11 1, 10-**59**-7-7, 12

Experimental Industrial Lot of Pipes Made From Thermicolly a remed Corbon Steel

temperature of 950 ± 1000; each sheet will a most a in water during I minute in a vertical position. organing process consisted in the heating of each plants and arrively to a temperature of 540 * 10°C during 20 minutes and subsequent cooling by air. In all tested sheets sectorary tensile strength was 50-60 kg/mm²; yield point as 35 kg/mm² and relative elongation (%) over 15%; after ratificial aging, toughness at a temperature of -2000 enceeded 3 m kg/cm2; bending angle was 1800, hatic of the rield point to temporary tensile strength was less then 6.8. After thermal treatment the shoets were subjected to cold dressing in a 7-roller mill during 5-7 minutes and bent to shape in a 4-roller mill, the bending process leading from 3-5 minutes for each sheet. Automatic welding was done with obsetrode Fods Sv10GS under flux OSTs-45 with a current of 38-44 v and 750-650 a. After welding the pipes were subjected to cold rolling during 3-5 minutes. Ends of sipes were calibrated and chamfered. In this condition recaption tests were made on 2 pipes of the same smelt, to determine rechanical properties of the welded joint and of the fused on metal:

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THE 95-59-4-3/42

Experimental Industrial Set of Physics, to From Thornic Bly Dardened Carbon Steel

results of tests are she in table or 3. Values of toughness under dynamic tests are shown in Table 4. At room temper turn the toughness is 0.5-14.0 m kg/cm2. The lower the temper ture the lower the toughness and the greater the amount of argutalline portions; at -4000 for instance the fracture is almost entirely organizations and the toughnous is 4.0-7.0 m kg/cm2. The fused on metal differs from basic metal by a lower toughness under all forestures. A con-between basic metal, fused on metal and netal in intermedite nones. Chemical composition of fused on metal is shown in Table Nr 5. At first it appeared as though weldel, thermiculty hardened curbon steel pipes should work out slightly nore expensive then pipes from low-alloy steel of MK grape. Successive improvements of thermal treatment will, here r, lower the cost of promotion of the pipes from St. 3(sp) steel, which will work out champer in the end than the lipes from

Card 3/4

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Experiment.1 Industrial Let of Pipes and From Thornically her mened Carbon Steel

low- 110 M grade stard. The industrial tri 1 los of 42 tons of welder, charming the hardenel carbon steel pipes press. Spir fitness for high pressure gas on oil pipeline sect.

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PHASE I BOOK EXPLOITATION

SOV/4923

- Krasil'shchikov, Zal'man Naftal'yevich, Nikolay Vladimirovich Shmidt, Yevgeniy Nikolaevich Shvach, Nikolay Timofeyevich Pavlenko, and
- Termicheskoye uprochneniye nezakalivayushcheysya uglerodistoy stali (Thermal Strengthening of Nonhardenable Carbon Steel) Leningrad, Sudpromgiz, 1960. 146 p. 4,200 copies printed.
- Scientific Ed.: G. I. Kapyrin; Ed.: R. D. Nikitina; Tech. Ed.:
- PURPOSE: This book is intended for technical and scientific personnel of metallurgical plants, scientific research organizations, and laboratories. It may also be useful to students in metallurgical in-
- COVERAGE: The book reviews problems of attaining by thermal strengthening significant improvement in the mechanical properties of that carbon steel which cannot be quench-hardened. The term "thermal strengthening" is used to distinguish this process from regular

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Thermal Strengthening (Cont.)

SOV/4923

heat treatment of hardenable steels. Experience in developing and introducing the thermal strengthening of carbon steel is generalized. The authors state that thermal strengthening increases the ultimate strength and the yield point of carbon steel by 20-30%. As a result of the use of thermally-strengthened carbon steel, the consumption of steel in producing a given object is reduced 20% or more. The authors acknowledge the contributions of P. M. Dontsov, Candidate of Technical Sciences, A. S. Vladimirov and O. T. Vnukova, Engineers, and G. A. Pashenko, and A. P. Rud', Senior Technicians, and thank N. G. Gavrilenko, Engineer, for his help in organizing the experimental investigations at a number of plants under actual working conditions. There are 32 references: 26 Soviet and 6 German.

TABLE OF CONTENTS:

Foreword

Ch. I. Nonhardenable Carbon Steels

Card 2/4

3

5

22724

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8/095/60/000/006/001/001 A053/A129

AUTHORS:

Krasil'shchikov, Z.N., Candidate of Technical Sciences, Shvach, Ye.

N., Nechepurenko, S.Ye., Engineers (Zhdanov city)

TITLE:

Welded pipes of greater strength

PERIODICAL:

Stroitel'stvo trub provodov, no. 6, 1960, 11 - 14

TEXT: In order to probe the effectiveness of the hardening thermic treatment, experimental pipes were produced from medium-carbon (Y (SU) steel, containing 0.26% of carbon and 1.05% of manganese, and from low-alloy steel of 14 X TC (14KhGS) grade containing 0.14% carbon, 1.25% manganese, 0.54% silicon and 0.64% chrome. Maximum hardening effect was obtained after tempering in water with austenitic temperature of 920 ± 10°C. The strength of hardened steel greatly decreases from a tempering temperature of 500°C during 0.5 hours, while plasticity and toughness considerably increase. A good combination of mechanical properties in medium-carbon steel is obtained with a tempering temperature of 670°C, resulting in a yield point of 59-61 kg/mm², a tensile strength of 70 kg/mm², a relative elongation exceeding 20%, a relative contraction of cross section exceeding 55% and a toughness of 5.5-6.5 kgm/cm² at temperatures between +20°C and -40°C. Low-

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Welded pipes of greater strength

S/095/60/000/006/001/001 A053/A129

alloy seeel 14KhQS in the tempered state at equal plasticity and toughness has a slightly lower tensile strength in comparison with medium-carbon steel. Supplementary tests were conducted at the Khartsyzskiy zavod (Khartsyz Plant) using 680-720 mm pipes with a wall thickness of 10 mm. Steel was thermically treated in sheets prior to being processed and after being processed as finished pipes. The micro-structure of the medium-carbon steel after tempering and annealing consisted of sorbite and a very small amount of ferrite, whereas in 14KhGS steel structuralfree ferrite existed in larger quantities. The article gives in detail the results $^{\prime}$ of the supplementary tests. The yield point for both brands of steel exceeded 41 kg/mm², but the tensile strength was above 60kg/mm². In both cases bending at 180° was possible without showing cracks; toughness at +20°C exceeded 6 kgm/cm²; at -70°C toughness of 14KhGS steel lies between 3-6.5 kgm/cm2 and of SU steel within the limits of 3.5-7.5 kgm/cm2. Crystalline sections appear in fractures of 14KhGS steel at -20°C and in SU steel at -40°C. Investigations of toughness of thermically treated and subsequently aged samples revealed that mechanical aging somewhat lowers the toughness, but maintains it at a high level; even at -70°C toughness exceeds 3.5 kgm/cm2. Thermic aging does not interfere with the toughness, but the combination of mechanical and thermic aging is apt to lower toughness of steel most especially in the low-alloy steel of 14KhQS grade. Tests revealed that the strength

Card 2/3

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Welded pipes of greater strength

S/095/60/000/006/001/001 A053/A129

of welded pipe joints of medium-carbon steel after thermic treatment was not below 60 kg/mm² and in case of low-alloy 14KhGS steel between 56 and 60 kg/mm². Toughness of the metal of the welded seam is for both grades within the zone of thermic treatment within 9-13 kgm/cm² at +20°C and 7-10 kgm/cm² at -40°C. On the basis of results of tests the authors draw the following conclusions: Medium-carbon and low-alloy steel (SU and 14KhGS) can be used after thermic treatment to produce pipes with a yield point exceeding 40 kg/mm² and with a tensile strength of 55-60 kg/mm². In view of mechanical properties of pipes and technological considerations preference should be given to production of pipes from hot-rolled sheets with subsequent thermic treatment. The utilization of medium-carbon and low-alloy steels for the production of large-diameter welded pipes in a thermically hardened state will reduce steel consumption in pipelines working at high pressure. There are 3 tables, 2 graphs and 2 photographs.

Card 3/3

VOLOKHVAYNSKAYA, E.S., kand.tekhn.nauk; GLADYREVSKAYA, S.A., kand.
tekhn.nauk; KRASIL'SHCHIKOV, Z.N., inzh.; PAVLENKO, N.T.,
kand.tekhn.nauk

Investigating the thermal hardening of St. 3 steel. Trudy
TSNII MPS no.195:162-175 '60. (MIRA 13:9)
(Steel alloys-Heat treatment)

18 8 200 5 533.0 21396 \$/032/61/027/012/009/015 B104/B108

AUTHORS:

Krasil'shchikov, Z. N., and Shvach, Ye. N.

TITLE:

Investigation of the impact strength of steel by tensile

testing

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 12, 1961, 1505 - 1509

TEXT: Fracture tests were conducted with an MMM-6 (MIM-6) microscope on Cr-Ni-Mo, Cr-Mn-Mo, and carbon steels. The minimum, maximum, and mean linear dimensions of the crystal facets, as well as the crystallinity coefficient of the fracture surface were determined. All facets within the visual field of the microscope were measured for the determination of their mean linear dimensions. The crystallinity coefficient was cal-

culated from $f=\frac{1^2\text{mean}\cdot N}{S}$ •100, where 1_{mean} is the mean linear dimension of the facets in a given field of view in μ , and S is the surface area of the field of view, in μ^2 . The results of the fracture analysis depend on Card 1/2

21396 S/032/61/027/012/009/015 B104/B108

Investigation of the impact strength ...

the magnifying power of the microscope. At different strengths of the specimens, an identical structure of the fractures corresponds to different impact strengths. The estimation of the impact strength from the fracture must therefore be made bearing in mind the strength (hardness), with increasing dimension of the facets. The results show that for every steel brand nomograms can be drawn up for determining its impact strength from the hardness and structure of the fracture. There are 3 figures.

