GAVRILENKO, L.M.; LEBED', G.G.; NAZAROV, D.A.

Modulating the output voltage of photomultipliers. Prib. i tekh.
eksp. 7 no.3:193 My-Je '62.   (MIRA 16:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut poligraficheskoy
promyshlennosti.
                        (Photoelectric multipliers)

NAZAROV, D.A.

Producing horizons of the Near East. Trudy VNIGNI no.42:94-113
'64.   (MIRA 18:3)

BIBIKOV, N.M.; YELISEYEV, N.A.; ZHUCHKOV, Ye.N.; NAZAROV, D.M.;
     SIROKIN, V.O., red.; KORKHOVA, Kh.N., red.; GRIBAKIN, D.V.,
     red. izd-va; GURDZHIYEVA, A.M., tekhn. red.

[Manual for the study of traffic regulations for sheet
crossings; traffic diagrams] Posobie dlia izucheniia pravil
proezda perekrestkov; skhemy dvizheniia. Pod red. V.O.So-
rokina, Kh.N.Korkhovoi. Leningrad, Gos. avtomobil'naia in-
spektsiia UVD Lenoblgorispolkomov, 1961. 103 p.
                                        (MIRA 15:7)

          (Traffic engineering)

NAZAROV, D. P.

NAZAROV, D.P.; BATULIN, G.S.; PALEVSKIY, S.A., inzhener, redaktor;
KRYUCHI, Iu.V., redaktor.

[Efficiency proposals of plasterer S.A. Afonin] Ratsionaliza-
satorskie predlozheniia shtukatura S.A. Afonina. Moskva, Gos.
izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 14 p.
    (Plastering)   (MLRA 7:6)

NAZAROV, D.P.; BATULIN, G.S.; BOGDANOV, B.N., inzhener, nauchnyy redaktor; UDOD, V.Ya., redaktor; TOKER, A.M., tekhnicheskiy redaktor

[S.F.Zhabin's method of covering stairsteps with mosaic slabs]
Oblitsovka stupenei mosaichnymi plitami po metodu S.F.Zhabina.
Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1954.
18 p.   (MLRA 7:10)
            (Stair building)   (Mosaics)

NAZAROV, F. G.

Forest and Forestry

Fruits of creative thought. Les i step' 5 No. 2, 1953.

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

SORKIN, S. L.,   NAZARCV, F. C.

Soil Moisture

Accumulating moistrue in soil by means of a furrowing machine and a claw cultivator. Les. khoz. 5 no. 3(42), 1952

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

MILYKH, Anatoliy Filippovich; NAZAROV, Fedor Nikolayevich; GERASIMUK, G.N., spets. red.; KALMYK, V.A., red.; GERASIMOVA, Ye.S., tekhn. red.

[Planning of design and research operations in construction] Pla-nirovanie proektno-izyskatel'nykh rabot v stroitel'stve. Moskva, Gos. izd-vo planovo-ekon. lit-ry pri Gosekonomsovete SSSR, 1961. 72 p.   (MIRA 14:7)
                    (Building research)

NAZAROV, F. S.

Montazh ustroistv STSB. /¯Installation of signaling, centralization and block system_/. Elektromekhanicheskaia tsentralizatsiia. Moskva, Transzheldorizdat, 1944. 243 p. illus., diagrs. (part fold.).

DLC:TF635.N37

DANILOV, I.V.; GUREYEVA, N.M.; NAZAROV, F.S.

Characteristics of I.P.Pavlov's pedagogic activity. Fiziol.zhur. 39 no.5:
673-675 S-O '53.   (MLRA 6:10)

1. Institut eksperimental'noy meditsiny Akademii meditsinskikh nauk, Muzey
akad. I.P.Pavlova. 2. Filial TSentral'nogo Gosudarstvennogo voyenno-istori-
cheskogo arkhiva SSSR.   (Pavlov, Ivan Petrovich, 1849-1936)

NAZAROV, F.S.
USSR/Biology - Physiology   FD-2286

Card 1/1   Pub 33-17/18

Author   : Gureyeva, N. M.; Nazarov, F. S.

Title   : I. P. Pavlov's stay at the Military Medical Academy, 1875-1889 (bio-
             graphical data)

Periodical : Fiziol. zhur. 40, 631-637, Sep-Oct 1954

Abstract : Gives biographical data on I. P. Pavlov during his stay at the Mili-
             tary Medical Academy (1875-1889). Photographic copy of letter. Six-
             teen references.

Institution: The I. P. Pavlov Museum of the Department of Physiology of the Insti-
              tute of Experimental Medicine of the Academy of Medical Sciences of
              the USSR and the Branch of the Central Military History Records Of-
              fice USSR, Leningrad.

Submitted : November 14, 1953

ZHIL'TSOV, P.N., inzhener; NAZAROV, F.S. [deceased]; KALININ, V.K.,
    inzhener, redakter; KHITROV, P.A., tekhnicheskiy redakter.

    [Manual for the electrician and mechanic employed on the
    centralized traffic control] Rukovodstve elektromekhaniku i
    monteru elektricheskei tsentralizatsii. Izd. 3-e, perer. i dep.
    Moskva, Gos.transp.zhel-der.izd-ve, 1955.386 p.   (MLRA 9:4)
        (Railreads--Signaling) (Railreads--Switching)

GUREYEVA, N.M.; NAZAROV, F.S.

Comments of I.P.Pavlov on V.I.Danilevskii's book "Human physiology material for a biography of I.P.Pavlov. Fisiol.zhur.41 no.5:704-706 S-O '55.   (MLRA 8:12)

1. Muzey I.P.Pavlova Instituta eksperimental'noy meditsiny AMN SSSR i Filial Tsentral'nogo voyenno-istoricheskogo arkhiva v Leningrade.
      (BIOGRAPHIES,
         Pavlov, Ivan B.)

NAZAROV, F.V., inzhener; ZELENINA, E.S.

Conference of heavy-machinery industrial designers. Mashinostroitel'
no.2:41-42 F '57.   (MLRA 10:5)
                    (Machinery--Design)

NAZAROV, G.

Manufacture of slabs on trolley-type mills. Stroitel' 8 no.6:6-7
Je '62.   (MIRA 15:7)
            (Donetsk Province—Precast concrete)

NAZAROV, G. A.

Nazarov, G. A.

"Topographic-anatomic aspects of the kidneys in foetuses and newborn children." Ivanovo State Medical Inst. Kalinin, 1956. (Disserta-tion for the Degree of Candidate in Medical Science)

So: Knizhnaya letopis', No. 25, 1956

NAZAROV, G.A.

Age-related topography of kidneys. Nauch. trudy Kal. otd. MOIP
no.2:209-213 '60.   (MIRA 14:10)
          (KIDNEYS)   (AGE)

NAZAROV, G.A.

Displacement of inferior vena cava to the left side of the body.
Nauch. trudy Kal. otd. MOIP no.2:214-217 '60.   (MIRA 14:10)
     (VENA CAVA)   (DEFORMITIES)

NAZAROV, O. D.

Nonspecific granuloma of the cecum following appendectomy.
Sov. med. 20 no.4:77-78 Ap '56.   (MLRA 9:8)

1. Iz khirurgicheskogo otdeleniya (zaveduyushchiy kandidat
meditsinskikh nauk F. M. Khmel'nitskiy) Kirovogradskoy
oblastnoy bol'nitsy.
        (APPENDICITIS, surgery,
            postop. granuloma of cecum. (Rus))
        (CECUM, neoplasms,
            granuloma, post-appendectomy (Rus))
        (GRANULOMA,
            cecum, post-appendectomy (Rus))

NAZAROV, G.D.

