S/032/63/029/004/009/016
A004/A127

AUTHORS: Lebedev, D.V., Moletilov, B.V., Ovayumikov, B.M.

TITLE: Metal tensile tests at very low temperatures

PERIODICALS: Zavodskaya laboratoriya, no. 4, 1963, 474 - 477

TEXT: The authors analyse methods of metal tensile tests at the boiling point of liquid hydrogen. The specimens were cooled and deformed in a modified and improved Dewar low-temperature vessel. The tests were carried out on a multipurpose P-5 (R-5) testing machine at a deformation rate of 2 mm/min. It is recommended to use cylindrical specimens as this reduces the error magnitudes. The nature of the stressed state arising during the deformation of the specimens can be established according to the angular distribution of stresses, in particular, the very substantial effect of bending at low loads. The total error of determining the mechanical characteristics by this method amounts to 5 - 7% of the maximum stress. Based on a statistical analysis it was found that reliable results are obtained with this method both for brittle and ductile metals. There are 5 figures and 1 table.

Card 1/2

Metal tensile tests at ....

S/032/63/029/004/009/016
A004/A127

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P. Bardina (Central Scientific-Research Institute of Ferrous Metallurgy im. I.P. Bardin)

Card 2/2

ACCESSION NR: AT4001248

furnaces with seals to ensure hermeticity of the system at relatively large displacements of the clamps of the testing machine, heating elements for the furnace, and control circuitry. Some operating features of the furnaces are discussed. Orig. art. has: 15 figures.

ASSOCIATION: Tsentral'ny*y nauchno-issledovatel'skiy institut chernoy metalurgii (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 00	DATE ACQ: 10Dec63	ENCL: 02
SUB CODE: AP, MA	NO REF SOV: 006	OTHER: 000

Card 2/4

L 11402-63 EWP(q)/EWT(m)/BDS AFFTC/ S/032/63/029/005/020/022
ASD JD

AUTHORS: Lebedev, D. V.; Melekhin, A. K. and Ovsyannikov, B. M. 55

TITLE: Furnace for testing metals for long-time strength at temperatures up to 1500° in air

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 5, 1963, 618-619

TEXT: The furnace (600 x 250 x 200 mm) was made of asbestos cement 15 mm thick with stainless steel plates at the openings and with $MoSi_2$ heating elements. The temperature on the test piece was measured with a thermocouple by means of a potentiometer. The load was applied to the test piece after it was heated and while it was held at 1500°C. There are three figures.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

ln/jn
Card 1/1

L 27760-65 EWT(m)/EWP(w)/EPF(c)/EPF(n)-2/EPR/T/EWP(b)/EWP(t)/EWA(d) Pr-4/
Ps-4/Pu-4 JD

ACCESSION NR: AT5003403 S/2776/64/000/038/0115/0118

AUTHOR: Lebedev, D. V.; Molotilov, B. V.; Ovsyannikov, B. M.

TITLE: Tensile testing equipment for very low temperatures

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 38, 1964. Novyye metody ispytaniy metallov; metallograficheskiye issledovaniya i mekhanicheskiye ispytaniya metallov (New methods in the analyses of metals; metallographic investigations and mechanical analyses of metals), 115-118

TOPIC TAGS: tensile testing, cryostat, liquid helium, liquid nitrogen, low temperature test

ABSTRACT: The development of solid state physics requires an ever-increasing number of methods suitable for low temperature testing, and particularly unidirectional static tensile tests. The authors' Institute has been working on the simplification of available tensile testing machines. An improved design was also sought with a view to reducing the amount of He used as a coolant. Furthermore, the new machine was to have a capacity for testing single crystals, polycrystalline microsamples and standard cylindrical specimens 4 to 5 mm in diameter or

Card 1/3

L 27760-65

ACCESSION NR: AT5003403

2

flat specimens 3 to 5 mm thick. A wall-type microtester was designed and among several models a cryostat suggested by A. B. Fredkov was found to be most convenient and compact. Loss of heat through its walls was diminished by tightening the connections and the use of rubber membranes prevented the leakage of the coolant. Isolation from the ambient air was improved by additional cooling with liquid nitrogen. The loads applied were recorded by means of an oscillography system. A centering device provided reliable centering of the work piece. The working chamber was isolated with mirror-finished copper sheets, 0.1 mm thick, clad with Cr, Ni or Ag. However, the search for better equipment continues. Orig. art. has: 3 figures.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii, Moscow (Central ferrous metallurgy scientific research institute)

SUBMITTED: 00 ENCL: 01 SUB CODE: SS, MM

NO REF SOV: 005 OTHER: 000

Card 2/3

ACCESSION NR: AT5003403 ENCLOSURE: 01

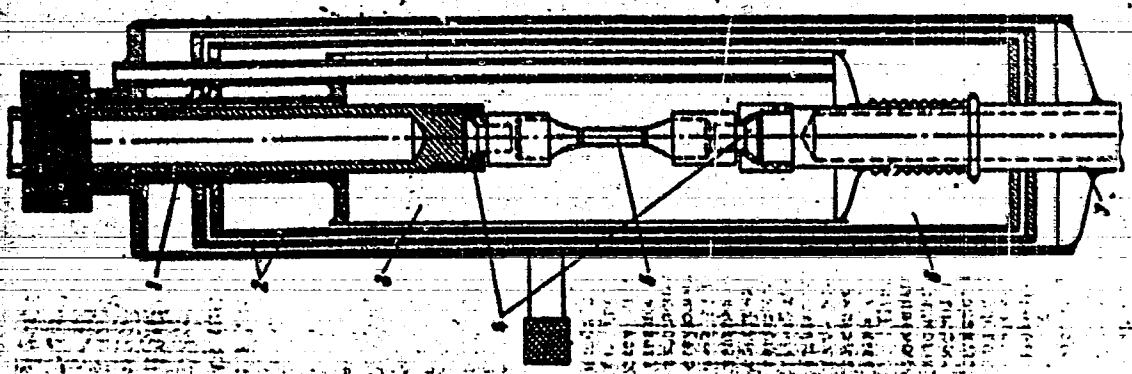

Figure 1. Schematic view of the model-4 cryostat: (1) active pull; (2) radiation screens; (3) working chamber with liquid He; (4) centering device; (5) specimen; (6) vacuum chamber; (7) passive pull.

Card 3/3

L 27768-65 EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) ...D
ACCESSION NR: AT5003404 S/2776/64/000/038/0119/0122

18
17
B+1

AUTHOR: Demidov, N. N.; Kobozev, Yu. S.; Ovsyannikov, B. M.

TITLE: Development and application of contactless (in power circuits) furnace temperature control methods during creep and stress rupture strength tests

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 38, 1964. Novyye metody ispytaniy metallov; metallograficheskiye issledovaniya i mekhanicheskiye ispytaniya metallov (New methods in the analyses of metals; metallographic investigations and mechanical analyses of metals), 119-122

TOPIC TAGS: saturation choke, contactless temperature control, furnace temperature, temperature regulation, creep test, stress rupture strength test, tester reliability

ABSTRACT: The authors investigated the possibility of introducing a more advanced contactless method of temperature control by means of a saturation choke which would enable the use of a centralized remote control system, eliminate substantial rheostat heat emission into the working area, and facilitate maintenance. In earlier papers, the design and employment of saturation chokes as a means of in-

Card 1/2

L 27168-65

ACCESSION NR: AT5003404

ductive coupling between the primary circuits of furnace heating elements and the control circuits had been discussed. The iron saturation choke has an A.C. coil on the outer cores and a D.C. excitation coil on the center core. The magnetic flux passes only through the outer cores. The A.C. voltage is not induced by the excitation coil. The furnace heating range lies between 300 and 800 C and the voltage is 0 for the initial 300 C and 25 v for the maximum temperature. The choke capacity is fully employed by connecting the choke to the primary circuit of the heating elements through an autotransformer whose transformation factor is equal to 2. Both are connected individually to each of the three sections of the furnace to provide accurate temperature control along the height of the working area. Light and sound signals indicate irregularities in the control system. The proposed system enhances the reliability of a test installation, cuts the cost of electric power and secures a more convenient and safer operation of the control panels. Orig. art. has: 1 figure.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii, Moscow (Central ferrous metallurgy scientific research institute)

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

NO REF SOV: 003 OTHER: 000

Card 2/2

ACCESSION NR: AP4013314 S/0032/64/030/002/0228/0229

AUTHOR: Cvsyannikov, B. N.; Lebedev, D. V.; Pelekhin, A. K.; Vol'nov, N. N.

TITLE: An installation for testing long range durability under vacuum at temperatures up to 1800C

SOURCE: Zavodskaya laboratoriya, v. 30, no. 2, 1964, 228-229

TOPIC TAGS: durability, durability test, long range durability, vacuum effect, temperature effect, vacuum oven, heated vacuum oven

ABSTRACT: The installation consisted of a two-section steel vacuum oven of cylindrical shape, 29 cm in diameter and 30 cm long, provided with a water jacket and two centrally located radiation heaters. By these means it was possible to bring the temperature up to 1300C within 20 minutes and to 1800C within 65 minutes. However, it was found that a too rapid rise of temperature caused an accelerated evolution of gases from the test samples placed in the oven, which affected the vacuum. A gradual step-by-step rise in temperature was found to be the proper procedure. An additional source of error in a vacuum of fluctuating magnitude was due to the presence of equalization loads of the leverage system of the testing machine. Figure 1 on the Enclosures gives the structural details of the vacuum oven, [illegible]

Card 1/2 Sent for Review of Ferrous Metallurgy

L 39323-65 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWA(d)/EWP(v)/EPR/T/EWP(t)/EWP(k)/EWP(b)/
ACCESSION NR: AP5007680 EWP(b)/EWP(l)/EWA(c) Pf-4 S/0032/65/031/003/0367/0369
JD/HW/EM

AUTHORS: Andrianov, Yu. Ye.; Lebedev, D. V.; Ovsyannikov, B. M.

