PAVLOV, Yu., starshiy leytenant

Resourcefulness saved him. Starsh.-serzh. no.2:25 F '62.
(MIRA 15:4)
(Parachute troops)

PAVLOV, Yu., khudozhnik

The language of paintings. IUn. tekh. 7 no.10:57-59 O '62.
(MIRA 15:10)

(Art—Philosophy)

PAVLOV, Yu., inzhener putey soobshcheniya

On our country's roads of steel. Komm.Vooruzh.Sil 1 no.6:55-57 Mr '61. (MIRA 14:8)

(Railroads)

NATAL'IN, N., mayor; PAVLOV, Yu., starshiy leytenant

Feverish activity. Komm.Vooruzh.Sil 1 no.16:60-63 Ag '61.
(MIRA 14:7)
(Russia--Army--Airborne troops)

(SOV/25-59-8-20/48

AUTHOR: Pavlov, Yu., Engineer

TITLE: Voltage Stabilizers

PERIODICAL: Nauka i zhizn', 1959, Nr 8, pp 67 - 68 (USSR)

ABSTRACT: Soviet engineers and scientists have developed very precise voltage stabilizers, giving deviations only in the tenth or hundredth parts of 1 per cent. They are used in many scientific research institutes, for pilot tests, and for feeding radiotechnical engineering equipment and control and measuring devices. They are said to be as good as foreign models.

Card 1/1

14(9) SOV/25-59-9-29/49

AUTHOR: Pavlov, Yu., Engineer

TITLE: Ion Membranes

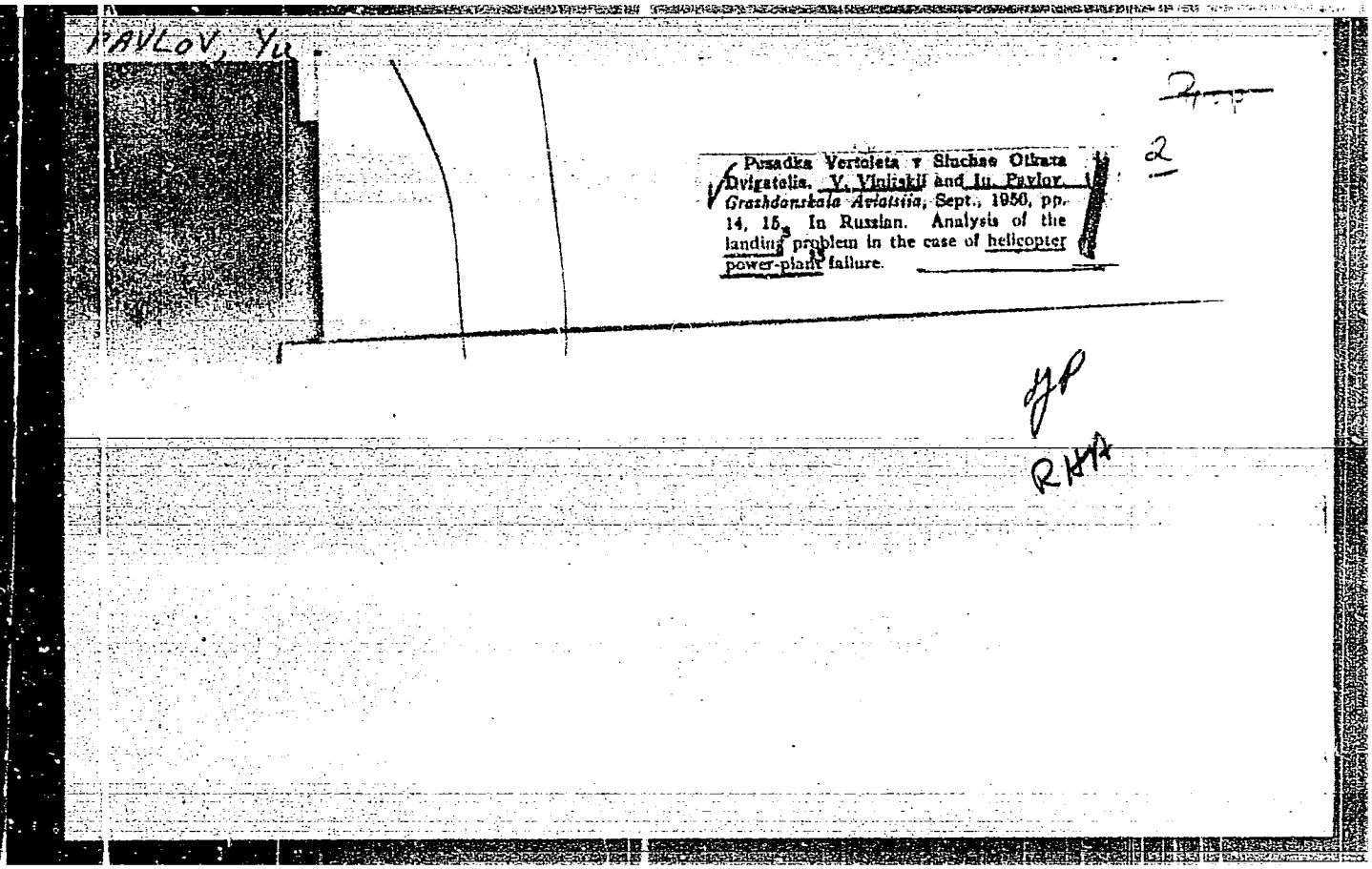
PERIODICAL: Nauka i zhizn', 1959, Nr 9, p 67 (USSR)

ABSTRACT: The Kafedra nemetallicheskikh materialov Moskovskogo aviatsionnogo technologicheskogo instituta (Department of Non-Metallic Materials of the Moscow Aviation Technological Institute) has developed so-called ion membranes for salt elimination. These small-size devices possess unusual properties. They filter the water through membrane-electrodes and hold back the ions of chemical elements of salt contained in water. Thus, the water becomes suitable for producing steam. The devices permit a ship to make a long voyage without stopping at a port for collecting fresh water. The districts of the USSR which are short of fresh water (e.g. Karakhumy) will be supplied with it from its salty lakes. Presently, ion membranes are being introduced in industry.

Card 1/1

VINITSKIY, V., letchik-ispytatel'; PAVLOV, Yu., inzhener.

Landing a helicopter in case of an engine failure. Grazhd.av. 13 no.9:14-15 S '56. (MLRA 9:11)
(Helicopters)



PAVLOV, Yu.

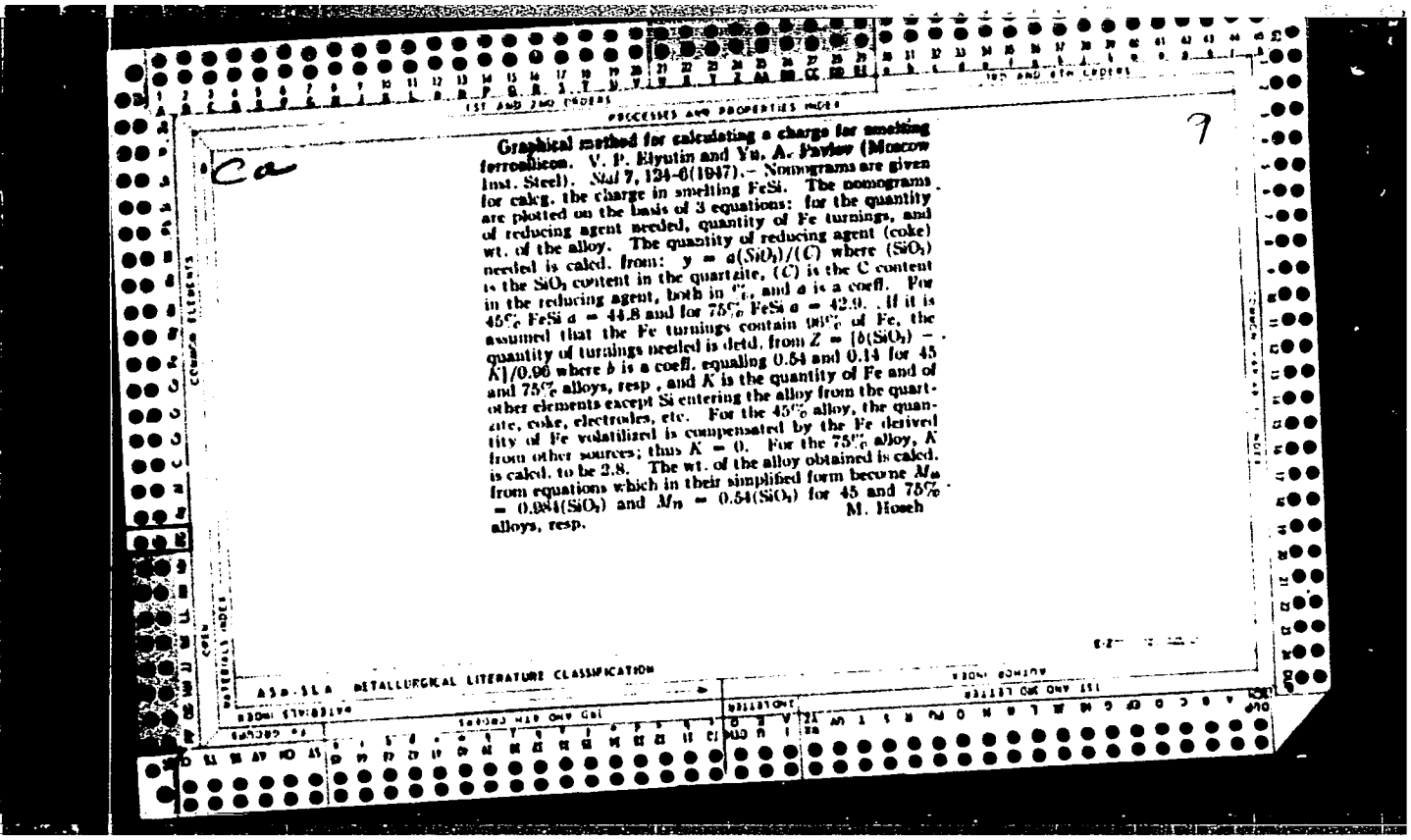
2

Posadka Vertoleta v Slozhnoe Otkrytoe Dvigatelia. V. Vinitskii and Iu. Pavlov. *Grazhdanskaia Aviatsiia*, Sept., 1950, pp. 14, 15. In Russian. Analysis of the landing problem in the case of helicopter power-plant failure.

