

L 15461-63
RM/WW

EPR/EWP(j)/EPF(c)/EWT(m)/BDS

AFFTC/ASD Ps-4/Pc-4/Pr-4

ACCESSION NR: AP3005443

S/0020/63/151/005/1118/1119

AUTHORS: Turov, B. S.; Vinogradov, P. A.; Dolgoplosk, B. A. (Corr. Member AS, SSSR); Kostina, S. I. 73

TITLE: Influence of electron donor additives on the chain structure in stereospecific polymerization of butadiene

SOURCE: AN SSSR. Doklady, v. 151, no. 5, 1963, 1118-1119

TOPIC TAGS: electron donor, butadiene polymerization, stereospecific polymerization, cis-polybutadiene, trans-polybutadiene

ABSTRACT: The effect of thio-ethers and tertiary amines (dibutyl sulfide and triethylamine) on butadiene polymerization was studied as a continuation of earlier study by the authors (DAN, 146, 1141 (1962)) of the effect of straight ethers. These compounds had less effect on polymerization rate than the straight ethers. They did effect an increase in the amount of 1,4-trans isomer by decreasing the 1,4-cis-polybutadiene. There was no lowering of solubility or unsaturation in the polymer formed. Experiment shows the cis-polybutadiene does not

Card 1/2

L 15461-63

ACCESSION NR: AP3005443

2

undergo changes in presence of donor additives and components of the catalyst system $TiI_4 + (iso-C_4H_9)_3Al$. Trans-members are formed only in the polymerization process by the direct participation of complexes containing the electron-donor additives. Orig. art. has: 1 figure.

ASSOCIATION: Yaroslavskiy zavod sinteticheskogo kauchuka
(Yaroslav synthetic rubber plant) ✓

SUBMITTED: 07May63

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: MA, CH

NO REF SOV: 003

OTHER: 003

Card 2/2

TUROV, B.S.; VINGRADOV, P.A.; DOLGOPLOSK, B.A.; KOSTINA, S.I.; KASTORSKIY,
L.P.

Effect of electron-donating additions on the chain microstructure
in the stereospecific polymerization of butadiene in the presence
of "cobalt" catalytic systems. Dokl. AN SSSR 155 no. 4:874-875
Ap '64. (MIRA 17:5)

1. Chlen-korrespondent AN SSSR (for Dolgoplosk).

L 15333-66 EWT(m)/EWP(j) WW/RM

ACC NR: AP6000986

(A)

SOURCE CODE: UR/0286/65/000/022/0060/0060

AUTHORS: Mironova, N. M.; Farberov, M. I.; Vinogradov, P. A.; Zakharov, N. D.; Gavshinova, K. Ye.

36
B

ORG: none

TITLE: A method for obtaining synthetic rubber. Class 39, No. 176410 /announced by Yaroslavl Technological Institute (Yaroslavskiy tekhnologicheskii institut)

15, 44, 55

15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 60

TOPIC TAGS: polymer, polymerization, copolymerization, synthetic rubber, rubber

ABSTRACT: This Author Certificate presents a method for obtaining synthetic rubber by low-temperature polymerization of dienes or copolymerization of the latter with vinyl monomers in an aqueous emulsion in the presence of redox initiators. To obtain modified rubbers, the polymerization or copolymerization process is carried out in the presence of β -chloroethyl ester of methacrylic acid.

SUB CODE: 11/ SUBM DATE: 10Jul63

07/

Card

1/1 *SC*

UDC: 678.762.2-134.622

VINOGRADOV, P.B.

Comments on G.I.Vol'fson's article "Roman Sergeevich Chetyrkin."
Gig. i san. no.11:51-52 N '54. (MLRA 7:12)

1. Iz Kafedry obshchey gigiyeny I Leningradskogo meditsinskogo
instituta imeni akademika I.P.Pavlova.

(BIOGRAPHS

Chetyrkin, Roman Sergeevich)

(MEDICINE, MILITARY AND NAVAL, history

contribution of Chetyrkin, Roman Sergeevich)

VINOGRADOV, P.B.

"Studies on the history of the public health system in Magadan Province"
by A.F. Khoroshev. Reviewed by P.B. Vinogradov. Sov. zdrav. 20 no.1:
81-82 161. (MIRA 14:5)
(MAGADAN PROVINCE—PUBLIC HEALTH) (KHOROSHEV, A.F.)

VINOGRADOV, P.B.

Health problems in N.I. Pirogov's works. Vrach. delo no.3:321
Mr '57 (MLRA 10:5)

1. Kafedra obshchey gigiyeny (zav.-prof. I.Ye. Ramm) Pervogo
Leningradskogo meditsinskogo instituta.
(PIROGOV, NIKOLAI IVANOVICH, 1810-1881)

VINOGRADOV, P.D.

Geology of the Zeravshan-Gissar antimony-mercury belt. Inform.-
sbor.VSEGEI no.46:17-35 '61. (MIRA 15:3)
(Tien Shan--Antimony) (Tien Shan--Mercury)

VINOGRADOV, P.D.; MARTYSHEV, V.R.; MISNIKOV, Yu.K.; TORSHIN, N.S.

Manifestations of petroleum in Silurian deposits of central Tajikistan. Mat. VSEGEI no.10:73-78 '56. (MIRA 10:1)
(Tajikistan--Petroleum geology)

VINOGRADOV, F. I.

Name: VINOGRADOV, F. I.

Dissertation: Biological principles involved in producing early high yields of tomatoes in Moldavia

Degree: Doc Biol Sci

Defended at:
~~Affiliation:~~

Min Higher Education USSR, All-Union Order of Lenin Acad of Agriculture imeni V. I. Lenin, Inst of Genetics of Acad Sci USSR

Publication
~~Defense Date,~~

Place: 1956, Kishinev

Source: Knizhnaya Letopis', No 4, 1957

L 63879-65 ENT(1)/ENT(m)/EPF(c)/EFF(n)-2/ENG(m)/ENA(d)/ENP(t)/ENP(k)/ENP(b)/ENP(c)
JD/HH/HH

ACCESSION NR: AP5015082

UR/0114/65/000/006/0022/0024

536.24.001.5

AUTHOR: Puchkov, P. I. (Candidate of technical sciences);
Vinogradov, O. S. (Engineer)

TITLE: Longitudinally finned heat-transfer surfaces

SOURCE: Energomashinostroyeniye, no. 6, 1965, 22-24

TOPIC TAGS: heat transfer, finned tubing

ABSTRACT: The results are reported of an experimental investigation of the heat transfer and hydraulic resistance of two 1-m long 32-mm OD metal tubes; one tube was equipped with 12 and the other with 28 longitudinal 11-mm high fins. The tubes had an inside electric heater, and were cooled by air, at $10^5 - 3 \times 10^5$ n/m², in a closed-type gasodynamic outfit. Critical functions $Nu = f(Re)$, and $\xi = f(Re)$ are presented in the form of curves. To enhance the heat transfer, the air between the fins, in the 28-fin tube, was turbulized by 3 ring diaphragms cutting through the fins. Also roughening the fin surface was tested as a measure to improve the heat transfer. Longitudinal finning improves by a factor of 2.4-2.7 the energy characteristics of a smooth tube; the diaphragms and rough surface make them still better (by 7% and 20%, respectively). Orig. art. has: 5 figures, 8 formulas, and 1 table.

Card 1/2

L 63879-65

ACCESSION NR: AP5015082

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 006

OTHER: 001

llc
Card 2/2

PUCHKOV, P.I., inzh.; VINOGRADOV, O.S., inzh.