TITLE: A method for strain testing small specimens at a temperature up to 1600C in a vacuum

SOURCE: Zavodskaya laboratoriya, v. 31, no. 3, 1965, 367-369

TOPIC TAGS: vacuum chamber, material, material strength, metal deformation, vacuum, plastic deformation, elastic deformation, IRM 0.2 machine

ABSTRACT: A technique of strain testing microspecimens under vacuum (or in inert gas) at temperatures up to 1600C is described. The method employs the IRM-0.2 material testing device described by V. P. Konoplenko and D. K. Vinogradov (Zavodskaya Laboratoriya, No. 1, 1959). The basic machine parameters are: maximum load capacity 1000 kg, direct loading; scale divisions 0-200, 0-400, 0-600, 0-800, and 0-1000 kg; maximum temperature 1600C; vacuum pressure 1 x 10-4 mm Hg; deformation rates 1 and 2 mm/minute; automatic diagram recording; deformation scale 45:1; required potential at maximum test temperature 2 kilovolts. The machine permits measuring several stress parameters. Figure 1 on the Enclosure gives the definition of the variables describing the size of a test specimen. The optimal size of a test specimen was considered to be that size which allows the closest approximation of

Card 1/3

the test to standard conditions and allows the use of the recording devices for description of mechanical properties. Tests were performed to find the optimal specimen dimensions, and concrete recommendations are made for specification of temperature control and measurement during the testing. Results indicate that the prescribed methods are in complete accord with the standard testing routines prescribed in GOST 1497-61. Orig. art. has: 3 figures.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy)

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NO REF SOV: 002 OTHER: 000

L 39323-65
ACCESSION NR: AP5007680

ENCLOSURE: 01

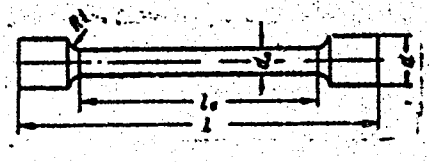


Fig. 1. View of test specimen

Card 3/3 do

OVSYANNIKOV, B.M.

Dependence of the impact strength on the radius at the jeny of the notch and the testing temperature. Zav. lab. 31 no...: 1380-1384 '65. (MIRA ...)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni Bardina.

L 20626-66 EWT(m)/T/EWA(d)/EWP(w)/EWP(t) IJP(c) JD/HW

ACC NR: AP6010101 SOURCE CODE: UR/0129/66/000/003/0064/0065

AUTHOR: Lebedev, D. V.; Maslenkov, S. B.; Ovsyannikov, B. M.

ORG: TsNIIChERMET

TITLE: Mechanical properties of EI827 alloy at low temperatures

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1966, 64-65

TOPIC TAGS: nickel alloy, chromium containing alloy, tugsten containing alloy, molybdenum containing alloy, aluminum containing alloy, alloy property, low temperature property / EI827 alloy

ABSTRACT: The tensile and yield behavior of EI827 nickel alloy (0.03%C, 9.85% Cr, 5% W, 5.65% Mo, 4.35% Al) at 20C to -253C has been investigated. The alloy was annealed at 1170C for 6 hr and water quenched. It was found that the strength characteristics increase linearly with decreasing temperature. At room temperature the tensile and yield strengths are 108 and 70 kg/mm^2; at -120C, 119 and 80 kg/mm^2; and at -253C, 140 and 82 kg/mm^2. The ductility changes insignificantly with a drop in temperature, the elongation remains around 47%, and the reduction of area, around 40—44%. The deformation along the gage length was uniform; no necking was observed at any temperature tested. The yielding at temperatures as low as -253C was smooth, and the stress-strain curve showed no serrations as observed in some metals and alloys at low temperatures. At room temperature the alloy is prone to deformation aging, which

Card 1/2 UDC: 620.17:669.14.013.45

EWT(m)/EWP(t)/ETI IJP(c) JD/JG/JH

SOURCE CODE: UR/2776/66/000/046/0086/0092

AUTHOR: [illegible], V. I.; [illegible], I. V.; Chuprunov, B. M.

ORG: none

TITLE: Influence of thermal treatment and preliminary deformation on the crystallization process in thin ribbons of steel 1Kh18N10T

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 46, 1966. Spetsial'nyye stali i splavy (Special steels and alloys), 86-92

TOPIC TAGS: steel, alloy steel, chromium steel, [illegible] steel, metal test / 1Kh18N10T steel

ABSTRACT: The crystallization process in thin 0.1-mm ribbons of steel [illegible] was studied as a function of the thermal treatment and preliminary deformation of the ribbon. The study supplements the results of I. L. Kogan'berg and [illegible] Shpichinetskiy (Nekotoryye rekristallizatsii metallov i splavov. Metallurgizdat, 1956). The microstructure and grain size of the steel ribbon were [illegible] as a function of the annealing temperature and degree of deformation. The experimental results are presented graphically (see Fig. 1). It was found that at 1200C the critical deformation of the ribbon was 10—25%. At all temperatures studied, a

Card 1/2

OVSYANNIKOV, B.N.

Tension test for metals. Standartizatsiia 25 no.3:46-48 Mr '61.
(MIRA 14:3)
(Metals--Testing--Standards)

OVSYANNIKOV, B.P., inzh.

Results of the power testing of silage harvesting [illegible]. Trakt. i sel'khozmash. no.1:[illegible] Ja '[illegible].

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.

SERGEYEV, M.P., prof.; OVSYANNIKOV, B.P., inzh.

Determining the output of the choppers of silage harvesters.
Mekh. i elek. sots. sel'khoz. 21 no.3:50-51 '63. (MIRA 16:3)

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Mowing machines) (Ensilage)

SOV/88 58 97 6/7

AUTHOR: Ovsyannikov, B. V., Candidate of Technical Sciences, and Kudrin, O.I., Candidate of Technical Sciences

TITLE: Exhaust Nozzle of a Piston Engine With the Addition of Atmospheric Air (Vykhlopnoy reaktivnyy patrubok porshnevogo dvigatelya s prisoyedineniyem atmosfernogo vozdukha)

PERIODICAL: Trudy Moskovskogo aviatsionnogo instituta, 1958, Nr 97, Addition of a Supplementary Volume in Jet Apparatus (Prisoyedineniye dopolnitel'noy massy v struynykh apparatakh), pp 181-190 (USSR)

ABSTRACT: The authors consider the problem of using the kinetic energy of exhaust gases for the addition of atmospheric air. They describe the test installation used in their research, give some numerical data and several graphs illustrating their findings. The main problems of their research were: 1. to determine whether the installation of an augmenter on jet nozzles of aircraft piston engines leads to a noticeable thrust increase in spite of the high frequency of their cycles (600-1200 cycles/minute); 2. to determine the influence of the pressure of the supercharger on the thrust of the combined jet. The authors arrived at the following conclusions: 1. The addition of atmospheric air to jet exhaust gases by means of an open ejector

Card 1/2

PHASE I BOOK EXPLOITATION SOV/4230

Ovsyannikov, Boris Viktorovich

Teoriya i raschet nasosov zhidkostnykh raketnykh dvigateley (Theory and Design of Pumps for Liquid Fuel Rocket Engines) Moscow, Oborongiz, 1960. 246 p. Errata slip inserted. 10,000 copies printed.

Ed.: I. L. Yanovskiy, Engineer; Managing Ed.: S. D. Krasil'nikov, Engineer; Ed. of Publishing House: S. I. Vinogradskikh; Tech. Ed.: V. P. Rozhin.

PURPOSE: This is a textbook for students of aeronautical and machine-building institutions of higher education specializing in the theory and design of pumps for liquid fuel rocket engines. The book may also be used as a manual for engineers and technicians interested in pump systems for aircraft power plants.

COVERAGE: The book is based on a synopsis of courses given by the author and on Soviet and other literature. It discusses the theory and design of pumps for liquid rocket engines, as well as characteristics and fuel requirements of such pumps. The author emphasizes that he has made ample use of the Soviet

Card 1/5

experience in pump building presented in a book by Professor A. A. Lomakin, Doctor of Technical Sciences. The author thanks Professor V. I. Polikovskiy, Doctor of Technical Sciences, for his comments and suggestions concerning the manuscript. There are 26 references: 23 Soviet, 2 English, and 1 German.

TABLE OF CONTENTS:

Card 2/5

OVSYANNIKOV, B.V.

Relationship between the impeller pressure of a radial-flow bladed machine and the moment of Coriolis inertia forces. Izv. vys. ucheb. zav., av. tekh. 6 no.2(92-10[illegible] '63.

(MIRA [illegible])

(Turbomachines - Fluid dynamics)

OVSYANNIKOV, L. V.
P 9

SOV/3848
SOV/11-M-97

[illegible] BOOK EXPLOITATION

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Prisoyedineniye dopolnitel'noy massy v struynykh apparatakh; sbornik statey (Mass-Flow Augmentation in Jet Engines; Collection of Articles) Moscow, Oborongiz, 1958. 230 p. (Series: Its: Trudy, vyp. 97) Errata slip inserted. 2,210 copies printed.

Ed. (Title page): A.V. Kvasnikov, Professor; Ed. (Inside book): S.G. Boshenyatov (Deceased); Managing Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: T.A. Valedinskaya; Tech. Ed.: L.A. Lebedeva.

PURPOSE: This collection of articles is intended for scientific workers at engineering schools and research institutes and also for engineers working in experimental design offices.

