ACCESSION NR: AT4036078

ASSOCIATION: None

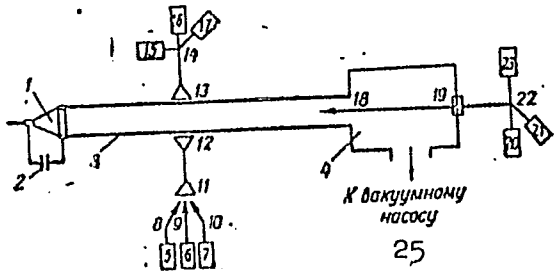
SUBMITTED: 00 DATE ACQ: 21May64 ENCL: 02

SUB CODE: ME NR REF SOV: 003 OTHER: 001

Card 3/5

ACCESSION NR: AT4036078

ENCLOSURE: 01

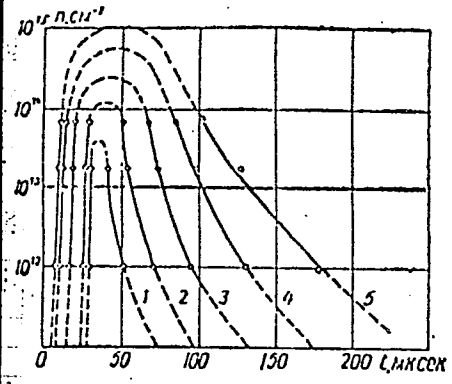


Block diagram of set-up: 1 - conical source; 2 - capacitor bank; 3 - glass tube; 4 - vacuum chamber; 5, 6, 7, 21 - generators; 8, 9, 10, 18 - dielectric antennas; 11 - input horn of waveguide channels; 12, 13 - horns irradiating the plasma; 14, 22 - double waveguide tees; 15, 16, 17, 23 - detector heads; 20 - matching unit; 19 - vacuum seal, 25 - to vacuum pump

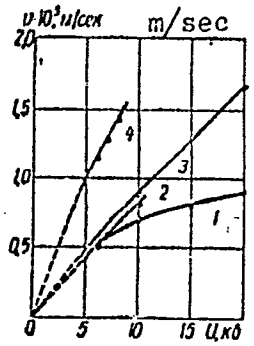
Card 4/5

ACCESSION NR: AT4036078

ENCLOSURE: 02



Distribution of charged-particle density in plasmoids at different voltages (kv): 3 (1), 4 (2), 6 (3), 8(4), and 10 (5). Time measured from start of discharge



Dependence of initial velocity of different layers of the plasmoid on the initial capacitor-bank voltage; densities: 1 - maximum 2 - 10^{12} (Doppler effect), 3 - 10^{12} (hf signal cutoff), 4 - 5 x 10^{10} (cm^{-3})

Card 5/5

L 15596-63 EWT(l)/EWG(k)/BDS/ES(w)-2 AFFTC/ASD/ESD-3/AFWL/SSD
Pz-4/Pi-4/Po-4/Pab-4 AT/IJP(C)

ACCESSION NR: AP3006492 S/0170/63/006/009/0057/0060

AUTHOR: Azovskiy, Yu. S.; Guzhovskiy, I. T.; Dushin, L. A.; Privezentsev, V. I.; Churayev, V. A.

TITLE: Microwave methods for diagnosing plasmoids

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 9, 1963, 57-60

TOPIC TAGS: plasmoid electron concentration distribution, plasmoid critical electron density, plasmoid sharp front boundary, plasmoid velocity measurement

ABSTRACT: This article describes microwave methods for diagnosing plasmoids. The distribution of electron concentration in a plasmoid was studied and the velocity of the plasmoid determined. Plasmoids were produced by means of the discharge of a capacitor bank (6 μf), through a conical source, and were propagated in a glass tube (6 cm in diameter and 120 cm in length) with a residual pressure not exceeding 2×10^3 newtons per square meter. Probing of plasmoids was carried out at three frequencies: 9×10^9, 37.5×10^9, and 75×10^9 cps, which correspond to critical electron densities of 10^{12}, 1.7×10^{13}, and 7×10^{13} cm^{-3}, respectively. The transmitting and receiving antennas were placed at a distance of 50 cm from the plasmoid source. It was found that plasmoids have a sharp front boundary.

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L 15596-63
ACCESSION NR: AP3006492

The plasmoid electron density at a 3-kv capacitor voltage was on the order of 10^{13} cm^{-3}. With an increase in voltage the electron density also increased to a value of 10^{15} cm^{-3} at a voltage higher than 10 kv. The velocities of plasmoids with electron densities of 10^{12} cm^{-3} have been measured by the Doppler effect. Velocity measurements of low-density plasmoids (10^{10}—10^{11} cm^{-3}) were made by a method which employs a cavity resonator (9.6 cm in diameter and 100 cm in length) in which the H_{11} mode was excited at a frequency of 2.3×10^9 cps. A plasmoid was simulated by means of a metallic rod inserted into a glass tube placed inside the resonator. The insertion of the rod resulted in the detuning of the resonator and, at points corresponding to the cavity resonance dimensions, resulted in a sharp increase in the indicator voltage. From readings taken at various voltages across the capacitor bank, graphs were plotted of distance versus time for plasmoids with a density of 5×10^{10} cm^{-3}. These graphs showed that different plasmoids moved with different speeds, which resulted in a decrease of the steepness of the plasmoid front as it moved along the tube. Orig. art. has: 4 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR, Khar'kov (Physicotechnical Institute, AN USSR)

Card 2/3 2

AZOVSKIY, Yu.S.; GUZHOVSKIY, I.T.; MAZALOV, Yu.P.; MANK, V.V.; SAFRONOV, B.G.; CHURAYEV, V.A.

Conical induction source of plasma bunches. Zhur. tekh. fiz. 33 no.10:1149-1158 O '63. (MIRA 16:11)

SINEL'NIKOV, K.D.; AZOVSKIY, Yu.S.; GUZHOVSKIY, I.T.; PANCHENKO, V.Ye.; SAFRONOV, B.G.

Interaction of plasma bunches with an axially symmetric magnetic field. Zhur. tekh. fiz. 33 no.10:1159-1168 O '63.
(MIRA 16:11)

ACCESSION NR: AP4035693 S/0057/64/034/005/0841/0846

AUTHOR: Azovskiy, Yu.S.; Guzhovskiy, I.T.; Safronov, B.G.

TITLE: A conical source of plasma bursts with electrodes and pulsed admission of gas

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 841-846

TOPIC TAGS: plasma, plasma jet, plasma source, hydrogen plasma

ABSTRACT: A conical source of plasma bursts was constructed as shown in the figure (Enclosure 01), and its behavior was investigated. The work was undertaken in an effort to develop a source that would produce bursts comparable in purity with those obtained with an induction source (Yu.S.Azovskiy, I.T.Guzhovskiy, Yu.P.Mazalov, V.V. Mank, B.G.Safronov and V.A.Churayev,ZhTF 33,1149,1963) while employing the simple external circuitry of previously investigated plastic sources (Yu.S.Azovskiy, I.T. Guzhovskiy, B.G.Safronov and V.A.Churayev,ZhTF 32,1050,1962). Hydrogen (usually 2 or 3 cm^3) was admitted to the discharge chamber, and after a delay of 210, 270 or 350 microsec (of which about 175 were required for the valve to open) a 6 microfarad capacitor, charged to between 5 and 20 kV, was discharged across it. The resulting

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plasma bursts were investigated in various ways: 1) the ion content was analyzed with a mass spectrometer; 2) the visible radiation was detected with a photomultiplier and displayed on an oscillograph; 3) the currents in the plasma bursts were detected with a movable magnetic probe (1.4 mm diameter, 8 mm long) and displayed on an oscillograph; 4) the cut-off of 37 500 megacycle microwaves was observed; 5) the relative energies of the bursts were determined with a thermocouple probe. The plasma bursts contained from 70 to 90% hydrogen, including a small quantity of H_2^+ and H_3^+. The principal impurities were carbon and oxygen from the pump oil vapor, and to a lesser extent, sodium and silicon from the glass walls, and copper and zinc from the brass electrodes. Several bursts were ejected during each discharge. In general, one burst was ejected during each half cycle (4.5 microsec), but two or even three bursts were frequently ejected during the first half cycle. This multiple ejection during the first half cycle is tentatively ascribed to radial oscillations of the pinched discharge. The plasma bursts completely cut off the microwaves; their charged particle density therefore exceeded 1.7×10^{13} cm^{-3}. The velocity of the bursts was directly proportional to the discharge voltage and increased with decreasing delay between gas admission and firing. The first burst ejected was the most rapid. With a 210 microsec delay and a 10 kV discharge potential, the velocity of the

ACCESSION NR: AP4035693

first burst was 5.3 x 10^6 cm/sec. Currents circulated in the plasma bursts in the same direction as in the winding about the discharge chamber. These currents decreased with time at a rate approximately proportional to the velocity of the burst, so that the current had decreased by a factor e when the burst had traveled 7.2 cm from the source. Similar behavior was observed in the much more rapid bursts from the induction source (loc.cit.supra), the corresponding distance in this case being 8.8 cm. It is accordingly suggested that the decay of the current is due less to the finite conductivity of the plasma than to expansion and interaction with the wall of the drift tube. "In conclusion the authors express their gratitude to V.A. Churayev and N.G.Shulika for their participation in several preliminary experiments"
Orig.art.has: 5 figures and 1 table.