Study of heat exchange and hydraulic resistance of helical channels
with heat emitting internal surface. Teploenergetika 11 no.10;
62-65 0 '64. (MIRA 18:3)

1. Tsentral'nyy kotloturbinnyy institut.

L 64482-65 INT(m)/REF(c)/SER(3)/T/ART(t)/REF(b) INT(c) JG/HA/AS
 ACCESSION NR: AP5021280 UR/0020/65/163/005/1147/1150

AUTHORS: Vinogradov, P. A.; Dolgoplosk, B. A. (Academician); Zgonnik, V. N.;
Paronago, O. P.; Tinyakov, Ye. I.; Turov, B. S.

TITLE: The role of electron-donor additives, water, and alkylating agents in the stereospecific polymerization of butadiene under the influence of a cobalt catalytic system

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1147-1150

TOPIC TAGS: stereospecific polymerization, polymer, butadiene, cobalt, catalyst

ABSTRACT: The object of the investigation was to enlarge the currently available information concerning the stereospecific catalytic activity of cobalt catalytic systems (B. S. Turov and P. A. Vinogradov i dr., DAN, 155, 874, 1965). The polymer studied was butadiene. The experimental results are shown graphically in Figs. 1 and 2 on the Enclosure. It is concluded that the addition of $AlCl_3$,

$AlCl_2$, Br_2 , H_2O , $CH_2 = CH - CH_2$ halogen, $RCl - Al - O - Al - RCl$ increases the formation of 1,4 cis rings, the molecular weight, and the rate of polymerization, whereas the addition of R_3Al , RSR , ROR , R_3N , KCl , and $NaCl$ decreases the number

Card 1/4

L 64482-65

ACCESSION NR: AP5021280

3

of 1,2 rings, the molecular weight, and the rate of polymerization. Orig. art.
has: 1 table, 3 graphs, and 3 equations.

ASSOCIATION: Institut neftekhmicheskogo sinteza, Akademii nauk SSSR (Institute
for Petrochemical Synthesis, Academy of Sciences SSSR)

44.55

SUBMITTED: 15Mar65

ENCL: 02

SUB CODE: CC

GC

NO REF SOV: 007

OTHER: 005

Card 2/4

L 64482-65

ACCESSION NR: AF-5021280

ENCLOSURE: 01

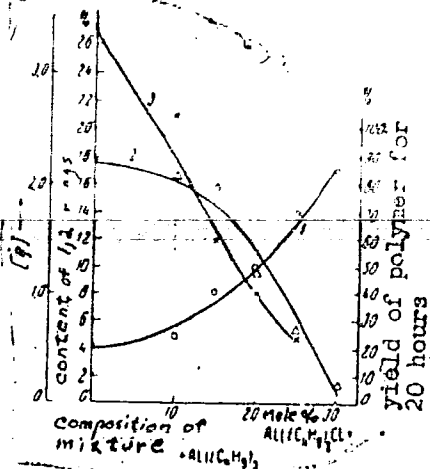


Fig. 1. The effect of triisobutylaluminum on the number of 1,2 rings in the chain (1), yield of polymer (2), and characteristic viscosity (3). Concentration of $CoCl_2 = 0.0096$ m mole, $Al/Co = 150:1$ (mole), butadiene 12.5 g, concentration of butadiene in benzene 1.8 mole/liter, temperature of polymerization $30C$, duration of experiment 20 hours.

Card 3/4

L 64482-65

ACCESSION NR: AP5021280

ENCLOSURE: 02

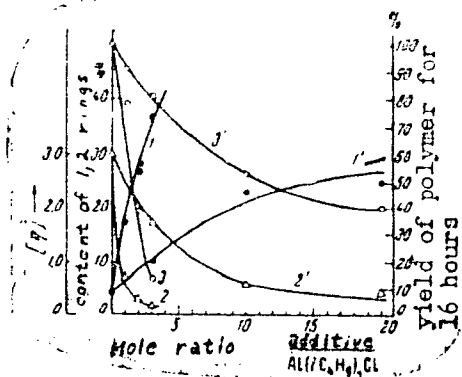


Fig. 2. Effect of KCl and NaCl on the number of 1,2 rings in the chain (1, 1'), viscosity (2, 2') polymer yield (3, 3') - for KCl 1,2,3, - for NaCl 1', 2', 3'. Concentration of $\text{CoCl}_2 = 0.0096$ m mole, $\text{Al/Co} = 150:1$ (mole), butadiene 12.5 g, concentration of butadiene in benzene 1.8 mole/liter, temperature of polymerization 50C, duration of experiment 16 hours.

Card 4/4

VINOGRADOV, P. I., Doc Biol Sci (diss) -- "The biological principles of obtaining earlier and larger harvests of tomatoes in Moldavia". Makhachkala, 1959.

43 pp (Min Agric Ukr SSR, Ukr Acad Agric Sci), 180 copies (KL, No 24, 1959, 131)

VINOGRADOV, P.I., kand.sel'skokhozyaystvennykh nauk

Developing cold resistant early tomato varieties in Moldavia.
Agrobiologiya no. 3:356-360 My-Je '60. (MIRA 13:12)
(Moldavia--Tomato breeding)

1. VINOGRADOV, F. I.
2. USSR (600)
4. Tomatoes
7. Improving tomatoes by intravarietal crossing. Sel. i sem. No. 11, 1952.

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

36-58-9/12

AUTHOR: Vinogradov, P. L.

TITLE: The Electrical Potential Gradient in the Atmosphere Based on Observations at Zuya, 1943-1950 (Gradiyent elektricheskogo potentsiala v atmosfere po nablyudeniya v Zuye za 1943-1950 gg.)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatorii, 1956, Nr 58, pp 58-68(USSR)

ABSTRACT: Observations were conducted at the Zuya Magnetic Observatory with a Benndorf-type mechanical electrograph. The author discusses various points of practical application in the findings obtained and arrives at the conclusion that yearly variations in the gradient are expressed by a curve with a simple maximum for February (162 v/m) and a flat minimum for summer (94 v/m). The rate of change is in inverse ratio to the average value of the turbidity factor. The curve of daily changes was found to have two maximums and two minimums. There are 3 figures, 3 tables, and 9 references of which 8 are Soviet and 1 English.

AVAILABLE: Library of Congress

Card 1/1

YINOGRADOV, P.L.

Observations in Zuy during 1943-1950 on the electric potential
gradient in the atmosphere. Trudy GGO no.58:58-68 '56.

(MLRA 10:1)

(Zuy--Atmospheric electricity)

1. VINIGRADOV, P. L.
2. USSR (600)
4. Moldavia φ Tomatoes
7. Planting tomatoes early in April in Moldavia. Dost sel'khoz. no. 1, 1952.

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

27.41000

30125

S/194/61/000/007/042/079
D201/D305

AUTHORS: Tabarovskiy, I.K., Gofman, I.M., Vinogradov, P.M.,
Pushkarev, A.A. and Pomel'tsov, A.N.

TITLE: An electro-kymograph, scintillation model ЭКC -60
(EKS-60)

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 7, 1961, abstract 7 E15 (Novosti med. tekhn.,
1960, no. 5, 41-63).

TEXT: The graphical recording of pulsating movements of the cardiac vessel cluster as observed using X-rays el. kymography, is used for diagnosing not only cardiac vessels but also pulmonary diseases, e.g. cancer. The model EKS-60 has been approved for series induction. It permits simultaneous registration of the electro-cardiogram and of one of the following processes: The pulsation of heart periphery and of large blood vessels, the capillary pulse of the pulmonary parenchyma, diff. pulmonary ventilation. It is also pos-

Card 1/2

An electro-kymograph...