COVERAGE: This collection contains abridged dissertations from the Department of Aviation Engine Theory, Faculty No. 2, of the Moskovskiy aviatsionnyy institut (Moscow Aviation Institute)

Card 1/12

the mixing chamber and permit the calculation of the length and the profile of the mixing-chamber wall, as well as the effect of the ejection coefficient and the turbulence factor on the mixing. It was found that the length of the initial sections of the mixing chamber depends primarily on the ejection coefficient μ and the magnitude of the test constant α which characterize the structure of the turbulent flow of the driving gas. The length of the mixing chamber is essentially independent of the difference in the velocities and temperature of the flows. The profile of the wall of the entrance section is extremely close to a straight line, slightly inclined with respect to the ejector axis. This angle of inclination depends primarily on μ, α, the velocity ratio u_2/u_1, and the temperature ratio T_2/T_1. The compressibility of the basic flow has a negligible effect on the mixing process up to sonic velocity. The analytical results are supported by experiments with an air ejector. As an incidental result of the study it was shown that, for a mass flow of the basic jet equal to 0.5 kg/sec and a pressure ratio of 1.85, an increase in thrust equal to 25-35 percent of the thrust of the basic jet could be obtained.

geometry of the walls without taking into consideration dissipation forces (viscosity and thermoconductivity). Comparison of the analytical results with experimental data shows that the properties of the complex flow obtained by the aforementioned theoretical treatment coincide with the properties of the actual flow observed in the ejector; that is, the character of turbulent mixing in an ejector is the same as in a free turbulent submerged jet. The flow in an ejector may thus be regarded as a flow of a submerged jet which is deformed due to the presence of the engine walls whose effect may be theoretically identified with the effect of a system of point vortices where the turbulent-viscosity coefficient is assumed constant in determining the vortex intensity. The actual velocity fields inside and outside the engine differ from the ideal, particularly near the walls, because of the presence of the boundary layer. Corrections for the effect of the boundary layer are given which permit determination of the actual velocities inside the engine. The thrust determined from the analytical equations was found to be in good agreement with experimental

Mass-Flow Augmentation in Jet Engines (Cont.) SOV 3848

This paper presents a theoretical and experimental study of the effects of adding atmospheric air to pulsating jets. It is shown that the addition of atmospheric air to a pulsating gas jet may lead to a considerable increase in its impulse. The addition of supplementary air mass is not only due to ejection, that is, the parallel addition of air into the driving jet which is associated with mixing, but also to the interaction of separate masses of air added gradually. Two forms of this gradual addition are possible, namely gradual expulsion of additional mass and gradual inflow of air behind the driving jet. The largest increment in thrust (up to 120 percent of the thrust of a single nozzle) was obtained in a compound jet nozzle with an open shroud which includes the three basic forms of the process of mass addition (ejection, expulsion, and gradual inflow of air behind the driving jet). The gradual inflow is the basic process which produces a large increment in thrust and determines the character of its variation as a function of the basic parameters of the pulsating flow. The thrust increases obtained in the process with gradual inflow were found to be close to the corresponding calculated values based on the assumption of no losses due to friction or vortex formation. This

Card 8/12

ACC NR: AP6036862 SOURCE CODE: UR/0147/66/000/[illegible]

AUTHOR: Ovsyannikov, B. V.; Borovskiy, B. I.

ORG: none

TITLE: Problem of energy transfer in centrifugal and mixed-flow pumps by circulation and Coriolis forces

SOURCE: IVUZ. Aviatsonnaya tekhnika, no.4,1966,107-113

TOPIC TAGS: centrifugal pump, mixed flow pump, pump performance analysis, pump design, CORIOLIS FORCE

ABSTRACT: An analysis is presented of some problems of designing centrifugal and mixed-flow pumps from the point of view of the energy transfer processes. It was previously shown (Ovsyannikov, B. V., Aviatsionnaya tekhnika, no.2.,1963) that in a centrifugal pump the energy is transfered to the fluid by Coriolis inertia forces and circulation forces (i.e., forces associated with the circulation of relative velocities around impeller blades). Formulas are derived for calculating these forces, and relationships are obtained for these forces and certain geometric pump parameters. It is noted that this type of approach to pump analysis makes it possible to explain various

Card 1/2 UDC: 621.67

ACC NR: AP6035952 SOURCE CODE: UR/0129/66/000/010/0040/0041

AUTHOR: Babakov, A. A.; Lebedev, D. V.; Ovsyannikov, B. M.; Ol'yanin, Ye. A.

ORG: TsNIIChERMET

TITLE: Mechanical properties of Kh14G14N3T steel at -253C

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1966, 40-41

TOPIC TAGS: SOLID MECHANICAL PROPERTY, METAL GRAIN STRUCTURE, chromium manganese nickel steel, boron containing steel, steel property, steel subzero temperature property/Kh14GN3T steel, Kh14G14N3TR steel

ABSTRACT: The properties of Kh14G14N3T and Kh14G14N3TR steels in the as-cast and in hot-rolled conditions have been investigated at -253C. Annealed at 1050C and water quenched, the steels had a fine-grained austenitic-ferritic structure, while the Kh18N10T steel used for comparison had fully austenitic structure. At -253C, rolled and annealed Kh14G14N3T steel had a tensile strength of 160 kg/mm^2, a yield strength of 49 kg/mm^2, and elongation of 34%, and a reduction of area of 28%, compared to 185 kg/mm^2, 68 kg/mm^2, 32%, and 42% in the Kh18N10T steel and 152 kg/mm^2, 58 kg/mm^2, 38% and 50% for boron-bearing Kh17G14N3TR steel. Kh14G14N3T steel in the as-cast condition had a much lower strength, (70 kg/mm^2) and extremely low ductility, and an elongation and reduction of area of only 5%. At -253C, as-cast Kh14G14N3T steel had a crystalline fracture which was not observed in Kh14G14N3TR or in Kh18N10T steel.

Card 1/2 UDC: 620.17:669.14.018.8:536.48

OVSYANNIKOV, B.V., kand.tekhn.nauk

Inflow of gas into a cylinder with variable volume. Nauch.dokl. vys.shkoly; mash.i prib. no.2:68-71 '58. (MIRA 12:10)

1. Predstavlano Moskovskim aviatsionnym institutom.
(Fluid dynamics)

OVSYANNIKOV, B.V.; CHEBAYEVSKIY, V.F.

Results of testing high-speed centrifugal pumps. Izv. vys. uchob. zav.; av. tekh. no.2:104-111 '58. (MIRA 11:6)

1. Moskovskiy aviatsionnyy institut, Kafedra AD-2.
(Centrifugal pumps--Testing)

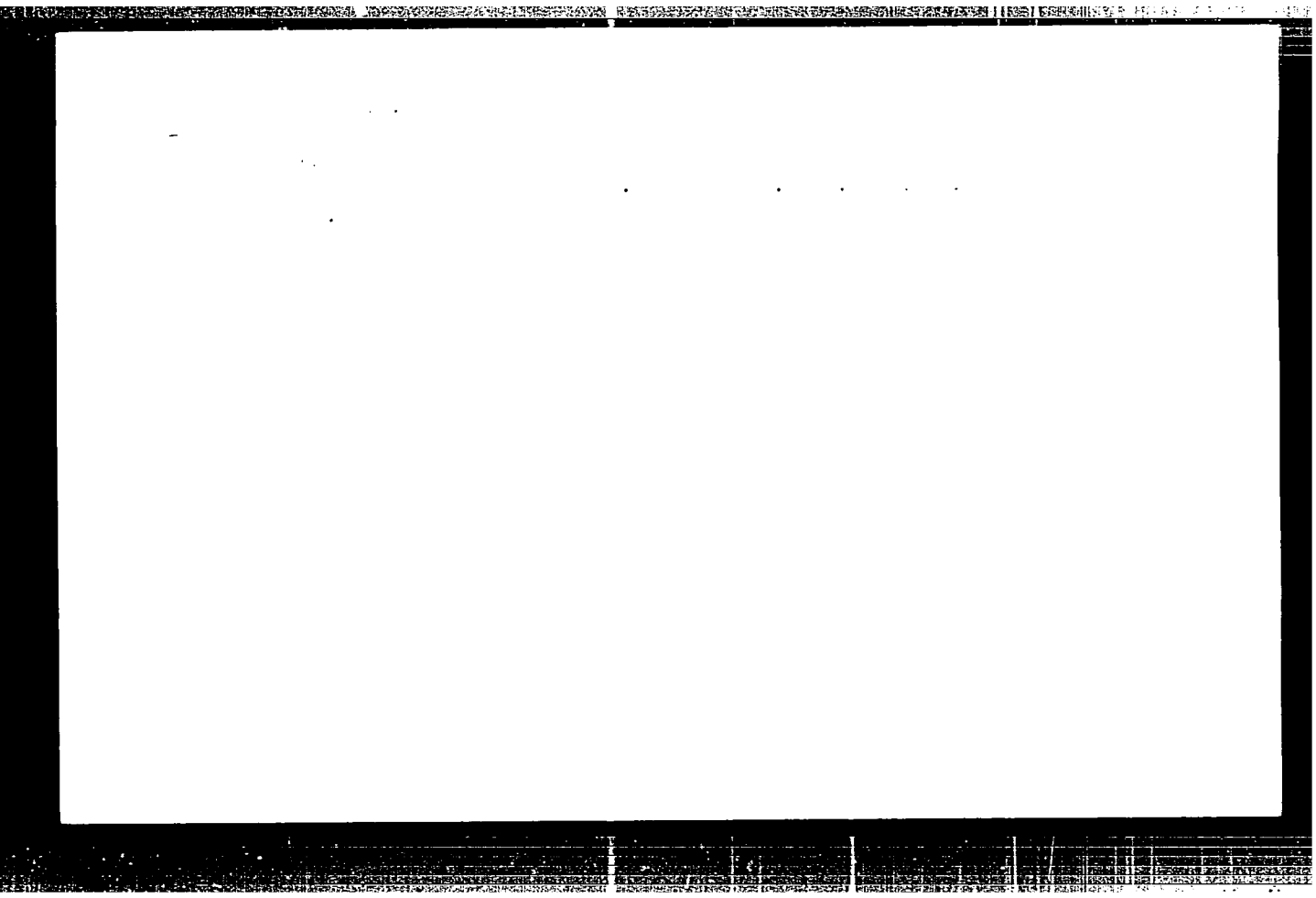
OVSYANNIKOV, B.V., kand.tekhn.nauk

Concerning M.IA.Baier's article published in "Energomashinostroenie" No.4, 1957, under the title "Conformal method for specifying blade profiles for Francis-type turbomachinery"; letter to the editor. Energomashinostroenie 4 no.5:15 My '58. (MIRA 11:9)
(Hydraulic turbines)

OVSYANNIKOV, D., kuznets, brigadir kollektiva kommunisticheskogo truda, deputat Verkhovnogo Soveta SSSR.