ASSOCIATION: none

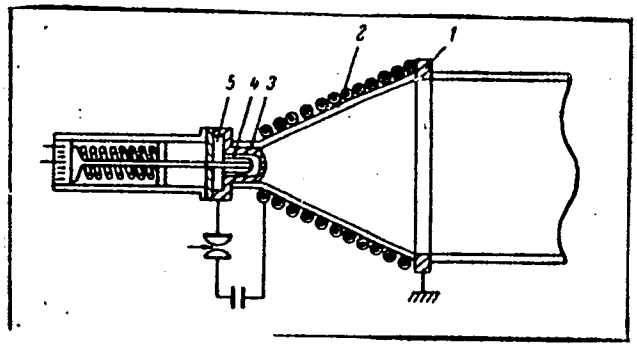
SUBMITTED: 09May63 DATE ACQ: 20May64 ENCL: 00

SUB CODE: ME NR REF SOV: 004 OTHER: 000

Card 3/4

ACCESSION NR: AP4035693

ENCLOSURE: 01



Conical plasma source: 1) brass ring electrode, i.d.9 cm, 2) glass wall of conical discharge chamber (vertex angle 50°) supporting a 12 turn colenoid, 3) brass cylindrical electrode, o.d.1.5 cm, 4) valve head, 5) teflon seal.

Card 4/4

ACCESSION NR: AP4040302 S/0057/64/034/006/1011/1012

AUTHOR: Azovskiy, Yu.S.; Guzhovskiy, I.T.; Safronov, B.G.

TITLE: Concerning measurement of the energy of plasma bursts with thermal probes

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.6, 1964, 1011-1012

TOPIC TAGS: plasma, plasma source, plasma jet, plasma temperature

ABSTRACT: The energies of plasma bursts from a conical plasma gun described elsewhere (Yu.S.Azovskiy, I.T.Guzhovskiy and B.T.Safronov,ZhTF 34,73,1964) were measured with a number of differently constructed thermal probes in order to obtain information concerning the errors involved in such measurements. The probes were 1.4 cm diameter cylinders of 0.1 mm copper foil, closed at one end, and were positioned with the open end toward the incident plasma. Probes were tested for which the ratio L/D of length to diameter was 0 (disc), 1,2 and 3. The equilibration time of the probes was of the order of one second, and the cooling time (due mainly to conduction through the thermocouple leads) was of the order of one minute. The probes tested with and without a conical shield, thermally insulated from the probe, which prevented the plasma flowing past the probe from coming in contact with the outer

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ACCESSION NR: AP4040302

wall. The energy indicated by both the shielded and the unshielded probes (temperature rise divided by heat capacity) increased monotonically with increasing L/D. For the unshielded probes this rise was nearly linear; the curve for the shielded probes reached a constant value for L/D greater than about 2 or 3. The low readings obtained with the disc and the short cylindrical probes are ascribed to the formation of a plasma "cushion", due to a shock wave propagating up stream, which shields the probe from the plasma. The high readings obtained with the long unshielded cylindrical probes are ascribed to heat influx through the cylindrical wall of the probe in contact with the flowing plasma. The reading of even the flat probe was smaller when the conical shield was employed than when it was unshielded; this indicates that plasma can strike the rear face of the disc. It is concluded that while thermal probes of any shape may be useful for relative measurements over a small energy range, absolute measurements require a deep hollow shielded probe. Orig.art.has: 1 figure..

ASSOCIATION: none

SUBMITTED: 24Jun63 DATE ACQ: 19Jun64 ENCL: 00

SUB CODE: ME NR REF SOV: 004 OTHER: 001

Card 2/2

L 23811-65 EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2
Pz-6/Po-4/Pab-10/Pi-4 IJP(c) AT

ACCESSION NR: AP5000835 S/0057/64/034/012/2129/2134

AUTHOR: Azovskiy,Yu.S.; Guzhovskiy,I.T.; Mazalov,Yu.P.; Pistryak,V.M.

TITLE: Interaction of plasma bursts with an axially symmetric magnetic field. 2.

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.12, 1964, 2129-2134

TOPIC TAGS: plasma interaction, plasmoid, magnetic field plasma effect, plasma diffusion

ABSTRACT: The present study was a continuation of earlier work (K.D.Sinel'nikov, Yu.S.Azovskiy, I.T.Guzhovskiy, V.Ye.Panchenko and B.G.Safronov,ZhTF 33,10,1963) devoted to investigation of the interaction of plasma bursts with an axially symmetric magnetic field. As compared to the earlier work, in the present study there were used purer hydrogen plasma bursts, produced by a conical source with pulsed gas injection. Primary attention was given to the interaction of the bursts with an inhomogeneous field (only preliminary measurements were made in a uniform field). The theoretical aspects of the phenomenon are reviewed briefly. The apparatus was basically the same as in the earlier work. Typical oscillograms of the signals from the magnetic probe are reproduced. These indicate the distribution of the field and

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L 23814-65 EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/ESC(t)/EI/EES(b)-2/EWA(m)-2
Pz-6/Po-4/Pab-10/Pi-4 IJP(c) AT

ACCESSION NR: AP5000836 S/0057/64/034/012/2135/2139

AUTHOR: Azovskiy,Yu.S.; Akhmerov,R.V.; Guzhovskiy,I.T.; Mamlov,Yu.P.; Pistryak,V.M.

TITLE: Interaction of plasma bursts with an axially symmetric magnetic field. 3

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.12, 1964, 2135-2139

TOPIC TAGS: plasma interaction, plasmoid, magnetic field plasma effect, plasma diffusion

ABSTRACT: In the present work, as in the study described previously (preceding article in this issue of the journal (p.2129) - see Abstract ACC.NR:AP5000835), there was investigated the interaction of plasma bursts with an inhomogeneous magnetic field, the difference being that in the present work there were used denser bursts ($n > 10^{14}$ cm^{-3}). The experimental setup is diagramed in the Enclosure. The two series-connected coils were located 50 cm from the source and produced a double hump field. The source was filled with either 100% hydrogen or 75% H and 25% He; in both cases each gas injection equalled 3 cm^3 (atmospheric pressure). The source was triggered 6 millisec after switching on the magnetic field, so that the burst interacted with the maximum field. The following equipment was used to measure the burst

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parameters incident to the interaction: a photomultiplier (usually an FEU-19) to detect the integral radiation, and ISP-51 spectrograph with a short-focus camera for photographing the plasma radiation spectrum, an ISP-51 spectrograph with a long-focus camera for following the behavior of individual spectrum lines and the continuous radiation, a high-speed photographic device for recording the radial compression of the burst, and a magnetic probe for recording the current induced in the burst. The photomultiplier and probe output signals were displayed on an oscillograph. Some typical oscillograms are reproduced. The experimental results are presented mainly in the form of curves giving the variation of the burst radius, density and electron temperature as a function of the magnetic field and the variation of the position of the injected bursts and reflected shock wave with time. With arrival of successive plasma bursts in the nonuniform field region there builds up a "cushion", resulting in a shock wave propagating in the opposite direction to the plasma stream. "In conclusion, the authors express their gratitude to K.D.Sinel'nikov, N.A.Khizhyan and B.G.Safronov for discussion of the results, to V.G.Padalka for useful advice, and to V.F.Gaydukov who participated in some of the preliminary experiments." Orig.art.has: 6 figures.