30125
S/194/61/000/007/042/079
D201/D305

sible to register simultaneously the diff. pulmonary ventilation of both lungs or of any 2 electrocardiogram connectors. Either a static or scintillation slot diaphragm probe is used. The probe oscillations are applied simultaneously after amplification to a recorder and an oscilloscope. Provision is made for signalling in case the probes and indicators are located separately. The construction is given of the probe together with the diagram of a 2-channel balanced photo amplifier with noise compensation circuits and of a 2-channel oscilloscope and of power supplies. The recording channels from the scintillation and static probes have a frequency band 0.15 to 12 c/s and 0.04 to 8 c/s respectively. The horizontal oscilloscope sweep is regulated from 0.01 to 10.0 sec. The overall equipment power consumption is 1 kVA. Results of clinical experiments are given. 29 references. [Abstracter's note: Complete translation]

Card 2/2

S/028/60/000/011/006/007
B020/B058

AUTHOR: Vinogradov, P. M.

TITLE: Diamond Wire-drawing Dies as From January 1, 1961 GOST 6271-60 (GOST 6271-60). Valid

PERIODICAL: Standartizatsiya, 1960, No. 11, pp. 36-39

TEXT: The new standard provides for the following four types of diamond wire-drawing dies for the drawing of wires with a diameter from 0.03 mm and less up to 1.2 mm: 1) OM - for the cold-drawing of very soft metals and alloys with a strength of less than 20 kg/mm² (Al, Zn, and others); 2) M - for the cold-drawing of soft metals and alloys with a strength from 20 to 50 kg/mm² (Cu, Ag, Au, Pt, and others); 3) P - for the cold-drawing of semihard metals and alloys with a strength (brass, bronze, Ni, Constantan, Manganin, and others); and 4) T - for the cold-drawing of hard metals and alloys with a strength above 100 kg/mm² (steels, nichrome, and others), and also for the hot-drawing of tungsten and molybdenum. The standard specifies the most suitable shapes and the most important dimensions of all types of diamond wire-drawing dies, permitting wire-drawing with minimum power, minimum pressure, and best lubri-

Card 1/2

Diamond Wire-drawing Dies. ГОСТ 6271-60

S/028/60/000/011/008/007
B020/B058

(GOST 6271-60). Valid as From January 1, 1961

cation. When ordering wire-drawing dies, wire tolerances must also be mentioned, owing to the fact that the standard ГОСТ 2771-57 (GOST 2771-57) specifies three to seven classes of tolerance for cold-drawn wire. The histograms of the "Elektrokabel" Plant, "Moskabel" Plant, Moskovskiy elektrolampovyy zavod (Moscow Electric Lamp Works), and others show that the most suitable diameter of diamonds with a weight from 0.12-0.20 carat is 0.15-0.35 mm for the purpose mentioned (Figs. 1-3). Theoretical studies by the NIIAlmaz (Nauchno-issledovatel'skiy institut almaza (Scientific Research Institute of Diamonds)) served as a basis for determining 11 weight groups of diamond crystals as dependent on the diameter of the wire-drawing die opening. A nominal weight and maximum weights of the diamonds correspond to each weight group, from which a number of dies with various diameters of the caliber zone can be manufactured (Table 2). The demands made on diamond crystals are described in detail, and the equation $d = \sqrt{6.366 (G/\gamma)}$ is given for calculating the mean diameter of drawn wire of 0.03 mm diameter and less, after weighing a wire of 200 ± 0.1 mm with an accuracy of ± 0.00001 g, G being the weight of a 200 mm long wire expressed in g, and γ the specific gravity of the wire metal. There are 3 figures and 2 tables.

✓

Card 2/2

SMIRNOV, G.D.; VINOGRADOV, P.M.; BYKOV, K.M., akademik.

Composite electrical activity as one of the characteristics of the functional condition of the cerebral cortex. Dokl. AN SSSR 91 no.2:433-436 J1 (MLRA 6:6) '53.

1. Institut morfologii zhivotnykh im.A.N. Severtsova Akademiya nauk SSSR.
2. Akademiya nauk SSSR (for Bykov). (Electroencephalography)

VINOGRADOV, P.M.

Acetylene generators. Standartizatsiia 25 no.2:47-48 F '61.
(MIRA 14:3)

(Acetylene generators—Standards)

SMIRNOV, G.D.; VINOGRADOV, P.M.

Electrical summation as one of indexes of cerebrocortical function.
Doklady Akad. nauk SSSR 91 no.2:433-436 11 July 1953. (CML 25:1)

1. Presented by Academician K. M. Bykov 12 May 1953. 2. Institute
of Animal Morphology imeni A. N. Severtsov, Academy of Sciences USSR.

VINOGRADOV, P.M.

Diamond drawing dies. Standartizatsiia 24 no.11:36-39 H '60.
(MIRA 13:11)

(Dies (Metalworking))

VINGGREN, F.H.

Mechanization of heavy work in the construction and operation of
wire broadcasting and communication systems. Vest. svyazi 25 no.7:
1. 11 '65. (MIRA 18:8)

1. Nachal'nik Glavnogo upravleniya gorodskoy i sel'skoy tele-
fonnoy svyazi Ministerstva svyazi SSSR.

VINOGRADOV, I. N., jt. au.

Low-power radio stations in the coal industry. Moskva, Ugletekhizdat, 1949. 166 p.
(50-20458)

TN343.F6

VINOGRADOV, P.N.; LAZARENKO, V.I.

B.M.Furmanev's article "Organization principles of telephone communication".
(From "Ugol'" no.9, 1954). Ugol' 31 no.4:38-39 Ap '56. (MIRA 9:7)
(Mine communication) (Furmanev, B.M.)

VINOGRADOV, P.N.

Toward further development and improvement of rural telephone
systems. Vest. svyazi 24 no.6:1-2 Je '64. (MIRA 17:11)

1. Nachal'nik Glavnogo upravleniya gorodskoy i sel'skoy telefonnoy
svyazi i radiofikatsii Ministerstva svyazi SSSR.

USSR / Farm Animals. Small Horned Stock.

Q-3

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54795.

Author : ~~Vinogradov, P. P.~~

Inst : Not given.

Title : On the Anatomy of the Brain and Brain Membranes of the Karakul Sheep.

Orig Pub: Nauchn. tr. Uzb. s.-kh. in-t, 1956, 10, 195-197.

Abstract: The brain of 12 Karakul sheep was studied macroscopically. It was established that the average length of the brain is 8 to 8.8 cm., length of the cerebral hemispheres - 6.5 to 6.7 cm., length of the cerebellum - 2.5 to 2.8 cm., its width in the region of cerebral hemispheres - 5.6 to 6.3 cm., length of hypophysis - 1 to 1.2 cm., and its width - 0.5 to 0.6 cm. The peculiarities of different parts of the brain, as well as of its membranes and of the cranial cavity, are described.

