Concerning the Mechanism of Diborane Reaction With Olefins

77388
SOV/79-30-1-49/78

Theoretically, a B atom can join either of the C=C carbon atoms and form isomers. According to D. Hurd, diborane gave with olefins equal amounts of isomers (X) and (XI); for example:

$$B_2H_6 + 6\,(CH_3)_2C{=}CH_2 \rightarrow 2B\left[(CH_3)_2CH{-}C\right]_3 \quad (X)$$

$$B_2H_6 + 6\,(CH_3)_2C{=}CH_2 \rightarrow 2B\left[(CH_3)_2CH{-}CH_2\right]_3 \quad (XI)$$

It was also reported (J. Am. Chem. Soc., 1956, Vol 78, p 5694; Chem. Eng. News, 1957, Vol 6, Nr 28) that the olefins, on reduction with sodium borohydride in the presence of $AlCl_3$, gave the corresponding primary alcohols. In view of the contradictory data on the order of diborane addition to olefins, the authors investigated the mechanism of this reaction. Propylene with diborane on heating to 230-250° C gave tripropylboron in 91%

Card 2/3

5.3700

77338
SOV/79-30-1-49/78

AUTHORS: Zhigach, A. F., Siryatskaya, V. N., Antonov, I. S., Makayeva, S. Z.

TITLE: Concerning the Mechanism of Diborane Reaction With Olefins

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 227-230 (USSR)

ABSTRACT: Diborane reacts with excess olefins, and forms, successively, alkyldiboranes (RB_2H_5; $R_2B_2H_4$; $R_3B_2H_3$; etc.) according to the reactions:

$$B_2H_6 \rightleftarrows 2BH_3 \text{ (IV)},$$
$$B_2H_6 + BH_3 \rightarrow B_3H_9 \text{ (V)},$$
$$B_3H_9 + C_nH_{2n} \rightarrow BH_3 + B_2H_5C_nH_{2n+1} \text{ (VI)},$$
$$B_2H_5C_nH_{2n+1} + BH_3 \rightarrow B_3H_8C_nH_{2n+1} \text{ (VII)},$$
$$B_3H_8C_nH_{2n+1} + C_nH_{2n} \rightarrow BH_3 + B_2H_4(C_nH_{2n+1})_2 \text{ (VIII)}$$
$$B_3H_4(C_nH_{2n+1})_5 + C_nH_{2n} \rightarrow BH_3 + 2B(C_nH_{2n+1})_3 \text{ (IX)}$$

Card 1/3

29020
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The asymptotic behavior of the . . .

There are 17 Soviet-bloc references.

SUBMITTED: March 16, 1959

Card 12/12

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C111/C222

The asymptotic behavior of the [illegible]

where $\nu(t,\varepsilon)$ is the solution of

$$\frac{d\nu}{dt} = \frac{1}{\varepsilon} w\left[\nu(t,\varepsilon)\right] - \frac{1}{\varepsilon} w\left[\bar{v}(t)\right] + B\left[\bar{\varphi}(t,\varepsilon)+\nu, \bar{v}(t), 0\right], \quad \nu(t_0,\varepsilon)=0 \tag{2.22}$$

(M = const, $\varepsilon_0 \leq a$, D_0 -- a ρ-neighborhood of the solution $\bar{v}(t)$ of the system

$$\frac{dv}{dt} = \bar{V}(v) \tag{2.23}$$

on $[t_0, L]$; $\rho > 0$ is so that $\bar{D}_0 \subset D$).

Two further theorems relate to the behavior of the solutions of (2.1) in the exceptional case where the system (2.2) has a non-degenerated whirl as its equilibrium position.

Finally it is shown that the well-known older results by V.M.Volosov on the solutions of differential equations with a small parameter can be concluded from the author's theorem.
The author mentions D. V. Anosov, Yu. A. Mitropol'skiy, L.S.Pontryagin, V.J. Smirnov, L.V.Rodygin, N.N. Bogolyubovand D.N.Zubarev.

Card 11/12

The asymptotic behavior of the . . .

$$\left.\begin{aligned} \frac{d\varphi}{dt} &= \frac{1}{\varepsilon}\ w(v) \\ \frac{dv}{dt} &= \bar{V}\ (v) \end{aligned}\right\} \qquad (2.20)$$

$$\left(\bar{V}(v) = \int_0^1 V(\varphi, v, 0)\ d\varphi,\ \ldots > 0\right.$$

with the initial conditions $\bar{\varphi}(t_0, \varepsilon) = \varphi_0$, $\bar{v}(t_0) = v_0$. Let $\bar{v}(t)$ remain in D on $[t_0, L]$. Then there exists an $\varepsilon_0 > 0$ so that $v(t, \varepsilon)$ for every $\varepsilon \in (0, \varepsilon_0]$ and $t \in [t_0, L]$ remains in a certain closed bounded region $\bar{D}_0 \subset D$ and it holds

$$\left|v_i(t, \varepsilon) - \bar{v}_i(t)\right| \leq \overset{0}{M}\varepsilon\ ,\ i = 1, \ldots, r,$$

$$\left|\varphi(t, \varepsilon) - \bar{\varphi}(t, \varepsilon) - w(t, \varepsilon)\right| \leq \overset{0}{M}\varepsilon\ .\ \left|w(t, \varepsilon)\right| \leq \overset{0}{M} \qquad (2.21)$$

Card 10/12

The asymptotic behavior of the

$$\left.\begin{aligned} \frac{d\varphi}{dt} &= \frac{1}{\varepsilon} w(v) + B(\varphi, v, \varepsilon), \\ \frac{dv}{dt} &= V(\varphi, v, \varepsilon), \\ (v &= \{v_1, \ldots, v_r\}, \; V = \{V_1, \ldots, V_r\}) \end{aligned}\right\} \qquad (2.19)$$

where $\varepsilon > 0$ is a small parameter, the functions $w(v)$, $B(\varphi, v, \varepsilon)$, $V_1(\varphi, v, \varepsilon), \ldots, V_r(\varphi, v, \varepsilon)$ together with their first partial derivatives are defined in $\varphi \in (-\infty, \infty)$, $v \in D$, $\varepsilon \in [0, a]$ and continuous (D-- open region of the Euclidean E_r of the variables $v_1, \ldots, v_r$), where $w(v) \neq 0$. The functions $B(\varphi, v, \varepsilon)$, $V_1(\varphi, v, \varepsilon), \ldots, V_r(\varphi, v, \varepsilon)$ are periodic in φ with the period 1. Let $\{\varphi(t, \varepsilon), v(t, \varepsilon)\}$ be the solution of (2.19) corresponding to the initial conditions $\varphi(t_0, \varepsilon) = \varphi_0$, $v(t_0, \varepsilon) = v_0$ ($v_0 \in D$, $0 < \varepsilon \leq a$). Let $\{\varphi(t, \varepsilon), v(t)\}$ be the solution of the averaged system

Card 9/12

The asymptotic behavior of the . . .

$$+ \mathcal{Y}\left[\varphi_0 + \frac{1}{\varepsilon}\int_{t_0}^{t} \frac{1}{T[\tilde{h}(r),\tilde{z}(r)]}\,dr + \nu,\ \tilde{h}(t),\tilde{z}(t),0\right],\ \nu(t_0,\varepsilon)=0$$

where

$$\mathcal{Y}(\varphi,h,z,\varepsilon) = \frac{1}{T(h,z)}\left[X(\overset{*}{x},\overset{*}{y},z,\varepsilon)\frac{\partial \overset{*}{y}}{\partial h} - Y(\overset{*}{x},\overset{*}{y},z,\varepsilon)\frac{\partial \overset{*}{x}}{\partial h} + \sum_{j=1}^{l} Z_j(\overset{*}{x},\overset{*}{y},z,\varepsilon)\left(\frac{\partial \overset{*}{x}}{\partial h}\frac{\partial \overset{*}{y}}{\partial z_j} - \frac{\partial \overset{*}{y}}{\partial h}\frac{\partial \overset{*}{x}}{\partial z_j}\right)\right]$$

The proof of the theorem is based on the properties of the solutions of (2.2) (under the assumptions of theorem 1), on the statement based on the latter that (2.8) represents a certain averaged system, and on the

Averaging theorem: Given the system

The asymptotic behavior of the . . .

