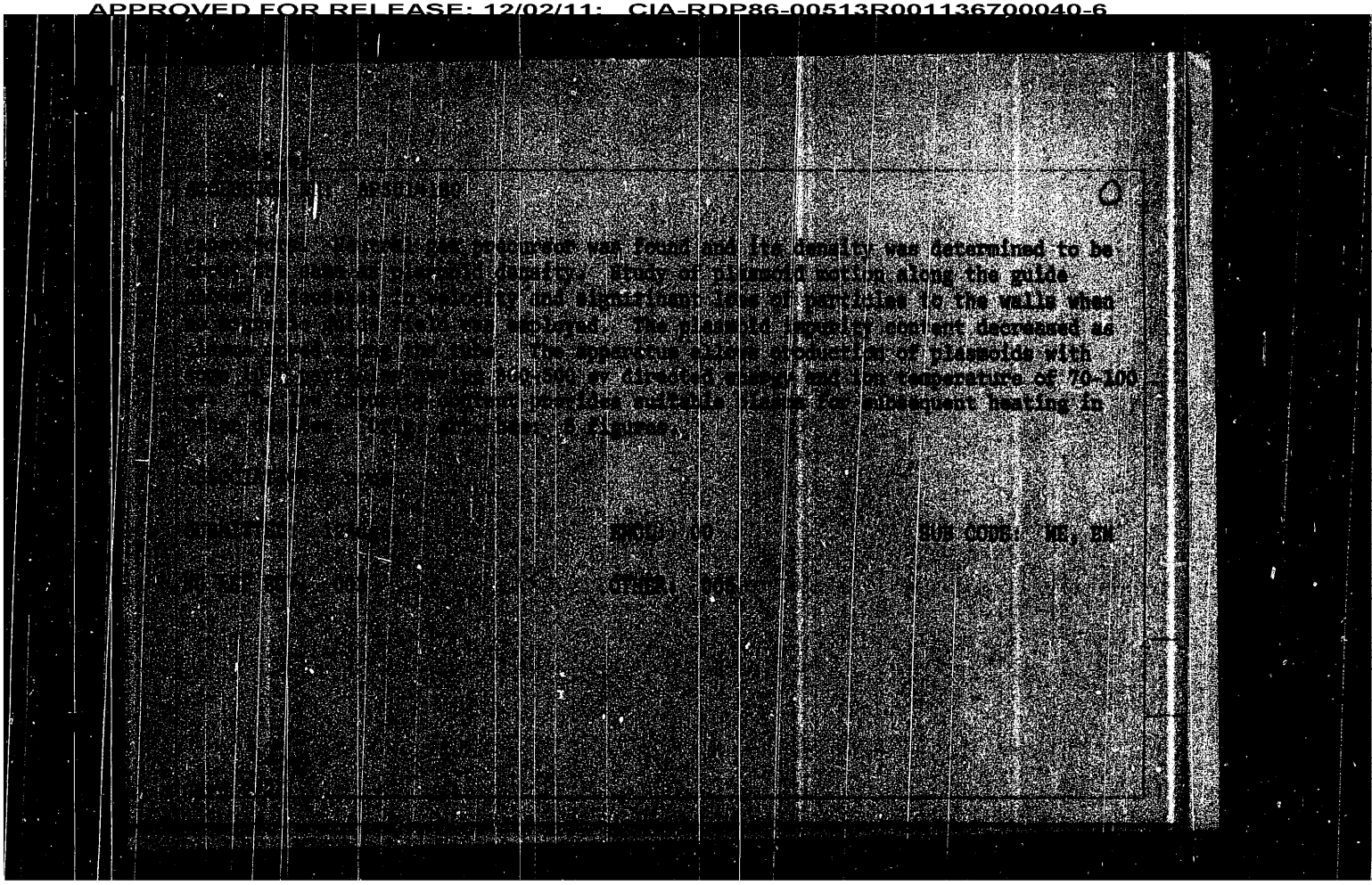
TITLE: Feasibility of temperature and density determination of nonstationary plasma by means of optical interferometry

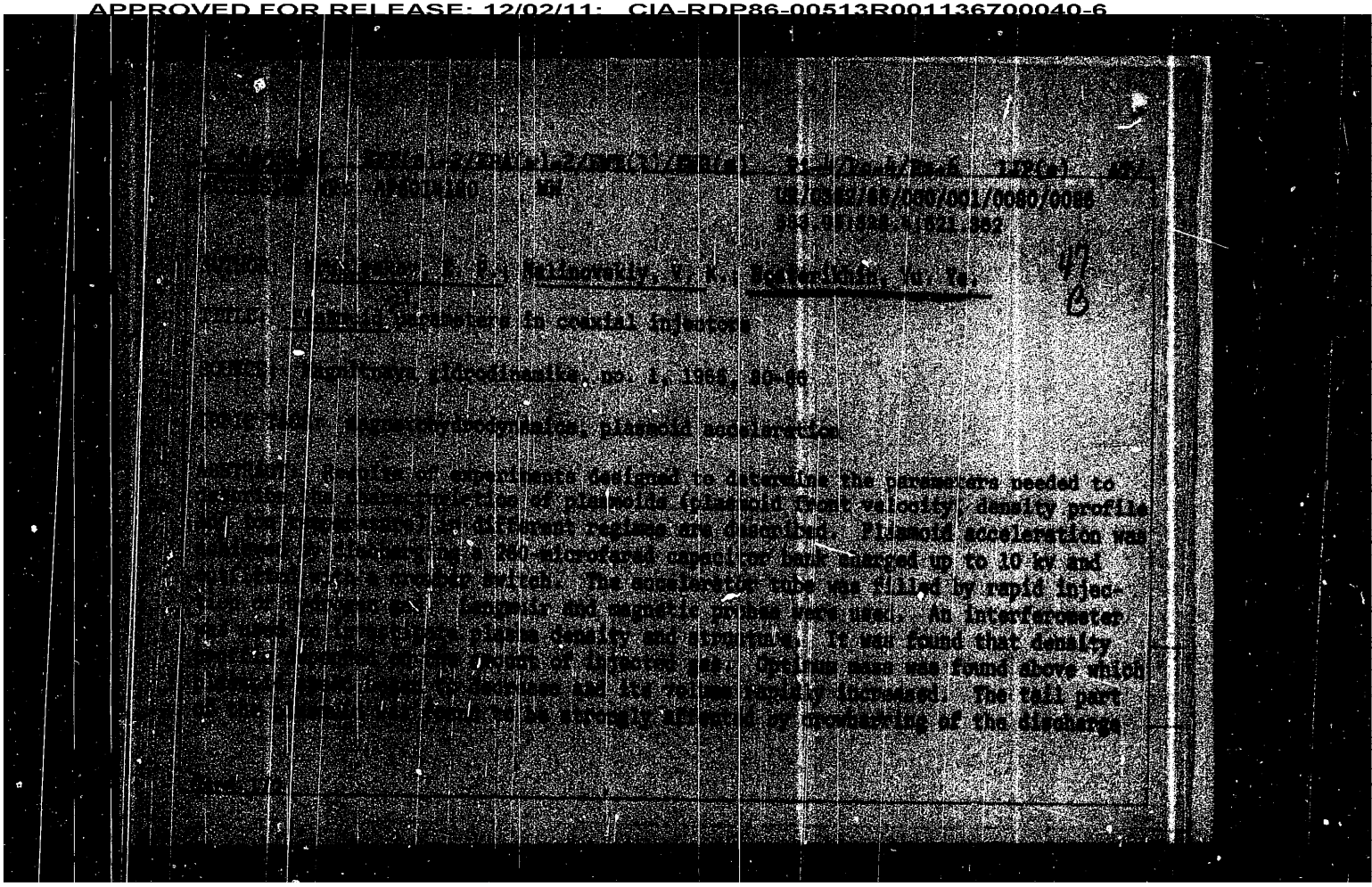
SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 31-34

TOPIC TAGS: plasma diagnostics, interferometer, plasma temperature, electron density

ABSTRACT: The application of a Michelson interferometer to nonstationary plasma diagnostics is reported. Preliminary results on the degree of ionization, electron density and plasma temperature are reported. The method consists of using streak and framing camera photography of the interferograms, and is used for events lasting a few microseconds. It is useful for studies where plasma concentration is 2×10^{14} cm^{-3} and its length is 10 cm or more. It is suggested that interferograms of plasma flows around obstacles can be used for determining its mean-free-path, temperature, and Alfven's velocity. A simple experiment to determine plasma temperature

Card 1/2





L 11062-66

ACC NR: AT6001387

converter should be increased to 40-50 lines/mm, and the slit should be decreased to 0.03-0.02 mm. The authors express their deep appreciation to S. L. Mandel'shtam and G. G. Dolgov for useful discussion and assistance. Orig. art. has: 10 figures.

SUB CODE: 14,17/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card 2/2

L 13062-66 EWT(1)/EWA(h)

ACC NR: AT6001387 SOURCE CODE: UR/3180/64/009/000/0072/0075

AUTHOR: Butslov, M. M.; Komel'kov, V. S.; Nesterikhin, Yu. Ye.

ORG: none

TITLE: Electron-optical instrument for studying changes in the half-width and intensity of spectral lines with time

SOURCE: AN SSSR. Komissiya po nauchnoy fotografii i kinematografii. Uspekhi nauchnoy fotografii, v. 9, 1964. Vysokoskorostnaya fotografiya i kinematografiya (High-speed photography and cinematography), 72-75 and insert facing page 80

TOPIC TAGS: image converter, spectral line

ABSTRACT: The article describes the design and testing of a dual converter, in which the recording of the glow intensity and dimensions of the image is based on the oscillograms of the input current of the photomultiplier. The test results confirm the principle and design of the instrument and indicate that an instrument with better parameters can be constructed. The tested instrument can be used for recording processes lasting 500-1000 μ sec. To improve the resolving time, it is necessary to increase the amplification factor of the instrument by two orders of magnitude and to use a fast multiplier with a current linearity up to 50-100 ma and a time resolution of 1-5 × 10^{-8} sec. To increase the space resolution, the resolving power of the image

Card 1/2

6

to 2 μsec. The initial plasma concentration was 5 x 10^{12} to 3 x 10^{13} cm^{-3}. Magnetic field trapping and plasma containment were achieved on the basis of the following observation. An average 40 μsec delay in neutron generation (10^6 to 10^7 neutrons), 10 kev ion-energy attainment, and bremsstrahlung radiation were obtained after the applied field H_o had decayed. Qualitative measurements from magnetic probes indicated that the trapped field was of the order of H (coil field) with a duration commensurate with neutron generation. The trapped plasma energy was about 10 kev. The authors thank G. I. Budker for his constant influence and interest in the work and R. Z. Sagdeyev for his help and participation in evaluating the results. Orig. art. has: 2 figures and 1 formula.

SUB CODE: ME/ SUBM DATE: 17Nov64/ ORIG REF: 002/ OTH REF: 001

Card 2/2

L 5388-66 EWT(l)/EWP(m)/ETC/EWG(m)/EWA(d)/EPA(w)-2/FCS(k)/EWA(h)/EWA(c) IJP(c)
ACC NR: AP5027280 WW/AT SOURCE CODE: UR/0207/65/000/005/0118/0120

AUTHORS: Iskol'dskiy, A. M. (Novosibirsk); Kurtmullayev, R. Kh. (Novosibirsk); Nesterikhin, Yu. Ye. (Novosibirsk); Pil'skiy, V. I. (Novosibirsk); Ponomarenko, A. G. (Novosibirsk)

ORG: none

TITLE: Magnetic field trapping and plasma containment in experiments with a collisionless shock wave

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1965, 118-120

TOPIC TAGS: magnetic field, plasma, shock wave, rarefied plasma, neutron generation, deuterium

ABSTRACT: Magnetic trapping and plasma containment were achieved in a rarefied, cylindrical, deuterium plasma by creating a collisionless shock condition. A 16-cm glass tube was placed in the centerline of a quasi-stationary magnetic field ($H_0 \sim 0.5$ kilo-oersted, $T = 5$ μsec). In the center of this system was added a 30-cm shock coil generating a magnetic field $H \sim 3$ to 6 kilo-oersteds, for $T \sim 1.4$

Card 1/2

ACCESSION NR: AP4019970

the injected plasma was 5×10^3 m/sec. Since in accelerators of this type there is no way of preventing radial diffusion, the time of acceleration must be of the order of 10^{-6} sec. This imposes requirements on the period of oscillations of the capacitor battery feeding the accelerator which are difficult to satisfy. "The authors are greateful to G. I. Budker for his interest and useful discussions, to V. N. Lukyanov for help with measurements, and to Yu. A. Berezin for computations." Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 17Sep63 DATE ACQ: 23Mar64 ENCL: 01

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

Card 2/3

ACCESSION NR: AP4019970 S/0020/64/154/006/1310/1313

AUTHOR: Dubovoy, L. V.; Nesterikhin, Yu. Ye.

