

Hydrogen Content and the Formation of Internal
Cracks in Semifinished Products With a Heavy profile

SOV 10-11-1975

After this long-term annealing (90-120 hours) the 250x250 mm roughed billets were cooled under a water shower (1 heat) or they were cooled in air and then heated to 650-1,270° with subsequent air or water shower cooling. (10 heats). The roughed blocks from another 5 heats were annealed for a long time, cooled in air, heated again, and then rolled down to a square of 120 to 140 mm edge length. These billets did not undergo further thermal treatment but were cooled in air. Although the experiments were conducted with a steel exhibiting a tendency toward crack formation, cracks could be found in no case. Similar experiments with semifinished steel product from the same heats, which were annealed through 30-40 hours at 660-700° showed that a repeated heating and in particular a subsequent hot working leads to crack formation. It was shown that there is no need to insist on slow cooling after forging (pressing). In order to prove this assertion, roughed billets (square profile with 250 mm edge length) from 6 heats of alloyed steels with pearlite, pearlite-martensite, and martensite structures were annealed at 660-700° through 90-140 hours, rolled down on the roughing mill and sent to

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30V, 103 19 1-1/10

another plant for forging and pressing where after the working the forgings were cooled in air. In no case a crack formation was found. These results were confirmed by the experience gained with some hundred tons of steel. There are 3 figures, 2 tables and 4 references, 2 of which are Soviet.

ASSOCIATION: Chelyabinskij politekhnicheskij institut (Chelyabinsk Poly-technical Institute)

SUBMITTED: March 25, 1958

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SOV/114-1-1-1

18(3)

AUTHORS: Reprintsev, V.S., Engineer; and Koronov, A.N., Doctor of Technical Sciences, Professor

TITLE: The Mechanism of Nucleation of Spherulitic Inclusions (Mekhanizm razovaniya sferovykh vuzryeg v kipyashchey stali)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chem. 1968, Nr 2, pp. 37-42 (USSR)

ABSTRACT: Although the mechanism of bubble formation in steel during the process of their formation and growth in liquid were carried out in order to resolve the contradictory opinions existing on this subject, the author presents a theory and suggests the following hypotheses: 1) Determination of carbon and oxygen content in steel and their ratio to the product $\frac{[C]}{[O]}$, which varies from 0.01 to 0.1 during the process of steel refining. 2) The oxygen concentration in steel is a function of the content. 3) Formation of nucleation bubbles and oxygen segregation in spaces bet. ...

SCV, 1958

The Mechanism of Honeycomb Structure in Al₂O₃ Produced in

crystallization.

There are 5 references, 1 of which is in English, 1 in Soviet, 1 in Russian, 1 in French, 1 in English and 1 in German.

ASSOCIATION: Selyuzhnikiy i Metallovedeniyskiy Institut (Central Metallurgical-Technical Institute), Kafedra metallurgii chernykh metallov (Chair of Ferrous Metallurgy)

SUBMITTED: November 17, 1958

Card 2 2

MOROZOV, A.N., doktor tekhn.nauk prof.; STROGANOV, I.A., kand.tekhn.nauk dots.

Steel quality and the technical and economic production indices for various methods of pouring. Izv.vys.ucheb.zav.; chern.met. 2 no.10:169-180 0 '59. (MIRA 13:3)

1. Chelyabinskiy politekhnicheskiy institut. Rekomendovano kafedroy metallurgii stali Chelyabinskogo politekhnicheskogo instituta.

(Steel--Metallurgy)

(Metallurgical plants--Quality control)

ADRIANOVA, V.P.; ANDREYEV, T.V.; ARANOVICH, M.S.; BARSKIY, B.S.; GROMOV, N.P.;
GUREVICH, B.Ye.; DVORIN, S.S.; YERMOLAYEV, N.F.; ZVOLINSKIY, I.S.;
KABLUKOVSKIY, A.F.; KAPELOVICH, A.P.; KASHCHENKO, D.S.; KLIMOVITSKIY,
M.D.; KOLOSOV, M.I.; KORCLEV, A.A.; KOCHINEV, Ye.V.; LESKOV, A.V.;
LIVSHITS, M.A.; MATYUSHINA, N.V.; MOROZOV, A.N.; POLUKAROV, D.I.;
RAVDEL', P.G.; ROKOPYAN, Ye.S.; SMOLYARENKO, D.A.; SOKOLOV, A.N.;
USHKIN, I.N.; SHAPIRO, B.S.; EPSHTEYN, Z.D.; AVRUTSKAYA, R.P., red.
izd-va; KARASEV, A.I., tekhn.red.

[Brief handbook on metallurgy, 1960] Kratkii spravochnik metallur-
ga, 1960. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i
tsvetnoi metallurgii, 1960. 369 p. (MIRA 13:7)
(Metallurgy)

LUKOYANOV, Boris Ivanovich; MOROZOV, A.N., prof., doktor tekhn.nauk,
nauchnyy red.; SVET, Ye.B., red.; KOLBICHEV, V.I., tekhn.red.

[Heat transfer in metallurgical furnaces as a basis for their
design] Teplovaia rabota metallurgicheskikh pechei kak osnova
ikh rascheta. Pod nauchnoi red. A.N.Morozova. Cheliabinsk,
Cheliabinskoe knizhnoe izd-vo, 1960. 126 p.

(MIRA 14:1)

(Metallurgical furnaces)
(Heat--Transmission)

KOLTSOV, M.I.; MOROZOV, A.M.; PISCHIKOV, M.M.

Research by plant laboratories and institutes in 1950. Stal' 20
no. 6:562 Je '50. (M A 14:2)
(Chelnyansk--Steel--Metallurgy)

KOLESANOV, F.F.; MOROZOV, A.N.

At the Chelyabinsk Metallurgical Research Institute. Stal' 20
no. 7:593; 610 JI '60. (MFA 14:5)
(Sintering) (Steel--Metallurgy)

MOROZOV, A.N.

Solubility of clay minerals in hydrochloric acid. Trudy VNIGNI
no.27:245-250 '60. (MIRA 17:3)

MOROZOV, A.N.; KOROLEV, Yu.M.

Effect of exchange cations on the properties of montmorillonite.
Trudy VNIGI no. 11201-75-100. (MIRA 17:3)

MBR0277 A 5

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PHASE I BOOK EXPLOITATION SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th, Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii (Physicochemical Bases of Steel Making; Transactions of the Fifth Conference on the Physicochemical Bases of Steelmaking) Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted. 3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg. Tech. Ed.: V. V. Mikhaylova.

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Physicochemical Bases of (Cont.)

SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies and are accompanied by references of which most are Soviet.

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Physicochemical Bases of (Cont.)

SOV/5411

Ladyzhenskiy, B. N. , and M. V. Karakula. Making Low-Carbon Alloyed Steels in Acid Open-Hearth Furnaces 27

Stroganov, A. I. , and A. N. Morozov. Behavior of Chromium in the Bath of a Basic Open-Hearth Furnace 39

Petukhov, B. G. Making Chromium-Nickel Steels in Large Open-Hearth Furnaces With the Use of Nickel Oxide 46

Omarov, A. K. , and A. Ye. Khlebnikov. Intensifying the Working Period of the Open-Hearth Scrap Process 54

[The following persons participated in the research work:
Engineer Munasyпова, Engineer T. Kovaleva, and Technicians
U. Rakhmanulov, V.V. Ponomareva, L. Rusnyak, Z. Zaporozhan,
A. Perkova, S. Bilyalova, and V. Guseva.]

