"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 62552-65 EWT(1)/EPF(c)/EPF(n)-2/EWG(m)/ Pr-4/Pu-4/Pu-4 WW

ACCESSION NR: AT5016484 UR/2649/65/000/189/0103/0109 41 40 B+1

AUTHOR: Goryainov, L. A.; Beylin, V. I.; Pavlenko, V. A.

21

TITLE: Finding the Reynolds number in convective heat exchange relationships

SOURCE: Moscow. Institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 189, 1965. Issledovaniye teploobmena v teploenergeticheskikh ustanovkakh i v ustanovkakh dlya polucheniya poluprovodnikovykh materialov (Investigation of heat exchange in thermal power units and in equipment for producing semiconductor materials), 103-109

TOPIC TAGS: Reynolds number, heat exchange, thermodynamic analysis

ABSTRACT: This article examines certain peculiarities which take place during various approaches to the determination of the Reynolds number. The numerical values of the Reynolds number are calculated from the formulas:

$$Re' = \frac{wd}{\nu}; \quad (1)$$

$$Re'' = \frac{Gd}{\mu f}, \quad (2)$$

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L 62552-65

ACCESSION NR: AT5016484

where w is the rate of motion of the fluid in m/sec; d is the decisive dimension in meters; ν is the kinematic viscosity of the fluid in m^2/sec; μ is the dynamic viscosity of the fluid in N·sec/m^2; G is the mass flow of the fluid in kg/sec; f is the cross section of the channel in m^2. In formula (1) the calculation is done by linear velocity, and in formula (2)--by mass flow. These two expressions are not identical in all cases. If the physical parameters refer to a temperature which is different from the mean temperature of the flow, then the values for Re calculated by (1) and (2) will differ. Formulas are derived relating these two expressions and examples are given to illustrate the use of these formulas. It is recommended that formula (1) should be used for forced airflow since there is a smaller scatter of points in this case when the temperature simplex is very different from unity. When the physical parameters relate to a temperature which differs from the flow temperature, the values of Re and invariant relationships differ when finding Re according to linear velocity and according to mass flow. There is less scatter of the experimental points when Re is calculated according to linear velocity. Orig. art. has: 3 figures and 12 formulas.

ASSOCIATION: Institut inzhenerov zheleznodorozhnogo transporta, Moscow (Institute of Railroad Transportation Engineers)

SUBMITTED: 00 ENCL: 00 SUB CODE: TD, ME

NO REF SOV: 010 OTHER: 000

Card 2/2 dwm

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

LEVINA, L.Ye.; MEN'SHIKOV, M.I.; PAVLENKO, V.A.; RABINOVICH, I.S.; RAFAL'SON, A.E.; TSYMBEROV, M.Ya.; SHUTOV, M.D.

New mass-spectrometric leak detector MX 1101. Prib. i tekh. eksp. 9 no.5:157-161 S-O '64. (MIRA 17:12)

1. Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.; VEYNGEROV, M.L., retsenzent

[Gas analyzers] Gazoanalizatory. Moskva, Mashinostroenie, 1965. 295 p. (MIRA 18:2)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.

Advances of gas analysis. Zhur. VKHO 9 no. 2:214-223 '64.
(MIRA 17:2)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 15688-65 EWT(d) Po-4/Pq-4/Pg-4/Pk-4/Pl-4 ASD-3/AFFTC/ESD-3/APGC
ACCESSION NR: AP4047481 S/0120/64/000/005/0157/0161

AUTHOR: Levina, L. Ye.; Men'shikov, M. I.; Pavlenko, V. A.; Rabinovich, I. S.; Rafal'son, A. E.; Tsy*mberov, M. Ya.; Shutov, M. D.

TITLE: New MKh 1101 mass-spectrometric leak detector

SOURCE: Pribory* i tekhnika eksperimenta, no. 5, 1964, 157-161

TOPIC TAGS: leak detector, mass spectrometric leak detector / MKh 1101 leak detector

ABSTRACT: The new MKh 1101 leak detector differs from previous types (PTI-4a and PTI-6) in that it has no oil-vapor pump, uses an oxidation-resistant cathode, and is calibrated by a reference diffusion-type helium leak. Two lobar rotary (Roots) pumps driven by a single motor provide the rough and fine vacuums; the equilibrium vacuum is $(2-5) \times 10^{-4}$ torr. The cathode is stable in operation at pressures up to 1 torr. The leak detector sensitivity is $(1-5) \times 10^{-6}$

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 15688-65
ACCESSION NR: AP4047481

1mc/sec for helium and 5×10^{-4} 1ms/sec for hydrogen. Setting the detector in operation takes only 10 minutes. Orig. art. has: 5 figures.

ASSOCIATION: SKB Analiticheskogo priborostroyeniya AN SSSR (Special Design Office for Analytical Instruments, AN SSSR)

SUBMITTED: 03Jun63 ENCL: 00

SUB CODE: ME NO REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.; RAFAL'SON, A.E.; SHUTOV, M.D.

Series of small-size mass spectrometers for studying the composition of neutral and ionized gases in the upper atmospheric layers. Kosm. issl. 1 no.2:287-295 S-O '63. (MIRA 17:4)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ACCESSION NR: AP4003737 S/0293/63/001/002/0287/0295

AUTHOR: Pavlenko, V. A.; Rafal'son, A. E.; Shutov, M. D.

TITLE: Series of small-scale mass spectrometers for the study of neutral and ionized gases of the upper layers of the atmosphere

SOURCE: Kosmicheskiye issledovaniya, v. 1, no. 2, 1963, 287-295

TOPIC TAGS: mass spectrometer, radio frequency mass spectrometer, nonmagnetic mass spectrometer, MKh6401 mass spectrometer, MKh 6403 mass spectrometer, MKh6405 mass spectrometer, upper atmosphere

ABSTRACT: The MKh6401, MKh6403, and MKh6405 mass spectrometers (based on the Bennet model) have been redesigned. The MKh6401 mass spectrometer is used for analyzing the molecular and ionic compositions of gases in a mass range of 1—4 and 12—56 amu. It consists of a miniaturized five-grid analyzer with grid distances fixed by metallic cylinders. A beam of slow electrons emitted by a red-hot cathode ionizes the gases. The analyzer, with the ion source, weighs 2.1 kg and is filled with a mixture of hydrogen, helium, argon, and neon at a pressure of 10^{-5} mm Hg. The MKh6403 mass spectrometer, identical in range to that of the MKh6401,

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ACCESSION NR: AP4003737

permits automatic range shifting. The analyzer, the ion source, and the ion collector are located in a common metallic case. In this model, all the elements of the ion source are in the form of highly transparent grids. The acceleration voltage is from 70 to 380 v, and the frequency automatically shifts from 30 to 8.6 Mc. The MKh6405 mass spectrometer, which contains the basic elements of the MKh6403, is considerably more sensitive than the MKh6403 and is suitable for the analysis of gases containing ionized and neutral particles of 1—2 and 12—36 amu. All three mass spectrometers can work at temperatures ranging from -40 to +40C at low and high humidities and are able to withstand considerable amounts of mechanical overloading. During observations made with the mass spectrometers on 22 June 1959, at altitudes of 90—211 km, the presence of the following ions was recorded: O^+, H_2O^+, NO^+, O_2^+. For purposes of analyzing the neutral components of the upper atmosphere, observations were performed at altitudes higher than 100 km, where the presence of the following were revealed: H, H_2, N, O_1, OH, H_2O, N_2, O_2, Ar, CO_2, and N_2O. Orig. art. has: 6 formulas, 7 figures, and 1 table.

Card 2/3

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V. A.; OZEROV, L. N.; RAFAL'SON, A. E.; SHUTOV, M. D.

Experimental-production operation of the MKh1201 automatic regulating mass-spectrometer. Zav. lab. 28 no.12:1525-1526 '62. (MIRA 16:1)

1. Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR.