Clinical aspects, diagnosis and treatment of spinal hourglass tumors.
Nov.khir.arkh. no.3:29-33 My-Je '57.   (MLRA 10:8)

1. Nauchno-issledovatel'skiy institut neyrokhirugii Ministerstva
zdravookhraneniya (nauchnyy rukovoditel' - zasluzhennyy deyatel'
nauki prof. A.I.Arutyunov) Adres avtora: Kirovograd, ul. Shchorsa,
d. 3, Oblastnaya bol'nitsa
        (SPINE--TUMORS)

NAZAROV, G. D., Cand Med Sci -- (diss) "Clinical picture, diagnosis,

and treatment of "hourglass"-type tumors of the spinal cord." Odessa,

1958.   17 pp (Odessa State Med Inst im N. I. Pirogov), 200 copies (KL,

16-58, 124)

-109-

NAZAROV, G.D.

Spinal cord varices. Vop.neirokhir. 22 no.6:47-50 N-D '58.
(MIRA 12:2)

1. Nevrologicheskoye otdeleniye Kirovogradskoy oblastnoy bol'nitsy.
(SPINAL CORD, varix,
case report (Rus))

NAZAROV, G. I.

"Generalization of Certain Approximate Methods for a Problem Concerning
the Motion of a Gas With Subsonic and Near-Sonic Speeds." Cand Phys-Math Sci,
Tomsk State U, Tomsk, 1953. (RZhMekh, Apr 55).

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations
Defended at USSR Higher Educational Institutions (16).

Nazarov, G.I.

124-1957-10-11344

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 23 (USSR)

AUTHOR: Nazarov, G. I.

TITLE: Solution of Two-dimensional Problems of Gas Dynamics by Means of a Multi-term Approximation of the Chaplygin Function (Resheniye ploskikh zadach gazodinamiki s pomoshchyu metoda mnogozvennoy approksimatsii funktsii Chaplygina)

PERIODICAL: Uch. zap. Tomskogo un-ta, 1955, Nr 25, pp 77-96

ABSTRACT: The paper covers the stationary potential barotropic motion of a compressible fluid. The basic equation is taken in Chaplygin's form and is solved by L. I. Sedov's method (Vest. Mosk.un-ta, 1949, Nr 9. Ploskiye zadachi gidrodinamiki i aerodinamiki. Moscow, Gostekhizdat. 1950), which concludes that the approximate solutions of an accurate equation can be considered as the accurate solutions of an approximate equation obtained for a certain hypothetical gas. The Chaplygin function is presented as follows:

$$K_{Hyp} = a\,(1 - b\,e^{-2\mu\sigma})$$

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124-1957-10-11344

Solutions of Two-dimensional Problems of Gas Dynamics (cont.)

where, a, b, and μ are the constants, determined in such a manner that individual portions of the curve K_{Hyp} coincide sufficiently with the accurate curve K_{Acc}. A single-term approximation with a similar choice of K was also considered by Tomotika, S., and Tarnada, K. (Quart. Appl. Math., 1951, Vol 9, Nr 2, pp 129-147; also see Mekhanika. Sb. perev. i obz. in. period. lit., 1952, Nr 2, pp 31-45). The Author examines a multi-term approximation which requires tangency in the initial and terminal points of the curves in the first term, as well as tangency in the first point and intersection in the last point for all other terms. A graph showing a curve constructed from a three-term approximation indicates close coincidence with the true curve. Conditions for the conjugation points of the stream-lines at conjugated points are established, and certain particular solutions are constructed.

N. L. Krasheninnikova

Card 2/2

87319
S/124/60/000/011/004/005
A005/A001

10 2000

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 11, pp. 46-47, #14746

AUTHOR: Nazarov, G.I.

TITLE: The Method of Sliding Approximation in the Gas Dynamics

PERIODICAL: Tr. Tomskogo un-ta, 1959, Vol. 144, pp. 81-93

TEXT: For the plane laminar stationary motion of an ideal compressible
fluid with an arbitrary relation between the pressure and the density, L.I.Sedov
obtained the following equation for the stream function:

$$\frac{\partial^2 \psi}{\partial \sigma^2} + \frac{\partial \psi}{\partial \sigma} \frac{d}{d\sigma}\left[\frac{d\sigma}{d\rho}(\rho^2 K - 1)\right] + \frac{K}{\sigma^2(\rho^2 K - 1)}\frac{\partial^2 \psi}{\partial \theta^2} = 0 \quad (1)$$

for the solution of which he proposed the following approximation of the coefficients:

$$\frac{d\sigma}{d\rho} = \frac{A\sigma}{\rho^2 K - 1} \quad , \quad \frac{K}{\sigma^2(\rho^2 K - 1)^2} = \frac{a}{A^2}\left(\frac{1}{\sigma^2} - 1\right) \quad (2)$$

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87319
S/124/60/000/011/004/005
A005/A001

The Method of Sliding Approximation in the Gas Dynamics

where ρ is density; $\delta = \delta(\rho)$ is a function of ρ, $K(\rho)$ is the Chaplygin function; θ is the angle of inclination of the velocity vector with respect to the x-axis; a, A are certain constants. The author proposes in the reviewed article to use approximation (2) for solving equation (1), but quantities a and A to assume as functions of ρ and to determine them from the condition of conformity of K and δ at each point of the flow, as well as their derivatives up to the second order inclusive. The author names such a method the method of mobile (sliding) approximation. An example is presented for plotting the flow around a closed profile by the method mentioned. There are misprints.

A.S. Mikheyev

Translator's note: This is the full translation of the original Russian abstract

Card 2/2

NAZAROV, G. I.   (Tomsk)

"On an Approximate Solution of Supersonic Flows in Ideal Gases."

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

34120
S/124/62/000/001/012/046
D237/D304

10. 1200

AUTHOR: Nazarov, G. I.

TITLE: Exact solution of the problem on subsonic gas
            flow during the adiabatic process

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1962,
            23, abstract 1B150 (Dokl. Nauchn. konferentsii
            po teor. i prikl. vopr. matem. i mekhan., Tomsk,
            Tomskiy un-t, 1960, 98-100)

TEXT: The problem stated in the title can be reduced to the
equation

$$\frac{\partial^2 \psi}{\partial s^2} + \frac{\partial^2 \psi}{\partial \theta^2} + T(s) \frac{\partial \psi}{\partial s} = 0 . \qquad X$$

Card 1/3

Exact solution of...

34120
S/124/62/000/001/012/046
D237/D304

The solution sought is of the type

$$\psi(s, \theta) = \sum_{k=0}^{\infty} \Phi_k(s, \theta) f_k(s) \quad ,$$

where $\Phi_k(s, \Theta)$ are harmonic functions. $\Phi_k(s, \Theta)$ and $f_k(s)$ are restrained by Bergman $\lceil$Abstracter's note: Transliteration$\rfloor$ conditions

$$2f_0' + Tf_0 = 0 \quad , \quad \frac{\partial \Phi_{k+1}}{\partial s} = \Phi_k \quad ,$$

$$2f_{k+1}' + Tf_{k+1} = -(f_k'' + Tf_k') \quad ,$$

Card 2/3

34120
S/124/62/000/001/012/046
Exact solution of...   D237/D304

and under the above assumptions an exact solution of the equation
is constructed. From the exact solution, an approximate one,
fairly close to the exact, is separated and used to construct the
flows around profiles. /Abstracter's note: Complete transla-
tion._/

Card 3/3

S/864/60/000/000/003/005
E032/E314

2443oo

AUTHOR: Nazarov, G. I.

