

5(4)

AUTHORS:

Vorob'yev, A. F., Skuratov, S. M.

SOV/76-32-11-19/32

TITLE:

Using the Electric Arc in Calorimetry (Ispol'zovaniye elektri-
cheskoy dugi v kalorimetrii)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 11, pp 2580-2585
(USSR)

ABSTRACT:

A special calorimetric bomb was constructed (Fig). The combustion of the sample is carried out by means of an electric arc formed between a tungsten electrode and the shell (for the sample) made of tantalum or heat resistant steel. An open calorimeter with an isothermal water jacket was used. In the latter the temperature was exactly maintained at 0.01°. To determine the energy of the electric arc a special electrodynamic d.c. meter was constructed (with V. A. Matsnev, Engineer, taking part in this work). The results obtained in calibrating the meter are given (Table 1). The heat value of the calorimeter was determined according to the diathermal method. A standard benzoic acid was used that had been synthesized by the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D. I. Mendeleeva (All-Union Scientific Research

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SOV/76-32-11-19/32

Using the Electric Arc in Calorimetry

Institute for Metrology imeni D. I. Mendeleev). The obtained values are given (Tables 2 and 2a). The enthalpy of the magnesium oxide formation was determined by means of the calorimeter described. The combustion took place at an oxygen pressure of 1.5 atmospheres absolute pressure. The experimental results obtained (Table 3) agree well with the values given in publications (Refs 3-8). It is assumed that the measurement method described will be applied within a wide field of measurements of the heat effects of high-temperature reactions. There are 1 figure, 3 tables, and 9 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 25, 1957

Card 2/2

VOROB'YEV, A.F.; SKURATOV, S.M.

Standard enthalpy of formation of carbon tetrafluoride.
Zhur.neorg.khim. 5 no.7:1398-1401 J1 '60.
(MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet. Termokhimi-
cheskaya laboratoriya im. V.F.Luginina.
(Carbon tetrafluoride) (Enthalpy)

VOROB'YEV, A.F.; KOLESOV, V.P.; SKURATOV, S.M.

Standard enthalpy of formation of silicon tetrachloride.
Zhur.neorg.khim. 5 no.7:1402-1408 J1 '60.
(MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet. Termokhimicheskaya
laboratoriya im. V.F.Luginina.
(Silicon chloride)

S/076/60/034/05/36/038
B010/B003

AUTHORS: Vorob'yev, A. F., Privalova, N. M., Skuratov, S. M.

TITLE: A Calorimeter for Measuring the Enthalpy of the
Decomposition of Solids

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5,
pp. 1142-1144

TEXT: A calorimeter is described (Fig.), which is used for measuring low thermal effects at high temperatures and the enthalpy of the decomposition of solids. The capacity of the calorimeter in which temperatures up to 700°C can be attained by means of a constantan heating coil, is about 40 ml. The coil produces a temperature of 600-700°C within 7-10 sec after the current was sent through, whereby only 40-80 cal are emitted. The casing of the calorimeter is heated by a second heating element. The difference in temperature between the calorimeter and its casing is determined by means of a mirror galvanometer to within 0.0005°C. Table 1 lists measured values of the water equivalent of the calorimeter

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A Calorimeter for Measuring the Enthalpy of
the Decomposition of Solids

S/076/60/034/05/36/038
B010/B003

with the outer heating element. These values were calculated by the
adiabatic method. For control purposes the water equivalent of the
calorimeter with the inner heating coil was also determined (Table 2,
measured values), and in both cases (Tables 1 and 2) a value of about
72 cal/degree was obtained. There are 1 figure, 2 tables, and 2 Soviet
references.

✓C

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V.
Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 23, 1959

Card 2/2

VOROB'YEV, A.F.; PRIVALOVA, N.M.; KHUAN LI-DAO [Huang Li-Tao]

Determination of the enthalpy of formation of the chlorate ion in aqueous solutions. Vest.Mosk.un. Ser.2:Khim. 13 no.6:27-31 N-D '63. (MIPA 17:4)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

VOROB'YEV, A.F.; PRIVALOVA, N.M.

Enthalpy of formation of anions of oxychloro acids in aqueous solutions. Vest.Mosk.un. Ser.2:Khim. 18 no.6:22-26 N-D '63.
(MIRA 17:4)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

VOROB'YEV, A.F.; PRIVALOVA, N.M.; STOROZHENKO, L.V.; SKURATOV, S.M.

Standard enthalpies of formation of some picrates. Dokl. AN SSSR
135 no.5:1131-1132 D '60. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lononosova.
Predstavleno akademikom A.N.Frumkinym.
(Enthalpy) (Picric acid)

S/020/60/135/006/020/037
B016/B060

11.2110

AUTHORS: Vorobiyev, A. P., Privalova, N. M., Monayenkova, A. S., and Skuratov, S. M.

TITLE: Standard Enthalpies of the Formation of Perchloric Acid and Some Perchlorates

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 6, pp. 1388-1390

TEXT: The authors report on standard formation enthalpies established by them concerning (1) perchlorates of potassium, sodium, and barium, (2) perchloric acid, and (3) perchlorates of lithium, ammonium, calcium, and magnesium. The law by Hess served for calculations in cases (1) and (3). For case (2) the enthalpy was determined by two independent methods: (a) on the basis of the formation enthalpies of $KClO_4$, and (b) of $NaClO_4$, a system of thermochemical equations 1 - 6 being used corresponding to $\Delta H_1 - \Delta H_6$. The resulting equation 6 reads for the case (b):

VC

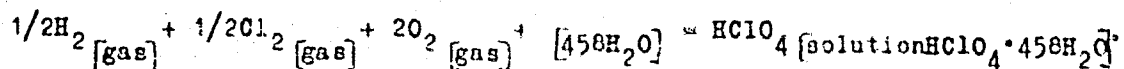
$$\Delta H_6 = \Delta H_1 - \Delta H_2 - \Delta H_3 - \Delta H_4 + \Delta H_5, \text{ or:}$$

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✓c

Standard Enthalpies of the Formation of
Perchloric Acid and Some Perchlorates

S/020/60/135/006/020/037
B016/B060



For the case (a) the concentration of the KClO_4 solution was set equal to $\text{KClO}_4 \cdot 4500\text{H}_2\text{O}$. Correspondingly, the acid and alkali concentration in the reaction of neutralization amounted to $\text{HClO}_4 \cdot 4500\text{H}_2\text{O}$ and $\text{KOH} \cdot 25\text{H}_2\text{O}$, respectively. ΔH_1 was determined on the basis of the data obtained in the first part of the work, ΔH_2 and ΔH_3 were measured experimentally, ΔH_4 and ΔH_5 were taken from the literature. The agreement between the values obtained by methods (a) and (b) confirms their reliability. These values are listed in Table 2. The formation enthalpies of NaCl and KCl were calculated on the basis of data found in the literature. For the formation enthalpy of BaCl_2 the authors based on their own experiments (Table 1) in addition to data by H. Siemonsen (Ref. 3). The enthalpies of perchlorates dealt with in Chapter I were determined by measuring their decomposition enthalpies in corresponding chlorides and oxygen in a massive air-tight microcalori-