2) The functions $x(t,\varepsilon)$, $y(t,\varepsilon)$ are identical with the functions

$$\overset{*}{x}\left(\varphi + \frac{1}{\varepsilon}\int_{t_0}^{t} \frac{1}{T[\bar{h}(r),\bar{z}(r)]}\,dr + \nu(t,\varepsilon);\ \bar{h}(t),\ \bar{z}(t)\right),$$

$$\overset{*}{y}\left(\varphi_0 + \frac{1}{\varepsilon}\int_{t_0}^{t} \frac{1}{T[\bar{h}(r),\bar{z}(r)]}\,dr + \nu(t,\varepsilon);\ \bar{h}(t),\ \bar{z}(t)\right)$$

up to terms of the order $0(\varepsilon)$. Here φ_0 is determined from the relations: $x_0 = \overset{*}{x}(\varphi_0, h_0, z_0)$, $y_0 = \overset{*}{y}(\varphi_0, h_0, z_0)$, $|0(\varepsilon)| \leq M_0\varepsilon$, $|\nu(t,\varepsilon)| \leq M_0$, $M_0 = \text{const}$, $\nu(t,\varepsilon)$ is the solution of the equation

$$\frac{d\nu}{dt} = \frac{1}{\varepsilon T[h(t,\varepsilon), z(t,\varepsilon)]} - \frac{1}{\varepsilon T[\bar{h}(t),\ \bar{z}(t)]} +$$

Card 7/12

The asymptotic behavior of the . . .

$$+\left(\frac{\partial H(x,y,z)}{\partial y}\right)^2\Big]^{-\frac{1}{2}} ds \quad (j=1,\ldots,l)$$

$$(T(h,z) = \oint_{H(x,y,z)=h} \left[\left(\frac{\partial H(x,y,z)}{\partial x}\right)^2 + \left(\frac{\partial H(x,y,z)}{\partial y}\right)^2\right]^{-1/2},$$

ds-- element of arc of the phase trajectory (2.3); the integration is carried out for an arbitrary fixed pair $(h,z) \in G_h$; G_h is the neighborhood of $(\overset{0}{h}, \overset{0}{z})$ into which G goes over if it is put $h=H(x,y,z)$, $z=z$). It is assumed that the solution $\{\overline{h}(t), \overline{z}_1(t),\ldots, \overline{z}_l(t)\}$ of (2.8) has the initial values $\overline{h}(t_0) = h_0 = H(x_0,y_0,z_0)$, $\overline{z}_1(t) = z_{10}$,... ..., $\overline{z}_l(t_0) = z_{l0}$ ($\{z_{10},\ldots, z_{l0}\} = z_0$) and on $[t_0,L]$ remains in G_h.

Card 6/12

The asymptotic behavior of the . . .

1) The solution $\{x(t,\varepsilon), y(t,\varepsilon), z(t,\varepsilon)\}$ of (2.1) runs in G, and the functions $h(t,\varepsilon), z_1(t,\varepsilon),\ldots, z_l(t,\varepsilon)$ $(h(t,\varepsilon) = H[x(t,\varepsilon), y(t,\varepsilon), z(t,\varepsilon)])$ are identical up to terms of the order $O(\varepsilon)$ with the functions $\bar{h}(t), \bar{z}_1(t),\ldots, \bar{z}_l(t)$ being solutions of the following autonomous system which is independent of ε :

$$\left.\begin{aligned}
\frac{dh}{dt} &= \frac{1}{T(h,z)} \oint_{H(x,y,z)=h} \Big[X(x,y,z,0)\frac{\partial H(x,y,z)}{\partial x} + \\
&+ Y(x,y,z,0)\frac{\partial H(x,y,z)}{\partial y} + \sum_{j=1}^{l} Z_j(x,y,z,0)\frac{\partial H(x,y,z)}{\partial z_j}\Big] \times \\
&\times \Big[\Big(\frac{\partial H(x,y,z)}{\partial x}\Big)^2 + \Big(\frac{\partial H(x,y,z)}{\partial y}\Big)^2\Big]^{-\frac{1}{2}} ds, \\
\frac{\partial z_j}{dt} &= \frac{1}{T(h,z)} \oint_{H(x,y,z)=h} Z_j(x,y,z,0)\Big[\Big(\frac{\partial H(x,y,z)}{\partial x}\Big)^2 +
\end{aligned}\right\} \quad (2.8)$$

Card 5/12

The asymptotic behavior of the . . .

be the equation of the trajectory through $(\overset{0}{x}, \overset{0}{y}, \overset{0}{z})$. Let (2.4) lie completely in $\tilde{G}$ and let it be closed. Then it is shown that in E_{1+2} there exists a neighborhood G of (2.4) with the following properties: 1) the phase trajectories of (2.2) going through the points of G are closed and lie completely in G. 2) For every pair (h,z) the equation (2.3) determines exactly one trajectory of (2.2) lying in G. 3) On each phase trajectory (2.3) of (2.2) one point $\{\alpha(h,z), \beta(h,z), z\}$ can be given which depends smoothly on h,z.

The basic result of the paper is contained in

Theorem 1: Let $H(x,y,z)$, $\frac{\partial H(x,y,z)}{\partial x}$, $\frac{\partial H(x,y,z)}{\partial y}$ together with their partial derivatives up to the second order be continuous and defined in G. Let $X(x,y,z,\varepsilon)$, $Y(x,y,z,\varepsilon)$, $Z_1(x,y,z,\varepsilon)$ ..., $Z_1(x,y,z,\varepsilon)$ together with their first partial derivatives be continuous in G, $0 \leq \varepsilon \leq a$ $(a > 0)$. Then there exists an $\varepsilon_0 > 0$ $(\varepsilon_0 \leq a)$ so that for every $\varepsilon \in (0, \varepsilon_0]$ on the finite interval $[t_0, L]$ it holds:

Card 4/12

The asymptotic behavior of the . . .

for (2.1).

The author investigates the solution $\{x(t,\varepsilon), y(t,\varepsilon), z(t,\varepsilon)\}$ of (2.1) corresponding to the initial conditions

$$x(t_0,\varepsilon) = x_0,\ y(t_0,\varepsilon) = y_0,\ z(t_0,\varepsilon) = z_0$$

$$((x_0, y_0, z_0) \in G)$$

where G is defined as follows:

Let $\frac{\partial H}{\partial x}$ and $\frac{\partial H}{\partial y}$ together with their derivatives be continuous in $\tilde{G} \subset E_{2+1}$, where E_{2+1} is the space of the $x, y, z_1, \ldots, z_1$. (2.2) has the integral

$$H(x,y,z) = h. \qquad (2.3)$$

Let $(\overset{0}{x}, \overset{0}{y}, \overset{0}{z}) \in \tilde{G}$ be no equilibrium position of (2.2). Let

$$H(x,y,z) = \overset{0}{h} \quad (\overset{0}{h} = H(\overset{0}{x}, \overset{0}{y}, \overset{0}{z})) \qquad (2.4)$$

Card 3/12

The asymptotic behavior of the . . . .

$$\left.\begin{aligned} \frac{dx}{d\tau} &= \frac{\partial H(x,y,z)}{\partial y} + \xi X(x,y,z,\xi), \\ \frac{dy}{d\tau} &= -\frac{\partial H(x,y,z)}{\partial x} + \xi Y(x,y,z,\xi), \\ \frac{dz}{d\tau} &= \xi Z(x,y,z,\xi) \end{aligned}\right\} \qquad (2.1')$$

The system

$$\left.\begin{aligned} \frac{dx}{d\tau} &= \frac{\partial H(x,y,z)}{\partial y} \\ \frac{dy}{d\tau} &= -\frac{\partial H(x,y,z)}{\partial x} \\ \frac{dz}{d\tau} &= 0 \end{aligned}\right\} \qquad (2.2)$$

arising from (2.1') for $\xi = 0$ is called the system of "quick motions"

Card 2/12

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AUTHOR: Makayeva, G. S.