Man achieves greatness only in work. Sov. profsoiuzy 16 no.20: 30-33 O '60. (MIRA 13:11)

1. Odesskiy zavod imeni Yanvarskogo vosstaniya.
(Odessa--Vegetable gardening (Kolkhoz))



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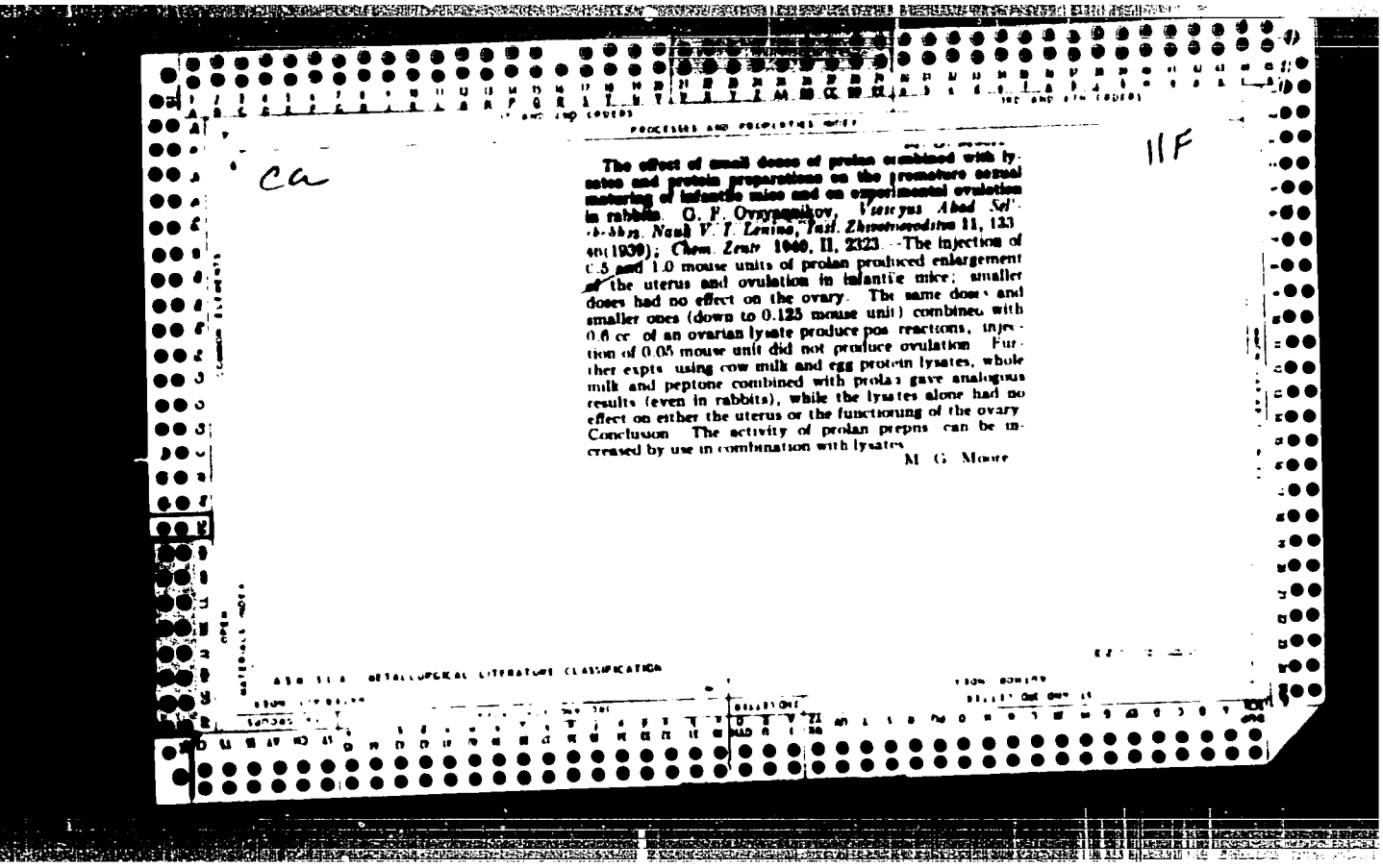

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The effect of small doses of prolan combined with lysates and protein preparations on the premature sexual maturing of infantile mice and on experimental ovulation in rabbits. G. F. Ovsyannikov, *Trudy Ukr. Nauch. Issled. Inst. Eksperim. Akad. Sel'skokhoz. Nauk V. I. Lenina, Inst. Zhivotnovodstva* 11, 133-40 (1939); *Chem. Zentr.* 1940, II, 2323.—The injection of 0.5 and 1.0 mouse units of prolan produced enlargement of the uterus and ovulation in infantile mice; smaller doses had no effect on the ovary. The same doses and smaller ones (down to 0.125 mouse unit) combined with 0.6 cc. of an ovarian lysate produce pos. reactions; injection of 0.05 mouse unit did not produce ovulation. Further expts. using cow milk and egg protein lysates, whole milk and peptone combined with prolan gave analogous results (even in rabbits), while the lysates alone had no effect on either the uterus or the functioning of the ovary. Conclusion. The activity of prolan preps. can be increased by use in combination with lysates.

M. G. Moore

OVSYANNIKOV, O.

Scaffoldings on rod girders. Stroitel' 2 no.6:15 Je '56.
(Scaffolding) (MLR 10:1)

L 5184-66 EWT(1)/EPA(s)-2/EWA(h) GW

ACC NR: AT6000093 SOURCE CODE: UR/2619/64/000/035/0133/0137

AUTHOR: Ovsyannikov, G. A. 60

44,55 B+1

ORG: Institute of Physics of the Earth im. O.Yu. Shmidt, AN SSSR (Institut fiziki zemli AN SSSR) 44,55

TITLE: Semiconductor circuit for powering a noncommutator motor for an epicentral seismic station 24,44,55

12,44,55

SOURCE: AN SSSR. Institut fiziki zemli. Trudy, no. 35, 1964, 133-137

TOPIC TAGS: semiconductor device, electronic circuit, electric motor, seismologic station, seismologic instrument

12,44,55

ABSTRACT: Test runs using a semiconductor-powered noncommutator motor showed that when the temperature of the surrounding medium exceeds 20°C, overall power consumption increases. This increase can be reduced significantly by using semiconductor diodes (schematic for commutator is shown). Orig. art. has: 5 figures. [FSB: v. 1, no. 5]

SUB CODE: EC, ES / SUBM DATE: none

Card 1/1 hs

1. OVSYANNIKOV, G. F.

2. USSR (600)

4. Cattle Breeds

7. Work practice in improving Yaroslav cattle, Sov. zootekh, 7, No. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

OVSYANNIKOV, G.F., kand.sel'skokhoz.nauk

Interrelationship between the length of gestation and live weight of newborn calves. Zhivotnovodstvo 21 no.9:[illegible] S '59. (MIRA 13:1)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A. Timiryazeva.
(Calves)

OVSYANNIKOV, G.G., aspirant; LIDIN, Dmitriy

Electronic calculating machines. Avtom., telem. i sviaz' 6 no.10:16-20 O '62. (MIRA 15:9)
(Railroads--Electronic equipment) (Electronic computers)

OVSYANNIKOV, G.G., aspirant; LILIN, Dmitriy

Electronic computers. Avtom., telem. i sviaz' 7 no.2:18-22 F '63.
(MIRA 16:3)
(Electronic computers)

ACC NR: AT6023932

its final form the probability of magnetic tape failure is

$$Q_{tape}(t) = \left[1 - \prod_{i=1}^{n} \left[1 - q_i(t)\right]^{\hat{\omega}}\right]^{\hat{\omega}^n},$$

where $q_i(t)$ is the probability of a tape section failure in time t, n is the number of zones, and $\hat{\omega}$ is the probability that the correcting code will correct mistakes by repeated readouts. Algorithms are given for recording on tape and for readout. Orig. art. has: 13 formulas and 2 figures.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 002

Card 2/2

OVSYANNIKOV, G. V.

OVSYANNIKOV, G. V. --"The Histogenesis and Reactive Changes in the Skin Tissue of the Ram Scrotum Following Castration under Experimental Conditions." Min Higher Education USSR. Leningrad Veterinary Inst. Leningrad, 1955. (Dissertation for the Degree of Candidate of Biological Sciences.)

SO: Knizhnaya Letopis', No 5, Moscow, Feb 1956

OVSYANNIKOVA, I.A.

Studying X-ray spectra of the compound NiS. Izv. Sib. otd. AN SSSR no.11:80-87 '61. (MIRA 15:1)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Nickel sulfides—Spectra)
(Spectrum, X-ray)

SHMIDT, N.V.; DONTSOV, P.M.; KRASIL'NIKOV, Z.N.; SHVACH, Ye.N.; OVSYANNIKOV, I.I.

Heat treated carbon steel for shipbuilding. Sudostroenie 28 no.9:44-48 S '62. (MIRA 15:10)
(Plates, Iron and steel—Testing) (Shipbuilding)

OVSYANNIKOV, Igor' Vladimirovich; SERGEYEV, V.I., redaktor; ZUBRILINA, Z.P., tekhnicheskiy redaktor.

[Growing fruits indoors] Plodovye rasteniia v komnate. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 109 p. (MLRA 10:4)
(Fruit culture) (House plants)

OVSYANNIKOV, I.V.

Where to obtain seedlings and plants. Est. v shkole no.2:95 Mr-Ap '56. (MLRA 9:7)

1.Deystvitel'nyy chlen Moskovskogo obshchestva ispytateley prirody. (Forest nurseries) (Nurseries (Horticulture))

OVSYANNIKOV, Igor' Vladimirovich; VARGANOVA, A.N., redaktor izdatel'stva; KONYASHINA, A., tekhnicheskiy redaktor

[Growing citrus fruits indoors] Komnatnaia kul'tura tsitrusovykh. Izd. 4-oe, ispr. i dop. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva RSFSR, 1956. 46 p. (MLRA 10:3)
(House plants) (Citrus fruits)

L 26417-66 EWT(1) SCTB DD

ACC NR: AM4048143 Monograph UR/

32
B+1

Ovsyannikov, Konstantin Alekseyevich

Parachute jumping from military-transport planes (Pryzhki s parashyutom iz voyenno-transportnykh samoletov) Moscow, Voyenizdat, 1964. 253 p. illus., biblio., 25,000 copies printed.

TOPIC TAGS: parachute, air force training, transport aircraft, training equipment, ground force training

PURPOSE AND COVERAGE: This book describes parachute parts and equipment and regulations for rigging and handling parachutes. It also includes rules for parachute jumping from military transport planes while carrying weapons and other equipment, jumping over water and from great heights. Several recommendations on organizing and training for parachute-descents over towns are made. This book is recommended as a training manual for parachutists in flying clubs and youth organizations of the DOSAAF.

TABLE OF CONTENTS (abridged):

Card 1/2 UDC: 358.4 0-34

OVSYANNIKOV, K.L., inzhener

New techniques and industrial methods in Moscow construction projects. Mekh.stroi. 14 no.10:26-31 O '57. (MIRA 10:12)

1. Glavmosstroy.

(Moscow--Building)

OVSYANNIKOV, K.L.