(Spectrometer)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ORSHANSKIY, D.L., gl. red. ARUTYUNOV, K.B., red.; VORONOV, A.A., red.; KARANDEYEV, K.B., red.; KARIBSKIY, V.V., red.; KRASIVSKIY, S.P., red.; KULEBAKIN, V.S., red.; LOGINOV, L.I., red.; LUKIN, V.I., red.; MALOV, V.S., red.; PAVLENKO, V.A., red.; PETROV, B.N., red.; RAKOVSKIY, M.Ye., red.; SMAGLY, L.V., red.; SMIRNOV, A.D., red.; SOTSKOV, B.S., red.; STEFANI, Ye.P., red.; TRAPEZNIKOV, V.A., red.; TSAREVSKIY, Ye.N., red.; LEONOVA, Ye.I., tekhn. red.

[EIKA; encyclopedia of measurements, control and automation]EIKA; entsiklopediia izmerenii kontrolia i avtomatizatsii. Moskva, Gosenergoizdat. No.1. 1962. 243 p. (MIRA 16:3)

(Instruments) (Automation) (Mensuration)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

KIRSA, V.I.; PAVLENKO, V.A.; KHOMENKO, M.S.

New measuring instruments. Mekh. sil'. hosp 12 no.11:27-28 N '61. (MIRA 14:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Measuring instruments)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

GRISHIN, A.I.; KAVALEROV, G.I.; NIZE, V.E.; ORSHANSKIY, D.L.; PAVLENKO, V.A.; SOTSKOV, B.S.; YURKEVICH, A.[illegible]

Modern trends in the development of the instrument industry. Priborostroenie no.1:1-5 Ja '62. (MIRA 15:1)
(Instrument manufacture)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A., kand.sel'skokhozyaystvennykh nauk; ISAYEV, A.P.

Effect of irrigation on the economic effectiveness of the production of eugenol basil. Masl. - zhir. prom. 27 no.12:28-29 D '61. (MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh i efiromaslichnykh kul'tur.

(Kuban--Basil botany/ irrigation)
(Basil (botany) irrigation))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A., glavnyy red.; VEYNGEROV, M.L., red.; GARBER, D.G., red.; KREMLEVSKIY, P.P., red.; ORSHANSKIY, D.L., red.; TURICHIN, A.M. red. [deceased]; KOBYAKOV, N.I., tekhn. red.

[Automatic gas analyzers] Avtomaticheskie gazoanalizatory. Moskva, TSentr. in-t nauchno-tekhn. informatsii elektrotekhn. promyshl. i priborostroeniia, 1961. 598 p. (MIRA 15:5)

1. Nauchno-tekhnicheskaya konferentsiya po avtomaticheskim gazoanalizatoram, Leningrad, 1960. 2. Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya Akademii nauk SSSR (for Pavlenko, Orshanskiy).
(Gases--Analysis)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

BAGAYEV, V.S.; ZHEREBTSOVA, A.A.; PAVLENKO, V.A.

Capacitance and series resistance of germanium diodes. Radiotekh. i elektron. 6 no.12:2036-2040 D '61. (MIRA 14:11)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.
(Germanium diodes)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.

33448
S/119/62/000/001/001/01
D201/D302

9,6000 (1040,1139,1159)

AUTHORS: Grishin, A.I., Kavalerov, G.I., Nize, V.E., Ormanadiy D.L., Pavlenko, V.A., Sotnkov, B.S., and Yurkovich, A.P.

TITLE: Recent trends in the development of instrumentation

SOURCE: Priborostroyeniye, no. 1, 1962, 1 - 5

TEXT: A survey of recent trends in the development of instrumentation within the Soviet-bloc is given. The main objective is the standardization of instruments with the aim of simplifying the automation of industrial processes. A group of new temperature gauges is based on the dependence of gas viscosity on temperature. Another class of gauges is based on the temperature change of a plate resistance, in conjunction with a compensating plate and an electromagnetic circuit. Efforts are made to utilize the Austin effect. For high temperature operation (above 2000°C), graphite p-n junction thermocouples have been developed. New flow gauges have been produced for the petroleum industry. Several interchangeable high-

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

3

33148

Recent trends in the development ... S/119/62/000/001/001/011
D201/D302

accuracy feed-back devices have been developed for measuring various parameters such as pressure and vacuum gauges, strain gauges, thermometers and density meters. Nuclear resonance methods are being developed for contactless flow measurement. Ultrasonic and radio-interference methods are used for level measurements and recordings. All new types of instruments are incorporated in new automatic control systems, developed around them. In 1961, 400 types of electrical measuring instruments were in production, varying from laboratory standards to high power distributing panel instruments. High sensitivity miniature meters are under development (1 - 2 cm³ volume, 5 - 10 microcamps range). The accuracy of portable instruments is being improved and their dimensions are reduced. Digital instruments, both of continuous action and sampled data types continue to find more and more applications. As far as analytical instruments are concerned, the main trend is to increase the number of methods of analysis applicable in practice, to increase the discriminating properties, sensitivity and speed of operation, to standardize the electrical output, to develop analytical instruments suitable for automatic control processes, to develop automatic and

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semi-automatic instruments. Those of interest are stated to be the newly developed series of standardized galvanic gas analyzers based on the micro-concentration of oxygen. Another method has been used in developing a spectrophotometric gas analyzer, with a sensitivity 10 times greater than that of the basic instrument; the instruments have ranges from 0 - 1.0 % volume of nitrogen in argon and 0 - 0.5% volume of nitrogen in helium. The range of gas analyzers based on infra-red absorption has been increased by several new instruments. Mention is made of a new instrument calibrated in 0 - 0.05 % CO_2, with output adapted to an automatic control system. New types of mass-spectrometers have been developed, with mass number ranges to 600 ME, revolution 300 and sensitivity (argon) 0.002 %. All spectrometers are being revised to form a single range of six instruments. A radiospectrometer has been developed for the electron paramagnetic particles; Its production has started. Electrometric methods of liquid analysis and control are under development. Of interest is stated to be an industrial instrument for measuring and controlling HCl concentration in wood pulp with a varying solid to liquid phase. Other types of concentration meters were also develo-

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

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S/119/62/000/001/001/011
D201/D302

Recent trends in the development ...

ped, both for inorganic and organic analysis: Some are based on spectrometry. As far as the computer technique is concerned, three main trends are considered: The use of universal electronic computers for scientific and engineering calculations; the use of computers in economics and for processing large amounts of information; Application of control computers for the control and automatic control of industrial processes. In new computers the existing mercury and CRT delay lines are replaced by magnetic core memories and tubes by transistors. Modular technique is widely used together with micro-miniaturization. A new storage element has been developed based on the effect of stable internal polarization. Another interesting new component is the magnetic triode, consisting of a p-n junction, formed by alloying the intrinsic material with lead and tellurium.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 08960-67

ACC NR: AP6019777 SOURCE CODE: UR/0119/66/000/006/0001/0004

AUTHOR: Pavlenko, V. A. (Engineer); Pevzner, V. V. (Engineer) 17

ORG: none

TITLE: Controlled-oscillator-type d-c amplifier

SOURCE: Priborostroyeniye, no. 6, 1966, 1-4

TOPIC TAGS: dc amplifier, ~~controlled-oscillator-type dc amplifier~~ electronic amplifier

ABSTRACT: Design and operation of a (high-resistance-input) controlled-oscillator-type d-c amplifier (see figure) are considered. Three parts are discernible in such an amplifier: I - a signal transducer comprising two varicaps and four resistors; by adjusting R_4 the system is brought to the threshold of self-oscillations, after which the input signal controls (positive feedback) the transfer ratio of the transducer and along with it the oscillation amplitude; II - an a-c

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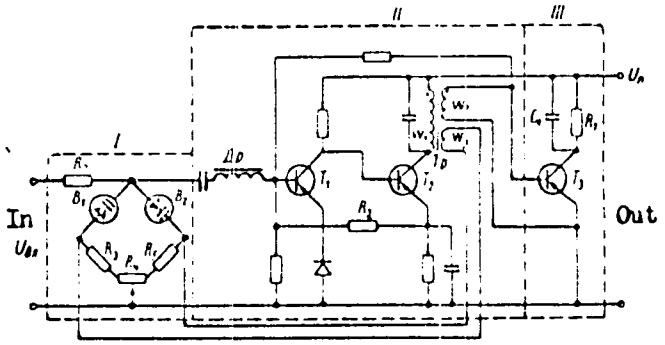
"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 08960-67

ACC NR: AP6019777



amplifier having a common d-c feedback; III - a rectifying unit having a ripple-smoothing capacitor C_1 and feeding into load R_1. A theory of operation of the above d-c amplifier is presented with formulas for the overall gain, transducer transfer ratio, a-c amplifier transconductance, transformer parameters, and rectifying unit input parameters. It is claimed that the above formulas agree with corresponding experimental data within 15—20%. Orig. art. has: 4 figures, 22 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: none

Card 2/2 not

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.