TITLE: The asymptotic behavior of the solutions of differential equations with a small parameter the systems of "quick motions" of which are Hamiltonian

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya matematicheskaya, v. 25, no. 5, 1961, 685-716

TEXT: The author considers the system

$$\left.\begin{aligned} \varepsilon \frac{dx}{dt} &= \frac{\partial H(x,y,z)}{\partial y} + \varepsilon X(x,y,z,\varepsilon), \\ \varepsilon \frac{dy}{dt} &= -\frac{\partial H(x,y,z)}{\partial x} + \varepsilon Y(x,y,z,\varepsilon), \\ \frac{dz}{dt} &= Z(x,y,z,\varepsilon) \quad (z=\{z_1,\dots,z_l\},\ Z=\{Z_1,\dots,Z_l\}) \end{aligned}\right\} \qquad (2.1)$$

or, after the introduction of the quick time $\tau = \frac{t}{\varepsilon}$ the system

Card 1/16

MAKAYEVA, G. S.: Master Phys-Math Sci (diss) -- "Asymptotic behavior of solutions of differential equations with small parameters, whose systems of 'rapid movements' are almost Hamiltonian". Moscow, 1959. 10 pp (Acad Sci USSR, Math Inst im V. A. Steklov), 185 copies (KL, No 12, 1959, 125)

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The Asymptotic Behavior of Solutions of Differential Equations With a Small Parameter Whose Systems of Rapid Motions" Are Close To the Hamilton Systems

SOV/20-121-6-5/45

a sketched proof containing asymptotic properties for the solutions of (1) which correspond to the well-known results of Volosov /Ref 1,2,3,4,5/ for systems with a quick time. Some misprints disturb the understanding.
There are 5 Soviet references.

ASSOCIATION: Matematicheskiy institut imeni V.A.Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A.Steklov of the Academy of Sciences of the USSR)
PRESENTED: April 18, 1958, by P.S.Aleksandrov, Academician
SUBMITTED: April 17, 1958

Card 2/2

SOV/20-121-6-5/45

AUTHOR: Makayeva, G.S.

TITLE: The Asymptotic Behavior of Solutions of Differential Equations With a Small Parameter Whose Systems of "Rapid Motions" Are Close To the Hamilton Systems (Asimptoticheskoye povedeniye resheniy differentsial'nykh uravneniy s malym parametrom, sistemy "bystrykh dvizheniy" kotorykh blizki k gamil'tonovym)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 6, pp 973-976 (USSR)

ABSTRACT: The author considers the system

$$\varepsilon\frac{dx}{dt} = -\frac{\partial H(x,y,z_1,\ldots,z_l)}{\partial y} + \varepsilon X(x,y,z_1,\ldots,z_l,\varepsilon)$$

$$\varepsilon\frac{dy}{dt} = \frac{\partial H(x,y,z_1,\ldots,z_l)}{\partial x} + \varepsilon Y(x,y,z_1,\ldots,z_l,\varepsilon) \quad (1)$$

$$\frac{dz_j}{dt} = Z_j(x,y,z_1,\ldots,z_l,\varepsilon) \qquad (j=1,2,\ldots,l)$$

which, under the introduction of the quick time $\tau = \frac{t}{\varepsilon}$, gets a form which for $\varepsilon = 0$ leads to a Hamilton system. Agreeing to a proposal of Pontryagin, the author gives a very long theorem with

Card 1/2

Makarova G.F.

MAKAYEVA, G.P.

Later results of treating varicosities of the leg by surgical and conservative means. Nov.khir.arkh.no.6:79-80 N-D '57. (MIRA 11:3)

1. Kafedra gospital'noy khirurgii 2-go Moskovskogo meditsinskogo instituta.
(VARIX)

MAKAYEVA, G.F.

"Problem of Surgical Methods of Treating Varicose Veins of the Lower Extremities and Their Lasting Results." Cand Med Sci, Second Moscow State Medical Inst imeni I.V.Stalin, Moscow, 1955. (KL, No 16, Apr 55)

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

MAKAYEV, Z.I., mashinist teplovoza (st.Orsk)

More about the TEM1 diesel locomotive. Elek.i tepl.tiaga 4 no.4: 45-46 '60. (MIRA 13:6)
(Diesel locomotives)

MAKAYEV, Ye.

Extending credit to producers' cooperatives and their financial planning. Fin. SSSR 17 no.10:46-53 O '56. (MLRA 9:11)
(Ul'yanovsk Province--Cooperative societies--Finance)

MAKAYEV, V.V.

Pedagogical practice of futrur teachers in students' brigades.
Politekh.obuch. no.5:71-73 My '59. (MIRA 12:7)

1. Pyatigorskiy pedagogicheskiy institut.
(Pyatigorsk--Teachers, Training of)

MAKAYEV, S.V.

On the road to completing the seven year plan. Metallurg 10 no.7:4-5 Jl '65. (MIRA 18:7)

1. Direktor Nizhne-Tagil'skogo metallurgicheskogo kombinata.

ARNAUTOV, V.T.; BARANOV, V.M.; DONSKOY, S.A.; PASTUKHOV, A.I.; SMIRNOV, L.A.; TORSHILOV, Yu.V.; TRET'YAKOV, M.A.; UDOVENKO, V.G.; FREYDENZON, Ye.Z.; SHCHEKALEV, Yu.S.; Prinimali uchastiye: MAKAYEV, S.V.; KOMPANIYETS, G.M.; NAGOVITSYN, D.F.; NOVOLODSKIY, P.I.; VARSHAVSKIY, V.L.; KOROGODSKIY, V.G.; KLIBANOV, Ye.L.; MEDVEDEVSKIKH, Yu.; TALANTSEVA, T.I.; DUBROV, N.F.; DZEMYAN, S.K.; TOPYCHKANOV, B.I.; CHARUSHNIKOV, O.A.; KHARITONOV, Yu.A.

Developing and mastering the technology of converting vanadium cast iron in oxygen-blown converters with a 100 ton (Mg) capacity. Stal' 25 no.6:504-508 Je '65. (MIRA 18:6)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Makayev, Kompaniyets, Nagovitsyn, Novolodskiy, Varshavskiy, Korogodskiy, Klibanov, Medvedevskikh, Talantseva). 2. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (for Dubrov, Dzemyan, Topychkanov, Charushnikov, Kharitonov).

MAKAYEV, S.V.

The Nizhniy Tagil metallurgical combine is 25 years old.
Stal' 25 no.6:481-483 Je '65. (MIRA 18:6)

1. Direktor Nizhne-Tagil'skogo metallurgicheskogo kombinata.

MAKAYEV, S.V., kand. tekhn. nauk; STAROSELETSKIY, M.I., inzh.;
KHAYKIN, B.Ye., inzh.

Using statistical methods for the investigation of technological processes in metallurgy. Stal' 24 no.1:89-92 Ja '64. (MIRA 17:2)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.

MAKAYEV, S.V., kand.tekhn.nauk; STAROSELETSKIY, M.I., inzh.; KALININ, A.I., inzh.

Reorganization of the blooming mill at the Nizhniy Tagil Metallurgical Combine. Stal' 23 no.9:816-819 S '63. (MIRA 16:10)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.

TARNOVSKIY, Iosif Yakovlevich; PAL'MOV, Yevgeniy Vasil'yevich; TYAGUNOV, Vladimir Arkad'yevich; MAKAYEV, Sergey Vladimirovich; KOTEL'NIKOV, Veniamin Petrovich; ANDREYUK, Leonid Vasil'yevich. Prinimal uchastiye KOTSAR', S.L.; LYASHKOV, V.B., red.; SKOROBOGACHEVA, A.P., red.izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Rolling on a blooming mill] Prokatka na bliuminge. Moskva, Metallurgizdat, 1963. 388 p. (MIRA 16:10)
(Rolling (Metalwork))

MAKAYEV, S.V., kand.tekhn.nauk; SKRYABIN, N.P., inzh.; KORSHCHIKOV, V.D., inzh.

Rolling beams on universal rolling mill stands. Stal' 22 no.12: 1088-1092 D '62. (MIRA 15:12)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat i Ural'skiy institut chernykh metallov.
(Rolling (Metalwork)) (Beams and girders)

MAKAYEV, S.V.

Nizhniy Tagil metallurgists during the 45 years of Soviet government. Stal' 22 no.7:578-579 Jl '62. (MIRA 15:7)

1. Direktor Nizhne-Tagil'skogo metallurgicheskogo kombinata imeni V.I. Lenina.
(Nizhniy Tagil--Iron and steel workers)

TARNOVSKIY, I.Ya.; MAKAYEV, S.V.; GANAGO, O.A.; STAROSELETSKIY, M.I.; SHELEKHOV, V.A.