Card 1/1

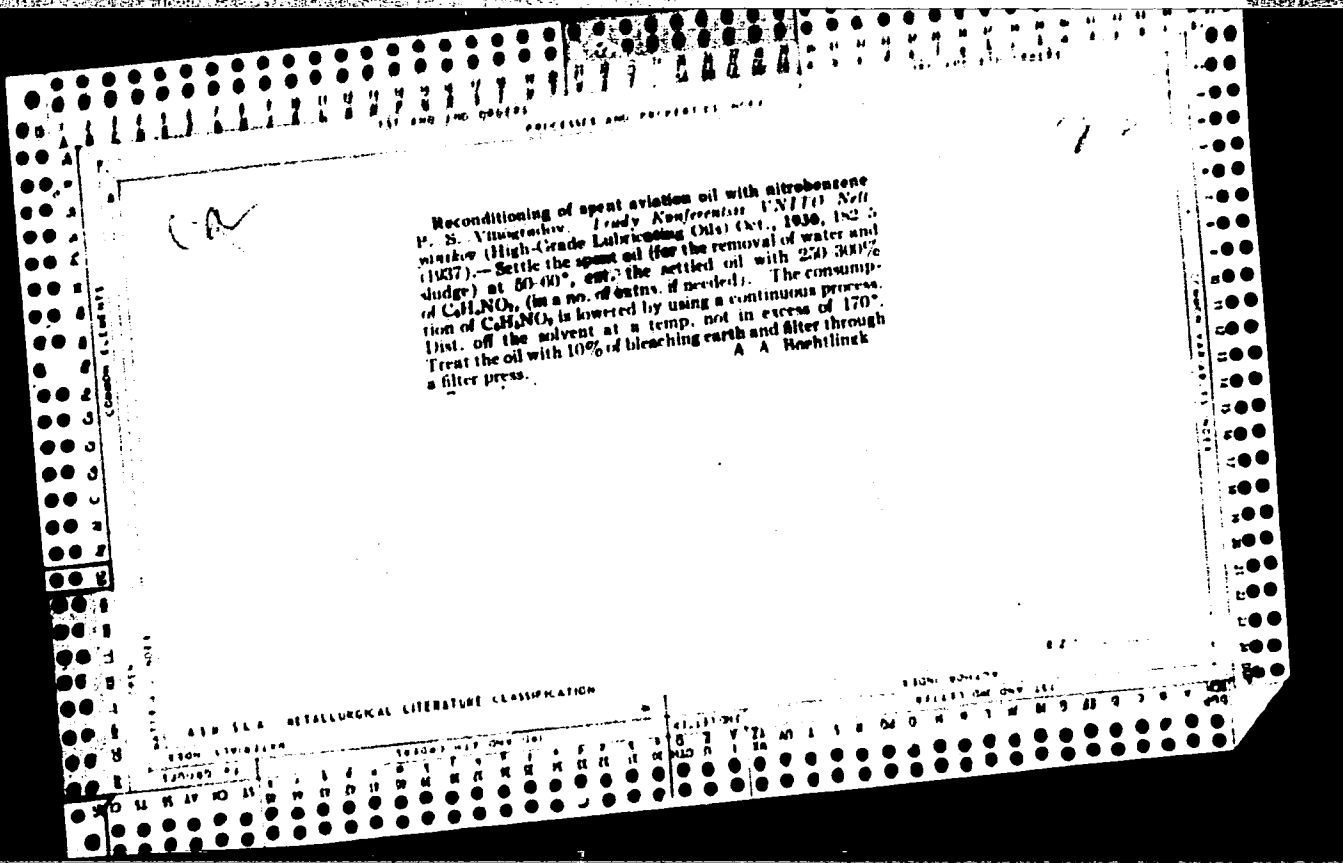
45

VINOGRADOV, P. S.

Grinding and Polishing

Universal sine device for grinding parts under two angles. Stan. 1 instr. 24,
No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.



VINOGRADOV, P.V., starshiy prepodavatel'

Lowering production costs and increasing the profit margin in the
petroleum production enterprises of the Kuybyshev Economic Council.
Trudy MINKHIGP no.30:29-61 '59. (MIRA 14:5)
(Kuybyshev Province--Oil fields--Production methods)

PNOMARENKO, A.V., ispolnyayushchiy obyazannosti dotsenta; VINOGRADOV, P.Y.;
starshiy nauchnyy sotrudnik; MIKHAYLOV, K.G., agronom-entomolog;
IYERUSALIMSKAYA, K.P., studentka

Controlling soil pests in checkrowed corn fields. Zashch. rast.
ot vred. i bol. 5 no.4:24-27 Ap '60. (MIRA 13:9)

1. Rostovskiy universitet (for Ponomarenko, Iyerusalimskaya).
2. Zernogradskaya selektsionnaya stantsiya (for Vinogradov).
3. Sal'skiy nablyudatel'nyy punkt (for Mikhaylov).
(Corn (Maize))—Diseases and pests)

VINOGRADOV, P.V.; OLEYNIKOV, M.L.

Faulty design of the Tishleev rat trap. Gig. i san. 24 no.9:86 S '59.
(MIRA 13:1)

1. Iz Kaliningradskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(RATS--~~EXTERMINATION~~)

8(5), 18(5)

SOV/112-59-4-7128

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 4, p 101 (USSR)

AUTHOR: Vinogradov, P. V.

TITLE: Testing a Water-Lifting Electrical Winch for Deep Wells

PERIODICAL: Tr. Turkm. s.-kh. in-ta, 1957, Vol 9, pp 159-176

ABSTRACT: Bibliographic entry.

Card 1/1

VINOGRADOV, P.V., nauchnyy sotrudnik

Eliminate discrepancies. Zashch. rast. ot vred. i bol. 3 no.1:45-46
Ja-F '58. (MIRA 11:3)

1. Zernogradskaya selektsionnaya stantsiya.
(Plants, Protection of)

VINOGRADOV, P.V.

USSR/Cultivated Plants - Grains

M-4

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1514

Author : ~~P.V. Vinogradov~~

Inst : Not Given

Title : Reasons for the Scarcity of Young Corn Crops in Kidus

Orig Pub : Kukuruzza, 1956, No 6, 17-19

Abstract : The data from 5 areas investigated in two "kolkhozes" of the Sla'skiy Rayon (Rostovskaya Oblast' in 1956). The amount of empty nidus of the young corn crops depends on the non-sifting of seed by sowing machines (2-8%), the trimming of plants by cultivators (6 - 8%), seed damage through disease (4 - 10%), injury by soil pests (6 - 10%) and less through birds and Siberian marmots (when the crops are still in their early stages).

Card : 1/1

VINOGRADOV, P.V., nauchnyy sotrudnik

Chick-pea miner *Liriomyza cicerina* Rd. Zashch. rast. ot vred. i
bol. 4 no.5:56 S-0 '59. (MIRA 16:1)
(Rostov Province--Chick-pea--Diseases and pests)
(Rostov Province--Leaf miners--Extermination)

VINOGRADOV, P.Y., nauchnyy sotrudnik; MALYAROV, V.Ye., agronom

In the Sal Steppes. Zashch.rast.ot vred. i bol. 3 no.6:25-26
N-D '58. (MIRA 11:12)

1. Zernogradskaya gosselekstantsiya (for Vinogradov). 2. Kolkhoz
imeni Stalina, Sal'skogo rayona, Rostovskoy oblasti (for Malyarov).
(Sal Steppe--Agricultural pests)

VINOGRADOV, P.V.

Millet

Foxtail millet pests and their control. Sel. 1 sem., 19, No. 4, 1952.

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

VINOGRADOV, P.V.

Insecticides

Foxtail millet pests and their control. Sel. i sem., 19, No. 4, 1952.

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

VINOGRADOV, P.V.

Agricultural Pests

Foxtail millet pests and their control. Sel. i sem. 19 No. 4, 1952.

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

1. VINOGRADOV, P.V.
2. USSR (600)
4. Wheat - Diseases and Pests
7. Damaging of spring wheat by the seed-eating typhus. Sel.i sem. 19 no.10, 1952.

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

1. VINOGRADOV, P. V.
2. USSR (600)
4. Weevils
7. Grain weevil. Priroda 41 no. 10, 1952.

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

BIBLIOGRAPHY, R.