2

YP

RHR



Ca

Graphical method for calculating a charge for smelting ferrosilicon. V. P. Elyutin and Yu. A. Pavlov (Moscow Inst. Steel). *Stal* 7, 124-6(1947).— Nomograms are given for calcg. the charge in smelting FeSi. The nomograms are plotted on the basis of 3 equations: for the quantity of reducing agent needed, quantity of Fe turnings, and wt. of the alloy. The quantity of reducing agent (coke) needed is calcd. from: $y = a(SiO_2)/(C)$ where (SiO_2) is the SiO_2 content in the quartzite, (C) is the C content in the reducing agent, both in %, and a is a coeff. For 45% FeSi a = 44.8 and for 75% FeSi a = 42.0. If it is assumed that the Fe turnings contain 98% of Fe, the quantity of turnings needed is detd. from $Z = [b(SiO_2) - K]/0.96$ where b is a coeff. equaling 0.54 and 0.14 for 45 and 75% alloys, resp., and K is the quantity of Fe and of other elements except Si entering the alloy from the quartzite, coke, electrodes, etc. For the 45% alloy, the quantity of Fe volatilized is compensated by the Fe derived from other sources; thus $K = 0$. For the 75% alloy, K is calcd. to be 2.8. The wt. of the alloy obtained is calcd. from equations which in their simplified form become $M_{45} = 0.984(SiO_2)$ and $M_{75} = 0.54(SiO_2)$ for 45 and 75% alloys, resp.

M. Hoseh

9

A59-51A METALLURGICAL LITERATURE CLASSIFICATION

PAVLOV, Yu.A.

YELYUTIN, V.P.; PAVLOV, Yu.A.; LEVIN, B.Ye.; ALEKSEYEV, Ye.M., redaktor; ATTOPOVICH, M.K., tekhnicheskiy redaktor.

[Iron alloy production; electrometallurgy] Proizvodstvo ferrosplavov; elektrometallurgiia. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt. 2. 1951. 496 p. [Microfilm] (MIRA 8:4)

(Iron alloys--Metallurgy) (Electrometallurgy)

PAVLOV, Yu. A.

V Penetration of fused titanium into graphite. V. P. Elyutin, M. A. Maurakh, and Yu. A. Pavlov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, No. 5, 129–32.—Chem. analysis does not lend itself readily to the detection of the penetrativity of Ti into the graphite crucible material, with the attendant Ti losses, and the Ti occasionally even passing through the crucible, damaging the furnace. The method selected for study of the penetration consisted in an application of the radioactive tracer technique, with radioactive Ti. This method was found to furnish the desired information with a min. consumption of materials. The assumption was confirmed, that the principal reason for the Ti losses was due to the metal penetration into the graphitic material, and depended on the conditions during melting and principally on the porosity of graphite. The usual electrode graphite was found to be unsuitable for that purpose. To minimize losses, the open pores must be kept at a min., excessive superheating of Ti must be avoided, and the Ti must be kept as short a time in the crucible as possible. W. M. Sternberg

YELYUTIN, V.P., professor, doktor tekhnicheskikh nauk; PAVLOV, Yu.A., dotsent, kandidat tekhnicheskikh nauk; MERKULOVA, R.F., inzhener.

Determining the starting temperature of reactions involving reduction of oxides by carbon. Sbor.Inst.stali 34:48-52 '55. (MLRA 9:7)

1.Kafedra metallurgii redkikh metallov.
(Chemical reaction, Rate of) (Reduction, Chemical) (Radioactive tracers--Industrial applications)

YELYUTIN, V.P., professor, doktor tekhnicheskikh nauk; MAURAKH, M.A., kandidat tekhnicheskikh nauk; PAVLOV, Yu.A., dotsent, kandidat tekhnicheskikh nauk.

Interaction of fused titanium and graphite. Sbor.Inst.stali 34:115-121 '55. (MLRA 9:7)

1.Kafedra metallurgii redkikh metallov.
(Titanium--Isotopes) (Graphite)

PAVLOV, Yu. A.

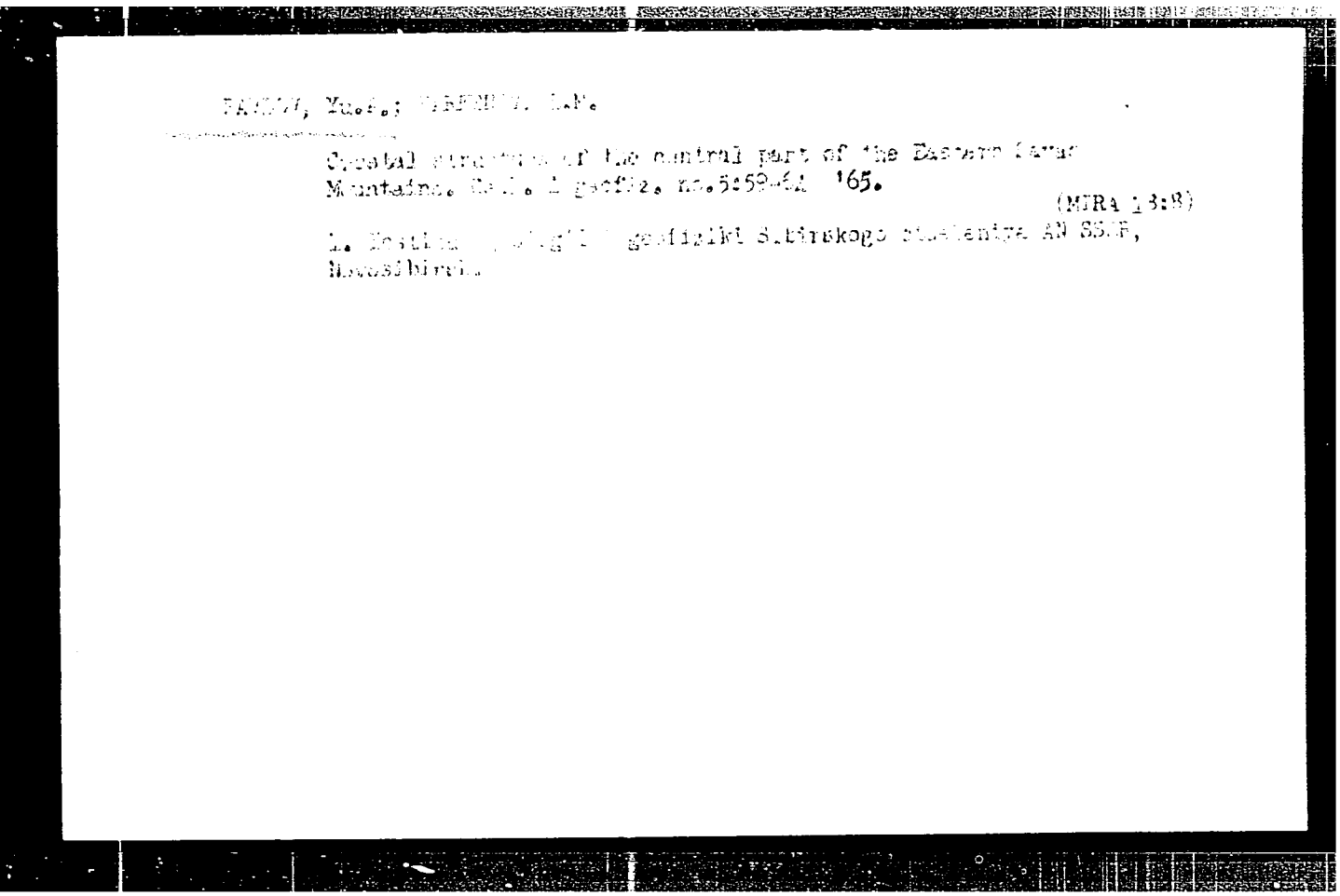
The study of structure of titanium-niobium-carbon alloys with an ultraviolet light microscope. V. F. Elyutin, M. L. Bernshtein, and Yu. A. Pavlov (I. V. Stalin Steel Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 104, 510–3 (1955).—The alloys investigated varied in their Nb content between 1.5 and 83.4%, with 0.7–0.9% C. The polished samples were coated electrolytically with a Cr_2O_3 coating, with a c.d. of of 0.5 amp./sq. dm., and an 18-8 stainless-steel cathode. After annealing *in vacuo*, the samples were microscopically observed in the visible and ultraviolet light, and the ultraviolet light was far superior in the sepn. of the different phases present. A no. of ultraviolet prints are reproduced in color. From the results obtained a state diagram of the Nb-Ti system (0.8% C) is constructed.

W. M. Sternberg

[illegible]

[illegible] metamorphic and igneous formations [illegible] the Eastern Sayan mountains. Geol. i geofiz. no.7:105-108 '65. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN [illegible], Novosibirsk.



ACCESSION NR: AP4039271 S/0148/64/000/005/0017/0021

AUTHORS: Yelyutin, V.P.; Pavlov, Yu.A.; Manukhin, A.V.

TITLE: The effects of oxide impurities on the semiconductive and chemical properties of vanadium pentoxide

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1964, 17-21

TOPIC TAGS: vanadium pentoxide, SiO sub 2, Cr sub 2 O sub 3, Cu sub 2 O, termal change, semiconduction, chemical activity, ZrO sub 2 crucible, ionization

ABSTRACT: There is a recent tendency of investigating the reduction - oxidation of metals from the viewpoint of semiconductive properties. Thus, the authors observed the effects of SiO_2, Cr_2O_3 and Cu_2O on the character of thermal changes in the electrical conductivity and chemical activity of vanadium pentoxide. Specimens were prepared by mixing V_2O_5 for 50 hrs. with a rated amount of additives and melting in ZrO_2 crucibles. The specimens were crushed and passed through a 120 mesh sieve. A load of 1.5 t/cm^2 was applied to produce 4 x 5 x 40 mm compacts which were sintered in an oxygen

Card 1/3

ACCESSION NR: AP4039271

stream at 600C for 7 hrs. Impurities exerted a considerable influence on the character of changes of the electrical resistivity of specimens according to temperature. They affected the initial temperature at which the conductivity of vanadium pentoxide began predominating over the conductivity of impurities. The higher the concentration of impurities, the greater the effect on the initial temperature at which the inflection on the conductivity curve appears. Low reducibility SiO_2 and Cr_2O_3 act in one direction while Cu_2O acts in the opposite direction. The authors contend that low reducibility oxides act as acceptors and high reducibility oxides as donors. As SiO_2 and Cr_2O_3 concentrations are heightened, the temperature of transition of the conductivity of impurities to that of V_2O_5 increases. Impurities with a low-temperature ionization were found to lower the temperature of initial oxide reduction and increase chemical activity. High-temperature ionization impurities act in the opposite direction. The authors believe that it may become possible to predict the character of the effect of impurities on the properties of oxide. The orig. art. has: 4 figures and 1 table.