L 23814-65
ACCESSION NR: AP5000836

ASSOCIATION: none

SUBMITTED: 20Dec63 ENCL: 01 SUB CODE: MS

NR REF SOV: 003 OTHER: 002

3/4

L 23814-65

ACCESSION NR: AP5000836

ENCLOSURE: 01

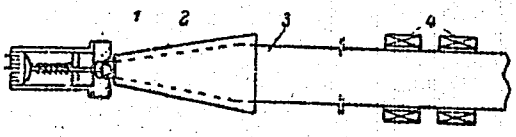

Diagram of the setup: 1 - valve, 2 - induction cone source, 3 - glass tube (9 cm inside diameter), 4 - magnetic coils

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L 49258-65 EWT(d)/EWT(l)/EEC(k)-2/EPF(n)-2/EWG(m)/EEC-4/EPA(w)-2 Pz-6/Pb-4/Pab-10/Pq-4/Pg-4/Pi-4/Pk-4/Pl-4 IJP(c) WW/AT

ACCESSION NR: AP5010802 UR/0057/65/035/004/0643/0649

AUTHOR: Azovskiy,Yu.S.; Gunkovskiy,I.T.; Manalov,Yu.P.; Platnyak,V.M. 24 91

TITLE: On the motion of plasma bursts in field free space 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 4, 1965, 643-649

TOPIC TAGS: plasma, plasmoid, velocity measurement, doppler effect, expanding gas, electron temperature

ABSTRACT: The authors have measured the velocities of plasma bursts from a conical plasma gun by means of the Doppler effect. Two different frequencies were employed (3.2 and 9.0 Gc/sec); the measured velocities therefore correspond to the motions of two different density regions within the burst. The plasma bursts were produced by the 28 kV discharge of a 27 μfd capacitor through a conical plasma gun containing approximately 3 cm^3 of hydrogen, and traveled in a 9 cm diameter 50 cm long glass tube and subsequently in a 18 cm diameter 200 cm long plastic tube. The measured motions of the two particle density regions (1.1×10^{11} and 1.1×10^{12} cm^{-3}) are presented graphically. A theory of a freely expanding plasma is briefly developed for both the one- and three-dimensional cases. This theory was employed to

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L 49258-65

ACCESSION NR: AP5010802

3

calculate from the measured velocities the velocity of the center of gravity of the burst and the sum of the ion and electron temperatures. Because of the uncertainty concerning several factors involved in the calculation, the calculated value of 5 eV for the sum of the electron and ion temperatures is regarded as in satisfactory agreement with the value of 8 eV previously obtained for the electron temperature in similar plasma bursts from the intensity ratio of the HeI 4921 and HeI 4713 lines (Yu.S.Azovskiy et al., ZhTF, 34, 2135, 1964). "In conclusion, the authors express their gratitude to B.G.Safronov and N.A.Khishnyak for discussing the results of the work, and to R.V.Akhmerov for participating in the preparation of the experiment." Orig. art. has: 7 formulas, 6 figures, and 1 table.

ASSOCIATION: None

SUBMITTED: 11Jun64 ENCL: 00 SUB CODE: ME

NR REF SOV: 005 OTHER: 003

Card 2/2

L 8907-66 EWT(1)/ETC/EPF(n)-2/EWG(m) IJP(c) AT

ACC NR: AT5022289 SOURCE CODE: UR/3137/64/000/049/0001/0013

AUTHOR: Azovskiy, Yu. S.; Guzhovskiy, I. T.; Mazalov, Yu. P.; Pistryak, V. M.

ORG: Academy of Sciences UkrSSR, Physicotechnical Institute (Akademiya nauk UkrSSR, Fiziko-tekhnicheskiy institut)

TITLE: Motion of plasmoids in field-free space

SOURCE: AN UkrSSR. Fiziko-tekhnicheskiy institut. Doklady, no. 049/P-008, 1964. O dvizhenii plazmennykh sgustkov v svobodnom ot poley prostranstve, 1-13

TOPIC TAGS: plasmoid acceleration, plasma diagnostics, hydrogen plasma

ABSTRACT: The speed of current sheets of a given density was determined by observing the main part of a plasmoid which moves in field-free space. After the ejection of a plasmoid from the source, it initially moved into a glass tube of 9 cm diameter, then into an organic glass tube of 18 cm diameter. Hydrogen was used in the experiment. In the present experimental conditions, the first dense plasmoid ejected was studied. It occured during the third half-period of the discharge. Sheets of different densities move with different speeds; those of lower density are faster. With the increase of retardation (neutral gas injection into the source) the speeds of both sheets decrease. The greatest delay occurs in the small diameter glass tube. This results in a decrease of the curvature of the plasmoid front. The motion of

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L 8907-66

ACC NR: AT5022289 9

sheets was measured by the microwave reflection doppler effect. The use of the speed of sound in plasma to characterize plasmoid thermal expansion is discussed. In conclusion the authors express their gratitude to B. G. Safronov and N. A. Khizhnyak for reviewing the results and to R. V. Akhmerov for his help in setting up the experiment. Orig. art. has: 6 figures, 1 table, 6 formulas.

SUB CODE: 20/ SUBM DATE: none ORIG REF: 005/ OTH REF: 003

44,55 44,55 44,55

QC

Card 2/2

L 2494-66 EWT(1)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2 IJP(c) AT
ACCESSION NR: AP5020726 UR/0057/65/035/008/1405/1407

AUTHOR: Azovskiy, Yu. S.; Guzhovskiy, I. T.; Mazalov, Yu. P.; Pistryak, V. M.

TITLE: On the motion of plasma bursts in a uniform axially symmetric magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 8, 1965, 1405-1407

TOPIC TAGS: plasmoid, magnetic field plasma effect, plasma temperature, plasma density, homogeneous magnetic field

ABSTRACT: The authors have continued their previous investigation of the motion of plasma bursts in axially symmetric fields (ZhTF, 34, No.12, 1964). The work reported here concerns mainly the motion of the plasmas in the uniform portion of the field. The apparatus is described in the previous paper. The plasmas had charged particle densities of about 2×10^{13} cm^{-3} and velocities near 6×10^{6} cm/sec, and contained 10% of heavy ions. The gas pressure within the plasmas was measured with a compensated magnetic probe of the type described by F.Waelbroeck et al. (Nuclear fusion, Suppl. 2, 675, 1962) and the diameters of different sections of the plasmas were measured with a pulsed plasmascope consisting of a light-shielded 7 cm diameter scintillator with control grids. The variations of the

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L 2494-66

ACCESSION NR: AP 5020726

duration of the magnetic probe signal, the charged particle density, and the plasma temperature as the plasma drifts in the uniform field are shown graphically for different values of the magnetic field strength. As the plasma moved down the field its length increased, its radius remained practically unchanged, and its temperature and charged particle density decreased. The possibility of a decrease of temperature during longitudinal expansion of a plasma in a magnetic field has been pointed out by F.Waelbroeck et al. (loc. cit.) and by F.R.Scott and O.C. Eldride (Phys. Fluids, 4, 1558, 1961). Orig. art. has: 3 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 28Dec64 ENCL: 00 SUB CODE: ME

NR REF SOV: 004 OTHER: 002

Card 2/2

L 43914-66 EWT(1) IJP(c) AT/GD

ACC NR: AT6020403 (N) SOURCE CODE: UR/0000/65/000/000/0068/0076

AUTHOR: Azovskiy, Yu. S.; Guzhovskiy, I. T.; Mazalov, Yu. P.; Pistryak, V. M. 62 B+1

ORG: none

TITLE: Interaction of plasmoids with an axially-symmetrical magnetic field. II.