TITLE: Generation of superfast plasma condensations in accelerators of the rail gun type

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1310-1313

TOPIC TAGS: superfast plasma condensation, plasma gun, plasma accelerator, plasma, plasma generation, particle ionization, particle acceleration

ABSTRACT: It has been recognized that it is desirable to separate the processes of ionization and acceleration of particles in the plasma. The present work describes experiments in which highly ionized plasma produced outside the accelerator is injected into the latter. The design of the plasma source is similar to that used by Yu. S. Azovskiy (Zh. TF, 32, 1050 (1961)). The plasma was composed of highly ionized particles evaporated from an insulator insert of the source made of organic glass. The average energy of electrons and ions was 15 to 15 ev measured with a retarding potential. The velocity of the front of

Card 1/3

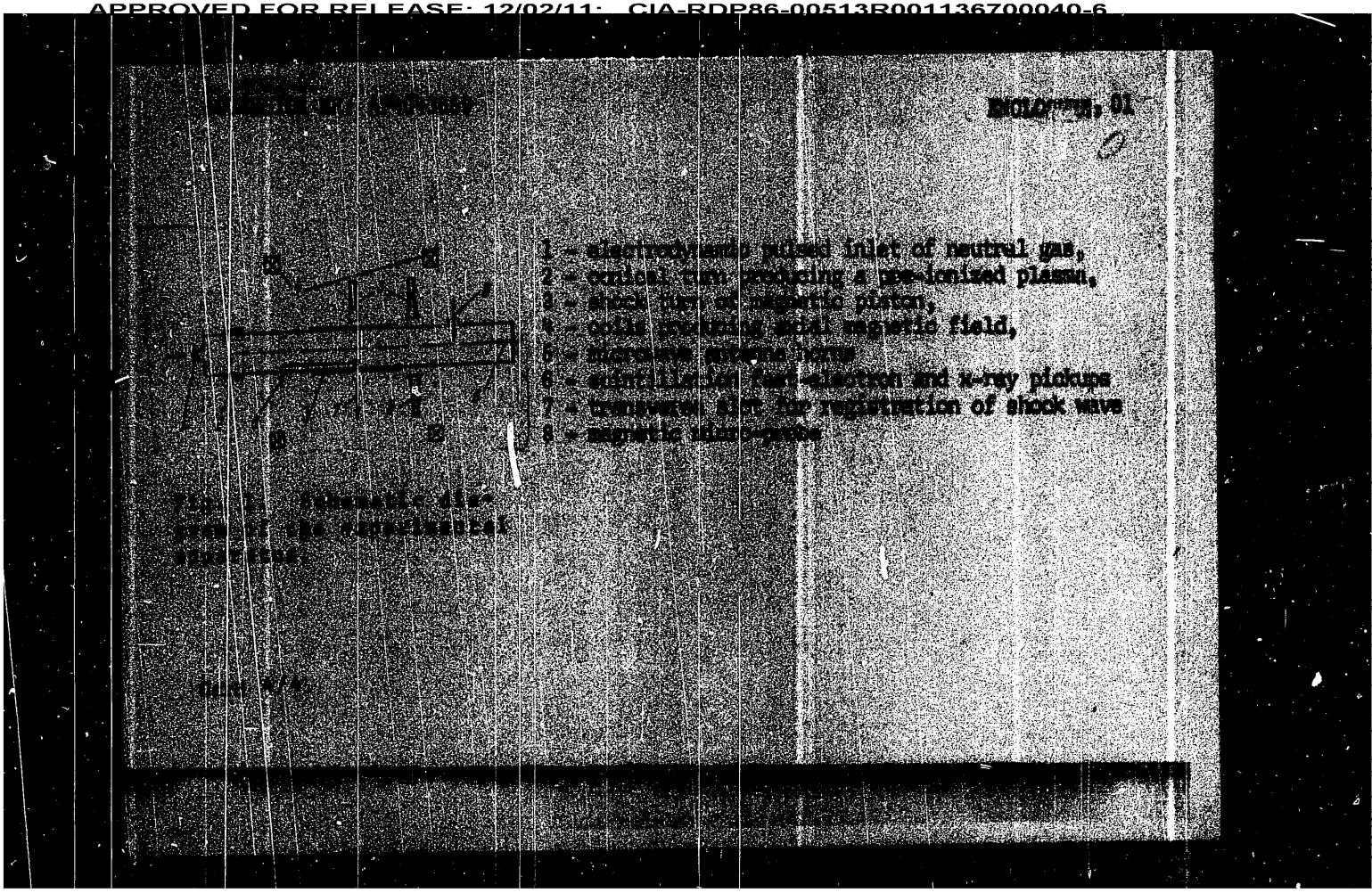


Fig. 1. Schematic diagram of the experimental apparatus

[illegible]
ACCESSION NR: AP4043659

ASSOCIATION: Institut yadernoy fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Nuclear Physics, Siberian Department, AN SSSR)

SUBMITTED: 05May64 ENCL: 01

SUB CODE: NP NO REF SOV: 001 OTHER: 005

Card 3/4

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6

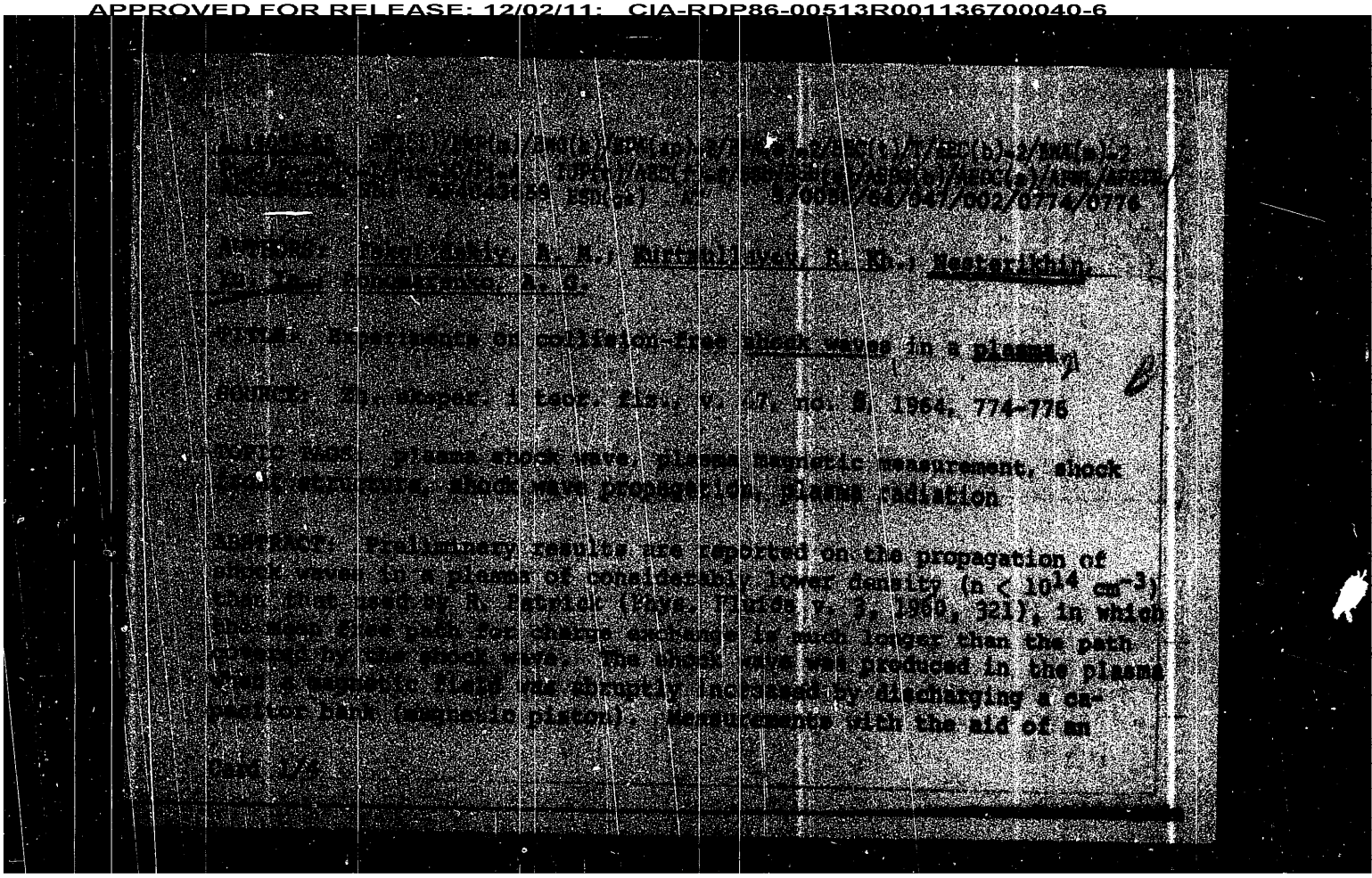
[illegible]

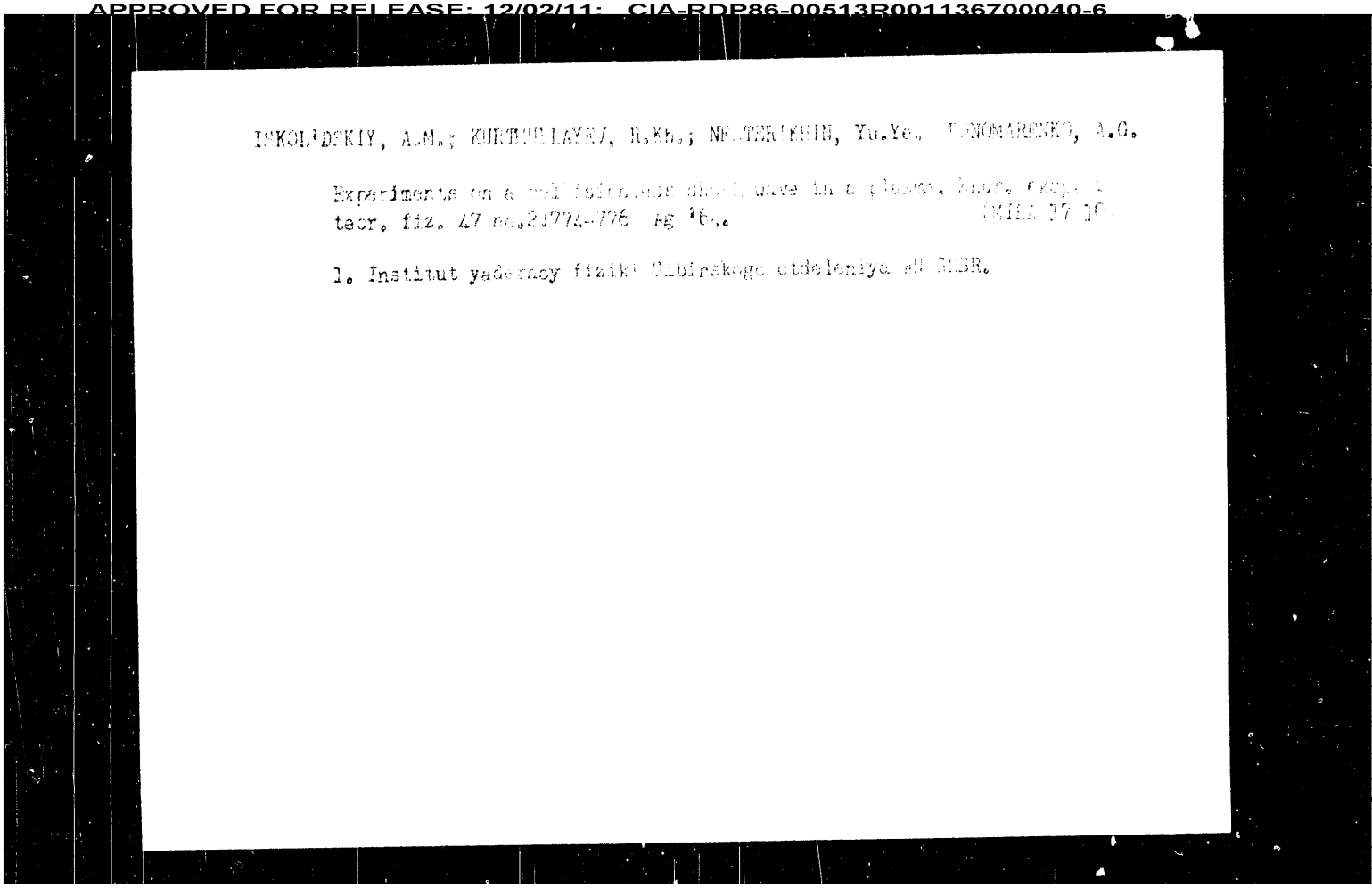
ACCESSION NR: AP4043659

electro-optical converter and magnetic probes have shown that oscillations exist within the shock front, in qualitative agreement with the predictions made by R. Sagdeyev (Symposium on Electromagnetics and Fluid Dynamics of Gaseous Plasma, Polytech. Inst. of Brooklyn, 1961), V. I. Karpman (ZhTF v. 33, 959, 1963), and R. W. Morton, Finite Amplitude Compression Waves in Collision Free Plasma, Preprint NYO-10434, New York University, 1964). Additional phenomena accompanying the convergence of the shock wave to the chamber axis were also recorded, including a burst of radio emission in the 3 and 0.8 cm bands at the instant of cumulation, with a signal duration ~2×10^{-8} sec, corresponding to the time necessary for the hydromagnetic disturbance to cover a distance of the order of 1--2 cm. This correlates with the estimates obtained for the wave front with the aid of the optical and magnetic measurements. "The authors are grateful to G. I. Budker for continuous attention and interest in the work, and to R. Z. Sagdeyev and A. A. Galeyev for a discussion and help." Orig. art. has: 4 figures.

Card 2/4

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6





I'KOL'SKIY, A.M.; KURT'YULAYEV, R.Kh.; NE.TEK'YEVIN, Yu.Ye. [illegible]NOMARENKO, A.G.

Experiments on a multistream shock wave in a plasma. Zhur. eksp. i teor. fiz. 47 no.2:774-776 Ag '64. (MIRA 17:10)

1. Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR.

NESTERIKHIN, Yu.Ye.; KOMEL'KOV, V.S.; MEYLIKHOV, Ye.Z.

Pulse breakdown over small gaps in the nanosecond range. Zhur. tekh. fiz. 39 no.1:40-52 Ja '64. (MIRA 17:1)

ACC.NR: AP4009944

and thus enables one to investigate the structure of the burst. The described procedure was used to measure the velocities of plasma bursts from a conical gun, using 37 kilomegacycle microwaves with the antennas inclined 40° to the drift tube axis. The two parameters of the system (microwave frequency and antenna inclination) can be adjusted to meet a wide variety of conditions. For example, if the inclination is made very large the frequency can also be made large, with a resulting increase in space resolution. Orig.art.has: 1 formula and 3 figures.

ASSOCIATION: none

SUBMITTED: 31Aug63 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 001 OTHER: 002

Card 2/2

ACCESSION NR: AP4009944 S/0057/64/034/001/0190/0192

AUTHOR: Kurtmullayev,R.Kh.; Nesterikhin, Yu.Ye.; Ponomarenko,A.G.