Card 2/3

L 8857-65 EWI(m)/EPF(n)-2/T/EWP(q)/EWP(b) Pad/Pu-4 JD/HW/JG

ACCESSION NR: AP4009588 S/0148/64/000/001/0136/0141

AUTHOR: Yelyutin, V. P.; Pavlov, Yu. A.; Yefimov, Yu. V.

B

TITLE: Dispersion hardening of Ni-V alloys

18

SOURCE: IVUZ. Chernaya metallurgiya, no. 1, 1964, 136-141

TOPIC TAGS: alloy hardening, nickel 27 vanadium 23 alloy, dispersion hardening, heat resistance, titanium 22 containing alloy, aluminum 13 containing alloy, molybdenum 42 containing alloy, nickel alloy, vanadium alloy

ABSTRACT: The article considers the possible strengthening of six different Ni-V alloys by secondary alloying elements (Ti, Al and Mo) and heat treatment. Cast specimens were successively annealed at 1200C for 5 hours, water quenched at 900-1050C and tempered at 20-1000C for from 25 hours to two months. The microsections were investigated, as well as the electrical resistance, and some specimens were subjected to X-ray analysis. Fig. 1 of the Enclosure shows the effect of temperature and tempering duration on Ni-V alloy hardness, while Fig. 2 shows the variation in relative electrical resistance of the alloys when heated at a constant rate. The author cites the conclusions of W. P. Pearson and W. Hume-Rothery with regard to these processes. The investigation showed that secondary alloying with Ti and Mo significantly increases the hardness of Ni-V alloys at higher temperatures, due

Card 1/4

L 8857-65
ACCESSION NR: AP4009588

mainly to increased formation of the metastable beta phase. Alloying with Al, in contrast, markedly decreased the heat resistance. The following schedule of heat treatment is proposed on the basis of the tests: annealing at 1200C for 5 hours, water quenching from 1050C and tempering at 650-700C for 15 hours. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Moskovskiy Institut Stali i Splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 29Apr63 ENCL: 02

SUB CODE: MM NO REF SOV: 000 OTHER: 012

Card 2/4

L 8857-63
ACCESSION NR: AP4009588

ENCLOSURE: 01

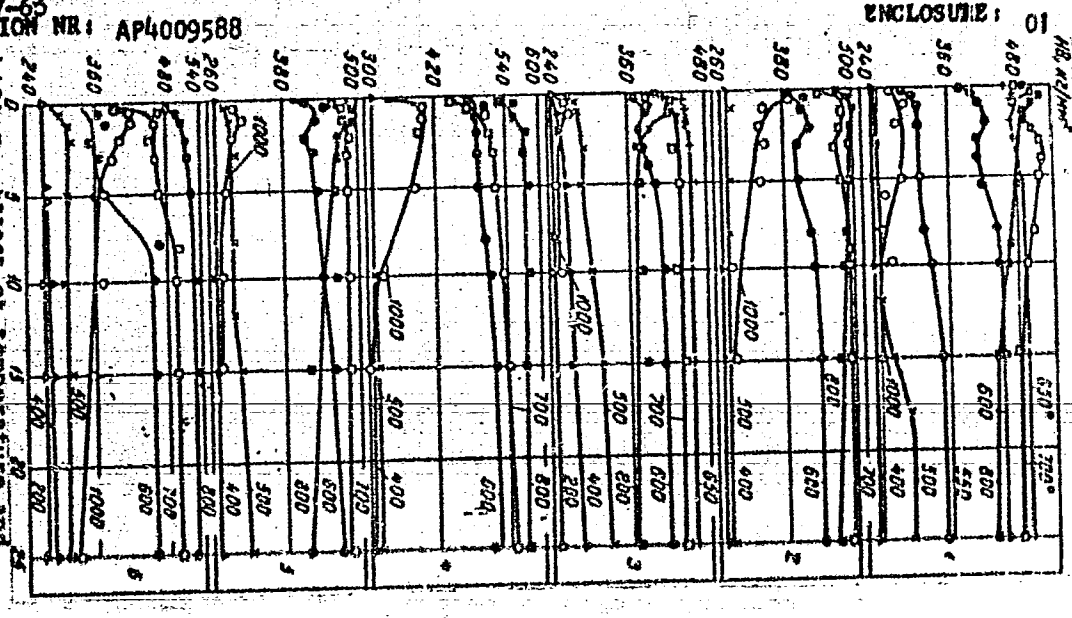


Fig. 1. Effect of temperature and tempering duration on hardness of Ni-V alloys.

Card 3/4

L 8857-65
ACCESSION NR: AP4009588

ENCLOSURE: 02

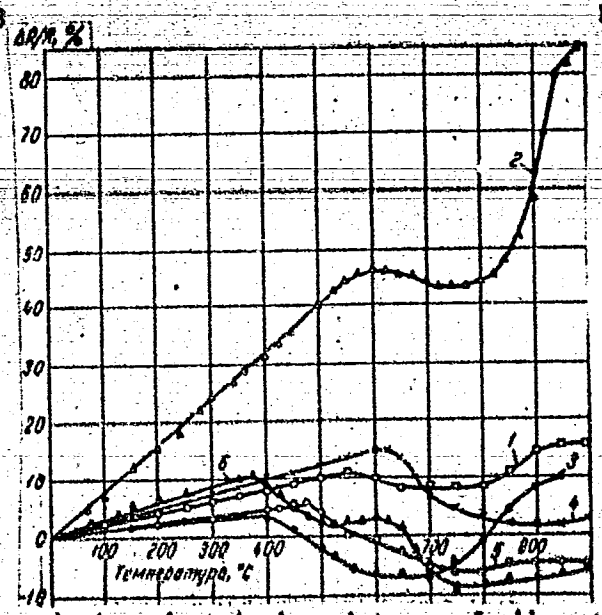


Fig. 2. Variation in relative electrical resistance of alloys when heated at a constant rate (150C/hr.).

Card 4/4

YELYUTIN, V.P.; PAVLOV, Yu.A.; SHEBOLDAYEV, S.B.; MANUKHIN, A.T.

Initial stages of the interaction of V_2O_5 with carbon. Izv. vys. ucheb. zav.; chern. met. 7 no.7:5-9 '64 (MIRA 17:8)

1. Moskovskiy institut stali i splavov.

PAVLOV, Yu.A.

Using the method of tangents in the interpretation of Δg curves over a vertical offset. Geol. i geofiz. no.12:109-114 '62. (MIRA 16:3)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Magnetic prospecting) (Curves)

S/076/62/036/007/007/010
B101/B138

AUTHORS: Yelyutin, V. P., Pavlov, Yu. A., Shulepov, V. I., and Myakisheva, T. C.

TITLE: Electrical resistivity of V_2O_5, MoO_3, and WO_3 when heated in hydrogen atmosphere

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 7, 1962, 1524 - 1527

TEXT: The initial stage of the reaction of V_2O_5, MoO_3, and WO_3 with H_2 was studied by measuring the electrical resistivity (apparatus see Izv. vyssh. uchebn. zavedeniy, Chernaya metallurgiya, no. 7, 1961). Oxides sintered in an O_2 flow for 6 hr were used. At all temperatures applied (200 - 700°C), resistivity was found to diminish in the course of heating. $\Delta R/R\Delta T$ for V_2O_5 was 0.002 at 250°C, 0.004 at 300°C, 0.007 at 350°C, 0.016 at 375°C, and 0.027 at 380°C (start of reaction with H_2). For MoO_3 and WO_3, $\Delta R/R\Delta T$ rose slowly at low temperatures, and rapidly near the beginn-

Card 1/2

35217
S/148/62/000/001/001/013
E039/E435

N. 2000

AUTHORS: Yelyutin, V.P., Pavlov, Yu.A., Ts'ao Fu-k'ang

TITLE: The connection between the beginning of reduction and the semiconductor properties of metallic oxides

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.1, 1962, 14-19

TEXT: The mechanism of reduction of metallic oxides is insufficiently understood, particularly for temperatures below 700°C at which the speed of regeneration of the oxides of carbon is insignificant, hence new methods of investigation are needed. In this work the change in electrical resistance of the higher oxides of vanadium, molybdenum and tungsten was investigated at the temperature of their initial interaction with carbon. Samples of cermets (2 x 6 x 40 mm) were prepared by pressing the powdered oxides at 1.5 tons/cm^2 and sintering in an atmosphere of oxygen for 6 hours at 600°C (V_2O_5); 700°C (MoO_3) and 900°C (WO_3). The electrical resistance of the samples was measured by a compensating method using a high temperature four-point probe in an atmosphere of argon at temperatures of 200 to 580°C (V_2O_5);

Card 1/2

28065
S/148/61/000/007/001/012
E073/E335

15.2640

AUTHORS: Yelyutin, V.P., Pavlov, Yu.A., Surovoy, Yu.N. and Shulenov, V.I.

TITLE: Electric Conductivity and Thermal Expansion of Vanadium, Molybdenum and Tungsten Oxides

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1961, No. 7, pp. 12 - 17

TEXT: The oxides V_2O_5, MoO_3 and WO_3 are n-type semiconductors. The electric conductivity of V_2O_5 was investigated by several authors within a very wide range of temperatures (-200 to + 1 200 °C). One of these authors did not study the temperature range of interest to the authors of this paper, whilst the results of the others might have been influenced by the interaction of the V_2O_5 with crucible material. As far as the authors are aware, data on the electric conductivity of MoO_3 and WO_3 are available only for temperatures below 200 °C In

Card 1/9

25065
S/148/61/000/007/001/012
E073/E335

Electric Conductivity

this paper, specimens for tests were produced from oxides of high purity by pressing and sintering in an oxygen stream. The applied pressure was 1.5 t/cm^2. The specimens were sintered at 600 °C (V_2O_5), at 700 °C (MoO_3) and at 1 000 °C (WO_3). The tests have shown that to obtain a stable density and electric conductivity the specimens have to be held at these temperatures for about 6 hours. The electric resistance of these specimens was measured on a potentiometric instrument consisting of a potentiometer, a mirror galvanometer and a DC source. The measurements were made at elevated temperatures by means of apparatus, a sketch of which is shown in Fig. 1 (1 - test specimen; 2 - thermocouple; 3 - heater, 4 - stainless-steel container; 5 - lid; 6 - stress-bearing current leads, 7 - clamping arrangement; 8 - pressure-current leads). The results have shown that the plots - reciprocal of the temperature versus logarithm of the specific conductivity - have a pronounced bend located somewhat lower than the observed temperatures of the beginning of reduction of these oxides with carbon.