TITLE: A general solution of the equations of ultrasonic flow
          of a gas in an adiabatic process

SOURCE: Nauchnaya konferentsiya po teoreticheskim i prikladnym
          voprosam matematiki i mekhaniki, Tomsk, 1960. Doklady.
          Tomsk, 1960. 100 - 101

TEXT: This paper discusses the plane potential ultrasonic
motion of a gas in an adiabatic process. Bergman's method is used
to derive the exact general integral,which depends on two arbitrary
functions, in the form of infinite converging series, each term
of which is given in a closed analytical form for any specific-
heat ratio γ . Some initial terms from this series are then
selected, giving an approximate solution which is very close to
the exact solution and is better than the existing approximate
solutions for practical calculations for the entire range of
velocities from $\mu = 1.4542$ upwards, where μ is the ratio of the
local velocity of the incident stream and the velocity of sound.

ASSOCIATION: Tomskiy universitet (Tomsk University)
Card 1/1

VISHNYAKOV, D.Ya., doktor tekhn.nauk, prof.; FIGEL'MAN, M.A., kand.tekin.
nauk; NAZAROV, G.I., inzh.

Isothermal treatment of 13Kh12NVFMA steel. Trudy MATI no.50:42-51
'61.   (MIRA 14:10)

(Steel—Heat treatment)

34063

S/207/62/000/001/004/018
B102/B108

26.2160
10.1230

AUTHOR: Nazarov, G. I. (Tomsk)

TITLE: Pressure of a gas jet on a symmetrical wedge

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1,
          1962, 25 - 33

TEXT: Bergman's method is somewhat modified and applied to solve two prob-
lems of pressure distribution on a symmetrical wedge placed in a gas stream.
A subsonic potential stream of gas (adiabatic) is described by

$$\frac{\partial^2 \varphi}{\partial s^2} + \frac{\partial^2 \varphi}{\partial \theta^2} + T(s) \frac{\partial \varphi}{\partial s} = 0 \qquad (1.1)$$

$$T(s) = \frac{1}{2} \frac{d \ln K}{ds}, \quad K = (1 - M^2)\left(1 + \frac{\gamma - 1}{2} M^2\right)^{\frac{2}{\gamma - 1}} \qquad (1.2)$$

$$\left(\gamma = \frac{c_p}{c_v}, \quad M = \frac{v}{a}\right)$$

$$s = \frac{1}{2}\left[\sqrt{\frac{\gamma + 1}{\gamma - 1}} \ln \frac{1 + \sqrt{(1 - M^2)(\gamma - 1)/(\gamma + 1)}}{1 - \sqrt{(1 - M^2)(\gamma - 1)/(\gamma + 1)}} - \ln \frac{1 + \sqrt{1 - M^2}}{1 - \sqrt{1 - M^2}}\right] (1.3)$$

Card 1/4

Pressure of a gas ...

S/207/62/000/001/004/018
B102/B108

$$s = 0 \quad \text{при} \quad M = 1, \quad s = -\infty \quad \text{при} \quad M = 0$$

(1. 4)

θ is the angle between velocity vector and abscissa ξ in the plane of the stream, a is the local sonic velocity, K - Chaplygin function, s is a function dependent on the velocity modulus. The solution of Eq. (1. 1) is found as the sum of harmonics φ_k (k = 0, 1, 2 ...),

$$\psi = \sum_{k=0}^{\infty} \Phi_k(\xi, \theta) f_k(s) \quad (1. 8) \quad \text{and} \quad \sum_{k=0}^{\infty} \left[\Phi_k(f_k'' + Tf_k') + \frac{\partial \Phi_k}{\partial s}(2f_k' + Tf_k) \right] = 0 \quad (1. 9)$$

The conditions

$$2f_0' + Tf_0 = 0, \qquad \frac{\partial \Phi_k}{\partial \xi} = \Phi_{k-1} \qquad (1. 10)$$

$$2f_k' + Tf_k = -(f_{k-1}' + Tf_{k-1}) \qquad (k = 1, 2,...) \qquad (1. 11)$$

are imposed on the arbitrary functions Φ_k and f_k. The f_k (k = 1, 2, .. ν), K, and J are obtained as functions of χ and $y = \sqrt{1-M^2}$. Eq. (1. 9) is then solved together with the additional condition $f_{ν
u} + Tf_i = 0$; K(s) is determined for a hypothetical gas. For ν = 0, K = $[A(s+b)]^{1/4}$ and for ν = 1,
Card 2/4

Pressure of a gas ...

$f_1'' + Tf_1' = T$, $2f_1' + Tf_1 = 0$, (1.25); $K' = \dfrac{4K^{3/4}}{b}(a^2 - K^{1/2})$ and $f_1 = bK^{-1/4}$.

a and b are constants of integration. (1.25) is integrated approximately according to G. A. Dombrovskiy (Sbornik "Teoreticheskaya gidromekhanika", Oborongiz, 1952, No. 9, pp. 5 - 41):

$$K = [a\,\text{th}\,m(s+c)]^4, \qquad f_1 = \frac{1}{m}\,\text{cth}\,m(s+c) \qquad \left(m = \frac{a}{b}, c = \text{const}\right)$$

$$\psi = \text{Im}\left\{-W(z) + \frac{\overline{\text{cth}\,m(s+c)}}{m}\,\frac{d\overline{W(s)}}{ds}\right\}, \qquad \Phi_0 = \text{Im}\,W(z)$$
$$(z = s + i0)$$

$$(1.26).$$

Eq. (1.26) is used to solve the problem of a symmetrical stream of gas about a wedge. The pressure of the gas on the wedge is

$$P = -2\left(p_1 l + \frac{4Q}{a}\sum_{n=1}^{\infty}\frac{\overline{\sin^2(\alpha\beta/2)\cos\omega\alpha}}{W_n(s_1)}N_n(s_1)\right)$$

$$N_n(s_1) = \int_0^{M_1} pK^{1/4}\frac{W_n(s)}{b}e^{\omega(s-s_1)}\frac{ds}{dM}dM \qquad (2.13)\text{ where}$$

Card 3/4

Pressure of a gas ...

$$p = \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}}, \quad p = \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{\gamma-1}}$$

$$v = M \left(1 + \frac{\gamma-1}{2} M^2\right)^{-\frac{1}{2}}$$

(1. 7).

The second problem is the flow of a compressible fluid around a wedge at the entrance to a channel with parallel walls. For this case, an unlimited stream of gas around a wedge is considered. It is shown that for a straight flow of an incompressible fluid around a plate relations are obtained which are identical with those obtained by N. Ye. Zhukovskiy (Vidoizmeneniye me- tota Kirkhgofa - Modification of the Kirchhoff method - Izbr. soch. t. 1, GITTL, M.-L. 1948, p. 256). S. V. Fal'kovich (PMM, 1957, XXI, no. 4, pp. 459-464), V. I. Troshin (Izv. AN SSSR, OTN, 1960, no. 4, pp. 167 - 170), L. N. Sretenskiy (PMM, 1959, XXIII, no. 2, pp. 305 - 332), and S. A. Khristian-ovich (PMM, 1947, XI, no. 2, pp. 215 - 222) are mentioned. There are 4 fig-ures; and 9 references: 7 Soviet and 2 non-Soviet.