Card 2/2

S/095/62/000/002/001/001 1031/1231

AUTHOR:

Krasil'shchikov, Z. N., Candidate of Technical Sciences, Nechepurenko, S. E., Engineer,

and Shvach, E. N., Engineer (Zhdanov)

TITLE:

Investigation of heat-treated carbon-steel pipes

PERIODICAL:

Stroitel'stvo truborovodov, No. 2, 1962, 12-14

TEXT: Heat-treated St.3(Sp) carbon steel pipes were studied to determine whether St. 3(Sp) carbon steel could replace low-alloyed steel in the manufacture of gas- and oil pipes. The physical properties of the base metal and the welds of an experimental batch of 41 pipes were investigated. The tensile properties, impact strength and ductility in both base metal and welding seams were satisfactory. The pipes were also subjected to hydrostatic tests. The macrostructure and hardness of the welds yielded satisfactory results. Application of heat-treated carbon steel in the manufacture of high-test line pipe is justified from both the technical and the economic standpoints. There are 4 figures and 4 tables.

Card 1/1

Rasil'shchikova, B., inzh.; Kheyyets, C., inzh.

Painting drinking water tanks with paints having an Kh-40 synthetic resin base. Mor.flot 19 no.9:33-34 S '59. (MIRA 12:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota. (Tanks) (Paint)

BERSHTEYN, V.A.; KRASIL'SHCHIKOVA, B.L.; MATVEYEV, V.M.; RYT, E.Sh.;
KHEYPETS, G.H.

Paints used for protecting the underwater portion of seagoing ships' hulls from corrosion and fouling. Trudy TSNIHF no.25:
31-72 '59.

(Paints) (Ships--Painting)

BERNSHTISTN, V.A.; KRASIL'SHCHIKOVA, B.L.

Honmetallic coatings for corrosion protection of inner surfaces of oil tanker tanks. Trudy TSNIMF no.25:73-86 '59.

(MIRA 12:8)

(Protective coatings) (Tank vessels--Painting)

BERSHTEYN, V.A., inzh.; KRASILISHCHIKOVA, B.L., inzh.

Nonmetallic coatings used for protecting oil-tanker tanks from corrosion. Sudestroenie 25 no.3:38-42 Mr '59.

(Protective coatings) (Tank vessels)

(Protective coatings) (Tank vessels)

BERSHTEYN, V.A., inzh.; KASHAYEV, I.N., inzh.; RYT, E.Sh., inzh.; TSODIKOVA, S.T., inzh.; Prinimali uchastiye: KRASILISHCHIKOVA, B.L., inzh.; KONONOVA, N.I., inzh.; MATVEYEV, V.M., inzh.

Results of testing synthetic antifouling paints for seagoing ships. Sudostroenie 28 no.4:41-44 Ap '62. (MIRA 15:4) (Fouling of ship bottoms) (Ships--Painting)

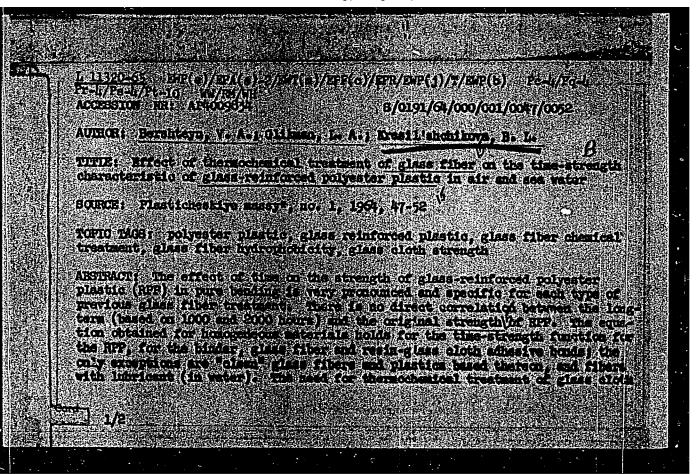
BERSHTEYN, V.A.; KRASIL'SHCHIKOVA, B.L.; NIKONOVA, S.N.; SHABADASH, A.N.

Mechanism of the effect of the thermochemical treatment of glass fibers on the strength of polyester glass plastics. Plast.massy no.10:30-35 '63. (MIRA 16:10)

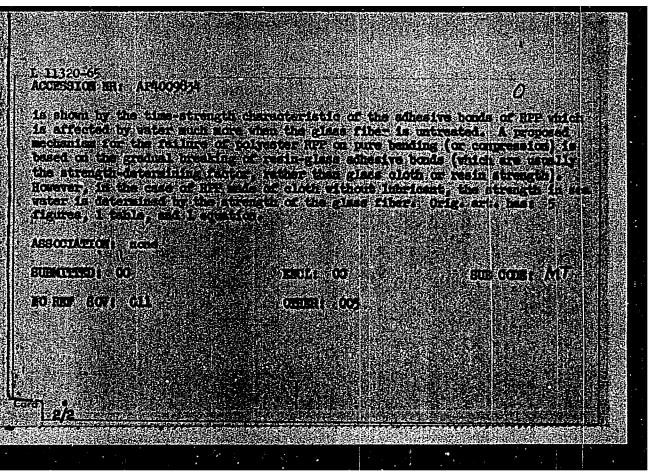
BERSHTEYN, V.A., inzh.; Prinimali uchastiyer KRASIL'SHCHIKOVA, B.L., inzh.; NOVIKOVA, Ye.V., inzh.; LAV « V., A.V., inzh.; GUVOV, B.I., inzh.; KITAYCHIK, V.A., inzh.; GLIKMAN, L.A., prof., dektor tekhn. nauk; SUPRUN, L.A., kand.tekhn.nauk, nauchnyy red.; SIRUMFF, P.I., kand.tekhn.nauk, otv.red.

[Stress-rupture strength and creep of glass-reinforced plastics for use as shipbuilding material.] Distribution processed in policy policy to the policy of the policy of

1. Sotrudniki TSentral'nogo nauchno-issledovatel'skogo kotloturbinnogo instituta imeni Polzunova (for Crekov, Kitaychik).



"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826110



KRASIL'SHCHIKOVA, D.I.

Stability of original bonds in memory processes. Vop. psikhol. 2 no.6:65-82 N-D '56. (HLRA 10:2)

1. Rostovskiy-na-Donu pedagogicheskiy institut. (Memory)

KRASIL'SHCHIKOVA, D.I.; KHOKHLACHKV, Ye.A.

Memorization of words of a foreign language in relation to methods of explaining their meaning and to memorization time. Vop. psikhol. 6 no. 6:65-74 N-D *60. (MIRA 13:12)

1. Pedagogicheskiy institut i Institut usovershenstvovaniya uchiteley, Rostov-na-Donu.

(Language and languages -- Study and teaching)

"Involuntary memory" by P.I.Zinchanko. Reviewed by D.I. Krasil'shchikova. Vop. psikhol. 8 no.4:151-155 Jl-Ag (62. 1. Pedagogicheskiy institut, Rostov-na-Donu. (Memory) (Zinchenko, P.I.)

KRASILSCHIKOVA, E.A. [Krasilshchikova, Ye.A.

Unsteady motion of finite wing span in a compressible medium.

Archiv mech 16 no.2:285-290 164.

1. Department of Aerodynamics. Institute of Mechanics, Moscow.

GAL'FERIN, Ye.I.; KRASIL'SHCHIKOVA, G.A.; MIRONOVA, V.I.; FROLOVA, A.V.

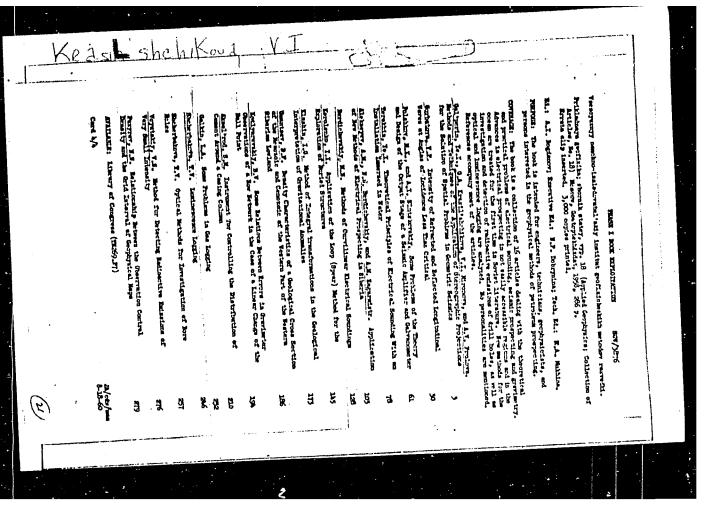
Techniques in using stereographic projections for solving threedimensional problems in geometrical seismology. Prikl. geofiz. mo.18:
(MIRA 11:5)
3-29 '58. (Seismometry) (Projection)

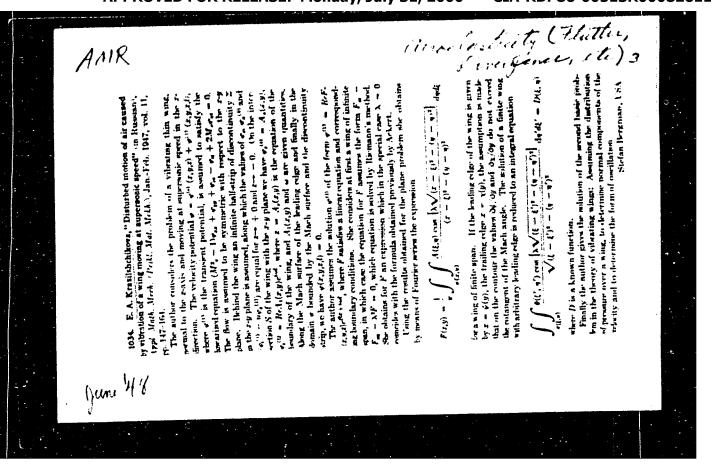
KRASIL'SHCHIKOVA, I.