Card 2/9

Electric Conductivity ..

Figs. 2 3a and 3b show the dependence of the electric conductivity on the temperature and the reciprocal of the temperature $10^4/T$ for V_2O_5 MoO_3 and WO_3 respectively In Fig. 3 Curves 1 apply to the heating and Curves 2 to the cooling process. The bends were observed at about 380 °C for V_2O_5 at about 460 °C for MoO_3 and at about 700 - 725 °C for WO_3 The temperatures of the beginning of interaction of these oxides with carbon are, respectively, 438 475 and 782 °C. Thus, at temperatures at which the reduction with carbon begins a physical transformation occurs which is accompanied by a slowing-down in the increase of the electric conductivity with temperature. From the point of view of the semiconductor properties this corresponds probably to a transition from impurity- to intrinsic-conductivity of the oxides.

Card 3/9

28065 S/148/61/000/007/001/012
E073/E335

Electric Conductivity

In a special series of experiments with specimens consisting of V_2O_5 and finely-ground graphite pressed and sintered for 6 hours at 250 °C it was found that the electric resistance increased monotonously at all temperatures with increasing holding time. On the other hand the electric resistance of pressed graphite powder was found to drop on heating to 300 °C and remained constant on further heating. This behaviour of oxide-plus-graphite specimens is attributed to interaction between them accompanied by the formation of $CO \cdot CO_2$

the carbon consumption of the reduction reaction leads to a decrease in the electric conductivity of the specimen since the conductivity is basically determined by the electric conductivity of the graphite. It follows therefrom that the speed of change of the electric resistance at various temperatures can serve as a characteristic of the speed of the process of reduction of the oxide by the carbon. Fig. 5 shows the dependence of the speed of change with time of the electric resistance ($\Delta R/\Delta$ [illegible] Ω/min) as a function of the temperature (°C) of the V_2O_5 plus C specimens a sharp increase was

Card 4/9

Electric Conductivity ....

observed at about 380 °C. The conclusion drawn is that the beginning of appreciable reduction of the oxides coincides with the transition from impurity- to intrinsic-type conductivity. The results of dilatometric measurements on V_2O_5, MoO_3 and WO_3 specimens, for heating and cooling rates of 150, 200 and 250 °C/h, respectively, are plotted in Fig.6 [V_2O_5, MoO_3 (Fig.6a), WO_3 (Fig. 6b)], (change in length, μ versus temperature, °C). The temperature was measured with an accuracy of ± 10 °C and the length with an accuracy of 0.5 μ. Thermal expansion occurs up to 350, 440 and 680 °C, respectively. From these temperatures upwards, which correspond approximately to the bends in the temperature-electric conductivity curves, contraction of the specimens was observed. This contraction is attributed to polymorphous transformation or to plastic deformation caused by the measuring equipment as a result of the sharp drop in strength of the oxide at this temperature. It is concluded that at the temperature of the beginning of the reduction process, a change is observed in the physical properties, which is accompanied

Electric Conductivity ....

by a sharp decrease in the strength of the sintered specimens and by a slowing-down of the drop in the electrical resistance during heating. The beginning of the intensive chemical interaction corresponds with the transition from impurity- to intrinsic-type conductivity.
There are 6 figures and 9 references 8 Soviet and 1 non-Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: January 25, 1961

Card 6/9

PAVLOV, YU. A

PHASE I BOOK EXPLOITATION SOV/4782

Moscow. Institut stali

Proizvodstvo i obrabotka stali i splavov (Production and Treatment of Steel and Alloys) Moscow, Metallurgizdat, 1960. 462 p. (Series: Its: Sbornik, 39) 2,100 copies printed.

Ed.: Ye. A. Borko; Ed. of Publishing House: S. L. Zinger; Tech. Ed.: M. R. Kleynman; Editorial Council of the Institute: M. A. Glinkov, Professor, Doctor of Technical Sciences; R. N. Grigorash, Docent, Candidate of Technical Sciences; V. P. Yelyutin, Professor, Doctor of Technical Sciences; A. A. Zhukhovitskiy, Professor, Doctor of Chemical Sciences; I. N. Kidin, Professor, Doctor of Technical Sciences; B. G. Livshits, Professor, Doctor of Technical Sciences; A. P. Lyubimov, Professor, Doctor of Technical Sciences; I. M. Pavlov, Corresponding Member, Academy of Sciences USSR; and A. N. Pokhvisnev, Professor, Doctor of Technical Sciences.

PURPOSE: This book is intended for technical personnel in industry, scientific institutions and schools of higher education, dealing with open-hearth and electric-furnace steelmaking, metal rolling, physical metallurgy, metallography, and heat treatment. It may

Card 1/10

also be used by students specializing in these fields.

COVERAGE: The book contains results of theoretical and experimental investigations of metallurgical and heat-engineering processes in open-hearth and electric furnaces. Data are included on the following: desulfurizing of pig iron outside the blast furnace, interaction of oxides of the carbide-forming metals with solid carbon, the change of content of gases in the bath of the open-hearth furnace in various periods of melting, intensification of the electric melting of steel, etc. Other articles deal with the nonuniformity of deformation in rolling, the study of the continuous rolling process, the dependence of the friction-slippage coefficients in rolling on a number of factors, and other problems in the pressworking of metals. Articles on physical metallurgy and the theoretical principles and techniques of the heat treatment of steel are also included. No personalities are mentioned. References accompany most of the articles. There are 207 references, both Soviet and non-Soviet.

Card 2/10

Card 3/10

PAVLOV, Yu.A., dotsent, kand.tekhn.nauk

Interaction between the oxides of carbide forming metals with solid carbon. Sbor.Inst.stali no.39:16-22 '60. (MIRA 13:7)

1. Kafedra metallurgii redkikh metallov Moskovskogo ordena Trudovogo Krasnogo Znameni instituta stali im. I.V.Stalina.
(Metallic oxides) (Steel--Metallurgy)

YELUTIN, V.P.; PAVLOV, Yu.A.; LYSOV, B.S.

Free energy of formation of vanadium-oxygen solutions. Izv. vys. ucheb. zav.; chern. met. no.1:5-11 '60. (MIRA 13:1)

1.Moskovskiy institut stali.
(Vanadium--Oxygen content)
(Force and energy)

AUTHORS: Yelyutin, V. P., Merzulova, K. F., Pavlov, Yu. A. SOV/[illegible]

TITLE: Investigating the Reduction Reactions of Metal Oxides With Carbon (Issledovaniye reaktsiy vosstanovleniya okislov metallov uglerodom)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 10 - 14 (USSR)

ABSTRACT: The influence of the temperatures on the reaction velocity of the reduction of metal oxides with carbon was investigated. Activated and non-activated charcoal were used as reducing agent; it had been obtained by the interaction of the gas mixture $CO_2 + C^{14}O_2$ with metallic magnesium. The initial temperature of the interaction between carbon and metal oxides, as for instance MoO_3, Fe_2O_3, V_2O_5, Nb_2O_5 and TiO_2 was determined. The reduction of V_2O_5 was investigated at 600, 700, 800, 900 and 1000° C, the reduction of MoO_3 at 500, 590, 600, 650 and 700° C,

Card 1/3

the reduction of Fe_2O_3 at 500, 600, 700, and 800° C, and the reduction of WO_3 at 900, 1000, 1100 and 1200° C.

The reduction processes take place at the same time with the increase of the reaction velocity they reach their maximum at the corresponding temperature and then slowly decrease again. The increase in temperature effects an increase of the rate of the reduction process. The kinetic curves obtained show that the reduction processes of the oxides have an autocatalytic mechanism. Based on the results obtained the apparent activation energy of the reduction processes of the oxides with metals was calculated. The following values were found for the activation energy: kcal/Mol: V_2O_5 - 2,3, MoO_3 - 14,3, Fe_2O_3 - 11,7 and WO_3 - 18,0. The linear dependence between the initial temperatures of the reduction and the activation energy of the corresponding processes was found. There are 4 figures, 1 table, and 9 references, 3 of which are Soviet.

Investigating the Reduction Reactions of Metal Oxides With Carbon SOV/[illegible]-58-3-2/49

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: February 26, 1958

Card 3/3

YELYUTIN, V.P.; PAVLOV, Yu.A.; GLUKHOVTSEV, B.V.

Fluidity and density in nickel-vanadium alloys. Nauch.dokl.vys. shkoly; met. no.4:12-16 '58. (MIRA 11:11)

1. Moskovskiy institut stali.
(Nickel-vanadium alloys--Testing) (Rheology)
(Liquid metals--Density)

SOV/163-58-1-17/54

AUTHORS: Yelyutin, V. P., Pavlov, Yu. A., Glukhovtsev, B. V.

TITLE: The Interaction Between Nickel-Vanadium Alloys and Refractories (Vzaimodeystviye nikelevanadiyevykh splavov s ogneuporami)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 87-92 (USSR)

ABSTRACT: The present investigation was carried out to improve the technology of high-temperature alloys, especially in regard to the removal of inclusions of non-metals or gases in alloys. Nickel-vanadium alloys were used as initial materials the melt of which was produced at 1 800 - 1 900°. The melt of the nickel-vanadium alloys was carried out in crucibles of Al_2O_3, BeO, ZrO_2 with different duration of storing. The analysis showed that the alloys were rich in gases such as 0,072 - 0,022% O_2 and 0,01 - 0,095% N_2. It was found that the high gas content of the alloys is caused by inclusion of the initial materials, especially the aluminum thermic vanadium.

Card 1/4

SOV/161-58-1-17/

The Interaction Between Nickel-Vanadium Alloys and Refractories

To determine the suitable refractory for the nickel-vanadium alloys the interaction between the alloys and the refractory was investigated. Vanadium is a comparatively active metal in the melt and reacts energetically with the refractories of the crucible, bringing impurities into the metal melts. In the reactions mainly VO reacts. In the interaction between VO and the oxides of refractories also V_2O_3 is formed. The lower stability of ZrO_2 as compared to vanadium melts is probably a consequence of the reaction $2ZrO_2 + V \rightleftarrows Zr_2O_3 + VO$.

By means of radioactive indicators the character of the interaction between the refractory and the liquid metal alloy with a vanadium content of 30% was determined. ZrO_2 was used as refractory to which the radioactive isotope Zr^{95} was added. The investigations showed that non-metallic impurities can be avoided only if the melt is not overheated and is left in the state of melting for as short a period as possible. The reaction products were investigated also by means of x-ray structural analysis to explain the character of the interac-

Card 2/4

The Interaction Between Nickel-Vanadium Alloys and Refractories

tion between the refractory and the liquid nickel-vanadium alloys. This analysis showed that in the interaction between the alloys and the refractory ZrO_2 is reduced to Zr.