SOURCE: AN UkrSSR. Issledovaniye plazmennykh sgustkov (Study of plasma clusters). Kiev, Naukova dumka, 1965, 68-76

TOPIC TAGS: plasmoid, plasma interaction, plasma magnetic field, plasma injection, plasma density

ABSTRACT: The first part of this paper was published in ZhTF v. 33, 10, 1963. Unlike in the earlier investigation, pure hydrogen plasmoids were used produced by a chemical source with pulsed inlet of gas (described by the authors in ZhTF v. 34, 841, 1964). The main purpose was to determine the interaction of the plasmoid and the character of its motion in an inhomogeneous magnetic field, in the case of dense plasmoids for which the adiabatic conditions are not satisfied. The apparatus and the test procedure are described. The tests yielded plots of the dependence of the density and radius of the plasmoid on the position of the plasmoid in the magnetic field, the dependence of the position of the plasmoid on the time, and the radial distribution of the particles in the plasmoid, the dependence of the vacuum magnetic field, the induced-current field, and their ratio on the vacuum magnetic field at the center of the solenoid, and the dependence of the radius and density on the magnetic

Card 1/2

L 43914-66

ACC NR: AT6020403

field. While most of the results can be reconciled with the qualitative theoretical descriptions of this phenomenon published by others, the plasmoid exhibited an unexpected acceleration in the region beyond the point corresponding to the maximum current. It is noted in conclusion that the results differ greatly from the earlier investigation, primarily because the plasma used there consisted essentially of heavy carbon and oxygen ions. The maximum compression rate in the magnetic field was produced where the magnetic field had a maximum gradient. The induced current first increased with the field, and then more rapidly than the field. However, once the plasmoid has been radially compressed, the induced current began to decrease rapidly. A noticeable crowding out of the magnetic field was observed, causing the axial field in the plasma to drop to about 15% of the vacuum field. The induction of the current was accompanied by a certain slowing down of the plasmoid motion, thus indicating that the translational energy was converted partially into radial and rotational energy. Orig. art. has: 9 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 006

Card 2/2 pb

ACC NR: AT6020404 (N) SOURCE CODE: UR/0000/65/000/000/0076/0084

AUTHOR: Azovskiy, Yu. S.; Akhmerov, R. V.; Guzhovskiy, I. T.; Mazalov, Yu. P.; Pistryak, V. M.

ORG: none

TITLE: Interaction of plasmoids with an axially-symmetrical magnetic field. III.

SOURCE: AN UkrSSR. Issledovaniye plazmennykh sgustkov (Study of plasma clusters). Kiev, Naukova dumka, 1965, 76-84

TOPIC TAGS: plasmoid, plasma interaction, plasma magnetic field, plasma density, plasma shock wave, plasma injection, plasma radiation

ABSTRACT: This is a continuation of the preceding article in the same source (Acc. Nr. AT6020403), which in turn is a continuation of an article published in ZhTF v. 33, 10, 1963. In this part of the investigation, a denser plasma was used ($n > 10^{14}$ cm^{-3}), and the plasma diagnostics was essentially by optical means (photomultipliers, spectrographs, and high-speed camera). The plasma was produced by a conical source, propagated through a glass tube, and interacted with a magnetic field produced by coils located 50 cm from the source (Fig. 1). The time-integrated radiation spectrum was photographed near the maximum magnetic field gradient (directly ahead of the coils) and in the region of the homogeneous field (between the coils). The plasma was either pure hydrogen or 75% hydrogen and 25% helium. The results show that the integral radiation, the continuous radiation, and the radiation of the helium and the

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ACC NR: AT6020404

impurities had the same character, whereas the glow due to the hydrogen was much longer. The latter is due to the longer recombination time of the hydrogen. An increase in the magnetic field increased all the components of the radiation (approximately by 3 times as the field increased from 0 to 0.2 - 0.3 Tesla), after which the increase slowed down. Measurements were also made of the dependence of the radius, density, and electron temperature of the plasmoid as functions of the analytic field and the dependence of the position of the injected plasmoid and the reflected shock wave in the plasma as functions of the time. Attention is called to the fact that at fields up to 0.20 - 0.25 Tesla all the plasmoids are compressed to an equal degree, but at larger magnetic fields only the first plasmoid is compressed, and the others are not. This is related to the occurrence of a shock wave at stronger magnetic fields. Orig. art. has: 6 figures.

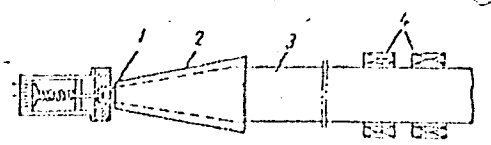

Fig. 1. Diagram of setup. 1 - Valve, 2 - induction source, 3 - glass tube, 4 - magnetic coils.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

L 41[illegible] EWT(1) UR(c) GW/AT

ACC NR: AT6020419 (N) SOURCE CODE: UR/0000/65/000/000/0203/0212

AUTHOR: Azovskiy, Yu. S.; Guzhovskiy, I. T.; Mazalov, Yu. P.; Pistryak, V. M.

ORG: none

TITLE: Plasmoid motion in a field-free region

SOURCE: AN UkrSSR. Issledovaniye plazmennykh sgustkov (Study of plasma clusters). Kiev, Naukovo dumka, 1965, 203-212

TOPIC TAGS: plasmoid, plasma generator, plasma density

ABSTRACT: Plasma expansions in a field-free region were investigated by observing the density and energy profile of the plasma. A theoretical review of a simple plasma configuration is given and compared with the experimental results. The plasma was generated by a conical electrodeless discharge and injected into a 250 cm tube. The measurements were limited to the third and densest plasmoid (10^{11} cm^{-3} to 10^{12} cm^{-3}). The density distribution at any time was measured with a microwave interferometer. The measurements of ion and electron velocities and temperatures in all three dimensions are tabulated and the weak dependence on the initial density and type of expansion of these quantities is pointed out. A rather strong effect of neutral gas density became apparent from studying the expansion parameters as a function of the delay between the neutral gas injection into the plasma generator and the discharge of the capacitors to pro-

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L 41069-66

ACC NR: AT6020419

duce the plasma. However, the theoretical predictions indicate that the experimental results can serve as an estimate of plasma expansion. Orig. art. has: 6 formulas, 6 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 005/ OTH REF: 003

Card 2/2

L 45921-66 EWT(1) IJP(c) AT

ACC NR: AP6028606 SOURCE CODE: UR/0057/66/036/008/1357/1363

AUTHOR: Azovskiy, Yu.S.; Guzhovskiy,I.T.; Pistryak,V.M.

ORG: none

TITLE: Interaction of plasma bursts with an axially symmetric magnetic field. 4.

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1357-1363

TOPIC TAGS: moving plasma, plasma density, magnetic field plasma effect, plasma temporature, plasma structure, plasmoid, AXIAL MAGNETIC FIELD, PLASMA INTERACTION

ABSTRACT: The present paper presents results of a continuation of earlier work of the authors and Yu.P.Mazalov (ZhTF, 34, 2129, 1964; ZhTF, 35, 1405, 1965) on the interaction of the plasmas from a conical-electrode plasma gun with an axially symmetric magnetic field. The apparatus has been described in the earlier papers. The plasmas from the conical gun entered the 20 cm diameter plastic drift tube with a velocity of about 6×10^6 cm/sec and a charged particle density of about 2×10^{13} cm^{-3}. A longitudinal magnetic field of up to 1.2 kOe was maintained in the drift tube by a solenoid. In the work reported here the plasmas were investigated with a double electric probe consisting of two parallel 0.8 mm diameter 5 mm long molybdenum wires mounted 2 mm apart. The probe could be moved both radially and axially and was used to investigate the structure of the plasmas and their radial and longitudinal expansion in different parts of the drift tube. Three regions of extreme values of

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ACC NR: AP6028606

different plasma parameters were noted; a region of maximum induced current (recorded with a magnetic probe), a region of maximum particle density, and a region of minimum radius and maximum temperature. The maximum induced current and particle density regions occurred in the inhomogeneous portion of the magnetic field; the minimum radius region was farther from the plasma gun in the homogeneous part of the field. In strong magnetic fields a portion of the plasma was reflected by the field and formed a peculiar plasma "cushion" which exerted a definite influence on the interaction between the plasma and the field. The longitudinal expansion of the plasma in the uniform field region was much more rapid than the radial expansion. Plasma temperatures derived from longitudinal expansion velocities were in good agreement with the temperatures given by the probe measurements. The authors thank K.D. Sinel'nikov and B.G.Safronov for discussing the results. Orig. art. has: 2 formulas and 8 figures.