A new psychology textbook ("Psychology," edited by Smirnov and others. Reviewed by D.I. Krasil'shchikova). Vop. psikhol. 4 (MIRA 11% no.2:143-149 Mr-Ap '58. (MIRA 1185)

1. Kafedra pedagogiki i psikhologii Rostovskogo-na-Domu pedagogicheskogo instituta. (Psychology)

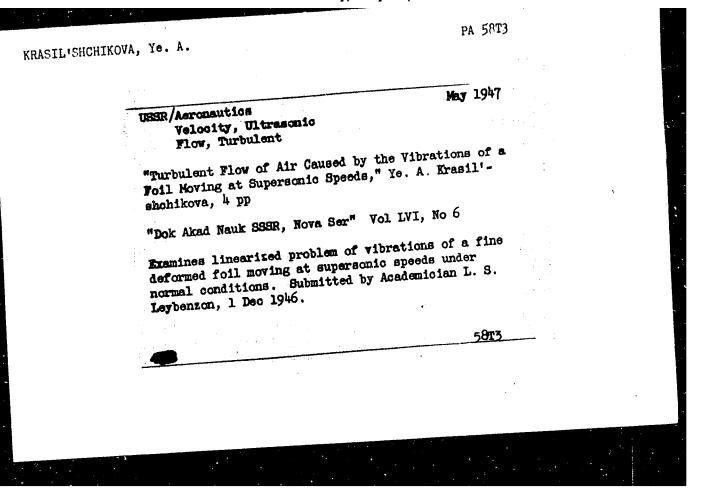
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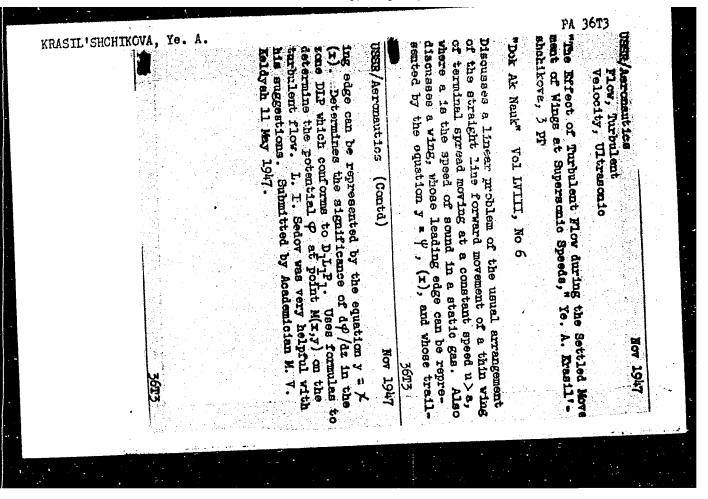




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CIA-RDP86-00513R000826110





KPASIŁ SICHIKOVA, E. A.

Disturbed motion of air caused by vibrations of a wing moving at supersonic speed. Providence, R. I., 1949. (Brown University. Graduate Division of Applied Mathematics. Translation no. A9-T-24)

Trans. of Vozmushchennoe dvizhenie vozdukha pri vibratsiiakh kryla, dvizhushcherosia so sverkhzvukovoi skorost'iu, (Published in Prikladnaia matematika i mekhanika, 1947, v. 11, no 1, p. 147-164.)

DMACA RPB

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

"APPROVED FOR RELEASE: Monday, July 31, 2000

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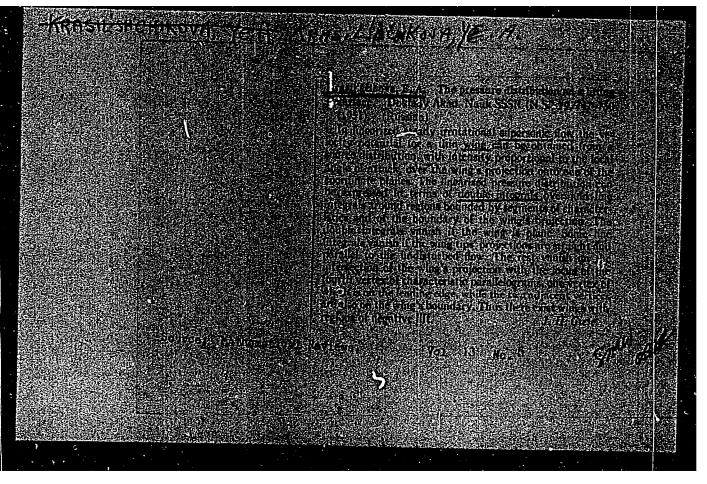
Krasil'shchikova, Ye. A		
1'shthikova, E. A., On the theory of ansteady motion lie fluid (in Russian), Dokladi Akad. Nawi S.S.N. 3-26, May 1950. in vibrating wing translated parallel to the z-axis appenentic wheel is at a small angle of attack herital $\phi(x, y, s, t)$ is assumed to satisfy the line-	The virtual of $(\phi_{xy} + \phi_{xz}) - \phi_{xy} + \phi_{xz}$, where $(\phi_{xy} + \phi_{xz}) - \phi_{yz}$ the wing onto $z = 0$. On P_{yz} prescribed to be $(P_{xy} + P_{yz}) = (P_{xy} + P_{yz}) = (P_$	## A 1 2 2 2 3 4 5 5 5 5 5 5 5 5 5
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KRASIL'SHCHIKOVA, Ye. A

"Notion of a Thin Wing With Supersonic Speed." Sub 10 May 11, Mathematics Instiment V. A. Stelllov, Acad Sci USSR

Discertations presented for science and engineering decrees in Noscow during 1951. So: Sur. No. 170, 20 ay 55.

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826110



KRASIL' SHCHIKOVA, Ye. A.

Mathematical Reviews Vol. 14 No. 8 Sept. 1953 Mechanics. Krasil'ščikova, E. A. Supersonic flow about thin bodies. Moskov. Gos. Univ. Učenye Zapiski 154, Mehanika 4, 181-239 (1951). (Russian)

This synthesizes or gives detailed proofs of results previously reported elsewhere [these Rev. 9, 392; 10, 77; 12, 216, 767; 13, 507]. Part I determines the velocity potential function for linearized supersonic flow over a harmonically oscillating and deforming thin wing, considering the influence of the wing's edges and trailing vortex sheet where necessary. As described in previous reviews, the potential is expressed as a power series in $\lambda^2 \approx \omega^2 a^2/(u^2 - a^2)^2$ with double integral coefficients, where w is the frequency, a the speed of sound, and u the speed of the undisturbed steady flow, The author outlines in detail the steps required to dual with wings of low aspect ratio (or for low supersonic speed) and with wings of non-convex plan-forms having areas cut out of their leading edges. She also describes a method for taking thickness into account. Part II deals with flow over nonoscillating wings, for which the potentials reduce to double integrals. Depending on where the potential is evaluated, the author simplifies the domain of integration and otherwise transforms the integrals, especially for wings of low aspect ratio. The pressure distribution on the wing is expressed in terms of surface integrals and line integrals along segments of the leading edge or characteristics. In some cases: there may be curves of zero pressure on the wing. For plane wings with supersonic leading edges and straight tips, which need not be parallel, these curves are similar to the lead-J. H. Giese (Havre de Crace, Md.).

KRASIL'SHCHIKOVA, YE.T.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 399 - I

BOOK

Call No.: AF539690

Author: KRASIL'SHCHIKOVA, YE. A.

Full Title: WING OF FINITE SPAN IN A COMPRESSIBLE FLOW

Transliterated Title: Krylo konechnogo razmakha v szhimayemom potoke

Publishing Data

Originating Agency: None

Publishing House: State Publishing House of Technical and

Theoretical Literature

Date: 1952

No. pp.: 158

No. of copies: 5,000

Editorial Staff

Editor: None

Tech. Ed.: None

Editor-in-Chief: Professors:

Appraiser: None

Lur'ye, A. I. and Loytsyanskiy, L. G.

Others: The author expresses thanks for valuable help to Sedov, L. I.

Text Data

Coverage: This is an account of the author's works on the theory of the thin wing published in 1947-1951. The book is concerned with the formation of the mathematical theory of the movement of a compressible medium disturbed by the presence of a thin wing. It contains also the calculation of boundary problems of the original equations of hydrodynamics. This book is not concerned with aero-

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Krylo konechnogo razmakha v szhimayemom potoke

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dynamic characteristics of the wing and other problems of applied aerodynamics. Diagrams.

The book is interesting as a theoretical aerodynamic study. In the introduction the author gives a short history of the development of the theory of the supersonic wing. Names of prominent Russian and foreign authors and titles of their publications appear in the text and in footnotes.

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medium moving with changing intensity; 3. Deduction of the	
basic formula for the velocity potential.	
Ch. II Steady Movement of a Wing in a Supersonic Flow	31-'12
l. Easic formula for the velocity potential at a steady	
motion; 2. End effect at a steady movement of the wing;	
3. Wing of a small span; 4. The influence of the vortex	
system in the wake of the wing at a steady movement of	
the wing; 5. Distribution of pressure on the surface of	
the wing; 6. Supersonic flow over a wing of a certain	
thickness 7 Ryamples	
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Krylo konechnogo razmakha v szhimayemom potoke

AID 399 - I PAGES

Ch. III Harmonic Oscillations of the Wing in Supersonic Flow

113-158

1. Basic formula for the velocity potential at harmonic oscillations of the wing; 2. Harmonic oscillations of the wing of infinite span; 3. End effect. Formation and calculation of the integral equation; 4. Oscillating wing of a small span; 5. The influence of the vortex system in the wake of the wing at harmonic oscillations of the wing; 6. General case of the supersonic flow around the wing;

7. Flow around an oscillating wing of a certain thickness.
Purpose: Theoretical study for the advancement of science for specialist in aerodynamics.

Facilities: None

No. of Russian and Slavic References: Names of 18 Russian and Slavic authors appear in footnotes. Most of the publications dated

Available: A.I.D., Library of Congress.

3/3

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826110

KRASILISHGHIKGVA, YE.A., RUDHEV, G.V.

Engineers

Scientist and engineer. Priroda hl, no. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress,

DECEMBER 1952 Unclassified.

