

VLASOV, V.V., kand.med.nauk: KUZ'MIN, K.P.

Pancreatic cyst. Vest. khir. 93 no.12:98-99 D '64.

(MIRA 12:5)

VLASOV, V.V., kand. med. nauk (Novosibirsk 17, korpus 95, kv.4)

Results of using metal bolts for osteosynthesis in the treatment  
of multiple fractures of the bones. Ortop., travm. i protez. 26  
no.2:7-10 F '65. (MIRA 18:5)

GORBACHEV, B.F.; VLASOV, V.V.; SITDIKOV, B.S.

Characteristics of the formation of authigenous anatase in the  
katagenesis zone. Lit. i pol. iskop. no.5:105-108 S-0 '64.  
(MIRA 17:11)

1. Kazanskiy gosudarstvennyy universitet.

VLASOV, V.V.; KULAKOV, M.V.

Methods for complex continuous determination of the thermo-  
physical coefficients of laminated and monolithic materials.  
Trudy MIKHM 25:237-255 '63. (MIRA 17:6)

VLASOV, V.V.

Use of a digital computer in determining the heat conductivity  
coefficient of solid materials. Inzh.-fiz. zhur. 7 no. 3:  
34-41 Mr '64. (MIRA 17:5)

1. Filial Moskovskogo instituta khimicheskogo mashinostroyeniya,  
Tambov.

VLASOV, V.V., kand.med.nauk (Novosibirsk); KHOTENOVSKIY, K.A. (Novosibirsk)

Skin diseases in burned patients. Vest. dermat. i ven. 36  
no.10:31-34 0'62 (MIRA 16:11)

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VLASOV, V.V.; MEL'NIKOVA, V.A.; YANUS, R.I.

Influence of the demagnetizing effect on the rate of establishing a magnetic induction flux in a ferromagnetic material. Fiz. met. i metalloved. 16 no.6:842-847 D '63. (MIRA 17:2)

1. Institut fiziki metallov AN SSSR.

VLASOV, V.V.

Automatic setup for establishing quasi-stationary heat conditions. Inzh.-fiz.zhur. 5 no.8:90-92 Ag '62. (MIRA 15:11)

1. Institut khimicheskogo mashinostroyeniya, Moskva.  
(Automatic control) (Heat engineering)



VLASOV, V.V., Cand Phys Math Sci -- (diss) "Application  
of the method of elementary functions to the solution  
of certain problems of the theory of elasticity."  
Mos, 1958, 7 pp (Mos Order of Lenin and Order of  
Labor Red Banner State Univ im M.V. Lomonosov.  
Mechanics Math Faculty) 150 copies. Bibliography  
pp 6-7 (11 titles) (KL, 50-58, 119-20)

SOV/24-58-7-6/36

AUTHOR: Vlasov, V.V. (Moscow)

TITLE: Application of the Method of Initial Functions to Problems of Equilibrium of Thick Multilayer Plates (Metod nachal'nykh funktsiy v zadachakh ravnovesiya tolstykh mnogosloynnykh plit)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 40 - 48 (USSR)

ABSTRACT: Solution of three-dimensional problems of theory of elasticity by means of initial functions (Ref 1) involves the determination of six functions (of two variables) on some initial (boundary) plane of the system, say,  $z = 0$ . These functions are: three components of the displacement vector  $u_0 = u(x,y,0)$ ,  $v_0 = v(x,y,0)$  and  $w_0 = w(x,y,0)$  and three components of the stress vector  $X_0 = X_z(x,y,0)$ ,  $Y_0 = Y_z(x,y,0)$  and  $Z_0 = Z_z(x,y,0)$ . If all these six initial functions are known, all displacements and stresses in the plate can be expressed in the form of an infinite series of terms in  $z$ , the coefficients of the terms being simply the initial

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functions and their derivatives with respect to  $x$  and  $y$ , as given in Eq (0.1). The expressions determining the differential operators  $L$ ,  $A$ ,  $B$  and  $C$  are given in Ref 1. They all include the Poisson's coefficient  $\nu$  and the shear modulus  $G$ . Eq (0.1) neglects inertia forces. If, for convenience, a new system of symbols be introduced as given by the terms starting with  $u(x,y,z) = U_1$ , on p 40, and ending with  $Z_0 = U_6$ , then Eq (0.1) can be simply expressed as a single sum (Eq (0.2)). The author then considers some particular cases. Starting with a flat multilayer plate (Figure 1), it is assumed that deflections and stresses change in a continuous manner, hence the final values for the first layer become the initial values for the second and so on. This leads to a number of matrices, which, when solved, give the answer to the problem. In the case of a two-dimensional problem, e.g. in the  $xz$ -plane, we have  $\nu = 0$  and therefore neither  $u$  nor  $w$  do depend upon  $y$ . The problem simplifies and instead of the 9 terms in the

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sum of Eq (0.2), only 5 terms remain as shown in Eq (2.1). Detailed determinations of the operators  $L_{ik}$  are given in Ref 2 and are summarised in Eq (2.2).

Symbol  $\gamma$  in these expressions denotes the partial derivative  $\partial/\partial x$ . In order to obtain displacements and stresses in terms of the initial functions (which will be in the form of infinite series) it is necessary to expand the trigonometric functions as a series in powers of  $\gamma z$ , then replacing  $\gamma$  by  $\partial/\partial x$ , to perform the differentiation of the respective initial functions.

As an example, the author solves the problem of an infinite plate consisting of two layers and resting on a great number of identical and equally spaced supports (Figure 2) at first in general terms and then for the case of uniformly distributed load  $q$ . In the latter case, the graphs of Figure 3 represent the normal stresses  $U_3 = Z_z$  and  $U_5 = X_x$  at the mid-section ( $x = 1/2a$ ) of the span (graphs a and b, respectively)

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Application of the Method of Initial Functions to Problems of  
Equilibrium of Thick Multilayer Plates

for the following conditions:

$$h_1 = h_2 = 1/4l; \quad a = 1/6l; \quad G_2 = 10G_1; \quad \nu_1 = \nu_2 = 0.3.$$

The author considers also the same case as before but with the plates free to slide with respect to each other at the surface of contact. Figure 4 gives the stresses  $U_3 = Z_z$  (graph a) and  $U_5 = X_x$  (graph b) at the mid-section. Three-dimensional problems are considered by means of double trigonometric series and the applicability of this method is illustrated on the example shown in Figure 5. Finally, the case of a three-dimensional infinite plate is discussed in general terms. There are 6 figures and 2 Soviet references.