Card 2/3

Standard Enthalpies of the Formation of
Perchloric Acid and Some Perchlorates

S/020/60/135/006/020/037
B016/B060

meter devised for the purpose (description in Ref. 1). Table 1 lists the measurement results. (3) Apart from the law by Hess, the thermochemical equations given in Chapter II were used for calculating the formation enthalpies. The dissolution enthalpies of the perchlorates mentioned, the neutralization enthalpies of perchloric acid by CaO and MgO as well as by solutions of LiOH and NH_4OH were measured experimentally. The value

(-29.77 ± 0.17 kcal/mole) found in Chapter II of the article under consideration was used for the formation enthalpy of the HClO_4 solution.

The formation enthalpies of CaO and MgO as well as of the solutions of LiOH and NH_4OH and of liquid water are taken from the literature. Table 3 lists the results. There are 3 tables and 5 references: 2 Soviet, 1 French, and 2 German. ✓

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: July 5, 1960, by A. N. Frumkin, Academician

SUBMITTED: July 5, 1960

Card 3/3

MOLOTKOV, L.F.; YUFEROV, V.M.; KRYZHANOVSKIY, A.L.; SHAFRAN, I.K.;
BOKTUNOV, Ye.M.; SOROCHAN, N.G.; MADZHAR, N.I.; VOROB'YEV, A.F.

Investigating pressures during the rolling of universal strips.
Izv.vys.ucheb.zav.; Chern.Met. 5 no.4:76-81 '62. (MIRA 15:5)

1. Dneprodzerzhinskiy metallurgicheskiy institut i Zavod im.
F.E.Dzerzhinskogo.
(Rolling (Metalwork)) (Pressure)

SKURATOV, S.M.; VOROB'YEV, A.F.; PRIVALOVA, N.M.

Enthalpies of formation of some perchlorates. Zhur.neorg.khim.
7 no.3:677-679 Mr '62. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy universitet.
(Perchlorates) (Enthalpy)

ACCESSION NR: AP3001607

S/0189/63/000/003/0045/0047

AUTHORS: Vorob'yev, A. F.; Skuratov, S. M.

TITLE: Formation enthalpy of ionic compounds

SOURCE: Moscow. Universitet. Vestnik. Seriya 2. Khimiya, no. 3, 1963, 45-47

TOPIC TAGS: ionic compound, enthalpy, diluted solution, infinitely diluted solution, enthalpy of ion formation, enthalpy of ion solution

ABSTRACT: The article presents a procedure developed for determining the formation enthalpies of various compounds. The purpose of the study was to obtain accurate results and to avoid time-consuming experiments. The method used was based on determining the enthalpies of different ions formed in an infinitely diluted solution and also the enthalpy of their solution. The formula used for these determinations was

$$\Delta H_{\text{sol}}(AB_{\text{rs}}) = \Delta H_{\text{sol}}(A_{\text{p-p}}^+) + \Delta H_{\text{sol}}(B_{\text{p-p}}^-) - \Delta H_{\text{p-p}}(AB_{\text{rs}}).$$

Card 1/2

ACCESSION NR: AP3001607

where $\Delta H_{\text{cop}}(AB_{\text{TB}})$ is enthalpy of the formation of a solid AB compound; $\Delta H_{\text{cop}}(A_{\text{p-p}}^{\infty})$ and $\Delta H_{\text{cop}}(B_{\text{p-p}}^{\infty})$ are formation enthalpies of A^+ and B^- ions in an infinitely diluted solution; and $\Delta H_{\text{p-peH}}(AB_{\text{TB}})$ is the solution enthalpy of a solid AB compound to an infinitely diluted solution. Knowing the enthalpy of ion formation in the infinitely diluted solutions and the enthalpy of their solution, the enthalpies of compounds formed by these ions can be calculated. The values of the ion formation enthalpies are found from the equation

$$\Delta H_{\text{cop}}(A_{\text{p-p}}^{\infty}) = \Delta H_{\text{cop}}(AB_{\text{TB}}) + \Delta H_{\text{p-peH}}(AB_{\text{TB}}) - \Delta H_{\text{cop}}(B_{\text{p-p}}^{\infty}).$$

Orig. art. has: 2 formulas.

ASSOCIATION: none

SUBMITTED: 02Apr62

DATE ACQ: 09Jul63

ENCL: 00

SUB CODE: CH, PH

NO REF SOV: 000.

OTHER: 001

Card 2/2

VOROB'YEV, A.F.; SKURATOV, S.M.

Enthalpy of the formation of ionic compounds. Vest. Mosk. un.
Ser. 2: Khim. 18 no.3:45-47 My-Je '63. (MIRA 16:6)

1. Laboratoriya termokhimii Moskovskogo universiteta,
(Chemical compounds) (Ions) (Enthalpy)

VOROB'YEV, A.F.; MONAYENKOVA, A.S.; PRIVALOVA, N.M.; SKURATOV, S.M.

Enthalpy of the formation of OH^- , K^+ , Na^+ , Li^+ ions in aqueous solutions. Vest. Mosk. un. Ser. 2: Khim. 18 no.3:48-51
My-Je '63. (MIRA 16:6)

1. Laboratoriya termokhimii Moskovskogo universiteta.
(Ions) (Enthalpy)

VOROB'YEV, A.F.; PRIVALOVA, N.M.; SKURATOV, S.M.

Enthalpy of formation of halogen anions in aqueous solutions.
Vest.Mosk. un. Ser.2: Khim. 18 no.4:39-45 JI-Ag '63.
(MIRA 16:9)

1. Laboratoriya termokhimii Moskovskogo universiteta.
(Halides) (Thermochemistry)

VOROB'YEV, A.F.; NABIL' AKHMED IERAGIM; SKURATOV, S.M., prof.

Enthalpy of formation of Rb^+ and Cs^+ ions in infinitely diluted aqueous solutions. Vest. Mosk. un. Ser. 2:Khim. 20 no. 5:3-7 S-0 '65. (MIRA 18:12)

I. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta. Submitted Dec. 28, 1964.