TITLE: On measuring the instantaneous velocity of a plasma burst

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 190-192

TOPIC TAGS: plasma, plasma burst, plasma burst velocity, plasma burst velocity measurement

ABSTRACT: A procedure is described for measuring the instantaneous velocity of plasma bursts by observing the Doppler shift of obliquely reflected microwaves. Microwave transmitting and receiving horns are located on opposite sides of the drift tube, with their axes inclined to and intersecting on the axis of the tube. In the absence of a plasma, no signal from the transmitting horn can enter the receiver. When the plasma burst reaches the critical position it reflects microwaves into the receiving horn. These are mixed with a portion of the transmitted signal and the beats are displayed on an oscilloscope screen. From these beats the Doppler shift, and hence the velocity, is obtained. This method has the advantage over some others that it responds, at any moment, to a definite section of the plasma burst

Card 1/2

ACC.NR: AP4009919

served by Fletcher with illuminated electrodes. Adequate agreement is shown. "The authors consider it their duty to mention the fruitful participation of B.V.Artemov in the early stages of this work." Orig.art.has: 23 formulas, 14 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 13Sep62	DATE ACQ: 10Feb64	ENCL: 00
SUB CODE: PH	NR REF SOV: 002	OTHER: 012

Card 3/3

proximately the Rogovskiy shape. For the point to plane measurements, a sphere of 0.005 cm radius was employed with mercury arc illumination. A double periodicity was observed in the distribution of the lag times: only lag times occurred that were multiples of a certain characteristic time t_1, and those which were also close to multiples of a second much longer characteristic time t_2 tended not to occur. The characteristic time t_1 ranged from about 0.1 to 0.6 nanosec and decreased with increasing E/p. For uniform field breakdown, the characteristic time t_2 also decreased with increasing E/p and was of the order of $10t_1$. The longer periodicity is said to be perceptible also in one of Fletcher's histograms. Possible causes for the observed periodicities are discussed at some length with no very firm conclusion being reached. Something of the order of 10^4 avalanches are required for breakdown. If fewer than these form initially, some sort of avalanche multiplication must occur, and this multiplication process may give rise to the periodicities. The authors favor avalanche multiplication by photoelectric effect at the cathode as in the avalanche chains observed by W.Franke (Zs.f.Phys.,158,96,1960). The characteristic time t_1 would be the time t_A required for an avalanche to develop to the critical size. In an appendix, the avalanche development time t_A is calculated with space charge effects taken into account. The calculated development times are compared with characteristic times t_1 observed in the present work and with lag times ob-

ACCESSION NR: AP4009919 S/0057/64/034/001/0040/0052

AUTHOR: Nesterikhin,Yu.Ye.; Komel'kov,V.S.; Meylikhov,Ye.Z.

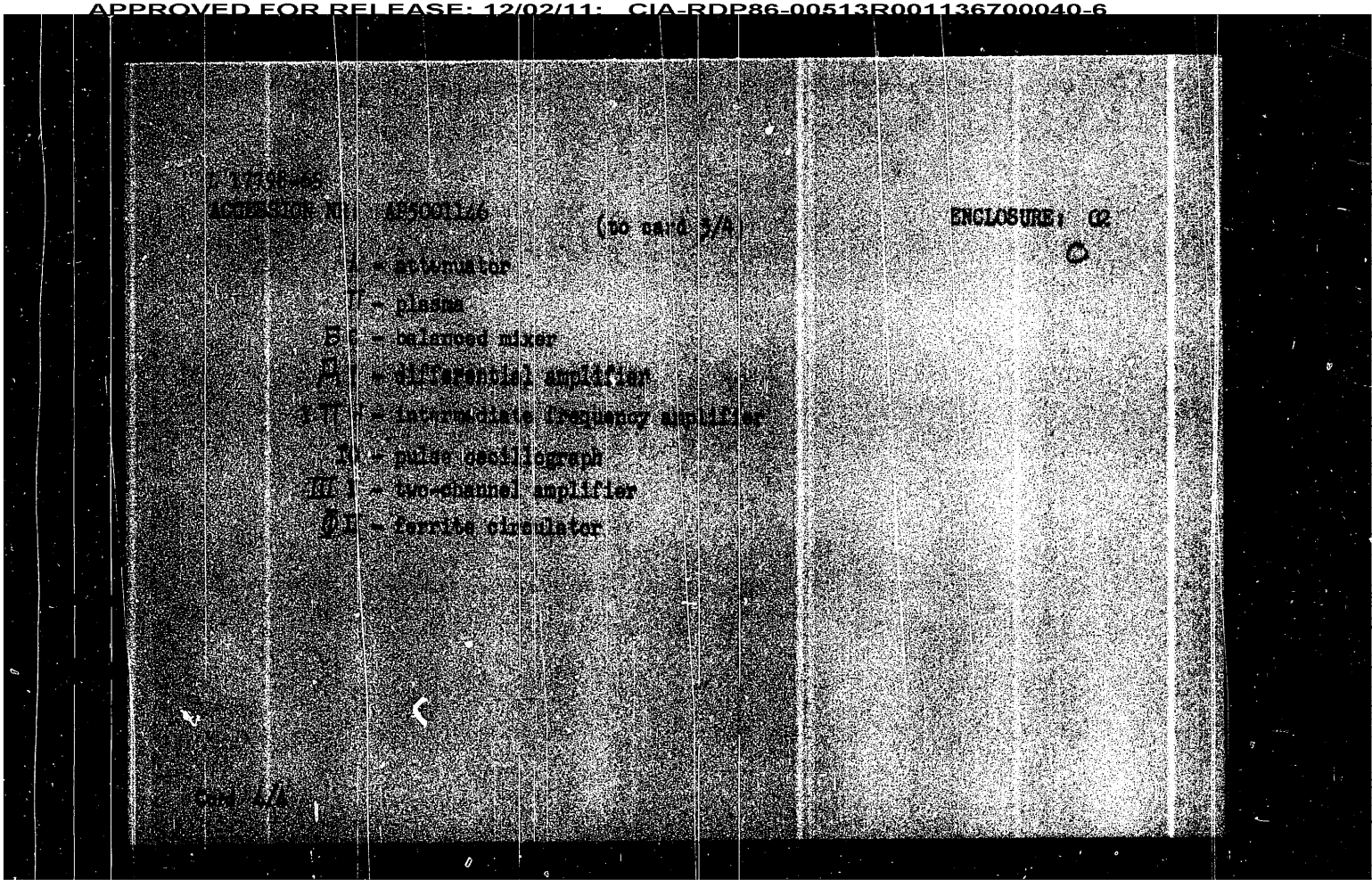
TITLE: Short gap pulse breakdown in the nanosecond range

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 40-52

TOPIC TAGS: electric breakdown, pulse breakdown, uniform field breakdown, point to plane breakdown, electron avalanche, electron avalanche multiplication

ABSTRACT: Lag times were determined for uniform field breakdown and for point to plane breakdown in air at pressures from 16 to 110 cm Hg, gap lengths from 0.01 to 0.122 cm, and pulse voltages of up to 25 kV. The work differed from earlier work of R.C.Fletcher (Phys.Rev.76,1501,1949) chiefly in that greater resolution and steeper pulses were achieved, shorter gaps were employed, and the pressure was varied. Pulse rise times of the order of 0.2 nanoseconds were obtained with the aid of a pulse sharpening gap. The discharges were observed with an oscilloscope capable of 5×10^{-11} sec time resolution, and it was this that limited the precision with which the lag (time between pulse arrival and gap breakdown) could be determined. The uniform field breakdowns took place between 2 cm diameter electrodes having ap-

Card 1/3



ACCESSION NR: AP5031146 (to card 3/4) ENCLOSURE: 02

A - attenuator
V - plasma
BM - balanced mixer
DA - differential amplifier
IFA - intermediate frequency amplifier
OS - pulse oscilliograph
TA - two-channel amplifier
FC - ferrite circulator

Card 4/4

ENCLOSURE: 01

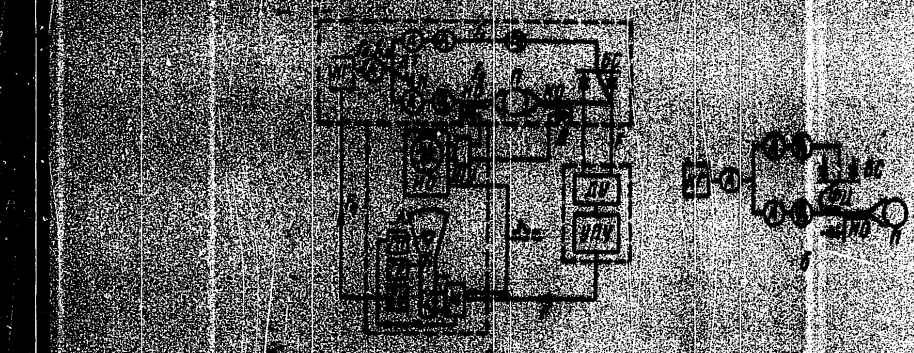


Fig. 1. Block-diagram of microwave interferometer
DT - double T-junction
Φ_1, Φ_2 - filters
G - probe signal source
D_1, D_2, R - loads

(to card 4/4)

Card 3/4

Abstract. The instrument was used to measure the phase shift $\phi(t)$

$$\varphi(t)=2\pi\frac{l}{\lambda}\left(1-\frac{1}{l}\int_0^l \sqrt{\varepsilon(x,t)}\,dx\right),$$

the strength of reflected and transmitted signals, and thus to determine the mean electron density N, conductivity σ, and electron collision frequency ν. The plasmoid diameter was 12 λ and was generated from a conical source. The minimum value of N was 5×10^{10} cm^{-3}, and the boundary velocity was 3.4×10^{6} cm/sec. The measurement accuracy is independent of probe signal absorption. "The authors are grateful to Yu. M. Malyavin for adjusting the apparatus and carrying out the experiments." Orig. art. has: 3 formulas and 2 figures.

ASSOCIATION: Institut yadernoy fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Nuclear Physics, Siberian Branch, Academy of Sciences SSSR)

SUBMITTED: 06Jun64 ENCL: 02

SUB CODE: NE,GP,EM NO REF SOV: 003 OTHER: 003

L 11798-65 EWT(d)/EWT(l)/EWG(k)/EPA(sp)-2/EEC(b)-2/EEC-4/EPA(w)-2/EEC(t)/T/EEC(b)-2/
EWA(c)-2 Pi-4/Pu-6/Pab-10/Pq-4/Pg-4/P1-4/Pv-4/P1-4 IJP(c)/SSD(b)/AFWL/AEDC(b)/
ESD/ESD(t)/KIH(f)-2/ESD/AS(mp)-2/ASD(a)-5/APETR/RAEM(a)/ESD(c)/ESD(ga)/ESD(t) AT
ACCESSION NR: AP5001145 S/0294/64/002/006/0837/0841

AUTHORS: Kurmuliayev, R. Kh.; Nesterikhin, Yu. Ye.; Pil'skiy, V. I.; Romanenko, A. G.

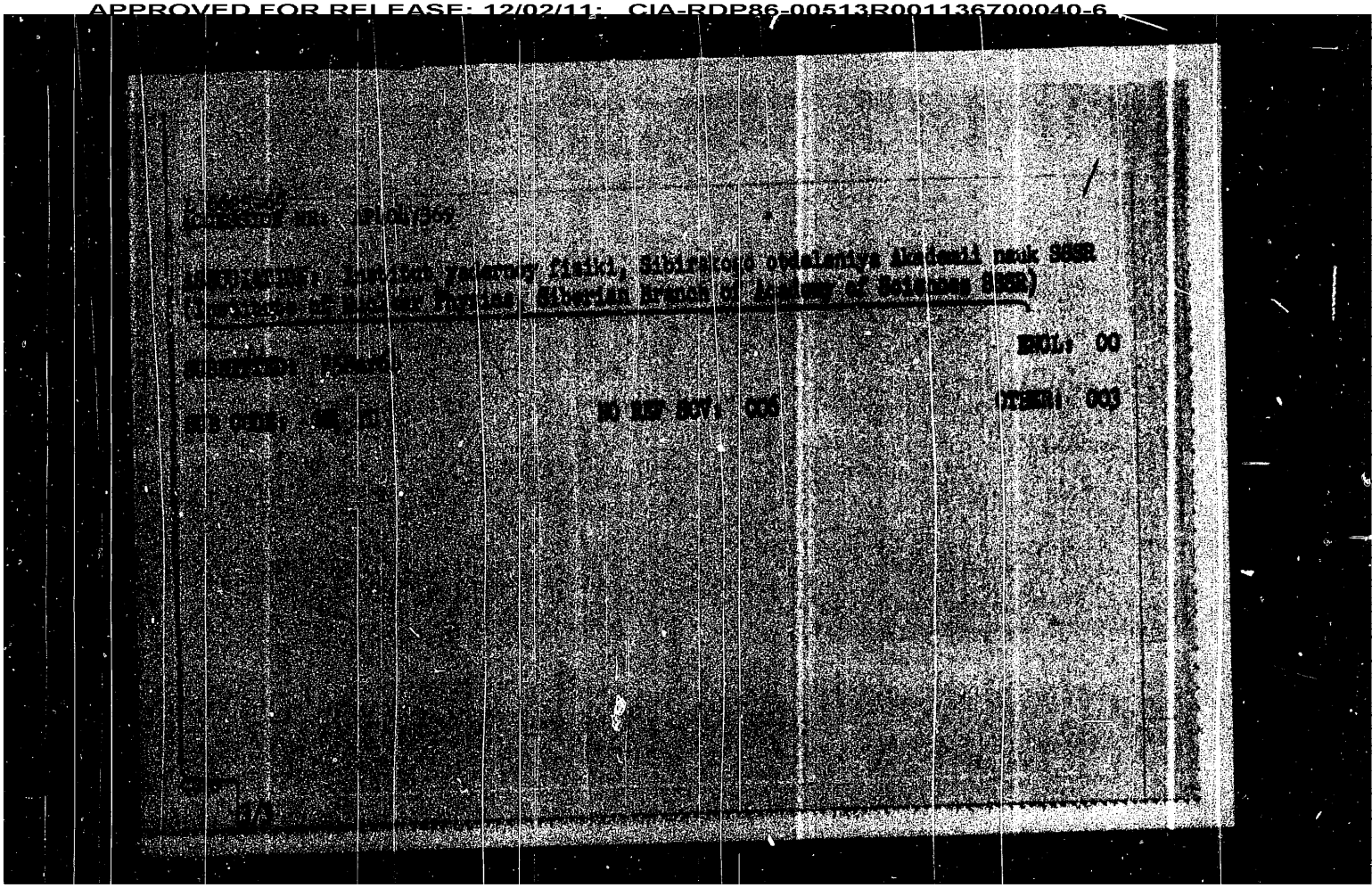
TITLE: Velocity diagnostics of plasma jets