SUBMITTED: April 8, 1958

Card 4/4

AUTHOR: Vlasov, V. V. (Moscow) SOV/179-59-3-16/45  
TITLE: An Application of the Method of Basic Functions in the Theory of Elasticity of Rectangular Systems (Primeneniye metoda nachal'nykh funktsiy k ploskoy zadache teorii uprugosti dlya pryamougol'noy oblasti)  
PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1959, Nr 3, pp 114-125 (USSR)

ABSTRACT: A method of solving a problem of equilibrium of a rectangular plane object subjected to tensions, as illustrated in the figure, p 114, is described. This method consists of finding four basic functions  $u(x,0) = u_0$ ,  $w(x,0) = w_0$ ,  $X_Z(x,0) = X_0$  and  $Z_Z(x,0) = Z_0$  which represent the corresponding components of the dislocation and tension vectors at the point  $Z = 0$ . The basic functions in this case are defined as Eq (0.1), where  $Z$  and  $X$  represent the tensions  $Z_Z$  and  $X_Z$ ;  $U$ ,  $U_0$  and  $W$ ,  $W_0$  correspond to the displacements  $U = Gu$ ,  $U_0 = Gu_0$ ,  $W = Gw$  and  $W_0 = Gw_0$ , where  $G$  - modulus of shear.

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An Application of the Method of Basic Functions in the Theory of Elasticity of Rectangular Systems

These values will be called displacements. The differential operators  $L$  and  $A$  in their symbolic terms are defined as Eq (0.2), where  $\gamma$  is a constant. Three cases are considered. In the first case the homogeneous conditions of the mixed type are acting on the two opposite sides of the rectangular surface. The limiting conditions in this case are expressed by Eq (1.1) and the basic functions  $U_0$  and  $Z_0$  are equal to 0. The remaining two functions can be defined as Eq (1.2), which can be written in the general form as Eq (1.8) if the function  $F(x)$  is introduced as in Eq (1.3). These two functions can be represented as Eqs (1.14) and (1.16) when the transformations, Eqs (1.9) to (1.13) and (1.15), are effected. The second case is defined for the homogeneous static conditions on two opposite sides when the limiting conditions are expressed by Eq (2.1). In this case the basic functions  $X_0$  and  $Z_0$  are also equal to 0 and the other two functions are represented by Eq (2.2).

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Similarly, as in the previous case, the function  $F(x)$  is

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introduced (Eq 2.3) and the formulae, Eq (2.6), are defined (where  $C_1 = \text{const}$ ). Substituting Eq (2.6) into Eq (0.1), the general formulae (2.7) are obtained which correspond to Eq (2.5). The value of  $kh$  in Eq (2.5) is expressed as  $kh = a + bi$  and then it is divided into two equations, Eq (2.8). Also the values of  $a-bi$ ,  $-a+bi$  and  $-a-bi$  can be obtained and, therefore, Eq (2.5) can be written as Eq (2.9). The values of  $a$  and  $b$  were found experimentally by I. Fadle (Ref 8) and are tabulated on p 121. Since the general form of the function  $F(x)$  can be written as Eq (2.10), the complex roots of Eq (2.5) are obtained as Eq (2.11) or (2.13). The third case is obtained when the homogeneous geometric conditions (3.1) are affecting two opposite sides. The function  $F(x)$  in this case is defined as Eq (3.2) which, in contrast to Eqs (1.5) and (2.5), does not contain zero roots. Therefore, the general integral for  $F$  is determined similarly to Eq (2.11). Then, the integrals for displacement and tension are found from Eqs (2.14) and (2.15) for the limiting conditions

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An Application of the Method of Basic Functions in the Theory of Elasticity of Rectangular Systems

$$\varphi'' - \sqrt{k^2} \varphi = 0 \quad \left(1 + \frac{\nu}{2}\right) \varphi' + \frac{1}{2k^2} \varphi''' = 0 \quad \text{for } z = 0, z = h$$

It should be noted that the calculations shown in this work (such as Eqs (1.14), (1.16) etc.) could be extended to every plane surface having at least two parallel sides. There are 1 figure and 9 references, 6 of which are Soviet and 3 English.

SUBMITTED: August 14, 1958

Card 4/4

93907

S/179/60/000/005/010/010  
E191/E181

16.7300

AUTHOR: Vlasov, V.V. (Moscow)

TITLE: The Method of Initial Functions in the Axially Symmetrical Problem of the Theory of Elasticity

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 5, pp 168-175

TEXT: Referring to Vlasov V.Z. (Ref 1), the fundamental relationships of the methods of initial functions are derived for the axially symmetrical problem of the theory of elasticity. A similar method was given by A.I. Lur'ye (Ref 2). An arbitrary solid of revolution under conditions of axially symmetrical deformation is considered under the action of external loads without mass forces. The displacement vector components in a cylindrical coordinate system are multiplied by the shear modulus and, in this form, are called displacements in the initial function method. The initial functions are the values in the base plane of the displacement vector and stress vector components. On the assumption that the stress and strain distributions are independent of the angular coordinate, the general expressions for the

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E191/Ei81

The Method of Initial Functions in the Axially Symmetrical Problem of the Theory of Elasticity

displacements and stresses of the initial function method, formulated earlier in cartesian coordinates, are transformed. Two basic sets of relations exist of which one applies to symmetrical and the other to anti-symmetrical deformations (torsion problem). The derivations are applied to the torsion of a thick-walled cylinder subject to an arbitrary torsion loading applied to the far end face of a cylinder fixed at the other end face. The torsion load is distributed over the face in accordance with a given function of the radius. To satisfy the boundary conditions at the loaded face, a differential equation of infinite order is formulated. The solution, being the sum of a particular solution of the non-homogeneous equation and the general solution of the homogeneous equation, is stated. The solution is expressed by Bessel functions, but when the radial distribution of the end load obeys a certain law, elementary functions are applicable. The application of the method is shown to the problem of the equilibrium of a thick-walled cylinder with "mixed" boundary

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The Method of Initial Functions in the Axially Symmetrical Problem of the Theory of Elasticity

conditions at the end faces (vanishing axial deformations and shear stresses). It is shown that identical solutions are obtained with those already given by other methods of the theory of elasticity. If the boundary conditions at both end faces are expressed in terms of stress alone (vanishing axial and shear stresses), the problem becomes that of the flexure of a round plate under an axially symmetrical load. The problem is solved by considering two partial solutions which are superimposed. Finally, the problem is considered of arbitrary normal loads at one face whilst the other face is free of either load or fixing. There are 7 Soviet references.

SUBMITTED: November 6, 1959

Card 3/3

VLASOV, V. V. (Moskva)

Applying the method of initial functions to some problems of the bending of rectangular plates. Inzh.sbor. 30:78-84 '60.

(MIRA 13:10)

(Elastic plates and shells)

VLASOV, V.V., kand.fiziko-matematicheskikh nauk (Moskva)

Application of the initial function method to the calculation of  
thick plates. Issl. po teor. sooruzh. no.10:189-207 '61.  
(MIRA 14:8)

(Elastic plates and shells)

VLASOV, V.V.