VOROB'YEV, A.F.; NABIL' AKHMED IBRAGIM; SKURATOV, S.M.

Enthalpy of formation of some rubidium and cesium salts.
Zhur.neorg.khim. 11 no.1:25-27 Ja '66.

(MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet. Submitted
January 4, 1965.

7540-66 EPA(s)-2/EWT(m)/EPF(c)/ERP(l)/EMP(t)/EMP(b)/ETC(m) IJP(c)/RPI ID/WIT
 ACC NR: AP5027104 J¹ JG/RM SOURCE CODE: UR/0188/65/000/005/0003/0007

AUTHOR: Vorob yev, A. F. ; Ibragim, N. A. ; Skuratov, S. M.

ORG: Department of Physical Chemistry, Moscow State University, (Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta)

TITLE: Enthalpies of formation of Rb super + and Cs super + ions in infinitely dilute aqueous solutions

SOURCE: Moscow, Universitet. Vestnik. Seriya II. Khimiya, no. 5, 1965, 3-7

TOPIC TAGS: rubidium, cesium, enthalpy, rubidium compound, cesium compound, calorimeter

ABSTRACT: The work is a part of systematic investigations of the thermochemistry of ionic compounds being performed at the thermochemical laboratory of Moscow State University. The enthalpies of formation of rubidium and cesium compounds are best determined via the enthalpies of formation of the Rb+ and Cs+ ions. Enthalpies of reactions of metallic rubidium and cesium with water and enthalpies of dilution of rubidium and cesium hydroxides were determined experimentally. A vacuum apparatus was used to prepare high-purity metal samples and to pour them into the ampoules employed in the calorimetric measurements. An air-tight low-heat-value calorimeter was employed. The data obtained permitted the calculation of the enthalpy of formation

UDC: 536.7

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2

L 7540-66

ACC NR: AP5027904

2

of RbOH and CsOH in infinitely dilute solutions, and thus enabled the authors to find the standard enthalpies of formation of the Rb⁺ and Cs⁺ ions. Orig. art, has: 3 figures and 2 tables.

SUB CODE: TD GC / SUBM DATE: 28Dec64 / ORIG REF: 002

Alkali metal

4/1/65

Card 2/2

VOROBYEV, I.F.; MENAFENKOVA, A.S.; SKURATOV, S.M.

Calorimeter of a receive design for measuring the enthalpy
of reactions between solid and gaseous substances. *Zhur.*
Str. Khim. 19 no.3:2008-2010 9p '65. (MIRA 18:9)

I. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SOKOLOV, V.A.; KOLESOV, V.P.; VOROB'YEV, A.F.

Recommendations regarding the publication of results of calorimetric
measurements. Zhur. fiz. khim. 39 no.5:1298-1299 My '65.
(MIRA 18:8)

MEDVEDEV, V.A.; YUNGMAN, V.S.; VOROB'YEV, A.F.; GURVICH, L.V.;
BERGMAN, G.A.; REZNITSKIY, L.A.; KOLESOV, V.P.;
GAL'CHENKO, G.L.; KHODEYEV, Yu.S.; KHACHKURUZOV, G.A.;
SOKOLOV, V.B.; GOROKHOV, L.N.; MONAYENKOVA, A.S.;
KOMAROVA, A.F.; VEYTS, I.V.; YURKOV, G.N.; MALENKOV, G.G.;
SMIRNOVA, N.L.; GLUSHKO, V.P., akademik, otv. red.;
MIKHAYLOV, V.V., red.; KARAPET'YANTS, M.Kh., red.

[Thermal constants of substances; reference book in ten
numbers] Termicheskie konstanty veshchestva; spravochnik
v desyati vypuskakh. Moskva, No.1. 1965. 144 p.
(MIRA 18:7)

1. Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy
informatsii.

VOROB'YEV, A.F.; DANEL'YAN, T.I.

[Concise collection of problems on computer mathematics; for engineers taking qualification improvement courses in the field of computer programming] Kratkii sbornik zadach po vychislitel'noi matematike; dlia slushatelei kursov povysheniia kvalifikatsii inzhenerov v oblasti programmirovaniia dlia elektronnykh vychislitel'nykh mashin. Moskva, Mosk. ekonomiko-stat. in-t, 1964. 65 p. (MIRA 18:4)

SKURATOV, Sergey Mikhaylovich; KOLESOV, Viktor Petrovich;
VOROB'YEV, Adol'f Fedorovich; SOKOLOV, V.A., nauchn. red.;
KOROBTSOVA, N.A., red.

[Thermochemistry] Termokhimiia. Moskva, Izd-vo Mosk. univ.
Pt.1. [General data on thermometry and calorimetry] Obshchie
svedeniia o termometrii i kalorimetrii. 1964. 301 p.
(MIRA 17:5)

POLYANTSEV, A.A. (Volgograd, ul. Pushkina, d.14, kv.46); VOROB'YEV, B.I.;
VOROB'YEV, A.F.

Our experience in surgical treatment of mitral stenosis. Grudn.
khir. 5 no.4:12-16 JI-Ag'63 (MIRA 17:1)

1. Iz kliniki obshchey khirurgii (zav. - prof. A.A.Polyantsev)
i kliniki obshchey terapii (zav. I.V.Zherdin) Volgogradskogo
meditsinskogo instituta.

VOROB'EV, Aleksandr Grigor'evich.

The mechanics of free aerostats Leningrad Tip. 1 Artshkoly 1924. 184 p. (40-22096)

TL578.V6

1. Aerostatics. I. Moscow. Voennaia vozdushnaia akademiia raboche-krest'ianskoi krasnoi armii.

VOROB'YEV, ALEKSANDR GREGOR'YEVICH.

VOROB'YEV, ALEKSANDR GREGOR'YEVICH.

K transpoliarnomu pereletu Amundsena. Leningrad, 1926. 30 p., illus.
port., map.

Title tr.: Amundsen's transarctic flight.

G700.1926.V6

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

USSR/Astronomy

Card 1/1 Pub. 8c - 11/40

Authors : Vorobyev, A. G. Professor

Title : About the observation of the Mars atmosphere during future oppositions

Periodical : Priroda⁴³, 78-80, Mar 1954

Abstract : Hypothetical data are presented, regarding the atmosphere of Mars. The author claims that the Mars atmosphere can be well observed by means of ... Mars will be the second ... will be inhabited by people. The ... of the Mars in this respect. ... the surface of the Mars is ... of the Earth of ... It is assumed that the ... in many other astro- nomical respects. Three USSR references (1947-1953). Graphs.