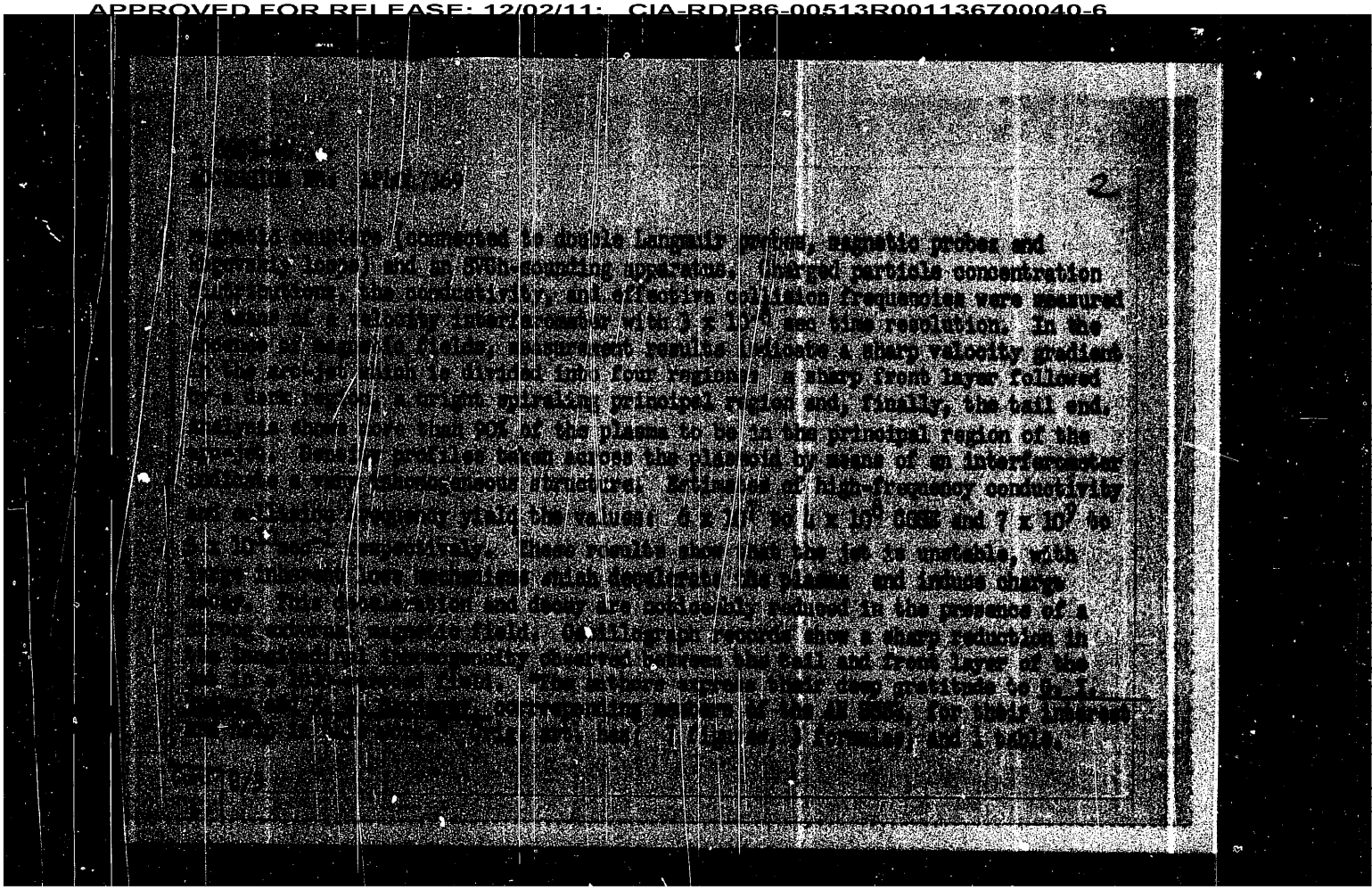
SOURCE: Teplofizika vysokikh temperatur, v. 2, no. 6, 1964, 837-841

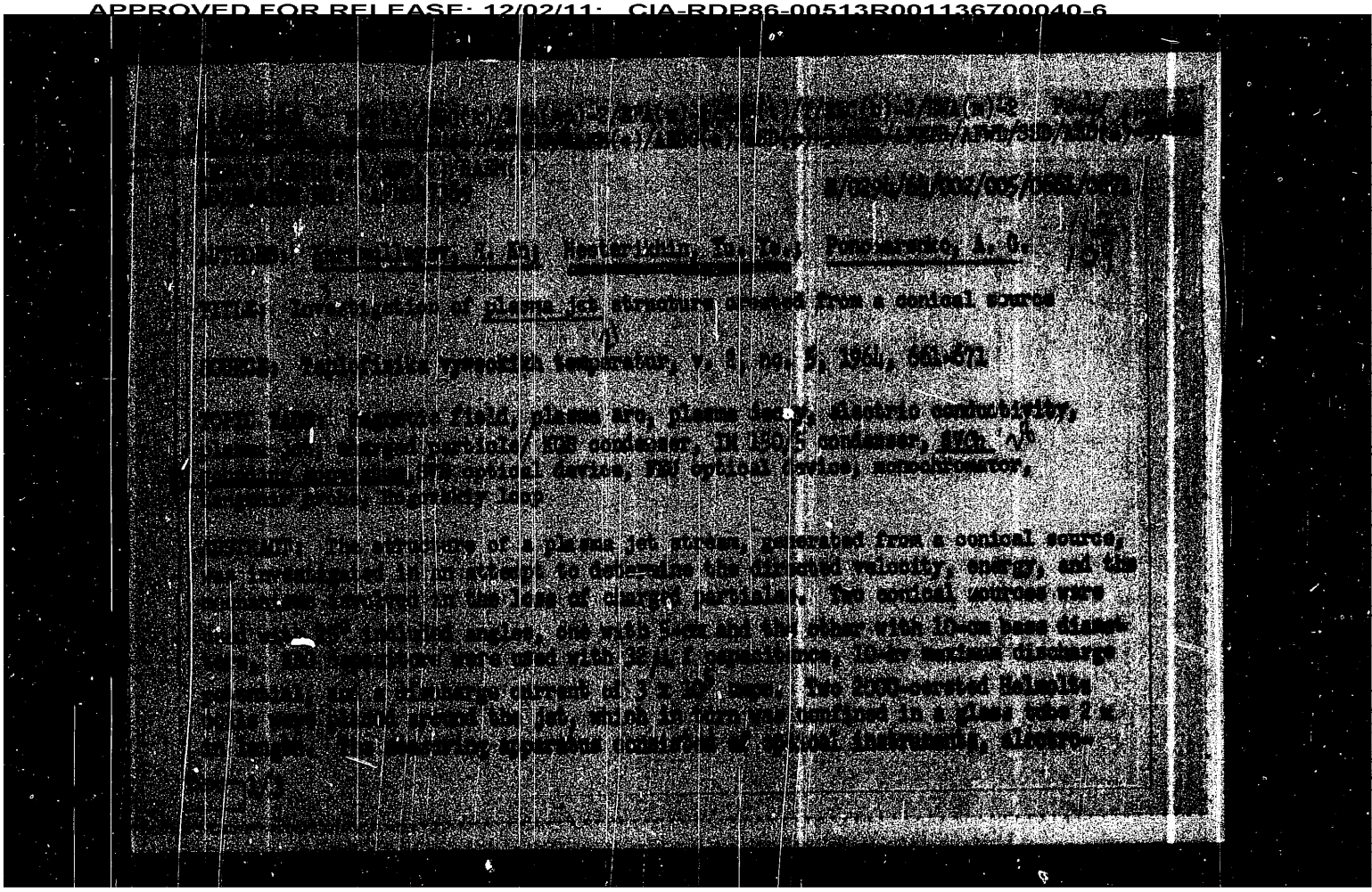
TOPIC TAGS: microwave equipment, microwave plasma, plasma, interferometer, electron collision, phase shift, reflected signal envelope / OK 15 oscillograph, 21LO1A cathode ray tube, 6V2P diode, OK 17 oscilloscope

ABSTRACT: A microwave interferometer for plasma speed diagnostics is described. The characteristics of the interferometer are: λ = 8 mm; resolving power 3×10^{-3} sec; maximum rate of phase change ± 5 rad/μsec, and sweep range T = (1 to 100) μsec. The interferometer operates by measuring the phase shift of the probe waves and by utilizing a frequency transformation from $f_0 = 3.7 \times 10^{10}$ cycles to an intermediate F = 30 Mcycle frequency with a heterodyne circuit. This is then compared with a reference frequency phase F_0 = 30 Mcycle on a cathode-ray oscilloscope. The schematic of the interferometer is shown in Fig. 1 on the

Card 1/4



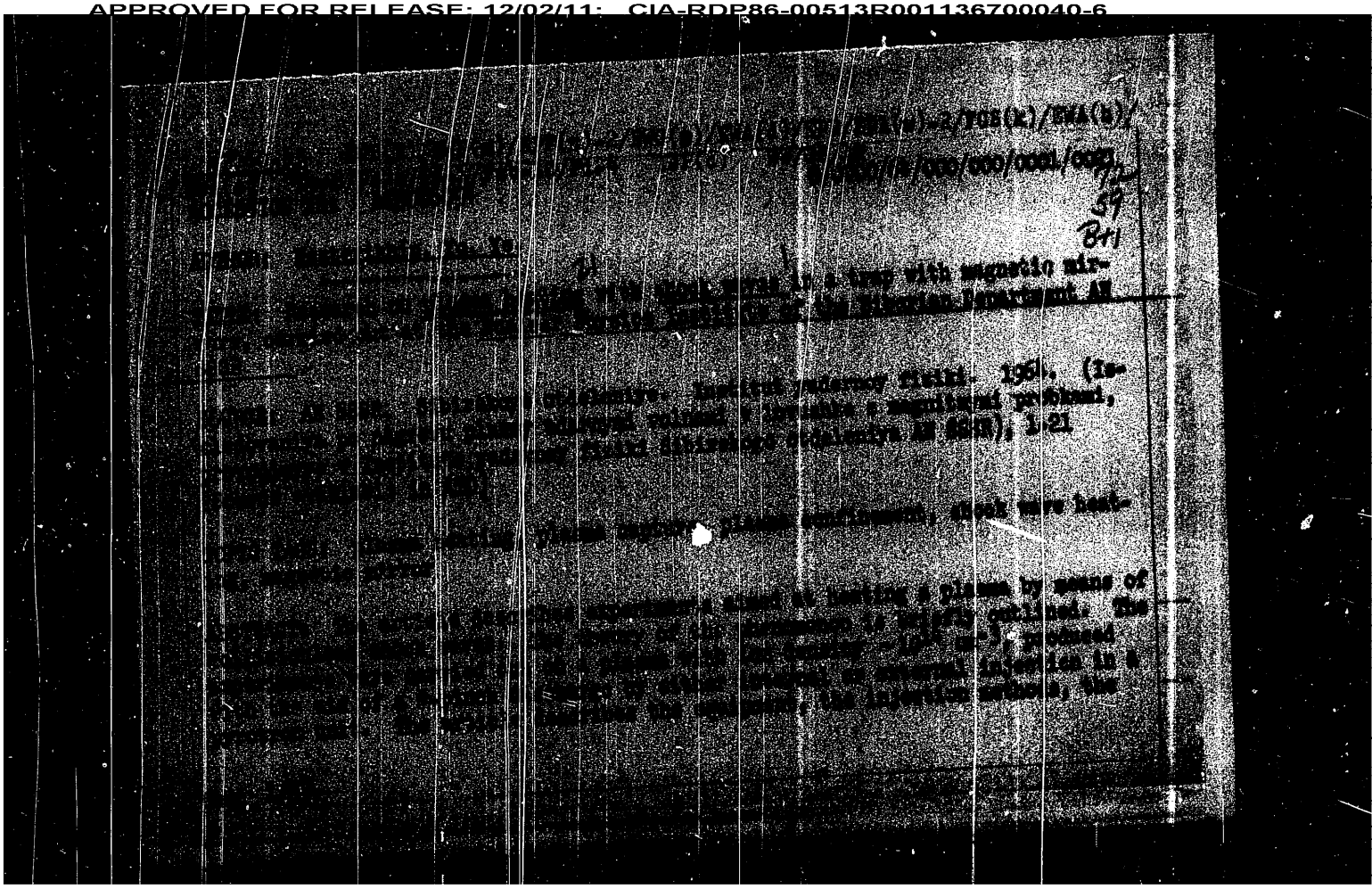




[illegible]

[illegible] prior to [illegible] of the shock waves, the [illegible] the optical and magnetic char- [illegible] used to determine [illegible] of capturing and retaining [illegible] and the [illegible] illustrations are diagrams [illegible] X-ray and neutron emission [illegible] results and equipment [illegible] It is deduced from the data that the [illegible] energies 10 - 15 keV and [illegible] formulated and realized by [illegible] participating in the work [illegible] Physics, Siberian Depart- [illegible] A. M. Iskol'dskiy, [illegible] and V. I. [illegible] [illegible] development of the equipment." [illegible]

[illegible] AN SSSR (Institute of [illegible] AN SSSR)



KURTMULLAYEV, R.Kh. (Novosibirsk); NESTERIKHIN, Yu.Ye (Novosibirsk); Ponomarenko, A.G. (Novosibirsk)