Modern gas analyzers. [Izd.] Sekts. prib. tepl. kontr. LONITOPRIBOR no.1:70-97 '53. (MLRA 8:7)
(Gases--Analysis) (Radiometer)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V. A. (Chefkonstr.) Moscow

"Analytic Instruments for the Continuous Supervision of Technological Processes,"

paper presented at the International Congress on Measurements and Automation, Interkama, Dusseldorf, 2 - 10 November 1957.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV/112-59-2-3277

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 150 (USSR)

AUTHOR: Pavlenko, V. A.

TITLE: Instruments for Chemical and Isotopic Analyses of Substances (Pribory dlya analiza khimicheskogo i izotopnogo sostava veshchestv)

PERIODICAL: V sb.: Priborostroyeniye. M.-L., Mashgiz, 1957, pp 101-115

ABSTRACT: A survey is presented of gas-analysis instruments developed by the GSKB Analytic Instrument Design Bureau; the instruments are based on physico-chemical methods. Measuring circuits of instruments based on measurement of heat conductance (TP 1110 and TP 1114) are considered. The following instruments are described: a TKh 2104 gas analyzer that measures the heating effect of a catalytic oxidation reaction; a thermochemical GB3 gas analyzer for determining gasoline-vapor concentration in air; a MN5106 gas analyzer based on measuring the paramagnetic properties of oxygen. Optical and optico-acoustical methods of analysis are considered which are based on

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SOV/112-59-2-3277

Instruments for Chemical and Isotopic Analyses of Substances

measurement of absorption of a radiated energy by the gas being tested or by a liquid that has absorbed the gas. The optico-acoustical gas analyzers have scale spans from 0-1 to 0-100%. The fundamental instrument error is $\pm 5\%$ of full span. Gas consumption is 0.5 liter/min. A photocalorimeter method of measuring very low concentrations (10^{-5} - 10^{-6}%) and mass-spectrometer methods for analysis of multicomponent mixtures are described.

V.I.L.

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/33

AUTHORS: Pavlenko, V. A., Rafal'son, A.E., Shereshevskiy, A. M.

TITLE: Industrial Mass-Spectrometers : Manufacture and New Developments (A Review) (Promyshlennyye mass-spektrometry : proizvodstvo i novyye razrabotki (Obzor))

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 3, pp 3-15 (USSR)

ABSTRACT: A review is given of the mass-spectrometers at present manufactured in the Soviet Union. The classification code employed is as follows:

Types of Mass-Spectrometer	Code
For chemical composition analysis	MKh
For isotopic composition analysis	MI
High resolution instruments	MV
Method of ion separation	
Homogeneous magnetic field	1
Non-homogeneous magnetic field	2
Reserve	3
Magneto-dynamic	4
Time of flight	5
Radio frequency	6

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

Application	
Indicators	1
Control of manufacture	2
Laboratory studies	3
Special instruments	4

The following is an example of the code. MI 1305 means that the mass-spectrometer is used for analysis of isotopic composition (MI), uses a homogeneous magnetic field (1), is designed for laboratory studies (3) and is a model Nr 5 (05). The characteristics of 11 mass spectrometers are given. MI 1301 This instrument is designed for analysis of isotopic composition of gases and easily vaporised substances. Its characteristics are as follows:

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MI 1301

Mass range	2÷400
Resolving power	300
Radius of the central trajectory of the ion beam	200 mm
Relative error in isotopic composition analysis:	
(a) single beam measurement	±1%
(b) double beam measurement	±0.2%
Sensitivity	0.001%
Maximum analyser magnetic field	7000 oersted
Range of accelerating voltage	2÷3 kV
Minimum ion beam measurable (1 amplifier)	5×10^{-14} amp
Minimum ion beam measurable (2 amplifiers)	5×10^{-15} amp
Time constant of ion beam amplifiers	1 sec
Warming-up time	2-3 hours
Dimensions	22 x 18 x 9 m

MI 1303 This instrument is designed for analysis of isotopic composition for gases and vapours of liquids and solids. Its characteristics are as follows:

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MI 1303

Mass range	1÷250
Resolving power	300
Radius of central trajectory of ion beam	200 mm
Relative error in analysis of isotopic composition	±1%
Sensitivity	0.01%
Maximum magnetic field of analyser	6000 oersted
Accelerating voltage	3, 4, 5 kV
Minimum measurable ion current	5×10^{-15} amp
Error of mass number indicator	±0.4
Time constant of ion current amplifier	1 sec
Warming-up time	2-3 hours
Dimensions	26 x 18 x 9.6 m

MI 1305 This instrument is designed for the same purposes as the preceding two spectrometers and replaces them. Its characteristics are as follows:

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SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MI 1305

Mass range	1-400
Resolving power	300
Radius of central trajectory of ion beam	200 mm
Relative error in analysis of isotopic composition:	
(a) single beam measurements	±1%
(b) double beam measurements	±0.2%
Sensitivity	0.001%
Minimum current	5×10^{-15} amp
Time constant of ion beam amplifier	1 sec
Warming-up time	2-3 hours
Dimensions	26 x 18 x 9.5 [illegible]

MKh 1302 This instrument is designed for analysis of isotopic and molecular composition of gases and easily vapourised substances. Its characteristics are as follows:

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Industrial Mass-Spectrometers: Manufacture and New Developments (A Review) SOV-120-58-3-1/33

MKh 1302

Mass range	1÷4, 12÷80
Resolving power	80
Radius of central trajectory of ion beam	100 mm
Relative error in analysis of molecular composition	±2%
Sensitivity	0.02%
Maximum magnetic field of analyser	5500 oersted
Accelerating voltage	800 V
Maximum sensitivity of ion beam amplifier	5×10^{-14} amp
Time constant of ion beam amplifier	1 sec
Warming-up time	2 hours
Dimensions	12 x 0.5 x 15 m

MKh 1303 This instrument is designed for analysis of molecular and isotopic composition of gaseous, liquid, and solid mixtures with vapour pressure greater than 0.5 mm Hg and at a temperature not greater than 300°C. Its characteristics are as follows:

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-1[illegible]-5-[illegible]-1/[illegible]

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MKh 1303

Mass range	1÷300
Resolving power	400
Radius of central trajectory of ion beam	200 mm
Relative error in analysis of molecular composition	±2%
Sensitivity	0.002%
Accelerating voltage	2 and 4 kV
Minimum measured ion current	5×10^{-15} amp
Time constant of ion current amplifier	1 sec
Stability of the temperature of ionisation chamber of the ion source	±1°

MV 2301 This instrument is designed for isotopic and molecular composition of gases and easily vapourised substances. Its characteristics are as follows:

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/32

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MV 2301

Mass range	1÷100
Resolving power	5000
Radius of central trajectory of ion beam	200 mm
Sensitivity	0.0005%
Maximum analysing magnetic field	5000 permitted
Accelerating voltage	2.5 and 5 kV
Minimum measured ion current	5×10^{-15} amp
Time constant of ion current amplifier	1.5 sec
Warming up time	3 hours
Dimensions	19 x 18.9 x 12.85 m

MI 1101 This instrument is designed for rapid analysis of isotopic composition of alkali metals. Its characteristics are as follows:

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MI 1101

Mass range (depending on the model)	4÷40
Resolving power (depending on the model)	25÷40
Relative error	±3%
Radius of central trajectory of ion beam	100 mm
Intensity of analysing magnetic field	1350÷2300 oersted
Working pressure in the analyser chamber	5×10^{-5} mm
Accelerating voltage	0.6÷1.2 kV
Warming-up time	1 hour
Dimensions	8.6 x 6.5 x 5.3 m

MI 1306 This instrument is designed for analysis of isotopic composition of micro-quantities and micro-concentrations of solid substances. Its characteristics are as follows:

Mass range	1÷400
Resolving power	600÷700
Radius of central trajectory of ion beam	300 mm
Minimum quantity of analysed substance	$\sim 10^{-8}$ g
Minimum content of analysed component	$\sim 10^{-4}$%
Minimum measured ion current	$\sim 10^{-17}$ amp

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SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

MKh 5201 This instrument is designed for continuous analysis and recording of six different components of a complex gaseous mixture in industrial conditions:

Mass range	12÷56
Resolving power	40
Sensitivity	0.05%
Relative error	±5%
Dimensions	16 x 5 x 5 m

MKh 6401 This instrument is designed for analysis of molecular chemical composition of gases in the mass range 2-60. Its characteristics are as follows:

Mass range	2÷8 and 12÷56
Resolving power	~45
Sensitivity	0.1%
Relative error	±5%
Frequency in the first range	5 Mc/s
Frequency in the second range	15 Mc/s
Working pressure in analyser	2×10^{-5} mm
Accelerating voltage	80÷400

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SOV-120-58-3-1/33

Industrial Mass-Spectrometers: Manufacture and New Developments (A Review)

A magnetic-type mass spectrometer. This instrument is designed for [illegible] of isotopic [illegible] molecular [illegible] of gases. The ions are separated according to the time of flight along spiral trajectories in a uniform magnetic field. The mass range is [illegible]-4[illegible], the resolving power is 5000, and the sensitivity 0.1%. There are 14 figures.

ASSOCIATION: Gosudarstvennoye nauchnoye konstruktorskoye byuro analiticheskogo priborostroyeniya (State All-Union Constructor Bureau for Analytical Instruments)

SUBMITTED: December 20, 1957.

1. Mass spectrum analyzers--Production 2. Mass spectrum analyzers--Design 3. Mass spectrum analyzers--Classification 4. Mass spectrum analyzers--Applications

Card 11/11

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.A.

Instruments for automatic analysis of gases and mass spectrometers. [Trudy] LO NTO Priborprom no.4:96-124 '59. (MIRA 13:2)

(Gases--Analysis) (Mass spectrometry)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ORCHANSKIY, D.L.; PAVLENKO, V.A.

International congress on mensuration and automation in Dusseldorf. [Trudy] LO NTO Priborprom. no.4:198-211 '59. (MIRA 13:2)

(Mensuration--Congresses) (Automation--Congresses)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

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PHASE I BOOK EXPLOITATION SOV/4597

Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti

Priborostroyeniye i izmeritel'naya tekhnika (Instrument Manufacture and Measurement Technique) Moscow, Mashgiz, 1960. 462 p. Errata slip inserted. 3,000 copies printed.

Ed.: A.N. Gavrilov, Doctor of Technical Sciences, Professor; Tech. Ed.: A. Ya. Tikhanov; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific and technical personnel in the instrument industry.

COVERAGE: The 23 articles deal with the present state and the outlook for the development of instrument manufacture and measurement technique. New problems of design, construction, and manufacture of instruments are discussed in the first two sections. Emphasis is given to problems of automation and mechanization of production and to the application of new techniques in program control, ultrasonics, and chipless working of metals. The third section deals with new measurement methods involving the use of ultrasonics and radio isotopes. Some theoretical aspects of metrology and measurement technique are also discussed in this section. No personalities are mentioned. References accompany several of the articles.

Belevtsev, A.T., Candidate of Technical Sciences. Automation and Mechanization of Manufacturing Processes in the Production of Variable Wire-Wound Resistors 293

PROBLEMS OF METROLOGY AND MEASUREMENT TECHNIQUE

Shmaylovskiy, N.N., Doctor of Technical Sciences, Professor, and L.V. Melittser, Candidate of Technical Sciences. Use of Nuclear Radiation in Measurement Technology 315

Shrayter, D.S., Candidate of Technical Sciences. Present State and Problems of the Development of Flaw-Detection Methods 332

Pavlenko, V.A., Engineer. Basic Trends in the Development of Instruments for the Analysis of the Composition of Materials 364

Sartin, V.I. Optical-Mechanical Projection-Type Measuring Instruments for Checking Dimensions 377

Zorish, Ye. I., Doctor of Technical Sciences, Professor. Modern Methods of Vibration Measurement 396

Fyurstenberg, A.I., Engineer. Oscillographic Methods of Frequency Measurement 409

Sitkin, L.G., Engineer. Dynamic Method for Determining the Moduli of Elasticity Under High-Temperature Conditions 449

Komarov-Dmayev, I.N., Candidate of Technical Sciences. Metrological Base in the Selection of Methods for Checking Dimensions 455

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VK/gv/mas
10-24-60

Pavlenko, V.A.

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86745

9.6150

S/120/60/000/006/023/045
E032/E314

AUTHORS: Pavlenko, V.A., Rafal'son, A.E., Slutskiy, M.Ye., Tsveyman, G.A. and Shutov, M.D.

TITLE: Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 6, pp. 89 - 95

TEXT: A brief description is given of a mass spectrometer designed for studying the ionic and molecular composition of the atmosphere. The mass spectrometer incorporates a non-magnetic radio-frequency analyser which separates ions according to mass, depending on the increase in the energy in electrical high-frequency fields. The instrument was designed to record mass spectra in the mass ranges 1-4 and 12-56. The basic circuit of a 5-stage analyser used in the mass spectrometer is shown in Fig. 2. It is based on the selective properties of three-grid assemblies in which the energy of the positive ions having different m/e ratios is increased by different amounts, depending on the value of this ratio. All three

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86748

S/120/60/000/006/023/045
E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

plane-parallel grids are kept at a negative accelerating voltage U_p. In addition, the middle grid is given a further high-frequency voltage. Positive ions entering the analyser from the atmosphere are accelerated by U_p and, on entering the high-frequency field, are given different energy increments depending on their mass. The maximum energy increments are received by the so-called "synchronous" ions, which pass through the first grid when the phase of the high-frequency voltage is 46° and the central grid when the field changes sign. The mass of these ions M is given by:

$$M = 0.266U_p/f^2S^2$$

where U_p is the accelerating negative voltage,
f is the frequency in Mc/s, and
S is the distance between the grids in cm.

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E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

A positive delay voltage U_d ensures that the collector receives only the "synchronous" ions. An increased resolution of the analyser and the minimum level of "harmonic" masses are reached with a number of three-grid stages in series, with the distances between the middle grids corresponding to 5-9-4-7 periods of the high-frequency voltage. The analyser is equipped with a demountable ion source which is enclosed in an evacuated glass envelope. When a molecular analysis is required the glass envelope can be broken by remote control, using a special breaker attached to the device. The gas entering the analyser is ionised in the ion source by electrons emitted by a hot cathode and the ions are extracted by two grids kept at a small negative voltage. Single-row grids of tungsten wire, 12 μ in diameter, wound with a step of 0.4 mm, were used in the analyser. The power consumed by the cathode did not exceed 0.75 W.

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S/120/60/000/006/023/045
E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

The instrument has the following characteristics:

1. Mass range I) 1 - 4, II) 12 - 56
2. Resolution (full width at full height) 50
3. Range of working pressures in the analyser in the case of the analysis of molecular composition $10^{-4} - 10^{-6}$ mm Hg
4. Partial sensitivity in the analysis of molecular composition (argon) $5 \cdot 10^{-9}$ mm Hg
5. Duration of 1 cycle of automatic sweep through the mass range 3 sec

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S/120/60/000/006/023/045
E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

6. Dynamic range of ion current amplifier	10^5
7. Supply voltage	27.5 V ± 10%
8. Power consumed	
a) molecular analyser	6 W
b) ion analyser	5.3 W
9. Working temperature range	-40 to +40 °C
10. Dimensions:	
measuring block of the analyser (without ion source)	210 x 90 x 70 mm^3
	ℓ = 270 mm, Ø 50 mm
ion source	ℓ = 140 mm, Ø 50 mm
11. Weight of measuring block	1.2 kg
12. Weight of analyser with the electrometric stage and ion source	2.1 kg
13. Specific weight of measuring block	1.2 ,

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S/120/60/000/006/023/045
E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

Basic circuits are given of the high-frequency oscillator (Fig. 5), sawtooth voltage generator (Fig. 6), switching circuit (Fig. 7) and DC converter (Fig. 8). These circuits are partly transistorised and employ miniaturised components (see above table for dimensions). All the input voltages are stabilised to within ± 0.2% when the supply voltage changes by ± 10%. The mass spectrometer feeds into the telemetric system the following data:

1) voltage at the outputs of the ion current amplifier (mass spectrum);
2) high-frequency voltage;
3) emission current of the cathode in the ion source, and
4) supply voltage (27.5 V).