Investigating the possibility of manufacturing railroad rails by drop forging in dies (without subsequent rolling). Kuz.-shtam.proizv. 4 no.12:1-3 D '62. (MIRA 16:1)
(Forging) (Car wheels)

MAKAYEV, Sergey Vladimirovich; VINOKUROV, Izrail Yakovlevich; MERKSIN, Boris Vasil'yevich; FEYGIN, Geshel' Davidovich; SKRYABIN, Nikolay Petrovich; RYABOKON', Nikolay Kononovich; LEDNEV, M.P., retsenzent; KOTSAR', Sergey Leonidovich, red.; BUR'KOV, M.M., red.izd-va; MIL'KOVA, N.T., tekhn. red.

[Production of lightweight sections]Proizvodstvo oblegchennykh profilei. [By]S.V.Makaev i dr. Sverdlovsk, Metallurgizdat, 1962. 215 p. (MIRA 16:3)
(Rolling (Metalwork))

MAKAYEV, S.V.; MEDVEDEV, Yul.

"Of Nizhniy Tagil origin." Nauka i zhizn' 28 no.10:30-31 O '61.
(MIRA 15:1)

1. Direktor Nizhnetagil'skogo metallurgicheskogo kombinata imeni V.I.Lenina (for Makayev).
(Nizhniy Tagil--Steel industry)

MAKAYEV, S.V., inzh.; GUBERT, S.V., inzh.; RABINOVICH, D.M., inzh.

Deep hardening of rails on industrial testing equipment. Stal' 21 no.2:156-159 F '61. (MIRA 14:3)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Railroads--Rails) (Steel--Hardening)

ROMENETS, V.A.; LAPIN, N.L.; MAKAYEV, S.V.

Evaluating the technical and economic indices of the rotary hearth process. Izv. vys. ucheb. zav.; chern. met. 4 no.11: 193-198 '61. (MIRA 14:12)

1. Moskovskiy institut stali.
(Rotary hearth furnaces)

ROMENETS, V.A.; MAKAYEV, S.V.; LAPIN, N.L.

Studying indices of the rotary furnace process. Izv.vys.ucheb.zav.; chern.met. 4 no.9:191-197 '61. (MIRA 14:10)

1. Moskovskiy institut stali.
(Rotary hearth furnaces)

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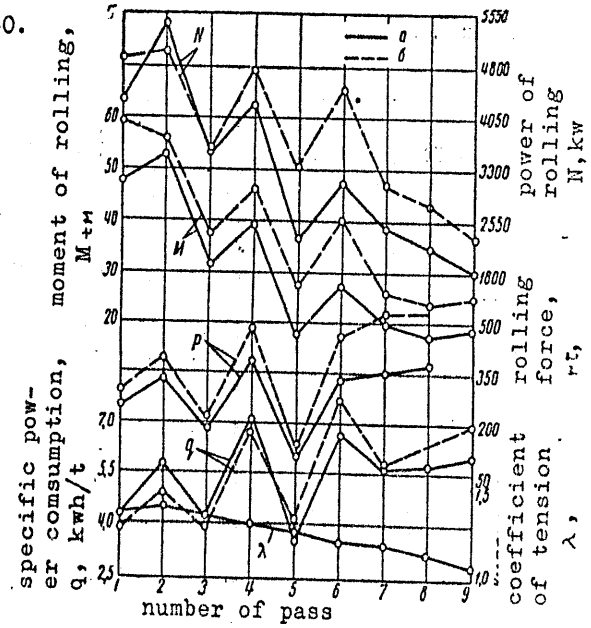
S/133/61/000/003/007/014
A054/A033

Mastering the rolling of .....

Figure 5: Idem, for beams 30.



Card 6/6

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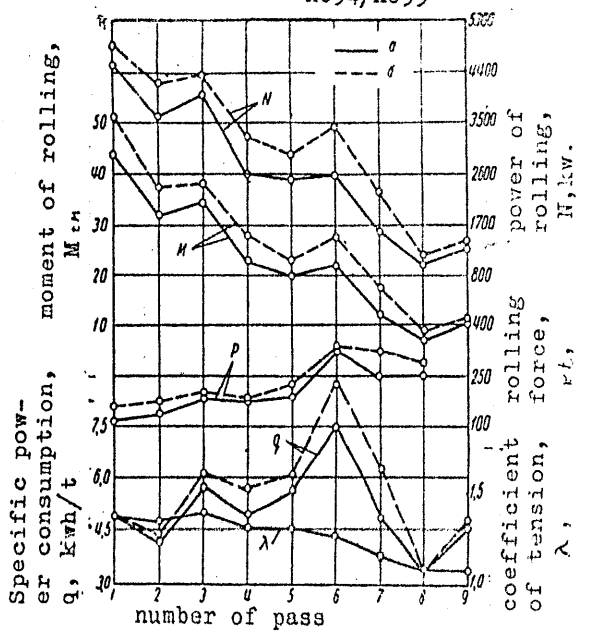
A054/A033

Mastering the rolling of .....

Figure 4: The change in the parameters of rolling light-weight beams (24) from St.3kp (carbon) and 15KhSND (low-alloy) steel, a,b, per pass, on the "800" stand.



Card 5/6

Mastering the rolling of ...

ings for the national economy in the low-alloy-sections are subjected to the heat treatment indicated. There are 8 figures and 4 tables.

ASSOCIATION: Nizhne-Tagil'sk metallurgicheskiy kombinat (Nizhne-Tagil Metallurgical Combine) and Ural'skiy institut chernykh metallov (Ural Institute of Ferrous Metals)

Mastering the rolling of ...

steels as compared with carbon steels. It was found, as regards temperature conditions, that low-alloy steels possess a higher deformation resistance at the final (lower) rolling temperatures, (750 - 850°C), than carbon steels. Therefore additional care has to be taken in adjusting the stand to obtain the required dimensions of the section. The standstills of the mill increased by about 10 % when rolling low-alloy steels, on account of changes of rolls and fixtures, so that the output of the mill dropped by about 10 %. However, the 09G2 steel, which is most suitable for light-weight sections, has a great strength in hot-rolled condition, as well as good welding properties and a lower ductility compared with St.3 steels. These properties of the 09G2 steel can still be improved by subjecting it to hardening and annealing at 580°C for 1,5 hours. As a result of heat treatment, the 09G2 steel obtains a fine grained ferrite-perlite structure; moreover, when annealed at 520°C, its strength increases further by about 10 - 20 %. 09G2 steel is also considerably tougher than the St.3 steels (after complete heat treatment its toughness exceeds that of St.3 steel at +20°C by 30%, at -40°C about three times.). Thus, with regard to the higher load of the motor and the reduced output of the mill, the production of light-weight sections from low-alloy steels will yield actual sav-

89973

S/133/61/000/003/007/014
A054/A033

Mastering the rolling of .....

sev, Yu. D. Korkodinov, S. V. Gubert, V, V. Skakun, V. V. Kutayev and V. S. Serebryakov. Beams and channels were rolled on the model "800" rolling mill. The parameters of the electromotors, the metalpressure on the rolls, the rolling temperature and the accuracy of the sections obtained were closely controlled. The same roll-pass designs were used as in the conventional process. The bloom were heated to 1280°C, rolled first in a "900" mill, next in the "800" mill, (with 3 - 5 passes on the first and 3 passes on the second stand) and then processed in the finishing mill. The roughing stands were actuated by a d-c 6200 hp motor (80 - 160 rpm, 55.5 TM rated torque), while the finishing stand was driven by a 2500 hp motor (rated torque: 22.4 TM). The energetic parameters were recorded on the tape of an OT-24 (OT-24) oscillograph, the metalpressure on the roll was registered by special УИЧМ (UIChM) dynamometer with wire pickups. The rolling temperature after the "900" stand was registered by a photoelectric pyrometer, before the finishing stand by a radiation pyrometer. Based on the test results it was found that the load on the motor increased by about 10 %, the rolling pressure by about 25 %, the specific electric power consumption by about 10 - 20 %, when rolling light-weight sections of low-alloy

Card 2/6

89973

S/133/61/000/003/007/014
A054/A033

1.1300 also 1454, 1045

AUTHORS: Makayev, S. V., Engineer; Skryabin, N. P., Engineer; Rabinovich, D. M., Engineer; Shadrin, V. A., Candidate of Technical Sciences; Korshikov, V. D., Engineer