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PHASE I BOOK EXPLOITATION

SOV/5600

Morozov, Aleksandr Nikolayevich, Professor, Doctor of Technical Sciences

Sovremennyy martenovskiy protsess (The Modern Open-Hearth Process) Sverdlovsk, Metallurgizdat, 1961. 600 p. Errata slip inserted. 6,000 copies printed.

Reviewer: N. I. Yefanov; Eds.: K. N. Belikov and Ye. I. Dikshteyn; Ed. of Publishing House: M. L. Kryzhova; Tech. Ed.: Ye. D. Turkina.

PURPOSE: This book is intended for technical personnel of metallurgical and machine-building plants and for members of scientific research and design institutes. It may also be useful to students at schools of higher education.

COVERAGE: Experience gained by major ferrous-metallurgy plants and results of investigations carried out during the last few years in the field of open-hearth steel manufacture are discussed. Attention is given to the following: theoretical fundamentals of steelmaking processes, heat-engineering problems related to the construction of furnaces, methods of melting metal in basic open-hearth furnaces, methods used in large open-hearth plants, the organization of the operation of these methods, and teeming conditions which ensure

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The Modern Open-Hearth Process

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the production of sound ingots. The author thanks the steelmaking specialists and engineers of the Magnitogorsk and Nizhny Tagil Combines and those of the Chelyabinsk, Zlatoust, Makeyevka, and other plants. He especially thanks the open-hearth process specialists, Engineers K. N. Belikov, Ye. I. Dikshteyn, F. D. Voronov, V. G. Garchenko, M. I. Kolosov, V. O. Kulikov, I. A. Lubenets, G. A. Petrov, N. M. Selivanov, N. A. Sokolov, and Ya. A. Shneyerov. Each part of the book is accompanied by references, the majority of which are Soviet.

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Ch. I. Development of Open-Hearth Steel Production	5
The beginning and development of open-hearth steel production in the nineteenth century	5
Open-hearth steel production in Russia before the revolution	13
Development of open-hearth steel production in the USSR	17

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S/765/61/000/000/003/003

AUTHORS: Morozov, A. N., Reprintsev, V. S.

TITLE: Liquation phenomena and the mechanism of the formation of honeycomb blowholes in castings of rimming steel.

SOURCE: Slitok i svoystva stali; trudy V konferentsii po fiziko-khimicheskim osnovam proizvodstva stali. Moscow, Izd-vo AN SSSR, 1961, 88-95.

TEXT: The experimental investigation described here is, in essence, a continuation and refinement of A. N. Morozov's 1953 work, and is intended to determine with greater accuracy the O content in the liquid steel within a mold during the rimming period, to provide a better understanding of the mechanism of the formation of honeycomb blowholes which, according to Morozov, consists in a release of CO₂ not along the surface of the crystallization front of the metal, but in the intercrystalline spaces that are separated from the bulk of the liquid portion of the casting through an enrichment of the parent solution by C and O. The investigation was performed in an open-hearth plant which poured rimming steel into a 6.5-ton mold by the syphon method. 14 ingots from 13 smelts were tested. The C content in the metals of these ingots varied from 0.05 to 0.19%, the Mn content from 0.25 to 0.40%. The O content in the metal during the rimming period in the molds was determined by the

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Liquation phenomena and the mechanism of

S/765/61/000/000/003/003

alumina method, which is described in detail. The C content in the liquid central portion of the rimming ingot, during its crystallization, depends on the zonal liquation; the determination of the C concentration and of the O concentration in the liquid rimming steel in the test molds showed that during the rimming the magnitude of the product $m = [C] \cdot [O]$ varies from 0.0017 to 0.0025, which is not consistent with the formation and growth of honeycomb blowholes according to the generally accepted scheme of A. Hultgren and G. Phragmen (Trans. Inst. Min. & Met. Engrg., v. 135, 1939, 133). It was determined that the character of the change in O concentration in the liquid metal in the molds during the rimming depends on the C content. The formation of honeycomb blowholes in ingots of rimming steel can only proceed as a result of the liquation of the C and O in the interstices between crystals, i. e., in the two-phase region formed within a casting during its crystallization. Such a concept of the formation of honeycomb blowholes explains their wormhole-like appearance, the accumulation of liquids along their inner surface, the crystalline structure of the metal in the zone of the honeycomb blowholes, and the intense development of zonal liquation in ingots of rimming steel. A detailed picture of the postulated mechanism of the formation of honeycomb blowholes is provided, including the effect of the rate of pouring into the mold and the accretion of the ferrostatic pressure on the reaction zone and the intensity and magnitude of the convection currents within the metal in the upper portion of the casting. The reasonings

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Liquation phenomena and the mechanism of ...

S/765/61/000/000/003/003

adduced explain why in the upper portion of an ingot no honeycomb blowholes form or, if they form, they appear much later, and the O and C content in the corresponding portions of the upper part of an ingot are lower than in the zone of honeycomb blowholes. There are 2 figures, 2 tables, and 7 references (5 Russian-language Soviet and 2 English-language, including the above-cited Hultgren-Phragmen reference and Katchen, K., Chipman, D., *ibid.*, v.131, 1938).

Card 3/3

S/137/62/000/004/017/201
A006/A101

AUTHORS: Simonova, Ye. A., Pischikov, M. M., Morozov, A. N.

TITLE: Technical and economical production indices in syphon and top casting of rimming steel for cold-rolled sheets

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 48, abstract 4V283 ("Sb. nauchno-tekhn. tr. N.-1. in-t metallurgii Chelyab. sovnarkhoza," 1961, no. 3, 45-64)

TEXT: The authors compared quality indices of thin 08 KΠ (08KP) steel sheet production at all transitional stages: open-hearth shop, blooming mill, hot and cold rolling shop, and metal rejects at two consumer plants, i.e., the Magnitogorsk Metallurgical Combine where the steel is top cast and "Zaporozhstal'" where it is syphon cast. It was established that the amount of waste sheets due to metal defects is approximately equal in both cases. However, at the "Zaporozhstal'" Plant, the metal rejects due to lamination, are by 3.5 times higher at the consumer plant than at the MMK. Total labor consumption for preparing the amounts intended for teeming and finishing of metal at the MMK per one ton of ingots was by 0.068 man-hour less than at "Zaporozhstal'". Total

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S/137/62/000/004/017/201

A006/A101

Technical and economical production ...

costs for preparing the composition for teeming and finishing of the metal were by 4.98 rubles per 1 ton of ingots less for top casting than for syphon casting. The technical and economical production data indicate that top casting is more efficient than syphon casting of steel in plants where rimming steel is cast into large size ingots to be rolled into sheets.

P. Arsent'yev

[Abstracter's note: Complete translation]

Card 2/2

LISNYAK, S.S.; BELIKOV, A.M.; MOROZOV, A.N.

Kinetics and the mechanism of chromite reduction by solid
carbon. [Sbor. trud.] Nauch.-issl.inst.met. no.4:3-11
'61. (MIRA 15:11)

(Chromite)
(Chemistry, Metallurgic)

ISAYEV, V.F.; MOROZOV, A.N.

Conditions for the formation of aluminum nitride in liquid
iron. [Sbor. trud.] Nauch.-issl.inst.met. no.4:12-18
'61. (MIRA 15:11)
(Liquid metals) (Aluminum nitride)

DANILOVICH, Yu.A.; MOROZOV, A.N.