KRASTLISUCUTKOVA YE A

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name

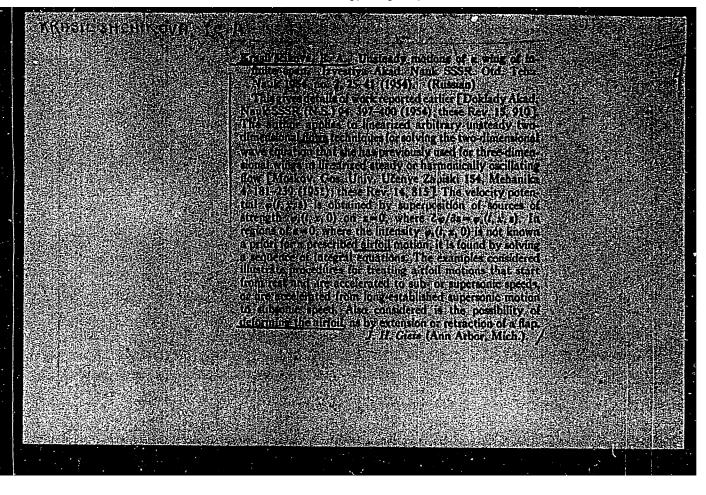
Title of Work

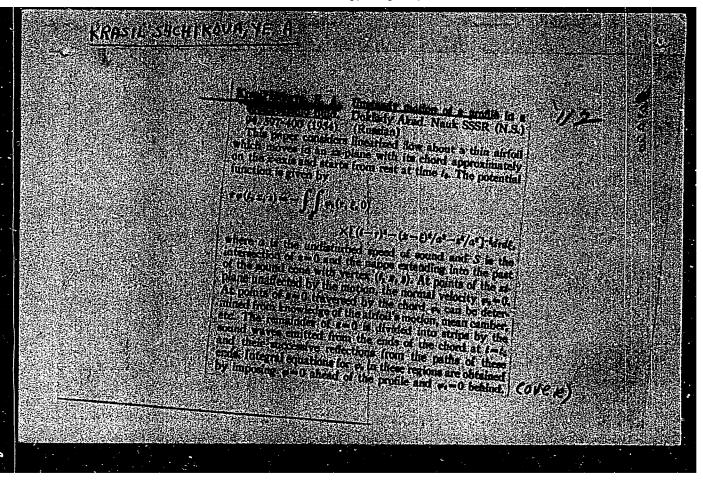
Nominated by

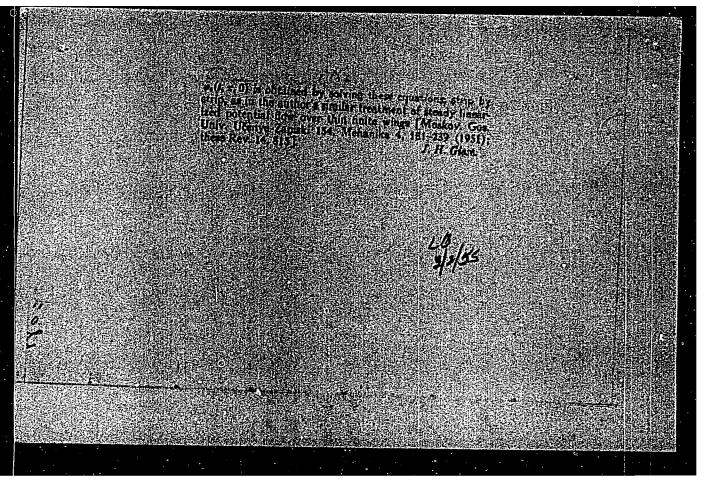
Krasil'shchikova, Ye. A. "A Wing of Finite Span in a Compressible Flour"

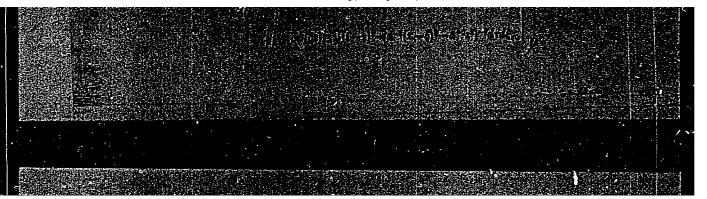
Institute of Mechanics, Academy of Sciences USSR

80: W-30604, 7 July 1954

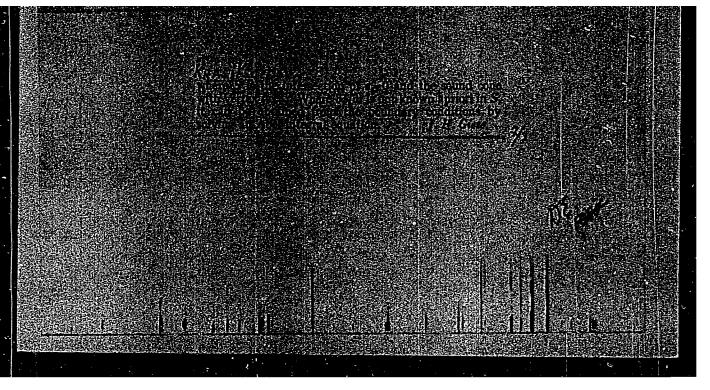








"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826110



AUTHOR: Krasil'shchikova, Ye. A. 30-117-5-13/54

TITLE:

Unsteady Motions of a Wing of Finite Span in a Compressible Medium (Neustanovivshiyesya dvizheniya kryla konechnogo razmakha

v szhimayemoy srede).

PERIODICAL:

Doklady All SSSR, 1957, Vol. 117, Nr 5, pp. 777 - 780 (USSR)

ABSTRACT:

The present paper investigates the spatial motions of an incompressible liquid, which is caused by the unsteady motion of a wing with finite span within an infinite liquid volume. The liquid is supposed to be at rest in the infinite. The author investigates the motion of the wing on such conditions limiting its action to small perturbations. The problem is linearized and the usual assumptions of the theory of the thin wing are made. The solution is accomplished in the fixed coordinates x0yz, which determinate the spatial motion of the wing. The law of motion of the wing is given in the form x = F(t), F denoting an arbitrary continuous 3 function of time. Then an expression for the normal component of the velocity is given and discussed. The velocity potential satisfies the three-dimensional wave equation $a^2\phi_{XX} + a^2\phi_{YY} + a^2\phi_{ZZ}$ φ_{tt} = 0. The author here employs the four-dimensional space x,y, z,t and then states the following boundary problem: The function $\varphi(x,y,z,t)$ is to be found, which satisfies a wave equation, the

Card 1/2

APPROVED FOR RELEASE: Monday, July 31, 2000

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20-117-5-13/54 e Medium.

Unsteady Motions of a Wing of Finite Span in a Compressible Medium.

derivatives of which vanish in the infinite andwhich satisfies the following boundary conditions in the space of the variable (x,y,t): $\phi_z = A(z,y,t)$ holds in the volume V (which is illustrated by an attached figure). $\phi_t = 0$ holds in the volume V_1 , $\phi = 0$ holds in the volume V_2 . The author then deals with the solutions of the equation $(u_1^2 - a^2)\phi_{1xx} - a^2\phi_{1yy} - a^2\phi_{1zz} + \phi_{1tt} + 2u_1\phi_{1tx} = 0$. The solution of the wave equation is given explicitly and is applied to the boundary problem. In particular, it is possible to compute the velocity potential everywhere at the surface of the wing with the help of this formula. In the investigation of the different variants of the unsteady motion of the wing a family of cones at z = 0 play an important part. The results ascertained here are valid even in the case, when the velocity of the wing changes suddenly. There are 3 figures, 4 references, all of which are Slavic.

ASSOCIATION:

Institute for mechanics AS USSR (Institut mekhaniki Akademii

nauk SSSR).

PRESENTED:

June 13, 1957, by L. I. Sedov, Academician

SUBMITTED:

June 11, 1957

Carc 2/2

KRASIL'SHCHIKOVA, YEA

24-58-3-3/38

AUTHOR: Krasil'shchikova, Ye. A. (Moscow)

TITLE: Unsteady Motions of a Wing with Finite Span in a Compressible Medium (Neustancvivshiyesya dvizheniya kryla

konechnogo razmakha v szhimayemoy srede)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 25-32 (USSR)

ABSTRACT: The disturbed motion is analysed of a compressible fluid, caused by a thin wing of finite span obeying a prescribed law of non-stationary motion. The undisturbed motion of the wing is given as a function of time. The normal component of the velocity on both sides of the wing surface is given as the sum of two terms: (1) a term expressing the undisturbed motion which is a function of time and local incidence and (2) a term given at each point of the wing surface, which expresses the superimposed non-stationary motion. Assuming the fluid flow to be irrotational and not subject to external forces, the velocity potential must satisfy the wave equation (Equ.1.4) in fixed co-ordinates. The boundary conditions are stated, including the condition that the fluid is at rest at infinity and that the Zhukovskiy condition at the trailing edge is satisfied. The boundary value problem requires finding a Card 1/2 function of space and time to satisfy the wave equation and

24-58-3-3/38

Unsteady Motions of a Wing with Finite Span in a Compressible Medium.

its boundary conditions. Its solution is found by a method developed earlier by the same author ("Mon-Stationary Motions of an Infinite Span Wing", Izv.Ak.Nauk,Otd.Tekh.Nauk,1954, Nr 2) for two-dimensional flows. The solution is given in the form of integrals suitable for all types of non-stationary wing motion, provided the undisturbed motion of the wing is supersonic and provided the tip effect or the effect of the trailing vortex system is negligible at the wing. There are 7 figures and 7 references, 6 of them Soviet and 1 French.

SUBMITTED: June 13, 1957.

1. Wings-Boundary layer-Mathematical analysis 2. Compressible Card 2/2 flow-Analysis 3. Wings-Supersonic characteristics-Mathematical analysis

AUTHOR:

Krasil'shchikova, Ye. A.

SOV /20-120-1-12/63

TITLE:

A Finite Span Wing With Symmetric Profile in a Compressible Flow (Krylo konechnogo razmakha v szhimayemom potoke s

simmetrichnym profilem)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 1, pp. 51-54 (USSR)

ABSTRACT:

The author investigates the motion of a finite span wing with the angle of incidence zero. The principal motion of the wing is assumed to be a straight forward motion with, generally speaking, a variable velocity. This motion may be real-Zized within an infinite volume of a compressible liquid which is at rest at an infinite distance. The shape of the aeroplane's wing is assumed to be arbitrary, and the wing's surface is symmetrical with respect to the plane of the wing's motion. On the main motion of the wing small additional vibrational motions may be superimposed by which the wing's surface is deformed. In these additional motions the wing maintains at any moment the symmetry with respect to the plane of the wing's motion. The author uses a Cartesian co-

Card 1/3

A Finite Span Wing With Symmetric Profile in a Compressible Flow

ordinate system which is rigidly joined to the space in which the wing moves. The law of the principal motion of the wing is given as x = F(t), where F is an arbitrary continuous function of time; x denotes the coordinate of an arbitrary fixed point at the front edge. Then formulae are given for the normal component of the velocity on the upper side and lower side of the wing surface. The velocity potential ϕ of the disturbed motion of the liquid and its derivatives are assumed to be small quantities of first order, and the small quantities of second order are neglected. The problem is treated in a linear manner. The velocity potential satisfies the wave equation $\varphi_{xx} + \varphi_{yy} + \varphi_{zz} - (1/4?)\varphi_{tt} = 0$, where a denotes the velocity of the sound in a non-disturbed medium. Then the boundary condition on the wing's surface is given. It is sufficient to solve the problem for the upper half-space. The author derives a formula which gives an effective solution of the problem for the case that there is a symmetric flow round the wing. In this case the motion of the wing may satisfy any law of motion (with undersonic and supersonic velocity). The formula for $\hat{oldsymbol{arphi}}$ is then specialized for the following problem: The wing moves with the con-

Card 2/3

SOV/20-120-1-12/63 A Finite Span Wing With Symmetric Profile in a Compressible Flow

> stant velocity u. In this case the law of the wing motion has the form x = F(t) = ut. The wing has a cylindrical surface, the indicatrices of which are inclined to the axis at an angle, the tangent of which is equal to u. The last part of this paper deals with the solving of this problem in a moving coordinate system. There are 3 figures and 5 references, 3 of which are Soviet.