The character of the interaction between the alloys and the refractories of beryllium oxide was not explained by the x-ray structural analysis. Probably only little vanadium oxide is formed in the interaction; this vanadium oxide dissolves in the melt. Beryllium vapor is formed which also dissolves in the metal melt.

Experiments on the interaction of nickel-vanadium alloys and Al_2O_3 were also carried out.

The macro- and microscopic investigation of the surface of zirconium bricks showed that in the melting in zirconium crucibles in the case of a longer period of storage the metal melt penetrates the ZrO_2. In melting beryllium and aluminum oxide in crucibles the interaction between the liquid metal and the refractory is much smaller.

There are 1 figure and [illegible] reference.

SOV/

The Interaction Between Nickel-Vanadium Alloys and Refractor

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: October 1, 1957

Card 4/4

YELYUTIN, V.P.; MERKULOVA, R.F.; PAVLOV, Yu.A.

Investigating the reaction of metal oxide reduction by carbon.
Nauch.dokl.vys.shkoly; met. no.3:10-14 '58. (MIRA 11:11)

1. Moskovskiy institut stali.
(Oxidation-reduction reaction) (Carbon--Isotopes)

18(6)

AUTHORS: Yelyutin, V.P., Pavlov, Yu.A., Glukhovtsev, B.V.

SOV/163-58-4-2/47

TITLE: Fluidity and Density of Nickel-Vanadium Alloys (Zhidkotekuchest' i plotnost' splavov nikelya s vanadiyem)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4, pp 12 - 16 (USSR)

ABSTRACT: In order to determine the fluidity of nickel-vanadium alloys of a content of 25, 30, and 35 % of vanadium, the method of pouring the alloys into molds of the Ruff-type was chosen. By this method, the tests can be carried out in vacuum or in a neutral atmosphere. The metal was melted in crucibles of beryllium-oxide with argon in a high-temperature resistance furnace with a graphitic carbon heater. A special furnace structure as shown here allowed the metal to be poured into crucibles without disturbing the tightness of the furnace. The experimental method of Yelyutin and Maurakh (Ref 6) was employed to determine the specific gravity of the smelt. This formerly used method is rather simple but reliable.- By investigating the fluidity of the nickel alloys of a vanadium content of 25, 30, and 35 % it was found that these alloys showed a rather good fluidity;

Card 1/2

e.g., their fluidity surpasses that of stainless steel. The fluidity of nickel-vanadium alloys of the investigated composition increases with increasing concentration of vanadium. Measurings of the density of molten nickel-vanadium alloys showed that it was lower by 0.3 - 0.4 g/cm^3 than the specific density of the solid samples. There are 5 figures, 2 tables, and 6 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: March 29, 1958

YELYUTIN, V.P.; PAVLOV, Yu.A.; GLUKHOVTSEV, B.V.

Interaction of nickel-vanadium alloys with refractory materials.
Nauch. dokl. vys. shkoly; met. no.1:87-92 '58. (MIRA 11:9)

1. Moskovskiy institut stali.
(Nickel-vanadium alloys) (Refractory materials)

YELYUTIN, V.P., prof., doktor tekhn. nauk; MERKULOVA, R.F., inzh.; PAVLOV, Yu.A., dots., kand. tekhn. nauk.

Temperatures at the start of metal oxide reduction by solid carbon. Sbor. Inst. stali no.38:79-87 '58. (MIRA 11:8)

1. Kafedra metallurgii redkhikh metallov Moskovskogo instituta stali im. Stalina.
(Oxidation-reduction reaction) (Thermometry)
(Radioisotopes--Industrial applications)

Pavlov, Yuriy Aleksandrovich

PHASE I BOOK EXPLOITATION 230

Yelyutin, Vyacheslav Petrovich; Pavlov, Yuriy Aleksandrovich; Levin, Boris Yeylevich; Alekseyev, Yevgeniy Mikhaylovich.

Proizvodstvo ferrosplavov; elektrometallurgiya (Production of ferro-alloys; Electrometallurgy) 2d ed., rev. and enl. Moscow, Mashgiz, 1957. 436 p. 7,500 copies printed.

Ed.: Alekseyev, Ye. M.; Ed. of Publishing House: Rozentsveyg, Ya. D.; Tech. Ed.: Vaynshteyn, Ye. B.

PURPOSE: The book is intended as a textbook for students at institutions of higher learning specializing in metallurgy and may also serve as a manual for engineers and scientific workers.

COVERAGE: Theoretical and practical data on production of ferro-alloys are systematized and generalized in this book. The theoretical foundations and technology of producing various ferro-alloys are discussed. Some information on physical chemistry is given in order to facilitate understanding of thermodynamic calculations.

Card 1/7

Card 3/7

Card 4/7

Card 6/7

KON'KOV, A.V.; PAVLOV, Yu.P. (Severomorsk)

Duration of the sound of pericardial friction in myocardial infarct. Klin.med. 40 no.5:143-144 '62. (MIRA 15:8)
(HEART--SOUNDS) (HEART--INFARCTION)

YELYUTIN, Vyacheslav Petrovich; PAVLOV, Yuriy Aleksandrovich; LEVIN, Boris Yeylevich; ALEKSEYEV, Yevgeniy Mikhaylovich; ROSENTSVEYG, Ya.D., red. izd-va; VAYNSHTEYN, Ye.B., tekhn.red.

[Iron alloy production; electrometallurgy] Proizvodstvo ferrosplavov; elektrometallurgiia. Izd. 2-oe, perer.i dop. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 436 p. (MIRA 11:1)

(Iron alloys--Metallurgy)

PAVLOV, Yu. A.

USSR

8099 The Production of Ferromanganese. V. P. Elyutin, Yu. A. Pavlov, and B. E. Levin. *Henry Brutcher Translation* No. 3130. 27 p. (Part from Book "The Production of Ferro-alloys", Chap. V. 1951. Metallurgizdat, Moscow.) Henry Brutcher, Altadena, Calif.

Survey of production methods for various grades, other products. Tables, graphs. 3 ref.

PAVLOV, Yuriy Filippovich; KAL'NITSKIY, .Ya., kal'nyts'kyi, ..IA], red.

[100 per 100; how the Frunze collective farm strives to achieve the production of one hundred centners of meat per hundred hectares of arable land] 100 na 100; iak kolhosp imeni Frunze boret'sia za oderzhannia 100 ts m'iasa na 100 ha orni zemli. Kharkiv, Kharkivs'ke knyzhkove vo, 19... 34 p.

1. Zaveduyushchiy kolkhozom imeni Frunze Khar'kovskogo rayona (for Pavlov).

MITELKIN, A.F., kand. tekhn. nauk, dotsent; PAVLOV, Yu.I., aspirant; MITKIN, S.P., inzh.

Stresses in pipings. Izv. vys. ucheb. zav.; mashinostr. no.5:102-107 '65. (MIRA 18:8)

1. Moskovskiy aviatsionnyy tekhnologicheskiy institut.

ARAKELYAN, O.I.; CHISTYAKOVA, A.A.; PAVLOV, Yu.I.; PODZOROVA, L.M.

Formation of hydrogarnets in muds from alumina production. (MIRA 15:8)
TSvet.met. 35 no.8:54-58 Ag '62.
(Alumina) (Hydrogarnet)

L 00914-66 EWT(1)/EWT(m)/EWP(w) JD/EM

ACCESSION NR: AP5019516 UR/0145/65/000/006/0102/0107
621.6.038

AUTHORS: Metelkin, A. F. (Candiate of technical sciences, Docent); Pavlov, Yu. I. (Aspirant); Mitkin, S. D. (Engineer)

TITLE: Stresses in pipes

SOURCE: IVUZ. Mashinostroyeniye, no. 6, 1965, 102-107

TOPIC TAGS: stress load, strain gage, experimental method, static stress, dynamic stress, thermal expansion

ABSTRACT: The stresses in a pipeline are divided into dynamic and static components

$$\Sigma\sigma = \Sigma\sigma_{dyn} + \Sigma\sigma_{st}$$

The dynamic stresses are produced by oscillations generated by the flow velocity, pressure, and engine vibrations; the static stresses are caused by thermal expansion. To determine these stresses during operation, the hydraulic conduits of three engines were experimentally investigated. The stresses were measured by strain gauges and recorded on oscillograms. The test results show that the hydrosystem pipelins can be divided into three dynamic stress zones corresponding to

Card 1/2

Card 2/2

L 42142-66

ACC NR: AP6027622 SOURCE CODE: UR/0145/66/000/006/0053/0056

AUTHOR: Metelkin, A. F. (Candidate of technical sciences; Docent); Pavlov, Yu. I. (Engineer); Matyushin, I. V. (Engineer)

ORG: Moscow Technological Aviation Institute (Moskovskiy aviatsionnyy tekhnicheskiy institut)

TITLE: Effect of cleaning methods on fatigue of pipelines of aircraft engine hydraulic systems

SOURCE: IVUZ. Mashinostroyeniye, no. 6, 1966, 53-56

TOPIC TAGS: stainless steel, pipeline, hydraulic system, ~~pipeline~~, aircraft, ~~hydraulic system, pipeline~~ fatigue strength/Kh18N10T steel

ABSTRACT: Experiments have been made to develop an optimal cleaning method for welded or brazed stainless-steel pipelines of aircraft-engine hydraulic systems. Chemical and ultrasonic pickling in different solutions of sulfuric, hydrochloric, nitric, and hydrofluoric acids at various temperatures were tested. Ultrasonic pickling in a solution containing 3% nitric and 3% hydrofluoric acids at 18—25C was found to be the most efficient. Welded joints in pipe 12 mm in outside diameter with a wall thickness of 1 mm required 10 min, and brazed joints, 20 min. Ultrasonically pickled specimens had a fatigue limit ($10 \cdot 10^6$ cycles) of 8.4 kg/mm^2 for brazed and 7.2 kg/mm^2 for welded

UDC: 621.79.02:621.643.2/3

Card 1/2

ACC NR: AP6027622

specimens, compared to 7.8—7.2 kg/mm^2 and 6.8—6.3 kg/mm^2 for chemically pickled specimens. Orig. art. has: 3 figures and 1 table. [AZ]