Results of the investigation of differential thermocouple batteries,  
Priborostroenie no.4:27-28 Ap '63. (MIRA 16:4)  
(Thermocouples—Testing)

VLASOV, V.V., kand. fiz.-matem. nauk

Method of initial functions in the plane problem of the  
theory of elasticity. Vop. proch. i ustojch. elem. tonkosten.  
kon. no.1:5-58 '63. (MIRA 17:1)



VLASOV, V.V., kand.fiz.-mat.nauk; SUBBOTIN, Yu.S.

New phase sensitive eddy current method of detecting surface cracks  
in metal products. Report No.2: Schematic diagram of a flaw detector.  
Defektoskopiia 1 no.3:77-85 '65.

(MIRA 18:8)

1. Institut fiziki metallov AN SSSR.

On a method of production of monocrystalline films of semiconductors.  
S. A. Semiletov.

Preparation, structure, and some properties of monocrystalline layers  
of lead selenide. S. A. Semiletov, I. P. Voronina.

On a method of preparation of thin films of indium antimonide of  
stoichiometric composition. P. S. Agalarzade, S. A. Semiletov,  
E. G. Pinsker.

New phases in the system gallium-tellurium. V. V. Vlasov, S. A. Semiletov.

Some questions on the crystal chemistry of semiconductors with the  
structure of bismuth telluride. S. A. Semiletov.  
(Presented by S. A. Semiletov--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,  
Kishinev, 16-21 Sept 1963

VLASOV, V. V.

"The Experience With Application of Penicillin in Medical Serums For  
Surgical Ailments," Voyenno-Med. Zhur., No. 6, p. 34, 1955.

VLASOV, V.V., podpolkovnik med. sluzhby

Treatment and application of prostheses following amputation.  
Voen.med.zhur. no.3:29-32 Mr '57. (MIRA 11:3)

(AMPUTATION STUMP,  
management (Rus)  
(ARTIFICIAL LIMB,  
(Rus)

VLASOV, V. V.

VLASOV, V.V. podpolkovnik meditsinskoy sluzhby; LIPSKIY, Ya.I., podpolkovnik meditsinskoy sluzhby; SHAYRANOV, A.A., podpolkovnik meditsinskoy sluzhby

Some aspects of surgical procedures in burns associated with open fractures; experimental observations. Voen.-med.zhur. no.8:20-25 Ag '57. (MIRA 10:12)

(BURNS, experimental,  
with open fract., surg. (Rus))  
(FRACTURES, experimental,  
with burns, surg. (Rus))

VIASOV, V.V., podpolkovnik meditsinskoy sluzhby

Changes in the vessels and the development of the tissue  
blood supply following burns combined with wounds. Voen.  
med.zhur. no.3:91 '59. (MIRA 12:6)  
(BLOOD VESSELS) (BURNS AND SCALDS)

VLASOV, V.V.

Metal nailing in open fractures combined with burns. Ortop., trav.  
i protez. 20 no.10:15-21 O '59. (MIRA 13:2)

1. Iz Novosibirskogo okruzhnogo gospitalya (nach. - N.Z. Borovskiy),  
nauchnyy rukovoditel' - prof. I.L. Bregadze.

(FRACTURES surgery)  
(BURNS therapy)

VLASOV, V.V. (Novosibirsk, 17, korp.95, kv.4)

Some clinical and roentgenological characteristics of the healing of  
experimental fractures associated with burns. Vest.rent. i rad. 34  
no.4:53-59 JI-Ag '59. (MIRA 12:12)  
(BURNS exper.)  
(FRACTURES exper.)



VLASOV, V. V., CAND MED SCI, "CERTAIN PECULIARITIES OF *the*  
SURGICAL TREATMENT AND HEALING OF WOUNDS ASSOCIATED WITH  
BURNS." NOVOSIBIRSK, 1960. (NOVOSIBIRSK STATE MED INST).  
(KL-DV, 11-61, 227).

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VLASOV, V.V.; ZAKHAREVICH, T.V.; KOMISSAROV, M.Ya.; TYAZHKUN, N.F.

Treatment of facial burns with bandages. Voen.-med. zhur. no.8:  
48-50 Ag '60. (MIRA 14:7)  
(FACE---WOUNDS AND INJURIES)  
(BURNS AND SCALDS)

VLASOV, V.V.

Three cases of complications following the administration of Gordeev's  
solution. Vest. derm. i ven. 34 no. 5:67-68 '60. (MIRA 14:1)  
(CYTOTOXIC DRUGS)

VLASOV, V.V., podpolkovnik meditsinskoy sluzhby

Case of anaphylactic shock. Voen.-med. zhur. no.7:73-74 J1 '61.  
(MIRA 15:1)

(ALLERGY)

(TETANUS)

ACCESSION NR: AP4019079

S/0170/64/000/003/0034/0041

AUTHOR: Vlasov, V. V.

TITLE: Determination of the thermal conductivity coefficient of solid materials by means of a computer

SOURCE: Inzhenerno-fizicheskii zhurnal, no. 3, 1964, 34-41

TOPIC TAGS: thermal conductivity coefficient, automatic thermal conductivity determination, digital computer, tufnol

ABSTRACT: A description is given of a method for the automatic determination of the thermal conductivity of solids under quasi-stationary heat conditions with the aid of a digital computer. The equation  $\lambda = qR / 2\Delta t$ , where  $\lambda$  is the thermal conductivity coefficient,  $q$  is the specific heat flux, and  $\Delta t$  is the temperature drop on the plates under study, is used to calculate the thermal conductivity of tufnol by both manual and automatic methods. A functional block diagram given in the article presents the principle of operation of an automatic device and of analog-discrete transformation units. The designs of all the basic units are described and the main parameters of their operation are given. The

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ACCESSION NR: AP4019079

experimental data for the thermal conductivity of tufool, obtained manually and automatically, are presented. The results of measurements are discussed, and the errors involved in the determination of the thermal conductivity of solids by a digital computer are evaluated. The author carried out the work in the Department of Chemical Technology at Cambridge University (England). Orig. art. has 1 figure, 1 table, and 1 formula.

ASSOCIATION: Filial Moskovskogo instituta khimicheskogo mashinostroyeniya, Tambov (Branch of the Moscow Institute of Chemical Machinery)

SUBMITTED: 18Feb63

DATE ACQ: .27Mar64

ENCL: 00

SUB CODE: PH, MM

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OTHER: 000

Card 2/2

BERG, L.G.; SIDOROVA, Ye.Ye.; VLASOV, V.V.; SOZIN, Yu.I.;  
AVVAKUMOVA, K.N.

Cadmium nitrate tetrahydrate and the products of its dehy-  
dration. Zhur. neorg. khim. 9 no.3:538-546. Mr '64.  
(MIRA 17:3)

1. Khimicheskiy institut AN SSSR i Kazanskiy filial AN SSSR.

BYCHKOV, Yu.F.; VLASOV, V.V.; ROZANOV, A.N.

Certain properties of ternary  $\beta$ -solid solutions of zirconium  
with niobium and molybdenum. Met. i metalloved. chist. met.  
no.3:82-95 '61. (MIRA 15:6)  
(Zirconium-niobium-molybdenum alloys)



VLASOV, V.V.