ASSOCIATION:

Institut mekhaniki Akademii nauk SSSR (Institute of Mechanics,

AS USCR)

PRESENTED:

January 3, 1958, by L. I. Sedov, Member, reademy of Sciences,

SUBMITTED:

December 1, 1957

1. Wings--Motion 2. Compressible flow--Applications

3. Wings--Mathematical analysis

Card 3/3

	KR A	5/41	PLOITATION SOV/2660	Trudy. Astematicional frame. Trudy. 1. 4: Entitype soderchanity settatoniyth dotladov. Doklady Innotraniyth uchenyth (deaderchanis of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Portion Scientists) Moscow, Izd-vo AM 535R, 1959. 247 p. 2,500 opples printed.	ltymnakly, A.M. Vasiliyay, B.V. Medweday, A.D. Yashkab, 3.M. Dinlisly, Gasp. Ed.), A.G. Postnikov, Tu. V. Prokhorov, K.A. billow, P. L. Ulyanov, Y.A. Uspenskiy, M.G. Chetayev, G. Ye. Ilov, and A.I. Shirshov.	FUNDOME: This book is intended for mathematicians and physicists. CONTRACES: The book is Volume IV of the Transactions of the Third All-	Union Mathematical Conference, held in June and July 1970. the book is divided into two main parts. The first part contains sussarises of the papers presented by Soriet solarities at the Conference that were not included in the first two volumes. The	assond part contains the text of reports accusately and according to the title by non-Soyast scientists. In those cases when the non-Soyast scientist at one of the paper is the title of the paper is the title of the paper was printed in a previous volume, reference is made to the appropriate volume. The papers,	both Sovies and non-Soviet, cover various topies in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mitheratical problems of mechanics and physics, computational mathematies, and the foundations of mathematics, and the hatony of mathematics.	Tushchenko, Ye. L. (Elyev), and L.P. Hithnik (fiyev). The	programming of one new boundary waits prootes for the loss ference equation of parabolic ference for the loss of ference for t	Section on the Mathematical frontess of memory shapes were T. I. (Verevan). On the plane problem of the theory 102 of elacticity for a rectingular vegion	Vlasoy, V.Z. (Moscow). Method of initial functions in the theory of thick suitilayer plates and shells	Golidanverzer, A.L. (Moscow). Pormal asymptotic represents- tions of the Integrals of partial differential equations with small parameter	Original E.I. (Moscow). Monlinear wibrations of cylindri- cal panals in supersonic flow	Fragilishthinus News. (Roscow). The method of integral equations in Froblean of the theory of a thin wing in compressible flow	Card 20/3*		
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"Unsteady Motions of Finite-Span Wings in Compressible Flow." report to be sumplitted for the Intl. Council of the Aeronautical Sciences, Second International Congress, Zurich, Switzerland, 12-16 Sep 60.

: KRASILSHCHIKOVA YE. A

PHASE I BOOK EXPLOITATION

SOV/4000

SOV/12-M-27

Akademiya nauk SSSR. Institut mekhaniki

Inzhenernyy sbornik, t. 27 (Engineering Collection, Vol. 27) Moscow, Izd-vo AN SSSR, 1960. 210 p. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk.

Resp. Ed.: A. A. Il'yushin; Ed.: V. M. Akhundov; Ed. of Publishing House: V.M. Akhundov; Tech. Ed.: A.P. Guseva.

FURPOSE: This book is intended for engineers, applied physicists, and applied mathematicians.

COVERAGE: The book consists of 24 articles on such problems as wing theory, supersonic flow, theory of shells, stability, plasticity and elasticity, the bending of thin plates and shells, and various aspects of applied mathematics. No personalities are mentioned. References accompany most of the articles.

Card 1/62

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826110

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Engineering Collection	sov/4000
TABLE OF CONTENTS:	
Rakhmatulin, Khalil Akhmedovich. (On His 50th Birthday Scientific and Educational Activities)	and 25th Year of
Rakhmatulin, Kh. A. On the Theory of Making a Fabric	5
Carafoli, E. The Theory of Delta and Cruciform Wings i	n Supersonic
Krasil'shchikova, Ye.A. Wing of Finite Span and Symmet in Subsonic and Supersonic Flows	rical Profile 29
Yur'yev, I. M. On the Calculation of Bodies of Revolut Supersonic Flow	ion in 39
Card 2/8 ₂	

KRASIL'SHCHIKOVA, Ye.A. (Moskva)

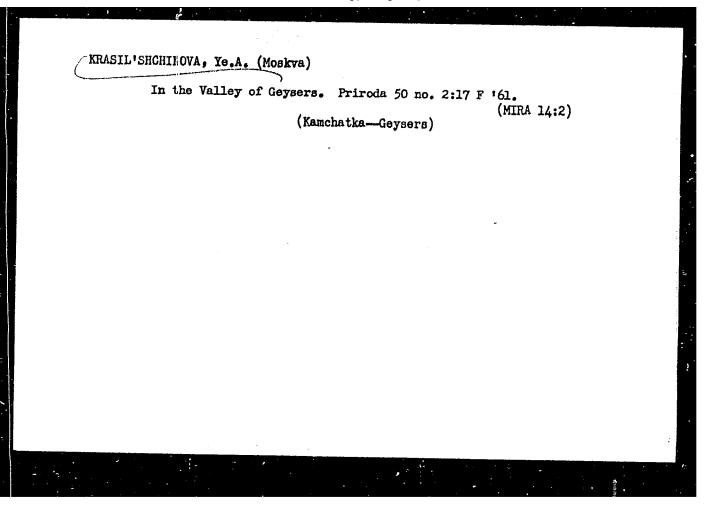
Airfoil of finite span and with a symmetric profile in subsonic and supersonic flow. Inzh.sbor. 27:29:37 '60.

(MIRA 13:6)

(Airfoils) (Aerodynamics, Supersonic)

NEKRASOV, Aleksandr Ivanovich [deceased]; PAVLIKHINA, M.A.; SEKERZE-ZEN'KOVICH, Ya.I., otv. red. toma; KRASIL'SHCHIKOVA, Ye.A., red.; SLEZKIN, N.A., red.; SMIRHOV, L.P., red.; RYVKIN, A.Z., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. 1961. 442 p. (MIRA 15:1) (Aerodynamics) (Hydrodynamics)



NEKHASOV, Aleksandr Ivanovich, akademik; PAVLIKHINA, M.A.;

TUPOLEV, A.N., akademik, otv. red. tora; INACIL'SHCHIKOVA,

Ye.A., red.; SEREZH-ZER'KOVICH, Ya.I., red.; SLEZKIN, N.A.,

red.; SMIRNOV, L.P., red.; GORSHKOV, G.B., red.; red.; red.; NOVICHKOVA, N.D., tekhn. red.

[Collected works]Sobranie sochinenii. Moskva, Izd-vc Akad.

nauk SSSR. Vol.2. 1962. 706 p. (MIRA 15:12)

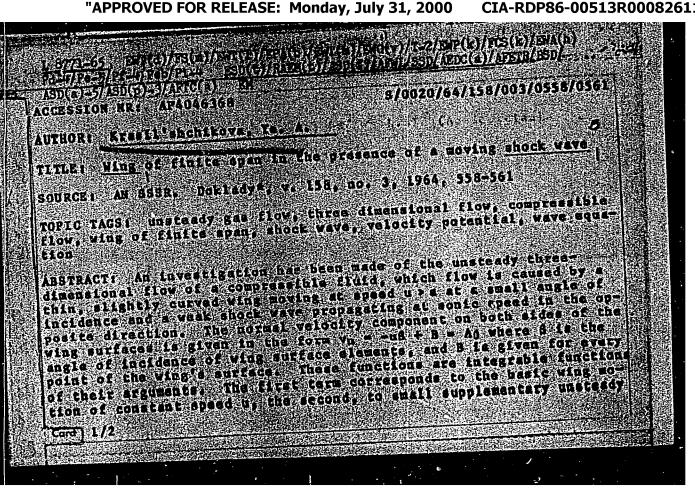
(Physics) (Mechanics) (Mathematics)

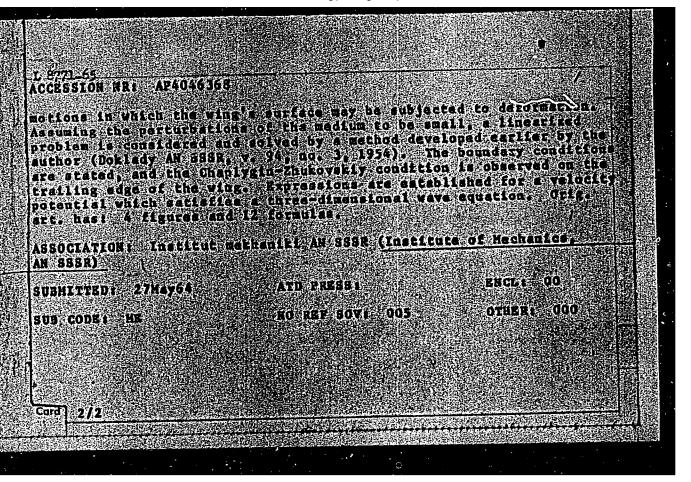
KRASILSHCHIKOVA, Ye. A.

"Three-Dimensional Problems for Wings with Variable Boundary Conditions".

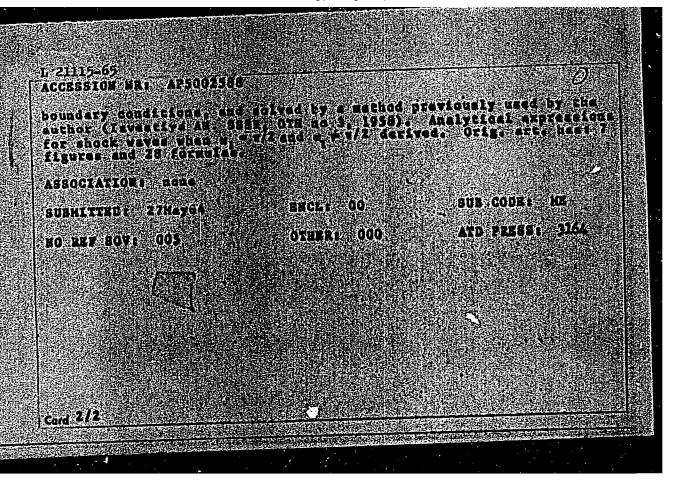
Report submitted for the 6th Symposium on Advanced Problems in Fluid Mechanics, Zakopane, Poland, 2-6 Sept. 1963.