Institution :

Submitted :

KRISHTOFOVICH, A.N. [deceased]; L'VOV, V.Ye.; MARKOV, A.V., professor;
KOHOLEV, A.Y.; GLOSHITSKIY, L.P.; OGORODNIKOV, K.F., professor;
BYGENSEN, M.S., professor; LOZIN-LOZINSKIY, L.K., professor;
VOROB'YEV, A.G., professor; YOZLOVA, K.I.; KAZENNOV, B.A.; SUSLOV,
A.K.; GEL'FREYKH, G.B.; VASIL'YEV, O.B.; LICHKOV, B.L., professor;
SYROMYATNIKOV; KUTYREVA, A.P.; KATTERFEL'D, G.N.; SYTINSKAYA, N.N.;
SHARONOV, V.V.; SUVOROV, N.I.; KUCHEROV, N.I.; TIKHOV, G.A.;
GORSHEV, P.M.

Addresses by A.N.Krishtofovich and others. Trudy Sekt.astrobot.AN
Kazakh.SSR 4:68-157 '55. (MLBA 9:12)
(Mars (Planet))

VOROB'YEV, A.G.

124-11-13368

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr. 11, p 151 (USSR)

AUTHOR: Vorob'yev, A. G.

TITLE: To the Question of the Natural Shape of the Cross Section of Cigar-Shaped Rafts.
(K voprosu obyestestvennoy forme poperechnykh secheniy puchkov puchkovykh plotov (sigar).)

PERIODICAL: Sb. tr. Leningr. basseyn. pravl. Nauchno-tekhn. o-va vodn. transp., 1956, Nr 3, pp 57-61.

ABSTRACT: Bibliographic entry.

Card 1/1

AUTHOR: Vorob'yev, A.G., Professor (Leningrad) SOV-26-58-8-16/51
TITLE: Jet Streams (Struynnye techeniya)
PERIODICAL: Priroda, 1958⁴⁷, Nr 8, pp 83-85 (USSR)

ABSTRACT: Jet streams are strong winds, generally blowing in a west-easterly direction with speeds of 30 m/sec and more. Around the streams the air is relatively calm. The streams are several thousand km long, hundreds of km broad and several km thick. They were discovered by tracking pilot balloons by means of radar. Maximum speeds of the streams over the territory of the USSR are 300 - 400 km/h, over the Atlantic and Northern America 500 km/h, over the Pacific 750 km/h. There are front and non-front streams. The front streams are connected with weather fronts and the pronounced temperature gradients associated with them. Figure 1 shows a vertical cross section of a frontal zone in which the tropopause near the axis of the jet stream is interrupted. Figure 2 shows the direction of the stream in relation to the front development. In the initial stages of the front it is parallel to the front (2, a, b), later it crosses the front and is divided. On February 8, 1958, such a stream moved across the Ukraine to the Central Urals attaining a speed of

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Jet Streams

SOV-26-58-8-16/51

200 - 300, sometimes 330 km/h. Frontal streams often cause abundant precipitation. Non-frontal streams are observed in subtropic areas between 20 - 35° northern latitude at altitudes of 12 - 14 km. In these streams the ascending and descending air currents are very pronounced, causing great turbulence.

There are 2 diagrams.

1. Jet streams (Meteorology)--Analysis

Card 2/2

AUTHOR: Vorob'yev, A.G. SOV-12-90-4-11/22

TITLE: Use of Dirigibles for Geographical Explorations (Primeneniye dirizhabley dlya geograficheskikh issledovaniy)

PERIODICAL: Izvestiya Vsesoyuznogo geograficheskogo obshchestva, 1958, Vol 90, Nr 4, pp 368-373 (USSR)

ABSTRACT: The author reviews the construction of dirigibles during last 50 years and enumerates the advantages of these airships in comparison with airplanes and helicopters for geographical surveying. There is one table.

1. Geography--USSR 2. Dirigibles--Applications

Card 1/1

VOROB'YEV, A.G., prof. (Leningrad)

Designing thin elastic circular rings for large deformations.
Issl. po teor. sooruzh. no.8:437-445 '59. (MIRA 12:12)
(Elastic plates and shells)

VOROB'YEV, A.G., professor (Leningrad); SMIRNOV, N.I., insh. (Leningrad)

Bold journey; by balloon across the Atlantic. Priroda 49 no.8:78-79
Ag '60. (MIRA 13:8)

(Balloon ascensions)

VOROB'YEV, A. G., prof.

Two approximate formulas for calculating flexible cylindrical
containers. Sudostroenie 28 no.10:12 0 '62.
(MIRA 16:1)

(Containers, Floating)

VOROB'YEV, A. G., prof.

"Dracone"-type flexible vessels for the transportation of
liquid cargoes (from "Engineer," no.5480, 1961). Sudostroenie
28 no.10:59-62 0 '62. (MIRA 16:1)

(Containers, Floating)

VOROBYEV, A.G., prof.

Stratospheric balloons and astronomy. Priroda 51 no.1:43-48 Ja
'62. (MIRA 15:1)
(Balloons) (Astronomy)

VOROB'YEV, A.G., prof. (Leningrad); SMIRNOV, N.I. (Leningrad)

Flight of a stratosphere balloon. Priroda 52 no.3:101-102 '63.
(MIRA 16:4)

(United States--Balloon ascensions)

VOROB'YEV, A.G. (Leningrad); SMIRNOV, N.I. (Leningrad)

Montgolfiers under present conditions. Priroda 52 no.9:107-
108 '63. (MIRA 16:11)

L 30080-66 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AF6012210

SOURCE CODE: UR/0237/66/000/004/0009/0017

AUTHOR: Savost'yanova, M. V.; Vorob'yev, A. G.; Polyakov, Yu. N.; Shakhverdov, T. A. ⁵⁶

ORG: none

TITLE: Characteristics of processes of coloring and discoloring of photochromic substances such as spiropyranes in polymer films ⁵⁵

SOURCE: Optiko-mekhnicheskaya promyshlennost', no. 4, 1966, 9-17 ^B

TOPIC TAGS: luminescence, quantum yield, organic solvent, polymer chain, *COLOR, PHOTOCHROMIC MATERIAL, LIGHT RADIATION EFFECT*

ABSTRACT: The authors investigate the photochromic effect (reversible change in the color of a substance under the influence of absorbed radiation), and derive certain quantitative characteristics of polymer films containing spiropyranes, the photochromic characteristics of which were disclosed in a patent by C. A. Carlson (USA Patent 3,085,469, class 88-74, 1963). The spiropyranes together with the polymer (polymethyl metacrylate, polystyrene, polyvinyl butyral, ethyl cellulose, and LP26 polymerization lacquer) were dissolved in a solvent (chloroform, dichloroethane, acetone, dioxane, benzene, alcohol) and the film left after

Card 1/2

L 30080-66

ACC NR: AF6012210

evaporation had the required photochromic properties. The spectral properties of the films (absorption, luminescence, spectral sensitivity of coloring and discoloring) were measured. Tests were also made of the reproducibility and sensitivity (quantum yield) of the products. The apparatus used for the tests is described and the results are presented in the form of a summary table and a number of spectral curves. The authors thank A. N. Terenin for interest in the work. Orig. art has: 6 figures, 3 formulas, and 2 tables.