Automatic device for continuous determination of the heat diffusivity factor for solids under quasi-stationary thermal conditions. Inzh.-fiz.zhur. 5 no.9:66-73 S '62. (MIRA 15:8)

1. Institut khimicheskogo mashinostroyeniya, Moskva.  
(Thermal diffusivity--Measurement)

VLASOV, Vladimir Yefimovich, zhurnalist; RYAZHSKIY, O., red.; YEGOROVA, I.,  
tekh. red.

[Blue glow] Goluboi ogon'. Moskva, Izd-vo TsK VLKSM "Molodaia  
gvardiia," 1961. 30 p. (MIRA 14:11)  
(Electric welding)

L 2914-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/EWA(h)/ETC(m)/ WW/EM  
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Vlasov, Vasilii Zakharovich (Corresponding Member of the Academy of Sciences of the U.S.S.R.)

Selected works. v. 1: Outline of the scientific work "General theory of shells." Articles (Izbrannyye trudy. t. 1: Ocherk nauchnoy deyatel'nosti "Obshchaya teoriya obolochek." Stat'i) Moscow, Izd-vo AN SSSR, 1962. 0528 p. illus., biblio. Errata slip inserted. 2000 copies printed.

TOPIC TAGS: aerospace structure, cylindrical shell structure, thin walled beam, shell theory, spheric shell structure, ellipsoidal shell structure, shell design, elasticity theory, cyclic strength

PURPOSE AND COVERAGE: This book is the first volume from the "Selected Works" by Vasilii Zakharovich Vlasov a prominent Soviet scientist in the field of strength of materials, structural mechanics and theory of thin-walled systems. The first volume comprises the treatise on "General theory of shells and their application in technology", and other articles in the area of the theory of shells. The title of the second volume is "Thin-walled elastic beams". This is a general presentation on the theory of stability, strength and vibration of thin-walled beams. It contains also the author's presentation "On the structural principles of general technical shell theory and new structural forms

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of three-dimensional systems". The third volume is on "Thin-walled three-dimensional systems", which presents general variation methods for designing prismatic folded systems and shells.

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BOOK EXPLOITATION

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Vlasov, Vasilii Zakharovich... (Corresponding Member of the Academy of Sciences of the U.S.S.R.)

Selected works. v. 3: Thin-walled three-dimensional systems (Izbrannyye trudy. t. III: Tonkostennyye prostranstvennyye sistemy) Moscow, Izd-vo "Nauka", 1964. 0471 p. illus., tables. (At head of title: Akademiya nauk SSSR) 2300 copies printed.

TOPIC TAGS: cyclic strength, bending stress, torsion stress, civil engineering, aerospace shell structure, cylindrical shell structure, thin-walled beam, shell theory, elastic plate, prismatic body, shell structure, shell design

PURPOSE AND COVERAGE: The thin-walled three dimensional structures comprising plates and shells are widely applied in various branches of modern technology. They are used for covering of industrial and civil structures and buildings such as: underground petroleum reservoirs, hangars, cooling towers, supply lines, stadiums, theatres, swimming pools, etc. The modern aircraft, ships, reinforced concrete vessels and floating docks, all-metal railroad cars, trolley cars, automobiles are also thin-walled three dimensional shell systems of

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different form and profile. The use of thin-walled structures is advantageous for technological and economic considerations. This book presents the general theory of cylindrical and prismatic orthotropic medium length shells with one cross-sectional transverse strength. In mathematical section the theory is presented by variation reduction methods in common matrix differential equations. It is a generalization for strength of materials theory, bending and torsion theory of thin-walled and continuous section beams. The book contains also practical and engineering methods for the solution of three-dimensional mechanical engineering and applied elasticity theory problems.

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Foreword to the 2nd edition -- 5

PART I. DESIGNING SHELLS BY COMBINED VARIATION METHOD WHILE NOT ALLOWING FOR SHEARING STRAIN

Ch. I. Theory of orthotropic prismatic and cylindrical shells of medium length -- 9

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L 2901-66

AM5007587

2

Ch. II. Theory application in designing thin-walled building structures -- 105

PART 2. DESIGNING SHELLS BY VARIATION DISPLACEMENT METHOD WHILE ALLOWING FOR SHEARING STRAIN

Ch. III. Designing theory for multiply connected cylindrical and prismatic shells -- 160

Ch. IV. Theory application in designing thin-walled three dimensional systems -- 176

Ch. V. Stability of prismatic shells <sup>54</sup> -- 240

Ch. VI. Strength and stability of cylindrical orthotropic shells

PART 3. VARIATION METHODS FOR THE SOLUTION OF PROBLEMS IN THE THEORY OF PLATES

Ch. VII. Plane stressed state of plates and thin-walled beams -- 309

Ch. VIII. Bending theory of plates -- 324

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24

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2

Ch. IX. Practical designing method of plates and prismatic shells with non-shiffling ribs -- 346

e Ch. X. Stability and oscillations of rectangular and trapeziform plates -- 395

PART 4. Technological designing theory of structures on elastic foundation

Ch. XI. Designing theory and methods of beams on elastic foundation -- 415

Ch. XII. Designing theory and methods of plates on elastic foundation -- 438

SUB CODE: AS

SUBMITTED: 30May64

NO REF SOV: 023

OTHER: 000

Card <sup>KC</sup> 4/4

SOV/6428

*Declassified*

*1958*

PHASE I BOOK EXPLOITATION

Vlasov, Vasilii Zakharovich (1906-1958)

Izbrannyye trudy. t. II: Tonkostennyye uprugiyе sterzhni. Printsipy postroyeniya obshchey tekhnicheskoy teorii obolochek (Selected Works. v. 2: Thin-Walled Elastic Beams. Development Principles of the General Engineering Theory of Shells) Moscow, Izd-vo Akademii nauk SSSR, 1963. 507 p. Errata slip inserted. 2000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Commission: N. I. Bezukhov, V. V. Vlasov, A. A. Gvozdev, A. L. Goldenveyzer, A. K. Mroshchinskiy, O. D. Oniashvili; Deputy Chief Ed.: I. M. Rabinovich; Chief Ed.: V. V. Sokolovskiy; N. S. Streletskiy; Resp. Secretary: I. S. Tsurkov; Eds. of Publishing House: V. M. Akhundov and Ye. N. Grigor'yev; Tech. Eds.: T. A. Prusakova and T. V. Polyakova.

PURPOSE: The book is intended for engineers, designers, and scientific workers concerned with the design and with the stress and stability

Card 1/β2

Selected Works. v. 2: Thin-Walled Elastic (Cont.) SOV/6428

analysis of thin-walled structures under static and dynamic loading.