Construction in the sixth block of the Novo-Peschanyi section. Gor.khoz.Mosk. 28 no.12:12-15 D '54. (MLRA 8:3)

1. Glavnyy inzhener Obshchestroitel'nogo territorial'nogo upravleniya No.1 Glavmosstroya.
(Moscow--Building)

OVSYANNIKOV, Karp L'vovich; BAYER, Yevgeniy Yakovlevich; ZOLOTNITSKIY, N.D., prof., doktor tekhn.nauk, red.; KORNILOVA, M.I., red.; RAKOV, S.I., tekhn.red.

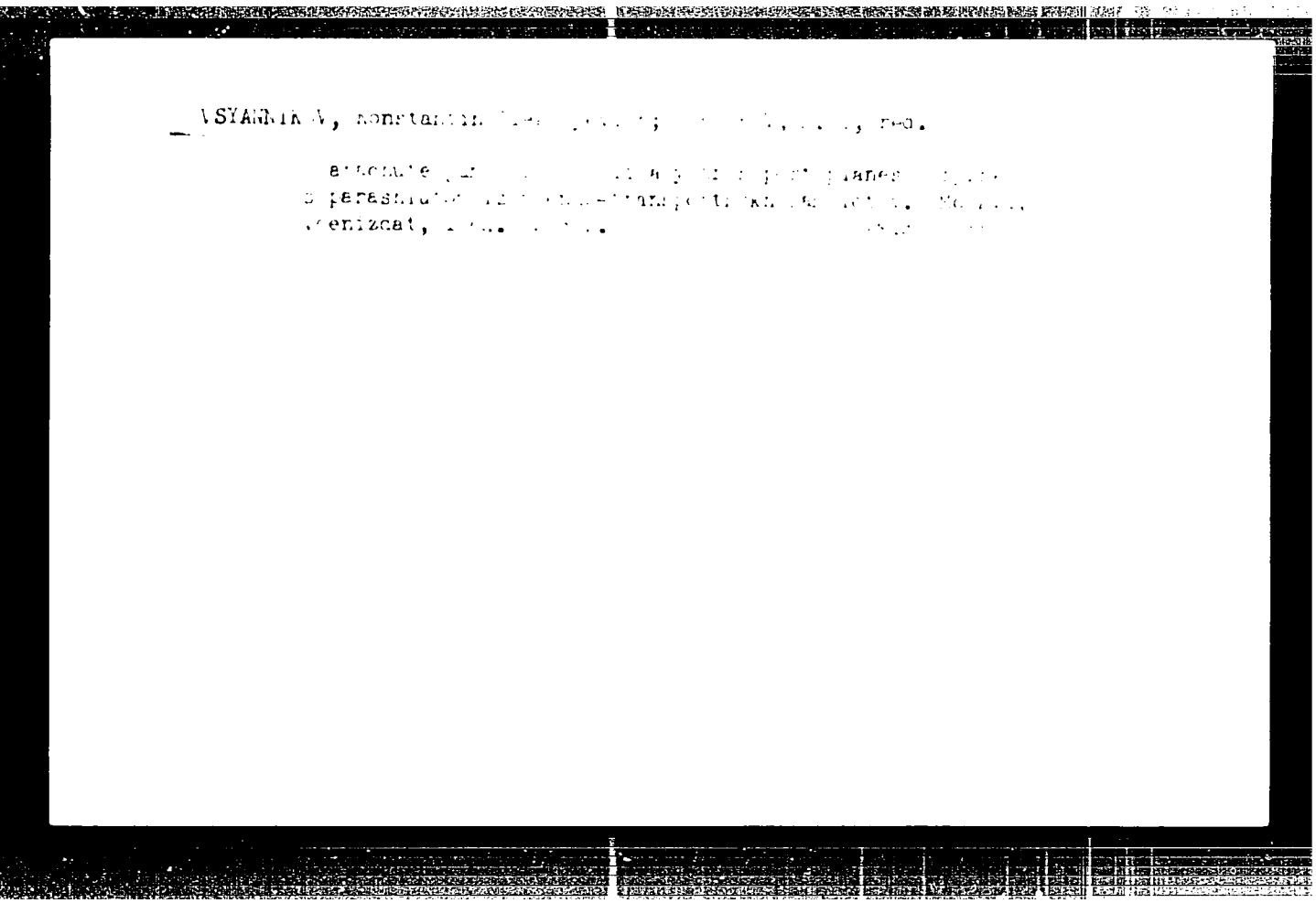
[Precast reinforced concrete at the construction site] Sbornyi zhelezobeton na poligonakh. Pod red. N.D.Zolotnitskogo. Moskva, Izd-vo VTeSPS Profizdat, 1960. 327 p. (MIRA 14:4)

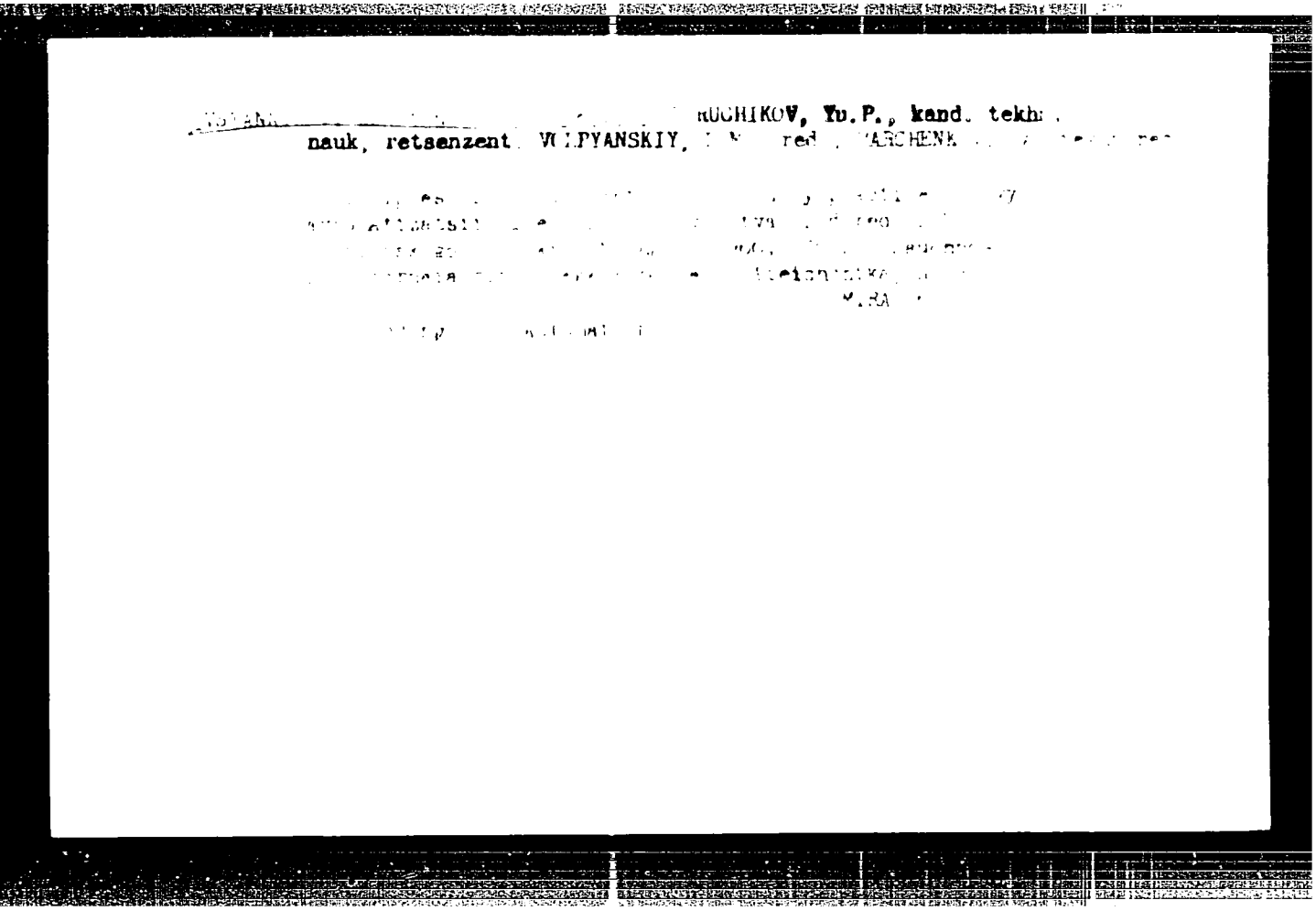
(Precast concrete)

OVSYANNIKOV, Karp L'vovich, inzh.; BAYYER, Yevgeniy Yakovlevich, kand tekhn. nauk[deceased]; KORNILOVA, M.I., red.

[Moscow experiment; experimental, assembly-line, and unique construction in Moscow] Moskovskii eksperiment; eksperimental'noe potochnoe i unikal'noe stroitel'stvo v Moskve. Moskva, Profizdat, 1965. 255 p. (MIRA 19:1)

1. Zamestitel' nachal'nika Glavnogo otdeleniya po zhilishchnomu i grazhdanskomu stroitel'stvu v g. Moskve (for Ovsyannikov).





ROCHIKOV, Yu.P., kand. tekhn.
nauk, retsenzent. VOLPYANSKIY, [illegible] red. [illegible]ARCHENK[illegible]

OVSYANNIKOV, Konstantin Matveyevich; RAZUMOV, V.N., kand.tekhn.nauk, retsenzent; VOLPYANSKIY, L.M., inzh., red.; DUGINA, N.A., tekhn.red.

[Over-all mechanization in foundries] Kompleksnaia mekhanizatsiia v liteinykh tsekhakh. Pod red. L.M.Volpianskogo. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 76 p. (Nauchno-populiarnaia biblioteka rabochego-liteishchika, vyp.29) (MIRA 14:1)

(Foundries--Equipment and supplies)

OVSYANNIKOV, L.

"Lenin's notebook." Nauka i zhizn' 28 no.9:5-7 S '61.
(MIRA 14:12)
(Moscow--Machinery industry)

KUCHERENKO, P.; OVSYANNIKOV, L., ekonomist

Efficiency of the piecework-bonus wage system on a state farm. Sots. trud 8 no.10:61-64 O '63. (MIRA 16:12)

1. Direktor sovkhoza "Kalacheyevskiy", Voronezhskoy oblasti (for Kucherenko).

DRABKINA, L.Ya.; MUCHALOVA, T.I.; OVSYANNIKOV, L.F.; ORECHKIN, D.B.

Investigating the composition of decalin obtained by the hydrogenation of naphthalene in the presence of sulfur-resistant catalysts.
Koks i khim. no.3:48-50 '63. (MIRA 16:3)
(Naphthalene) (Hydrogenation)

OVSYANNIKOV, L. M.;BRUYEVICH, T. S.