Card 4/4

L 17031-63   EFR/EPA(b)/EWT(1)/EPF(n)-2/EWG(k)/BDS/ES(w)-2   AFFTC/ASD/
ESD-3/AFWL/IJP(C)/SSD   Ps-4/Pd-4/Pu-4/Pz-4/P1-4/Po-4/Pab-4   AT/WW/EH
                                             S/207/63/000/002/006/025

                                                       95

AUTHOR: Nazarov, G. I. (Tomsk)

TITLE: The exact solutions of certain problems in magnetohydrodynamics

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2,
             1963, 63-72

TEXT: Exact solutions of equations of potential gas motion of infinite conductance
in a magnetic field normal to the plane of motion have been obtained by using
modified Bergmann's methods. Solutions for the sub- and super-sonic gas motion
have been found for currents as functions of velocity hodograph variables. Solu-
tions for the encounter of gas flows in a magnetic field and for a gas outflow from
a nozzle are also given and they agree with solutions obtained earlier (Ref. 6:
N. A. Slezkin, PMM, 1952, vol. 16, no. 2; Ref. 7: T. S. Solomakhova, Vest.
Moskovsk. un-ta, ser. 1, 1961, no. 1; Ref. 11: S. A. Chaplygin, GITTL, 1949, p. 75)
using Chaplygin's method. It has been also proved that finite Bergmann's series
for supersonic gas flow are accurate solutions of laws of hypotetic gases introduced
by S. A. Khristianovich (Ref. 12: PMM, 1947, vol. 11, no. 2) and G. A. Dombrovskiy

Card 1/2

L 17031-63

s/207/63/000/002/006/025

O

The exact solutions...

(Ref. 13: Teoreticheskaya gidromekhanika, 1954, art. 12, no. 4). The author gives preference to Bergmann's method over the similar Chaplygin's approach because of its simplicity and because it permits an analogous approach to the solution of problems of supersonic gas flows. There are 4 figures.

SUBMITTED: October 20, 1962

Card 2/2

ACCESSION NR: AR4054725   8/0124/64/000/003/B032/B032

SOURCE: Ref. zh. Mekhan., Abs. 3B192

AUTHOR: Nazarov, G. I.

TITLE: Approximate solution of a problem on supersonic deflection of the flow of
ideal gas

CITED SOURCE: Tr. Tomskogo un-ta, v. 163, 1963, 133-138

TOPIC TAGS: aerodynamics, cusped body, supersonic flow, Chaplygin equation

TRANSLATION: The Chaplygin equation approximately replaces the Euler-Poisson type
of equation, for which, then, a particular solution with a branching-out point of
the current line is calculated by dividing the variants and integral concepts of the
Bessel Function in the Shlafley form.

For individual values of parameters of the solution, the deflection of a pointed
semibody by a supersonic flow is calculated.

DATE ACQ: 02Apr64   SUB CODE: AI   ENCL: 00

Card 1/1

L 23948-66   EWT(d)/EWT(l)/EWP(m)/ETC(m)-6/EWA(l)   IJP(c)   WW

ACC NR: AP6014960   SOURCE CODE: UR/0207/65/000/002/0130/0131

AUTHOR: Nazarov, G. I. (Tomsk)

ORG: none

TITLE: Exact general integral of equations for a class of compressible liquids

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1965, 130-131

TOPIC TAGS: compressible fluid, gas dynamics

ABSTRACT: For a certain class of compressible liquids with plane-parallel or axisymmetrical movement, exact general solutions, found in physical variables, depend on an arbitrary function of two arguments. These solutions can be useful for approbation of numerical methods used in the solution of edge problems in nonlinear gas dynamics equations where external conservation forces are taken into account. Orig. art. has: 10 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: 29Dec64 / ORIG REF: 004

Card 1/1

NAZAROV, O.I., kandidat tekhnicheskikh nauk.

Electric drive of the S-4 combine. Trudy KIMESKH 3:5-11 '56.
(Combines (Agricultural machinery))   (MIRA 10:8)
(Electric driving)

NAZAROV, Georgiy Ivanovich, for Doctor of Technical Sciences on basis of

dissertation defended 4 Nov 58 in Council of the Moscow Inst of Mechani-

zation and Electrification of Agriculture, entitled: "Theory and Method

of Calculation of Fly-Wheel Drives of Agricultural Machines with Pulsating

Load." (BMVISSO USSR, 2-61, 30)

405

ANDRIANOV, V.N., doktor tekhn.nauk; BERSENEV, Ye.Ye., inzh.; BYSTRITSKIY,
D.N., kand.tekhn.nauk; GREBENNIKOV, A.F., kand.tekhn.nauk; GRETSOV,
N.A., kand.tekhn.nauk; ZOYEV, V.A., kand.tekhn.nauk; KLIMOV, A.A.,
kand.tekhn.nauk; KOROLEV, V.F., kand.tekhn.nauk; KUDRYAVTSEV, I.F.,
kand.tekhn.nauk; KULIK, M.Ye., kand.tekhn.nauk; NAZAROV, G.I., kand.
tekhn.nauk; OLEYNIK, N.P., inzh.; OSETROV, P.A., kand.tekhn.nauk;
PODSOSOV, A.N., inzh.; POPOV, S.T., inzh.; PRISHCHEP, L.G., kand.
tekhn.nauk; PCHELKIN, Yu.N., inzh.; RUBTSOV, P.A., kand.tekhn.nauk;
RUNOV, B.A., kand.tekhn.nauk; SAVINKOV, K.P., kand.tekhn.nauk;
SAZONOV, N.A., prof., doktor tekhn.nauk; SERGEYEV, A.S., inzh.;
SKVORTSOV, P.F., kand.tekhn.nauk; SMIRNOV, B.V., kand.tekhn.nauk;
SMIRNOV, V.I., kand.tekhn.nauk; TYMINSKIY, Ye.V., inzh.; URVACHEV,
P.N., kand.tekhn.nauk; SHTRURMAN, B.A., inzh.; SHCHUROV, S.F.,
kand.ekon.nauk; RUNOVA, L.M., inzh.; VOL'KOVSKAYA, D.N., red.;
NIKITINA, V.M., red.; BALLOD, A.I., tekhn.red.

[Manual on the use of electric power in agriculture] Spravochnik po
primeneniiu elektorenergii v sel'skom khoziaistve. Moskva, Gos.
izd-vo sel'khoz. lit-ry, 1958. 606 p.   (MIRA 11:5)
        (Electricity in agriculture)

NAZAROV, G.I.; MUSIN, A.M., inzh.

Using electric vibrators as ensilage rammers. Mekh. i elek. sots.
sel'khoz. 16 no.3:36-39 '58.   (MIRA 11:6)

1.Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo
khozyaystva. 2. Chlen-korrespondent Vsesoyuznoy akademii sel'-
skokhozyaystvennykh nauk imeni V.I. Lenina.
                    (Ensilage) (Vibrators)

NAZAROV, G.I.; RUNOV, B.I.; YUROVSKIY, I.M.

Textbook not up to expectations ("Electric drive and automatic control" by V.I. Popov. Reviewed by G.I. Nazarov, B.A. Runov, and I.M. IUrovskii). Mekh. i elek. sots. sel'khoz. 16 no.3:61-63 '58.

(MIRA 11:6)

(Electric driving)
(Popov, V.I.)

NAZAROV, G.I.; KOSHKIN, K.Ye., inzh.