TITLE: Mastering the rolling of light-weight sections of low-alloy steels

PERIODICAL: Stal', no. 3, 1961, 240 - 245

TEXT: The new light-weight beams and channels (ГОСТ - GOST 8239-56 and GOST 8240-56) made of low-alloy steel have not the same strength as the corresponding sections made of carbon steel. In order to obtain the required strength, larger sizes of these sections are used and in this way the savings otherwise effected are partly lost. This draw-back is compensated for by improving the mechanical properties of the steels of which the light-weight sections are made. In order to find suitable methods to this end, tests were made with the most current low-alloy steels: 09Г2 (09G2), 15ХСНД (15KhSND) and compared with the СТ.3 (St.3) grade steels. The tests were carried out with the cooperation of L. I. Putil't-

Card 1/ 6

Figure 2:

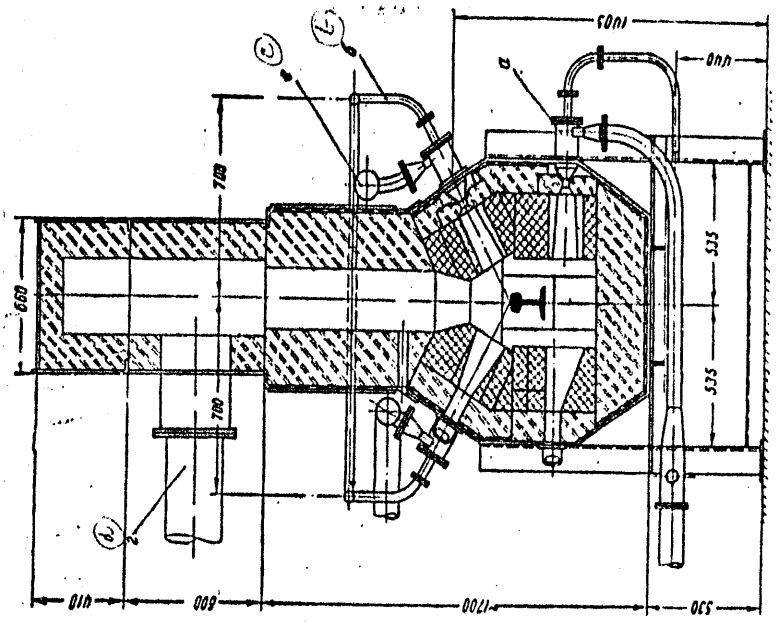
Cross section of one of the ten compartments of the furnace for high-speed heating

a - burner; b - air pipe; c - gas pipe; d - smoke pipe

Card 8/8

S/133/61/000/002/008/014
A054/A033

Volumetric Hardening of Rails in an Industrial ...



Card 7/8

S/133/61/000/002/008/014
Volumetric Hardening of Rails in an Industrial... A054/A033

	σ_s kg/sq mm	σ_B kg/sq mm	δ%	ψ%	a_K kgm/sq cm	d_B mm
volumetric-hardened rails	79.5-97.0	126-131	11-8.3	41.5-33.5	3.7-4.5	3.2-3.3
rails without heat treatment	44.0-45.4	83.5-87	11.7-9.5	15.8-19.2	2.0-2.2	3.9-4.0

The test rails were laid on the Sverdlovsk track, in heavy-duty sectors, in curves, and show great resistance to wear. Equipment for the heat treatment of the total Soviet rail production (1.2-1.5 million tons a year) for rails 25 m long, will be designed. The heat treatment costs about 10 rubles/ton, so that it is much cheaper than using alloyed steels. There are 5 figures and 2 Soviet references.

ASSOCIATION: Nizhne-Tagil'ski'y metallurgicheskiy combine (The Nizhne-Tagil Metallurgical Combine)

Card 6/8

Volumetric Hardening of Rails in an Industrial...

Duration of heating, min	9-11
Holding time in air, sec	30-70
Hardening temperature, in oil, °C	830-850
Oil temperature, during hardening the rail, °C	≤ 110
Duration of hardening, min	5-6
Annealing temperature, °C	450-480
Holding time for annealing, hours	2

The heat treatment installation ensures such a straightness of the rails which cannot be obtained by any other equipment. Flat bending in vertical and horizontal planes does not exceed 80 mm and no torsion around the longitudinal axis was observed. The rails can be heated at a rate of 2°/sec between 20 and 900°C, despite the presence of screw holes. Cracks formed only after hardening in oil containing much water and when annealing was delayed after hardening. The comparison of characteristics of heat-treated and non-heat-treated rails show that the former are superior, attaining the values found in chrome-vanadium steel rails:

ity is equipped with oil conduits, air piping for the mixing of oil, supports for the rails, steam pipes for producing a vapour curtain when the oil is combusted. Above the container a welded metal beam construction is suspended. It is supplied with a roller runway and drive for lowering and lifting the beam. On the beam a cover is loosely fitted, which covers the container when the beam is lowered. After hardening the rail is removed by a winch from the beam structure onto a shelf provided with equipment for the removal of oil vapours. A bridge crane then carries it into the furnace for annealing. The uniformity of heating was checked by electronic potentiometers, indicating that the heating of the rails in the furnace is constant. The temperature differential along the rail does not exceed 80°C (50°C on an average), above 900-950°C it even decreases to 30°C. The temperature drop can further be reduced by discharging the rails more quickly and making the furnace longer. Fairly uniform properties of the metal can be obtained by hardening the rail head at temperatures above A_{c_3}. The heat treatment is carried out under the following conditions:

Temperature of heating the rail in the compartment furnace, °C	900-920

This steel costs 31 rubles more than the M75 type and the rails made of it are twice as expensive as the conventional ones. However, tests carried out at the NTMK, in 1957-60, proved that rails with the required properties can be obtained from carbon-steel by volumetric hardening in oil with subsequent annealing. For this process a semi-industrial pilot installation has been designed, consisting of a 10-compartment, 50-ton furnace for rapid heating and a unit for oil-hardening. The furnace-compartments are arranged in one line, 1.600 mm apart. The spaces between the compartments are covered with drums under which water-cooled rolls for delivering the rails are mounted. Each compartment has eight two-conduit, short-flame turbulence burners of VNIIMT -design for coke-gas burning. The most uniform heat distribution in the furnace can be obtained by a chess-board arrangement of the burners on the upper and the lower level of each compartment, the thermal load being distributed between the upper and the lower burners at a 88-12% ratio. The furnace is provided with shelves and guiding mechanisms for feeding the rails to and discharging them from the furnace, moreover with control and measuring apparatus, sound and flashlight indicators. Uniform heating of the rails over their whole length can be obtained by continuously moving them forward and backward at a rate of 4 m/min. The hardening container of 30-ton capac-

raised the cost considerably. Rails made of vanadium steel, (0.30% V) - produced in 380-ton furnaces with top pouring, adding ferro-vanadium into the ladle show better properties than the conventional M75 steel rails:

	σ_s kg/sq mm	σ_B kg/sq mm	δ %	ψ %	a_K kg/sq cm
Vanadium steel	53-64	90-102	6-12	8-26	2.5-4.0
Conventional M75 type steel	48-55	82-95	7-9	15-22	2.0-2.5

Partly due to isothermal treatment of the rails, with small vanadium additions at 600-650°C, the cost of these steel rails is 1.5 times higher than that of M75 steel rails. Tests were also carried out with chrome-vanadium steels (Cr: 2.5-3.2%; V; 0.1-0.2%). For the rails of this alloy - without heat treatment - the following values were obtained:

σ_B kg/sq mm	σ_s kg/sq mm	δ %	ψ %
115-130	70-95	7-10.5	20-55

S/133/61/000/002/008/014
A054/A033

AUTHORS: Makayev, S.V., Engineer, Gubert, S.V., Engineer, and Rabinovich, D.M., Engineer

TITLE: Volumetric Hardening of Rails in an Industrial Pilot Installation

PERIODICAL: Stal', 1961, No. 2, pp. 156-159

TEXT: Under the present operational conditions the service life of rails made of M75 type steels produced without heat treatment is insufficient. The strength of the rails should be increased to 100-120 kg/sq mm and their yield point to 80 kg/ sq mm and up, without deterioration of the plastic properties. This can be obtained either by alloying the rail steels or by a heat treatment consisting of volumetric hardening. Tests carried out at the Nizhne-Tagil Metallurgical Combine gave the following results: The properties of rails made of low-alloy steels without heat treatment were improved only slightly while the production became much more expensive. When the rails were made of alloy steels with a higher chromium and nickel content, their properties improved but the technological difficulties involved also

Card 1/8

Trends in the Development of Blooming Mill

ious specimens in the border and the central zones of the products are given. There are 6 figures, 4 tables and 8 Soviet references.