Solubility of oxygen in iron-chromium melts. [Sbor. trud.]
Nauch.-issl. inst. met. no. 4:19-25 '61. (MIRA 15:11)
(Iron-chromium alloys--Oxygen content)
(Liquid metals--Oxygen content)

GLADKOVSKIY, V.A.; MOROZOV, A.N.; STROGANOV, A.I.; VACHUGOV, G.A.;
Prinimali uchastiyе: BELOV, B.V., inzh.; POPOV, N.P., inzh.;
BAYAZITOV, M.I., inzh.

Effect of work hardening on the properties of structural
steel. [Sbor. trud.] Nauch.-issledovatel'skiy institut metallurgii (for
'61. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut metallurgii (for
Gladkovskiy, Morozov, Stroganov). 2. Zlatoustovskiy
metallurgicheskiy zavod (for Vachugov).
(Steel, Structural—Hardening)

BOGATENKOV, V.F.; VAYNSHTEYN, O.Ya.; ZVIREV, B.F.; KOLOSOV, M.I.; LUBCHETS,
I.A.; MOROZOV, A.N.; POVOLOTSKIY, D.Ya.; STROGANOV, A.I.

Desiliconization of open-hearth pig iron in the mixer. Izv. vys.
ucheb. zav.; chern. met. 4 no.8:32-36 '61. (MIRA 14:9)

1. Chelyabinskiy metallurgicheskiy zavod, Chelyabinskiy nauchno-
issledovatel'skiy institut metallurgii i Chelyabinskiy politekhnich-
eskiy institut.

(Cast iron--Metallurgy)

LEONOV, A.F.; MOROZOV, A.N.; IVANOV, R.M.; VARNAVSKIY, I.N.;
TAKHTAYEV, Yu.B.; IZOTOV, N.P.; VOLKOV, S.S.

Smelting of native-alloy steel. Metallurg 6 no.10:20-21
0 '61. (MIRA 14:9)

1. Orsko-Khalilovskiy metallurgicheskiy kombinat i
Chelyabinskiy nauchno-issledovatel'skiy institut metallurgi.
(Steel alloys--Metallurgy)

KOROLEV, L.G.; MOROZOV, A.N.

Equilibrium of m. nitrogen and vanadium in gamma-iron. Izv. vys. ucheb.
zav.; chern. met. 5 no.9:39-42 '62. (MIRA 15:10)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.
(Vanadium nitride) (Iron-vanadium alloys—Hardening)

ISAYEV, V.F.; MOROZOV, A.N.

Thermodynamic conditions of aluminum nitride formation in liquid
iron. Izv.vys.ucheb.zav.; Chern.met. 5 no.11:57-60 '62.

(MIRA 15:12)

1. Nauchno-issledovatel'skiy institut metallurgii i Chelya-
binskiy politekhnicheskiy institut.

(Liquid metals) (Aluminum nitride) (Vapor-liquid equilibrium)

MOROZOV, A. N. (Chelyabinsk); NOVOKHATSKIY, I. A. (Chelyabinsk)

Thermodynamics of the reduction of ferrous chromite by hydrogen.
Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl. no.6:3-6 N-D '62.
(MIRA 16:1)

(Chromite)
(Oxidation-reduction reaction)

5/146/62/000/007/001/005
E071/E135

AUTHORS: Korolev, L.G., and Morozov, A.N.

TITLE: The solubility of nitrogen in liquid iron-vanadium alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Chernaya metallurgiya, no.7, 1962, 27-29

TEXT: Because of the inconsistency of literature data, the authors investigated the solubility of nitrogen in liquid iron-vanadium alloys using the Siverts method, in which the amount of dissolved nitrogen is determined from the change in nitrogen pressure in the reaction system. The apparatus and experimental procedure are described in some detail. The following results were obtained for alloys containing from 1 to 10% V at 1580 °C and a nitrogen pressure of 760 mm Hg:

% V: 0.92; 1.06; 1.20; 1.73; 2.36; 3.83; 4.32; 5.2; 7.7;

% N: 0.058; 0.072; 0.077; 0.081; 0.093; 0.117; 0.140; 0.150; 0.272;

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The solubility of nitrogen in ... S/148/62/000/007/001/005
E071/E135

% V: 10.7;

% N: 0.510

The results obtained are in good agreement with those of Pelke and Elliot.
There are 2 figures and 1 table.

ASSOCIATION: Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii
(Chelyabinsk Scientific Research Metallurgical Institute)

Card 2/2

AUTHORS:

TITLE:

PERIODICAL:

TEXT:

Belikov, A.M., Lisnyak, S.S., Morozov, A.N.
 Chrome-spinellides and crystallochemical changes during
 their firing
 Fizika metallov i metallovedeniye, v.13, no.5, 1962,
 774-776
 S/126/62/013/005/024/031
 E111/E435

The structural peculiarities of natural chrome-spinellides with the general formula $(Mg,Fe)(Cr,Fe,Al)_2O_4$ have not been studied sufficiently. The authors have shown that is a difference between the lattice spacing of the stoichiometric and the excess-oxygen specimens in chemical composition explained by the difference in lattice spacing specially in purified specimens, the authors studied heating in vacuum and in air on lattice spacing to compare the heat-treatment-produced from $Mg_{1-x}Fe_xCr_2O_4$ and $Mg(Cr_yFe_{2-y})O_4$ lattice spacing of the natural compounds.
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S/126/62/013/005/024/031
E111/E435

20700

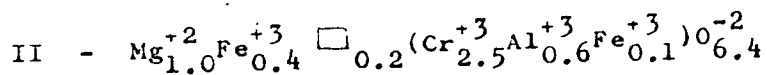
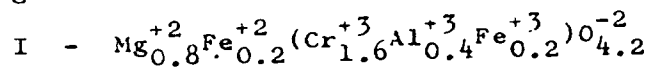
AUTHORS: Belikov, A.M., Lisnyak, S.S., Morozov, A.N.
TITLE: Chrome-spinellides and crystallochemical changes during
their firing
PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962,
774-776

TEXT: The structural peculiarities of natural chrome-spinellides with the general formula $(Mg,Fe)(Cr,Fe,Al)_2O_4$ have not been studied sufficiently. The authors have shown that there is a difference between the lattice spacing of the stoichiometric and the excess-oxygen chrome-spinellides, which cannot be explained by the difference in chemical composition. Using specially purified specimens, the authors studied the effect of heating in vacuum and in air on lattice spacing. They have tried to compare the heat-treatment-produced change in the spacing and the degree of inversion calculated from it for synthetic $Mg_{1-x}Fe_xCr_2O_4$ and $Mg(Cr_yFe_{2-y})O_4$ spinellides with the change in lattice spacing of the natural compound. The two types are
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Chrome-spinellides ...

S/126/62/013/005/024/031
E111/E435

assigned the formulae



where $\square_{0.2}$ is the number of vacancies in the tetrahedral spaces in the spinel molecule which must be filled by cations. When type II are heated in vacuo, cations move into these vacancies from the octahedral pores: this and the change of Fe^{3+} into Fe^{2+} produces the increase in the lattice spacing. Since the stoichiometric type I is free from such vacancies, heating in vacuo has no effect. On heating in air, vacancies remain in both types. There are 2 figures and 1 table.