Automatic control in grain drying. Mekh.i elek.sots.sel'khoz.
16 no.5:39-42 '58.
(MIRA 11:11)

1. Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo
khozyaystva. 2. Chlen-korrespondent Vsesoyuznoy Akademii sel'sko-
khozyaystvennykh nauk imeni V.I. Lenina (for Nazarov).
(Grain, Drying)   (Automatic control)

BUDZKO, I.A.; NAZAROV, G.I.

Mikhail Grigor'evich Evreinov (on the occasion of his 75th birthday). Mekh. i elek. sots. sel'khoz. 16 no.6:56-57 '58.
(MIRA 12:1)

(Evreinov, Mikhail Grigor'evich, 1683-)

NAZAROV, G.I.

Analytical solution of the problem of electric flywheel drive
parameters in connection with cosine-rectangular load diagrams
for operating machines. Trudy Inst. mash. Sem. po teor. mash. 17
no.68:51-67 '58.   (MIRA 11:7)
                        (Electric driving)

NAZAROV. G. I.

Problems pertaining to the theory of electric flywheel drive in agricultural machinery. Nauch. trudy VIESKH 4:140-152 '59.

(MIRA 13:11)

1. Chlen-korrespondent Vsesoyuznoy Akademii sel'skokhozyaystvennykh nauk imeni Lenina.

(Agricultural machinery--Electric driving)

NAZAROV, G.I.; MUSIN, A.M., inzh.

Ensilage rammer. Trakt.i sel'khozmash. no.8:31-33 Ag '59.
(MIRA 12:11)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystven-
nykh nauk im. V.I.Lenina (for Nazarov). 2. Moskovskiy institut
mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for
Musin).
(Ensilage) (Agricultrual machinery)

NAZAROV, G.I.

Analytic determination of parameters of electric flywheel drives
for agricultural machinery. Mekh. i elek. sots. sel'khoz. 17 no.1:
27-32 '59.   (MIRA 12:1)

1.Chlen-korrespondent Vsesoyuznoy akademii sel'skokhosyay-
stvennykh nauk imeni V.I. Lenina.
          (Agricultural machinery--Electric driving)

GUROV, Ivan Nikolayevich; KONONOV, Mikhail Ippolitovich; NAZAROV, G.I.,
doktor tekhn.nauk, retsenzent; PETRUSOV, A.I., doktor tekhn.nauk,
retsenzent; GALKIN, Yu.M., red.; FAL'KO, O.S., red.izd-va;
SOKOLOVA, T.F., tekhn.red.

[Electric equipment of agricultural machinery] Elektrooborudo-
vanie sel'skokhoziaistvennykh mashin. Pod obshchei red. IU.M.
Galkina. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry,
1960.   248 p.   (MIRA 14:3)

1. Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo
khozyaystva (for Nazarov). 2. Khar'kovskiy politekhnicheskiy
institut (for Petrusov).
     (Agricultural machinery--Electric equipment)

KATSOPASHVILI, Ya.R.; KURKOVA, M.S.; LIKHOBABENKO, V.S.; LEVITSKIY, E.A.; GOLOSOV, S.A.; MASOLOVA, F.A.; NAZAROV, G.I.

Apparatus for washing filter residues of high hydraulic resistance. Khim.prom. no.4:340 Je '60.

(MIRA 13:8)

(Filters and filtration)

NAZAROV, G.I.; KALININ, L.A., kand.tekhn.nauk

Electric testing stands for factories and repair shops for
testing automobile, tractor, and harvester engines. Nauch.
trudy VIESKH 7:78-86 '60.   (MIRA 15:8)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni Lenina (for Nazarov).
                         (Gas and oil engines--Testing)

NAZAROV, G.I., prof., doktor tekhnicheskikh nauk

Effect of the amount and speed of feeding on the productivity
and power features of the grain threshing cylinder [with
summary in English]. Izv. TSKhA no.2:185-197 '61.   (MIRA 14:8)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyayst-
vennykh nauk imeni Lenina.
                    (Combines (Agricultural machinery)

NAZAROV, G.I.

Concerning a formula for determining the optimum gear ratio for
electric drives. Mekh.i elek.sots.sel'khoz. 20 no.4:38-43 '62.
(MIRA 15:8)
1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni Lenina.
                    (Electric driving)

NAZAROV, G.I.; SIMONENKO, A.S., inzh.

Method for the calculating the flywheel mass of a diesel
generator aggregate in independent rural electric power
generators operating under sharp changes of loads. Izv.
TSKHA no.2:155-165 '63.   (MIRA 16:10)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni Lenina (for Nazarov)

NAZAROV, G.I., doktor tekhn. nauk, prof.

Rectification of the mechanical characteristics of a short-circuit asynchronous engine. Izv. TSKHA no.4:167-178 '63.

(MIRA 17:1)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina.

ANDRIANOV, V.N.; BEYLIS, M.Yo.; BUDZKO, I.A.; ZAKHARIN, A.G.; ZLATKOVSKIY,
    A.P.; ZUYEV, V.A.; KRASNOV, V.S.; LISTOV, P.N.; NAZAROV, G.I.;
    POYARKOV, M.F.; SMIRNOV, B.V.

Nikolai Alekseevich Sazonov; obituary. Elektrichestvo no.5:
92-93 My '63.   (MIRA 16:7)

          (Sazonov, Nikolai Alekseevich, 1903-)

NAZAROV, G.I., doktor tekhn. nauk; OLEYNIK, N.P.; FOMENKOV, A.P.;
YUKOVSKIY, I.M.; SOLODENIKOVA, G.A., red.

[Principles of electric drives and use of elec' ical
energy in agriculture] Osnovy elektro: rivoda   primenenie
elektricheskoi energii v sel'skom k' z'ale . [By] G.I.
Nazarov i dr. Moskva, Kolos, 196'   '   '.
                                            (MIRA 18:7)

1. Chlen-korrespondent Vsesoyuzno; r.   ii sel'skokho-
zyaystvennykh nauk imeni V.I.Le .D. . Nazarov).

NAZAROV, G.I. (Tomsk)

Exact general integral for equations for a certain class of compressible
fluids. PMTF no.2:130-131 Mr-Ap '65.
(MIRA 18:7)

L 22592-66

ACC NR: AP6013001   SOURCE CODE: UR/0105/65/000/006/0091/0091

AUTHOR: Andrianov, V. N.; Budzko, I. A.; Venikov, V. A.; Demin, A. V.; Gorodskiy, D. A.; Grudinskiy, P. G.; Zakharin, A. G.; Krasnov, V. S.; Levin, M. S.; Listov, P. N.; Markovich, I. M.; Mel'nikov, N. A.; Nazarov, G. I.; Razevig, D. V.; Smirnov, B. V.; Stepanov, V. N.; Syromyatnikov, I. A.; Fedoseyev, A. M.; Yakobs, A. I.

ORG: none

TITLE: Doctor of technical sciences, Professor L. Ye. Ebin (on the occasion of his 60th birthday

SOURCE: Elektrichestvo, no. 6, 1965, 91

TOPIC TAGS: scientific personnel, electric network, lightning

ABSTRACT: Professor Lev Yefimovich Ebin, 60, graduated in 1928 from the Kiyevskiy elektrotekhnicheskiy institut (Kiyev Electrotechnical Institute). Between 1929 and 1936, he worked in the Donenergo system and published various original papers on lightning protection and grounding devices. From 1936 EBIN works at the Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (All-Union Scientific Research Institute for the Electrification of Agriculture) where he heads a laboratory. In 1937, he defended his candidate's dissertation and in 1951 his Ph. D. Thesis dealing with studies of the nonsymmetrical operating conditions of electrical networks and of stationary and nonstationary electro-thermal processes in the

Card 1/2   UDC: 621.31

L 22592-66
ACC NR: AP6013001

country. These works served for further development of the rural distribution networks. He showed considerable interest in the problem of the raising of scientific personnel. Ebin was decorated with "Znak pocheta" and various medals. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09 / SUBM DATE: none

Card 2/2. yw

NAZAROV, G.N.