SUB CODE: 20, 07/ SUBM DATE: 18Dec65/ ORIG REF: 007/ OTH REF: 011

Card 2/2

90

VOROB'YEV, A.I.; GLOZMAN, M.K.; GORBUSHIN, A.I.; KOSTINSKIY, I.Ye.;
~~MAKSIMOV, I.I.~~; PROLYGIN, V.I.; STOLYARSKIY, L.L. HEMPEL' M.P.
redaktor; POL'SKAYA, R.G., tekhnicheskiy redaktor; FREUMKIN,
P.S., tekhnicheskiy redaktor.

[Ship finishing work] Sudovye dostroechnye raboty. Leningrad,
Gos. Soizuznoe izd-vo sudostroit. promysh., 1955. 159 p. (MLRA 8:8)
(Shipbuilding)

DERVIZ, G.V.; VOROB'YEV, A.I.

Quantitative determination of hemoglobin with the FFK-M apparatus. Lab.
delo 5 no.3:3-8 My-Je '59. (MIRA 12:6)

1. Iz Tsentral'nogo ordena Lenina instituta gematologii i perelivaniya
krovi (dir. - prof. A.A. Bagdasarov) i 3-y kafedry terapii Tsentral'nogo
instituta usovershenstvovaniya vrachev (zav.-prof. I.A. Kassirskiy),
Moskva.

(HEMOGLOBIN) (COLORIMETRY)

VOROB'YEV, A. I.

Counting erythrocytes with the FEK-M photoelectrometer. Lab. delo
5 no.3:10-16 My-Je '59. (MIRA 12:6)

1. Iz 3-y kafedry terapii (zav. - prof. I.A. Kassirskiy) Tsentral'-
nogo instituta usovershenstvovaniya vrachey, Moskva.
(ERYTHROCYTES) (COLORIMETRY)

VOROB'YEV, A.I.

Studying the growth and life span of erythrocytes by determining
their acid resistance. Probl. gemat. i perel. krovi 5 no. 5:18-23
My '60. (MIRA 14:1)

(ERYTHROCYTES) (HYDROCHLORIC ACID)

LUZKOVA, Sima Leont'yeva; MYASHNIKOV, A.L., prof., red.; KASSIRSKIY, I.A.,
prof., red.; VOROB'YEV, A.I., red.; BEL'CHIKOVA, Yu.S., tekhn. red.

[Atlas of clinical hematology] Kliniko-gematologicheskii atlas. Pod
red. A.L.Miasnikova i I.A.Kassirskogo. Moskva, Medgiz, 1961. 122 p.
(MIRA 14:12)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Myasni-
kov). 2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for
Kassirskiy).

(BLOOD--DISEASES)

BRILLIANT, M.D.; VOROB'YEV, A.I.

Fractionation of erythrocytes according to their age characteristics. Vop.biofiz., biokhim.i pat.erit. no.2:62-64 '61.

(MIRA 16:3)

1. Iz III kafedry terapii (zaveduyushchiy chlen-korrespondent AMN SSSR, professor I.A. Kassirskiy) Tsentral'nogo instituta usovershenstvovaniya vrachey (direktor M.D. Kovrigina).
(ERYTHROCYTES)

VOROB'YEV, A.I.; BRILLIANT, M.D.

Different erythrocyte populations in some anemic states. Vop.
biofiz., biokhim. i pat. erit. no. 2:226-233 '61. (MIRA 16:3)

1. Iz III kafedry terapii (zav. chlen-korrespondent AMN SSSR
prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenst-
vovaniya vrachey (dir. M.D. Kovrigina).
(ERYTHROCYTES) (ANEMIA)

VOROB'YEV, A.I., vrach

Instruments replace the laboratory worker's eyes. Zdorov'e 7
no.10:29 0 '61. (MIRA 14:10)
(MEDICAL INSTRUMENTS AND APPARATUS)

GRINSHPUN, Liya Davydovna; VOROB'YEV, A. I., red.; PARAKHINA, N.L.,
tekhn. red.

[Major eosinophilias and their clinical diagnostic significance]
Bol'shie eozinofilii krovi i ikh kliniko-diagnosticheskoe znache-
nie. Moskva, Medgiz, 1962. 151 p. (MIRA 16:1)
(EOSINOPHILES) (BLOOD--DISEASES)

BRILLIANT, M.D.; VOROB'YEV, A.I.

Effect of plasma on the resistance of the erythrocytes in blood diseases. Probl.gemat.i perel.krovi no.5:7-13 '62.

(MIRA 15:8)

1. Iz 3-y kafedry terapii (zav. - chlen-korrespondent AMN SSSR prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenstvovaniya vrachey (dir. M.D. Kovrigina).

(BLOOD--DISEASES) (ERYTHROCYTES) (BLOOD PLASMA)

ARUTYUNOV, G.A.; ANTUF'YEV, I.I.; VOROB'YEV, A.I.; KUZNETSOV, M.I.;
UDALOV, Yu.F.; SHIBUNEYEV, A.G. (Moskva)

Effect of nervous strain on requirement of the body for some
vitamins. Vop.pit 21 no.4:3-10 J1-Ag '62. (MIRA 15:12)
(VITAMINS) (FATIGUE, MENTAL) (STRESS (PHYSIOLOGY))

GYURDZHIAN, A.A.; VOROB'YEV, A.I.

Thirteenth International Congress of Aviation and Space Medicine. Izv.
AN SSSR, Ser. biol. no.4:614-623 J1-Ag '65. (MIRA 18:7)

~~(A-E-2)~~ A. J.
VOROB'YEV (fnu) (Dr.)

"Medical Aspects of TU-104 Travel."

Paper presented at the Third European Congress of Aviation Medicine, Louvain, Belgium, 26 Sep 58.

Translation.

Encl: B- 3,800,998.