On Jet Propulsion Engines & K. E. Tsiolkovsky,
Theorist, Designer (Co-Author)

Soviet Source; P; Ogonek #18 May 46, Moscow

Abstracted in USAF "Treasure Island", on file in
Library of Congress, Air Information Division,
Report No. 82022

VINOGRADOV, R.

Subject : USSR/Aeronautics AID P - 1818
Card 1/1 Pub. 35 - 13/18
Authors : ~~Vinogradov, R.~~ Eng. Major, Dotsent, Kand. of Tech. Sci.
and ~~Minayev, A.~~, Eng.
Title : Soviet jet aircraft fighters
Periodical : Vest. voz. flota, 3, 68-78, Mr 1955
Abstract : The author gives a short history of the development
of fighter aircraft in Russia from 1915 up to recent
times. The MIG-15 is described as the last aircraft.
Diagrams, graphs and photos.
Institution: None
Submitted : No date

VINOGRADOV, R.

RT-837 (A process of successive approximations for finding characteristic values and characteristic vectors) Protsess posledovatel'nykh priblizhenii dlia otyskania sobstvennykh chisel i sobstvennykh vektorov.
DOKLADY AKADEMII NAUK SSSR, 83(2): 173-174, 1952.

VINOGRADOV, A.

History of Mathematics, Biography (2795)

Vest. Vozdushnogo Flota, No. 6, 1953, pp 71-76

An Outstanding Soviet Scientist (The 65th Anniversary of the Birth of V. P. Vetchinkin)

A short outline of the scientific activity of V. P. Vetchinkin.

SO: Referativnyi Zhurnal -- Matematika, No. 3, 1954 (W-30007)

VINOGRADOV, R. and MINAYEV, A.

"Soviet Jet Fighter Planes," Vest. Vozd. Flot., No.3, pp 66-78, 1955

Translation F-TS-8576/V

VINOGRADOV, R., kandidat tekhnicheskikh nauk; ZAYTSEV, V., kandidat
tekhnicheskikh nauk

YAK-18 airplane. Kryl. rod. 3 no.1:22-24 Ja '52. (MIRA 8:8)
(Airplanes)

VII
AID P - 2647

Subject : USSR/Aeronautics
Card 1/1 Pub. 135 - 2/17
Author : Vinogradov, R., Major Eng., Dots., Kand. Tech. Sci.
Title : Tsiolkovskiy, K. E. and contemporary aviation
Periodical : Vest. vozd. flota, 9, 9-16, S 1955
Abstract : A brief review of Tsiolkovskiy's work, mainly in the field of rockets and jet-propelled aircraft.
Institution : None
Submitted : No date

VINOGRADOV, R.; ZAYTSEV, V.

Scientist-innovator. Kryl.rod. 2 no.6:10-11 Je '51.
(MIRA 8:8)

(Vetchinkin, Vladimir Petrovich, 1888-1950)

VINCGRADCV, R.

On "Aerial" type of Jet-Propulsion Engines

Soviet Source: P: Ogonek #18 (Moscow May 46)
Abstracted in USAF "Treasure Island", on file in Library of Congress, Air Information
Division, Report No. 77574.

VINOGRADOV, R. (CO-AUTHOR)

On-Helicopter "TsAGI 1-EA", and others; designers Yur'yev and Bratukhin

Soviet Source: P: Ogonek # 20, Moscow May 1946

Abstracted in USAF "Treasure Island", on file in Library of Congress, Air Information Division, Report No. 77798.

VINOGRADOV, R.A.

Machine tool unit with a lifting table. *Biul.tekh.-ekon.inform.*
Gos.nauch.-issl.inst.nauch.i *tekh.inform.* 18 no.1:31-32 Ja '65.
(MIRA 18:4)

VINOGRADOV, R.I.; LEN'KO, O.N.

Simulating thin-walled structures working in an elastoplastic deformation zone during heating. Izv. vys. ucheb. zav.; av. tekhn. 7 no.3:52-58 '65. (MIRA 18:9)

0901 2015

I 6425-66 ENT(d)/EWT(m)/EWP(w)/EFA/EWP(v)/T-2/EWP(k)/EWP(h)/EWA(h)/ETC(w)
ACC NR: AP5020636 WW/EM SOURCE CODE: UR/0147/65/000/003/0052/0058

AUTHOR: Vinogradov, R. I.; Len'ko, O. N.

84
85

ORG: None

TITLE: Modeling of thin-walled structures operating in an elastic-plastic deformation region subjected to heating

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 3, 1965, 52-58

TOPIC TAGS: aerospace structure, supersonic aircraft, model scaling, elastic deformation, elastic stress, plastic deformation, thin walled beam

ABSTRACT: Earlier the authors (Odvukhmasshtabnom modelirovaniy tonkostennykh konstrukt-siy. M., "Stroitel'naya mekhanika i raschet sooruzheniy," No. 1, 1963) examined the similarity criteria for thin-walled structures without heating. The present article examines the similarity condition in the case of heating in the elastic-plastic deformation region, which is characteristic of structural components of supersonic aircraft. The similarity criteria of plastic deformation under dynamic load and the effect of steady-state heating are employed, as are the similarity criteria of elastic deformation under dynamic load and the effect of non-steady-state heating. The fundamental equations of plasticity theory and the dynamic equations of equilibrium and deformation from elasticity theory are employed to derive the similarity criteria. Orig. art. has: 23 formulas.

UDC: 539.3+629.13.01

SUB CODE: AS / SUBM DATE: 18Feb64 / ORIG REF: 004 / OTH REF: 001

Card 1/1 BC

L 55020-65 EWT(d)/EWT(m)/EWP(r)/T-2/EWP(r)/EWP(r) File Ref EM

ACCESSION NR: AP5015554

LR 0266 65 000 008/008/0098
629.135/138

AUTHOR: Vinogradov, R. I.; Vinogradov, I. N.

TITLE: Automatic flapping wing. Class 62, No. 170305

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 98

TOPIC TAGS: flapping wing²⁻⁴, flapping wing glider, airframe component

ABSTRACT: An Author Certificate has been issued for an automatic flapping wing for gliders. It consists of a nose section outfitted with ribs, tail section, double-wall and auxiliary longerons, dove-tailed blades flexibly mounted on the streamlined ribbing, and components for joining the wing to the fuselage. A servoactuator is mounted on the double-wall longeron for the purpose of maintaining the center of gravity of the oscillating wing frame at a point near the longeron axis, for increasing the dynamic properties of the wing and for assuring damping. This servoactuator is connected to a reducer and weight balance which produces the automatic oscillation

Card 1/2

L 55020-65

ACCESSION NR: AP5015554

of the wing. The initial oscillating impulse is given by a pneumatic cylinder rod through a support disk fastened to the auxiliary longeron. The panel of the wing is hinged to the fuselage by a bracket connected with a horizontal damper and with a shock-absorber rod. [WH]

ASSOCIATION: none

SUBMITTED: 25Nov63

NO REF SOV: 000

ENCL: 09

OTHER: 000

SUB CODE: AC

ATD PRESS: 4027

Card 2/2

86-58-4-16/27

AUTHOR: Vinogradov, R. I., Engineer, Lt Col, Docent, Candidate of Technical Sciences; Bogdanov, A. P., Engr-Capt

TITLE: Aerodynamical configuration of a Supersonic Aircraft (Aerodynamicheskaya komponovka sverkhzvukovogo samoleta)

PERIODICAL: Vestnik vozdushnogo flota, Nr 4, 1958, pp 55-63, (USSR)

ABSTRACT: First the author discusses the general peculiarities of the configuration of a supersonic aircraft and presents in Fig. 1 a table of classified aerodynamical configuration of such an aircraft based on two main features: the configuration of the wing and the arrangement of the empennage. He divides the whole range of speeds into subsonic, transonic, supersonic and hypersonic regions and describes each region separately. He indicates that the transition from subsonic to supersonic speeds is bound with the problem of overcoming the additional (wave) resistance which increases greatly in the transonic region, and that the character and the magnitude of the change of the coefficient of wave resistance of an aircraft, with respect to velocity, depend on the wave resistance of the parts and their location on that aircraft.