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

86748

S/120/60/000/006/023/045
E032/E314

Radio-frequency Mass Spectrometer for the Analysis of the Ionic and Molecular Composition of the Upper Layers of the Atmosphere

Instruments of this type were used on rockets to study the ionic and molecular composition of the atmosphere. There are 8 figures and 5 references: 2 Soviet and 3 English.

ASSOCIATION: Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya (Special Design Bureau for Analytical Instrument Construction)

SUBMITTED: October 15, 1959

Card 7/7

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVIENKO, V. A. and SHUTOV, M. D.

"Die Modernen Analytischen Messgerate."

report presented at the 2nd Intl Measurements and Instruments Conference (IMEKO), Budapest, 25 June - 1 July 1961.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

BEL'KIND, L.D.; VENIKOV, V.A.; GLAZUNOV, A.A.; GRUDINSKIY, P.G.; ZHADIN, K.P.; ZHEBROVSKIY, S.P.; LAPITSKIY, V.I.; NEKLYUDOV, B.K.; PAVLENKO, V.A.; RAZEVIG, D.V.; ROSSIYEVSKIY, G.I.; SAFONOV, A.P.; SOKOLOV, N.I.; SOLDATKINA, L.A.; TAYTS, A.A.; UL'YANOV, S.A.; FEDOSEYEV, A.M.; KHEYSTER, V.V.

Boris Arkad'evich Teleshev; on his 70th birthday and the 45th anniversary of his engineering and educational work. Elektrichestvo no.[illegible]:91 S '64. (MIRA 17:[illegible])

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

AID P - 5493

Subject : USSR/Aeronautics - reversing arrangements

Card 1/1 Pub. 135 - 10/26

Author : Pavlenko, V. F., Eng.-Lt.Col., cand. of tech. sci.

Title : Reversing arrangements of turbo-jet engines

Periodical : Vest. vozd. flota, 3, 50-58, Mr 1957

Abstract : A short review of the general trend in the field of reversing arrangements for aircraft with turbo-jet engines is given in this article. One diagram, five graphs. The article is of informative value.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V. F.

AID P - 743

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 10/21

Author : Pavlenko, V., Eng.-Maj., Kand. of Tech. Sci.

Title : Characteristics of a turbo-jet engine (TJE) at non-established conditions of operation

Periodical : Vest. vozd. flota, 10, 53-63, O 1954

Abstract : Conditions of operation of a TJE under which the power of the compressor does not equal the power of the turbine are defined by the author as non-established. The author gives the definitions of various characteristics of operation and then analyzes them. Taken under consideration were TJEs with only one type of compressor. Diagrams, graphs, formulae.

Institution : None

Submitted : No date

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

KAZANDZHAN, P.K.; ALEKSEYEV, L.P.; GOVOROV, A.N.; KONOVALOV, N.Ye.; NECHAYEV, Yu.N.; PAVLENKO, V.F.; FEDOROV, R.M.; PISARENKO, M.S., inzhener-polkovnik, redaktor; KUZ'MIN, I.F., tekhnicheskiy redaktor

[Theory of jet engines] Teoriia reaktivnykh dvigatelei. Moskva, Voen. izd-vo Ministerstva oborony SSSR, 1955. 295 p. (MIRA 9:3)
(Jet propulsion)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SOV/86-58-9-26/42

AUTHOR: Pavlenko, V. F., Engr, Lt Col, Candidate of Technical Sciences

TITLE: Rocket Engines. 4. Propellant Feeding Systems (Raketnyye dvigateli. 4. Sistemy podachi topliva)

PERIODICAL: Vestnik vozdushnogo flota, Nr 9, 1958, pp 55-63 (USSR)

ABSTRACT: In this article the author discusses two liquid propellant feeding systems in rocket engines, the pressurized propellant feeding system and the mechanical pumping system. In Fig. 1 he gives a diagram which presents the regions within which a minimum weight of the power plant can be achieved by utilizing one of these systems. In Fig. 2 he gives a schematic drawing of a pressurized propellant feeding system, showing its separate parts. He describes the following variations of this system: the first, in which the pressure is maintained by

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vaporizing the oxidizer, the second, in which the pressure is maintained by burning the powder (schematic drawing of this system is given in Fig. 3a and 3b), and the third, in which the pressure is maintained by burning liquid fuels. The author distinguishes between the mechanical pumping systems according to the type of pumps they employ (centrifugal or pinion pumps), or according to the means by which they are driven (turbine or mechanical drive from the other engine). In Fig. 4 he gives a schematic drawing of a pumping system for propellant feed. In Fig. 5 he demonstrates the pumping system of the V-2 rocket. Further, the author discusses separate elements of the pumping system (gas generators, turbines, pumps) and their operation. In Fig. 6 he gives a schematic drawing of a gas generator with a solid catalyzer. In Fig. 7 he gives a section of the V-2 engine's turbine through which the steam passes.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ACC NR: AP7004961 SOURCE CODE: UR/0048/66/030/009/1427/1429

AUTHOR: Vlasenko,N.A.; Vitrikhovskiy,N.I.; Denisova,Z.L.; Pavlenko,V.F.

ORG: none

TITLE: On the nature of the luminescence centers in cadmium sulfide /Report,Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 9, 1966, 1427-1429

TOPIC TAGS: luminescence, cadmium sulfide, luminescence center, annealing, lattice defect

ABSTRACT: The authors investigated the influence of heat treatment in vacuum and in sulfur vapor, cadmium vapor, oxygen, and hydrogen sulfide and the presence of Group I and Group III dopants on the red, orange, and green luminescence of cadmium sulfide crystals and films in order to determine the nature of the corresponding luminescence centers. The crystals were grown from the gaseous phase by sublimation and synthesis, and the polycrystalline films were deposited in vacuum. The green luminescence centers were found to be thermally labile and it was not possible to produce them by any heat treatment. These centers were more stable in a sulfur atmosphere than in the other atmospheres; it is concluded that they are associated with local sulfur excesses in the lattice arising during crystal growth. Group III dopants increased the intensity

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ACC NR: AP7004961

of the green luminescence and Group I dopants reduced it. The activation energy for thermal quenching of the green luminescence was found to be 0.14 ± 0.01 eV, in agreement with the difference between the width of the forbidden band and the energy of the emitted photons. The orange luminescence was enhanced by anneal in an oxygen atmosphere and depressed by anneal in other atmospheres. From this and the findings of B.A.Kulp (Phys. Rev., 125, 1865 (1962)) concerning the effects of electron bombardment it is tentatively concluded that oxygen favors the formation of interstitial cationic defects in the form of singly charged interstitial cadmium ions, which are responsible for the orange luminescence. The red luminescence was found to be enhanced by heating in vacuum or in a cadmium atmosphere and by the presence of Group I dopants; from these results and from other data in the literature it is concluded that the red luminescence is due to recombination of an electron with a hole trapped at a sulfur vacancy. Orig. art. has: 1 figure.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 000 OTH REF: 008

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, N.P., kandidat geograficheskikh nauk; KARTAVOV, M.M., redaktor; TYURYAYEV, M.A., tekhnicheskiy redaktor

[The national economy of the Kirghiz S.S.R.; a brief study in economic geography] Narodnoe khozialstvo Kirgizskoi SSR; kratkii ekonomiko-geograficheskii ocherk. Frunze, Kirgizskoe gos. izd-vo, 1955. 75 p. (MLRA 9:10)

(Kirghizistan--Economic conditions)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, Viktor Fedorovich; RYAZANTSEV, Sergey Nikolayevich

[The Kirgiz S.S.R.] Kirgizskaia SSR. Moskva, Geografiz, 1956. 118 p.
(Kirghizistan--Geography) (MLRA 9:12)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

RYAZANTSEV, Sergey Nikolayevich; PAVLENKO, Viktor Fedorovich; MALAYEVA, S.L., sostavitel' kart; DOBRONRAVOVA, K.O., red.; KONOVALYUK, I.K., mladshiy red.; KISELEVA, Z.A., red.kart; GLEYKH, D.A., tekhn.red.