VOROB'YEV MIKSAANDR. L.
VOROBLYEV, Alexandre Doctor of Hygiene

"Physiology and Psychological Reactions of Pilots,"

Paper presented at the 5th European Congress of Aviation Medicine, Royal College of Surgeons, London, England, 29 August - 2 September 1960.

FAYNSHTEYN, Filya El'yevich; VOROB'YEV, A.I., red.

[Aplastic and hypoplastic anemias] Aplasticheskie i gi-
poplasticheskie anemii. Moskva, Meditsina, 1965. 286 p.
(MIRA 18:5)

VOROB'YEV, A.I.

Defectoscope-car tests rails at a speed of 100 km per hour.
Put' 1 put. khoz. 8 no.10:17-19 '64.

(MIRA 17:12)

1. Rukovoditel' puteispytatel'noy laboratorii Novosibirskogo
instituta inzhenerov zheleznodorozhnogo transporta.

VOROB'YEV, A. I.

VOROB'YEV, A. I. "Trofim Denosovich Lysenko", (On his fiftieth birthday, report to the celebrating meeting of the University Council of 28 September 1948), Izvestiya Odes. gos, un-ta im. Mechnikova, Issue 1, 1948 p. 13-29, with portrait.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

VOROB'EV, A. I.

The principles of Michurin's genetics Moskva, Sovetskaiia nauka, 1950. 195 p.
(51-25013)

SB123.V6

VOROB'YEV, A I

Osnovy Michurinskoy Genetiki [Principles of Michurin's Genetics] Izd. 2. Pod.
Red. M. A. Ol'shanskiy. Moskva, Gos. Izd-vo Sovetskaya Nauka, 1953.
201 p. Illus.
Bibliographical footnotes.

N/5
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1953

USSR/Cultivated Plants - Grains.

M

Abs Hour : Ref Zhur Biol., No 18, 1958, 82300

Author : Vorob'yev, A.I.

Inst : Odessa University

Title : The First Generation of Some Inter-Variety Corn Hybrids

Orig Pub : Nauchn. Yezhegodnik, Odessk. un-t, 1956, Odessa, 1957,
277-279

Abstract : The most promising varieties for obtaining high-yield hybrids proved to be the late maturing varieties - Odesskaya 10 and Zolotaya Imperatritsa; and from the early varieties - Voronezhskaya 76. Transplanting hybrids at the rate of 2 plants to a nest increased the yield by 20% as against trials with one plant to a nest. F₁ generation of hybrids surpassed parental varieties in fast maturing.

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VOROB'YEV, A.I.

SIMONENKO, V.K. [Symonenko, V.K.], student biolog.fakul'teta; VOROB'YEV,
A.I. [Vorobiov, A.I.], prof., nauchnyy rukovoditel';
SAGAYDAK, I.M. [Sahaidak, I.M.], dots., nauchnyy rukovoditel'

Studies on intergeneric vegetative hybridization of tomatoes
with the Bolgarskii 14 eggplant. Pratsi Od.un. Zbir.stud.rob.
149 no.5:183-185 '59. (MIRA 13:4)

1. Odesskiy gosudarstvennyy universitet.
(Tomatoes) (Eggplant)

FAYTEL'BERG, R.O., prof., doktor med.nauk, otv.red.; ~~VOROB'YEV, A.I., prof.,~~
doktor biolog.nauk, red.; DANILKO, K.Ye., dotsent, kand.filolog.nauk,
red.; PAZYUK, L.I., dotsent, kand.geologo-mineral.nauk, red.;
EL'KIN, D.G., prof., doktor pedagog.nauk, red.

[Collection commemorating the 50th anniversary of the death of I.M.
Sechenov] Sbornik, posviashchanyi 50-letiiu so dnia smerti I.M.
Sechenova. Odessa, 1957. 144 p. (Odessa. Universitet.
Trudy, vol. 147) (MIRA 12:4)

1. Odessa. Universitet. 2. Odesskiy gosudarstvennyy universitet im.
I.I.Mechnikova (for Faytel'berg, El'kin).
(SECHENOV, IVAN MIKHAILOVICH, 1829-1905) (PSYCHOLOGY)
(PHYSIOLOGY)

LEBEDEV, S.I., prof., doktor biolog.nauk, otv.red.; KOVBASYUK, S.M., dotsent, kand.istor.nauk; red.; PAZYUK, L.I., dotsent, kand.geologo-mineral.nauk, red.; KIRILLOV, Ye.A., prof., doktor fiziko-matemat.nauk, zasluzhennyy deyatel' nauki USSR, red.; TSESEVICH, V.P., prof., doktor fiziko-matemat.nauk, red.; LEONOV, I.G., dotsent, kand.istor.nauk, red.; VOROB'YEV, A.I., prof., doktor biolog.nauk, red.; GAVRILOV, N.I., prof., doktor fiziko-matemat.nauk, red.; MOROZOV, A.A., prof., doktor khim.nauk, red.; DANILENKO, K.Ye., dotsent, kand.filolog.nauk, red.; MIGAL', K.G., dotsent, kand.istor.nauk, red.; SMIRNOV, A.M., dotsent, kand.geograf.nauk, red.; BABICH, N.M., tekhn.red.

[Scientific yearbook for 1956] Nauchnyi ezhegodnik 1956 g. Odessa, 1957. 388 p. (MIRA 12:4)

1. Odessa. Universitet. 2. Deystvitel'nyy chlen Ukrainskoy Akademii sel'skokhoz.nauk, zaveduyushchiy kafedroy fiziologii rasteniy Odesskogo gosudarstvennogo universiteta im. I.I.Mechnikova (for Lebedev). 3. Zaveduyushchiy kafedroy istorii Ukrainskoy SSR Odesskogo gosudarstvennogo universiteta im. I.I.Mechnikova (for Kovbasyuk). 4. Zaveduyushchiy
(Continued on next card)

VOROB'YEV, A.I.

Device for measuting the depth of excavator digging. Stroi.
i dor. mash. 10 no.3:33 Mr '65. (MIRA 18:5)

VOROB'YEV, A.I., kand. tekhn. nauk, dots.

Causes for increased fat content of whey separated during the
manufacture of cheese, Trudy LTIKHP 5:100-101 '54. (MIRA 11:3)
(Cheese) (Whey)

VOROB' YEV, A.I., dotsent, kand.tekhn.nauk

Protective film for cheeses. Trudy LTIKHP 13:35-40 '57.
(MIRA 13:6)

1. Kafedra tekhnologii moloka i molochnykh produktov
Leningradskogo tekhnologicheskogo instituta kholodil'noy
promyshlennosti.
(Protective coatings) (Cheese)

VOROB'YEV, A.I., dotsent, kand.tekhn.nauk

Manufacture of edible casein in the soluble form. Trudy
ITIKHP 13:41-45 '57. (MIRA 13:6)

1. Kafedra tekhnologii moloka i molochnykh produktov
Leningradskogo tekhnologicheskogo instituta kholodil'noy
promyshlennosti.