COVERAGE: The general theory of strength, stability, and vibration of thin-walled beams and columns of open and closed cross section is presented. The design of solid-cross-section bars is also discussed. The following modern problems of the strength of materials, structural mechanics, and applied elasticity theory are examined: thin-walled shell-type open-section beams reinforced by transverse elements; shell-type closed-section beams undergoing normal and shearing strains due to the warping of cross sections; prestressed beams; thermal stresses; equilibrium of shell-type beams under complex loadings; three-dimensional stability; and vibration of thin-walled structures. The treatment of all these problems is based on the general "bimoment" theory of warping (deplanation). The term "bimoment" denotes a new quantity in statics (dimensionality  $\text{kg}\cdot\text{cm}^2$ ) associated with the sectorial deplanation of the cross section. The "bimoment" represents a generalized self-equilibrating system of forces statically

Card 2/63

## Selected Works. v. 2: Thin-Walled Elastic (Cont.)

SOV/6428

equivalent to zero. The second part of the book consists of a review-report by the author. This report was presented at the Second International Conference on the Theory of Shells held in Oslo in 1957, and may be considered as a summation of Vlasov's entire scientific activity. No personalities are mentioned. There are 300 references: 218 Soviet and 82 non-Soviet.

## TABLE OF CONTENTS [Abridged]:

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Card 3/83	

ZIMA, Ivan Mitrofanovich; MALYUGIN, Timofey Timofeyevich; KURUSHIN, F.M.,  
retsenzent; ASHEULOV, Ye.A., retsenzent; VLASOV, Ye.I., red.;  
FUKS, Ye.A., red.izd-va; PARAKHINA, N.L., tekhn.red.

[Mechanization of silvicultural operations] Mekhanizatsia  
lesokhoziaistvennykh rabot. Moskva, Goslesbumizdat, 1960.  
563 p. (MIRA 14:1)  
(Forests and forestry--Equipment and supplies)

VLASOV, YE. I.

27839. VLASOV, YE. I Mashiny i oborudovaniye dlya sozdaniya polezashchitnykh polos. Les istep', 1949, No. 1, s. 58-62

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

VAYS, Karl Leonovich; VLASOV, Ye.M., red.; SHILLING, V.A., red. izd-  
va; GVIRTIS, V.L., tekhn. red.

[Problems in applying microreproduction to scientific and  
technological information] Nekotorye voprosy primeneniia mik-  
rofotokopirovaniia v nauchno-tekhnicheskoi informatsii. Le-  
ningrad, 1962. 14 p. (MIRA 15:12)  
(Microphotography)



VLASOV, Yevgeniy Modestovich; TIMOFEYEVSKIY, T.P., red.

[Microphotocopying of scientific and patent and  
technical information] Mikrofotokopirovanie v nauchnoi  
i patentno-tekhnicheskoi informatsii. Leningrad, 1965.  
34 p. (MIRA 18:5)

ACC NR: AR6022395

(N)

SOURCE CODE: UR/0398/66/000/003/V010/V010

AUTHOR: Kurzon, A. G.; Vlasov, Ye. N.

TITLE: Selection of parameters for a supersonic double-crowned turbine stage with a small intake ratio

SOURCE: Ref. zh. Vodnyy transport, Abs. 3V80

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 62, 1965, 11-27

TOPIC TAGS: turbine design, steam turbine, turbine stage, marine engineering, propulsion engineering, supersonic nozzle, supersonic nozzle flow

ABSTRACT: The results of design and experimental determinations of the optimum nozzle slope,  $\alpha_1$ , for a supersonic double-crowned turbine stage with a small intake ratio,  $\epsilon$ , are cited, and the question of selecting the optimum nozzle height,  $\chi_n$ , for various operating conditions and intake ratios, is reviewed. It is established that (1) the dependence of the nozzle velocity coefficient,  $\varphi$ , on  $\alpha_1$  must be taken into consideration when designing auxiliary supersonic turbines; this requires the compilation of experimental material; (2) it is desirable to take  $\alpha_{opt} \sim 16-14^\circ$ , for small flow values  $\alpha_{opt} \sim 12-10^\circ$ , and to reduce it for lesser flows and turbine power ratings; (3) a nozzle height of 10-11 mm should be considered satisfactory for steam flows of 1 to 2 tons/

UDC: 621.438:629.12

Card 1/2

ACC NR: AR6022395

hour, the higher for lesser flows, and the lower for the larger ones; (4) the question of the optimum complex for the values for  $\lambda_n$  and  $\epsilon$  and for the stage diameter, is worthy of profound experimental investigation. 13 figures, 3 tables. Bibliography of 17 titles. S. Korzh. [Translation of abstract]

SUB CODE: 13

Card 2/2

ACC NR: AR6022395

(N)

SOURCE CODE: UR/0398/66/000/003/V010/V010

AUTHOR: Kurzon, A. G.; Vlasov, Ye. N.

TITLE: Selection of parameters for a supersonic double-crowned turbine stage with a small intake ratio

SOURCE: Ref. zh. Vodny transport, Abs. 3V80

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 62, 1965, 11-27

TOPIC TAGS: turbine design, steam turbine, turbine stage, marine engineering, propulsion engineering, supersonic nozzle, supersonic nozzle flow

ABSTRACT: The results of design and experimental determinations of the optimum nozzle slope,  $\alpha_1$ , for a supersonic double-crowned turbine stage with a small intake ratio,  $\epsilon$ , are cited, and the question of selecting the optimum nozzle height,  $\chi_n$ , for various operating conditions and intake ratios, is reviewed. It is established that (1) the dependence of the nozzle velocity coefficient,  $\varphi$ , on  $\alpha_1$  must be taken into consideration when designing auxiliary supersonic turbines; this requires the compilation of experimental material; (2) it is desirable to take  $\alpha_{opt} \sim 16-14^\circ$ , for small flow values  $\alpha_{opt} \sim 12-10^\circ$ , and to reduce it for lesser flows and turbine power ratings; curves for use in making a tentative evaluation of  $\alpha_{opt}$  are derived; (3) a nozzle height of 10-11 mm should be considered satisfactory for steam flows of 1 to 2 tons/

UDC: 621.438:629.12

Card 1/2

ACC NR: AR6022395

hour, the higher for lesser flows, and the lower for the larger ones; (4) the question of the optimum complex for the values for  $\lambda_n$  and  $\epsilon$  and for the stage diameter, is worthy of profound experimental investigation. 13 figures, 3 tables. Bibliography of 17 titles. S. Korzh. [Translation of abstract]

SUB CODE: 13

Card 2/2

L 00994-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EWG(s)-2/EWP(f)/EWG(v)/EWP(v)/T-2/EWP(k)/  
 EWA(h)/EWC(m) EM/WW

ACCESSION NR: AP5019667

UR/0229/65/000/006/0028/0031  
 621.125-225.1

AUTHORS: Kurzon, A. G. (Doctor of technical sciences); Vlasov, Ye. N. (Engineer)  
 44,55

TITLE: Effects of nozzle construction on the economy of a supersonic, double-ring turbine stage at small partial admission ratios