Distribution of permanently frozen rocks in the watershed of the rivers Nizhnyaya Tunguska and Podkamennaya Tunguska and in the Nyuya Basin. Trudy Inst. merzl. AN SSSR 15:194-211 '59.

(MIRA 13:3)

(Tunguska Basin--Frozen ground) (Nyuya Valley--Frozen ground)
(Electric prospecting)

NAZAROV, G.N.

Some results of electric prospecting in investigation the structure
of the Baskunchak salt dome. Razved. i prom. geofiz. no.36:40-44
'60.   (MIRA 13:12)
                    (Baskunchak region--Salt domes)
                        (Electric prospecting)

VAYSHAN, A.E.; KAMKIN, M.A.; NAZAROV, Q.N.

Draft standards for bolts, screws, and nuts for all purposes.
Standartisatsiia 24 no.4:41-55 Ap '60.   (MIRA 13:9)
(Bolts and nuts--Standards)   (Screws--Standards)

NAZYROV, G.N.; VENGERSKAYA, Kh.Ya.; BOBOVNIKOV, B.M.; FEDOROVA, Ye.S.

Improve labor conditions in hydrolysis plants. Gidroliz. i
lesokhim. prom. 14 no.5:16 '61.   (MIRA 16:7)

1. Uzbekskiy nauchno-issledovatel'skiy sanitarnyy institut (for
Nazyrov, Vengerskaya). 2. Andizhanskiy gidroliznyy zavod (for
Bobovnikov, Fedorova).
                    (Hydrolysis)

NAZAROV, Grigoriy Nikiforovich; YARTSEV, N., red.; PAVLOVA, S.,
        tekhn. red.

[Cement made near Moscow] Podmoskovnyi tsement. Moskva,
Mosk. rabochii, 1961. 73 p.   (MIRA 15:2)

1. Direktor podmoskovnogo tsementnogo zavoda "Gigant" (for
Nazarov).
            (Moscow Province—Cement plants)

NAZAROV, G.N.

Improve the quality of initial raw materials. Standartizatsiia
28 no.10:28-30 O '64.
(MIRA 17:12)

1. Glavnyy konstruktor OKB standartov Gosudarstvennogo komiteta
po aviatsionnoy tekhnike SSSR.

L 56492-65
ACCESSION NR: AP5017800

UR/0286/65/000/011/0031/0031
631.859.12.002.2

AUTHOR: Karatayev, I. I.; Kel'nik, B. D.; Repenkova, T. G.; Sviridova, A. G.;
Doktorov, M. L.; Nazarov, G. M. Raygorodskiy, I. M.; Vasil'yev, B. T.; Bystrov,
M. V.; Babaryka, I. F.; Kuzyak, F. A.; Fel'dman, M. V.; Soverchenko, D. A.;
Buslakova, L. P.; Toroptseva, N. P.; Lyubimov, S. V.; Ul'yanov, A. T.; Andrea,
V. V.; Sobchuk, Yu. I.; Tsetlina, M. M.; Andreyev, V. V.; Kramer, G. L.

TITLE: A method for producing phosphoro-potassium fertilizers. Class 16, No. 171-
409

SOURCE: Byulleten' Izobreteniy i tovarnykh znakov, no. 11, 1965, 31

TOPIC TAGS: fertilizer, phosphate, potassium

ABSTRACT: This Author's Certificate introduces a method for producing phosphoro-
potassium fertilizers using cement dust (waste from cement production) as the potas-
sium raw material. The process of adding potassium to the product is simplified
and evaporation is prevented by using a 20% excess of an acid which directly neutra-
lizes the cement dust for breaking down the phosphate raw material.

Card 1/2

L 56492-65
ACCESSION NR: AP5017800   0

ASSOCIATION: none

SUBMITTED: 29Mar62   EXCL: 00   SUB CODE: GC, LS

KO REF SOV: 000   .   OTHER: 000

Card 2/2

NAZAROV, G.N.; IVANOV, B.N.

Manifestation of karst in the Crimean steppes. Geofiz. sbor.
no.8:114-124 '64.   (MIRA 18:6)

1. Institut mineral'nykh resursov Gosudarstvennogo geologicheskogo
komiteta SSSR.

VOL'FSON, A.B., inzh.; ZOLOTOV, S.S., kand.tekhn.nauk; TIKHON, L.A., inzh.;
NAZAROV, G.P., inzh.

Study the hydrodynamic characteristics of disk valves. Sudostrbenie 27
no.3:28-31 Mr '61.   (MIRA 14:3)
          (Ships—Hydrodynamics)
               (Valves)

SHALAGINOV, N.F., inzh.; NAZAROV, G.S., inzh.

Profile and directions of lines of maximum deformations in shifting
rock formations. [Trudy] VNIMI no.45:135-142 '62.   (MIRA 16:4)
(Mining engineering)

NAZAROV, G. S.

NAZARCV, G. S. and (Lecturers)
RONZHINA, G. I.
and

GURYANCVA, M. P. (Assistant, Department of Pharmacology and Parasitology,
Saratov Zooveterinary Institute).
Use of the chloropifrin-creolin emulsion in the fight against mange of sheep.

Source: Veterinariya; 22; 6; June 1945 uncl
TAECCN

NAZAROV, G.S.

NAZAROV, G. S.

NAZAROV, G. S. (Lecturer, Department of Pharmacology, Saratov Zooveterinary Institute.) Therapy of bovine mange with sulfur dusting.

So: Veterinariya; 23; (10-11); October/November 1946; Uncl.

TABCON

NAZAROV, G.S., Lecturer
Saratov Zootechnico-Veterinary Institute
      "The dry method therapy of ringworm of cattle."
SO: Vet.27 (8) 1950, p. 27

KAZAROV, Grigorii Stratonovich

[Skin diseases of domestic animals and their treatment] Kozhnye bolezni domashnikh zhivotnykh i ikh lechenie. [Saratov] Saratovskoe kn-vo, 1955. 82 p.

(MIRA 9:11)

(Skin--Diseases)   (Veterinary medicine)

KAZAROV, G.S., dotsent.

Dust therapy for scabies in rabitts and cats. Veterinariia 33 no.6:
43-46 Je '56.   (MLRA 9:8)

1. Saratovskiy zooveterinarnyy institut.
            (Scabies) (DDT (Insectcide))

R

USSR / Diseases of Farm Animals. Toxicoses.

Abs Jour: Ref Zhur-Biol., No 8, 1958, 35876.

Author : Nazarov, G. S.
Inst   : Not given.
Title   : Zinc Phosphide Sheep Poisoning. Treatment of
          the Sheep and Prophylaxis of the Disease.

Orig Pub: S. kh. Povolzh'ya, 1957, No 11 52-53.

Abstract: In poisoned animals, phenomena of depression,
          dyspnea, frothing at the mouth, blood discharge
          from the nose, soreness of the thorax, absence
          of rumination are observed. The recommended
          treatment consists of an internal administrat-
          ion of 25 to 30 milligrams of a three percent
          $CuSO_4$ solution, as well as of sodium sulfate,

Card 1/2

NAZAROV, G. S.,Doc Vet Sci (diss) -- "Dispersed substances (dusts) and the

principles of their use to combat ectoparasitic diseases of agricultural

animals". Moscow-Kuz'minki, 1959. 46 pp (Min Agric RSFSR, Moscow Vet Acad),

140 copies (KL, No 11, 1960, 136)

NAZAROV, Grigoriy Stratonovich; SYCHIK, Ye.V., red.; GOR'KOVA, Z.D., tekhn.red.