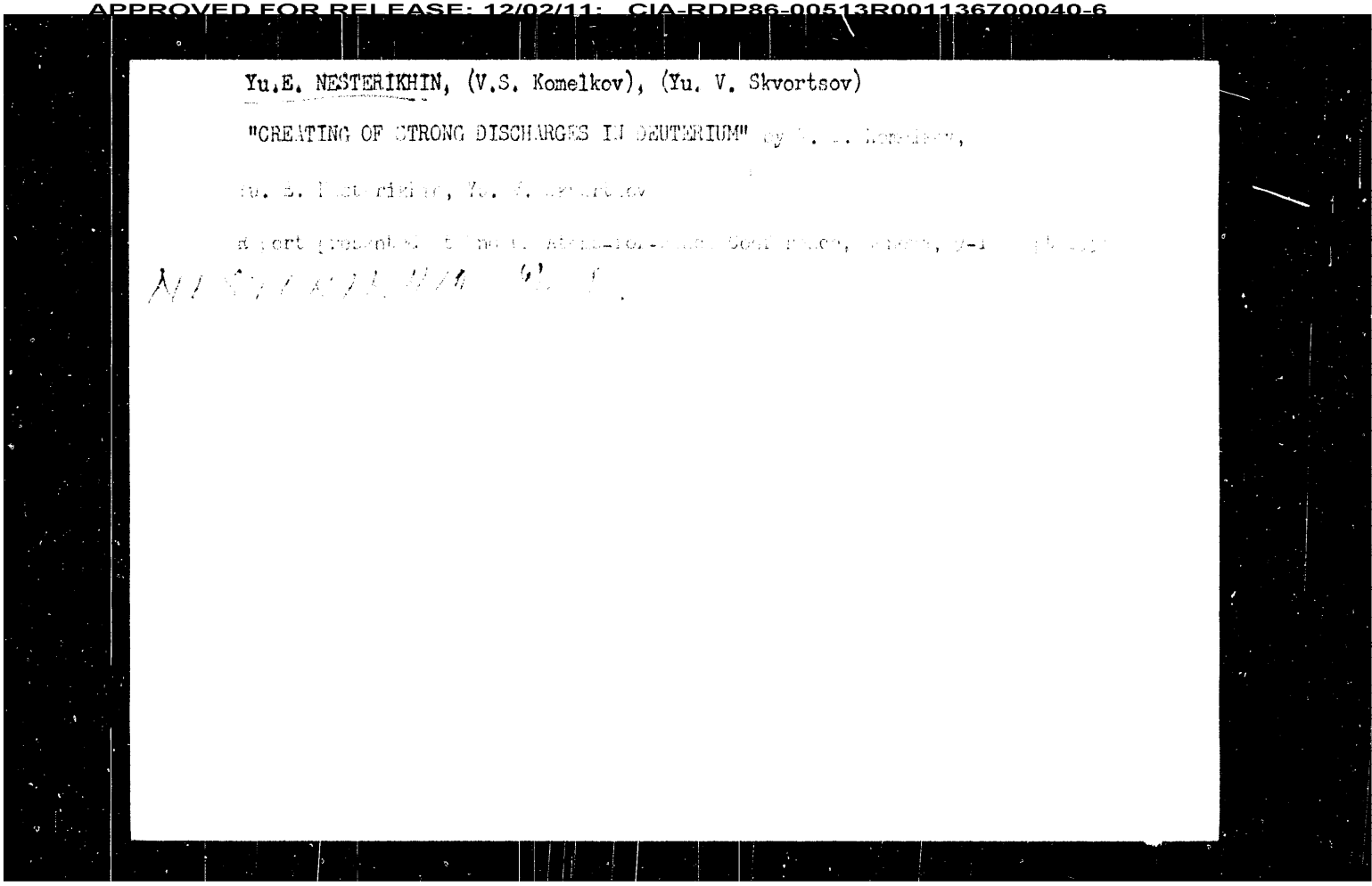
Raleigh - Taylor instability in a conical plasma accelerator. PMTF no. 6:144-146 N-D '63. (MIRA 17:7)

NESTERIKHIN, YU. E. PERGAMENT, M. I. KOMELKOV, V. S.

Electron Optical High Speed Camera for the Investigation of Transient Processes.

reported submitted for: The 5th International High Speed Photography Congress, Washington, D.C. 16-22 Oct., 1960.

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6



Yu.E. NESTERIKHIN, (V.S. Komelkov), (Yu. V. Skvortsov)

"CREATING OF STRONG DISCHARGES IN DEUTERIUM" by [illegible]

[illegible]

Report presented at [illegible]

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6

LASKIN, M., starshiy leytenant, ANTONOV, V., mayor; NESTERIKHIN, I., starshiy serzhant, radiotelegrafist 1-go klassa

From experience in training military specialists. Tekh. vooruzh. i voen. delo no. 56-60 D '63. (MIRA 17:3)

NESTERENOK, Ye.S., arkhitektor; PIVKIN, V.M., arkhitektor

Developing rugged areas in the Kuznetsk Basin. Trudy Zap.-Sib. fil. AS A no.7:33-41 '62. (MIRA 18:2)

NESTERENOK, Ye.S., arkhitektor; PEYSAKHOV, M.L., inzh.

Effective use of land allotted to a village in the [illegible] regions of the Kuznetsk Basin. Trudy [illegible]
23-32 '62. (MIRA 17:3)

L [illegible]

ACCESSION NR: AT4045960 5

layer obtained in nickel-boron alloy was much higher than that obtained in ferroborall, but the density and ductility of the latter were substantially higher and the surface quality better than those of the former. Boronizing, especially in ferroborall, increases the corrosion and heat resistance of steel and, therefore, can be recommended for parts operating in aggressive media and at high temperatures. The diffusion rate and the thickness of the impregnated layer decrease, but the hardness increases with increasing steel carbon content. In alloy steels nickel, molybdenum and especially chromium slow down diffusion and decrease the thickness of the diffusion layer regardless of whether these elements were introduced separately or in combination. Orig. art. has: 7 figures and 5 tables.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3128

Card [illegible]

[illegible] Pad/Pa-4/EWP(t)/Pu-4 JD/HW/JG
ACCESSION NR: [illegible] S/2563/64/000/234/0075/0082

AUTHOR: [illegible]; Nesterenkova, Yu. P.

TITLE: Boronizing of steel in solid media

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 234, 1964. Metallovedeniye (Metallography), 75-82

TOPIC TAGS: steel boronizing, steel solid medium boronizing, steel diffusion coating, boronized steel property, boronized layer property

ABSTRACT: The boronizing of various steels in solid media, such as [illegible] ferroborall, a boron-aluminum alloy containing 5.77% B, 3.88% Si, [illegible] Al, [illegible] C, or a nickel-boron alloy containing 7.62% B was studied in order to determine optimal conditions for the process. It was found that in either alloy, used in powder form with a particle size of [illegible] mm and with an addition of 0.5% aluminum chloride, the diffusion rate at 1000C amounts to 0.027 mm/hr for ferroborall and 0.024 mm/hr for nickel-boron alloy. A dense diffusion layer was obtained. Under all conditions tested the hardness of the borided

Card 1/2

NESTERENKOVA, T.A.

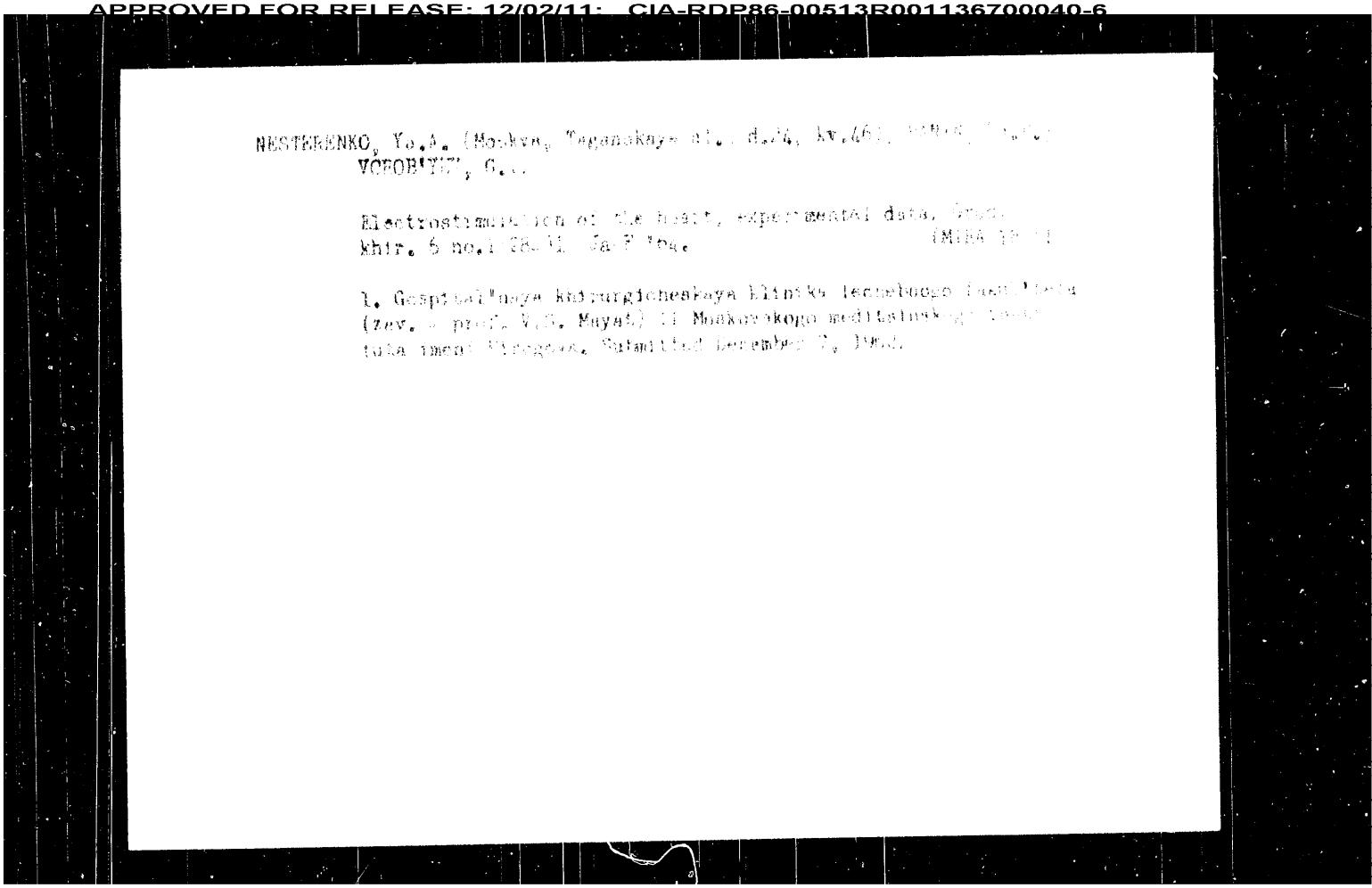
Care, feeding and raising of the hippopotamus. Sobr. st. Mosk. zoop. no.2:69-74 '58. (MIRA 11:12)
(Hippopotamus)

NESTERENKO, Z.M. (Rostov-no-Donu)

Penicillin therapy in veterinary practice. Veterinariia 30 no.5: 26-28 My '53. (MLRA 6:5)

SEMKO, Mikhail Fedorovich; ATROSHCHENKO, Vasiliy Ivanovich;
NESTERENKO, Yu.Yu., red.

[For the development of cooperation between the workers
of science and production] Za razvitie sodruzhestva ra-
botnikov nauki i proizvodstva. Khar'kov, Izd-vo
Khar'kovskogo gos. univ., 1961. [illegible]



NESTERENKO, Yu.A. (Moskva, Taganskaya ul., d.24, kv.46); [illegible]; VOROB'EV, G...

Electrostimulation of the heart, experimental data. Grud. khir. 6 no.1 28-31 Ja-F '64. (MIRA 17:4)

1. Gospital'naya khirurgicheskaya klinika lechebnogo fakul'teta (zav. - prof. V.S. Muyat) II Moskovskogo meditsinskogo [illegible] imeni I.V. Stalina, Sanitarnaya [illegible] Yu.A.

FEDOROV, V.D.; NESTERENKO, Yu.A.; BULYCHEV, V.V.; SOLOV'YEV, V.V.

Measurement of pressure in the cavities of the heart and large vessels in acquired heart defects. Vop.kard. 2-go MGMI no.2: 357-374 '62. (MIRA 16:1)

1. Iz kafedry gospital'noy khirurgii (zaveduyushchiy prof. V.S. Mayat) i kafedry gospital'noy terapii (zaveduyushchiy chlen-korrespondent AMN SSSR prof. P.Ye.Lukomskiy).
(BLOOD PRESSURE) (HEART--DISEASES)

NESTERENKO, Yu. A.

Hemodynamic changes during commissurotomy. Khirurgiia 36 no.3:19-28 Mr '60. (MIRA 13:12)
(HEART--SURGERY) (BLOOD--CIRCULATION)

NESTERENKO, Yu. A., Cand Med Sci -- (diss) "Hemodynamic changes during the time of a comissurotomy operation." Moscow, 1960. 16 pp; (Second Moscow State Medical Inst im N. I. Pirogov); 250 copies; price not given; (KL, 17-60, 171)

NESTERENKO, Yu.A.

Measurement of pressure in the left atrium and pulomonary artery during commissurotomy. Vest.khir.81 no.7:42-47 Jl '58 (MIRA 11:8)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. V.S. Mayat) lechebnogo fakul'teta 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova (Moskva), Taganskaya ul., d.24, kv.46)

(COMMISSUROTOMY,
determ of left auric & pulm. artery pressure in mitral stenosis (Rus))

(BLOOD PRESSURE, determ.
intra-auric & intrapulmonic, in commissurotomy (Rus))

BEKKER, A. E.; SUPRUN, T. P.; DMITRIYEVA, S. V.; NESTERENKO, Ye. Y.

"Morphogenesis and metabolism of fungi with special attention to the nucleic acids and their antimetabolites.

report submitted to 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

All-Union Sci Inst for Antibiotics, Moscow State Univ.

NESTERENKO, Ye.G.; CHUISTOV, K.V.