ASSOCIATION: Nizhne-Tagil'skiy metallurgicheskiy kombinat (Nizhne-Tagil'sk Metallurgical Plant)

Card 3/3

Trends in the Development of Blooming Mills

tion between the longitudinal-vertical dimensions of the deformation center, l/H_{aver} (l is the length of the arc of contact, H_{aver} the average height) [Abstracter's note: Subscript aver (average) is the translation of the original cp (srednyaya)] and the changes in transverse deformation, $\Delta b/b$ were defined, giving the degree of deformation of the carcass sheets. The irregularities in longitudinal and vertical deformations were investigated in ingots with carcasses inside them, on which coordinates were plotted. The influence of the degree of reduction was examined in ingots and slabs cast in 7-ton molds, of boiling and killed steel. Mechanical, macro- and microstructural tests showed that an increase in the degree of reduction reduced the irregularities of deformation inside the sheets and the possibility of internal defects being formed, furthermore, that the mechanical properties and the structure of the products were improved. The conclusion was drawn that the output of the mill could be raised by increasing the degree of reduction to 100 - 110 mm per pass, while the optimum rolling speed is 75 rpm. The transport of the ingots from the soaking pit to the mill should not take more than 2 min and when increasing the degree of reduction, an edger should be operated for removing the angular cracks forming on both sides of the ingots, at least after every third pass. The values of l/H_{aver}, $\Delta b/b$ and other characteristics (expansion, indices of irregularities in expansion) of var-

S/133/60/000/010/006/013
A054/A029

AUTHOR: Makayev, S.V., Engineer

TITLE: Trends in the Development of Blooming Mills

PERIODICAL: Stal', 1960, No. 10, pp. 915 - 919

TEXT: In order to determine the possibilities of increasing the output of blooming mills by improving the quality of ingots and slabs as regards deformation, theoretical investigations and tests were carried out to define the laws governing transverse, vertical and longitudinal deformations in ingots, the distribution of the irregularities in deformation in its center and its influence on the stressed condition of the product. In the tests dealing with vertical and transverse deformations ingots containing carcasses were rolled; the carcass was formed by putting it in the empty ingot mold and by filling the mold with liquid steel by bottom casting. The carcass consisted of five sheets made of CT3 (ST3) type steel, 30 - 32 mm thick, 450 mm wide and 1,600 mm high. The distribution of vertical deformation was defined by the change in the distance between the sheets of the carcass, while the change in the distance between the notches made in the sheets showed the distribution of the transverse deformations. The rela-

Card 1/3

MAKAYEV, S.V., inzh.

State of stress-deformation in ingots during rolling on a blooming mill and gripping of the bar by rolls. Stal' 20 no. 7:628-634 Jl '60. (MIRA 14:5)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Rolling (Metalwork)) (Deformations (Mechanics))

MAKAYEV, S.V.

TARNOVSKIY, I.Ya.; GANAGO, O.A.; BAGROV, I.N.; SHELEKHOV, V.A.; Prinimali uchastiye: MAKAYEV, S.V., inzh.; RYABOKON', N.K., inzh.; KOTEL'NIKOV, G.V., inzh.; PUCHKOV, S.G., inzh.; STAROSELETSKIY, M.I., inzh.; BAKHAREV, V.P., tekhnik.

Developing a technology for the manufacture of lightweight railroad car wheels. Kuz.-shtam. proizv. 1 no.9:1-4 S '59. (MIRA 12:12)

(Car wheels) (Forging)

SOV/130-58-12-14/21

Reasons for the Formation of Corner Flaws on Blooms from Rimming-Steel Ingots

250 mm square billets which were then sectioned longitudinally and inspected. Ingots of one heat of type 3 kp steel were rolled, after delays of 1-4.5 minutes, into 300 x 320 mm billets which were retreated and rolled into 125 mm squares without intermediate dressing. Best results were obtained with cooling times of 1.0-1.5 minutes (corresponding to normal mill operation). The macrostructure of a specimen from a 250-mm square billet rolled from an ingot cooled for 5-6 min was normal and the maximal depth of surface fissures was 7-10 mm. No microstructural peculiarities were associated with the fissures. The author attributed the investigated flaws to longitudinal tensile forces due to uneven deformation.
There is 1 figure and 1 table.

ASSOCIATION: Nizhne-Tagil'skiy metallurgical combine

Card 2/2

AUTHOR: Makayev, S.V. SOV/130-58-12-14/21

TITLE: Reasons for the Formation of Corner-Flaws on Blooms from Rimming-Steel Ingots (Prichiny obrazovaniya uglovykh rvanin na blyumakh iz slitkov kipyashchey stali)

PERIODICAL: Metallurg, 1958, Nr 12, pp 32-33 (USSR)

ABSTRACT: When blooms and slabs are rolled from large ingots, especially those of rimming steels, serious fissures leading to rejects often appear on the corners. The author describes an experiment to confirm that an important cause of this is uneven temperature distribution due to cooling of the corners during pre-rolling delays. The 7-tonne rimming-steel experimental ingot was heated with the others in the soaking pit to 1320°C in 7 hours and on discharge was fitted with thermocouples placed in holes previously prepared in it. The cooling curves (Fig) thus obtained show that after 4 and 7 minutes the temperature difference between centre and corners is 75 and 170°C respectively, and the author indicates that large differences in resistance to deformation will result. To check this, top-poured, square 7-tonne rimming-steel ingots were rolled after various cooling times (1-7 minutes) into

Card 1/2

New Wheel-rolling Shop of the Nizhniy Tagil Metallurgical Combine.

checked, passed for dressing and then for mechanical working. After mechanical treatment the wheels are passed into a rotating bottom ring furnace for heating followed by hardening by spraying with water with a temperature of 20-30 °C and 4-5 atm. pressure. Hardened wheels are passed into soaking pits for tempering (500 - 520 °C for 3.0 - 3.5 hours). The present scheme of cutting ingots into semis is shown in Fig.26. Steel used: 0.5 - 0.7% C, 0.6 - 0.9% Mn, 0.15 - 0.35% Si; $\leq$0.05% S, $\leq$0.05% P. Data on the distribution of defects in rejected wheels during the first quarter of 1957 are given in the table. In conclusion, it is stated that an improvement in the stability of centering of top and bottom stamps in presses is necessary. There are 1 table and 2 figures.

AVAILABLE: Library of Congress.

Card 2/2

MAKAYEV, S. V.

133-7-12/28

AUTHOR: Makayev, S.V., Kotel'nikov, G.V., Staroseletskiy, M.I. and Narutskaya, L.A., Engineers.

TITLE: New Wheel-rolling Shop of the Nizhniy Tagil Metallurgical Combine (Novyy kolesoprokatnyy tsekh Nizhne-Tagil'skogo metallurgicheskogo kombinata)

PERIODICAL: Stal', 1957, No.7, pp. 616 - 621 (USSR)

ABSTRACT: A description of the wheel-rolling shop designed by Gipromez for the Production of 180 000 tons of wheels with their mechanical and thermal treatment is given. The distribution of equipment is shown in Fig.1. Main points: 14 ingot-cutting machines (at present capable of cutting 11-13 ingots per shift each), two four-zone ring furnaces with rotating bottoms for pre-heating semis before deformation (furnace capacity - 216 semis), 3 000-ton press for primary reduction and piercing, 7 000-ton press for the final forming of semis; wheel-rolling mill; 2 500-ton bending press. The duration of the whole operation on presses and rolling mill is 2.5 - 3 min. In order to prevent the formation of flakes, packets of 6 wheels with a temperature of 450 - 600 °C are transferred into soaking pits for isothermal treatment at 600 °C for 3 hours (altogether 48 soaking pits of 2 150 mm in diameter and 2 110 mm in depth). After cooling in air in packets, the wheels are

Card1/2

MAKAYEV, S.V.