ALL PAPERS WILL BE PUBLISHED IN A 1964 ISSUE OF THE POLISH JOURNAL OF APPLIED MECHANICS, ARCHIMUM MECHANIKA STOSOWANEJ.





L_SINISOS _IMP(a)/SVA(b)/MP(b)/SVI(a)/SVI(a)/FVI(a)/FVI(a)/FVIA(b)/FVI



L 18346-65 AEDC(a)/ASD(b).2 NT(C2): p/0033/64/016/002/0285/0290.

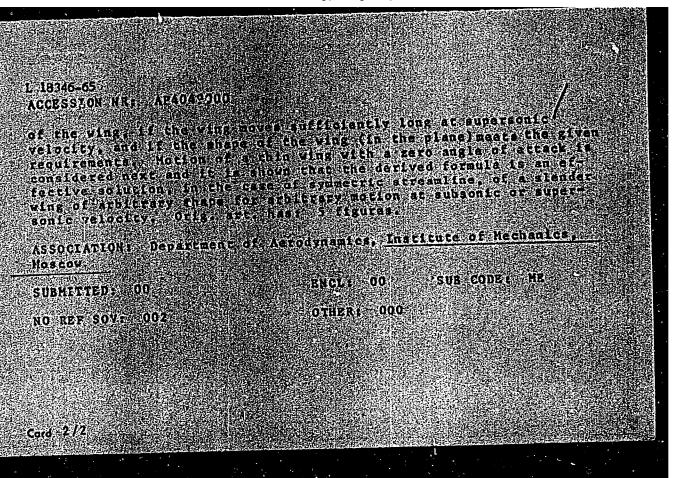
AUTHORI Krasilschikova E A (Koscow)

TITLE: Unreservingelion of a vine of furtee span in a compressible medium

SOURGEL Achtusismervankki succovanej, w. 16, no. 2, 1964, 285-290.

TOPIC TACS: unrecedy motion wine, finite span, compressible medium, are disturbance, veriable velocity

ABSTRACTI: This artificie is a grassmination of continued investigation of air disturbances dusing mean. It shapers a vibractons of ethin, of air disturbances dusing mean. It shapers a vibractons of ethin, of air disturbances dusing mean. It shapers a vibractons of ethin, of air disturbances dusing terms. It shapers a vibractons of ethin, of air disturbances dusing terms. It shapers a vibractons of ethin, of air disturbances dusing the mean motion of the policy. All SSSR Doklady, v. 10, no. 1, to be ving a result for angle of air delices with variable velocity, and they ving aureace may be despired for additional small vibrations of client ving aureace may be despired for additional small vibrations of client ving aureace may be despired for additional small vibrations of client ving aureace may be despired for additional small vibrations of client ving aureace may be despired for additional small vibrations of client ving aureace may be despired for additional small vibrations of client ving air first and considered from thin wing theory, are equation is jestived for decreatings the velocity potential exerted ving air first the medium is not disturbed in Front vibration and above the ving if the medium is not disturbed in Front vibration and above the ving if the medium is not disturbed in Front vibrate on and above the ving if the medium is not disturbed in Front vibrate on and above the ving if the medium is not disturbed in Front vibrate on and vibrations.



21770-66 EVT(d)/FS(m)/EVT(1)/EWP(m)/EWT(m)/EWP(w)/EWA(d)/T-2/EVF(k)/EWA(h)/ETC(m)-6 SOURCE CODE: UR/0421/66/000/001/0061/0068 ACC NR. AP6010842 WW/EM EMA(1) AUTHOR: Krasil'shchikova, Ye. A. (Moscow) ORG: none TITLE: Thin wing in a compression wave of finite length SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1966, 61-68 TOPIC TAGS: supersonic aerodynamics, supersonic flow, shock wave, thin wing ABSTRACT: The motion of a thin wing of finite span at supersonic speed in a compressible medium is considered under the action of a weak incoming shock wave whose front is at an angle w to the plane of motion. It is assumed that the motion is uniform and taking place inside an infinite space. Simplified assumptions usual in thin-wing theory are made. The problem is considered in linearized form, according to approaches of Nekrasov and Sedov and solved by the method suggested previously by the author, being reduced to a problem of superposing two waves of infinite length on a disturbed compressible medium. The velocity field is analyzed and expressions for the velocity potential are established, in particular, in the case when the simultaneous effects of forward and rear shock fronts are present on the wing surface at a certain wavelength. If the shock wave moves in the direction of wing motion, it is necessary to change the sign in certain expressions. Orig. art. has: 10 figures and 22 formulas. SUB CODE: 20/ SUBM DATE: 18Jan65/ ORIG REF: 005/ ATD PRESS:4/227 1/1 11/1 Card

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826110

ACC NR: AP6018064 SOURCE CODE: PO/0033/65/017/005/0727/0738

AUTHOR: Krasilschikova, E. A. (Moscow)

ORG: Institute of Problems in Mechanics, Academy of Sciences SSSR (Institut problem mekhaniki Akademii nauk SSSR)

TITLE: Finite-span wing in the presence of a moving shock wave

SOURCE: Archiwum mechaniki stosowanej, v. 17, no. 5, 1965, 727-738

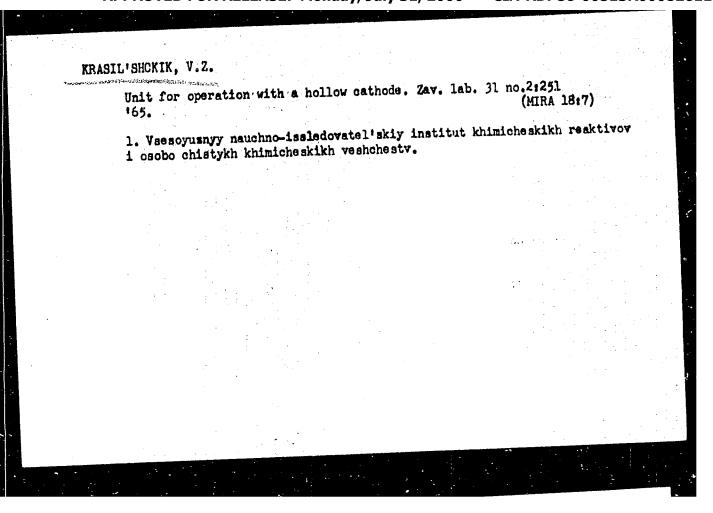
TOPIC TAGS: shock wave motion, wave equation, thin wing, supersonic flow, weak shock wave

ABSTRACT: A method of solution of miscellaneous problems has been proposed for a three-dimensional wave equation when conditions change with time. The spacial

ABSTRACT: A method of solution of miscellaneous problems has been proposed for a three-dimensional wave equation when conditions change with time. The spacial problem of supersonic gas flow for a wing in the presence of a moving shock wave has been examined by this method. Solutions have been obtained of a three-dimensional problem on determining the field of velocities which is excited by the motion of a

Card 1/2

ACC NR: AP6018064 0 thin wing and by a weak shock wave attacking it, with changeable gas parameters behind the shock-wave front. The velocity potential has been found in the form of binary quadratures under a sign of which the given function of two variables is included. The resulting solution permits calculation of the velocity potential as follows: a) everywhere on the wing surface and above the wing when the wing edges are supersonic profiles, b) when the wing is moving at a constant speed as a solid or as an elastic solid, and c) when the shock-wave front moves at the speed of sound and represents the plane inclined to the surface of the moving wing at an arbitrary angle. The resulting solutions can be simultaneously examined as threedimensional problems of the diffraction of a plane acoustic wave moving on a thin, plane, or bent plate at a supersonic speed. Orig. art. has: 7 figures and 27 formulas... [Based on author's abstract] SUB CODE: 01/ SUBM DATE: 05Apr65/ ORIG REF: 004/ OTH REF: 002/ 2/2 LC



"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000826110

		Ibration Furpose		
paper presented at	the 4th All-Uni	on Conf. on Acou	stics, Moscow,	26 May - 23 Jun 58.

P/015/63/000/003/001/001 D001/D101

AUTHOR:

Krasimowicz. Albin

TITLE:

Testing the properties of plastic ceramic mass by the conical

indentor method

PERIODICAL:

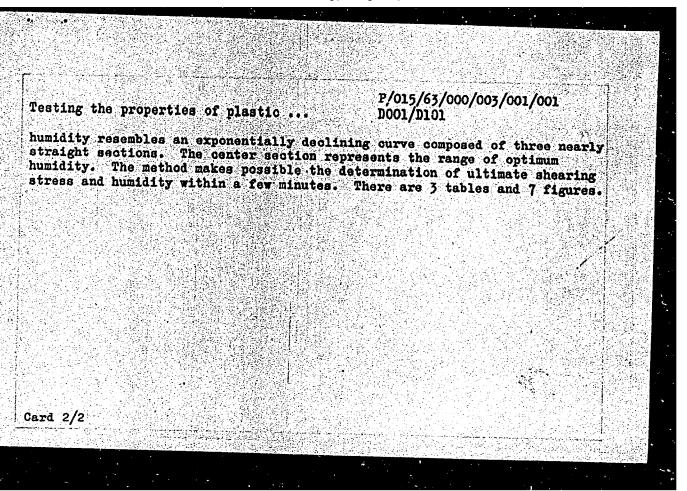
Szkło i ceramika, no. 3, 1963, 83-86

TEXT: The author used a conical steel indentor briefly described in the article and built by the Katedra Maszynoznawstwa Ceramicznego ACH (Department of the Theory of Ceramical Machines ACH) to measure shear in a number of Folish clays and loams and establish the usability of the method in production practice. The shear in masses of varying humidity was calculated according to the formula

 $\theta = k \frac{r}{h^2}$

where θ -- ultimate shearing atress in kg/cm²; P -- load on conical indentor in kg; h -- indentation in cm; k -- a constant dependent on the tip angle of the cone. Ultimate shearing stress plotted in a diagram against