Card 1/3

86-58-4-16/27

Aerodynamic Configuration of a Supersonic Aircraft

The author also discusses how the form and the aspect ratio of a wing, the form and relative thickness of an airfoil affect the character of the flow of wave resistance of a wing. In Fig. 2 he presents a diagram showing the dependence of the coefficient of head resistance of an aircraft on M at zero lift force. In Fig. 3 the graph shows the interdependence between the relative thickness of the airfoil and M critical for an arrow and a rectilinear wing. In Fig. 4 he shows the influence of the relative thickness of airfoil on the coefficient of wave resistance at its maximum value.

Further the author analyzes the aircraft with respect to their wing form. He analyzes separately various aircraft, aircraft with a triangular wing, rectilinear wing, arrow wing, an aircraft with a wing in the form of a ring (Fig. 5), an aircraft with a circular wing (aircraft-saucer Fig. 6), an aircraft without a horizontal empennage (tailless aircraft or flying wing), an aircraft with the horizontal empennage located in the rear, and an aircraft with the horizontal empennage located in the front. (aircraft-duck)

Finally the author mentions the constructional changes in the wings which should improve their aerodynamical characteristics during take-off and landing at low speeds and which he calls the mechanization of the wing. He discusses also the following

Card 2/3

86-58-4-16/27

Aerodynamic Configuration of a Supersonic Aircraft

prospective means of mechanization of supersonic aircraft: the jet flap, the control of the boundary layer, the variable sweep-back of the wing (Fig. 7), and the variation of the angle of a wing's setting.

There are three schematic drawings, three diagrams, and one photo.

AVAILABLE: Library of Congress

1. Airplanes - Supersonic characteristics
2. Airfoils - Supersonic characteristics
3. Airplanes - Aerodynamic characteristics

Card 3/3

PHASE I BOOK EXPLOITATION

SOV/5826

Vinogradov, Rostislav Ivanovich, and Aleksey Vasil'yevich Minayev

Samolety SSSR; kratkiy ocherk razvitiya (Aircraft in the USSR; a Brief Outline of Their Development) 2d ed., rev. and enl. Moscow, Voenizdat M-va obor. SSSR, 1961. 297 p. 11,500 copies printed.

Ed.: N. P. Gordeyev; Tech. Ed.: T. F. Myasnikova.

PURPOSE: This book is intended for students at aviation schools, flying and technical personnel of the Soviet Air Force, Civil Air Fleet, and All-Union Voluntary Society for the Promotion of the Army, Aviation and Navy, and for general readers.

COVERAGE: The book is concerned primarily with the development of airplanes under the Soviet administration. Ch. I, which deals with the invention of the airplane and the beginning of Russian airplane construction, contains information on A. F. Mozhayskiy, who, according to the authors, was the inventor of the airplane. Only typical airplanes and those which have contributed to the development of aircraft designs are presented. Photographs, drawings, and concise

Card 1/5

Aircraft in the USSR (cont.)

SOV/5826

performance characteristics of some airplanes are included. The authors have drawn much of their source material from the Tsentral'nyy Gosudarstvennyy voyenno-istoricheskii arkhiv (Central State Archives of Military History) and the Tsentral'nyy Gosudarstvennyy arkhiv Krasnoy Armii (Central State Archives of the Red Army). No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Preface	3
Ch. I. Invention of the Airplane and the Beginning of Russian Airplane Construction	5
The invention of the first airplane	5
The inception of aeronautical science	17
Beginning of Russian airplane construction	22
Ch. II. The First Heavy and Maneuverable Airplanes	29
Developing heavy airplanes	29
Developing light maneuverable airplanes	35
Developing seaplanes	42
The development of Russian aeronautical science	43

Card 2/5

VINOGRADOV, Rostislav Ivanovich; MINAYEV, Aleksey Vasil'yevich; PISAREV, M.S.,
Inzhener-polkovnik, redaktor; SOLOMOVICH, B.L., tekhnicheskiy redaktor.

[Brief study of the development of airplanes in the U.S.S.R.] Kratkiy
oчерk razvitiia samoletov v SSSR. Moskva, Voen. izd-vo Ministerstva
oborony SSSR, 1956. 254 p. (MLRA 9:5)
(Aeronautics--History)

ACC NR: AP6035934

SOURCE CODE: UR/0413/66/000/020/0196/0197

INVENTOR: Vinogradov, I. N.; Andreyev, V. M.; Vinogradov, R. I.

ORG: none

TITLE: Flapping-wing motorcycle [Engine-powered ornithopter mounted on a motorcycle frame]. Class 62, No. 187533

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 196-197

TOPIC TAGS: ~~xxxxxx~~, STOL aircraft, research aircraft, unconventional aircraft, ornithopter

ABSTRACT: An Author Certificate has been issued for an engine-powered ornithopter resembling a monoplane equipped with a folded flapping wing with feather-like blades on the tips. The wings are mounted on the frame of a motorcycle together with a horizontal tail unit, control vanes, a drive, and a system of mechanisms for effecting their flapping motion. To increase wing efficiency, between the feather-like blades' drive gear and longerons is a mechanism for automatically changing the blades' angle of attack; this mechanism consists of a support (articulately attached to the first section of the wing and connected by a pull rod with a lever on the drive shaft) and a round deflecting balancer (attached to the traverse of the end rib of the second section of the wing and attached to the support through a ball, and

Card 1/2

UDC: 629.135/138

ACC NR: AP6035934

the other end is connected with to the crank of the second wing section, which is connected by pull rods with the longerons of the feather-like blades). In order to free the drive mechanism of the wing's natural vibrations, a compensating cross-piece suspension is used, which is connected by a pull rod with the drive-mechanism.cam; at the other end it is connected to a cantilever of the first section of the wing. Orig. art. has: 1 figure.

SUB CODE: 01/ SUBM DATE: 30Dec64

Card 2/2

VINOGRADOV, R.¹; inzhener-mayor; ZAYTSEV, V., inzhener-mayor.

Soviet all-metal airplanes. Vest.Vozd.Fl. 34 no.11:57-67 H '51.
(Airplanes--Design and construction) (MIRA 8:3)

VINOGRADOV, R. and MINAYEV, A.

"Soviet Jet Fighter Planes," Vest. Vozd. Flota, No.3, pp 68-78, 1955

Summary of article D 306363, 11 Jul 55

VINOGRADOV, R. I.