MAKAYEV, S.V., inzhener.

Grip on the metal by blooming mill rolls. Stal' 16 no.12:1089-1094 D '56. (MLRA 10:9)

1. Novo-Tagil'skiy metallurgicheskiy zavod.
(Rolling (Metalwork))

MAKAYEV, S. K. Cand Tech Sci -- "Study of deformation occurring during rolling of ingots on blooming mills." Sverdlovsk, 1960 (Min of Higher and Secondary Specialized Education RSFSR. Ural Polytechnic Inst im S. M. Kirov). (KL, 1-61, 194)

MAKAYEV, N.A.; GEL'BERG, Ya.L (Vitebsk)

On the road to technical progress. Shvein.prom. no.5:11-14 S-O '60. (MIRA 13:12)
(Clothing industry)

MAKAYEV, L.S.

Asymptotic behavior of solutions of small-parameter differential equations with Hamiltonian "rapid movements." Izv. AN SSSR. Ser. mat. 25 no.5:685-716 S-O '61. (MIRA 14:10)
(Differential equations)

MAKAYEV, F.K.; VIGDERGAUZ, Ye.M.; GRUSHEVSKIY, F.U.; KOROVKEVICH, N.V., inzh., red.; VOROB'YEVA, L.V., tekhn. red.

[Experience in the operative planning of train operations; from the practices of the Western Siberia Line] Opyt operativnogo planirovaniia poezdnoi raboty; iz praktiki Zapadno-Sibirskoi dorogi. Moskva, Transzheldorizdat, 1963. 44 p. (MIRA 17:2)

МАКАЙЕНКО, И. И.

TRUSHNEVA, V.S.; GALIGUZOV, N.S.; MAKAYENKO, I.I.; RABINKOVA, T.S.; VARTANYAN, K.T.

Discussions. Trudy Mekhanobr no.98:60-75 '56. (MLRA 10:7)
(Ore dressing)

MAKAYDA, N.P.

Readers' conferences. Izv. vys. ucheb. zav.; tekh. leg. prom. no.2:145 '60. (MIRA 13:11)

1. Otvetstvennyy sekretar' redaktsii zhurnala "Tekhnologiya legkoy promyshlennosti".
(Technoglogy--Periodicals)

MAKAY, Maria

Donaggio's test in rheumatic diseases. Reumatologia Polska no.3: 313-317 '60.

1. Z Instytutu Reumatologicznego w Warszawie Dyrektor: prof. dr.med. E. Reicher
(RHEUMATISM urine)

Makay, M

GRAJNERT, K.; MAKAY, M.; RAJPERT, D.

Effect of mud liniments on the secretion of 17-ketogenic steroids in patients with ankylosing spondylitis. Postepy reumat. no.3:72-80 1957.

1. Z Instytutu Reumatologicznego. Dyrektor: prof. dr Eleonora Reicher.

(SPONDYLITIS, ANKYLOSING, urine in
17-ketosteroids, eff. of mud liniments (Pol))
(17-KETOSTEROIDS, in urine
in ankylosing spondylitis, eff. of mud liniments (Pol))
(LINIMENTS, eff.
mud liniments on urinary 17-ketosteroids in ankylosing spondylitis (Pol))

KOVACS, Istvan, dr.; MAKAY, Laszlo, dr.

Some data on the problem of the etiology of embryological malformations. Magy. noorv. lap. 25 no.2:86-91 Mr '62.

1. Bajai Varosi Tanacs Korhaza (Igazgato: Cseh Imre dr.) Szuleszeti es Nogyogyaszati Osztalyanak (Foorvos: Kovacs Istvan dr.) kozlemenye.

(ABNORMALITIES etiol)

MAKAY, Laszlo, dr.

Unusual localization of appendicular cyst. Orv.hetil. 102 no.3: 135-136 15 Ja'61.

1. Baja Varosi Tanacs Korhaz Szuleszeti es Nogyogyaszati Osztaly.
(APPENDIX dis)
(CYSTS)

MAKAY, Gyorgy

Relations between the durability of stranded wire cables for cranes and the warranty material tests. II. Gep 14 no.3:35-91 Mr '62.

MAKAY, Gyorgy

Correlation between durability and material testing in time of delivery of stranded wire ropes for cranes. (To be contd). Gep 14 no.2:64-68 F '62.

1. Ganz-MAVAG Mozdony-, Vagon- es Gepgyar.

MAKAY, Gyorgy

General requirements for the final inspection of machine industry products and the control of imported goods. Gepgyartastechn 2 no.1:1-8 Ja '62.

1. GANZ-MAVAG Mozdony-, Vagon- es Gepgyar.

MAKAY, Endre

Power economy investments. Ipari energia 3 no.3:45-47 Mr '62.

1. Hoenergiagazdasagi es Tervezo Vallalat.

SZEKELY, Katalin, dr.; KISS SZABO, Antal, dr.; MAKAY, Aniko, dr.; JEZERNICZKY, Judit

Serum enzyme studies in infants and children. Gyermekgyogyaszat 14 no. 8:238-243 Ag. '63.

1. A Debreceni Orvostudomanyi Egyetem Gyermekklinikajanak (Igazgato: Kulin Laszlo dr. egyetemi tanar) kozlemenye.
(ENZYME TESTS) (INFANT, NEWBORN, DISEASES)
(ASPARTATE AMINOTRANSFERASE) (ALANINE AMINOTRANSFERASE)
(ATROPHY) (HEPATITIS, EPIDEMIC) (ALDOLASE)

The International Connections of the Higher School - Scientists of Foreign Countries in the USSR

various branches of industry. A group of 23 American post-graduate students arrived recently to study at the Moscow and Leningrad universities. A delegation from the United Arab Republic and 2 Indian professors, Mr. Wenkataraman and Shiba Prasad Chatterdzhi, are mentioned as having visited the USSR in addition to 3 instructors from France who learned Russian in exchange for teaching French. Student groups also arrived from Sweden, England and Finland.

Card 4/4

The International Connections of the Higher School - Scientists of Foreign Countries in the USSR

Union. Professor S. Landa delivered lectures on chemistry at the Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva (Moscow Chemico-Technological Institute imeni Mendeleyev). Forty-five Instructors from countries of the people's democracies attended a seminar on the Russian language at the MGU. During the last 6 months of 1958 the USSR Ministry of Higher Education recieved 4 delegations from the USA: a delegation of presidents of American universities of 13 men headed by E. Litchfield, President of Pittsburg University, a delegation of American university professors headed by F. Brown, Director of a Department of the American Council on Questions of Education. The author mentions 2 other delegations, one of which was led by D. Turkevich, Professor of Princeton University, and the other by F. Lindwall, Professor of California University. The American specialists visited the Kuybyshev GES and familiarized themselves with the system of training engineers for

The International Connections of the Higher School - Scientists of Foreign Countries in the USSR

Sigeti headed a delegation which familiarized itself with the method of teaching social sciences at Moscow and Leningrad vuzes. A week of friendship between the Moscow University imeni Lomonosov and the Berlin Humboldt University was conducted from 27 October to 3 November. The Berlin delegation, consisting of professors and students, was headed by Professor W. Hartke, President of the Academy of Sciences and University Rector. A return visit was paid to the Humboldt University by a delegation of the MGU headed by the University Pro-Rector Professor I.S. Galkin. Three delegations from the Chinese Ministry of Education spent 2 months each in the USSR and studied scientific work in the field of aeronautical engineering, radiophysics and radio-engineering, chemistry and chemical technology. G. Gunzhe, a scientific worker of the University imeni Choybalsan (Mongolian People's Republic), arrived to study higher mathematics at the MGU. Many scientists from Czechoslovakia also visited the Soviet

22(1)
AUTHOR: Makav'yeva, N.A. SOV/3-59-3-37/48

TITLE: The International Connections of the Higher School (Mezhdunarodnyye svyazi vysshey shkoly) - Scientists of Foreign Countries in the USSR (Uchënyye zarubezhnykh stran v SSSR)

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 3, pp 72-73 (USSR)

ABSTRACT: In 1958, cultural and scientific cooperation between the USSR and other countries was for the first time carried out on a large scale. The vuzes and the USSR Ministry of Higher Education were visited last year by 672 foreign specialists, and in turn sent over 700 scientists and about 150 students to foreign countries. The author mentions the young scientific workers of Albania T. Perpari, S. Chicho, G. Dzhinari and scientists from Bulgaria I. Georgiyev, V. Kylbova, S. Neykov, I. Panchev and I. Terziyskiy, who visited agricultural and medical vuzes. About 100 young scientists from Hungary spent from 1 to 4 months in the USSR to increase their qualification, and the Hungarian Deputy Minister of Education I.