SUB CODE: 20 SUBM DATE: 07Aug65 ORIG. REF: 005 OTH REF: 002

Card 2/2 mjs

GUZHOVSKIY, V.V. [Huzhovs'kyi, V.V.] (Kiyev)

Eccentrically compressed thin-walled rods of open profile within and beyond elastic limit. Prykl.mekh. 5 no.2:179-190 '59.
(MIRA 12:9)

1. Kiyevskiy inzhenerno-stroitel'nyy institut.
(Elastic rods and wires)

24(6)

SOV/21-59-9-6/25

AUTHOR: Guzhovs'kyy, V.V.

TITLE: On the Stability and Free Oscillations of Thin-Walled Bar Systems

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 953-958 (USSR)

ABSTRACT: In this paper, the author outlines the methods for determining the critical load and the first frequency of free oscillations of thin-walled sets of bars of arbitrary cross section having an open shape. The value of the critical load $(\varphi = 0)$ is determined from the (7) - $(9)^2$:

$$N = N_y \frac{c_y - a_y}{c_y - \tilde{a}_y}; \qquad N = N_x \frac{c_x - a_x}{c_x - \tilde{a}_x};$$

$$N = \frac{N \omega r^2}{p^2 + a_x c_x k_{23} + a_y c_y k_{12}}$$

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On the Stability and Free Oscillations of Thin-Walled Bar Systems

The first frequency is found from the equations (10) - (12):

$$\varphi^2 = \varphi_y^2 \frac{C_y - a_y}{C_y - \tilde{a}_y}; \qquad \varphi_2 = \varphi_x^2 \frac{C_x - a_x}{C_x - \tilde{a}_x};$$

$$\varphi^2 = \varphi_\omega^2 \frac{1}{\ldots a_x c_x k_{23} + a_y c_y k_{12}}.$$

The solution is simplified by considering the deforma- by considering the deformation of the relatively instantaneous coordinates of the center of rotation. It is noted that the most complicated part of the calculation is the solution of the transcendental functions. However it proved possible to determine these functions from the known table [Ref 3] and [Ref 5] in the formulae of the method of deformation. There are 7 Soviet

On the Stability and Free Oscillations of Thin-Walled Bar Systems

references.

ASSOCIATION: Kyyivs'kyy inzhenerno-budivel'nyy instytut (Kiyev Engineering and Construction Institute)

PRESENTED: By F.P. Byelyankin, Member AS of UkrSSR

SUBMITTED: February 20, 1959

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GUZHOVSKIY, V. V., Cand Tech Sci (diss) -- "The stability and oscillations of thin-walled rods and frames". Kiev, 1960. 16 pp (Min Higher Educ Ukr SSR, Kiev Construction Engineering Inst, Chair of Construction Mech), 150 copies (KL, No 11, 1960, 132)

24.4200 1327 26075 S/198/61/007/004/003/004
D218/D305

AUTHOR: Huzhovskyy, V.V. (Kyyiv)

TITLE: On the stability of thin-walled rods and frames beyond the elastic limit

PERIODICAL: Prykladna mekhanika, v. 7, no. 4, 1961, 415 - 421

TEXT: The article deals with the question of the stability of elastically reinforced thin-walled rods of arbitrary profile and of frames constructed of such rods. The solution is based on the Engesser-Shenley theory [Abstractor's note: Theory not stated]. The critical force is to be evaluated from the interval of loads in which it acts, the lower limit being the tangent-modulus load, and the upper limit being reduced-modulus load, N_t and N_{red} respectively. Numerical analysis shows that in the case of thin walled rods of U- or angular profile, the difference between the value of N_t and N_{red} is not great. Thus, in the following solution

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the critical force will be estimated. The method is based on the use of the diagram of σ against ε [Abstractor's note: Symbols not defined, but clearly σ = stress, ε = extension], whence $\sigma = \sigma_{rect} + (\sigma_{tang} - \sigma_{rect})\sqrt{1-m}$; $m = E_t/E$ (1) (Fig. 1)[Abstractor's note: E, E_t not defined]. The determination of the critical forces is based on the previous determination of the line of centers of revolution of the transverse sections of the rod, and leads to the solution of the problem of arbitrary section thin-walled rods. The tangent-modulus force for a section of the rod is then given by

$$N_t = \frac{N_{\omega t} r^2}{\rho^2 + a_x C_x + a_y C_y} \qquad (4)$$

where $N_{\omega t} r^2 = E_t\left(\frac{v_\theta^2 I_\omega}{\ell^2} + \frac{G}{E} I_d\right)$; (5), $r^2 = \rho^2 + a_x^2 + a_y^2$; $\rho^2 = \frac{I_x + I_y}{F}$ (6)

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E_t is Young's tangential modulus, c_x, c_y are the coordinates of the center of revolution, a_x, a_y are the coordinates of the center or bending, I_x, I_y ($I_x > I_y$) are moments of inertial referred to the principal central axes x and y, I_ω is the sector moment of inertia, GI_d is the torsional rigidity, ξ, η, are the displacements of the section of the rod, and θ is its rotation. For a U-profile, where $N_t = \sigma_t F$, then

$$m^2 \left[\frac{N_\omega r^2}{F(\rho^2 + a_x c_x + a_y c_y)}\right]^2 - m \left[\frac{2\sigma_{rect} N_\omega r^2}{(\rho^2 + a_x c_x + a_y c_y)F} - (\sigma_{tang} - \sigma_{rect})^2\right] + \sigma_{tang}(2\sigma_{rect} - \sigma_{tang}) \quad (11)$$

For $N > N_t$ the torsion of the rod produces an additional normal

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stress. In the zones of the section where this additional stress is positive, breakdown occurs according to Hooke's law. The reduced modulus forces correspond to an unrestrictedly large displacement of the section. The value of the reduced-modulus load may be found from

$$N_t = N_{yt}\left(1 - \frac{c_y}{a_y}\right) \quad (2), \quad N_t = N_{xt}\left(1 - \frac{c_x}{a_x}\right) \quad (3), \quad N_{yt} = \frac{\nu_6^2 E_t I_y}{l^2}; \quad (5)$$

$$N_{xt} = \frac{\nu_6^2 E_t I_x}{l^2} \quad (5)$$

and (4), the geometrical characteristics being referred to the reduced section. The coordinates of the center of revolution are found by the method of elastic solutions from

$$A_1 c_x^3 + A_2 c_x^2 + A_3 c_x + A_4 = 0, \quad A_1 = q - 1; \quad A_2 = [(q-1)(\rho^2 - a_x^2 - \quad (6')$$

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$$- p) + a_x^2 + qa_y^2] \frac{1}{a_x};$$

$$A_3 = (2 - q)\varrho^2 - a_x^2 - a_y^2 q - p; \quad A_4 = -a_x\varrho^2;$$

$$q = \frac{N_{yl}}{N_{xl}} = \frac{N_y}{N_x}; \quad p = \frac{N_{\omega l}}{N_{xl}} r^2 = \frac{N_\omega}{N_x} r^2; \tag{6'}$$

$$N_y = \frac{\nu_\xi^2 EI_y}{l^2}; \quad N_x = \frac{\nu_\eta^2 EI_x}{l^2}; \quad N_\omega r^2 = \frac{\nu_0^2 EI_\omega}{l^2} + GI_d.$$

and $$c_x = \frac{1}{2a_x}(a_x^2 + p - \varrho^2) + \sqrt{\frac{1}{4a_x^2}(a_x^2 + p - \varrho^2)^2 + \varrho^2}. \tag{7}$$

In the case of a U-profile

$$\sigma = \frac{\nu_0^2 T}{\lambda_\omega^2} = \frac{4\nu_0^2 E}{\lambda_\omega^2\left(1 + \sqrt{\frac{E}{E_t}}\right)^2}. \tag{13}$$

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and $$T = \frac{4E}{\left(1 + \sqrt{\frac{E}{E_1}}\right)^2}. \qquad (12)$$