AID P - 4990

Subject : USSR/Aeronautics - bibliography
Card 1/1 Pub. 135 - 18/26
Author : Not given
Title : Development of airplanes in our country
Periodical : Vest. vozd. flota, 9, 81, S 1956
Abstract : Critical review of the book Kratkiy Ocherk Razvitiya Samoletov v SSSR (Short Outline of Development of Airplanes in USSR), by R. I. Vinogradov, A. V. Minayev. Published by the Defense Ministry of USSR, Moskva, 1956, 256 pages.
Institution : None
Submitted : No date

S/143/62/000/012/004/005
D238/D308

AUTHOR: Vinogradov, R.I., Candidate of Technical Sciences
TITLE: The aerodynamic characteristics of a windwheel with self-oscillating blades
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, no. 12, 1962, 86-94

TEXT: Experiments were carried out in a closed-jet wind tunnel on windwheel models with normal (fixed) blades and with blades fitted flexibly, to: (a) demonstrate any advantageous dynamic effect occurring as a result of steady-state self-oscillations of the blades and (b) bring out the possibility of operating windwheels with oscillating blades without prejudicing mechanical strength and without infringing the safety of the operating personnel. The experimental windwheels had a diameter of 0.6 m, carrying 3 blades and with a single-component blade oscillation (torsional oscillations). The blades were mounted freely on the hub by a flexible coupling providing steady-state oscillations of the blades at wind speeds as low as 3 m/sec.

Card 1/3

S/143/62/000/012/004/005
D238/D308

The aerodynamic characteristics ...

The following parameters were measured during the experiments: speed of the windwheel; torsional displacements of the blades and the oscillating frequencies; time variation in the moment of the windwheel; variation in the stream velocity in the wind tunnel in front of the windwheel. It was found that self-oscillating blades on high-speed wind machines result in a higher starting and run-up characteristics of the high-speed windwheel approach those of the slow-speed windwheel employing the normal type of blade fixing. Self-oscillating blades thus combine in one unit the properties of high and low-speed windwheels and extend the range of high-speed wind machines. Self-oscillating blades increase the wind utilization factor on average by 15 to 20%, depending on the angle of advance. Variation of the stream or wind velocity has practically no effect on the amplitude of steady-state oscillations. The self-oscillations collapse with a very sharp increase in the wind-stream velocity. The self-oscillation conditions can be regulated by means of movable equalizers or interchangeable flexible elements. Blades with freely or flexibly mounted wing flaps on the trailing edge of the vane provide a lower critical self-oscillation speed, which favorably influences the

Card 2/3

The aerodynamic characteristics ...

S/143/062/000/012/004/005
D238/D308

starting moment. The theoretical and experimental data point to the possibility of employing blade self-oscillation for the purpose of improving the aerodynamic characteristics of windwheels. There are 7 figures.

SUBMITTED: January 9, 1962

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Card 3/3

VINOGRADOV, R.I., kand.tekhn.nauk; KUVYCHKIN, V.I., inzh.

Racing boat with underwater wings. Sudostroenie 28 no.6:51
Je '62. (MIRA 15:6)
(Planing hulls) (Motorboats)

VINOGRADOV, R I

1(2);1(3)

PHASE I BOOK EXPLOITATION

SOV/2307

Bogdanov, Aleksandr Pavlovich, Rostislav Ivanovich Vinogradov, and
Konstantin Dmitriyevich Mirtov

Sbornik zadach po konstruktsii i prochnosti samoletov (Collection of
Problems on Aircraft Constructipn and Strength) Moscow, Oborongiz,
1959. 230 p. Errata slip inserted. 7,000 copies printed.

Reviewer: Kh. S. Khazanov, Candidate of Technical Sciences, Docent;
Ed.: A.M. Yarunin, Engineer; Ed. of Publishing House: L.A.
Belyayeva; Tech. Ed.: N.A. Fukhlikova; Managing Ed.: A.I. So-
kolov, Engineer.

PURPOSE: This text book was approved by the Ministry of Higher
Education of the USSR for students of aeronautics vuzes and depart-
ments.

COVERAGE: This collection of problems on the design and strength of
aircraft was compiled for the course: "Strength analysis of air-

Card 1/4

Collection of Problems on Aircraft (Cont.)

SOV/2307

craft" and " Construction and design of aircraft". It is intended to aid students to solve engineering and analytical problems under the supervision of instructors and independently.

TABLE OF CONTENTS:

Procedural instructions	3
Ch. I. Forces Acting on Aircraft	5
1. Forces and overloads acting on aircraft in flight	5
2. Flight loading conditions and maximum characteristics	20
Ch. II. Wing	27
1. Wing load and stresses in wing sections	27
2. Calculations for frame elements	45
3. Stresses in wing sections	51
4. Analysis of wing components	66
Ch. III. Ailerons, Empennages, Control	102
1. Ailerons	102
2. Tail unit	111

Card 2/4

Collection of Problems on Aircraft (Cont.)	SOV/2307
3. Control	116
Ch. IV. Empennage and Wing Vibration. Aeroelasticity	125
Ch. V. Fuselage and Engine Mounts	130
1. Fuselage	130
2. Engine mounts	151
Ch. VI. Landing Gear	160
1. Analysis of shock absorbers	160
2. Strength analysis of landing gears	168
Ch. VII. Aircraft Control	178
Ch. VIII. Emergency Crew Rescue Devices, Air-tight Cabins, De-termination of Aircraft Parameters, and Centering	189
Appendixes	
Card 3/ 4	

Collection of Problems on Aircraft (Cont.)	SOV/2307
I. Table of the International Standard Atmosphere	196
II. Characteristics of Aeronautic Airfoils	199
III. Graphs for Longitudinal Bending Analysis of Bars	218
IV. Values of the Coefficient k in Relation to Conditions of Support and Loading of Plates	228

AVAILABLE: Library of Congress

Card 4/4

IS/bg
9-18-59

VINOGRADOV, R. I. (Riga)

Relationship between parameters of the vortex inverted
path and Strouhal's number. Izv. vys. ucheb. zav.; av. tekhn. 2
no. 4:14-25 '59. (MIRA 13:4)
(Vortex motion)

VINOGRADOV, R.I., inzh.-podpolkovnik, dots., kand. tekhn. nauk; BOGDANOV,
A.P., inzh.-kapitan.

Aerodynamic composition of supersonic plane. Vest. Vozd. Fl. 40
no.4:55-63 Ap '58. (MIRA 11:4)
(Aerodynamics, Supersonic)

S/115/62/000/006/003/005
E194/E435

AUTHOR: Vinogradov, R.I.

TITLE: A new design of strain gauge pressure transducer

PERIODICAL: Izmeritel'naya tekhnika, no.6, 1962, 20-23

TEXT: Small cylindrical wire strain gauges may be used with normal strain gauge procedures and recording on an electromagnetic oscillograph to measure rapidly changing gas pressures. The sensitive element is a short thin walled cylinder supported by constantan wires. Away from the supporting frame, changes of pressure alter only the tension in the thin walled cylinder and gauges, whilst near the frame there is also bending and the short cylinder is affected by bending over its entire length, which increases the sensitivity. Approximate formulae are given for selection of element geometry to ensure high sensitivity and indeed the sensitivity is appreciably higher than that of membrane type gauges of similar size. Also, the new gauges are more reliable. Constantan wire 0.03 mm diameter is wound lengthwise on a cylindrical frame to which an elastic film is then secured to form the cylinder. For pressures in the range from 0.0001 to Card 1/2

A new design of strain ...

S/115/62/000/006/003/005
E194/E435

10 atm, rubber or polyethylene tapes are used, for higher pressures smooth or corrugated metal foil is used. For pressures above about 1 atm, wires are wound around the cylinder as well as lengthwise. The wires are wound with some initial tension to improve the frequency characteristics and stability. A differential pressure gauge is described which employs two elastic cylinders; gas at one pressure is delivered to the space between the cylinders and at the other to the surrounding inner and outer spaces. Practical design recommendations are made for pressure gauges to suit various conditions of use and pressures including recommendations concerning optimum frequency in relation to gas conditions and the type of oscillograph elements used. Static and dynamic calibration, the latter using crank driven piston arrangement, are briefly discussed. There are 4 figures.