[Features of the economic geography of the Kirghiz S.S.R.] Kirgizskaia SSR; ekonomiko-geograficheskaia kharakteristika. Moskva, Gos.izd-vo geogr.lit-ry, 1960. 483 p. (MIRA 13:12)

(Kirghizistan--Economic geography)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.F.

Main trends in the development of productive forces of Central Asia. Izv. AN SSSR. Ser. geog. no.2:53-60 Mr-Ap '61. (MIRA 14:3)

(Soviet Central Asia--Economic policy)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V. F.

Administrative territorial division and the economic-geographical regionalization of the Kirghiz S.S.R. Izv. Kir. fil. Geog. ob-va SSSR no.3:13-21 '62. (MIRA 15:10)

(Kirghizistan--Administrative and political divisions)
(Kirghizistan--Economic zoning)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.F.

Central Asia as an economic geographical region. Vop. geog. no.57:297-310 '62. (MIRA 15:10)
(Soviet Central Asia—Economic geography)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, Viktor Fedorovich; LYUBIMOV, I.M., red.; KONOVALYUK, I.K., mlad. red.; KISELEVA, Z.A., red. kart; VAS'KINA, M.S., tekhn. red.

[Central Asia on new roads] Novye puti Srednei Azii. Moskva, Geografgiz, 1963. 116 p. (MIRA 17:3)

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PAVLENKO, V.F.

Condition of transportation geography and the interregional relations of Central Asia. Geog. i khoz. no.12:43-48 '63. (MIRA 16:12)

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PAVLENKO, V.F.

Mold content in peat, soil and brown coal. Mikrobiologiia 34 no.2:318-323 Mr-Ap '65. (MIRA 18:7)

1. Zhitomirskiy sel'skokhozyaystvennyy institut.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

30847. PAVLENKO, V. N.

K raschetu boltovykh i zaklepochnykh soyedineniy na krucheniye. Nauch. trudi (Odes. in-t inzhenerov mor. flota), vyp. 8, 1949, s. 78-82.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

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PAVLENKO, V. I.

"Investigation of the Rolling of Ships in Storms." Cand Tech Sci, Gor'kiy Inst of Water Transport Engineers, Gor'kiy, 1954. (KZhMat, [illegible])

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

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PAVLENKO, V. G.

1998. Pavlenko, V. G., An investigation of the principal oscillations in the pitching of a ship (in Russian), *Nauch. tr. Odessk. in-ta inzh. mor. flota. Jubilee edition*, Moscow, 132-14., 1955; Rev. no. 867, *Ref. Zh. Mekh.* 1956.

Article deals with the elementary investigation of the unconstrained oscillations of a ship in pitching. Within the scope of the conventional linear theory, which assumes the hydrodynamic problem to be solved, the known equations (e.g., those of M. D. Khaskind) for the combined longitudinal and vertical oscillations are assembled in simplified form, and expressions derived for the natural frequencies involved. Some curves are reproduced, showing the relations between these frequencies and the characteristic parameters of the ship.

N. N. Moiseev, USSR

Courtesy of Referativnyi Zhurnal

Translation, courtesy Ministry of Supply, England

Phys

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PAVLENKO, V. G.

1997. Pavlenko, V. G., On the calculation of the pitching motions of a ship in waves (in Russian), *Nauch. tr. Odessk. Inst. inzh. mor. flota, Jubilee edition*, Moscow, 142–156, 1955, Rep. no. 868, *Ref. Zh. Mekh.* 1956.

An investigation of the known elementary equations of the pitching of a ship in waves [cf. G. E. Pavlenko: "Theory and calculations of the pitching motion of a ship", L. K. I., 1939].

A graphical method of calculating the flooding of a ship during pitching is given. N. N. Moiseev, USSR

Courtesy of Referativnyi Zhurnal

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, Vladimir Georgiyevich; BLAGOVESHCHENSKIY, S.N., otvetstvennyy redaktor; TIMYEV, V.A., redaktor; KAMOLOVA, V.M., tekhnicheskiy redaktor

[Methods of calculating the roll of ships] Metody rascheta bortovoi kachki sudov. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1956. 98 p. (MLRA 10:4)

(Stability of ships)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

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SOV/124-57-7-7933

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 67 (USSR)

AUTHOR: Pavlenko, V. G.

TITLE: Experimental Investigation of the Added Moment of the Water During the Rolling Motion of a Ship (Eksperimental'noye issledovaniye pri soyedinennogo momenta inertsii vody pri bortovoy kachke sudov)

PERIODICAL: Tr. Novosibirsk. in-ta inzh. vod. transp., 1956, Nr 2, pp 75-95

ABSTRACT: The effect of the action of a liquid on a body moving through it with an accelerated motion is manifested by a change of the inertia of the body. In the case of a rolling ship this action is characterized by the magnitude of the added moment of inertia of the water. Theoretical determination of this moment for a moving ship is difficult; hence the author undertakes a systematic experimental investigation of a series of cylindrical models differing in cross-sectional shape as well as in beam/draft ratio. As the result of the experiments conducted on a specially-constructed test installation the author plots the curves for the variation of the coefficient of the added moment of inertia as dependent upon the beam/draft ratio at different values of the block coefficient. These curves have a clearly marked minimum for B/D = 2,

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Experimental Investigation of the Added Moment of the Water During the (cont.)

where B is the beam and D is the draft of the model. The effect of the free surface of the water on the magnitude of the added moment of inertia may be disregarded for values of B/D from 1.6 to 4.0 but must be considered for B/D < 1.5. The experimental data obtained are used for the engineering calculation of the added moment of inertia of water of a rolling ship performed, as usual, by the method of plane cross sections.

A. N. Shmyrev

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

ACC NR: AR6036148 (N) SOURCE CODE: UR/0398/66/000/010/V021/V021

AUTHOR: Pavlenko, V. G.; Rudin, S. N.

TITLE: Frictional resistance of a ship in shallow flowing water and under laminar flow conditions

SOURCE: Ref. zh. Vodnyy transport, Abs. 10V131

REF SOURCE: Tr. Novosib. in-ta inzh. vodn. transp., vyp. 25, 1966, 42-49

TOPIC TAGS: shipbuilding engineering, hydrodynamics, drag coefficient, laminar flow

ABSTRACT: Graphic results are presented on a calculated system of equations characterizing the motion of a fluid between the bottom of a ship and a river's bottom. The ship is considered at rest, and the river's bottom to be moving opposite to the ship's direction of motion. Since the deviation of the drag coefficient caused by the water current does not exceed ±4% of its value without current, its effect on the ship's resistance under laminar flow conditions can be ignored. The current speed between the boundary layers of a ship's bottom and a river's bottom can rise by 30% of its value, determined by neglecting the generation of boundary layers. The tangential stress on the ship's bottom can increase by more than 10 times during motion in shallow water. The ship's speed relative to the water has to be corrected by a factor <1 for a flow which has changed from a laminar to a three dimensional condition. SUB CODE: 13/ SUBM DATE: none/

Card 1/1 UDC: 629.12:532.517.2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 36304-66 EWT(d)/EWP(h)/EWP(1)

ACC NR: AT6014306 (N) SOURCE CODE: UR/3191/64/000/015/0006/0014

AUTHOR: Pavlenko, V. G.; Polunin, A. M.