Frames in building and machine construction lose their stability predominantly beyond the elastic limit. The differential equations of deformation of a rod according to the basic Engesser-Karmann approximation theory are given. The formulae for calculation by the deformation method are

$$B_{ab} = t^{\omega}_{ab}\left[\alpha^{\omega}_T \vartheta'_a + \beta^{\omega}_T \vartheta'_b - (\alpha^{\omega}_T + \beta^{\omega}_T)\frac{\theta_\Delta}{l_{ab}}\right],$$
$$M^{x}_{ab} = t^{x}_{ab}\left[\alpha^{\nu}_T \varphi^{\nu}_a + \beta^{\nu}_T \varphi^{\nu}_b - (\alpha^{\nu}_T + \beta^{\nu}_T)\frac{\delta^{\nu}_{ab}}{l_{ab}}\right], \qquad (17)$$
$$M^{\nu}_{ab} = t^{\nu}_{ab}\left[\alpha^{x}_T \varphi^{x}_a + \beta^{x}_T \varphi^{x}_b - (\alpha^{x}_T + \beta^{x}_T)\frac{\delta^{x}_{ab}}{l_{ab}}\right],$$

where

where

$$t^{j}_{ab} = \frac{TI_j}{l}; \quad j = x, y, \omega; \quad i = \xi, \eta, \vartheta;$$

$$\alpha^{j}_{T} = \frac{\nu_{Ti}}{\operatorname{tg}\nu_{Ti}} \frac{\operatorname{tg}\nu_{Ti} - \nu_{Ti}}{2\operatorname{tg}\frac{\nu_{Ti}}{2} - \nu_{Ti}}; \quad \beta^{j}_{T} = \frac{\nu_{Ti} - \sin\nu_{Ti}}{2\operatorname{tg}\frac{\nu_{Ti}}{2} - \nu_{Ti}} \frac{\nu_{Ti}}{\sin\nu_{Ti}};$$

$$\nu^2_{T\xi} = \frac{Nl^2}{TI_y} \frac{c_y}{c_y - a_y}; \quad \nu^2_{T\eta} = \frac{Nl^2}{TI_x} \frac{c_x}{c_x - a_x}; \quad \nu^2_{T\vartheta} = \frac{Nl^2}{TI_\omega}(\varrho^2 + a_x c_x + a_y c_y) -$$

$$- \frac{GI_d}{EI_\omega} l^2.$$

[Abstractor's note: Symbols not explained]. As an example a frame of U-profile rods is considered. There are 3 figures and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Kyyivs'kyy inzhenerno-budivel'nyy instytut (Kyyiv Institute of Civil Engineering)

SUBMITTED: October 15, 1960

SERGIYENKO, L., inzh.; KOCHAN, L., inzh.; GUZHVA, G.; KLIMOV, L.; KHMELEVA, L.

No, these are not trifles! Okhr.truda i sots.strakh. no.10: 39-41 O '59. (MIRA 13:2)

1. Korrespondenty gazety "Vitebskiy rabochiy" (for Guzhva, Klimov). 2. Spetsial'nyy korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye" for (Khmeleva).
(Vitebsk Province--Industrial hygiene)

GUZHVA, N.A., inzh.

Electric power supply of the "Zaria Communisma" State Farm. Energetik 13 no.3:27-29 Mr '65. (MIRA 18:7)

GUZHVENKO, G.P.

GUZHVENKO, G.P.; SOKOLOVSKIY, T.M.

Increasing the zone of operations for each winder. Tekst. prom. 17 no.8:9-10 Ag '57. (MLRA 10:9)

1. Nachal'nik otdeleniya trudovogo kontrolya Kiyevskoy khlopkopryadil'noy fabriki (for Guzhvenko). 2. Nachal'nik krutil'no-motal'nogo tsekha (for Sokolovskiy).
(Cotton spinning)

NARODITSKIY, I.A., inzh.; GUZHVENKO, G.P., inzh.

Reducing the expenditures for carding machine modernization.
Tekst. prom. 20 no. 12:62-63 D '60. (MIRA 13:12)

1. Kiyevskaya khlopkopryadil'naya fabrika.
(Carding machines)

GUZHVENKO, G.P.

Schools for exchanging information on progressive practices. Tekst. prom. 18 no.8:70 Ag '58. (MIRA 11:10)

1.Zaveduyushchiy normativno-issledovatel'skoy laboratoriyey po trudu pri Kiyevskoy khlopkropryadil'noy fabrike.
(Ukraine—Textile schools)

GUZHVENKO, N.S., aspirant

Designing beading machines taking into consideration the critical speed of cans filled with liquid products. Izv. vys. ucheb. zav.; mashinostr. no.7:84-88 '65.

(MIRA 18:12)

1. Submitted November 11, 1963.

LOZA, G.M., akademik; GUZHVIN, P.F., assistent

Organization of state farms in connection with specialization and of production. Izv. TSKhA no.1:160-176 '61. (MIRA 14:3)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I. Lenina (for Loza).

(State farms)

GUZIAKIEWICZ, J.

GUZIAKIEWICZ, J. Repairing tracks during a transitional period. p. 52

V ol. 8, no 3, Mar. 1956
PRZEGLAD KOLEJOWY DROGOWY
TECHNOLOGY
Warszawa, Poland

So: East European Accession, V ol. 6, no. 2, 1957

GUZIAKIEWICZ, J.

GUZIAKIEWICZ, J. Draining tracks at stations, crossings, and switch rails. Przeglad. p. 56

Vol. 8, no. 4, Apr. 1956
PRZEGLAD KOLEJOWY DROGOWY
TECHNOLOGY
Warszawa, Poland

So: East European Accession, Vol. 6, no. 2, 1957

GUZIAKIEWICZ, J.

Example of a request for materials for surface work by the roadmaster. Przeglad Drog. Dodatek.

P. 12. (PRZEGLAD KOLEJOWY DROGOWY) (Warszawa, Poland) Vol. 10, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

GUZIAKIEWICZ, J.

An example of work organization for the exchange of a single rail.
Przeglad Drog. Dodatek.

P. 13. (PRZEGLAD KOLEJOWY DROGOWY) (Warszawa, Poland) Vol. 10, no. 2, Feb. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

GUZIAKIEWICZ, Jozef, mgr.inz.

Losses of the Polish State Railroads caused by lowering of the speed of trains. Przegl kolej drog 14 no.5:91-92 My '62

1. Dyrekcja Okregowa Kolei Panstwowych, Katowice.

GUZICKI, Stanislaw, prof.

Professor Karol Adamiecki and his achievements in the fields of organization and management. Przegl techn 79 no.10:432-434 My '58.

GUZICKI, Stanislaw, prof.

The Association of Scientific Organization and Management. Przegl techn no.51:6 21 D '60.

1. Prezes Towarzystwa Naukowego Organizacji i Kierownictwa, Warszawa.

GUZIEL, A

GUZIEL, A. Using nomograms in setting out directions. p. 69

No. 1, 1956
GEODEZJA
SCIENCE
Warzawa, Poland

So: East European Accession, Vol. 6, no.2, Feb. 1957

GUZIEL, Alojzy

Analysis of the correctness of the estimated quantity of resources. II. Przegl geol 9 no.4:196-201 '61. (EEAI 10:9)

1. Ministerstwo Przemyslu Ciezkieg.

(Geology)

GUZIEL, A.

Standards of mining map preparation and completion. Rudy i metale 6 no.10:467 O '61.

MISIURA,J. GUZIENE,A.

Modified oxihemometry. Sveik. apsaug. 9 no.2:47-48 F'64.

1. Vilniaus Valst. V.Kapsuko v. universiteto Medicinos fakultetas ir Respublikine Vilniaus klinine ligonine.

GUZIEL, Alojzy, mgr inż.

Instruction on water hazard in ore mines. Rudy i metale 9 no. 8:457-458 Ag '64.

GUZIK, Antoni, mgr inz.

Exergy of technical gases obtained from the air. Energetyka przem 10 no.11:384-387 N '62.

1. Katedra Energetyki Cieplnej, Politechnika Slaska, Gliwice.

GUZ IK, G.A.

Variations in the extent of functional scotoma produced by unconditioned and conditioned stimuli. Probl.fiziol. opt. 12:82-88 '58 (MIRA 11:6)
(SCOTOMA)

GUZIK, G.A.

Functional scotoma and its elimination by means of a mirror campimeter. Uch.zap. GNII glaz.bol. no.7:159-163 '62.
(MIRA 16:5)

1. Iz otdeleniya okhrany zreniya detey Gosudarstvennogo nauchno-issledovatel'skogo instituta glaznykh bolezney imeni Gel'mgol'tsa i glaznogo otdeleniya Polikliniki No.7 Moskvy.
(SCOTOMA) (STRABISMUS)

GUZIK, G.A.