Card 2/2

ACC NR: AP6036857

SOURCE CODE: UR/0147/66/000/004/0068/0074

AUTHOR: Vinogradov, R. I.

ORG: none

TITLE: Using the method of variation of similarity constants in the project design of aircraft 210 /

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1966, 68-74

TOPIC TAGS: aeronautics, research aircraft, aircraft test, test model, model scaling, model test, similarity theory

ABSTRACT: A method of varying similarity constants for the analysis of aircraft configurations is outlined which makes it possible to obtain a great number of new configurations with oscillating elements. This method consists in varying the similarity constants with respect to defining parameters, that is, those which are contained in similarity criteria of the phenomena considered here. In this case, it is possible to go from an initial model through the entire spectrum of configurations differing structurally from one another but able to operate regularly. This makes it possible to select the optimal configurations from those obtained and to use the results obtained from one model for carrying out design calculations for structurally different configurations. This method is applied here to the analysis

Card 1/2

UDC: 629.19.02

ACC NR: AP6036857

of aircraft configurations with an oscillating element (semirigid wing or its section). The defining parameters are frequency characteristics of the model. Three types of configurations are presented as an illustrative example. Orig. art. has: 5 figures and 11 formulas.

SUB CODE: 01/ SUBM DATE: 28Dec65/ ORIG REF: 004/ ATD PRESS: 5106

Card 2/2

VINOGRADOV, Rotislav Ivanovich; MINAYEV, Aleksey Vasil'yevich; GORDEYEV,
N.P., red.; MYASNIKOVA, T.F., tekhn. red.

[Airplanes of the U.S.S.R.] Samolety SSSR; kratkii ocherk razvitiia.
Izd.2., perer. i dop. Moskva, Voen. izd-vo M-va obr. SSSR, 1961.
297 p. (MIRA 14:11)

(Airplanes)

ВИНГРАДОВ, БОРИСЛАВ ПЕТРОВИЧ

Советы СССР; kratkiy ocherk nauchnykh [i] E.I. Vinogradov
[i] A.N. Minayev. Izd. 2., pecher. i dop. Moskva, Voenizdat, 1961.

297 p. illus., diagrs., graphs, ports., tables.

Bibliographical footnotes.

68929
S/147/59/000/04/002/020
E191/E481

10.2000

AUTHOR: Vinogradov, R.I. (Riga)
TITLE: Relation of the Parameters of the Inverse Vortex Street and the Strouhal Number

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 14-25 (USSR)

ABSTRACT: In determining the forces which act on a wing at constant amplitudes of oscillation in plane incompressible flow, it is convenient to use the hydrodynamic analogy of the vortex wake suggested by Golubev (Ref 1). A chessboard vortex street forms behind the wing similar to the drag vortex street but with an opposite sense of rotation. The basic parameter of the inverse vortex street (ratio of street width to vortex pitch) is independent of the Strouhal Number in a given range of Reynolds Numbers and is equal to 0.281 for any oscillation law. The street width is equal to the oscillation amplitude. The velocity of the vortices is obtained from the formula for the drag street by substituting the inverse rotation in the Karman formula. These assumptions have proved valid only for special oscillations. Generally, the

Card 1/3

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6892
S/147/59/000/04/002/020
E191/E481

Relation of the Parameters of the Inverse Vortex Street and the Strouhal Number

drag and lift of the oscillating wing can be obtained by substituting a function of the Strouhal Number for the width/pitch ratio and another function for the vortex velocity. It follows from experimental evidence that the width/pitch ratio and the vortex velocity are pronounced functions of the Strouhal Number in the range of 0.05 to 1.0, that the width/pitch ratio varies in time for each pair of vortices and that, generally, the amplitudes of oscillation are substantially smaller than the vortex street width. The interpretation of many frames obtained by motion photography has shown that averaging does not give a true picture. Different mutual dispositions of vortices exist at different instants of time. The wake oscillates about a mean position at the frequency of wing oscillations. With zero phase between the torsional and flexural wing oscillations, the chessboard pattern vanishes. At 90° phase, the most pronounced inverse vortex streets are observed. The life of a pair of

Card 2/3

68929
S/147/59/000/04/002/020
E191/E481

Relation of the Parameters of the Inverse Vortex Street and the Strouhal Number

vortices is divided into three periods. In the first period, the vortices are established and the street widens; in the second period, the mean limiting value of the width is maintained and in the third period, the vortices diverge. A brief analysis leads to a formulation of the width/pitch ratio and the vortex velocity as functions of the Strouhal Number. During the first two periods of the vortex life, the pitch remains constant. The width changes in time as a result of the viscosity of the flow. Analysis with the formulae given in the paper yields to satisfactory agreement with experiment and the derived value of the width/pitch ratio can be used to compute the drag, lift and efficiency of the oscillating wing in accordance with the formulae of V.V.Golubev. There are 10 figures, 1 table and 3 Soviet references.

SUBMITTED: April 30, 1959
Card 3/3

4

Vinogradov PHASE I BOOK EXPLOITATION 161

Vinogradov, Rostislav Ivanovich, and Minayev, Aleksey Vasil'yevich
Kratkiy ocherk razvitiya samoletov v SSSR (Brief Outline of Aircraft
Development in the USSR) Moscow, Voen. izd-vo Min-va obor. SSSR,
1956. 254 p. No. of copies printed not given.

Ed.: Pisarev, M.S., Engineer-Colonel; Tech. Ed.: Solomonik, R.L.

PURPOSE: The book is intended for students at aeronautical
engineering schools and for the flying and technical personnel of
the Air Force and the All-Union Voluntary Society for the Promotion
of the Army, Aviation, and Navy.

COVERAGE: The book contains a historical outline on the development
of Russian aircraft, beginning with A.F. Mozhayskiy's plane and
embracing contemporary high-speed jet aircraft. It was compiled
from archive material; part of it was published before in magazines,
part is published for the first time. No personalities are
mentioned. There are 51 references, of which 50 are Soviet and 1
German.

Card 1/4

Brief Outline of Aircraft Development in the USSR From the Authors	161
Ch. I. Creation of the Airplane and the Beginning of Russian Airplane Construction	3
Creation of the first airplane	7
Birth of aeronautical science	7
Beginning of Russian airplane construction	24
Ch. II. The First Heavy and Maneuverable Airplanes	31
Development of heavy aircraft	41
Development of light maneuverable aircraft	46
Development of seaplanes	52
Ch. III. Development of Bombers, Fighters and Reconnaissance Airplanes	59
Heavy bomber biplanes	62
Maneuverable fighter-biplanes	62
Reconnaissance airplanes	73
	86

Card 2/4

Brief Outline of Aircraft Development in the USSR	161
Reconnaissance seaplanes	89
Ch. IV. Beginning of Soviet Airplane Construction	95
The first Soviet airplanes	100
Beginning of all-metal airplane construction	104
Ch. V. Establishment of the Soviet School of Aircraft Design	111
Heavy monoplanes	113
Development of maneuverable fighter planes	137
Attack planes	149
Reconnaissance planes	150
Civil aircraft	155
Training and special airplanes	159
Ch. VI. Development of High-speed Aircraft	162
The first high-speed monoplanes	162
Card 3/4	

Brief Outline of Aircraft Development in the USSR	161
High-speed maneuverable fighter planes	169
From "air cruiser" to high-speed medium bomber	180
High-speed heavy aircraft	191
High-speed attack planes	196
High-speed civil aircraft	200
Ch. VII. Aircraft of the Second World War	207
Development of new combat planes	207
Development of combat planes in the course of the Second World War	218
Ch. VIII. Postwar Aircraft Construction	235
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Card 4/4