(Casein)

KAZANSKIY, Mikhail Mikhaylovich; KOVALENKO, Mikhail Sergeyevich;
YOROB'YEV, Aleksandr Ivanovich, dotsent, kand.tekhn.nauk;
GRISHCHENKO, Aleksandr Dmitriyevich; KIVENKO, S.P., spetsred.;
IVANOVA, N.M., red.; KISINA, Ye.I., tekhn.red.

[Technology of milk and dairy products] Tekhnologiya moloka
i molochnykh produktov. Moskva, Pishchepromizdat, 1960. 440 p.
(MIRA 13:12)

(Dairy industry)

ZELENEYEV, V.A.; VOROB'YEV, A.I.

Introducing the plastic flow method for hot forming.
Priborostroenie no.9:24-25 S '56.

(MLRA 9:10)

(Forging)

VOROB'YEV, A.I.; ZELENYEV, V.A.

Using rams for drawing graduation lines. Stan. 1 instr. 27 no.11:31
N '56. (MIRA 10:1)

(Calibration)

VOROB'YEV, A.I.; ZELENYEV, V.A.

Multiedged form cutting disks. Priberestroenie no.1:29 Ja '57.
(Cutting tools) (MLRA 10:4)

Vorob'yev, A. I.

137-1957-12-24020

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 160 (USSR)

AUTHORS: Vorob'yev, A. I., Zeleneyev, V. A.

TITLE: The Production of Steel Ladles (Izgotovleniye stal'nykh kovshey)

PERIODICAL: Mashinostroitel', 1957, Nr 5, pp 39-40

ABSTRACT: The previously prevailing technology in the manufacture of steel ladles (SL) was very wasteful of labor and required large amounts of special technological equipment. A new method has been developed for the manufacture of SL's by means of investment casting. A mold consisting of three units and designed for the investment casting of the SL is presented. This method curtails the expenditure of labor in the production of SL's.

A. S.

1. Ladles-Production
2. Steel-Casting

Card 1/1

VOROB'YEV, A.I. SHANDRIKOV, M.N.

Making pins with iridium tips. Priboroostroenie no.6:24-26 Je '57.

(Iridium) (Instrument industry)

(MIRA 10:7)

307/123-59-16-63856

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 16, p 31 (USSR)

AUTHORS: Vorob'yev, A.I., Nasonkin, I.M.

TITLE: Investigation of the Stability of Flexible Shafts on Oil Film

PERIODICAL: Sb. nauchno-issled. rabot stud. Fiz.-mekhan. fak. Leningr. politekhn. in-t, 1958, vyp. 1, pp 44-68

ABSTRACT: The problem of stability (at a steady motion) of a flexible shaft with one disk, revolving in slide bearings (P) is investigated, with allowance for the elasticity of the shaft and the elastic and absorbing forces of the oil film, when the disk is located in the middle of P on a bracket. This work originated in connection with studies of the causes of shaft vibrations in a high-power installation with a number of revolutions which was twice the critical number of revolutions. The problem of stability of an unperturbed motion is solved on the basis of equations of first approximation, in so far as the roots with the real part being zero do not exist among the roots of the characteristic equation. It is required that all coefficients of the characteristic equation and only the penultimate determinant of Hurwitz should be positive. An equation of the shaft motion and its characteristic equations for the case of a bracket rotor were

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Investigation of the Stability of Flexible Shafts on Oil Film SOV/123-59-16-63856

worked out. A displacement of the disk center is composed of the displacement of the shaft in P and the elastic sagging of the shaft. Frequency equations were the same as the frequency equations for the case of the disk located between the supports. The dissipative forces (connected with a loss of energy) and the forces of the oil layer were calculated, starting from the assumption that the lubrication liquid is in a narrow space, limited by the eccentrically located bushing, and the journal. The criteria of stability of the systems "shaft with disk in the center" and "bracket shaft" were determined, as well as the criterion of stability for an absolutely rigid shaft, which may serve as a starting point for the determination of stability of the flexible shaft. As an example, the case of a semienclosed P with an enveloping angle of 180° was investigated and the range of stability was established under the assumption that all sections of P were working under the same conditions. 7 figures, 10 bibliographic references.

M.V.G.

Card 2/2

SOV/117-58-11-19/36

AUTHORS: Vorob'yev, A.I., and Zeleneyev, V.A., Engineer

TITLE: A Device for Boring Inner Spherical Surfaces (Prisposobleniye dlya rastochki vnutrennikh sfericheskikh poverkhnostey)

PERIODICAL: Mashinostroitel', 1958, Nr 11, pp 23 - 24 (USSR)

ABSTRACT: A special device has been developed for the machining of spherical surfaces in machine parts. The detail is moved on a turning table. The depths of cutting are controlled by a micrometer. The device is installed on a horizontal milling machine. The turning table turns clockwise, the detail counter-clockwise. There is 1 set of diagrams.

1. Milling machines--Equipment
2. Cutting tools---Control
3. Metals--Machining

Card 1/1

VOROB'YEV, A.I.; FROLOV, N.I.

Universal four-cutter heads for lathes. Mashinostroitel' no.1:36-37
Ja '59. (MIRA 12:2)

(Lathes--Attachments)

VOROB'YEV, A.I.; ZELENBYEV, V.A.

Automatic production of band saws. Mashinostroitel' no.3:
6-7 Mr '60. (MIRA 13:6)
(Band saws)

VOROB'YEV, A.I.; LIVSHITS, Sh.Ya.

Development of the production of machine-tool units and
automatic lines. Standartizatsiia 29 no.6:9-12 Je '65.

(MIRA 18:12)

1. Eksperimental'nyy nauchno-issledovatel'skiy institut metallo-
zhushchikh stankov.

ACC NR: AP7005666

SOURCE CODE: UR/0413/67/000/002/0137/0138

INVENTOR: Vorob'yev, A. I.; Klyushkin, Ye. A.; Osipov, V. F.