Ambulant surgery in concomitant strabismus in childre of pre-school and primary school age. Uch.zap. GNII glaz.bol. no.7:125-127 '62. (MIRA 16:5)

1. Iz otdeleniya okhrany zreniya detey Gosudarstvennogo nauchno-issledovatel'skogo instituta glaznykh bolezney imeni Gel'mgol'tsa i glaznogo otdeleniye Polikliniki No.7 Moskvy.
(STRABISMUS)

L 1714-66 EWT(1)

ACCESSION NR: AP5024302 UR/0084/65/000/010/0021/0021

AUTHOR: Kuliyev, I.; Rustamov, A.; Guzik, I.; Aliyev, N.

TITLE: Helicopter lands at sea [Newly designed helicopter-landing platform for Soviet "Texas-tower"-type drilling rigs]

SOURCE: Grazhdanskaya aviatsiya, no. 10, 1965, 21

TOPIC TAGS: helicopter pad, well drilling, off shore oil drilling

ABSTRACT: Described is a new helicopter landing platform for a bottom-anchored "Texas-tower"-type off-shore drilling rig, designed by the Azerbaydzhan State Design and Planning Scientific-Research Institute for Off-Shore Oil, (Gipromorneft'). The supporting structure is of welded steel pipe, and the 23 x 23-m landing platform consists of double planking over 180 x 160-mm wood beams, for a total area of 530 m^2. A number of other design aspects are presented along with various economic and supply considerations relating to the use of these landing platforms and helicopters in off-shore drilling operations. A side view of the rig and platform and a top view

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Card 2/2

KULIYEV, I.; RUSTAMOV, A., inzh.; GULIN, I.; ALIYEV, N.

A helicopter lands in the sea. Grazhd. av. 22 no.10:21 O '65. (MIRA 18:12)

1. Zamestitel' direktora Gosudarstvennogo instituta po proyektirovaniyu predpriyetiy dlya dobychi nefti s morskogo dna (for Kuliyev). 2. Nachal'nik Azerbaydzhanskogo upravleniya grazhdanskoy aviatsii (for Aliyev).

KAUFMAN, V.P.; GUZIK, I.S.

Determining the economic effectiveness of geological prospecting.
Geol. nefti 2 no.12:11-17 D '58. (MIRA 12:2)

1. Ministerstvo nefyanoy promyshlennosti Azerb. SSR.
(Petroleum geology) (Gas, Natural--Geology)

KULIYEV, I.P.; GUZIK, I.S.

Using movable installations in offshore test drilling. Azerb. neft. khoz. 38 no.7:46-48 Jl '59. (MIRA 13:2)
(Oil well drilling, Submarine--Equipment and supplies)

GUZIK, I.S.

Extra-deep drilling in the United States. Azerb. neft. khoz. 39 no.5:44-45 My '60. (MIRA 13:10)
(United States—Oil well drilling)

KULIYEV, I.P.; MOKHALOV, M.N.; GUZIK, I.S.

Results of and prospects for using floating rigs. Azerb. neft. khoz. 39 no.11:46-48 N '60. (MIRA 13:12)
(Caspian Sea--Oil well drilling, Submarine--Equipment and supplies)

GUZIK, I.S.

Drilling speed records in the U.S.A. Azerb. nefti. khoz. 40 no. 3:34 Mr '61. (MIRA 14:5)
(United States—Oil well drilling)

NAZIROV, R.K.; GUZIK, I.S.

Economics of offshore oil field construction made of reinforced concrete. Azerb. neft. khoz. 40 no.10:45-47 O '61. (MIRA 15:3)
(Azerbaijan--Oil well drilling, Submarine)
(Reinforced concrete construction)

GUZIK, I.S.; IONE, L.A.

Some problems relative to the construction foundations for offshore drilling. Azerb.neft.khoz. 41 no.4:46-47 Ap '62. (MIRA 16:2)

(Artificial islands)

GUZIK, I.S.

Some economic problems of offshore petroleum production in the United States. Azerb.neft.khoz. 41 no.8:47-48 Ag '62.
(MIRA 16:1)
(United States—Oil well drilling, Submarine)

GUZIK, K.

TECHNOLOGY

PERIODICAL: PREZGLAD GEOLOGICZNY. Vol. 6, no. 3, Mar. 1958.

GUZIK, K. Preparing topographic nets for polygonal cartographic and geologic traverses by analyzing photogrammetric pictures. p. 111.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 4 April 1959, Unclass.

GUZIK, K., JACZYNOWSKA, J.

Remarks on the morphogenesis of the Zkopane Triangle in the Zakopane Depression. p.203.

ACTA GEOLOGICA POLONICA. Warszawa, Poland. Vol. 9, no. 2, 1959.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

GUZIK, Kazimierz

Utilization of aerophotogrammetric and terrestrial surveys for mapping the geological map of the Polish Tatra Mountains, scale 1:10,000. Kwartalnik geol 5 no.1:182-195 '61.

1. Katedra Geologii Ogolnej Uniwersytetu Warszawskiego.

GUZIK, KAZIMIERZ

(16) (244)

Warsaw, Przeglad Geodezyjny, Vol XXXIII, No 5, May 1962.

1. ''Non-Topographic Utilization of Photogrammetry,'' Adam LISENBARTH, master of engineering; pp. 177-182.

2. ''Photogrammetry in Mining,'' Prof. Zygmunt KOWALCZYK, doctor of engineering; pp. 183-191.

3. ''Photogrammetry in Geological Research,'' docent Kazimierz GUZIK; pp. 192-197.

4. ''Aerophotogrammetry and Agriculture,'' Walery FEDOROWSKI, master of engineering, pp. 197-200.

5. ''Aerophotogrammetry and Forestry,'' Krzysztof RUDZKI, master of engineering; pp. 201-205.

6. ''Aerostereogram Used for the Determination of the Wood Supply in Lowlands,'' Mieczyslaw [illegible], master of engineering, of the Department of Forest Management of the Forestry Research Institute (Zaklad Urzadzania Lasu Instytutu Badawczego Lesnictwa); pp. 206-209.

7. ''Photogrammetry and Country Planning,'' Wiktor RICHERT; pp. 209-214.

8. ''Photogrammetry Used for Road Planning and Road Building,'' Janusz [illegible], master of engineering, of the Department of Photogrammetry of the Warsaw Polytechnic (Katedra Fotogrametrii Politechniki Warszawskiej); pp. 215-218.

9. ''Photogrammetric Documentation in Architecture, Archeology and Anthropology,'' Mieczyslaw NIEPOKOLCZYCKI, master of engineering, of the Institute of Photogrammetry of the Warsaw Polytechnic (Zaklad Fotogrametrii Politechniki Warszawskiej); pp. 215-221.

10. ''Photogrammetric Methods for the Inventory of Historical Monuments,'' Jan CISLO, master of engineering, Substitute Professor of the Academy of Mining and Metallurgy (Zastepca profesora AGH); pp. 221-225.

11. ''In Memoriam: Prof. Dr. Jan PIOTROWSKI,'' Zdzislaw ADAMCZEWSKI; pp. 225-226.

S/035/62/000/012/054/064
A001/A101

AUTHOR: Guzik, Kazimierz

TITLE: Methods of identification and photogrammetric processing of aerial photographs in cartographic-geological investigations of the Geological Division of the Warsaw University and Laboratory of Geological Sciences at the Polish Academy of Sciences

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 12, 1962, 22, abstract 12G148 ("Przegl. geod.", 1962, v. 34, no. 5, 192 - 197, Polish)

TEXT: Geological identification of aerial photographs is one of the basic methods of geological investigations; its value increases by using metrical properties of photographs for determining quantitative characteristics of investigated geological processes and phenomena. The Laboratory of Geological Cartography of the Warsaw University together with the Division of Geological Sciences at the Polish Academy of Sciences are carrying out methodical works. Attention is paid to ways of teaching aerial methods for student geologists. [Abstracter's note: Complete translation] D. K.