X-ray scattering by "Guinier complexes." Kristallografiia 10 no.3: 324-329 My-Je '65. (MIRA 18:7)

1. Kiyevskiy institut metallofiziki.

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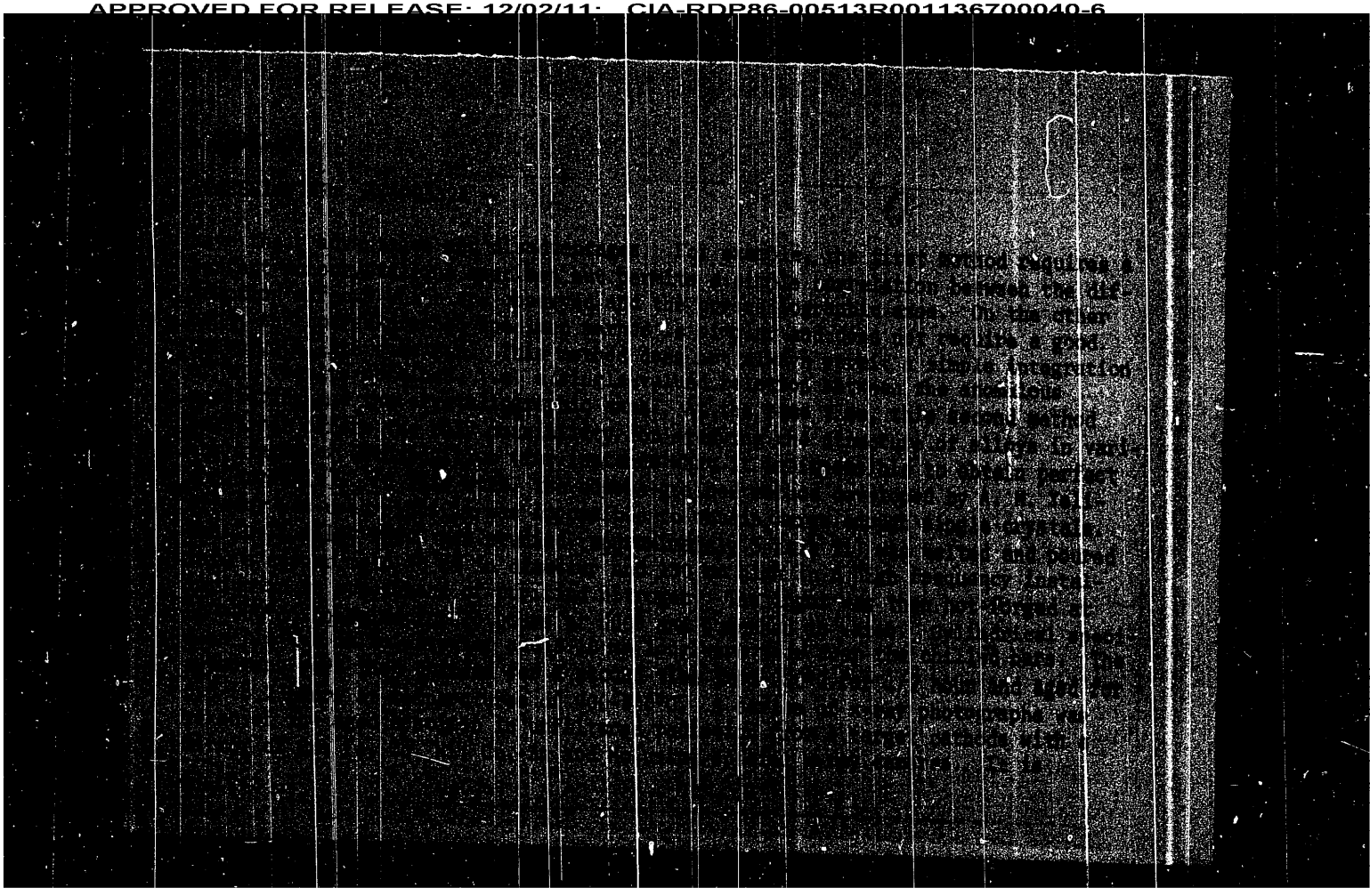

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AM4017086

SUB CODE: ML, AP SUBMITTED: 23Aug63 NR REF SOV: 253

OTHER: 463 DATE ACQ: 17Jan64

Card 3/3

AM4017086

presented. Contemporary concepts of the nature and mechanism of different weakening processes in metals are expounded, as well as present-day thinking concerning the effect of impurities on the kinetics of the weakening processes. The articles in this collection are principally the original results of research performed in recent years at the Institut Metallofiziki AN USSR.

TABLE OF CONTENTS:

Card 2/3

AM4017086 BOOK EXPLOITATION S/

Gertsriken, S. D.; Dekhtyar, I. Ya.; Krivoglaz, M. A.; Larikov, L. N.; Lytvak, L. I.; Nesterenko, Ye. G.; Novikov, N. N.; Sosnina, Ye. I.; Shyusar, N. P.; Tikhonov, L. V.; Trofilov, V. I.; Chuistov, K. V.

Physical bases of the strength and ductility of metals (Fizicheskiye osnovy prochnosti i plastichnosti metallov) Moscow, Metallurgizdat, 1963. 321 p. illus., biblio. Errata slip inserted. 4250 copies printed. Editor of the publishing house: Ye. N. Berlin; Technical editor: L. V. Dobuzhinskaya; Bindery artist: Yu. M. Vashchenko

TOPIC TAGS: strength of metals, ductility, crystal lattice, dislocations, metal failure, strain hardening, solid solution, microstress, lattice defect, plastic strain, relaxation, polygonization, recrystallization, grain growth

PURPOSE AND COVERAGE: This collection of articles is intended for scientific personnel and for engineers and metals physicists; it also may be useful to students at metallurgical and machine-building vuzes. The results of study of crystal-lattice imperfections and dislocation theory of metal failure are

Card 1/3

The effect of ....

depends on the type of deformation, being 38% for deformation in rolling and 6.3% for deformation in tension. 4) The composition of the Ti-enriched regions, giving rise to the appearance of satellite diffractions and to the formation of α'-phase crystals, is near to the composition of the stable phase. 5) The results of the present investigation provide a support for the view that the phase-transformation in Cu-Ti alloy can be regarded as a transformation of the allotropic type. There are 3 figures and 6 tables.

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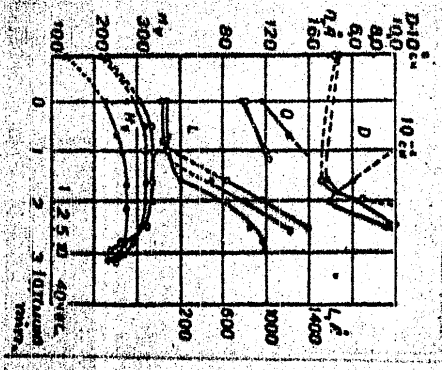


Card 3/3

Fig. 3:

The effect of ....

measurements. Conclusions - 1) Plastic deformation of the solution-treated Cu-Ti alloy slows down the rate of the initial stage of decomposition of the solid solution (formation of the "modulated" structure) and accelerates the process of formation and growth of the intermediate- and stable-phase crystals. The general effect of preliminary plastic deformation on the kinetics of ageing of the Cu-Ti alloy is demonstrated in Fig. 3, where H_V (kg/mm^2), Q (Å), D (10^{-5} cm) and the dimensions of the α'-phase (L, Å) are plotted against time (hours, upper scale, or log τ, min, lower scale); shaded, half-shaded and unshaded circles relate, respectively, to test pieces aged at 500 °C, deformed to 22% deformation and then aged at 500 °C and deformed to 44% and aged at 500 °C. 2) As a result of plastic deformation of preliminarily aged Cu-Ti and Cu-Ti-Cr alloys, crystals of the intermediate and stable phases are formed from the enriched zones of the solid solution, and a change in the lattice symmetry of the intermediate α'-phase accompanied by the formation of the stable β-phase crystals takes place. 3) The minimum degree of plastic deformation at which structural changes in preliminarily aged alloys can be observed

S/601/62/000/016/012/029
E193/E383

AUTHORS: Nesterenko, Ye.G. and Chuistov, K.V.

TITLE: The effect of plastic deformation on the decomposition and stability of second-phase precipitates in copper-titanium and copper-titanium-chromium alloys

SOURCE: Akademiya nauk Ukrayinskoyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 16. Kiyev, 1962. Voprosy fiziki metallov i metallovedeniya. 90 - 102

TEXT: The object of the present investigation was to study the effect of plastic deformation on the decomposition of solution-treated 4.5% Ti-Cu alloy and on the structural state of this and the 5% Cr - 5% Ti-Cu alloy, solution-treated and then aged. After subjecting the test pieces to the appropriate heat and mechanical treatment, X-ray diffraction measurements were used to determine the "modulation period" Q , size L_{Ω} of the intermediate α'- and stable $\beta(Cu_3Ti)$ phases, the magnitude $\delta a/a$ of the distortions of the second type and the dimensions D of the mosaic blocks of the matrix. The process of ageing was followed by hardness, H_V ,

Card 1/3

NESTERENKO, Ye.G.; CHULSTOV, K.V.

Effect of crystal structure imperfections on the hardening of solid solutions during decomposition. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.14:89-103 '62. (MIRA 15:6)
(Alloys--Hardening) (Crystal lattices--Defects)

S/123/62/000/017/004/006
A052/A101

The aging characteristics of...

firmed by the measurement of the crystalline lattice parameter of the investigated alloys after various heat treatments. The investigation has not detected the modulated structure and intermediate α-phase formation, and after an hour's aging at 400°C the formation of sufficiently large stable β-phase crystals (Cu_3Ti) has been observed. There are 3 figures.

T. Kislyakova

[Abstracter's note: Complete translation]

Card 2/2

3/123/62/000/017/004/006
A052/A101

AUTHORS: Nesterenko, Ye. G., Chuistov, K. V.

TITLE: The aging characteristics of copper-titanium-beryllium alloys

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 17, 1962, 21, abstract 17B111 ("Sb. nauchn. rabot In-ta metallofiz. AN UkrSSR", no. 13, 1961, 142 - 146)

TEXT: The decomposition was studied of two (I and II) copper-titanium-beryllium alloys smelted of oxygen-free copper, titanium iodide and technically pure beryllium and containing (in weight %) 1.19 Ti and 0.96 Be (alloy I) and 2.12 Ti and 0.50 Be (alloy II). A hardness measurement of alloys after an hour's aging has shown that the alloys have 2 hardness maxima: the first one at the decomposition temperature of 300°C coincides with the hardness maximum of copper-beryllium alloy and the second one (at 400 - 500°C) coincides with the hardness maximum of copper-titanium alloy. Thus the decomposition of the supersaturated solid solution of Ti and Be in copper takes its course in two stages: in the first stage Be and in the second stage Ti precipitates. The same fact is con-

Card 1/2

Micro-stresses and coherent- ...

There are 8 figures, 5 tables and 11 references: 8 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: Ref.4: Stokes A.R. Proc. Phys. Soc. v.61, 1948, 382; Ref.5: Warren B.E., Averbach B.L. J. Appl. Phys., v.23, 1952, 497; v.21, 1950, 595. Ref.8: McKechan M., Warren B.E. J. Appl. Phys., v.24, 1953, 52.

ASSOCIATION: Institut metallofiziki AN UkrSSR
(Institute of Physics of Metals AS UkrSSR)

SUBMITTED: May 22, 1961

Card 4/4

Micro-stresses and coherent- ...

from U-12A the line broadening is due only to the small block size; this was found to be 2.6×10^{-6} cm for U-10 steel and this is in good agreement with published results (Ref.3: Arbuzov M.P., Lysak L.I., Nesterenko Ye.G. DAN SSSR, v.90, 1953, 3). The size of the coherent scattering region was found to be independent of the method used to determine them. The uniform deformation region in martensite crystals is considerably larger than in plastically deformed metals, confirming the conclusion jointly published by one of the authors (Nesterenko) and others (Ref.3) that martensite crystals in a piece of hardened steel are elastically deformed by forces external to them. For isolated martensite the situation is entirely different. Static disturbances can produce changes in the intensity of X ray interference without appreciable width change, but special experiments are needed to check whether this effect could be responsible for the observed relationships. Study of the effect of linear dimensions of specimens on static disturbances showed that for martensite in hardened steel they are due wholly to the presence of interstitial carbon atoms in the alpha-iron lattice.

Card 3/4

S/126/61/012/006/013/023
E111/E435

Micro-stresses and coherent- ...

U-12A steels; hardened filings of U-12A steel; hardened 1.2 mm diameter specimens of U-12A steel; hardened 4 x 10 x 10 mm specimens of U-12A steel. Before the X-ray pattern was obtained a 0.2 mm thick layer was etched off all the specimens except filings (from which very little was etched off); this was found to give carbon contents in the saturated solid solution (martensite) equal to those analysed in the steel. The results showed that the value of type II disturbances ($\delta a/a$) in martensite crystals of hardened steel depends on the dimensions of the specimen hardened, it is a basic factor that there is no difference between the values for the very fine filings and those for the 1.2 mm diameter cylinder. This indicates that the disturbances are due to deformation produced by the formation of the martensite crystals and deformation produced by thermal stresses. The hardness measurements of the hardened cylinders and pieces of U 12A steel was found to be almost the same; since their type II disturbance values are different, this means that the high hardness of martensite in hardened steel is not due to the presence of type II disturbances. The authors stress that for martensite isolated

Card 2/4

S/126/61/012/006/013/023
E111/E435

AUTHORS: Kurdyumov, G.V., Nesterenko, Ye.G.