SOURCE: Sudostroyeniye, no. 6, 1965, 28-31

TOPIC TAGS: partial admission turbine, steam turbine, nozzle efficiency, turbine nozzle efficiency

ABSTRACT: The effects of nozzle construction on the efficiency of a supersonic turbine stage operating at small admission ratios were investigated experimentally at the Leningradskiy korablestroitel'skiy institut (Leningrad Shipbuilding Institute). This nozzle is also described by Ye. N. Vlasov (Issledovaniye sverkhzvukovoy dvukhveneychnoy stupeni pri maloy stepeni vpuska, "Sudostroyeniye," no. 11, 1964). The nozzle geometries (see Fig. 1 of the Enclosure) included three drilled (divergence  $\gamma = 6^\circ 30'$ ; area ratio  $F_m/F_{\min} = 2.25$ ,  $\alpha_1 = 12, 15, \text{ and } 18^\circ$ ) and three milled ( $\gamma = 10^\circ$ ; A.R. = 2.25,  $\alpha_1 = 10, 15, \text{ and } 15^\circ$ ) configurations with throat areas  $F_{\min} = 0.385 \text{ and } 0.525 \text{ cm}^2$  respectively. Tests were performed  
 Card: 177

L 00991, 46

ACCESSION NR: AP5019667

with 1-7 nozzles corresponding to a flow of 350-2400 kg/hour and an admission ratio

$$\epsilon = \frac{F_{1z}}{D_{op}^2 c \sin \alpha_1}$$

per nozzle of 0.02, 0.032, 0.025, 0.026, 0.04, and 0.025 for nozzle types A, B, C, D, E, and F (where  $\alpha_1$  = angle of the nozzle wall -  $14^\circ 45'$ ;  $8^\circ 45'$ ;  $11^\circ 45'$ ;  $15^\circ$ ;  $10^\circ$ ; and  $15^\circ$  respectively). Superheated steam at a calculated expansion ratio of  $P_0^*/P_2 = 14$  was used. The efficiency as a function of  $u/C_0$  for drilled nozzles is shown in Fig. 2 of the Enclosure, for milled nozzles in Fig. 3 of the Enclosure, while a comparison of economy of the two types of nozzles as a function of  $F_{min}$  is shown in Fig. 4 of the Enclosure. It was found that the admission ratio rather than  $\alpha_1$  had the major effect on efficiency for the drilled nozzles, while for the milled nozzles the efficiency depended on the type of construction at small admission ratios ( $Z = 1$ ). This dependence decreased as  $Z$  was increased ( $Z = 4$ ). The efficiency of drilled nozzles was found to be greater (see Fig. 4 of the Enclosure) than that of milled nozzles over the whole range of investigated parameters. Orig. art. has: 4 figures and 1 formula. [04]

Card 2/7

L 0099h-66

ACCESSION NR: AP5019667

ASSOCIATION: none

SUBMITTED: 00

ENCL: 04

SUB CODE: PR

NO REF SOV: 008

OTHER: 000

ATD PRESS: 4068

Card 3/7



L 00994-56

ACCESSION NR: AP5019667

ENCLOSURE: 01

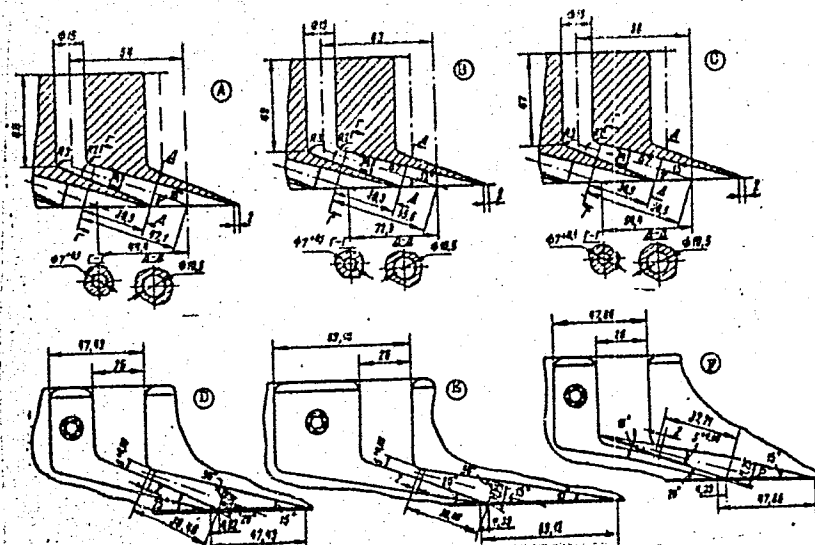


Fig. 1. Nozzle geometries

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L 00994-66

ACCESSION NR: AP5019667

ENCLOSURE: 02

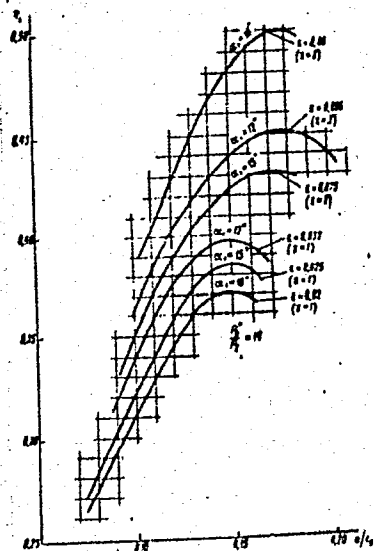


Fig. 2.  $\eta_i = f(u/C_0)$  of drilled nozzles

Card 5/7

L 0089) 66

ACCESSION NR: AP5019667

ENCLOSURE: 03

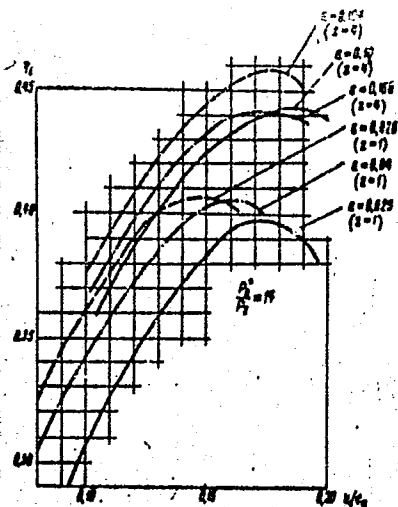


Fig. 3.  $\eta_1 = f(u/C_0)$  of milled nozzles; --- type D;  
---- F; - - - E

Card 6/7

L 00994-66

ACCESSION NR: AP5019667

ENCLOSURE: 04

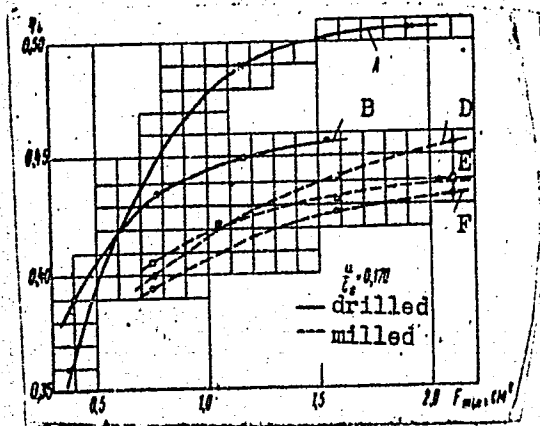


Fig. 4. Comparison at  $u/C_0 = 0.170$

Card 7/7

L 22539-65

S/C229/64/000/011/0034/0036

ACCESSION NR: A4049885

AUTHOR: Vlasov, Ye. N. (Engineer)