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Chrome-spinellides ...

S/126/62/013/005/024/031
E111/E435

ASSOCIATION: Nauchno-issledovatel'skiy institut metallurgii
g. Chelyabinsk (Scientific Research Institute of
Metallurgy, Chelyabinsk)

SUBMITTED: May 3, 1961 (initially)
October 31, 1961 (after revision)

Card 3/3

BOGATENKOV, V.F.; [Name], O.I. [Name], O. Ya.]; ZVEREV, B.S.; [Name],
M. I.; LUBENKO, I. A. [Name], I.A.]; MOROZOV, A. N.; POVOLOTSKIY, B.I.
[Povolotskiy, B.Ya.]; STROGANOV, A.I.

Desilicification of Martin iron in mixers. *Annales metalurgie* 16 no.1:
21-27 Ja-Mar '62.

VORONOV, F.D., prof.; MOROZOV, A.N., prof., doktor tekhn.nauk;
SELIVANOV, I.M., kand.tekhn.nauk; SMIRNOV, Yu.D., kand.tekhn.nauk;
RABINOVICH, Ye.I., kand.tekhn.nauk; CHERNOV, G.I., inzh.;
TKACHENKO, I.A., inzh.; BIKTAGIROV, K.K., inzh.; FILIPPOV, V.M.,
inzh.; KUSTOBAYEV, G.G., inzh.

Making St. 3ps capped steel in Magnitogorsk Metallurgical
Combine open-hearth furnaces. Stal' 22 no.8:716-718 Ag '62.
(MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy
nauchno-issledovatel'skiy institut metallurgii.
(Magnitogorsk--Open-hearth process)

LISNYAK, S.S.; BELIKOV, A.M.; MOROZOV, A.N.; VSHIVKOVA, L.A.

Chromium spinelide behavior during heating in reducing and oxidizing
gaseous media. Ogneupory 27 no.9:417-420 '62. (MIRA 15:8)

1. Nauchno-issledovatel'skiy institut metallurgii Chelyabinskogo
soveta narodnogo khozyaystva.

(Spinel group) (Metals, Effect of temperature on)

S/133/63/000/004/001/011
A054/A126AUTHORS: Lubenets, I. A., Morozov, A. N., Galyan, V. S., Khizhnichenko, A. M.

TITLE: Melting electrosteel with the use of liquid cast iron

PERIODICAL: Stal', no. 4, 1963, 323 - 325

TEXT: Liquid cast iron (containing 4.2 - 4.3% C; 0.75 - 1.15% Si; 0.70 - 1.40% Mn; 0.025 - 0.050% S; 0.13 - 0.16% P) is used in an electric melting plant in amounts of 30 - 50% of the charge and is fed into the furnace in 4 - 6 minutes, 50 - 70 minutes after the current was switched on. The difficulties encountered in deslagging after the cast iron had been fed were eliminated by feeding the total amount of lime required after tapping the first acidic slag. When establishing the technology for electric melting with the use of liquid cast iron it had to be considered that iron ore has a lower oxidizing effect in electric smelters than in open-hearth furnaces. The liquid cast iron melting method can only be used for high-carbon instrument steel (Y12/U12 - Y7/U7) and ШХ15 (ShKh15) ball bearing steel. Advantages of the new method are a reduced power consumption (by 20%) and a higher (by 2%) output of flawless products. Best re-

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S/133/63/000/004/001/011

Melting electrosteel with the use of liquid cast iron A054/A126

sults were obtained when adding 35 - 40% liquid cast iron. Still better results might be expected if the liquid cast iron is refined prior to being fed into the furnace, as the silicon and manganese and a greater part of the carbon content could then be removed by the duplex process. In electric melting shops this could be done by a steam-oxygen treatment. However, the latter proposals by the authors are not yet sufficiently supported by test results. The tests described were carried out in co-operation with N. V. Keys, M. Ya. Yartsev, T. I. Malinovskaya, S. T. Ushakov, M. I. Shatalov, M. A. Bornovalov, I. Ya. Loyberg, A. F. Kozlov, G. K. Fokego, V. I. Berdnikov, and R. M. Khayrutdinov. There are 2 figures.

Card 2/2

ACCESSION NR: AR4015540

S/0137/63/000/011/A009/A009

SOURCE: RZh. Metallurgiya, Abs. 11A62

AUTHOR: Morozov, A. N.; Isayev, V. F.; Korolev, L. G.

TITLE: Solubility of nitrogen in alloys of iron with elements forming stable nitrides

CITED SOURCE: Sb. Teoriya i praktika metallurgii. Chelyabinsk. vy*p. 5. 1963, 8-11

TOPIC TAGS: nitrogen, nitrogen solubility, iron alloy, nitride, stable nitride

TRANSLATION: It is shown that when a solid nitride is present on the surface of Me, the equilibrium of the system is determined by the reaction $(R_xN_{1-x}) \rightleftharpoons x[R] + (1/2)N_2$, where R is the content of Ti, Al, V, and other elements forming stable nitrides. It is shown that the nitrides AlN, TiN, and $V_{1.17}N$ form in Fe alloys and that the solubility of N_2 in binary mixtures of Fe with Ti, Al, and V obeys the Siwertz law only under conditions excluding the formation of nitrides. It

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ACCESSION NR: AR4015540

has been found that the dissociation elasticity of nitrides reaches 1 atm for 0.05% Ti, 0.9% Al, and 1.1-1.2% V. 1 illustration. A. Vertman.

DATE ACQ: 09Dec63

SUB CODE: ML, CH

ENCL: 00

Card 2/2

MOROZOV, A.N. (Chelyabinsk); NOVOKHATSKIY, I.A. (Chelyabinsk)

Reduction of manganous oxide by hydrogen. Izv. AN SSSR. Met.
1 gor. delo no.5:18-22 S-0 '63. (MIRA 16:11)

BIRYUKOV, N.I.; MOROZOV, A.N.

Modeling processes of in-the-ladle treatment of metal
by slag. Izv. vys. ucheb. zav.; chern. met. 6 no.2:39-44
'69. (MIRA 16:3)

1. Chelyabinskiy politekhnicheskiy institut.
(Metallurgy)
(Dimensional analysis)

KOROLEV, L.G.; MOROZOV, A.N.

Conditions for the formation of vanadium nitride in liquid
iron. Izv. vys. ucheb. zav.; Chern. met. 6 no. 1:45-49 1963.
(MIRA 16:5)

1. Chelyabinskiy politekhnicheskiy institut.
(Iron-vanadium alloys) (Vanadium nitride)

MOROZOV, A.N.

~~Accelerating~~ the production of steel in open-hearth furnace plants. Stal' 23 no.2:117-121 F '63. (MIRA 16:2)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

(Open-hearth process)
(Oxygen—Industrial applications)

MOROZOV, A.N., doktor tekhn.nauk; LISNYAK, S.S., kand.tekhn.nauk;
BELIKOV, A.M.

Changes in the composition and structure of chromium ores
during their heating and reducing process. Stal' 23 no.2:137-139
F '63. (MIRA 16:2)

1. Chelyabinskiy nauchno-issledovatel'skiy institut
metallurgii.

(Chromium ores)
(Iron-chromium alloys—Metallurgy)

LUBENETS, I.A.; MOROZOV, A.N.; GALYAN, V.S.; KHIZHNICHENKO, A.M.