[DDT and hexachloran in veterinary medicine] DDT i geksakhloran v veterinarii. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 182 p. (MIRA 14:1)

(DDT (Insecticide))   (Benzene hexachloride)

HAZAROV, G.S., dotsent, kand. veterinarnykh nauk

Influence of dispersed substances (dusts) on animal organisms.
Veterinariia 36 no.9:54-60 S '59.   (MIRA 12:12)

1.Saratovskiy zootekhnichesko-veterinarnyy institut.
                (Dust--Physiological effect) (Veterinary medicine)

NAZAROV G. S. (Doctor of Veterinary Sciences) and YAKOVLEV L. A.
(Professor, Doctor of Veterinary Sciences) (Reviewers).

"Veterinary Disinfection."

Veterinariya, Vol. 38, No. 12, December 1961, P. 72.

MAKHLAYUK, Vitaliy Petrovich; NAZAROV, Grigoriy Stratonovich,
prof., red.; PANOV, V., red.

[Medicinal plants in popular medicine] Lekarstvennye
rasteniia v narodnoi meditsina. Saratov, Privolzhskoe
knizhnoe izd-vo, 1964. 557 p.   (MIRA 17:12)

1. NAZAROV, G. V.

2. USSR (600)

4. Drilling and Boring Machinery

7. Using broken twist drills. Sakh. prom. 26, no. 12, 1952.

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

AID P - 4871

Subject   : USSR/Engineering

Card 1/1   Pub. 107-a - 5/14

Author   : Nazarov, G. V.

Title   : Automatic welding of 32mm thick parts without edge-
                 trimming.

Periodical   : Svar. proizv., 4, 15-16, Ap 1956

Abstract   : In cutting flat parts out of sheet metal, excessive
                 waste may be avoided if a complicated design is cut in
                 segments and then welded into the desired shape. The
                 author describes such a method in making 32mm flat rings,
                 which are punched in four segments and then welded
                 automatically into the ring. This process permits saving
                 a great quantity of metal and as much as 29% of the labor.
                 Two tables and 5 drawings.

Institution : "Krasnoye Sormovo" plant im. Zhdanov (in Gor'kiy)

Submitted   : No date

NAZAROV, G.V.

135-4-1/15

SUBJECT: USSR /Welding

AUTHORS: Shorshorov, M.Kh, Candidate of Technical Sciences, Nazarov,
G.V., Engineer, and Amfiteatrova, T.A., Candidate of Chemical
Sciences.

TITLE: Weldability of Titanium (Issledovaniye svarivayemosti titana).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 4, pp 1-5 (USSR).

ABSTRACT: The authors' institute carried out (in 1954-55) an experimental
investigation of the weldability of sheet titanium "ИМП-I",
"ИМП-IA", and "ВТ-IA", representing technically pure titanium,
produced by different manufacturers at different dates.
The nitrogen content has been determined by Kleydal's (клейдаль)
method of chemical analysis, and the oxygen content by the
vacuum melting method. The chemical composition of the three
titanium grades concerned, as well as the mechanical properties
found in all consignments are shown in four charts. The in-
fluence of welding-heat cycle on grain growth, structural
changes, and mechanical properties was studied by the method
previously described in "Svarochnoye Proizvodstvo" # 9, 1956
(Shorshorov, M.Kh., Klebanov, G.N., Gushchina, L.S.-"Investi-

Card 1/3

135-4-1/15

TITLE: ·   Weldability of Titanium (Issledovaniye svarivayemosti titana).

gation processes is described in detail.

The conclusions reached are the following:

1) The most difficult problem in welding titanium is the deterioration of mechanical properties in the metal at the zone of fusion.

2) The changing of σ_b, σ_s, and ψ in weld joints according to the temperature is of the same nature as in the base metal.

3) Intensive grain growth in the weld metal and in the adjacent parent metal is observed during welding.

4) The formability of weld joints in # 2 of titanium grades "ИМП-A" and "ВТ-1Я" was very high and satisfied the production requirements.

5) The structure and the mechanical properties of low-temperature α-phase base metal are changing abruptly in the heating-part as well as in the cooling-part of the heat cycle; in the temperature interval of β-phase, σ_b and ψ are changing only insignificantly. After the thermal cycle of heating and cooling, titanium of all grades possesses lower mechanical properties.

6) For comparing the gas contents of the base metal, a special test is recommended, based on heating thin samples to 1300-1500° at

Card 2/3

135-4-1/15

TITLE: Weldability of Titanium (Issledovaniye svarivayemosti titana).
different speeds. The criterion for evaluation in this test
is the critical heating speed at which formation of bulges and
pores is observed in the metal.
7) The choice of welding technology is to be based on keeping
the metal a short time in the β-phase temperature of intensive
grain growth, and on slowing down the cooling in the interval
of $\beta \rightarrow \alpha$ conversion.

The article contains 5 tables, 5 diagrams, and 15 microphoto-
graphs.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR
(Institute for Metallurgy imeni A.A. Baykov, Academy of Sciences,
USSR).

PRESENTED BY:

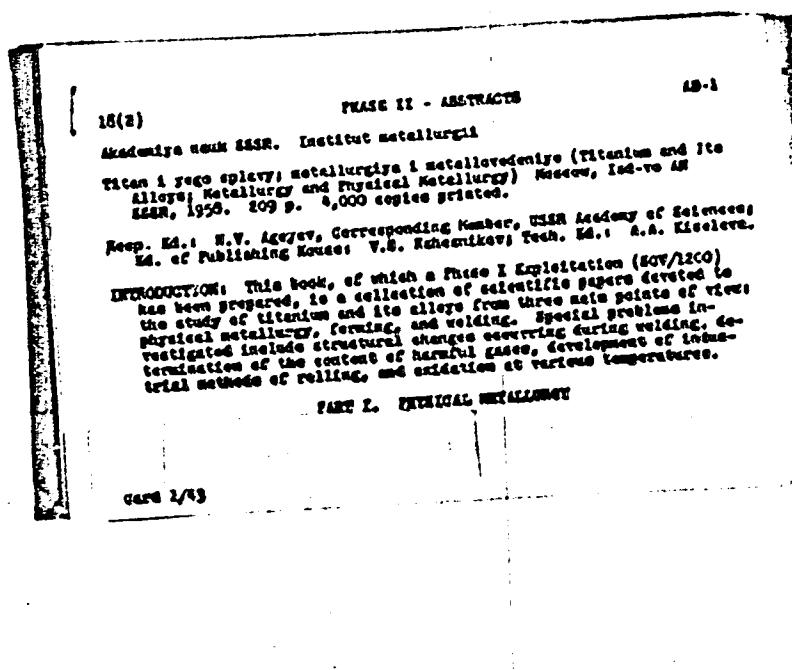SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 3/3

SHORSHOROV, M.Kh.; AMFITEATROVA', T.A.; NAZAROV, G.V.

Weldability of IMP1 titanium. Titan i ege splavy no. 1:180-193
(MIRA 14:5)
'58.

1. Institut metallurgii AN SSSR.
(Titanium—Welding)

NAZAROV G.V.