ORG: none

TITLE: Effect of flow on the draft variation of river boats in shallow water

SOURCE: Novosibirsk. Institut inzhenerov vodnogo transporta. Trudy, no. 15, 1964. Gidromekhanika sudna (Hydromechanics of ships), 6-14

TOPIC TAGS: ship, ship draft

ABSTRACT: The problem of draft variation of ships in shallow water has been analyzed. Experiments show that the draft is greater downstream and lesser upstream in nonflowing shallow water. The conception of equivalent water depth is introduced. The latter is determined by the following expression:

$$\frac{H_e}{H} = \left(1 - A\frac{c}{v}\right)^2,$$

where H_e is the equivalent water depth; H is real depth; c is the velocity of flowing water; v is ship speed in relation to water; A is an experimental coefficient. Analysis of diagram of streams-velocity distribution against water depth permits determination of the coefficient A as follows: $A = 1 - \alpha$, where α is the curve area

UDC: 629.122.1:656

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L 36304-66

ACC NR: AT6014306

ratio. Experimental data, obtained at the Novsibirsk Water Transport Institute, show the dependence of relative variation in a ship's draft on such nondimensional parameters as $t = T/H$, c/v, and $Fr_T = v/\sqrt{gT}$, where Fr is the Fronde number, T is the ship's draft at $v = 0$, and g is acceleration due to gravity. Orig. art. has: 7 figures and 7 formulas. [Based on authors' abstract.] [NT]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

L 36282-66 EWT(d)/EWP(h)/EWP(1) JXT(CZ)

ACC NR: AT6014307 (N) SOURCE CODE: UR/3191/64/000/015/0015/0037

AUTHOR: Pavlenko, V. G.; Rudin, S. N.

ORG: none

TITLE: Investigation of the friction resistance of ships in shallow water, taking flow into account. Friction resistance of an infinitely wide ship (basic equations)

SOURCE: Novosibirsk. Institut inzhenerov vodnogo transporta. Trudy, no. 15, 1964. Gidromekhanika sudna (Hydromechanics of ships), 15-37

TOPIC TAGS: ship friction, friction resistance, friction coefficient, motion equation, laminar boundary layer

ABSTRACT: The friction resistance of ships in shallow water, taking flow into account, has been investigated. The basic equations describing the motion of fluid between the ship's bottom and the river bottom were expanded for exceptional cases when there is laminar flow in the boundary layers of the vessel and the river bottom and when there is turbulent motion in smooth and rough boundaries of the flow. Numerical integration methods are given to compute a concrete numerical example concerning an increase of the friction resistance in shallow water, the mutual effect of the boundary layers of the ship's bottom and the river bottom, and verification of the assumed laminar flow. Orig. art. has: 9 figures and 103 formulas. [Based on authors' abstract.] [NT]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 006. OTH REF: 001

Card 1/1 UDC: 532.526:629.12 transportation 14

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.G., kand.tekhn.nauk; SANDLER, L.B., inzh.; YERMOLENKO, S.D., kand.tekhn.nauk

Determining the resistance of barges and barge trains by the results of model testing in wind tunnels. Trudy NIIVTa no.14: 3-17 '63. (MIRA 17:4)

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PAVLENKO, V.G.

[Methodological guide for the determination of the most advantageous course of travel for tow trains] Metodicheskoe rukovodstvo po [illegible] i [illegible]ndivygodneishei trassy sudovogo [illegible]. Novosibirsk, Novosibirskii inst. inzhenerov vodnogo transp., 1961. 11 p. (MIRA 17:3)

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PAVLENKO, Vladimir Georgiyevich; [illegible], red.; [illegible], Ye.M., red.

[Elements of the theory of [illegible], Elementy teorii sudovozh[illegible] putiakh. Moskva, Transport. [illegible] and the [illegible] Normirovanie gabaritov i [illegible] sostavov. 1964. 118 p. (MIRA 17:10)

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PAVLENKO, Vladimir Georgiyevich; MIRONOV, V.P., kand. tekhn. nauk, retsenzent; RYZHOV, L.M., kand. tekhn.nauk, retsenzent; VELEDNITSKIY, I.O., red.; VOLCHOK, K.M., tekhn. red.

[Basic principles in the theory of navigation on inland waterways] Elementy teorii sudovozhdeniia na vnutrennikh vodnykh putiakh. Leningrad, Izd-vo "Rechnoi transport." Pt.1.[Selection of shipping routes] Vybor trassy sudovogo khoda. 1962. 102 p. (MIRA 16:5)
(Inland navigation)

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PAVLENKO, V.G., kand.tekhn.nauk

Trials of river vessels on turning. Proizv.-tekh. sbor. no.1:71-78 '59. (MIRA 13:9)

1. Nauchno-issledovatel'skiy institut vodnogo transporta.
(Inland navigation) (Ship trials)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.G., dotsent, kand.tekhn.nauk

Determining the braking time and distance of barge trains being pused. Proizv.-tekh. sbor. no.2:24-38 '59. (MIRA 13:10)

1. Nauchno-issledovatel'skiy institut vodnogo transporta.
(Towing) (Barges--Brakes)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.G.

Consideration of current in determining the maximum size of river vessels and towing trains. Izv.Sib.otd.AN SSSR no.3:26-44 '60. (MIRA 13:10)

1. Novosibirskiy institut inzhenerov vodnogo transporta.
(Tugboats) (Ships) (Barges)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.G.; POLUNIN, A.M.

Approximate determination of the inertia characteristics of ships on hydrofoils. Izv.Sib.otd.AN SSSR no.2:22-29 '60. (MIRA 13:6)

1. Novosibirskiy institut inzhenerov vodnogo transporta.
(Hydrofoils)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.K., inzh.

Automatic electric drive system for the conveyor charging of skip cars on powerful blast furnaces. Stal' 23 no.5:400-403 My '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektromekhaniki.
(Conveying machinery--Electric driving)
(Blast furnaces--Equipment and supplies)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

PAVLENKO, V.K.

Apparatus for forcing mortar into damaged bridge supports. Rats. i izobr.predl. v stroi no.70:18-19 '53. (MLRA 7:10)
(Masonry) (Bridges--Repairing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

KOROBKO, M.I., kand. tekhn. nauk, red.; INOSOV, V.L., red.; OLEFIR, F.F., red.; REZNIK, M.G., red.; PECHUK, V.I., red.; SHUMILOV K.A., red.; PAVLENKO, V.N., red.

[Complete automation in steelmaking] Kompleksnaia avtomatizatsiia proizvodstva stali. Kiev, Inst. tekhn. informatsii, 1963. 198 p. (MIRA 18:6)

1. Ukraine. Gosudarstvennaya planovaya komissiya. Institut avtomatiki.

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MALINOVSKIY, B.N , red.; PAVLENKO, V.N., red.

[Experience in the operation of the "Dnepr" digital control computer] Opyt ispol'zovaniia tsifrovoi upravliaiu-shchei mashiny "Dnepr." Pod red. B.N.Malinovskogo, Kiev. In-t tekhn. informatsii, 1965. 43 p. (MIRA 19:1)

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KOSTOGRYZOV, V.I., kand. tekhn.nauk, red.; PAVLENKO, V.N., red.

[Automation of metallurgical processes] Avtomatizatsiia metallurgicheskogo proizvodstva. Kiev, Gos.izd-vo tekhn. lit-ry USSR, 1964. 211 p. (MIRA 18:3)

1. Kiev. Institut avtomatiki.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

SHPUNTOVA, M.Ye.; SHNAYDER, Ye.Ye.; CHEPUGO, S.V.; LAZAREVA, L.V.; MASLOVA, L.G.; ROSHCHINA, V.I.; Prinimali uchastiye: PAVLENKO, V.M., starshiy laborant; GERASIMOVA, L.I., starshiy laborant

Pentose hydrolysis of cottonseed hulls and corncobs with hexose hydrolyzates. Sbor.trud. NIIGS 11:7-15 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239520015-3

VENEDIKTOV, M.V., red.; PECHUK, V.I., red.; NECHAYEV, G.K., kand. tekhn. nauk, red.; RUDNYY, N.M., red.; RUDNAYA, A.I., kand. tekhn. nauk, red.; KUDRYAVTSEVA, R.G., otv. za vyp.; PAVLENKO, V.N., red.; BUREYEV, A.L., tekhn. red.