Making electric steel using liquid pig iron. Stal' 23 no.4:323-325
Ap '63. (MIRA 16:4)

(Steel—Electrometallurgy)

MOROZOV, A.N., doktor tekhn. nauk; MARKOV, B.L., kand. tekhn. nauk

Firing of open-hearth furnaces with natural gas. Stal' 22
no.6:507-510 Je '62. (MIRA 16:7)

(Open-hearth furnaces—Equipment and supplies)
(Gas, Natural)

KHAYRUTDINOV, R.M., inzh.; MOROZOV, A.N., doktor tekhn. nauk, prof.,
rukovoditel' raboty; Prinsipalni uchastiye: GALYAN, V.S.; BORNOVALOV,
M.A.; KOLOYARTSEV, V.L.; GALYAN, R.V.; SYROVA, G.I.; KORNENEV, T.F.

Decarburizing the bath of a large electric furnace. Stal' 23
no.10:911-914 0 '63. (MIRA 16:11)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

DIKSHTEYN, Ye.I.; DEYNERO, L.I.; ANCHIL, V.S.; NOZDOL, A.M.,
doktor tekhn. nauk, prof., nauch. red.; SVET, Ye.B.,
red.

[Steelmaking at the Magnitogorsk Metallurgical Combine]
Staloplavil'noe proizvodstvo na IMK. Cheliabinsk, Che-
liabinskoe knizhnoe izd-vo, 1963. 43 p. (USSR 1964)

ACCESSION NR: AP4029829

S/0279/64/000/002/0013/0016

AUTHOR: Isayev, V. F. (Chelyabinsk); Morozov, A. N. (Chelyabinsk)

TITLE: Nitrogen solubility and nitride formation in iron-boron melts

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 2, 1964, 13-16

TOPIC TAGS: nitrogen, nitride, iron, boron, boron containing steel

ABSTRACT: Boron is widely used in metallurgy for the microalloying of steel. The properties of boron-containing steel are determined to a considerable degree by the character of its boron compounds. The formation of a nitride inhibits the positive effect of boron on the properties of dead melt brands of construction steels, but, on the other hand, gives nonrust properties to boiling steels. The formation conditions for boron nitride in liquid melts had not previously been studied. The effect of boron on the solubility of nitrogen in iron also had not been determined. The only publication regarding this problem (Fountain, R. W.; Chipman, G. Solubility and Precipitation of Boron Nitride in Iron. Boron alloys. Trans. Metal Soc. AIME, 1962, v. 224, no. 3) was concerned with the effect of boron on the solubility of nitrogen in γ -iron and the explanation of thermodynamic conditions of boron nitride separation from iron. The equipment and method of research is similar to the authors'

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ACCESSION NR: AP4029829

previously described work. The results of investigation have shown that boron in the examined range of its concentrations sharply decreases the solubility of nitrogen in iron. The test data are presented in tables. Orig. art. has: 1 figure, 1 table and 13 formulas.

ASSOCIATION: none

SUBMITTED: 20Jul63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: ML

NO REF SOV: 007

OTHER: 002

Card 2/2

RODRIGUEZ, N.V. (Chelyabinsk) ...
(Chelyabinsk) ...

Magnetic treatment ...
Izv. AN SSSR kat. ...

FONOMARENKO, A.G.; MOROZOV, A.N.; KARSHIN, V.P.

Stoichiometric disorder of liquid slags in the system $CaO-SiO_2$.
Izv. vys. ucheb. zav.; Chern. met. 7 no.11:16-20, 1964.
(MI-A 17-12)
1. Chelyabinskii nauchno-issledovatel'skiy institut metallurgii.

MORONOV, A.N.; KFYC, M.V.; KOMISSAROV, A.I.

New developments in research. (Classification: S) (Date: 1964)

1964-10-11

MOROZOV, Nikolay Aleksandrovich, dotsl., kadm. nauk, inzh.,
MOROZOV, Aleksandr Nikolayevich, inzh.; SABEV, V.I.,
red.

[Automation of loading and unloading operations for wood-
working machines and machine lines] Avtomatizatsiia zagru-
zochno-razgruzochnykh operatsii na derevoobrabatyvaiushchikh
stankakh i stanochnykh liniyakh. Moskva, Lesnaia promyshlen-
nost', 1965. 120 p. (MIRA 18:2)

PONOMARENKO, A.G.; MOROZOV, A.N.; KASHINA, V.P.

Effect of the oxido-reduction potential of the medium on the
composition and properties of CaO-SiO_2 melts. *Elektrokhiimiya* 1
no. 7:862-863 11 1965. (MIRA 18:10)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metalurgii.

МОРОЗОВ, А. Н.

"Concerning the Ultimate Compression Strength of
Products Made of Brick Clays in Respect to Granulometric
Composition and the Alumina of Their Active Part."
Thesis for degree of Can. Geological-Mineralogical Sci.
Sub 31 May 50, All-Union Sci Res Inst of Mineral Raw
Materials

Summary 71, 4 Sep 52, Dissertations Presented
for Degrees in Science and Engineering in Moscow
in 1952. From Vechernyaya Moskva, Jan-Dec 1952.

MORCZOV, A. N., Cand Agric Sci (diss. -- "A comparative study of methods of training race horses". Leningrad-Puskin, 1959. 20 pp (Min Agric USSR, Leningrad Agric Inst), 200 copies (Kt., No 6, 1768, 127)

KHOLMSKIY, D.V., kand.tekhn.nauk; MOROZOV, A.N., inzh.

Regulation of voltages and reactive power in long d.c. power
transmission lines tied at a nodal point. Elektrichestvo
no.1:1-6 Ja '63. (MIRA 16:2)

1. Institut avtomatiki Gosplana UkrSSR,¹
(Electric power distribution)

(N) L 11790-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD

ACC NR: AP6001683

SOURCE CODE: UR/0148/65/000/012/0057/0063

AUTHOR: Dolinin, D. P.; Morozov, A. N.; Khasin, G. A.; Shved, F. I.; Soskov, D. A.; Savenok, L. L.

ORG: Chelyabinsk Scientific Research Institute of Metallurgy (Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii); Zlatoust Metallurgical Plant (Zlatoustovskiy metallurgicheskiy zavod)

TITLE: Removal of oxygen and nitrogen in vacuum arc melting of ShKh15 steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 12, 1965, 57-63

TOPIC TAGS: steel, chromium steel, ball bearing steel, steel melting, vacuum arc melting, steel refining, steel degassing, oxygen removal, nitrogen removal/ShKh15 steel

ABSTRACT: The behavior of oxide and nitride inclusions and the mechanism of the removal of oxygen and nitrogen from ShKh15 (AISI E2100) ball-bearing steel in vacuum arc refining have been investigated. Steel ingots were melted in a 20-t electric furnace and forged into consumable electrodes, 180 mm in diameter, which were remelted twice in a vacuum of $(1-5) \cdot 10^{-2}$ mm Hg. The first and the second vacuum remelting decreased the oxygen and nitrogen content from the initial 0.00400 to 0.00110 and 0.00095% O, and from 0.0084 to 0.0060 and 0.0045% N. The respective initial content of Al₂O₃ and SiO₂ inclusions decreased from 0.00400 and

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UDC: 669.141.247.083.4.054

L 11790-66

ACC NR: AP6001683

0.00270% to 0.00060% each after the first remelting, and to 0.00051 and 0.00026% after the second. Oxygen and nitrogen are removed for the most part as oxide and nitride particles. Hence, a more complete refining can be achieved by promoting the formation in the initial metal of inclusions with a low specific weight and a high interphase energy at the metal-inclusion interface. The high-alumina inclusions which are formed by the deoxidation of the initial metal with an increased amount of aluminum enjoy these properties. Removal of nitride inclusions is promoted by lowering to a minimum (0.002—0.003%) the content of titanium in the initial metal. Orig. art. has: 3 figures and 4 tables. 17 (MS)

SUB CODE: 11/ SUBM DATE: 15Jul64/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS: 478

HUJ
Card 2/2

MORGZOV, A.N.; CHIRKOV, N.A.; FIRSOV, S.G.; KRASHCHENKO, L.S.; Prinimeli
uchastnye: RISP'EL', K.N.; VAYNSHTEYN, O.Ya.; BUSHUYEV, A.P.;
SNEZHKO, E.Ya.; MEL'NICHENKO, A.A.; ZHURAVLEV, V.M.