Two cases of deep blastomycosis of the skin. Vest. vener., Moskva no.5:43-44 Sept-Oct 1951. (CLML 21:1)

1. Of the Department of Dermatology (Head -- Prof. L. N. Mashkilleyson), Central Skin-Venereological Institute (Director -- Candidate Medical Sciences N. N. Turanov).

OVSYANNIKOV, L.M. (Moscow)

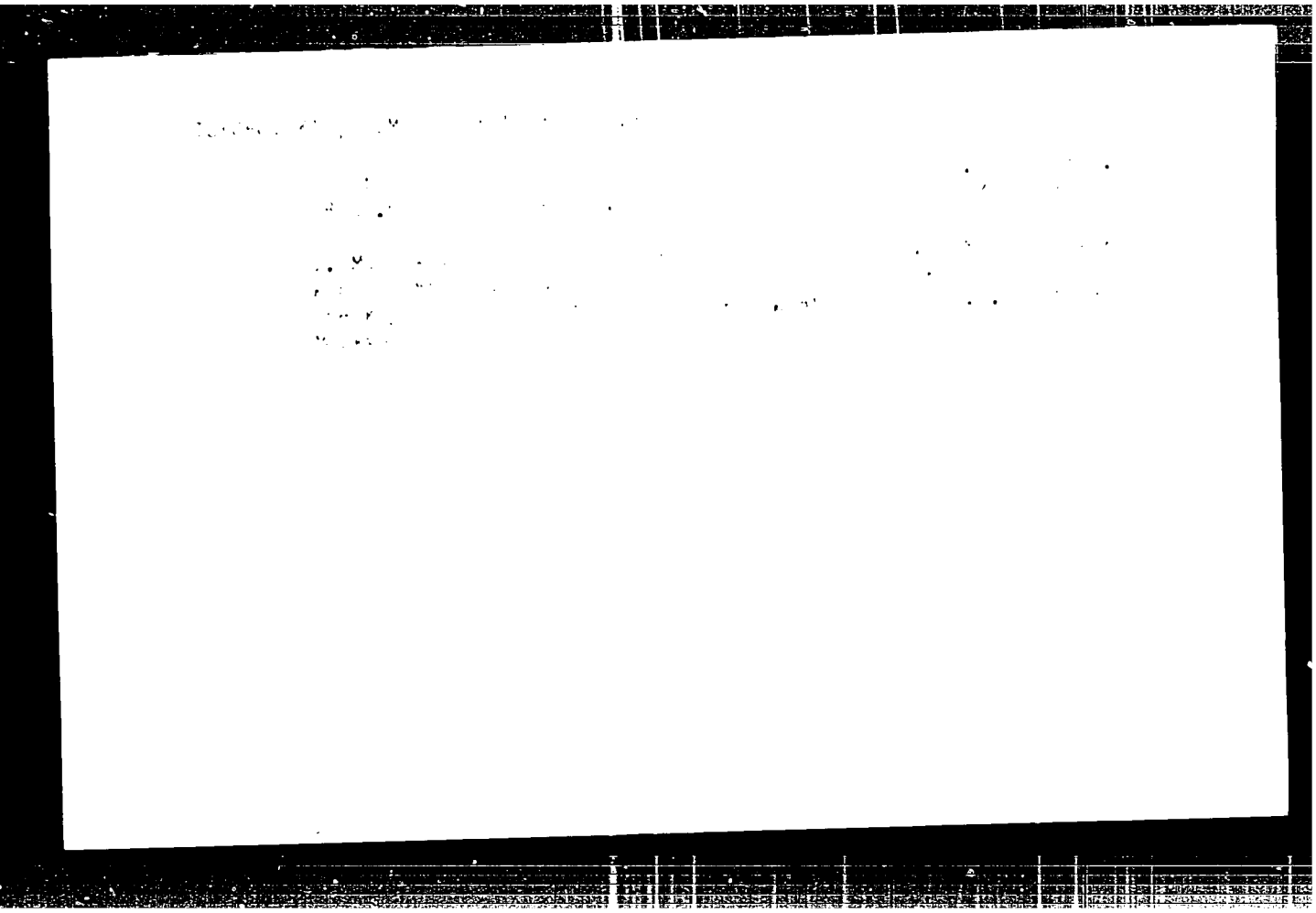
Deep intestinal lavages for various kinds of dermatosis. Vest.ven. i derm. no.6:46 N-D '54. (MLRA 8:2)
(SKIN--DISEASES) (ENEMATA)

OVSYANNIKOV, L.M.

OVSYANNIKOV, L.M.

Porokeratosis. Vest. ven. i derm. no.1:45-46 Ja-F '55. (MLRA 8:4)

1. Iz TSentral'nogo kozhno-venerologicheskogo instituta.
(SKIN--DISEASES)



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

OVSYANNIKOV, L. V.

1950

AMR

778 Ovsyannikov, L. V., On a gas flow with a straight transition line (in Russian), *Prikl. Mat. Mekh.* 13, 5, 537–542 Sept.–Oct. 1949

Author claims to have obtained a solution of the differential equation of a two-dimensional gas flow which describes a subsonic flow in a symmetrical jet which becomes sonic along a straight line l perpendicular to the axis of the jet. The stream lines meet the line l at right angles. The solution is obtained by a limiting process of Chaplygin's well-known solution describing a [illegible] jet (S. Chaplygin, *Uchenye Zapiski Imp. Akad. Nauk Otd. Fiz.-Mat.* 21, 1–121, 1904, translated as NACA TM 1063, 1944).

L. Rosenhead, USA

OVSYANNIKOV, L. V.

Among the papers presented by the First All-Union Conference on Aerohydrodynamics (8-13 Dec 1952) Convened by the Institute of Mechanics, Academy of Sciences USSR, was:

"Symmetrical Flow of a Near-Sonic Current Past a Wave-like Profile" by Ovsyannikov

SO: Izvestiya AN USSR, Otdeleniye Tekhnicheskikh Nauk, No. 7, Moscow, June 1953, (W-30662, 12 July 1954)

OVSYANNIKOV, L. V.

2

Mathematical Reviews
May 1954
Analysis

Ovsyannikov, L. V. On Tricomi's problem in a class of generalized solutions of the Euler-Darboux equation. Doklady Akad. Nauk SSSR (N.S.) 91, 457–460 (1953). (Russian)

Let S be a Tricomi domain for the equation

$$(*) \qquad yu_{xx}+u_{yy}=0.$$

That is, S consists of an arc K in the half-plane $y\leqq 0$ with endpoints on the x-axis (at A and B) and the two characteristics in $y\leqq 0$ issuing from these endpoints. A generalized solution $u(x, y)$ of (*) is said to be in class P_* if: (1) u is continuous in S; (2) $u=0$ on K; (3) u is twice continuously differentiable in S_+ (the part of S for which $y>0$) and satisfies (*) there; (4) there exists a function $\nu(x)\in L_2(A, B)$ so that

$$\lim_{h\to 0}\int_{x_1}^{x_2} w(x, y)(u_y(x, h)-\nu(x))dx=0$$

for arbitrary w continuous in S_+; (5) $u(x, y)$ satisfies in S_- the relation

$$u(x, y)=\gamma_1(\eta-\xi)^{1/3}\int_\xi^\eta \frac{u(s, 0)ds}{(\eta-s)^{1/3}(s-\xi)^{2/3}} -\gamma_2\int_\xi^\eta \frac{\nu(s)ds}{(\eta-s)^{1/3}(s-\xi)^{1/3}},$$

Mathematical Reviews
Vol. 15 No. 1
Jan. 1954
Mechanics

9
4

Clero

Ovsyannikov, L. V. The equations of [illegible] of a gas. Vestnik Leningrad Univ. 1952, no. 8, 47–54 (1952). (Russian)

By perturbing uniform sonic flow the author first derives approximate equations for steady plane irrotational flow originally obtained by von Kármán [J. Math. Phys. 26, 182–190 (1947); these Rev. 9, 217] and S. V. Falkovich [Akad. Nauk SSSR Prikl. Mat. Meh. 11, 459–464 (1947); these Rev. 9, 476]. Then he obtains appropriate forms for the conditions at a strong shock and shows that the same system of partial differential equations is valid to the same order of accuracy in transonic rotational flow behind a curved shock. *J. H. Giese* (Havre de Grace, Md.).

4-20-54-CA

OVSYANNIKOV, L. V.

USSR/Mathematics - Non-linear equations

Card 1/1 Pub. 22 - 7/59

Authors : Ovsyannikov, L. B.

Title : On the linearization of an equation in partial derivatives of the second order

Periodical : Dok. AN SSSR 102/2, 219-221, May 11, 1955

Abstract : A method is presented for the transformation of a non-linear equation in partial derivatives of the second order into a linear one in the terms of the original equation. The method permits any number of independent variables and also permits the characterization of the all set of the linear equations obtained. One USSR reference (1954).

Institution : .....