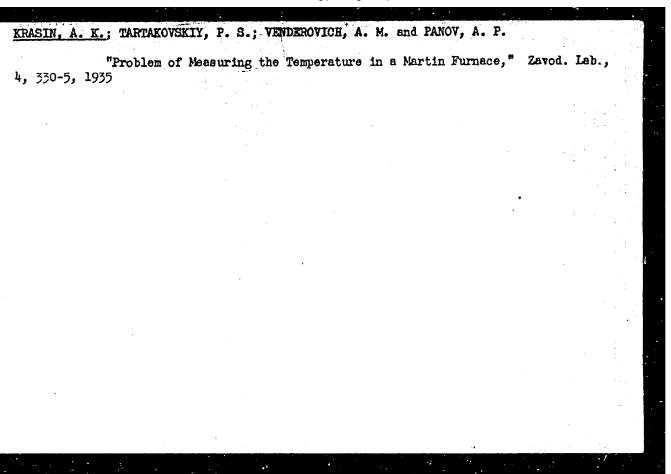
Card 1/2

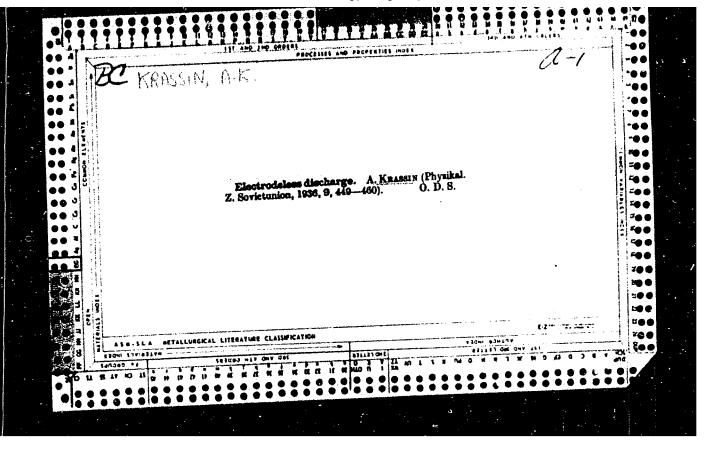


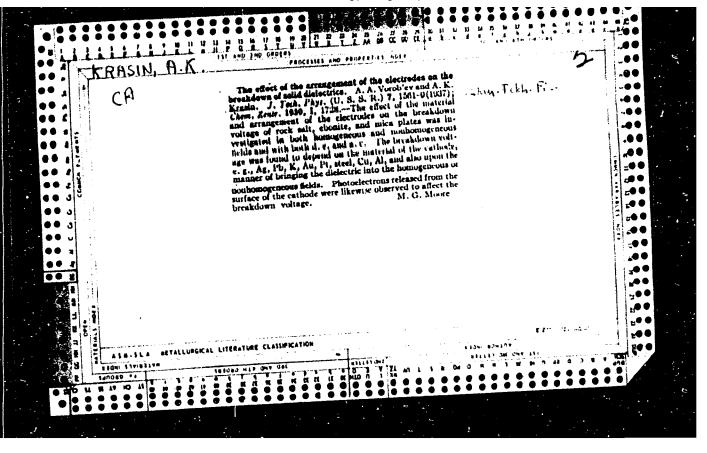
GUSEVA, L.M.; SOKOLOV, B.K.; KRASIN, A.G.; LYSENKO, A.M.; MOROZOV, G.A., red.

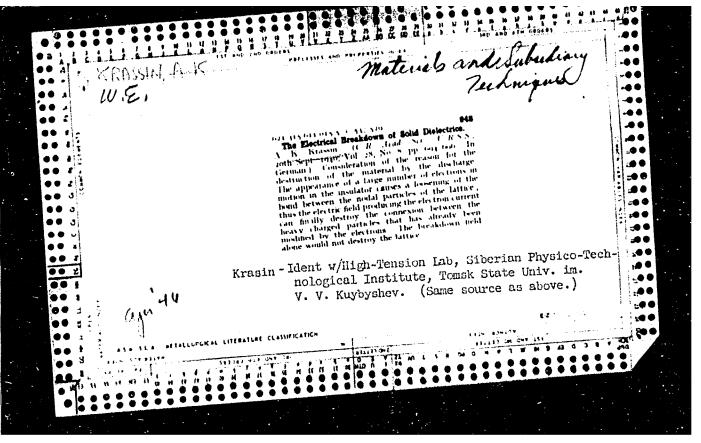
[Nor high corn yields] Za vysokie uroshai kukuruzy. Hovgorod, Knizhnaia red.gazety "Hovgorodskaia pravda," 1960. 59 p.

(Gorn (Maise))









KRASIN, A.

6771. Krasin, A. Znacheniye mestnykh udobreniy v povyshenii urozhaynosti. (Novgor. obl.) Hovgorod, 1954. 24 s. 20 sm. (Iz opyta raboty peredovykh kolkhozov).

3.000 ekz. 40 k. - (55-2794) p
631.8 (47.24)

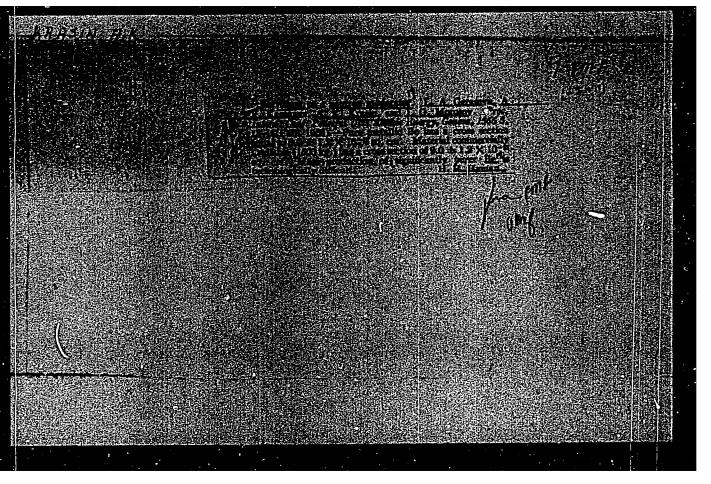
S0: Knizhnaya Letopis' No. 6, 1955

KRASIN, A.K.; MOROZOV, I.G.; GERASEVA, L.A.; KAMAYEV, A.V.

[Study of beryllium as a neutron moderator] Izuchenie berilliia kak zamedlitelia neitronov. Moskva, 1955. 17 p.

(MIRA 14:7)

(Beryllium) (Neutrons—Capture)



OSTROUMOV, Georgiy Hikolayevich; KBASIN, A.K., doktor fiziko-matematicheskikh nauk, nauchnyy redaktor; GRINGAUZ, 5., redaktor; YAKOVIEVA, Ye., tekhnicheskiy redaktor

[First in the world] Pervaia v mire. Nauchn.red. A.K.Krasin.
[Moskva] Moskovskii rabochii, 1956. 35 p. (MIRA 10:2)
(Atomic power industry)

KRASIN, A. Dr. Physico-Mathematical Sciences

"Trends in the Development of Atomic Power Engineering," Pravda, page 3, 20 January 1956, Moscow.

Translation M-1097, 2 May 56

KRASIN, A.K.

USSR / PHYSICS SUBJECT

PA - 1608 CARD 1 / 2

AUTHOR

KRASIN, A.K., DUBOVSKY, B.G., MATALIN, E.Y., INYUTIN, E.I., KAMAEV, A.V.

LANTSOV, M. N.

TITLE

An Investigation of Physically Characteristic Quantities in a

Nuclear Power Station.

PERIODICAL

Atomnaja Energija, 1, fasc.2, 2-10 (1956)

Issued: 6 / 1956

Experiments carried out on the reactor of the Nuclear Power Station of the Academy of Science in the USSR are described.

The data for the characteristic quantities obtained on this occasion can be used for the operation of similar reactors as well as for the further development of heterogeneous reactors and reactors with water cooling which work with thermal neutrons.

Experiments and measurements were carried out with respect to the critical mass of the fuel with and without water in the channels, as well as concerning size and arrangement of the boron control rods, maximum activity and its control, the influence exercised by water on activity, the probability of escaping resonance capture, and the velocity distribution of neutrons and their density in the reactor.

The important values found as a result of these experiments agree well with computed values.

Results;	experim e n	tal	theoretical
Radius of critical mass with water in			
the channels	60	(cm)	59
dto. without water in the channels	101	, ,	99
The maximum activity at the beginning of a			
working period (10"linear cm") corresponds			
to an activity \triangle K of $(4,5+0,2)10^{-4}$	0,11+0,00	5	0,1222
Activity control:	-		
a) with 1 manual control rod in the interior			
ring	0,013 <u>+</u> 0,0	01	0,12
b) with 1 manual control rod in the exterior			
ring	0,007+0,0		0,007
c) with 2 locking rods	0,01870,0	02	0,02
The probability of escaping resonance capture	e (1 - φ)		
The fission ratio of U ²³⁵	À =0.906±	0.015	_
in the epicadmium region	0,906± 8,3%	0,0.7	-
INSTITUTION:	8,2%		-

. KRASIN, A.K.

Getogory: USSR/Nuclear Physics - Nuclear Engineering end Power Co

C-8

Abs Jour , Ref Zhur - Fizika, No 3, 1957, No 6104

Author : Blokhintsev, D.I., Dollekhal', N.A., Krasin, A.K. Title : Reactor of the Atomic Electric Station of the Acidemy of

Sciences of the USSR.

Orig Pub: Atom. energiya, 1956, No 1, 10-23

Abstract: The thermal power of the reactor is 30,000 kw, and the electric power is 5,000 kw. The amount of uranium charge is 550 kg, representing 27.5 kg U235 at a 5% onrichment. The moderator and reflector are made of graphite, and the coolant is ordingry distilled water. The thermal flux reaches 1.8 x 10 kcal-m -hr 1. The shield comprises a layer of water 100 cm thick and 3 meters of concrete. The graphite core of the reactor is three meters in diameter and 4.6 meters high. The central section contains 157 vertical heles at a spacing of 120 mm. 128 holes are occupied by the working elements, and the remainder are intended for the control rods and for auxiliary purposes. The diameter of the active zone is 1500 mm, the height is 1700 mm. Tubular uranium fuel elements are used in the reactor. The

Card : 1/2

APPROVED FOR RELEASE: Monday, Hulyn31, 12000d PowerA-RDR86-00513R0008

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6104

water pressure is 100 atmospheres and the temperature at the reactor output is 280°. The water of the coolant forms the primary loop, which contains a steam generator. The secondary loop comprises a turbine generator, operating on steam with a pressure of 4.5 atmospheres and a temperature of 270°. The atomic electric station of the Academy of Sciences of the USSR has been operating without interruption since 27 June 1954. Its operating experience has made it possible to proceed toward a design of more powerful stations with uranium-graphite reactors and water cooling.