TITLE: Micro-stresses and coherent-scattering regions in martensite crystals

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.6, 1961. 883-890

TEXT: Micro-stresses as well as the small size of regions of coherent scattering play a part in the broadening and blurring of X-ray interference lines from martensite in hardened steel. If martensite crystals are isolated (by electrolytic solution) the micro-stresses produced by elastic deformation disappear. The object of the present work was to obtain more precise knowledge of the nature and causes of micro-stresses arising on quenching steel. Types У-12 (U-12) and У-10А (U-10A) steels were used. From the broadening and decrease in intensity of the interference lines of martensite, the crystal-lattice disturbances and the size of the coherent X-ray scattering regions were determined by means of previously described techniques. The following specimens were studied: martensite isolated from hardened pieces of U-10A and

Card 1/4

32658

S/126/61/012/005/018/028
B102/B138

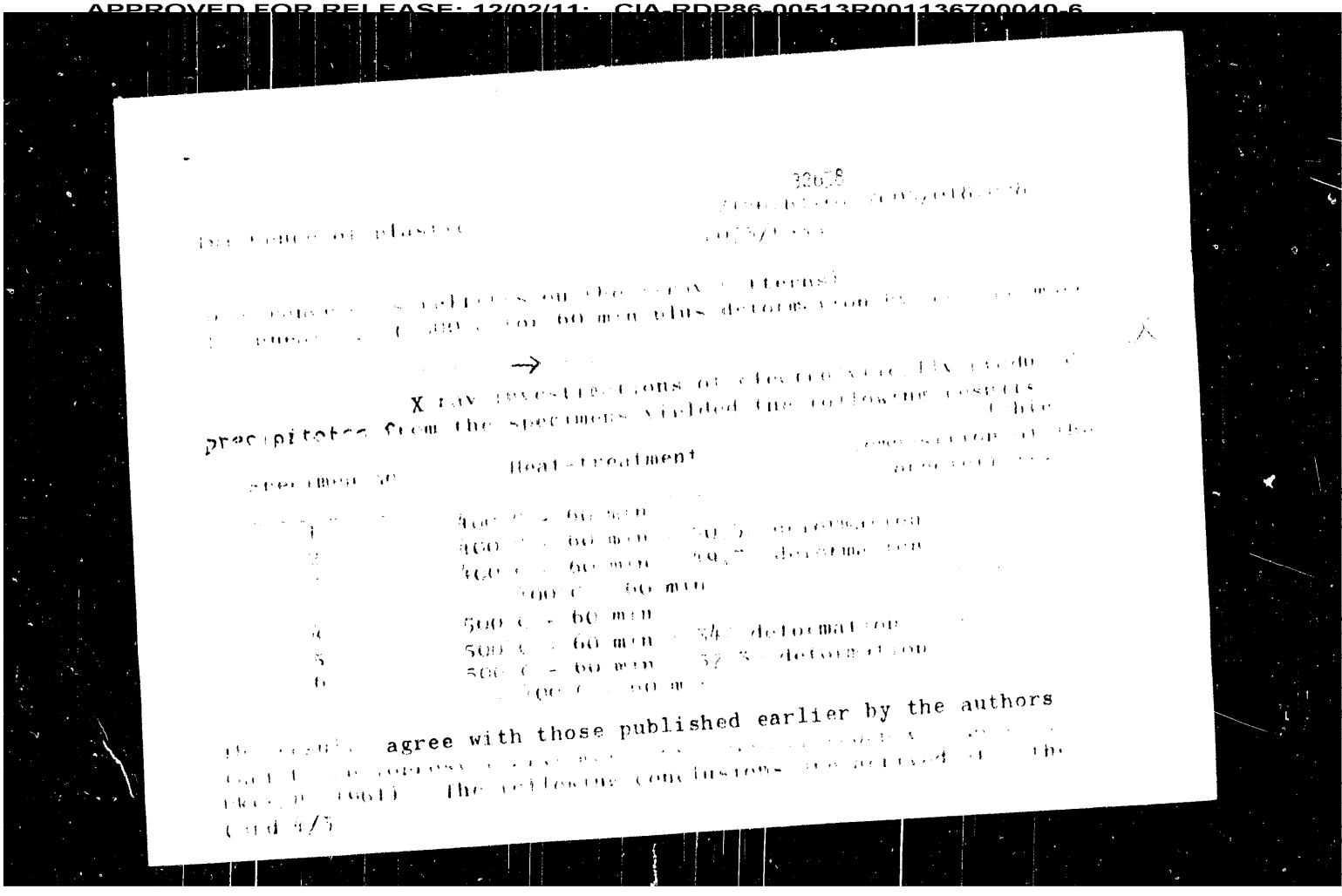
Influence of plastic ...

composition of enriched sections in the Co-Fe alloy. The presence of which leads to the appearance of satellites on X-ray diffraction patterns, as well as the composition of the intermediate α'-phase, are near to the composition of the stable phase. The process of formation of an intermediate and a stable phase from the enriched sections of the crystals is a diffusionless process of the polymorphous type, which does not require germinations of centres of a new structure. The latter conclusion is based on the fact that even a small degree of plastic deformation (9.8%) leads to considerable structural changes if the structural state is highly unstable; a the structure approaches more stable state, considerably higher deformations are required for changes in the structure of the crystals of the aged alloy. There are 2 tables and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference reads as follows: Ref. Thomas G., Nutting J., Hirsch P., J. Inst. Metals, 1957, 86, 7.

ASSOCIATION: Institut metallofiziki AN Ukr SSR
Institute of Metal Physics AS Ukr SSR

SUBMITTED: March 20, 1961

Card 5/5



32628

→

X ray investigations of electron-irradiated precipitates from the specimens yielded the following results

Specimen No.	Heat-treatment	
1	400 C - 60 min	
2	400 C - 60 min	30% deformation
3	400 C - 60 min	50% deformation
4	500 C - 60 min	
5	500 C - 60 min	34% deformation
6	500 C - 60 min	32.5% deformation

agree with those published earlier by the authors

The following conclusions are drawn:

Card 3/5

32656

Influence of plastic [illegible] S/126/61/012/005/018/028 E073/E535

[illegible] regardless of the degree of deformation [illegible] were [illegible] which correspond to the stable [illegible] phase [illegible] was possible that the [illegible] did not [illegible] to exist but that they simply could not be singled out [illegible] main reflections due to the considerable widening of the reflections from the matrix. Therefore all the specimens were again annealed at 400°C for 60 min, as a result of which the reflections from the matrix became narrower. In spite of this no [illegible] could be detected on the [illegible] patterns. [illegible] investigations were carried out on specimens aged at 400°C for 60 min and deformed by [illegible] to 50% deformation [illegible] up to 16% did not lead to additional reflections. However, deformation above 33% led to the appearance on the X-ray patterns of interference lines from the stable phase. Additional annealing at 400°C for 60 min did not bring about any change in the general interference pattern. Thus, cold plastic deformation leads to the following phase changes:

[illegible] annealing at [illegible] for [illegible] min plus deformation above [illegible]

$$[illegible] \rightarrow \alpha + \beta$$

[illegible] (Ti - Ti-enriched matrix areas leading to the

Card 3/[illegible]

32658

Influence of plastic [illegible] [illegible]

[illegible] 10 [illegible]

[illegible] sp[illegible] titanium [illegible] [illegible] increase in the duration of the ageing to 580 min leads to a cessation of [illegible] on the X-ray patterns and to the appearance of reflections from an intermediate [illegible] phase. [illegible] ageing at [illegible] for 1140 min did not lead to the appearance of reflections from the stable [illegible] phase [illegible] $CuCr$ [illegible]. This earlier work has shown that after ageing of a Cu-Ti alloy at 500 C for 15 to 1000 min the X-ray patterns contain only reflections from the matrix and from crystals of the intermediate [illegible] phase. An increase in the duration of the decomposition to 2100 min led to a cessation of the [illegible] from the [illegible] phase and to the appearance of reflections from the crystals of the stable [illegible] phase. In the experiments described in this paper this structural state was changed by additional heat treatment at relatively high [illegible]. The [illegible] obtained after ageing of the [illegible] at 400 C for [illegible] min [illegible] 500 C for 60 min were [illegible]. The [illegible] specimens were subjected to [illegible] plastic deformation [illegible] 50 [illegible] by compression. No [illegible] were detected after [illegible] deformation on specimens [illegible] aged at 300 C for 140 min

Card 2/5

32658

[illegible]

ID 1200

AUTHORS: Nesterenko, Ye. G. and Chuistov, K. V.

TITLE: Influence of plastic deformation on phase changes in the alloy Cu-Fe

PERIODICAL: Fizika metallov i metallovedeniye, v. 12, no. 5, 1961, 756-758

TEXT: The influence of plastic deformation on the stability of the structure of [illegible] during the process of decomposition of saturated solid solutions has been little studied and only some electron microscope investigations are available which indicate that plastic deformation may lead to appreciable structural changes. In this paper the results are given of X-ray investigations of the influence of plastic deformation on the structure of crystals of a Cu-Fe alloy ([illegible]% Fe) after preliminary decomposition at 400 and 500°C for durations of 150 and 60 min respectively. In earlier work the authors have shown that after ageing of the Cu-Fe alloy at 400°C for durations of [illegible] 00 min the X-ray diffraction patterns reveal satellites indicating the [illegible] in the alloy of areas which are respectively [illegible] [illegible] Fe.

S/126/61/012/004/009/021
The effect of small additions E193/E383

Ref. 8 - B. Warren, B.J. Averbach - J. Appl. Phys., 1952, 23, 497 and Ref. 12 - A. Guinier - Acta met., 1955, 3, 510.

ASSOCIATION: Institut metallofiziki AN UkrSSR
(Institute of Physics of Metals AS UkrSSR)

SUBMITTED: February 17, 1961

Card 4/7

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6

α'-phase in alloys aged at 500 °C is plotted against log τ, the continuous curves representing results based on the (002) reflections, broken curves denoting results calculated from (020) reflections. It was inferred from the results obtained that small Be, Ag, Zr, Cr and Fe additions did not affect the mechanism of decomposition of the Cu-Ti alloys but affected the rate at which the individual stages of the process took place. The rate of growth of Ti-enriched regions in the initial stage of decomposition is increased by Ag, Be and Zr and decreased by Cr and Fe additions. The rate of coalescence of the α'-phase particles and formation of the β-phase is accelerated by Ag. On the other hand, addition of elements which decrease the difference between the lattice parameter of the matrix and the α'- phase stabilizes this phase and slows down the process of its coalescence and formation of the β-phase.
There are 5 figures, 5 tables and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The four latest English-language references quoted are: Ref. 3 - A. Geisler - Phas. Transformation in Solids, N.J., 1951; Ref. 7 - W. Dauiel, H. Lipson - Proc. Roy. Soc., 1943, A181, 368;
Card 3/7

The effect of small additions ....

temperature. The composition of the experimental alloys is given in Table 1, in at.%. Hardness measurements were used to study the process of decomposition of specimens solution-treated at 950 °C which, according to the results of X-ray diffraction, constituted single-phase alloys. The structural changes were studied by X-ray diffraction, which was also used to determine the crystal structure of the intermediate phase, separated from the matrix by electrolytic dissolution, to study the variation of the modulation period Q and to determine the particle size of the α'- and β-phases precipitated during ageing at 400 and 450 °C. The kinetics of the process studied are illustrated in Fig. 2, where Vickers hardness (HV, kg/mm^2) is plotted against log τ (where τ is the ageing time, min, at 400 °C), the various curves relating to alloys as indicated by the inserted region. Data for alloys aged at 500 °C are reproduced in the same manner in Fig. 4. In Fig. 3, the modulation period Q (Å) of alloys aged at 500 °C (top set of curves) and 400 °C (bottom set of curves) is plotted against log τ. Finally, in Fig. 5, the particle size L_φ (Å) of the

S/126/61/012/004/009/021
E193/E383

AUTHORS: Nesterenko, Ye.G. and Chuistov, K.V.

TITLE: The effect of small additions of beryllium, cerium, zirconium, chromium and iron on the composition of a supersaturated copper-titanium solid solution

PERIODICAL: Fizika mtallov i metallovedeniye, v. 12, no. 4, 1961, 567 - 575

TEXT: According to earlier findings of the present authors (Ref. 4 - FMM, 1960, 9, no. 1; Ref. 5 - ibid no. 3), the decomposition of a supersaturated Cu-Ti solution takes place in the following three stages: 1) formation of regions enriched in, and denuded of, Ti (formation of, so-called, modulated structure); 2) precipitation of an intermediate α'-phase; 3) precipitation of a stable β-phase (Cu_3Ti). The object of the present investigation was to establish whether and to what extent the mechanism and kinetics of this process are affected by the presence of a small quantity of a third component. The alloying additions chosen have all different atomic radii and their solubility in Cu decreases in every case with decreasing

69693
S/126/60/009/03/016/033
E091/E435

Phase Changes in a Copper-Titanium Alloy on Ageing

of a Cu-Ti alloy after quenching and ageing at 500°C for one hour. The authors conclude that: (1) the formation of α'-phase crystals leads to considerable ternary distortions in the original solid solution; (2) electrolytic separation of α'-phase crystals does not change either the structure or the crystal lattice parameters of the intermediate α'-phase and enables the structure and state of the intermediate phase crystals to be analysed in greater detail. There are 4 figures, 4 tables and 8 references, 6 of which are Soviet and 2 English.

ASSOCIATION: Institut metallofiziki AN USSR
(Institute of Physics of Metals, AS UkrSSR)

SUBMITTED: July 7, 1959

Card 3/3

Phase Changes in a Copper-Titanium Alloy on Ageing

the matrix and hence the authors called this phase α'. The reflection angles of the various planes of the α'-phase are practically independent of the ageing temperature and time of holding (see Table 2). After the decomposition of the Cu-Ti alloy at 500°C, each line in the X-ray picture separates into two and hence it can be assumed that a decomposition of the alloy into two phases with tetragonal lattices takes place. The authors assume that $c/a < 1$ in the metastable α'-phase and $c/a > 1$ in the matrix and that the interplanar distances of the matrix and α'-phase are similar, ie the tetragonal doublets can be superimposed on each other as shown in Fig 2. A calculation of the relative intensities of the doublet components was worked out for two cases:
(a) in the α-phase $c > a$, in the α'-phase $c' < a'$;
(b) in the α-phase $c = a$, in the α'-phase $c' < a'$.
It was assumed that the quantity of the α'-phase in the alloy was 25%. The results of such a calculation are shown in Fig 3. Table 4 shows the intensities of reflection from copper powder and from matrix crystals

Card 2/3

69693
S/126/60/009/03/016/033
E091/E435

18.1220

AUTHORS: Nesterenko, Ye.G. and Chuistov, K.V.

TITLE: Phase Changes in a Copper-Titanium Alloy on Ageing

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 3, pp 415-421 (USSR)

ABSTRACT: The results are given of an investigation of structural changes occurring in the Cu - 4.5% Ti alloy on ageing in a temperature range in which excess phases are formed. The study was carried out by X-ray methods on polycrystalline specimens. In Fig 1a, 1b and 1c, photomicrograms of X-ray pictures are shown of quenched Cu-Ti alloy specimens which were subsequently aged at 500 and 600°C for one hour. In order to interpret the structure of the intermediate phases, the authors separated particles of this phase electrolytically. Fig 1B is the photomicrogram of an intermediate phase separated from a piece of quenched and aged (500°C, one hour) Cu-Ti alloy In Table 1, the reflection angles (ϑ) of various planes are given and the interplanar distances (d) and lattice parameters along the a and c axes calculated from ϑ. The lattice parameters of this phase are close to that of

Card 1/3

S/126/60/00[illegible]/01/0[illegible]/0[illegible]
E021/E191

Characteristics of the Initial Stages of Decomposition [illegible] Supersaturated Solid Solution of Titanium in Copper

further increase to 450-500 °C, the lines of [illegible] appear. At the same time the [illegible] solid solution begins to increase. The [illegible] position of the new interference lines [illegible] to the stable [illegible]-phase (Cu_3Ti), the lines of which appear at 600-700 °C. The composition of the [illegible] regions during the formation of the [illegible] is quite close to that of the stable [illegible]. The experiments confirm that precipitation from [illegible] saturated solid solutions begins not with [illegible] nuclei of the new phase, but by formation of [illegible] the matrix which are rich in the atoms of the alloying element, but have the same lattice as the initial solid solution.