SUB CODE: 13/ SUBM DATE: 12Jun65/ ORIG REF: 003/ ATD PRESS: 5062

Card 2/2

L 53591-65 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EWA(d)/EPR/EWP(t)/EWP(k)/EWP(b)/EWA(c)
Pf-4 MJW/JD/HW/EM
ACCESSION NR: AP5012893 UR/0145/65/000/004/0045/0053
539.4

AUTHORS: Metelkin, A. F. (Candidate of technical sciences, Docent); Pavlov, Yu. I. (Aspirant)

TITLE: Certain problems of increasing the exploitation safety of pipe connections

SOURCE: IVUZ. Mashinostroyeniye, no. 4, 1965, 45-53

TOPIC TAGS: pipe flow, joint, stress distribution, stress analysis, stress calculation, stress relaxation/ EI 961 steel, KH18N9T steel

ABSTRACT: Stress distribution during the work of a pipe-connection under sudden changes in temperature was studied theoretically and tested. Starting with the Fourier formula for thermal flow under nonstationary conditions, equations were derived for the axial weakening in the connection, the radial and axial weakening in the area of thread, and for the total free play in the junction. Theoretical results were found either identical with or very close to the measured ones. To prevent the formation of leaks and to extend the lifetime of a pipe connection, it is recommended to eliminate the joints (where possible), to transfer them into a zone of lesser thermal stress, or to decrease the thermal flow affecting the

Card 1/2

L 53591-65
ACCESSION NR: AP5012893

function. If these measures are impossible, special nipple-joints were recommended. The nipples are made of EI-961 steel and are welded to the steel pipes Kh18N9T. They showed a satisfactory performance at 300C and at kerosene pressure 80 kg/cm^2. Nipple sizes required for various connections are calculated. Other thermo-compensating elements recommended are: a special insert into a nut for the butt-joints and a special spring interlayer for the flange connections. Orig. art. has: 6 figures and 3 formulas.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Technological Institute of Aviation)

SUBMITTED: 30Sep64 ENCL: 00 SUB CODE: IE, MM

NO REF SOV: 004 OTHER: 000

Card 2/2

L 05696-67 EWP(k)/EWT(l)/EWT(m)/T/EWP(w)/EWP(v)/EWP(t)/ETI IJP(c) EM/WW/JD/HM

ACC NR: AP6022863 SOURCE CODE: UR/0145/66/000/002/0038/0042

AUTHOR: Metelkin, A. F. (Candidate of technical sciences, Lecturer); Pavlov, Yu. I. (Graduate student)

ORG: Moscow Aviation Engineering Institute (Moskovskiy aviatsionno-tekhnologicheskiy Institut)

TITLE: Strength of aviation pipeline couplings with brazed nipples

SOURCE: IVUZ. Mashinostroyeniye, no. 2, 1966, 38-42

TOPIC TAGS: stress analysis, pipeline, hydraulic equipment, turbojet engine, metal joining, stress concentration, fatigue strength

ABSTRACT: The authors study methods for raising the safety factor of pipelines with brazed nipples in turbojet engine hydraulic systems under variable stresses. The pipelines and nipples in this study were made of Kh18N9T steel and brazed by high frequency current and oxyacetylene torches using PZh45-81 high-temperature solder. Such joints can withstand pressures of more than 500 kg/cm^2 and uniform heating up to 700°C. It should be added that this type of union can function under extreme vibration. Turbojet engine pipelines are most susceptible to vibration arising from rotor imbalance and gas stream pulsations. Strain tests of 60 pipelines show that the overall maximum level of vibration stresses is 5-6 kg/mm^2. An expression is given

Card 1/2 UDC: 621.22

L 05696-67

ACC NR: AP6022863

2

for calculating the safety factor of pipelines used under variable load conditions. This is based on the fact that variable loads change according to an asymptotic law. In finishing pipeline systems, a safety factor of at least 1.3-1.4 is desirable. This can be achieved by decreasing variable stresses and lowering the static component of normal stresses thus raising the fatigue limit. Tests show that the fatigue limits are approximately the same in pipeline bending for tubes with internal fluid pressure of 100 kg/cm^2 and atmospheric pressure. The fatigue limit of pipelines is a function of the absolute dimensions of pipe cross section and local stress concentrators. It is shown that the experimental method is most accurate in determining the fatigue limit of pipelines. Data are given for fatigue limits of various diameter pipelines and experimental coefficients of stress concentration for nipples. The minimum safety factor used for existing turbine engine pipelines is 1.75-2.5. The main problem to be solved is that higher safety factor values should not be accompanied by increased weight and reduced efficiency of the system. Orig. art. has: 4 figures, 2 formulas.

SUB CODE: 01, 11, 13, 21,20/SUBM DATE: 28Dec64

Card 2/2

L 38169-66 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/WB/EM

ACC NR: AP6021075 (N) SOURCE CODE: UR/0365/66/002/002/0145/0148

AUTHOR: Azhogin, F. F.; Pavlov, Yu. K.

ORG: none

TITLE: Corrosion cracking of high strength steels in acids

SOURCE: Zashchita metallov, v. 2, no. 2, 1966, 145-148

TOPIC TAGS: high strength steel, alloy steel, stress corrosion, acid solution, anode polarization, cathode polarization, stress measurement / 30KhGSNA high strength steel

ABSTRACT: The effect of concentration and type of acid on stress corrosion cracking of high strength steel is studied. Samples of 30KhGSNA steel (C--0.39%, Mn--1.10%, Cr--0.91%, Ni--1.40%, Si--0.98%, S--0.03% and P--0.03%) were oil quenched from 890°C and tempered at 200°C for 2 hrs. Stress was applied by bending and the samples were immersed in solutions of H_2SO_4, HCl, H_3PO_4 and 20% H_2SO_4 + NaCl. Both stress and potential are given as functions of time of the first appearance of cracking. The empirical parameters σ_{cr} and K were obtained from the following experimental relation:

$$(\sigma-\sigma_{cr})\tau=K,$$

where σ is the applied stress, σ_{cr} is the stress below which no corrosion cracking oc-

UDC: 620.195

Card 1/2

L 38169-66
ACC NR: AP6021075

curs, τ is the time to crack appearance and K is the constant. With increase in the acid concentration from 1 to 20%, the tendency toward stress corrosion cracking increased, the greatest increase taking place in the HCl solutions. The critical stress σ_{cr}, K and the speed of corrosion were tabulated for all the acids at concentrations ranging from 1 to 20%. HCl had the largest values of K (433 kg/mm^2 min at 20% to 777 at 1%) and the lowest values of σ_{cr} (45.5 kg/mm^2 at 1% to 26 at 20%). When Cl ions were introduced to the H_2SO_4 solutions (by addition of 30 g/l NaCl) the tendency to stress corrosion cracking increased. Cathodic and anodic polarization curves showed that the Cl ions retarded the cathodic and anodic processes in the steel and consequently decreased the general corrosion rate. The adsorption of Cl ions was retarded more at the base of stress concentrators than on the residual surface; therefore the difference between the speed of corrosion at the base of the stress concentrators and on the residual surface increased. Orig. art. has: 5 figures, 1 table, 1 formula.

SUB CODE: 11/ SUBM DATE: 08Mar65/ ORIG REF: 016/ OTH REF: 001

Card 2/2

S/790/62/000/000/001/005

AUTHORS: Azhogin, F. F., Pavlov, Yu. K.

TITLE: The effect of alloying on the corrosion cracking of high-strength steels.

SOURCE: Korroziya i zashchita metallov; sbornik statey. Ed. by V. P. Batrakov. Moscow, Oborongiz, 1962, 82-100.

TEXT: The paper deplores the nonexistence of published systematic studies on the effect of alloying elements on the corrosion cracking (CC) of structural steels in acid, neutral, and alkaline solutions and in humid air. A brief survey of existing literature is given. Investigation: A single smelted batch of steel, prepared in an electric induction furnace, was alloyed successively with various alloying elements (4–6 different quantitative additions per element, per full-page table). Steel strips were rolled and longitudinal specimens cut out. Heat treatment: Martensitic quench, 2-hr low or medium temper. Specimens were surface-ground to 100x8x2 mm and were stressed variously within the elastic range in a 20% H_2SO_4 bath with 30 g/l NaCl, a scale-removing solution in which high-strength steels (HSS) manifest an elevated CC tendency. The tensile stresses were achieved by simple-beam, concentrated-load, bending in a special jig (photo shown) with a screw adjustment (to within 0.05 mm) of the deflection. Measurements: (1) Mean time to crack formation

Card 1/3

at a given stress level; (2) the "critical stress" (max. stress at which CC does not take place); (3) a factor K (kg. min/mm^2), equal to the product of "excess" stress applied (above the "critical stress") and the time (min.) to inception of CC. Carbon (0.3-0.78%): An increase in C content increases the tendency of a HSS toward CC; this is attributed primarily to stresses created by the C dissolved in α-Fe. High tempering T reduces the internal stresses and, hence, the CC tendency. C-containing HSS become more CC-prone with increasing hardness. Graphs of crack-formation time vs. stress applied are shown for various C contents and tempering T. The "critical-stress" and K values are tabulated. The effects of the T and duration of temper on the critical stress are graphed, also the correlation of H_{RC} and the critical stress. Chromium (0-4.3%): The CC tendency of a HSS increases with increasing Cr content within the range of % Cr tested. High tempering T reduce the CC tendency, but less so with increasing Cr content (most sharply between 0.5 and 1.5%). The specimens were quenched either without or with temper at 200, 300, 350, and 400°C. The CC relationship with temper T and Cr content is illustrated graphically. Silicon (0.14-1.78%): An increase in Si content up to 1.28% does not increase the CC tendency; a further increase in Si content (up to 1.78%) prolongs the time to CC formation in steel tempered at 300°C. The Si-containing specimens were water-quenched and tempered at 200, 300, and 350°. The critical stress remained practically unchanged at all Si contents for a

45220

S/790/62/000/000/003/005

18.8300

AUTHORS: Azhogin, F. F., Pavlov, Yu. K.

TITLE: The tendency to stress-corrosion cracking of steels in various media.

SOURCE: Korroziya i zashchita metallov; sbornik statey. Ed. by V. P. Batrakov. Moscow, Oborongiz, 1962, 112-117.