Alloying open-hearth steel with exothermic ferroalloys in the
ladle. Stal' 25 no.5:412-414 M7 '65. (MIRA 13:6)

MOROZOV, A.P. [Morozov, O.P.]

New method of accelerating the saturation of blood with oxygen in perfusion apparatus. Fiziol. zhur. [Ukr] 4 no.6:827-829 N-D '58.

(MIRA 12:3)

1. Institut fiziologii im. A.A. Bogomol'tsa AN USSR, laboratoriya sravnitel'noy i vozrastnoy fiziologii.

(PERFUSION PUMP (HEART))

MOROZOV, A.P. [Morozov, O.P.]

Use of indirect heart massage and artificial respiration in asphyxia in newborn animals. *Fiziol.zhur.* [Ukr.] 6 no.2:228-234 Kr-Ap '60. (MIRA 13:7)

1. Institut fiziologii im. A.A. Bogomol'tsa AN USSR, laboratoiya sravnitel'noy i vozrastnoy fiziologii.
(RESUSCITATION) (ASPHYXIA)

MOROZOV, A.F.; IPATENKO, A.Ya., kand.tekhn.nauk

Self-cleaning oil filter. Biul. tekhn.-ekon. inform. Tekh. upr. Min.
mor. flota 7 no.6:60-63 '62. (MIRA 16:4)

1. Starshiy mekhanik teplokhoda "Labinsk" (for Morozov).
(Marine engines—Lubrication) (Filters and filtration)

MCRCZOV, A. P., Engineer

"Effect of the Shape and Geometry of Hard-Alloy Cutters and the Rigidity of a System on the Selection of Cutting Conditions at Required Precision of Machining." Sub 10 Oct 51, Moscow Machine-Tool and Tool Institute I. V. Stalin

Dissertations presented for science and engineering degrees in Moscow during 1951.

SC: Bur. No. 430, 9 May 55

MOROZOV, A P

PHASE I BOOK EXPLICITATION

SOV/5028

Futoryanskiy, Yuzef Vladimirovich, and Alexsey Pankhomovich Morozov

Metody stabilizatsii razmerov pri termoobrabotke (Methods for Attaining Dimensional Stability in Heat Treatment) [Kuybyshev] Kuybyshevskoye knizh. izd-vo, 1960. 95 p. 2,000 copies printed. (Series: Novoye v tekhnike)

Ed.: I. V. Postnikova; Tech. Ed.: Ye. A. Yashen'kina.

PURPOSE: This booklet is intended for workers in machine and tool production, especially for those in heat-treatment shops.

COVERAGE: The booklet deals with the experience of the Chetvertyy ordena Lenina gosudarstvennyy podshipnikovyy zavod (Order of Lenin State Bearing Plant No. 4) in the introduction of new methods for attaining dimensional stability of parts processed by heat treatment. The cold treatment of parts after quench-hardening is described in detail. The author presents regimes for various methods of heat treatment of rolling-bearing components, discusses the selection of the appropriate method, and

Card ~~1~~/4

SOV/144-59-5-12/14

AUTHOR: MOROSOV, A.P., Laboratory Assistant

TITLE: Operation and Exploitation of a Betatron with a Maximum Gamma Ray Energy of 15 Mev.

BIBLIOGRAPHICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 5, pp 101 - 109 (USSR)

ABSTRACT: In 1951, the Tomsk Polytechnical Institute built a betatron with a maximum gamma ray energy of 15 Mev for the Moscow Institute of Engineering and Physics (Ref 1). This betatron was designed for scientific and teaching purposes. A special laboratory was built for it and in October 1954 the accelerator was brought into operation and has worked satisfactorily ever since. The present paper gives a description of the adjustment and the operation of the betatron (Ref 6). The laboratory was planned so that the electro-magnet, the control desk, the condenser bank and the screening arrangements occupied an area of about 100 sq m. The plan of the laboratory is shown in

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SOV/144-59-5-12/14

Operation and Exploitation of a Betatron with a Maximum Gamma Ray Energy of 15 Mev

Figure 1. The ventilators remove contaminated air at the rate of 3 600 l/min through an air duct and eject it into the atmosphere to a height of 12 m. Special tests were made on the ozone concentration at various levels in the laboratory to ensure the necessary purity of air in the working region. The working region was separated by a concrete wall 1 m thick. It was established that the humidity in the laboratory must be below 75% if stable working conditions are to be maintained. The vacuum system ensures a vacuum of 2×10^{-6} mm Hg in the accelerator chamber. The optimum parameters of the betatron were found to be as follows: 1) voltage across the primary of the electromagnet 210 volts; 2) current in the primary 15 amp; 3) Pressure in the accelerator chamber 2×10^{-6} mm Hg; 4) construction of the electron injector and the disposition of the electrodes as shown in Figure 2; 5) filament current 3.1 amp; 6) amplitude of the high voltage pulse 38 kV; 7) Pulse rise time 1 μ sec; 8) pulse decay time 3 μ sec; 9) position of the deflecting coils as shown in Figure 3; 10) the phase at

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SOV/144-59-5-12/14

Operation and Exploitation of a Betatron with a Maximum Gamma Ray Energy of 15 Mev

which complete displacement of electrons onto the target takes place is 85° . The intensity under these optimum parameters was 4.5×10^8 MeV/cm² sec. Absolute measurements of the intensity were carried out by calorimetric methods. Figure 4 gives a diagram of the calorimeter. It consists of two parts, namely, the calorimetric system A and the water thermostat B. The calorimetric system consists of two lead blocks (1 and 2) placed in an aluminum chamber. The diameter of the blocks is 60 mm and their thickness 25 mm. The thickness of the blocks is sufficient to absorb the radiation. In Figure 4, 8 are heaters (200 watt each) and 9 is a motor which brings the stirrer 7 into action. The thermostat 6 controls the current to one of the heaters.

Card 3/4 There are 4 figures, 4 tables and 9 references, of which 3 are English and 6 are Soviet.

SOV/144-59-5-12/14

Operation and Exploitation of a Betatron with a Maximum Gamma Ray
Energy of 15 Mev

ASSOCIATION: Kafedra elektro-fizicheskikh ustanovok, Moskovskiy
inzhenerno-fizicheskii institut (Chair of Electro-
Physical Equipment, Moscow Physical-Engineering Institute)

Part 4/4

MOROZOV, A.P.