Card 1/4

AUTHOR: Makav'yeva, N.A. 3-58-7-29/36

TITLE: Foreign Scientists in the Soviet Union (Zarubezhnyye uchenyye v Sovetskom Soyuze)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 7, pp 79-81 (USSR)

ABSTRACT: In the last 5 months more than 150 scientists visited the Soviet Union. About 50 of them came from capitalistic countries. There is 1 photo.

Card 1/1

Veterinary Medicine

BULGARIA

PAVLOV, N., Dr, MAKAVEYEVA, E., Dr, VESELINOVA, A., Dr, VIZPB [not identified]

"Disease of New- Born Lambs Caused By Neorickettsiae"

Sofia, Veterinarna Sbirka, Vol 63, No 1, 1966, pp 3-6

Abstract: The virus abortion of sheep is a latent neorickettsiae infection. Lambs that are born alive exhibit symptoms of the infection. Tissues and organs of infected new- born lambs were subjected to a pathological, anatomic, and histologic investigation. Two strains of the causative factor were isolated and propagated in 6-day old chicken embryos on being injected into their yolk sac. The embryos perished on infection and showed presence of typical elementary bodies. Antigen obtained from chicken embryos had properties identical with those of antigen isolated from the placenta of aborting ewes. By using the antigen from chicken embryos, the reaction of complement fixation was carried out for diagnostic purposes.

1/1

SERBEZOV, V.; OGNANOV, D.; MATOVA, E.; ALEXANDROV, E.; MAKAVEYEVA, E.; NEDELTSEVA, N.

Detection of ornithosis virus by the fluorescent antibody method, using convalescent anti-virus abortion sheep sera. J. hyg. epidem. (Praha) 9 no.2:253-255 '65.

1. Higher Institute of Military Medicine, Veterinary Institute of Infectious and Parasitic Diseases, State Epidemiology Station, Sofia.

MAKAVEEV, Tsvetan

Effect of the feeding level on the growth, development, and subsequent productivity of the young Red Danish crossbred cattle. Izv Zhivotn nauki 1 no.3:35-43 '64.

1. "Obraztsov Chiflik" Agricultural Institute, Ruse.

BULGARIA/Farm Animals - Cattle. Q-3

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30958

feeding of animals, in the methods of rearing young , etc.

Card 2/2

BULGARIA/Farm Animals - Cattle. Q-3

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30958

Author : Vladimirov Ivan, Makaveyev Tsvetan
Inst : -
Title : The Evaluation of Bulls According to Progeny. (Ob otsenke bykov po potomstvu).

Orig Pub : Selkostop. mis"l, 1957, 2, No 4, 231-214

Abstract : Examples are adduced where, in the absence of the evaluation of bulls according to the milkiness of their daughters and in the selection of cows by the milk yield, the level of production according to milk composition remained without change for about 20 years. The methods for the testing of bulls and the technique used in different countries are described. It has been noticed that the evaluation of sires by progeny must be repeated in the presence of essential changes in the herd structure, in the conditions of maintenance, management and

Card 1/2

MAKAVEEV, Iv., jt. au.

Continuous air-brakes; description of the various systems and types of continuous air-brakes; their use and repair Sofiia Nauka i izkustvo 1949 (Biblioteka Transportno knigoizdavane, no. 2) (51-38773)

MAKAVEEV, Iv.

Continuous working mixture for tobacco leaves. Ratsionalizatsiia 11 no.9:18-20 '61.

(Tobacco)

MAKAVETSKAS, R.A.; POPOV, V.N.; TSEDERBERG, N.V.

Experimental study of the viscosity of helium and nitrogen.
Teplofiz. vys. temp. 1 no.2:191-197 S-O'63. (MIRA 17:5)

1. Moskovskiy energeticheskiy institut.

MAKAVETSKAS, R.A.; POPOV, V.N.; TSEDERBERG, N.V.

Experimental study of the viscosity of mixtures of nitrogen and helium. Teplofiz. vys. temp. 1 no.3:348-355 N-D '63. (MIRA 17:3)

1. Moskovskiy energeticheskiy institut.

ACCESSION NR: AP4004139

No. 3, 1940), which employs a capillary and an annular balance. The smoothed data obtained from several sets of isotherms agree with the experimental values within 2%. Orig. art. has: 3 figures, 5 formulas, and 3 tables.

ASSOCIATION: Moskowskiy energeticheskiy institut (Moscow Power Engineering Institute)

SUBMITTED: 03Jul63	DATE ACQ: 26Dec63	ENCL: 02
SUB CODE: AS, PH	NO REF SOV: 004	OTHER: 006

Card 2/2

ACCESSION NR: AP4004139 S/0294/63/001/002/0191/0197

AUTHORS: Makavetskas, R. A.; Popov, V. N.; Tsederberg, N. V.

TITLE: Experimental determination of the viscosity of helium and nitrogen

SOURCE: Teplofizika vy*sokikh temperature, v. 1, no. 2, 1963, 191-197

TOPIC TAGS: dynamic viscosity, viscosity, helium, helium viscosity, nitrogen viscosity, gas analyzer, gas analysis, gas property, gas viscosity, nitrogen, helium nitrogen mixture

ABSTRACT: With an aim at filling the temperature gaps in the existing experimental data, the coefficient of dynamic viscosity of helium, nitrogen, and their mixture was investigated experimentally in the temperature range 10--660°C and in the pressure range from 1 to 600 kg/cm^2 using the method of Professor D. L. Timrot (Izv. VTI,

Card 1/2

DIMOV, Kiril, prof.; MAKAVEISKA, St.

Comperative results from the bleaching of linen yarns and fabrics by the chlorite, hypochlorite, and hypochlorate peroxide method. Tekstilna prom 10 no.5:24-28 '61.

DIMOV, K.; MAKAVEISKA, St.

Comparative results at the bleaching of the flax yarn and fabric with the chlorite, hypochlorite and hypochlorite-peroxide methods. Godishnik khim tekh 7 no.1/2:65-75 '60 [publ. '61].

SEMERDZHIEV, Bolan, d-r.; GENIANOV, D.; MAKAVEEVA-KIMOVA, Ek.

Isolation of a virus agent of the psittacosis-ornithosis group from pneumonic calves. Izv Vet inst virus 2:5-8 '63

1. Otgovoren redaktor i chlen na Redaktsionnata kolegiia, "Izvestiia na Veterinarniia institut po virusologiia" (for Semerdzhiev).

SEMERDZHIEV, Bolan, d-r.; OGNIANOV, D.; MAKAVEEVA-SIMOVA, Ek.

Culture of the ovine abortion virus in experimental animals.
Izv Vet inst virus 1827-35 '62

VLADIMIROV, Ivan; MAKAVEEV, Tsvetan

Fattening of young bulls in the prefattening period.
Selskostop nauka 2 no.5/6:648-657 '63.

MAKAVEANU, L. [Macaveanu, L.], inzh.

Stable VFO for duplex operations. Radio i televiziia 11 no.4:104-105 '62.

MAKAVEEV, Tsvetan

Fattening of the young bulls and oxen of the Red Danish crossbreed up to various live weights. Selskostop nauka 1 no.10:1109-1116 '62.

1. Kompleksna opitna stantsiia "Obraztsov chiflik" krai Ruse.

MAKAUSKAS A.A.

USSR / Virology. Human and Animal Viruses. Viruses of the Pox Group. E-3

Abs Jour : Ref Zhur - Biol., No 20, 1958, No 90665

Author : Makauskas, A. A.
Inst : The Moscow Scientific Research Institute for Vaccines and Serums.
Title : The Responsiveness of Rabbits of Various Ages to Smallpox Vaccine.

Orig Pub : Tr. Mosk. s.-i. in-ta vaktsin i syvorotok, 1957, 9, 204-207.

Abstract : No abstract given.

Card 1/1