TITLE: Investigations of a supersonic two-wheel turbine stage at low partial admission conditions

SOURCE: Sudostryeniye, no. 11, 1964, 34-36

TOPIC TAGS: steam turbine, turbine stage, supersonic turbine

ABSTRACT: The efficiency characteristics of a supersonic two-wheel turbine stage were experimentally investigated. The stage had the following characteristics: 1st wheel profile TR-4A, 2nd wheel profile TR-4A, clearance between nozzles and first row of vanes 0.005 mm, clearance between second row of vanes 0.005 mm and 0.005 mm. The experiments were performed at partial admission conditions.

Card 1/5

1. 22710.12

nozzle, wall angle  $\alpha$ ; should be 10-12° or less, while for flows of  $G/T^* / P^* = 800-2500$ ,  $(\alpha_1)_{opt} = 15^\circ$ . It was also found that the existing methods for calculating the losses in a partial admission turbine can differ from the experimental values

ASSOCIATION: Leningradskiy zonalnyy nauchnyy tsentr (Leningrad Physical Institute)

SUBMITTED: 00

ENCL: 03

SUB CODE: PR

NR REP SOY: 003

OTHER: 000

Card 2/5

KURZON, A.G., doktor tekhn.nauk; VLASOV, Ye.N., inzh.

Main directions for improving auxiliary marine steam turbines.  
Sudostroenie 30 no.2:21-25 P '64. (MIRA 17:4)

KURZOK, A.G., doktor tekhn. nauk; VLASOV, Ye.N.

Selecting the parameters of a supersonic two-row turbine stage  
with a low inlet rate. Trudy TSNIIEF no. 62:11-27 (MIRA 16:12)

6



LAVEROV, N.P.; TARASHCHAN, A.N.; VLASOV, Ye.P.; PUDAN, G.F.

Use of thermoluminescence for determining the relative age of  
granitoids. Geol.rud.mestorozh. no.6:91-101 N-D '61.  
(MIRA 14:12)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,  
mineralogii i geokhimii AN SSSR.  
(Rocks)  
(Geological time)  
(Luminescence)

VLASOV, Ye.V. (Moskva); MUNIN, A.G. (Moskva)

Acoustic characteristics of a free turbulent stream. Akust. zhur.  
10 no.3:271-275 '64. (MIRA 17:11)

ACCESSION NO: 100-111111

SOURCE: Akusticheskiy zhurnal, v. 10, no. 3, 1964, 271-275

TOPIC TAGS: acoustics, aerodynamic sound generation, jet noise

ABSTRACT: The results of an experimental study of jet aircraft noise are presented. The increased knowledge of space-time correlations in turbulent flow was applied to throw new light on the noise radiated by jets, its acoustic character, and the noise spectrum near

ASSOCIATION: none

Card 1/2

SUBMITTED: 08Mar63

ATD PRESS: 1000

0

ENCLOSURE

2/2

1 52192-25

ACCESSION NR: AF5014513

12/01/05/000/005/0568/3573

AUTHOR: Vlasov, Ye. V.

TITLE: Investigation of the ...

Source: Inzhenerno-Stroitel'skiy zhurnal, no. 5, 1945, 564-573

The ...  
initially ...  
...

ASSOCIATION WITH APPROXIMATE

The three pulsating velocity components  $u_1, u_2, u_3$  are assumed to be uncorrelated and isotropic. The mean square velocity is given by

is combined with the positive correlation  $V_1 = L_1 L_2 L_3 = k_1 k_2^3$  to yield an expression for the acoustic power of the jet

$$P_a = 14$$

These calculations show that 75% of the sound energy is radiated by the jet.

L 52196-65

ACCESSION NR: AF5013913

ASSOCIATION: Filial TsAGI im. prof. N. Ye. Zhukovskogo s. Moskva (Branch of  
TsAGI)

SUBMITTED: 05Sep64

ENCL: 00

SUB CODE: ME

NO REF SOV: 002

OTHER: 005

Card 3/3

VLASOV, Yu., zasluzhenny master sporta

From week to week. Starsh.-serzh. no.7:34 J1 '62. (MIRA 16:6)  
(Weight lifting)



VIASOV, Ya.; AMINA'YEVA, N.; LARINA, P.

Virus infection of gramineous plants. Zashch. rast. ot vred.  
i bol. 10 no.8:43-44 1965. (MIS 18:11)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut zashchity  
rasteniy.

VLASOV, Yu.; ABDUKARIMOVA, A.; MERTSALOVA, O.

Composite tomato streak. Zashch. rast. ot vred. i bol. 10  
no.1:47-48 '65. (MIRA 18:3)

1. Vsesoyuznyy institut zashchity rasteniy.

VLASOV, Yu.A.

Some causes of distortion of ballistocardiographic curves and possible  
ways for their elimination. Vop. pat. i reg. org. krov. i dykh. no.1:  
43-48 '61. (MIRA 18:7)

VINOGRADOVA, T.S.; VLASOV, Yu.A.; GURFINKEL', V.S.; SHIK, M.L.

Clinical and physiological parallels in congenital and acquired heart defects. Vop. pat. i reg. org. krov. i dykh. no.1:77-87 '61.

(MIRA 18:7)

VLASOV, Y.I.A.; GURFINKEL', V.S.; IVANOV, D.I.; MALKIN, V.B.; POPOVA, Ye.O.;  
SHIK, M.L.

Hemodynamic studies during the respiration of O<sub>2</sub> under excessive pressure. Biul. eksp. biol. i med. 51 no.4:22-27 Ap '61.

(MIRA 14:8)

1. Iz Instituta eksperimental'noy biologii i meditsiny (dir. - prof. Ye.N.Meshalkin) Sibirskogo otdeleniya AN SSSR, Novosibirsk.

Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.

(BLOOD—CIRCULATION) (RESPIRATION)

(ATMOSPHERIC PRESSURE—PHYSIOLOGICAL EFFECT)

MESHALKIN, Ye.N.; BLAU, Yu.I.; VLASOV, Yu.A.

Evaluation of the effectiveness of pericardial resection  
in chronic adhesive pericarditis by the hemodynamic control  
method. Eksp. khir. i anest. 7 no.6:3-9 N-D '62.