ORG: None

TITLE: A locking device which prevents axial motion of the working blades in a turbine disc. Class 46, No. 190727

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 137-138

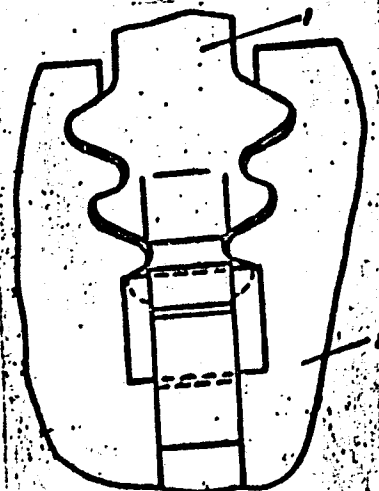
TOPIC TAGS: turbine blade, turbine disk, mechanical fastener

ABSTRACT: This Author's Certificate introduces a locking device which uses plates for preventing axial motion of the working blades in a turbine disc. The weight and overall dimensions of the locking plates are reduced and their operational reliability is increased by inserting them into integrated radial channels of rectangular cross section cut into the facing surfaces of the blades and disc at the herringbone connection points. The plates are pushed into the channels until they stop and the free ends are flanged.

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UDC: 621.438.621.45

ACC NR: APT005666



1—blade; 2—disc

SUB CODE: ^{10/}~~EH~~ SUBM DATE: 30Jan63

Card 2/2

1. VOROB'YEV A.I.
2. USSR (600)
4. Casein
7. Waterproofing and gluing properties of casein, A.I. Vorob'yev, Der. i lesokhim. prom. 2 no. 5 '53.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

VOROB'YEV, A.I., inzh.

Semiautomatic drilling and grooving machine. Der. prom. 12
no.4:27-28 Ap '63. (MIRA 16:10)

1. Derevoobrabatyvayushchiy kombinat No.3 Glavnogo upravleniya
promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley.

VOROB'YEV, A.I.

Sizing semi-automat for sawing particle board and fiberboard. Der. prom.
(MIRA 17:1)
12 no.11:20-21 N '63.

VOROB'YEV, A.I., inzh.

Semiautomatic line for mechanical processing and preparation of
door panels for finishing. Der. prom. 12 no.6:22 Je '63.
(MIRA 16:10)

SOV/126-7-4-6/26

AUTHORS: Vlasov, V.V., Vorob'yev, A.I. and Uspenskiy, Ye.I.

TITLE: Investigations Relating to the Defectoscopy of Railroad Rails in Moving Magnetic Fields. 13. Defectoscope for Testing Rails at High Speeds

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 4, pp 527-533 (USSR)

ABSTRACT: This is one of a long series of articles on the subject of detection of rail failures by means of magnetic fields moving at speeds which are acceptable in normal railroad operation. Increasing the speed of movement of the test apparatus is of considerable interest in tracks with high traffic densities. This problem has been relatively little studied. In earlier parts of this work (Ref 2 and 3), the theoretical and experimental fundamentals of rail defectoscopy in moving magnetic fields are described. Particularly, it is shown that it is possible to detect defects in rails at relatively high speeds of movement, of up to 90 km/hr. It was established that magnetization of the rails by moving sources induces in the rails relatively intensive eddy currents which participate in the formation of the

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SOV/126-7-4-6/26

Investigations Relating to the Defectoscopy of Railroad Rails in Moving Magnetic Fields. 13. Defectoscope for Testing Rails at High Speeds

defect field; the role of these currents is the more important the higher the speed of movement of the external magnetic field. The obtained results show that it is possible to utilise eddy currents induced in the rails by a moving magnetic field for rail defectoscopy purposes. Studying the shapes of the emf pulses induced in the search coil by dangerous and non-dangerous rail defects and by metallic components of the track structure enabled relatively satisfactory solution of the problem of separating out useful signals. This enabled the introduction of considerable changes in the practice of testing rails by means of moving magnetic fields. In this paper the design is described of apparatus fitted in an ordinary passenger wagon and intended for detecting defects in the track rails. The here described defectoscopy apparatus was built in 1952 (Ref 4 and 5) by modifying a relatively older type defectoscope wagon (Ref 6) which operated at a speed of 30 to 35 km/hr. The basic circuit is shown in Fig 1 and

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Investigations Relating to the Defectoscopy of Railroad Rails in
Moving Magnetic Fields. 13. Defectoscope for Testing Rails at High
Speeds

in general its conception is not original. The search equipment consists of a coil which is located in the middle between the poles of an electromagnet, the plane of the windings of which is perpendicular to the longitudinal rail axis. The coil is fitted on a 0.5 mm thick sledge of non-magnetic stainless steel. The emf induced in the search coil is recorded on a 35 mm film from an oscillograph; one cassette contains up to 300 m of film; the film consumption is about 5 m per kilometre of track, recording the signals from both rails of the track. The power supply is from a current type rail dynamo. The here described defectoscope wagon enables detecting defects in rails irrespective of weather and it can travel with a speed of up to 90 km/hr. Defectoscopes described by A.A.Kosarev (Ref 8) and others (Ref 9) operate at a running speed of 55 km/hr. The defectoscope wagon detected satisfactorily the following defects: relatively highly developed shallow transverse cracks in the railheads; relatively small

Card 3/5

SOV/126-7-4-6/26
Investigations Relating to the Defectoscopy of Railroad Rails in
Moving Magnetic Fields. 13. Defectoscope for Testing Rails at High
Speeds

transverse cracks in the railhead located on one side of the vertical axis of the rail at relatively small depths; relatively developed transverse cracks in welded joints and also cracks which extend from the foot to the head of the rail and transverse rail cracks; longitudinal-horizontal layering of the railheads; longitudinal-transverse cracks (as shown in the photo, Fig 5) and more complicated defects (shown in Fig 6). If the here described defectoscope is used, additional inspection can be reduced to a minimum. Some information is given about its characteristics and sensitivity. There are 8 figures, 1 table and 14 references, 12 of which are Soviet, 1 German and 1 English.

n.b. In part 14 of this series (pp 689-693, Vol 7, Nr 5) the substitution of the cinefilm recording by a magnetic tape recording is described and this is stated to be considerably more satisfactory.

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SOV/126-7-4-6/26

Investigations Relating to the Defectoscopy of Railroad Rails in
Moving Magnetic Fields. 13. Defectoscope for Testing Rails at High
Speeds

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal
Physics, AS USSR)

SUBMITTED: December 19, 1958

Card 5/5

VOROB'YEV, A.I., inzh.

Methods of improving the rail spotter cars. Put' 1 put.khoz. 6 no.6:
36-38 '62. (MIRA 15:7)

(Railroads--Cars) (Railroads--Rails--Defects)

VOROB'YEV, A.I.

Physical processes occurring in the magne'ization of elongated specimens by a moving constant magnetic field. Izv. vys. ucheb. zav.; fiz. no.4:120-127 '63. (MIRA 16:9)

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