Our experience in the mechanization of auxiliary and labor-consuming work. Tekst.prom.14 no.6:4-6 Je '54. (MLRA 7:7)

1. Glavnyy inzhener Kurovskogo kombinata.
(Textile industry)

MOROZOV, A.P.

Conduit for removing lining wastes. TSement 28 no.1:21 Ja-F
'62. (MIRA 16:5)

1. Kramatorskiy tsementnyy zavod.
(Kilns, Rotary)

KLYACHKO, A.L., inzh.; ODINOV, N.I., inzh.; GLUKHOVSKIY, K.A.,
kand. tekhn. nauk, inzh., red.; GVOZDEV, A.A., doktor
tekhn. nauk, prof., red.; GORENSHTEYN, B.V., kand.
tekhn. nauk, red.; KOSTYUKOVSKIY, M.G., kand. tekhn.
nauk, red.; KAYLOV, N.A. doktor tekhn. nauk, red.;
KUREK, N.M., kand. tekhn. nauk, red.; LEVINSKIY, L.G.,
inzh., red.; LOBANOV, N.D., inzh., red.; MOROZOV, A.I.,
inzh., red.; ONIASHVILI, C.D., doktor tekhn. nauk, prof.,
red.; SAKHNOVSKIY, K.V., doktor tekhn. nauk, prof., red.;
FILIN, A.F., doktor tekhn. nauk, prof., red.; YEFIMOV,
A.D., inzh., nauchn. red.

[Three-dimensional structural elements in the U.S.S.R.;
materials of the All-Union Conference on Precast
Reinforced Concrete Three-Dimensional Elements held in
November 13-17, 1962 in Leningrad] Prostranstvennye kon-
struktsii v SSSR; po materialam pervogo Vsesoiuznogo so-
veshchaniia po sbornym zhelezobetonnyim prostranstvennym
konstruktsiiam, sostoiavshegosia 13-17 noiabria 1962 g.
v Leningrade. Leningrad, Stroizdat, 1964. 461 p.

(MIRA 17:11)

1, Nauchno-tekhnicheskoye obshchestvo stroitel'noy indu-
strii SSSR. Leningradskoye otdeleniye.

FOLYAKOV, Pavel Ivanovich, kand. tekhn. nauk; TANANOVSKAYA,
Marianna Zenonovna, kand. arkhil.; KAKBAKOV, Mikhail
Sergeyevich, inzh.; LOGZOV, A.P., red.

[Use of stereophotogrammetry in architectural and construc-
tion practice] Primenenie stereofotogrammetrii v arkhitekturno-
stroitel'noi praktike. Leningrad, 1964. 12 p.

(NIRA 17:9)

MOROZOV, A.P., kand. tekhn. nauk; SOKOLOV, N.L., inzh., retsenzent;

[Making dies for forging Izgotovlenie shtampov dlia go-
riachei shtampovki. Moskva, Mashinostroenie, 1965. 183 p.
(MIRA 18:5)

ACC NR: AT6036638

SOURCE CODE: UR/0000/66/000/000/0347/0348

AUTHOR: Sirotinin, N. N.; Yankovskiy, V. D.; Adamenko, N. P.; Gerya, Yu. F.
Morozov, A. P.

ORG: none

TITLE: Reestablishment of vital functions of the organism in clinical death caused by severe anoxia and radial acceleration [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 347-348

TOPIC TAGS: hypoxia, biologic acceleration effect, space physiology, decompression sickness, animal physiology

ABSTRACT:

For the last twenty years the possibility of reanimation from clinical death (resulting from hemorrhage, electrical trauma, and asphyxiation of the newborn and of drowned persons) has been studied. It was demonstrated that it was possible to restore all vital functions with prolonged survival afterwards. Dogs dead from

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ACC NR: AT6036638

blood loss were revived after 15 min of clinical death. Those dead from electrical shock were revived after 21 min and 51 sec of clinical death. Newborn who died of asphyxiation were revived after 10 min. Those who drowned in salt water were revived after 21 min of clinical death.

As a test for restoration of higher nervous activity, conditioned reflexes were developed in dogs after which they were subjected to hemorrhage and reanimation. After a 10 min clinical death from hemorrhage and subsequent reanimation, conditioned reflexes were reestablished. After a 19 min clinical death from drowning in salt water, conditioned reflexes were also fully reestablished.

During the last three years the possibility has been under study of reestablishing vital functions after clinical death resulting from acute anoxia (decompression) and from the effects of radial acceleration. Dogs weighing 3—5 kg were placed in a small pressure chamber which was connected to a large chamber where an atmospheric pressure equal to 54 mm Hg. (corresponding to an altitude of 18000 m) was created. Pressure in the two chambers

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ACC NR: AT6036638

was equalized in less than one minute. In another series of experiments the animals were subjected to decompression in a pressure chamber from which air was sucked out in the course of one or two minutes creating a pressure of 40—70 mm Hg (corresponding to an altitude of 20--16.3 km). The possibility was demonstrated of reestablishing all vital functions, with prolonged survival, after an 11 min clinical death resulting from decompression, and restoration of vital functions with survival for several hours after a clinical death of 20 minutes duration.

For the study of reanimation after clinical death from radial acceleration, dogs were placed in a chest-back position in a capsule of a 5 m centrifuge and exposed to a 40 G acceleration for a period of 4--8 min (without a stabilizing drug) and 8--12 min after preliminary injection of sinantrin (a stabilizing agent). After this exposure clinical death set in. It was demonstrated that reanimation is possible after a 16--19 min clinical death resulting from radial acceleration. Dogs survived afterwards for a period of 2--3 yr.

[W. A. No. 22; ATD Report 66-116]
SUB CODE: 06 / SUBM DATE: 00May66
Card 3/3

ACC NR: AR6028506

(H)

SOURCE CODE: UR/0398/66/000/005/0005/0005

AUTHOR: Morozov, A. P.TITLE: Planning corrective alignment of river beds

SOURCE: Ref. zh. Vodnyy transport, Abs. 5B30

REF SOURCE: Proizv.-tekhn. sb. Tekhn. upr. M-va rechn. flota RSFSR, no. 4 (48), 1965, 63-64

TOPIC TAGS: waterway engineering, civil engineering, ship navigation

ABSTRACT: When corrective alignment measures are planned, the parameters are selected by a matching arrangement. First of all, the boundaries of the corrective alignment for the designed width are plotted, based on the shape of shoals and bank outlines. Elements of the curve along the plotted alignment are measured (length, mean radius, central turning angle φ) and these magnitudes are compared with the design values. Then, using successive approximations, and changing the position of the alignment, a match between the planned curve and its design values is obtained. The following formula is suggested for use in determining the radius of curvature: $R = A \sqrt{Q_f / I} \cdot \varphi$, where Q_f is the bed-forming water flow, I is the average gradient of the water surface for the section under review for a water level corresponding to Q_f , φ is the central turning angle in radians, and A is a coefficient, inherent in the

Card 1/2

UDC: 627.4.001.12

ACC NR: ARG028506

particular section of the river. The coefficient A was determined for several rivers. Its magnitude changed from 0.0019 to 0.0030. The following formula is suggested for finding A for a particular shoal section:

$A = \lambda \times I_{av}^{0.75} \times n^{0.5} / T^{0.83} \times B^{0.5}$, where λ is the length of the curved section along the concave bank, T is the average depth, in meters, B is river width in meters, I_{av} is the average gradient for the water surface, n is the roughness coefficient. T, B, and I_{av} correspond to the bed-forming flow. [Translation of abstract]

SUB CODE: 08,13

Card 2/2

MOROZOV, A.P.; MININ, V.F., inshener.