(MIRA 17:10)

1. Iz Instituta eksperimental'noy biologii i meditsiny (dir.  
- prof. Ye. N. Meshalkin) Sibirskogo otdeleniya AN SSSR.

MEYERSON, F.Z.; MIKOELIAN, A.L.; MARKOVSKAYA, G.I.; VLASOV, Yu.A.

Myocardium and hemodynamics in hyperfunction and insufficiency of the heart. Report no.2: Decrease in vascular resistance as a factor in economical compensation in diseases of the circulatory system. Biul.eksp.biol. i med. 55 no.1:31-35 Ja'63.  
(MIRA 16:7)

1. Iz Instituta normal'noy i patologicheskoy fiziologii (dir. deystvitel'nyy chlen AMN SSSR V.V.Parin) AMN SSSR i Instituta eksperimental'noy biologii i meditsiny (dir. - prof. Ye. N. Meshalkin) Sibirskogo otdeleniya AN SSSR. Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.  
(AORTA DISEASES) (BLOOD--CIRCULATION)  
(NERVES, CARDIAC)

VLASOV, Yu.A.; BLAU, Yu.I.

Phasic correlation of the form of pressure curves in venae cavae and the right sections of the heart in chronic constrictive pericarditis. Kardiologiya 3 no.5:46-50 S-0 '63. (MIRA 17:9)

1. Iz Instituta eksperimental'noy biologii i meditsiny Sibirskogo otdeleniya AN SSSR (dir. - prof. Ye.N. Meshalkin).



MESHALKIN, Ye.N.; SERGIYEVSKIY, V.S.; ARKHIPOVA, G.F.; OKONEVA, G.N.; SAVINSKIY, G.A.; VLASOV, Yu.A.; BIDENKO, V.I.

Theoretical possibility of preserving the basic function of the lung following surgical resection of all its neural connections (in auto-transplantation) under experimental conditions. Eksper. khir. i anest. 9 no.2:34-42 Mr-Apr '64. (MIRA 17:11)

1. Institut eksperimental'noy biologii i meditsiny (nauchnyy rukovoditel' - prof. Ye.N. Meshalkin, ispolnyayushchiy obyazannosti direktora dotsent Yu.I. Brodin) Ministerstva zdravookhraneniya RSFSR, Novosibirsk.

VLASOV, Yu.A.; GURFINKEL', V.S.; SHIK, M.L.

Model of an aperiodic ballistocardiography and the description of  
a aperiodic ballistocardiogram in healthy persons. Biul. eksp. biol.  
i med. 57 no.6:103-106 Je '64. (MIRA 18:4)

1. Institut eksperimental'noy biologii i meditsiny (dir. - prof.  
Ye.N.Meshalkin) Sibirskogo otdeleniya AN SSSR, laboratoriya  
fiziologii (zav. - kand.med.nauk T.S.Vinogradova) i Institut  
biofiziki (dir. G.M.Frank) AN SSSR.

VINOGRADOVA, T.S., starshiy nauchnyy sotrudnik; VLASOV, Yu.A.; FUFIN, V.I.

Characteristics of blood flow in patent ductus arteriosus.  
Pat. fiziol. i eksp. terap. 9 no. 4:70-76 JI-Ag '65. (MIRA 18:9)

1. Laboratoriya modelirovaniya krovoobrashcheniya (zav. - starshiy nauchnyy sotrudnik T.S. Vinogradova) Instituta eksperimental'noy biologii i meditsiny (direktor - Yu. I. Borodin) Ministerstva zdravookhraneniya RSFSR, Novosibirsk.

BALKOV, V.A.; VLASOV, Yu.A.

Landform features of the northern part of the Kungur **forested**  
steppe. Uch. zap. Perm. gos. un. 15 no.2:85-91 '60. (MIRA 14:12)  
(Kungur District--Landforms)

BERENSON, S.P.; Primal uohastiye VLASOV, Yu.A.

Investigating the oxidability of oils in thin layers by the photo-  
electric method. Khim. i tekhn. topl. i masel 6 no.11:64-66 N '61.  
(MIRA 14:12)

(Lubrication and lubricants--Additives)  
(Photoelectricity)

VIASOV, Yu.A., inzh.; TENENBAUM, L.V., inzh.

Increasing the reliability of safety clutches. Mashinostroenie  
no.5:82 S-O '64 (MIRA 18:2)

VLASOV, Yu.A., inzh.

Multicircuit command devices for programming loads in testing.  
Priborostroenie no.2:11-13 F '65. (MIRA 18:3)

TENENBAUM, L.V., inzh.; VLASOV, Yu.A., inzh.; KUTSYN, L.M., inzh.

Increasing the reliability and durability of manure conveyors.  
Mashinostroenie no.3:100-101 My-Je '65. (MIRA 18:6)



TENENBAUM, I.V., inzh.; VLASOV, Yu.A., inzh.

Stand for testing transmissions with flexible couplings.  
Mashinostroneie no.4:36-37 JI-Ag '65.

(MIRA 13:8)

TENENBAUM, L.V., inzh.; VLASOV, Yu.A., inzh.

Increasing the reliability and durability of the PSN-1 silo  
loader. Mashinostroenie no.5:97-98 S-O '65.

(MIRA 18:9)

AUTHORS: Makarov, L. L., Yevstrop'yev, K. K., Vlasov, Yu. G. SOV/76-32-7-25/45

TITLE: The Osmotic and Activity Coefficients of RbCl, CsCl and KJ in Highly Concentrated Aqueous Solutions (Osmoticheskiye koeffitsiyenty i koeffitsiyenty aktivnostey RbCl, CsCl i KJ v vodnykh rastvorakh pri vysokikh kontsentratsiyakh)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7, pp 1618 - 1621 (USSR)

ABSTRACT: As in publications values of the above-mentioned coefficients are only found up to certain concentrations these values are determined in the present paper for higher concentrations at 25°. Using the equation by Gibbs-Duhem a possibility for the calculation of the magnitude of the mean "practical" ion activity coefficient  $\gamma_{\pm}$  is given for the case of the determination of the values of the activity of water for higher concentrations of the electrolytes employing the data already existing in this field. The isopiestic method by Robinson and Sinclair (Ref 1) was employed for the determination of the water activity; Kharned and Ouen (Ref 2) had proved the reliability of this

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method. The diagram of the vacuum exsiccator used is given, from which fact may, among other things, be seen that glass and silver vessels were used. The water activity was determined according to calibration curves with NaCl and CaCl<sub>2</sub> solutions being used. The activity coefficients and the osmotic coefficients were calculated according to an equation. Besides the KJ-, NaCl- and CaCl<sub>2</sub>-salts used also the method employed for the production of RbCl and CsCl is described. The investigation of the solubility of the salts was carried out according to the isopiestic method. The obtained values of the solubility at 25°, as well as those of the osmotic and activity coefficients are given in a table. There are 1 figure, 1 table, and 5 references, 1 of which is Soviet.

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