Presented by : Academician M. A. Lavrent'ev, January 14, 1955

OVSYANNIKOV, L.V.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1627
AUTHOR OVSJANNIKOV, L.V.
TITLE The General Solution of the Equations of the Renormalization Group.
PERIODICAL Dokl.Akad.Nauk, 109, fasc. 6, 1112-1114 (1956)
Issued: 12 / 1956

At first the equations of the renormalization group derived by N.N.BOGOLJUBOV and D.V.ŠIRKOV, Dokl.Akad.Nauk, 103, No 2 (1955) by means of the perturbation theory are explicitly given for the GREEN'S function of quantum-electrodynamics. The present work furnishes the general solution of this equation and its analogy for the meson theory. At first the aforementioned equation is transformed. The transformed equation is then linear with respect to the required function $f(x,y,z)$. Next, ansatzes for the two first integrals are given. To each solution of the transformed equation there corresponds a certain function $\varphi(y,z)$, so that this solution is determined implicitly from the equation $\varphi(y/x, f(x,y,z)) = \varphi(y,z)$. Inversely the following is true: Independent of the form of the function $\varphi(y,z)$ the above mentioned equation determines the function $f(x,y,z)$, which satisfies the transformed equation. Thus, $\varphi(y/x, f(x,y,z)) = \varphi(y,z)$ is the general solution for the transformed equation. The solution obtained applies also in the case of $y=0$. However, in that case the function φ has a certain form the determination of which is shown here. The most general solution of the transformed equation for the case $y=0$ is explicitly written down; it can also be determined from the above general

OVSYANNIKOV, L V

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1903
AUTHOR OVSJANNIKOV, L.V.
TITLE A New Way of Solving Equations of Hydrodynamics.
PERIODICAL Dokl. Akad. Nauk, 111, fasc. 1, 47-49 (1956)
Issued: 1 / 1957

The present report concerns a new particular solution of the equation of adiabatic motion of a compressible liquid: $d\vec{u}/dt + (1/\varrho)\nabla p = 0$, $d(\log\varrho)/dt + \operatorname{div}\vec{u} = 0$, $d(\log p)/dt + \gamma \operatorname{div}\vec{u} = 0$. Here $\vec{u} = \vec{u}(t,\vec{x})$ denotes the velocity vector; $\varrho = \varrho(t,\vec{x})$ - density; $p = p(t,\vec{x})$ - pressure, γ - the coefficient of the adiabatic curve. The symbol d/it denotes the differentiation according to time along a trajectory, i.e. along any integral curve of the equation $d\vec{x}/dt = \vec{u}$.
With $\vec{\xi}$ being assumed to be a vector with the projections ξ, η, ζ, the functions $F = F(\vec{\xi})$, $G = G(\vec{\xi})$ and the constant matrix of the third order $L = \|l_{ik}\|$ are found, so that $\nabla_{\xi} G = FL\vec{\xi}$ is true. Here ∇_{ξ} denotes the operation ∇ with respect to the variables ξ, η, ζ. Furthermore, the non-singular quadratic matrix of the third order $M = M(t)$ is defined as a solution of the equation $M^{*}(d^2M/dt^2) + |M|^{1-\gamma}L = 0$; here M^{*} denotes the matrix which is transposed with respect to m, and $|M|$ the absolute value of the determinant of M. On these conditions the formulae:
$\vec{u} = (dM/dt)M^{-1}\vec{x}$, $\varrho = (1/|M|)F(M^{-1}\vec{x})$, $p = (1/|M|^{\gamma})\,G(M^{-1}\vec{x})$ supply the exact

OVSYANNIKOV, L.V.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/3 PG - 657
AUTHOR OVSJANNIKOV L.V.
TITLE A new solution of the hydrodynamic equations.
PERIODICAL Doklady Akad.Nauk 111, 47-49 (1956)
reviewed 3/1957

Let the adiabatic motion of a compressible fluid be described by the system

$$\frac{d}{dt}\breve{u} + \frac{1}{\rho}\nabla p = 0$$

$$(1) \qquad \frac{d}{dt}\log\rho + \operatorname{div}\breve{u} = 0$$

$$\frac{d}{dt}\log p + \gamma \operatorname{div}\breve{u} = 0.$$

$\breve{u} = \breve{u}(t,\mathfrak{P})$ is the vector of velocity; $\rho = \rho(t,\mathfrak{P})$ - density; $p = p(t,\mathfrak{P})$ - pressure; γ - adiabatic exponent. The operations ∇ and div refer to the space $\mathfrak{P}(x,y,z)$. $\frac{d}{dt}$ means differentiation with respect to the time along an arbitrary integral curve of $\frac{d\mathfrak{P}}{dt} = \breve{u}$.

Doklady Akad.Nauk 111, 47-49 (1956) CARD 3/3 PG - 657

$\sigma = \varepsilon_1 \xi^2 + \varepsilon_2 \eta^2 + \varepsilon_3 \zeta^2, \quad \varepsilon_i = \pm 1, \quad L = \begin{pmatrix} \varepsilon_1 & 0 & 0 \\ 0 & \varepsilon_2 & 0 \\ 0 & 0 & \varepsilon_3 \end{pmatrix}$

2) $r = 2;\ G(\vec{\xi}) = g(\sigma);\ F(\vec{\xi}) = \dfrac{\xi g'(\sigma)}{\varepsilon_1 \xi^2 + \delta \xi \eta + \varepsilon_2 \eta^2}, \quad \sigma = \xi \varphi\left(\dfrac{\eta}{\xi}\right),$

$\varphi(s) = \exp\left\{\int \dfrac{\varepsilon_2 s\, ds}{\varepsilon_1 + \delta s + \varepsilon_2 s^2}\right\}, \quad \varepsilon_1 = \pm 1; \quad L = \begin{pmatrix} \varepsilon_1 & \delta & 0 \\ 0 & \varepsilon_2 & 0 \\ 0 & 0 & 0 \end{pmatrix},$

3) $r = 1;\ G(\vec{\xi}) = g(\sigma), \quad F(\vec{\xi}) = \dfrac{\varepsilon_1}{\xi} g'(\sigma);\ \sigma = \xi;$

$L = \begin{pmatrix} \varepsilon_1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}, \quad \varepsilon_1 = \pm 1;$

4) $r = 0;\ G = \text{const};\ F(\vec{\xi})$ - arbitrary, $L = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$. Here $g(\sigma)$ is an arbitrary function and $g'(\sigma)$ its derivative.

AUTHOR: OVSYANNIKOV, L.V. 20-3-6/59

TITLE: Groups and Group Invariant Solutions of Differential Equations (Gruppy i invariantno-gruppovye resheniya differentsial'nykh uravneniy) SSSR

PERIODICAL: Doklady Akademii Nauk/, 1958, Vol.118, Nr.3, pp.439-442 (USSR)

ABSTRACT: Within the compass of the classical Lie theory the author considers group properties of differential equations. The given system S is written in a quasilinear form which always can be reached by the introduction of additional unknown functions. The sought functions u^k $(k=1,\ldots,m)$ and the arguments x^i $(i=1,\ldots,n-m)$ are explained as point coordinates of an E_n. Under certain additional assumptions the author gives proposals for the determination of the group of S. The following definition seems to be very useful: the solution $u = \varphi(x)$ of S is called a group invariant solution (H-solution) if the manifold defined in the E_n by the equations $u = \varphi(x)$ is the invariant manifold of a subgroup H of the fundamental group of S. The importance of the H-solution is that it is determined from a system which in general is simpler than S.

Card 1/2

Groups and Group Invariant Solutions of Differential Equations 20-3-6/59

The case of an intransitive H the invariant manifolds of which are identical with their systems of intransitivity is considered in detail.

ASSOCIATION: Moscow Physical-Technical Institute (Moskovskiy fiziko-tekhnicheskiy institut)
PRESENTED: By M.A.Lavrent'yev, Academician, 24 December 1957
SUBMITTED: 24 December 1957
AVAILABLE: Library of Congress
Card 2/2

16(1)

AUTHOR: Ovsyannikov, L.V.

TITLE: Group Properties of the Non-Linear Equation of Heat Conduction (Gruppovyye svoystva uravneniya nelineynoy teploprovodnosti)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 3, pp [illegible]

ABSTRACT: The equation of heat conduction

$$\frac{\partial}{\partial x}\left(f(u)\frac{\partial u}{\partial x}\right) = \frac{\partial u}{\partial t}, \quad f(u) = \text{const}$$

is replaced by the quasi-linear system

(1) $$w = f(u)u_x, \quad w_x = u_t$$

(see [Ref 1]), and it is required that the equations (1) are invariant under the first continuation of the infinitesimal operator

$$X = \tau\frac{\partial}{\partial t} + \xi\frac{\partial}{\partial x} + \eta\frac{\partial}{\partial u} + \zeta\frac{\partial}{\partial w}$$

If invariance is fulfilled, then (1) admits the operator X. The following result of classification is obtained: 1. For arbitrary f(u) the equation of heat conduction admits only

Card 1/3

Group Properties of the Non-Linear Equation of Heat Conduction SOV/20-125-1-7/6

invariant solutions of rank 1 are given.
There are 3 references, 2 of which are Soviet, and 1 Norwegian.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physico-Technical Institute)

PRESENTED: December 27,1958, by M.A. Lavrent'yev, Academician

SUBMITTED: December 27, 1958

Card3/3

LIDSKIY, Viktor Borisovich; OVSYANNIKOV, Lev Vasil'yevich; TULAYKOV, Anatoliy Nikolayevich; SHABUNIN, Mikhail Ivanovich. Prinimali uchastiye: ABRAMOV, A.A.; BOCHKK, I.A.; YEVGRAFOV, M.A.; ZYLOV, A.A.; KARAKHODOV, V.I.; KARIMOVA, Kh.Kh.; KUIRYAVTSEV, L.D.; KUTASOV, A.D.; SHURA-BURA, M.R.; SHCHEGLOV, M.P. SOLOIKOV, V.A., red.; KRYUCHKOVA, V.N., tekhn.red.

[Problems in elementary mathematics] Zadachi po elementarnoi matematike. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 463 p. (MIRA 14:1)

(Mathematics--Problems, exercises, etc.)

OVSYANNIKOV, L. V. (Novosibirsk)

"The Group Properties of Some Differential Equations in Mechanics."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960

OVSYANNIKOV, L.V. (Novosibirsk)

Group characteristics of S.A. Chaplygin's equation. PMTF no.3:126-14; S-O '60. (MIRA 14:7)
(Differential equations, Linear)
(Fluid dynamics)

OVSYANNIKOV, L.V.

Remark on the calculation of the trace of a nonnegative, entirely continuous, operator. Sib. mat. zhur. 1 no.2:242-247 Jl-Ag '60. (MIRA 13:12)

(Operators (Mathematics))

OVSYANNIKOV, L. V. Doc Phys-Math Sci -- "Group properties of differential equations." Novosibirsk, 1961 (Acad Sci USSR. Siberian Department. Joint Academic Council for Phys-Math and Tech Sci). (KL, 4-61, 182)

S/044/61/000/[illegible]/[illegible]
C111/C222

Group properties of the equation ..