Hundred meter span roofing for an industrial building made of precast reinforced concrete. Nov.tekh.i pered.op.v stroi. 12 no.9:16-18 Ag. '56. (MLRA 9:10)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Morozov).
(Precast concrete construction) (Roofs)

MOROZOV, A.P.; MININ, V.F., inzh.; SHIFRIN, L.S., inzh.; STAROV, A.F., inzh.;
FUGACH, Ya.Yu., inzh.

Thin-slab reinforced cement roofs in housing construction. Biul. tekhn.
inform. 3 no.11:3-6 N '57. (MIRA 11:1)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury (for
Morozov).

(Roofs, Concrete)

MOROZOV, A.P.; MININ, V.F., inzh.; STAROV, A.F., inzh.; SHIFRIN, L.S., inzh.

First experience of using reinforced cement for roofs in civil construction. Biul. tekhn. inform. 3 no.12:13-17 D '57. (MIRA 11:1)

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(Roofs, Concrete)

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inform. 4 no. 6:3-6 Je '58. (MIRA 11:7)

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Morozov). 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury
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(Roofing, Concrete)

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Brussels World Fair in 1958. Biul. tekhn. inform. 4 no.9:29-32
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KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[New spatial construction elements; collection of scientific reports] Novye prostranstvennye stroitel'nye konstruktsii; sbornik nauchnykh soobshchenii. Leningrad, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1959. 113 p.

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(Precast concrete construction)

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Roof of an experimental shop. Biul. tekhn. inform. 5 no.3:10-11
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(Roofing, Concrete)

MOROZOV, A.P.

New developments in the construction of industrial buildings. Izv.
ASIA no.4:13-19 '60. (MIRA 14:4)

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Universal'nye mezhoraslevye promyshlennye zdaniia
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inzhener; MOROZOV, A.P., inzhener.

Remarks on the new regulations concerning the technical operation
of interurban telephone communication lines and repeater stations.
Vest.sviazi 14 no.2:15-16 F '54. (MLRA 7:5)
(Telephone lines)

MOROZOV, A.P.

USSR/Miscellaneous

Card 1/1 : Pub. 133 - 11/20

Authors : Ostinskiy, A. Ya.; Morozov, A. P.; Sherin, G. A.; and Belevich, L. I.

Title : Dispatching of technical services in the Inter-City Telephone Station

Periodical : Vest. svyazi 10, 20-21, Oct 54

Abstract : In order to insure the servicing of communication channels and equipment, the Leningrad Inter-City Telephone Station, introduced a dispatch service for the technical exploitation of large telephone stations. Short description of the above mentioned service is given. Diagrams.

Institution : ... *Chief ENGR, Leningrad MTS*

Submitted : ... *(mezhdunarodnoy telefonnoy stantsii)*

MOROZOV, A. F.

USSR/ Electronics - Communications

Card 1/1 Pub. 133 - 4/23

Authors : Morozov, A. P., Senior Engineer of the Leningrad Long-Distance Telephone Station, and Nikishina, A. V., Engineer

Title : Application of a volume range narrowing and widening system in long-distance channels

Periodical : Vest. svyazi 11, page 9, Nov 1954

Abstract : A system employed for changing the volume range of audio-frequency signals, so that weak sounds will not be lost through interfering background noises, and loud sounds will not overload any part of the radio broadcasting, is described. The method of inserting the volume-range changer system in the channel, the zero-point orientation of the system, its tuning and checking the accuracy of its operation is described. One USSR reference (1953). Diagrams.

Institution:
Submitted:
Chief Eng, Leningrad Long-Distance Telephone Station.

Trans M-3, 053, 578

MOROZOV, A. P.

USSR/ Electronics - Telephone communications

Card 1/1 Pub. 133 - 11/18

Authors : Morozov, A. P.; Chistyakov, V. M.; and Barabanov, N. V., Engineers

Title : Experiences with the (BUS-12) auxiliary amplifier station

Periodical : Vest. svyazi ¹⁵ 2, 20 -22, Feb 1955

Abstract : The experiences gained during the exploitation of the auxiliary amplifier station BUS-12 are described. The BUS-12 was considered a modern device with excellent technical-tactical characteristics. The circuit diagram and mode of operation of the BUS-12 are described. Diagrams.

Institution: Leningrad Mezhdunarodnoy Telefonnoy Stantsii

Submitted:

TRANSLATION M-1348, 11 Dec 56
519821

SOV/111-59-8-19/30

6(7)

AUTHOR: Morozov, A. P., Chief Engineer

TITLE: On the Introduction of the Immediate System of Service in Inter-City Telephone Communications

PERIODICAL: Vestnik svyazi, 1959, Nr 8, pp 22-23 (USSR)

ABSTRACT: In this article the author treats the "immediate system" (nemedlennaya sistema) of inter-city telephone service in operation at the Leningrad Inter-City Telephone Station (MTS). The growth of this system, since its introduction in 1952, is very briefly outlined; the author states that 47.8% of all outgoing calls at the Leningrad MTS are handled by this system. One of the principle advantages of this system over the order system is the considerable saving in time necessary for putting through a call; waiting time for the subscriber is much shorter, (Table 1). In addition the volume of calls handled on lines operating on the immediate system increases substantially, and is better distributed throughout the day (Fig 2). An increase in the productivity of labor at the MTS is also noted. Direct, semi-automatic con-

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SCV/111-59-8-19/30

On the Introduction of the Immediate System of Service in Inter-City Telephone Communications

nections from telephone stations in the city (independent of the MTS) also greatly increase the efficiency of the system, (Table 2). The author deals with the problem of handling transit calls through Leningrad from suburbs and rayon towns of the Leningrad oblast to towns operating up to 1 hour. The solution to this problem is outlined; increased automation of transit call processing has contributed, and will further contribute to greater efficiency in handling these calls. In conclusion the author reviews the principle advantages of the immediate system as presented in the text, stressing its role in the process of automation of inter-city telephone communications. There are 2 tables and 2 graphs.

ASSOCIATION: Leningradskaya MTS (Leningrad MTS)

Card 2/2

MURCZOV, A I

PHASE I BOOK EXAMINATION

Grinberg, Grigoriy Borisovich, and Arkadiy Iosadovitch. Murzov

Sovmeshcheniye obratovodiya ustroystvogo raznogo naznacheniya i radiofizitsii (Combination Equipment for Electrocommunication and Wire-Broadcasting Repeater Station) Moscow, Sovetskizdat, 1970. 49 p. 3,000 copies printed (Series: Spetsialnykh svyazistov).

Resp. Ed.: A. P. Kogan; Ed.: V. I. Bashchuk; Tech. Ed.: G. I. Shefer.

PURPOSE: This booklet is intended for technical personnel of long-distance and local communication services and of the wire-broadcasting system.

COVERAGE: The authors present a generalization of the experience gained from combined arrangement of equipment and unified servicing of combined rediffusion stations and intrastate and long-distance repeater stations. The book is based on work done in communication establishments in the Leningralskaya oblast, parts of the Sverdlovskaya and Kirovskaya oblasti, the Kamchatkiskiy and Khabarovskiy krays, the RSFSR, and the Latvian SSR. The general

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