TEXT: The paper has two specific objectives: (1) Determination of the relationship between the magnitude of the critical stress (highest stress at which stress-corrosion cracking does not occur – CS) and the crack-inception time (CIT) of a given steel in a given medium; (2) identification of a corrosive medium that can serve in accelerated stress-corrosion-cracking tests of high-strength steels (HSS) for other media. While a metal coming from a given smelting and heat-treatment batch and exposed to a given corrosive medium satisfies the relationship "(applied stress minus CS) times the CIT equal to constant K," the dependence of CS and K on many factors, such as the smelting process, the composition and heat treatment of the steel, the surface finish of the metal, the composition of the corrosive medium, etc., makes accelerated tests appear desirable. A comparison of media indicates that the stress-corrosion-cracking tendency of HSS is most pronounced in an etching solution containing 20% H_2SO_4 and 30 g/l NaCl. Comparison tests, listed in descending order of effectiveness on 30ХГСНА (30KhGSNA) and similar HSS (chemical compositions

Card 1/2

and H_{R_C} tabulated) were: (1) Saline-fog chamber, i.e., within a 3% NaCL-solution spray; (2) tropical chamber, i.e., 8 hrs at 50°C, R.H. 95-98%, 12 hrs at 18-25°, same R.H., 2 hrs drying, 2 hrs observation of specimen; (3) industrial-district atmosphere, i.e., in air drawn in on the roof of a six-story building in Moscow, and in a non-saline moisture chamber, i.e., at 25°C, R.H. 95-98%. Tabulations and stress-versus CIT and CS-versus-CIT graphs illustrate the behavior of specimens of six different steel smeltings in the various corrosive media. It was found that the value of the CS obtained in the etching solution can be used as a criterion in assessing the stress-corrosion tendency of a given steel in the other media and that with increasing CS in the etching solution the CIT in the other media increases. It was found, for example, that a steel having a CS in excess of 50 kg/mm^2 in the etching solution is not subject to stress-corrosion cracking in the industrial-district atmosphere. It is concluded that tests in an etching solution containing 20% H_2SO_4 and 30 g/l NaCl can serve for the development of an accelerated method for the determination of stress-corrosion cracking tendency in HSS in various media. There are 2 figures, 4 tables, and 2 Russian-language Soviet references, one of which (Ryabchenkov, A.V., Nikiforov, V.N.) appears in Symposium on Stress Corrosion Cracking of Metals, ASTM, August 1945, 19, 113, 305.

ASSOCIATION: None given.

Card 2/2

L 09065-67 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6030861 (A) SOURCE CODE: UR/0365/66/002/005/0533/0538

AUTHOR: Azhogin, F. F.; Pavlov, Yu. K. 16

ORG: none

TITLE: The effect of inhibitors on corrosion cracking of superstrength steels

SOURCE: Zashchita metallov, v. 2, no. 5, 1966, 533-538

TOPIC TAGS: high strength steel, superstrength steel stress corrosion, corrosion, corrosion inhibitors, ~~superstrength steel~~/30KhGSNA alloy steel

ABSTRACT: The effect of inhibitors on corrosion cracking of 30KhGSNA superstrength steel has been investigated. Two heats of the steel, one with a standard carbon content of 0.29% and another experimental heat with 0.41%C were tested. The steel specimens were hardened and tempered at 220C to a tensile strength of 170 kg/mm^2 for standard 30KhGSNA and to 210 kg/mm^2 for the experimental steel. The specimens were subjected to tensile stresses of 145 kg/mm^2 by means of clamping in a special device and tested in this state for resistance to corrosion cracking in hydrochloric and sulfuric acid solutions with or without inhibitors. It was determined that urotropine and BA-6 (a product of the reaction between urotropine and benzilamine) were the most effective inhibitors. Both, however, were more effective in hydrochloric than in sulfuric acid. For instance, specimens tested without inhibitors showed cracking after about 5 min in sulfuric acid and after 4 min in hydrochloric acid. Urotropine

Card 1/2 UDC: 620.194.8/197.3

L 09065-67

ACC NR: AP6030861 O

at a concentration of 50 g/l prolonged the time-to-cracking to 1400 min in hydrochloric acid and to 323 min in sulfuric acid. At the same concentration, BA-6 extended the time-to-cracking to 1400 min in hydrochloric acid and to 160 min in sulfuric acid. Orig. art. has: 2 figures and 4 tables. [TD]

SUB CODE: 7, 11, 13/ SUBM DATE: 08Dec65/ ORIG REF: 014/ OTH REF: 002/
ATD PRESS: 5077

Card 2/2 nst

BERG, P.P.; VOROTYNTSEV, M.F.; GENKIN, N.M.; PAVLOV, Yu.N.; PRIPOROVA, G.E

Increasing the wear resistance of heavy duty dies. Lit. proizv.
no.1:39-40 Ja '65. (MIRA 18:3)

MURUSIDZE, D.N., kand.sel'skokhozyaystvennykh nauk; MIKHALEV, V.I., kand.sel'skokhozyaystvennykh nauk; PAVLOV, Yu.N.

Local chicken strains of Amur Province. Ptitsevodstvo 9 no.10:32-33 O '59. (MIRA 13:2)

1. Blagoveshchenskiy sel'skokhozyaystvennyy institut (for Pavlov).

(Amur Province--Poultry breeds)

PAVLOV, YU. N.

5

18 19 4E2C-1

Low-temperature sulfiding of cast-iron parts. V. N. Lumsdin, N. M. Genkin, and Yu. N. Pavlov (Automobile Plant, Yaroslavl). Avtomobil. i Traktor. Prom. 1957, No. 4, 39-41.—Samples were sulfided at 90-8° for 3 hrs. at 10-12 v. and in baths conts. Na_2S 15, Na_2S 15-H_3PO_4 15, and KSCN [illegible] requiring frequent replenish- [illegible] the first [illegible] 0.05 cm. layer [illegible] to 0.3% S [illegible] deep through [illegible] as a function of [illegible] is given.

LUPANDIN, V.N.; GENKIN, N.M.; PAVLOV, Yu.N.

Low-temperature sulfidization of cast iron workpieces. Avt.i trakt. prom. no.4:39-41 Ap '57. (MLRA 10:5)

1.Yaroslavskiy avtozavod.
(Cast iron)
(Cementation (Metallurgy))

PRIVOROTSKIY, L.B.; PAVLOV, Yu.N.

Device for plotting graduation lines. Mashinostroitel' no.3:41 Mr '62. (MIRA 15:3)

(Calibration)

PAVLOV, Yu.P., inzhener.

By new methods. Nauka i zhizn' 22 no.11:49 N '55. (MLRA 9:1)
(Screw-cutting machines)

PAVLOV, Yu.P.

Using the shield method for building running tunnels in sandy soils. Transp.stroi. 13 no.9:21-24 S '63. (MIRA 16:12)

1. Nachal'nik stroitel'no-montazhnogo upravleniya No.7: Mosmetrostroya.

L 2776-66 EWT(m)/EWP(j)/T/EWA(h)/EWA(l) IJP(c) RM
ACC NR: AP6007815 SOURCE CODE: UR/0120/66/000/001/0090/0091

AUTHOR: Vedekhin, A. F.; Pavlov, Yu. P.; Chernykh, L. P. 32 B

ORG: none

TITLE: Selection of scintillators for counters 19 used in recording gamma radiation in plateau conditions

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 90-91

TOPIC TAGS: scintillator, crystal phosphor, gamma detector, scintillation counter, alkali halide, sodium compound, iodide, thallium

ABSTRACT: The authors study the counting characteristics of gamma detectors with various types of scintillators as well as the variation in plateau as a function of the dimensions and basic indices of the scintillators: luminescence yield and resolution with respect to Cs^{137}. FEU-35 and FEU-13 photomultipliers were used for measurements in an installation consisting of pickup, amplifier, high voltage unit and scaler. The γ-radiation source was a Cs^{137} preparation in a lead collimator. Industrial scintillators produced by the Irkutsk Chemical Combine were studied. The specimens included both inorganic (NaI·Tl, CsI·Tl and KI·Tl) and organic (stilbene, tolan, naphthalene, anthracene) types and a plastic scintillator packed with magnesium oxide reflector. It was found that thallium-activated sodium iodide is the best scintillator

UDC: 539.16.07

Card 1/2

L 24776-66

ACC NR: AP6007815

O

for counters operating in plateau conditions. A scintillator made of this material measuring 30 mm in diameter and 20 mm long has a resolution of 18.5% with respect to Cs^{137}. The length of the plateau is practically independent of the radiation energy when these crystals are used for recording γ-radiation with an energy of >60 kev. A reduction in the length of the plateau is observed with a decrease in energy below this point. CsI·Tl and KI·Tl crystals show a satisfactory plateau for specimens with a diameter less than or equal to that of the photomultiplier and a length less than or equal to ½ the diameter. These crystals have a luminescence yield of 0.9 or more. A comparison of the results of measurements on the FEU-35 and FEU-13 photomultipliers showed that the relative length of the plateau for the FEU-35 is approximately twice that for the FEU-13 with the same type scintillator.

SUB CODE: 18/ SUBM DATE: 06Jan65/ ORIG REF: 001/ OTH REF: 002

Card 2/2

SMIRNOV, S.A.; PAVLOV, Yu.S.; KHOLODKOVA, T.V., red.; POPOVA, S.M., tekhn. red.

[Production and use of high pulsed magnetic fields; collection of abstracts, 1923-1961]Poluchenie i ispol'zovanie bol'shikh impul'snykh magnitnykh polei; sbornik referatov, 1923-1961 gg. Moskva, Gosatomizdat, 1962. 55 p. (MIRA 15:8)
(Magnetic fields--Abstracts)

S/781/62/000/000/026/036

AUTHORS: Volkov Ya. F., Pavlov Yu. S., Tolok V. K., Skibenko A. I.

TITLE: Plasma in an alternating magnetic field

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekhn. inst. AN Ukr.SSR. Kiev, Izd-vo AN Ukr. SSR, 1962. 127-130

TEXT: The behavior of a plasma pinch in an alternating magnetic field was measured for two types of magnetic fields, one producing a PIG discharge (constant field) and one producing total ionization and detachment of the plasma from the walls. The magnetic field was measured with probes and the density with an electric probe and also with a 4 mm microwave signal. The maximum density was found to be about 10^{15} per cc. In the case of the PIG discharge the density increases sharply toward the second or third maximum of the field, but in the case of no preliminary ionization the maximum occurs at the fourth or fifth maximum. The decrease in density and the breakup of the pinch with constant magnetic field are slowed down when the fields add and accelerate when the fields sub-

Card 1/2

Plasma in an alternating magnetic field S/781/62/000/000/026/036

tract. This is confirmed by streak photography. Sharp contraction of the plasma gives rise to radial oscillations of the pinch, which are more pronounced in argon than in hydrogen (because the frequency is higher). The slight increase in the magnetic field in the plasma close to the zero of the external field can be attributed to the fact that the plasma traps the magnetic field of the preceding cycle and the latter grows with compression of the plasma by the growing external field. The frequency of the plasma oscillation agrees roughly with the value obtained by Tuck (ref.4, cited in the Russian translation) for plasma in a straight-line discharge. There are four figures.