$\frac{d\sigma}{dw} = -\frac{R(w)}{w}$. After a transition to the characteristic variables

$\lambda = L(\sigma) + \theta$, $\mu = L(\sigma) - \theta$, $\frac{dL}{d\sigma} = \sqrt{\ }$ [illegible] ...

$$\Psi_{\mu\lambda} + N(\lambda + \mu)(\Psi_{\lambda} + \Psi_{\mu}) = 0$$

Since, however, the boundary value problems in the hodograph plane in the general case remain non-linear, for the overcoming of these difficulties some authors use an approximation of the characteristic by simpler approximation equations. Well-known approximations are criticized by the author according to the following point of view. The greater the transformation group which admits the approximating equation the "better" is the equation. The author tests the calculation process of the group for an equation of the type

$$z_{xy} + Az_x + Bz_y + Cz = 0,$$

where A, B, C are functions of x, y. Then this process is applied

Card 2/5

Group properties of the equation ...

class (I,0), $K_0(\sigma) = \frac{1}{\sigma^2}$

class (II,0), $K_0(\sigma) = I_0^4(\sqrt{2s})$, $\sigma = \frac{Y_0(\sqrt{2s})}{I_0(\sqrt{2s})}$

class (I,q), $K_0(\sigma) = [illegible]$, $\sigma = \frac{4\nu}{2\nu+1}$

class (II,q), $K_0(\sigma) = P_\nu^4(s)$, $\sigma = \frac{Q_\nu(s)}{P_\nu(s)}$

To the class (I,q) there especially belongs the function $K_0(\sigma = 0)$ ...

it is proved that every admissible Chaplygin function either [illegible]
with one of the functions (5) or can be obtained from one ...
functions with the aid of the group transformation (4). ...
investigates admissible Chaplygin functions which can be use[illegible]

Card 4/5

OVSYANNIKOV, L. V.

"Application of the theory of Lie groups to some partial differential equations"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden, 15-22 Aug 62

LIDSKIY, Viktor Borisovich; [illegible]SYANNIKOV, Lev Vasil'yevich; TULAYKOV, Anatoliy Nikolayevich; SHABUNIN, Mikhail Ivanovich; MAYEVA, A.P., red.; KUZ'MICHKOVA, V.N., tekhn. red.

[Problems in elementary mathematics] Zadachi po elementarnoi matematike. [illegible] Moskva, Fizmatgiz, 19[illegible]. [illegible] 415 p.

OVSYANNIKOV, L.V., doktor fiz.-matem. nauk; ZELENYAK, T.I., kand. fiz.-matem. nauk

Soviet-American symposium of mathematicians in Novosibirsk. Vest. AN SSSR 33 no.11:93-96 N '63. (MIRA 17:1)

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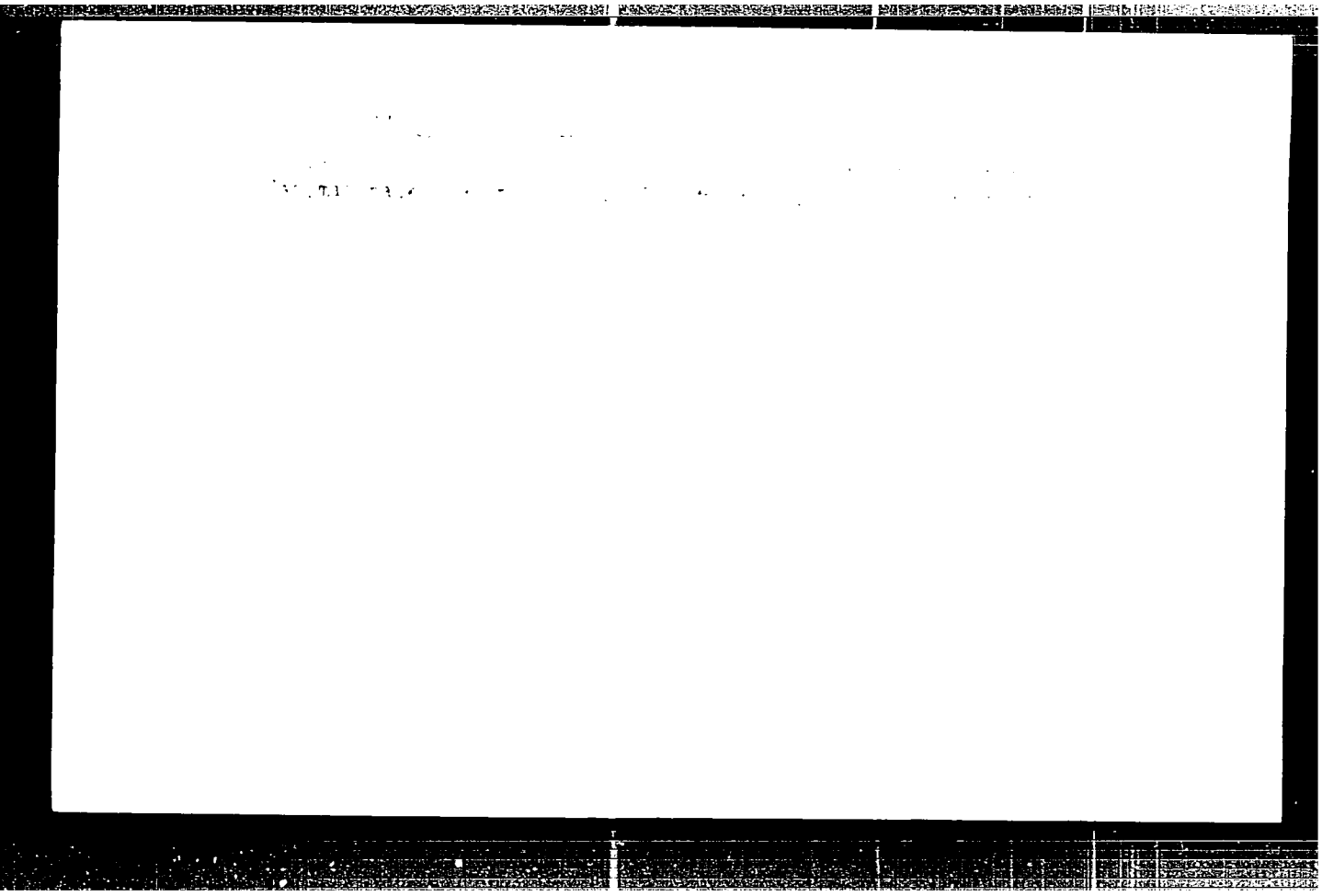
"Invariant group solutions of the equations of hydrodynamics"

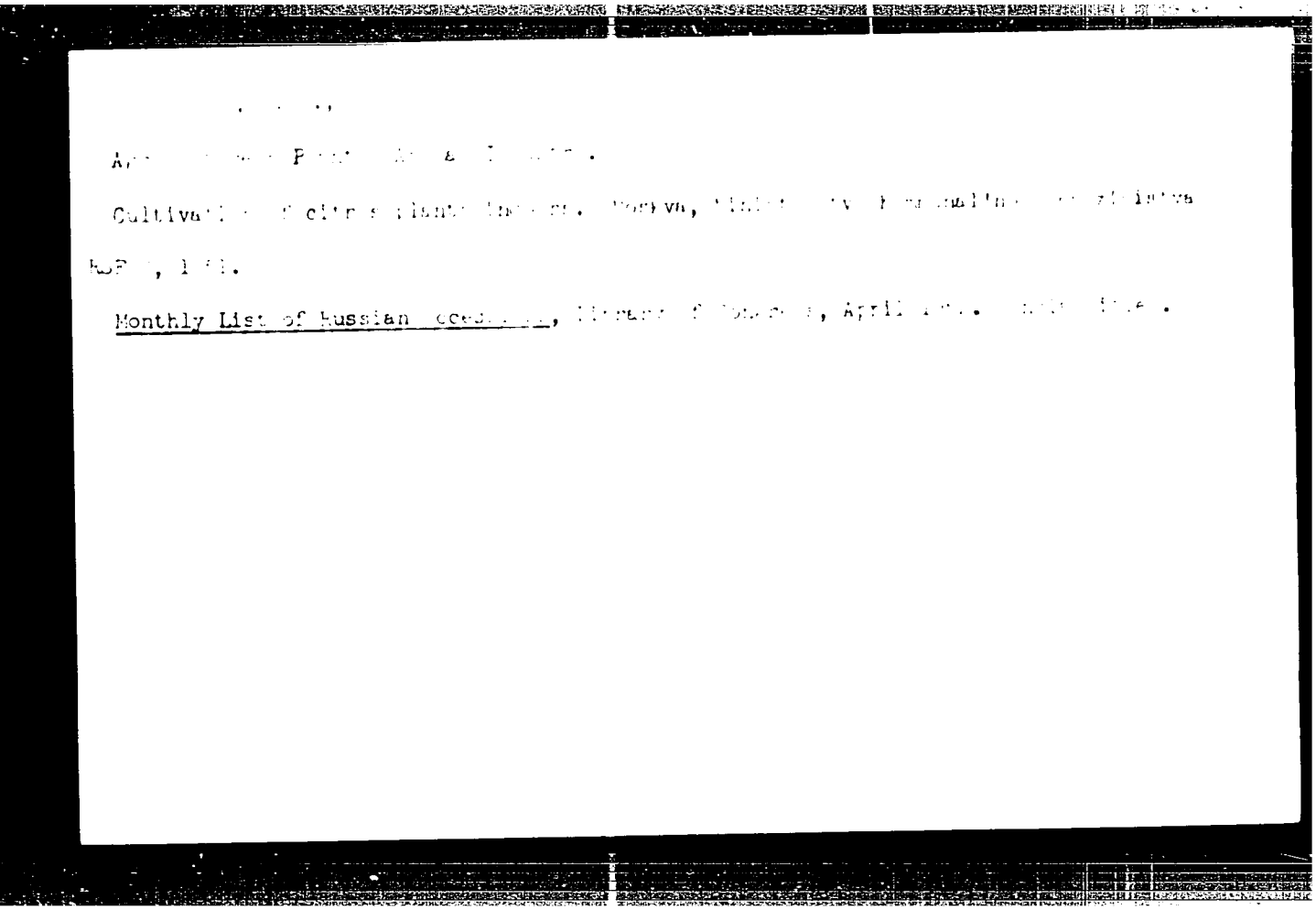
Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb 64.



OVSYA[illegible], I. [illegible].

[illegible] Dokl. AN SSSR 143
[illegible] (MIRA 18:8)

1. Institut [illegible] AN SSSR, chlen-
korrespondent AN [illegible].



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(Sverdlovsk--Communist Party of the Soviet Union--Party work)

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Mighty arsenal of socialist industry; twentieth anniversary of the Ural Plant of Heavy Machinery Construction. Vest. mash. 33 no.7:94-97 Jl '53. (MLRA 6:8)

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(RHEUMATIC FEVER)

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(BRONCHOSCOPY, appar. & instruments
bronchoesophagoscope with fixed muzzles (Rus))
(ESOPHAGOSCOPY, appar & instruments
same)

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