[Industrial control, equipment and the means of automatic control] Pribory promyshlennogo kontrolia i sredstva avtomatiki; doklady i soobshcheniia. Kiev, Gos.izd-vo tekhn. lit-ry USSR, 1963. 370 p. (MIRA 16:12)

1. Nauchno-tekhnicheskaya konferentsiya po priboram promyshlennogo kontrolya i sredstvam avtomatiki. 2. Institut avtomatiki Gosplana Ukr.SSR (for Nechayev).
(Automatic control)

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A006/A101

1 230

AUTHORS: Gel'man, A. S., Professor, Doctor of Technical Sciences, Pavlichenko, V. S., Engineer

TITLE: The Effect of Real and Inductive Resistance of a Butt-Welding Machine on the Flash-Welding Process

PERIODICAL: Svarochnoye proizvodstvo, 196.. No. 4, pp. 1 - 6

TEXT: Investigations made by TsNIITMASh and the Institute of Electric Welding imeni Ye O. Paton, have shown that the electrical parameters of a butt-welding machine, strongly affect the flash welding process. The authors studied separately the effects of real and inductive resistance of the welding machine on the magnitude of minimum voltage ($U_{2c}min$), necessary for the excitation and maintenance of continuous flashing, the nature of the flashing process, the shape of flashed butts, the effective thermal efficiency of the process, the quality of weld joints, the heating of the parts to be flash-welded, the power consumed, the effective current and the effective resistance of the welding zone. All the experiments were carried out on a 150 kvamp machine. Changes in the real resistance of the primary circuit were produced by a ballast rheostat RB - 300 (R; ≤

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A006/A101

The Effect of Real and Inductive Resistance of a Butt-Welding Machine on the Flash-Welding Process

0.34 ohm) and in the induction resistance by two welding chokes connected in series ($X_1 \leq 1.2$ ohm at 100 amp current in the primary circuit). The experiments were made with 32 x 3.5 mm "20" grade steel pipes. The following flash welding conditions were employed, assuring satisfactory weld joints without additional resistance: adjusted length -40 + 40 mm, duration of cycle -12 sec, flashing distance -11 mm, mean flashing speed 0.92 mm/sec, maximum flashing speed prior to upsetting 1.7 mm/sec, upset distance 4.5 mm; upset speed 50 mm/sec. The effect of the machine resistance was evaluated by current and voltage oscillograms recorded on the МПО-2 (MPO-2) oscillograph. Due to the similarity of both the primary and secondary current curves, already previously observed by V. Ya. Khazov (Ref. 6), only the primary current was oscillographed. In studying the effect of the machine resistance on the minimum idle run voltage and the nature of the flashing process it was found that at constant parameters, the increase of real resistance (Figure 2) affected the value $U_{2Q\,min}$ much more than the corresponding increase of inductive resistance. This confirms the dependence previously established by V. K. Lebedev and G. V. Barbunov (Ref. 4). The oscillograms obtained show that the current never changes its sign within one half-period which confirms V. Ya. Khazov's conclusion (Ref. 7) on the absence of a cross piece of a

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A006/A101

The Effect of Real and Inductive Resistance of a Butt-Welding Machine on the Flash-Welding Process

dynamic capacitor during the break, as was previously assumed (Ref. 1). The effect of the resistance on the depth of craters in the pipes is shown in figure 4. The effect of the machine resistance on the heating of pipes was studied by measuring the temperature with chromel-alumel thermocouples (Fig. 5a) and by recording calorimetrically the heat content of the flashed pipe at the end of the process and during intermediate periods. Temperature distribution curves are given in Fig. 5. It was found that an increase in the real resistance in both the primary and secondary circuits impaired the heating conditions (drop of temperature) which is probably due to the reduced existence and the size of fused metal cross pieces between the tubes. The effect of the resistance on the active power consumed during flashing was determined from oscillographic recordings and calculations on the basis of indices from a single-phase electric power meter. The effective thermal efficiency of the flashing process η_{fl}, was determined by formula (1) $\eta_{fl} = \frac{Q_d}{Q_d + Q_{pr}}$ (where Q_d is the heat contained in the flashed part, Q_{pr} is the heat emanated during the flashing process with the metal splashings),

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The Effect of Real and Inductive Resistance of a Butt-Welding Machine in the Flash-Welding Process

and the equation of heat balance is $Q_{tot} = Q_1 + Q_2 + Q_d + Q_{br} + Q_n$, where Q_{tot} is the total amount of heat in cal liberated during flashing process, Q_1 and Q_2 are the heats emanated in the primary and secondary circuits of the machine and Q_n is the head loss. Formulae are also given for determining the effective current during flashing; the effective welding current, the effective resistance of the welding zone and the effective resistance of the welding circuit. Results are given in Figure 7. It was established that the resistance of the machine did practically not affect the number of pulses but affected strongly the effective flashing resistance. This is in a certain disagreement with V. Ya. Khazov's clusions that the flashing resistance is directly affected only by the inductivity of the welding circuit and the duration of closing and breaking of the welding circuit. As a result of the investigation performed the authors draw the following conclusions: An increased resistance of the machine causes a considerable increase of the minimum idle-run voltage, necessary to maintain the flashing process. The strong effect of the real resistance is confirmed (due to high [illegible] during the flashing). Increased resistance of the machine reduces the stability of flashing (carried out at $U_{2o\,min}$). However, at a raise of R the amount of current pulses

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during a half-period does not noticeably change, it decreases abruptly with increasing inductive resistance X. When the real resistance is prevalent, the current often does not reach zero during the failure of the cross piece. This indicates the possibility of several cross pieces existing under the described conditions, which are not simultaneously disrupted. An increase of the machine resistance decreases noticeably the degree of heating the parts, flashed at U_{20}min; whereby higher R has a greater effect than increasing X. The increasing resistance reduces the effective thermal efficiency of flashing. The increase of the machine resistance, in particular of the real resistance, causes the increase of the mean effective resistance and a reduction of the mean effective current. An increase in the machine resistance (during welding at U_{20}min) degrades the quality of the weld joints, in particular when the real resistance increases. This indicates the possibility of defects due to the higher resistance of the welding circuit of the machine resulting from the impaired state of the transition contacts. There are 2 tables, 7 figures and 7 Soviet references.

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Figure 2:
Dependence of the minimum idle-run voltage on the resistance of the welding machine

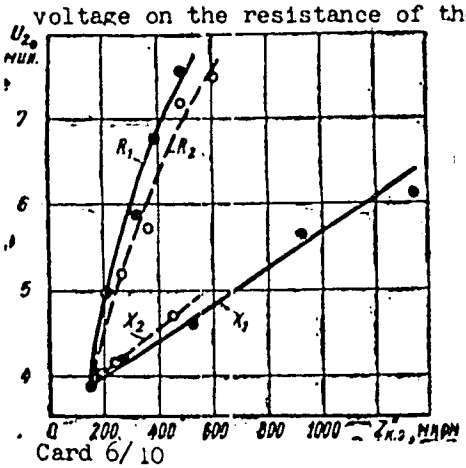

Figure 4:
Dependence of the depth of craters (a) and the total extent of defective areas of pipe butts (b) on the resistance of the machine (Zk. 3) when introducing additional real and inductive resistances (R_1 and X_1).

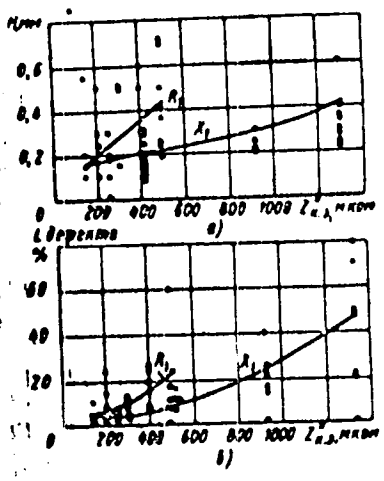

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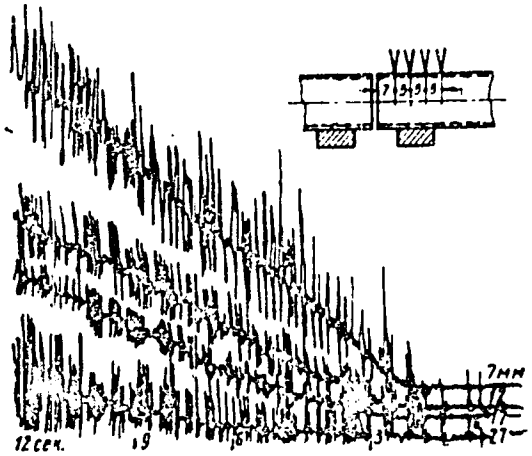
Figure 5: Changes in temperature of flashed pipes of 32 x 3.5 mm dimensions:

a) - standard oscillogram of temperature changes during flashing process;



a) a)

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