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GUZIK, Kazimierz; KOTANSKI, Zbigniew

Tectonics of the lower mountain region near Zakopane. Acta geol. Pol. 13 no.3/4:387-424 '63

1. Katedra Geologii Ogolnej, Uniwersytet, Warszawa.

GUZIK, Kazimierz

Geological structure of the southern and western slopes of Mala Swinica in the lower mountain region near Zakopane. Acta geol. Pol. 13 no.3/4:425-444 '63

1. Zaklad Kartowania Geologicznego, Uniwersytet, Warszawa, i Pracownia Kartografii Geologicznej, Zaklad Nauk Geologicznych, Polska Akademia Nauk, Warszawa.

L 5119-66 EWT(l)/EWA(h)

ACCESSION NR: AP5026300 UR/0144/65/000/008/0863/0873
519.49+681.142

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AUTHOR: Guzik, V. F. (Engineer); Glukhov, O. D. (Engineer)

TITLE: An interference-free trigger circuit operating at 1 Mc

15

SOURCE: IVUZ. Elektromekhanika, no. 8, 1965, 863-873

TOPIC TAGS: trigger circuit, interference immunity, circuit design, digital differential analyzer

ABSTRACT: A trigger stage with counter input made of standard B_1 type modules and operating at 1 Mc is proposed. In addition to two standard B_1 type modules, it contains four D9B diodes, three MLT-0.25 10 kΩ ±10% resistors, and two KTM or KTK-1 200 mf ±10% capacitances. The paper presents a comprehensive formulation of the problem, describes in detail the design and operation of the basic circuit of the trigger, and reports on the comprehensive experimental tests of the unit (optimum operating conditions, interference stability, and binary scalar operation). Results show that the trigger unit developed for the digital differential analyzer (with a 600-kc frequency) can be utilized in arbitrary

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circuits the maximum operating frequency of which does not exceed 1 Mc. Orig. art. has: 2 formulas, 12 figures, and 1 table.

ASSOCIATION: Taganrogskiy radiotekhnicheskiy institut (Taganrog Radioengineering Institute)

SUBMITTED: 20May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 007 OTHER: 000

Card 2/2

L 21009-65 EED-2/EWT(d)/EWP(1) Pg-4/Pk-4/Pq-4/Ps-4 IJP(c)/AFWL/SSD/ASD(a)-5/
BSD/AFMD(p)/AFETR/AFTC(b)/RAEM(d)/RAEM(1)/ESD(dp) GG/BB
ACCESSION NR: AP5003751 S/0144/64/000/007/0804/0813

AUTHOR: Guzik, V. F. (Assistant in computer engineering dept)

TITLE: Transistorized arithmetic apparatus of a controlling computer constructed on the basis of a digital differential analyzer

SOURCE: IVUZ. Elektromekhanika, no. 7, 1964, 804-813

TOPIC TAGS: digital computer, integration, differentiation, computer component

Abstract: A parallel arithmetic unit that is the main unit of a digital differential analyzer is described. It has a basic cyclical frequency of 1 Mc; the maximum number of digital places is 25; the maximum number of inputs into the integrator is 7, and integration is by a formula of parabolas; the increment coding system is ternary; the binary system is used in calculation; the main elements are semiconductor triodes and diodes. The principal elementary operation performed by the integrator is the addition of binary digits, which is accomplished by means of parallel storage summator. The optimal parameters of all the elements are given. Work is being done to raise the cyclical frequency, but increase beyond 2 Mc is limited by lag of the direct transition circuit and would require either reducing the number

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ACCESSION NR: AP5003751

of digital places or working out the functional circuit of the summator on another principle. The high speed of the device permits a controlling machine constructed on the principle of a series-parallel differential analyzer to function in the natural time scale in controlling high-speed production processes. Orig. art. has 7 formulas.

ASSOCIATION: Kafedra vychislitel'noy tekhniki Taganrogskogo radiotekhnicheskogo instituta (Department of Computer Engineering of the Taganrog Radio Engineering Institute)

SUBMITTED: 11Sep63 ENCL: 00 SUB CODE: DP, MA

NO REF SOV: 002 OTHER: 000 JPRS

Card 2/2

GUZIK, Vyacheslav Filippovich, assistent

Transistorized arithmetical unit of a control computer based on a digital differential analyzer. Izv. vys. ucheb. zav.; elektromekh. 7 no.7:804-813 '64. (MIRA 18:5)

1. Kafedra vychislitel'noy tekhniki Taganrogskogo radiotekhnicheskogo instituta.

GUZIK, Vyacheslav Filippovich, inzh.; GLUKHOV, Oleg Dmitriyevich, inzh.

Noise stable trigger circuit for lmc. operation. Izv.vys.uchab.zav.; elektromekh. 8 no.8:863-873 '65. (MIRA 18:10)

1. Taganrogskiy radiotekhnicheskiy institut.

GUZIK, Zofia, mgr; LOPATA, Roman, mgr inż.

Obtaining inert varieties of monocrystalline corundum.
Hutnik P 30 no.3:83-86 Mr '63.

ZAYONCHKOVSKIY, A.D.; BERNSHTEYN, M.Kh.; KIRIYENKO, N.V.; ABRAMOVA, V.V.; GUZIKHIN, N.S.; SHMERLING, B.M.; YABKO, Ya.A.; PEKAR, Ya.A.; PESHKOV, P.V.

Artificial leather for the uppers of open summer footwear. Leg. prom. 16 no.1:20-23 Ja '56. (MLRA 9:6)
(Shoe industry) (Leather, Artificial)

GUZIKHIN, N. S.

Chrome leather. G. M. Gluzman, M. G. [illegible], V. N. Safonova, N. S. Guzikhin, and N. N. Dorokhin. U.S.S.R. 100,153, June [illegible]. The tanning of chrome [illegible] leather, and [illegible]

[illegible]

GUZIKOV, A.M.

[Clinical prosthodontia] Klinicheskoe zuboprotezirovanie. Moskva, Medgiz, 1952. 259 p. (MLRA 6:7)
(Teeth, Artificial)

GUZIKOV, N.L.

Uproshchennyi sposob opredeleniia kasatel'nykh napriazhenii, voznikaiushchikh pri kru-chenii kryla. (Tekhnika vozdushnogo flota, 1945, no. 7/8, p. 27-30, diagrs)

Title tr.: Simple method of determing tangential stresses induced by the torsion of the wing.

TL504. T4 1945

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

USSR/Aeronautics — Mar 1947
Wings - Design
Wing Profiles - Stresses

PA 28T8

"Approximating the Weight of Power Sheathing during Given Deformation of Buckled Wings," N. L. Guzikov, 6 pp

"Tekh Voz Flota" No 3 (228)

Sheathing for plane wings can be divided into two types, strong and weak. For the aerodynamic profiles of wings for fast planes, allowance must be made for the fact that the torsion is greatly regulated. Therefore, it is important to be able to approximate the weight of the sheathing for any given wing profile. From that data it is easy to determine the

BS 28T8

USSR/Aeronautics (Contd) — Mar 1947

thickness of the sheathing necessary for a particular wing profile. Presents mathematical formulas for calculating the weight of sheathing.

BS 28T8

GUZIKOV, P. A. (Prof.)

"Methods of Painless Child-Birth for the Masses," Sov. Zdrav., No.6, 1949

Hd., Chair of Obstetrics & Gynecological Clinic. Molotov Med. Inst.

GUZIKOV, P.A.

Penicillin prophylaxis of ophthalmia neonatorum. Akush.gin. No.5: 37-41 Sept-Oct 50. (CLML 20:5)

1. Of the Obstetric-Gynecology Clinic (Head -- Prof. P.A.Guzikov), Molotov Medical Institute.

GUZIKOV, V.M., inzhener.

New method for recording torsional vibrations. Izobr. v SSSR 2 no.1: 11-15 Ja '57. (MLRA 10:4)
(Torsion) (Vibration--Measurements)

GAWEND-DZIERZYNSKA, Irena, TOWPIK, Josef, MORRIS, Wanda, GUZIKOWSKA, Maria

Level and retention in the blood of domestic procaine penicillin. Polski tygod. lek. 13 no.16:591-596 21 Apr 58

1. (Z Zakladu Antybiotyków P.Z.H.; i z Instytutu Dermatologii i Wnerologii w Warszawie) Adres: Warszawa, ul. Chocimska 24. Zaklad Antybiotykov P.Z.H.

(PENICILLIN, rel. cpds.
procaine penicillin, level & retention in blood (Pol)