Card : 2/2

Atomnaja Energija, 1, fasc.4, 147-148 (1956) CARD 2 / 2 PA - 1481 neutron source with $\approx 10^6$ neutrons per second was fitted in the interior of the reactor. A waterless variety of the uranium-beryllium reactor was realized by the charging of 6 elements. Graphite was introduced into the central channels of the cells, into the interior tubes of the elements, and into the horizontal channels. After 366 uranium elements were charged (6,66 kg 235) the system became critical. On the occasion of transition to the reactor without reflector the upper layers of

On the occasion of transition to the reactor without lefted to the appropriate the beryllium blocks were removed. The critical mass in this case was 11,73 kg U²³⁵. For the same case the variety of a reactor with thermocolumn in the center was realized. The data corresponding to the various varieties are shown in a table. If there is a thermocolumn in the center of the reactor the

shown in a table. If there is a thermocolumn in the center of the reactor the density of the thermal neutrons is 4 times as great as the average density of the neutrons in the active zone. However, in the case of the variety without thermocolumn with reflector the maximum density of the neutrons exceeds the average density by 13%.

INSTITUTION:

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CIA-RDP86-00513R000826110

RHSIN, A.K. Category: USSR/Nuclear Physics - Nuclear engineering and power

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Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 711

: Krasin, A.K., Dubovskiy B.G., Doil'nitsyn, Ye.Ya., Matalin, L.A., Author

Inyutin, Ye.I., Kameyev, A.V., Lantsow, M.N.,

: Study of the Physical Characteristics of an Atomic Electric Station Reactor. Title

Orig Pub: Atom. energiya, 1956, No 2, 3-10

Abstract : A graphite-water research reactor, in which the cell construction was nearly equal to the cell of the reactor of an atomic electric station, was built to check the calculation results for the latter reactor. The research reactor was a cylinder 190 cm high and 260 cm in diameter. The figsion material used was uranium protoxide and oxide with 10% U235 enrichment. The critical mass (M) was 6.3 kg U^{235} , which was in good agreement with the calculated value (Mcr = 5.35 -- 7.4 kg U^{235}) calculated with a procedure previously checked experimentally only with a uranium-graphite lattice with a small content of steel and water. The critical mass was calculated for the reactor of the atomic electric station for two cases: with and without water in the working channels. The results obtained are in good agreement with the calculations.

Experiments were made on the calibration of boron rods and on the determination of the excess reactivity. The dependence of the effectiveness of the

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Category : USSR/Nuclear Physics - Nuclear engineering and power

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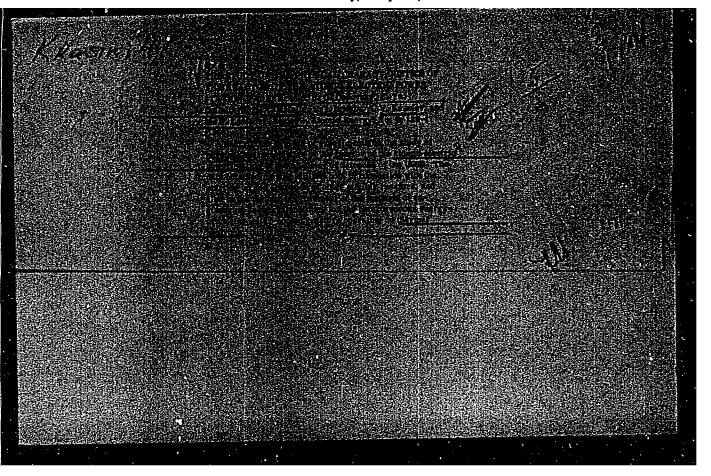
Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 711

absorbing boron rod on the depth of its insertion in the reactor was investigated. Experiments on the determination of the controlling ability of the rod have established that the surrounding rods affect stronlgy the absorbing ability of the rod. A study of the character of the curve for the decrease in power with time under scram conditions was made to determine the operating time of the scram rods.

A mechanical neutron selector was used to study the neutron spectrum, and the distribution of the thermal neutrons was found to be in good agreement with the theoretical curve when the effective temperature of the neutron gas was assumed to be approximately 100° higher than the temperature of the core. The temperature of the neutron gas was then determined with the aid of boron rods, and good agreement was obtained here with the results of the measurements made with the selector. The curves of the cadmium ratios versus the reactor radius showed that 8.3% of the fissions in U²³⁵ occur in the region above the cadmium.

Card : 2/2

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KRASIN, A.E.

USSR/Nuclear Physics

c-8

Abs Jour

: Referat Zhur - Fizika, No 5, 1957, 11299

Author

Krasin, A.K., Dubovskiy, B.G.

Inst

: Not given

Title

: Beryllium Research Reactor.

Orig Pub

: Atom. energiya, 1956, No 4, 147-148

Abstract

: Description of a research reactor, started in August 1954 in the building of the atomic electric station of the Academy of Sciences, USSR, with a moderator made of metallic beryllium, operating with enriched uranium fuel. The core of the reactor, made of beryllium blocks, comprises a cylinder with a diameter and height of approximately 1 meter. Control is by means of two cadmium rods, and scram protection is insured by eight more cadmium rods. A study was made of three versions of dry reactors: with lateral

Card 1/2

USSR/Nuclear Physics

C-8

Abs Jour

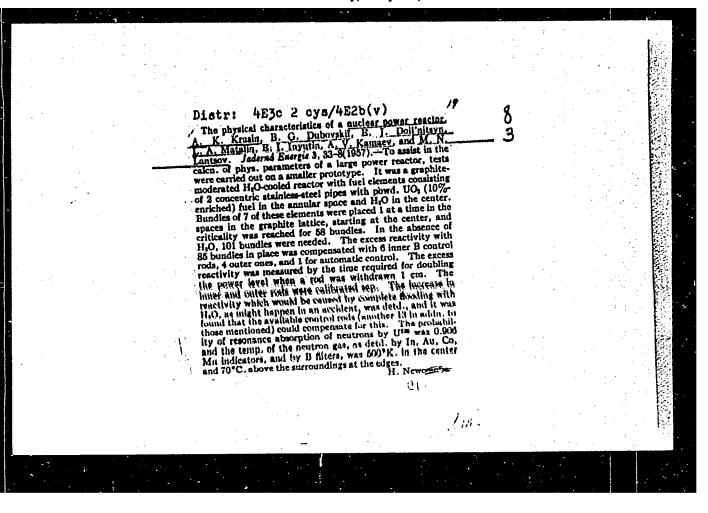
: Ref Zhur - Fizika, No 5, 1957, 11299

beryllium reflector 15.5 cm thick, without reflector, with thermal column in the center, and a reactor with fuel elements filled with water. The critical masses in this case turned out to be 6.66, 11.73, 12.66 and 3.42 kg of U²³⁵ respectively. The density of the thermal neutrons in the thermal column is four times greater than the density of the neutrons in the active zone.

Card 2/2

KRASIN, Andrey Kapitenovich, doktor fiziko-matematicheskikh nauk; FAYNHOYM, I.B., redaktor; GUBIN, M.I., tekhnicheskiy redsktor.

> [Nuclear power reactors] Energeticheskie iadrenye reaktory. Moskva, Izd-vo "Znanie," 1957 36 p. (Vacaciuznoe obshchestvo po rasprostraneniu politicheskikh i nauchnykh znanii. Ser. 8, no.4) (MLBA 10:3) (Nuclear reactors)



KRASIN, A.K.; DUBOYSKIJ, B.G.; BOHAL, L., inz. [translator]

Physical beryllium reactor. Jaderna energie 3 no.2:62-63 F 157.

KRASIN, AK., GRIGORYANIS, A. N., NIKOLAYEV, N. A. and USHAKOV, G. N.

"Operating the First USSR Power Station with the Fuel Channels Working in Boiling Conditions."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 dep 50,

AUTHORS:	Krasin, A. K., Minashin, M. Ye., Sviridenko, V. Ya.	sov/89-5	5-2-2/36
ritle:	The Influence of the Temperature of of the Runs of the Fuel and Its Reg (Vliyaniye temperatury neytronnogo kampanii i vosproizvodstvo goryuch	generation in a Por gaza na prodolzhi	tel'nost'
PERIODICAL:	Atomnaya energiya, 1958, Vol. 5, N	r 2, pp. 111-118 (1	ussr)
		reraised by the te	mperature of
	The calculation of the influence of the neutron gas on the duration of production of Pu ²³⁹ , and on the am generated is dealt with. Calculatifollowing two variants of reactors	the run of the re ount of the electr ons relate especia	ic energy lly to the
	The calculation of the influence entre neutron gas on the duration of production of Pu ²⁵⁹ , and on the amagenerated is dealt with. Calculating two variants of reactors	the run of the recount of the electrons relate especia:	ic energy lly to the
	The calculation of the influence enthe neutron gas on the duration of production of Pu ²³⁹ , and on the am generated is dealt with. Calculatifollowing two variants of reactors a) Heat output of the reactor	the run of the recurt of the electrons relate especia: Variant I	ic energy lly to the Variant I
ABSTRACT:	The calculation of the influence entre neutron gas on the duration of production of Pu ²⁵⁹ , and on the amagenerated is dealt with. Calculating two variants of reactors	the run of the recurt of the electrons relate especia: Variant I 140 MW	ic energy lly to the Variant II 140 MW

The Influence of the Temperature of a Neutron Gas on the Duration of the Runs of the Fuel and Its Regeneration in a Power Reactor 90V/89-5-2-2/36

		Variant I	Variant II
	e) Canning material of fuel elements	Zr of a thick- ness of 0,3 mm	· · · · · · · · · · · · · · · ·
	f) Moderator material in core and reflector	graphite (1.67 g/cm^3)	graphite (1,67 g/cm ³)
	g) Coolant	Na.	Na
	h) Diameter of core	500 cm	500 cm.
	i) Height of core	1100 cm	400 cm
	j) Thickness of lateral andbasic reflectors	80 cm	80 cm.
	k) Number of cells	1100	400
Card 2/4	 Number of channels for regulating-and safety rods 	50	50