Card 2/2

There are 4 figures, [illegible] tables and 17 references, of which 7 are English, 2 German, [illegible] French and [illegible] Soviet.

ASSOCIATION: Institut metallofiziki AN USSR (Metal-Physics Institute, Acad.Sci. Ukr.SSR)

SUBMITTED: June 7, 1959

S/126/60/009/01/0[illegible]/[illegible]
E032/E514

AUTHORS: Nesterenko, Ye.S., and Christov, K.V.

TITLE: Characteristics of the Initial Stages of Decomposition of a Supersaturated Solid Solution of Titanium in Copper

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 9, No. 1, pp 140-147 (USSR)

ABSTRACT: The alloy investigated contained 4.5 weight % Ti and was made from electrolytic Cu and iodide Ti. The casting process was followed by changes in hardness using a Vickers pyramid, and structures were examined by X-ray crystallography. Samples were quenched in water from 850 °C and aged at 200-700 °C in vacuo for one hour at each temperature. Heating at 300 °C resulted in no change in the diffraction pattern. At 350 °C less sharp additional lines were observed, which were symmetrical about the interference lines of the original alpha solid solution (satellites). From this behaviour, it was proposed that a modulated structure is formed by redistribution of the Ti atoms, giving parts rich and deficient in Ti. An increase in temperature leads to an increase in the intensity of the satellites. With a

Card 1/2

NESTERENKO, Ye.G.; CHURISTOV, K.V.

Characteristics of crystal structure changes in the process of Cu-Ag alloy decomposition. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.10:104-110 '59. (MIRA 13:9)
(Copper-silver alloys--Metallography)

Akademiya nauk Ukrainskoy SSR. Institut metallofiziki

Voprosy fiziki metallov i metallovedeniya (Problems in the Physics of Metals and Metallography) Kiyev, Izd-vo AN USSR, 1959. 215 p. (Series: Its: Sbornik nauchnykh rabot, no. 10) 3,000 copies printed.

Ed. of Publishing House: O.M. Pechkovskaya; Tech. Ed.: R.A. Rumiy; Editorial Board: V.N. Svechnikov, Academician, Academy of Sciences UkrSSR (Resp. Ed.), S.B. Gertsriken, Doctor of Physics and Mathematics, and I.Ya. Dekhtyar, Doctor of Technical Sciences.

PURPOSE: This collection of articles is intended for scientific workers, aspirants and engineers working in metal physics, metallography and metallurgy, and for students in advanced courses of metallurgy and physics departments.

COVERAGE: The collection of articles gives the results of an investigation of the effect of high heating rates, thermal treatment, deformation and crystallization conditions on the phase transformations, structure and properties of metals and alloys, and of the effect of alloying additives on volume and intergranular

diffusion in alloys, as well as the effect of repeated tempering by ultrasound irradiation on the physical properties of alloys. There is also a description of an x-ray camera for studying the structure of the individual grains. The following personalities are mentioned: V. Razaba, A.A. Smirnov, S.G. Glazunov, Ye.I. Marotov, V. Danilenko, L.M. Kikot', and I. Ya. Dekhtyar', Doctor of Technical Sciences. There is a bibliography of Soviet and non-Soviet references at the end of each article.

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NESTERENKO, Ye.G. [Nesterenko, IE.H.]; CHUISTOV, K.V.

Effect of plastic deformations on crystal structure changes in Cu - Ti alloy aging. Ukr. fiz. zhur. 3 no.3:427-429 My-Je '58. (MIRA 11:10)

1. Institut metallofiziki AN USSR.
(Copper-tin alloys--Testing)

NESTERENKO, Ye.G. [Nesterenko, IE.H.]; CHUISTOV, K.V.

Changes in the crystalline structure of aging Cu-Ti alloys.
Ukr. fiz.zhur. 3 no.2:276-278 Mr-Ap '58. (MIRA 11:6)

1.Institut metalofiziki AN URSR.
(Copper-titanium alloys)

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700040-6

Nesterenko, Ye.G.

57-9-38/40

AUTHOR: Nesterenko, Ye.G.

TITLE: On the Article by D.M. Vasil'yeva " On the Method of Dividing a K_α - Doublet of X-Ray Lines"
(Po povodu stat'i D.M. Vasil'yeva "K metodike razdeleniya K_α - dubleta rentgenovskikh liniy")

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 9, pp. 2183 - 2185 (USSR)

ABSTRACT: The article published in Zhurn. Tekhn. Fiz., Vol. 25, Nr 11 by Vasil'yeva is critisized because it contains a number of inaccuracies. The difficulties allegedly found by him when determining the inter-doublet distance on considerably washed-out lines are by no means substantiated. The distance is determined by the nature of X-ray radiation and can always be easily computed. The construction of the correction diagram $\frac{B_0}{B} = f(\frac{\delta}{B})$ actually changes the inter-doublet distance and not the breadth of the components. B denotes the breadth of line measured, B_0 - breadth of the component of the K_α - doublet, δ -inter-doublet distance. The fact that the author of the article, instead of using the value $f(k, \delta', x_0)$, uses that of the function $f(k, \delta, x = 0)$, leads to essential errors for some B- and

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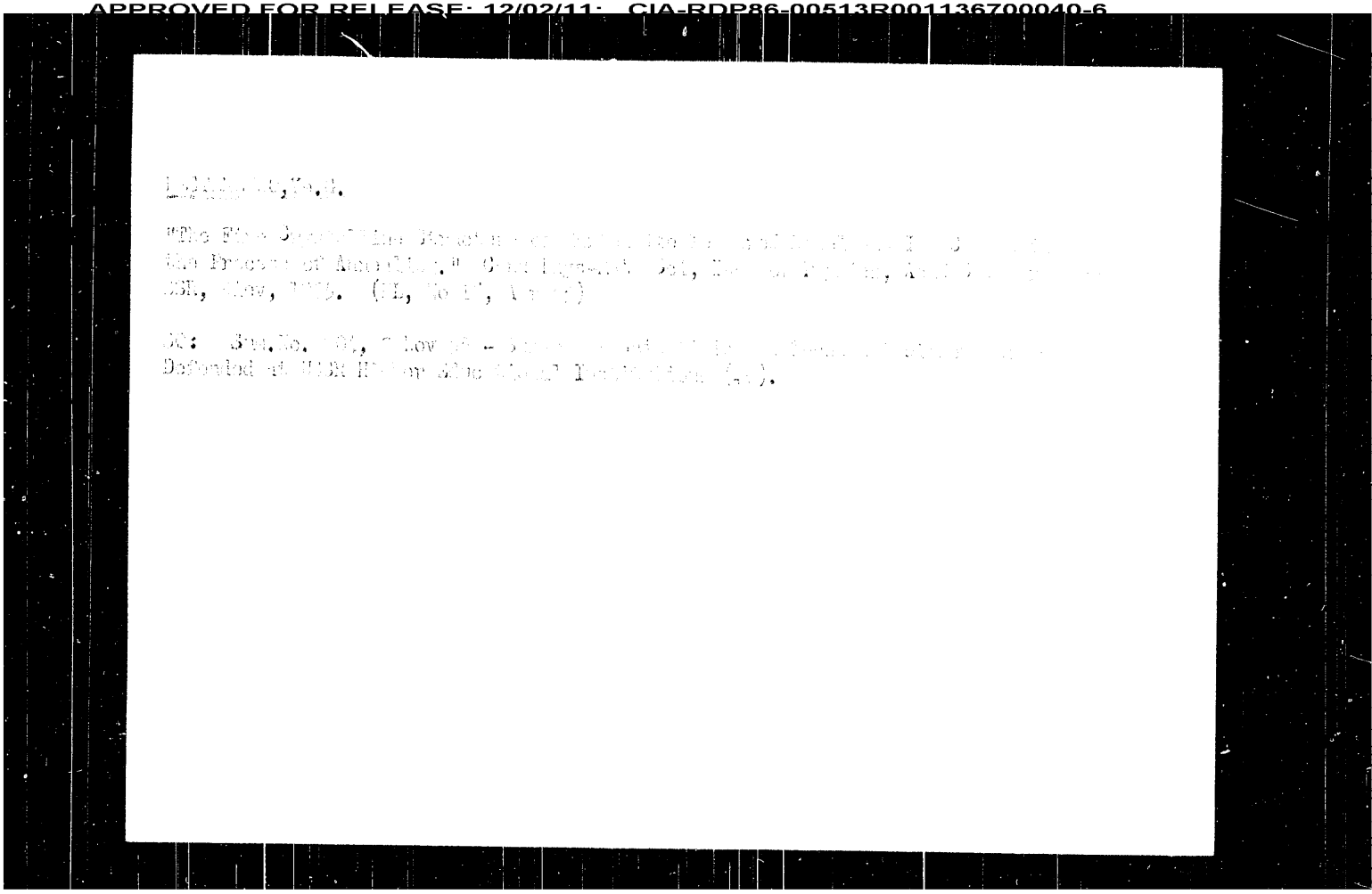

NESTERENKO, Ye. G.

260T2

USSR/Metallurgy - Steel, Martensite Structure 21 May 53

"On the Structure of Martensite Crystals in Hardened Steel," M. P. Arbuzov, L. I. Lysak, Ye. G. Nesterenko, Lab of Physics of Metals, Acad Sci Uk SSR, Kiev

DAN SSSR, Vol 90, No 3, pp 375-377

Discusses results of X-ray investigation of martensite separated electrolytically from hardened steel with 0.98% C. Radiograms were obtained in

260T24

Fe-emission from cylindrical specimens pressed out of martensite powders. Presented by Acad I. P. Bardin 19 Mar 53.

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NESTERENKO, Ye.N.; SMYRNOV, A.A.; KURDYUMOV, H.V., diysnyy chlen.

Disturbance of regularity in the crystallic lattice of alloys. Dop.AN URSR no.3:184-193 '51. (MLRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Kurdyumov). 2. Laboratoriya metalofizyky Akademiyi nauk Ukrayins'koyi RSR (for Nesterenko and Smyrnov). (Metallography)

MALAKHOV, G.M., doktor tekhn. nauk; CHIRKOV, Yu.I., kand. tekhn. nauk; KUCHERYAVENKO, I.A., kand. tekhn. nauk; ZYMAIEV, G.S.; KHIVRENKO, A.F.; NESTERENKO, V.V.

Introduction of new variants of the system of sublevel caving at "Dzerzhinskrud" Trust mines. Met. i gornorud. prom. no.2: 50-54 Mr-Ap '65. (MIRA 18:5)

BELASH, Aleksandr Sergeyevich, inzh.; KOVALEV, Alekseĭ Fedotovich, kand. tekhn. nauk; LIBNIK, Grigoriy Filippovich, kand. tekhn. nauk; NESTERENKO, Vladimir Vasil'yevich, inzh.; SHKUTA, Eduard Ivanovich, inzh.; DUBKO, V.D., inzh., retsenzent; AFONINA, G.P., red.

[Improving systems of mining iron-ore deposits] Usovershenstvovanie sistem razrabotki zhelezorudnykh mestorozhdenii. Kiev, Tekhnika, 1965. 207 p. (MIRA 18:10)

NESTERENKO, V.V.

Standards for assuring mines of ready mining reserves of ore.
Met. i gornorud. prom. no.5:50-52 S-O '64. (MIRA 17:7)

NESTERENKO, V.V., gornyy inzh.; KORNEYENKO, D.D., gornyy inzh.; AL'BRUT, B.[illegible]., gornyy inzh.

Practice of conducting large-scale blasting in a system of sublevel caving with ore breaking by deep boreholes. Gor. zhur. no.12:13-15 D '62. (MIRA 15:11)

1. Dzerzhinskiy gosudarstvennyy trest zhelezorudnoy promyshlennosti, Krivoy Rog.
(Krivoy Rog Basin—Blasting)

NESTERENKO, V. V., gornyy inzh.

Safety factor in various systems of sublevel caving. Gor. zhur. no.10:71-73 O '62. (MIRA 15:10)

1. Dzerzhinskiy gosudarstvennyy trest zhelezorudnoy promyshlennosti, Krivoy Rog.

(Krivoy Rog Basin--Iron mines and mining--Safety measures)

NESTERENKO, V.V., inzh.; BOGUSLAVSKIY, M.M., inzh.; AL'BRUT, B.I., inzh.; BAKHTIN, O.B., inzh.

Sublevel stoping. Met. i gornorud. prom. no.4:52-55 Jl-Ag '62. (MIRA 15:9)

(Stoping (Mining))

NESTERENKO, V.V., inzh.; KORNIYENKO, D.D., inzh.; AL'BRUT, B.I., inzh.

Large-scale blasting in the sublevel caving system with breaking of the ore through deep holes at the Dzerzhinskii mine. Met. i gornorud. prom. no.3:46-50 My-Je '62. (MIRA 15:9)
(Krivoy Rog Basin--Iron mines and mining)
(Blasting)

MAYDAN, Dmitriy Semenovich; KOBEVNIK, Vasiliy Fedorovich; NESTERENKO, Vladimir Vasil'yevich; ZABOLOTNYI, Ivan Prokor'yevich; BESKLEPCHENKO, Fedor Markovich; KUCHEROV, Dmitriy Mikhaylovich; FEYGIN, L.M., otv. red.; BOGOPOL'SKIY, B.Kh., otv. red.; SILINA, L.A., red.izd-va; MAKSIMOVA, V.V., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Mechanization and automation of production processes in mining]Mekhanizatsiia i avtomatizatsiia proizvodstvennykh protsessov na rudnikakh. Moskva, Gosgortekhizdat, 1962. 320 p. (MIRA 16:2)

(Mining engineering--Equipment and supplies) (Automation)

NESTERENKO, V.V.

Rapid preparation of blocks in mine levels having a height of 100m.
Biul.TSIICHM no.4:3[illegible]-36 '61. (MIRA 14:10)

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(Krivoy Rog Basin--Iron mines and mining)

NESTERENKO, V.V., gornyy inzh.; MYACHIN, S.D., gornyy inzh.

Drift mining at a speed of 421.8 m. per month. Gor. zhur. no.12: 20-22 D '60. (MIRA 13:12)

1. Trest Dzerzhinskruda, Krivoy Rog.
(Mining engineering)