Card 2/2

VOLKOV, Ya.F.; PAVLOV, Yu.S.; TOLOK, V.T.; SKIBENKO, A.I.

[A plasma in a variable magnetic field] Plazma v peremennom magnitnom pole. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. 255-266 p. (MIRA 17:3)

PAVLOV, Yu. S.

14-57-6-12716

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6, pp 131-132 (USSR)

AUTHOR: Pavlov, Yu. S.

TITLE: Helminths Found in Wolves in Saratovskaya Oblast' (K gel'mintofaune volkov Saratovskoy oblasti)

PERIODICAL: Sb. nauch. stud. rabot Saratovsk. zootekhn.-vet. in-ta, 1956, Vol 1, pp 52-55

ABSTRACT: In 1950-51, 105 wolves were examined for helminth in Saratovskaya Oblast'. It was established that 46 percent of the wolves in districts on the left bank of the Volga were infested with Alaria alata, with an average intensity of infestation equal to 224 per animal; on the right bank 26.3 percent were infested, with an average of 624. Toxascaris leonina were found in 46 percent of the wolves on the left bank, with an average of 36 per animal, while 56.3 percent of the

Card 1/2

N L 11542-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB

ACC NR: AP6000616 SOURCE CODE: UR/0135/65/000/012/0016/0018

AUTHOR: Ishchenko, Yu. S. (Engineer); Grinenko, V. I. (Engineer); Pavlov, Yu. S. (Engineer)

ORG: none

TITLE: Pulse argon-arc welding of nonrotating tube seams of Kh18N10T type steel using infusible electrodes

SOURCE: Svarochnoye proizvodstvo, no. 12, 1965, 16-18

TOPIC TAGS: pulse welding, arc welding, welding electrode, seam welding, steel, metal pulse, solid mechanical property, corrosion resistance

ABSTRACT: High quality welded seams can be obtained by arcing the nonrotating joints of tubes made from Kh18N10T steel with wall thicknesses up to 6 mm. A cyclogram is given in which weld current is shown as a function of time. The criterion chosen for weld quality was the general seam formation, including crater depth. Tungsten electrodes of varying truncated diameter were used and the influence of this diameter on crater depth was shown; in general, the depth decreased with increase in truncated diameter (0.5 to 2.0 mm). The 1.5 to 2.0 mm truncated diameters worked best. Crater depth was also plotted as a function of welding current. The depth decreased with current which ranged from 10 to 50 amp. However, the length of the welded junction remained constant with welding current. Due to slight changes in the assembly, the

UDC: 621.791.753.93:621.643.2/.3:669.15-194

Card 1/2

L 11542-66

ACC NR: AP6000616

shifting of edges occurred from the true vertical. The displacements of the electrode and the seam edges are given for tubes of varying wall thicknesses: the displacement of the edges ranged from 2 to 3 mm while that of the electrodes ranged between 1.5 to 2 mm. Welding data for tube dimensions of 60 × 4, 57 × 5 and 108 × 6 mm are given in tabular form. Samples of weld made by the pulse-arc method and continuous welding are compared, no difference being noted for ordinary mechanical properties or bend angle. Macrostructural and x-ray examination revealed absence of porosity, cracks, lack of fusion and other discontinuities in the metal. Microstructures of various portions of the welded region are also shown. The basic structure studied was a small-grained, austenitic-pearlitic matrix. In the heat affected zone, there was growth of the austenite grains and the weld region had a cast austenitic-pearlitic structure. The effect of pressing during the welding operation was to decrease the ferrite content. Corrosion test results (GOST 6032-58) revealed that the pressed and unpressed welded seams were equally resistant to corrosion attack. Orig. art. has: 7 figures, 2 tables.

SUB CODE: 11/3/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 000

HW
Card 2/2

PAVLOV, Yu.V.

Structural transformations in the sliver at the twist threshold in the moment of breakage. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.4:56-61 '65. (MIRA 18:9)

1. Ivanovskiy tekstil'nyy institut imeni Frunze.

PAVLOV, Yu.V.

Electrophoretic method in medicolegal expertise to detect the presence of seminal fluid. Sud.-med. ekspert. 8 no.2:16-18 Ap-Je '65. (MIRA 18:8)

1. Kafedra sudebnoy meditsiny (zav.- prof. V.M. Smol'yaninov) II Moskovskogo meditsinskogo instituta.

MIKHLIN, Ye.G., prof. ; PAVLOV, Yu.V., ordinator.

Removal of impacted foreign bodies from the bronchi in children using a drill. Vestn. otorinolaring. 25 no.3:102-103 '63 (MIRA 17:1)

1. Iz kafedry bolezney ukha, nosa i gorla (zav. - prof. Ye.G. Mikhlin) Krasnoyarskogo meditsinskogo instituta.

PAVLOV, Ye.V.

Operation of an acid open-hearth furnace fired with natural gas. Lit. proizv. no.2:43 F '65. (MIRA 18:6)

EYDUS, Ya.T.; NEFEDOV, B.K.; BESPROZVANNYY, M.A.; PAVLOV, Yu.V.

Catalytic hydrocondensation of carbon monoxide with olefins and their hydropolymerization under the effect of carbon monoxide and hydrogen. Report No.39: Activity of rhodium-based catalysts. Izv. AN SSSR. Ser. khim. no.7:1160-1169 '65. (MIRA 18:7)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

PAVLOV, Yu.V.

Concerning a certain method for determining the losses in an antenna. Radiotekhnika 16 no.7:20-22 Jl '61. (MIRA 14:7)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S.Popova.
(Antennas (Electronics))

S/108/61/000/007/003/007
D204/D305

9.1000
AUTHOR: Pavlov, Yu. V., Member of the Society (see Association)

TITLE: A method of determining antenna losses

PERIODICAL: Radiotekhnika, no. 7 1961 20-22

TEXT: The author suggests one of the possible methods of determining analytically losses in an antenna due to dispersion and thermal losses. For real antennae with thermal and dispersion losses the noise signal temperature at the output of an antenna matched to the receiver is $T_n = (1 - \alpha) T_a + \alpha T_0$ (5)

where α - the heat loss coefficient T_0 - temperature of the antenna material, $1 - \chi$ - the antenna efficiency. The author eventually obtains the relationship $T_n = (1 - \chi)(1 - \beta)\bar{T}_m + (1 - \chi)\beta\bar{T}_s + \chi T_0$ (6)

which can be used for determining antenna losses. To do so the author suggests the use of two standards of thermal radiation: the radiation from an anti-location screen having the absorption coefficient near to unity and the radiation from the sky in the zenith

Card 1/4

region whose temperature can be calculated theoretically for a given wavelength. The procedure of determining losses would then be as follows: the screen covered with glossy material is placed at a distance from the antenna within the main lobe of radiated power. For horizontal radiation it can be assumed that side-lobes are symmetrical with respect to earth and the sky so that the temperature of the signal (6) reflected from the screen is equal to

$$T_{sl} = (1 - \gamma)(1 - \beta)T_{el} + (1 - \alpha)\frac{\beta}{2}\bar{T}_{sky} + (1 - \alpha)\frac{\beta}{2}\bar{T}_{earth} + \alpha T_o \quad (7)$$

where T_{el} - the temperature of the screen coating, $\bar{T}_{sky}$ - the average temperature of the sky $\bar{T}_{earth}$ - the average temperature of the earth. After measuring the signal temperature T_{sl} the absorbing material of the screen is replaced by a reflecting one and the screen is tilted 45^0. If the dispersion losses are not taken into account i.e. if $\beta = 0$, it is easy to obtain from (7) the formula given by V.S. Troitskiy (Ref. 2 Radiotekhnika i elektronika, 1, No. 5, 1956) $T_s = (1 - \alpha) T_{el} + \alpha T_o$. The evaluation of losses according to this

Card 2/4

S/169/63/000/007/003/007
D228/D305

A method of determining antenna [illegible]

formula gives excessively high but realistic figures (1, 40 ; 60%). In many problems of passive radio location it is required to evaluate radio thermal contrasts for contrasts of two objects, formulae

$$T_{s1} = (1-\alpha)(1-\beta)T_1 + (1-\alpha)\frac{\beta}{2}T_{sky} + (1-\alpha)\frac{\beta}{2}T_{earth} + \alpha T_o \quad (11)$$

and

$$T_{s2} = (1-\gamma)(1-\beta)T_2 + (1-\gamma)\frac{\beta}{2}T_{sky} + (1-\gamma)\frac{\beta}{2}T_{earth} + \alpha T_o \quad (12)$$

are used in which T_1 and T_2 are the equivalent black body radiation temperature of the first and second objects respectively. Determining the radio thermal contrast from (11) and (12) expression

$$\Delta T = T_1 - T_2 = \frac{T_{s1} - T_{s2}}{(1-\beta)(1-\gamma)} = \frac{T_{s1} - T_{s2}}{1-\chi} \quad (13)$$

is obtained where $\chi = \gamma + \beta - \alpha\beta$ - total antenna losses. It can be seen from (13) that in determining radio thermal contrasts it is necessary to take into account coefficients α and β. There are 1 figure and 2 references: 1 Soviet bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: [illegible] Astrophys., 46, 234, 1958

Card 3/4

S/108/61/000/007/003/007
A method of determining antenna losses B204/B305

ASSOCIATION Obshchestvo radiotekhniki i elektrosvyazi im A S Popova (Radio Engineering and Electrical Communications Society im A S Popova) (Abstracter's note: Name of association taken from first page of journal)

SUBMITTED July 13 1960 (initially)
March 13 1961 (after revision)

Card 4/4

24.6200,24.6600,24.6510,
24.6900,16.8100

76975
SOV/56-37-6-15/55

AUTHORS: Ivanova, N. S., Ostroumov, V. I., Pavlov, Yu. V.

TITLE: Production of Multi-Charged Particles on Photographic Emulsion Nuclei by 280-mev π^+-Mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1604-1612 (USSR)

ABSTRACT: A study was made with the aid of photographic emulsions (relativistic type P-R and less sensitive type P-9) of the fragment production in nuclear disintegrations induced by 290-mev π^+-mesons. The angular charge, and density distributions of the emitted fragments were measured and plotted on graphs. The stars formed by π^+-mesons were found to contain 223 fragments of which 61 were located in the relativistic type emulsion. Some 60% of all fragments were due to the interaction of π-mesons with heavy nuclei and 40%, with light nuclei.

Card 1/4