PHASE II - ABSTRACTS   AB-1

18(2)

Akademiya nauk SSSR. Institut metallurgii

Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and its
Alloys; Metallurgy and Physical Metallurgy) Moscow, Izd-vo AN
SSSR, 1958. 209 p. 4,000 copies printed.

Resp. Ed.: N.V. Ageyev, Corresponding Member, USSR Academy of Sciences;
   Ed. of Publishing House: V.S. Kzhemikov; Tech. Ed.: A.A. Kiseleva.

INTRODUCTION: This book, of which a Phase I Exploitation (SOV/1200)
   has been prepared, is a collection of scientific papers devoted to
   the study of titanium and its alloys from three main points of view:
   physical metallurgy, forming, and welding. Special problems in-
   vestigated include structural changes occurring during welding, de-
   termination of the content of harmful gases, development of indus-
   trial methods of rolling, and oxidation at various temperatures.

              PART I. PHYSICAL METALLURGY

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PART III.   WELDING OF TITANIUM

Shorshorov, M.Kh., T.A. Amfiteatrova, and G.V. Nazarov (Institute
of Metallurgy, USSR Academy of Sciences) Weldability of IMP-1
Titanium   180
    IMP-1 titanium plates (100 x 40 x 2 mm,) were butt-welded in a
protective atmosphere (argon and helium), the added metal having
the same chemical composition as the parent metal (typical
analysis: 0.05 percent C, 0.3 percent Fe, 0.05 percent Si,
0.21 percent Ni, 0.08 percent N_2, 0.03 percent Cr, 0.3-0.6 per-
cent O_2). Investigations were made of the following: mechani-
cal properties of the weld metal; grain growth and changes in
structure and mechanical properties of the heat-affected zone
under various thermal conditions; and swelling of titanium on
being heated. In the latter connection a test was developed for
the comparative determination of the degree of saturation of the
metal with hydrogen. Conclusions. (1) The main difficulties
in developing the technological processes of welding titanium
are connected with the deterioration of the properties of the
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base metal in the heat-affected zone. (2) Changes in tensile
strength and reduction in area as functions of temperature have
the same character as in the case of the base metal. (3) In-
tensive grain growth is observed in the weld metal and heat-af-
fected zones. The beta-phase grain growth in the dendrites of
heating is more intensive than in the dendrites of cooling.
(4) The structure and mechanical properties of rolled base metal
having the alpha-phase structure change sharply with change in tem-
perature, both in the dendrites of heating and cooling. In the
beta-phase temperature range, tensile strength, elongation, and re-
duction in area change very little. Titanium in the rolled state,
even in the alpha-phase, shows greater tensile strength, elongation,
and reduction in area than titanium which has not been subjected
to the heat of welding. (5) In the test for comparative determi-
nation of hydrogen saturation, thin specimens are heated to 1300-
1400° C at various speeds. The criterion of quality is the criti-
cal rate of heating at which swelling of the metal takes place and
porosity develops. (6) For improving the properties and structure
of welded titanium joints in the heat-affected zone, welding methods,
and conditions should be selected with a view to reducing the time
during which the metal is at a temperature where the beta-phase

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grain growth is intensive and to decreasing the cooling rate in the
$\beta \rightarrow \alpha$ transformation temperature range. There are 12 figures, 2
tables, and 2 references (both Soviet).

Poplavko, M.V., N.N. Manuylov, and L.A. Gruzdeva (Ministry of the
Aircraft Industry of the USSR) Some Problems in the Welding and
Soldering of Commercial Titanium 194
    VT-1D commercial titanium, which has a one-phase (alpha)
structure, was investigated for weldability. Tests were per-
formed on sheet metal rolled from ingots that were produced in
an arc furnace with a nonmelting tungsten electrode. Conclu-
sions. (1) VT-1D titanium sheet metal, when its properties
are stable and its plasticity sufficiently high, exhibits good
weldability characteristics in the following types of welding:
argon-shielded arc welding (manual and automatic), spot welding,
seam welding, and butt welding. (2) In order to produce welded
joints with good properties, it is necessary to remove, before
welding, any scale present on the surface as well as the surface
layer of metal itself, if it is contaminated with gases (oxygen,
hydrogen, nitrogen). These layers can be successfully removed
by pickling in an acid medium. Scale removal can be facilitated
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NAZAROV, G. V.

SOV-135-5?-9/19

AUTHOR: Shorshorov, M.Kh., Candidate of Technical Sciences and
Nazarov, G.V., Engineer

TITLE: The Effect of Some Alloying Elements on the Properties of Weld
Joints of Titanium and Its Alloys (Vliyaniye nekotorykh legi-
ruyushchikh elementov na svoystva svarnykh soyedineniy titana
i yego splavov)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 3, pp 30-33 (USSR)

ABSTRACT: Investigations on the weldability of "IMP-1A" and "VT-1D"
commercial titanium and its alloys with aluminum, lead,
manganese, vanadium, tungsten, etc. were carried out by G.V.
Nazarov at the laboratory for metal welding of the Institute
of Metallurgy imeni Baykov together with TsNIIChermet. It is
concluded that the optimum cooling rate in the $\beta-\alpha$ range
(Tables 1 and 4) must be considered in selecting the welding
process technology. Elements reducing the plasticity of weld
seams are classified in the following order: Fe, Mn, V, Sn, Al.
Recommendations are given for obtaining titanium alloys which
do not require heat treatment after welding, and for obtaining
the best plastic properties of weld joints by the use of heat

Card 1/2 treatment.

SOV-135-58-9/19

The Effect of Some Alloying Elements on the Properties of Weld Joints of Titanium and Its Alloys

There are 4 tables, 3 photos, 2 graphs, and 2 Soviet references.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR (Institute of Metallurgy imeni A.A. Baykov, AS USSR)

1. Welded joints--Properties   2. Titanium--Welding   3. Titanium alloys--Welding

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NAZAROV, G. V

PHASE I BOOK EXPLOITATION   SOV/2857

Shorshorov, Minas Khachaturovich, and Gennadiy Vasil'yevich
   Nazarov

Svarka titana i yego splavov (Welding of Titanium and Its Alloys),
   Moscow, Mashgiz, 1959. 134 p. Errata slip inserted. 4,000
   copies printed.

Ed.: G. B. Yevseyev, Candidate of Technical Sciences; Ed. of
   Publishing House: N. S. Stepanchenko; Tech. Ed.: V. D. El'kind;
   Managing Ed. for Literature on Heavy Machine Building (Mashgiz):
   S. Ya. Golovin, Engineer.

PURPOSE: This book is intended for scientists, production engineers,
   and designers working in the field of titanium welding and on the
   development of new titanium alloys for application in welding.

COVERAGE: The book deals with the weldability of titanium and its
   alloys and with modern industrial methods of welding and soldering
   them (inert-gas shielded arc welding, submerged-arc welding,
   electroslag welding, resistance welding, etc.). Basic data on the

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Welding of Titanium and Its Alloys   SOV/2857

   production and properties of titanium are given. Other matters
   discussed are the effect of alloy composition and harmful im-
   purities on weldability, thermal processes in welding, control of
   structure and properties of welded joints, and principles of
   selecting welding and heat-treating regimes. The main fields of
   application of welded designs are indicated. The following
   personalities are mentioned for their contributions in this fielu:
   S. M. Gurevich, A. P. Goryachev, F. Ye. Tret'yakov, M. V. Poplavko,
   M. A. El'yasheva, B. D. Orlov, and Ye. A. Guseva. There are 51
   references: 28 Soviet and 23 English.

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