

*1951*  
SHVAISHTEYN, Ye.I.

Psychical disorders in lupus treated with large doses of vitamin D<sub>2</sub>.  
Nevropat. psikhiat., Moskva 20 no.5:76-79 Sept-Oct 51. (CIAML 21:4)

1. Of Second Leningrad Psychiatric Hospital (Head Physician--Candidate  
Medical Sciences M.Ya. Lyakhovitskiy).

SHVAYSHTEYN, Ye. S.

*Chemica  
Cinemography*

**Effect of electrolytes on the viscosity of cellulose nitrate solutions.** P. V. Kozlov, A. A. Freiman, B. S. Savitskaya and L. K. Lokutskaya (Inst. Fine Finances, All-Union Sci. Research Kirov-Photo Inst., Leningrad). *Koloid. Zhur.* 16, 115-10 (1954).—The apparent viscosity  $\eta$  of 2% solns. of cellulose nitrate (I) (11.5% N) in COMe, calculated, assuming Poiseuille's law, decreased from 0.17 to 0.12 poises when  $\log \phi$  increased from 1.4 to 3.0 sec.<sup>-1</sup> at 20°;  $\phi$  being the velocity gradient. When LiCl equiv. to the OH groups of I was added,  $\eta$  was lowered (to 0.14-0.11 poises) but  $d\eta/d \log \phi$  was similar. However, when the amt. of LiCl was equiv. to the ONO<sub>2</sub> groups or to the ONO<sub>2</sub> and OH groups combined,  $\eta$  was small (0.038 poises) and independent of  $\phi$ . Thus, to eliminate structural viscosity, each ONO<sub>2</sub> group must be blocked by one LiCl. The effect of LiCl on 18% soln. of I in EtOH + Et<sub>2</sub>O was similar, while 0.2% solns. (which exhibit no structural viscosity) were not affected by LiCl. The mol. wt. (from  $\eta$ ) of I used was 43,000 independently of the amt. of LiCl added; thus, the depression of  $\eta$  by LiCl was not due to depolymerization.

J. J. Bikerman

AA

L 00986-66 EWT(l)/EWP(m)/EWA(d)/FCS(k)/EWA(l)

ACCESSION NR: AP5020559

UR/0294/65/003/004/0569/0576  
532.517.4

29  
28  
B

AUTHOR: Lebedev, A. V.; Shvaykovskiy, Yu. V.

TITLE: Experimental investigation of the velocity fields and turbulent characteristics in a heat protective gas stream /

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 4, 1965, 569-576

TOPIC TAGS: heat protective gas stream, turbulent mixing, concurrent gas stream

ABSTRACT: One method for preventing the walls of a combustion chamber from overheating is the injection of a jet of cold gas along the wall surface to separate the hot combustion gases from the wall. Experimental determination of the velocity fields in the gas jet protecting the wall was carried out to study the mechanism of the turbulent mixing of the gas jet with the main stream of the combustion gases. The time-average longitudinal velocity component  $u$  and the average absolute velocity pulsation  $\overline{|u' |}$  were measured using the experimental unit described in Fig. 1 of Enclosure. Dependence of  $u$ ,  $\overline{|u' |}$ , and

$$\overline{|u' |} \left[ \frac{du}{d(y/s)} \right]$$

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ACCESSION NR: AP5020559

on  $y/s$  and  $x/s$ , where  $s$  refers to the height of the slot for the injection of the jet of a cold gas, were measured for  $m = 0.253; 0.436; 0.629; 1.62; \text{ and } 3.09$ ;  $m = \rho_1 u_{1av} / \rho_0 u_0$ , where  $u_{1av}$  and  $u_0$  are the average cross-section velocities in the slot and in the main gas stream before mixing, and  $\rho_1$  and  $\rho_0$  are the corresponding densities. The experimental results confirmed the validity of a previously proposed method for calculating the heat protective gas stream by using the equations of the turbulent boundary layer formed at a rigid wall (S. S. Kutateladze, A. I. Leont'yev. *Teplofizika vysokikh temperatur*, no. 2, 1963). Orig. art. has: 6 figures and 14 formulas. [PS]

ASSOCIATION: Institut teplofiziki Sibirskogo otdeleniya Akademii nauk SSSR  
(Institute of Thermal Physics, Siberian Branch, Academy of Sciences, SSSR)

SUBMITTED: 15Apr64

ENCL: 01

SUB CODE: PR, ME

NO REF SOV: 008

OTHER: 001

ATD PRESS: 4068

Card 2/3

L 00986-66

ACCESSION NR: AP5020559

ENCLOSURE: 01

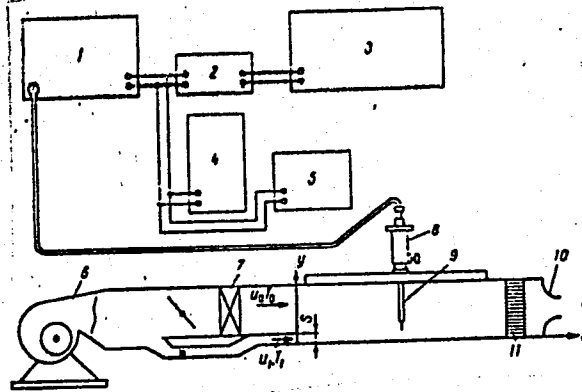


Fig. 1. Experimental setup for measuring gas stream velocities.

1 - ATA-1 thermoanemometer; 2 - coordinating amplifier; 3 - oscillograph 350-101; 4 - EO-7 oscillograph; 5 - average value voltmeter; 6 - fan; 7 - electric heater; 8 - traversing probe; 9 - data unit; 10 - nozzle; 11 - flow equalizing grid.

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SHVAYSHTEYN, Z.I.

Laboratory for the investigation of ice and testing of ice breaker and  
ice ship models. Probl. Arkt. no.2:171-178 '57. (MIRA 11:12)  
(Testing laboratories) (Ice-breaking vessels--Testing)

SHVAYSITTEYN, Z. I.

Snow and ice research laboratory in Canada. Probl.Arkt. no.3:110-111  
(MIRA 12:1)

' 58. (Canada--Ice--Research) (Canada--Snow--Research)

SHVAYSHTEYN, Z.I.

Manufacture of ice for model studies by atomizing supercooled  
water. Probl.Arkt. no.5:93-98 '58. (MIRA 13:5)  
(Ice--Manufacture)



SHVAYSHTYEN, Z.I.

The thermoelectric effect of freezing water. Probl.Arkt. no.6:  
89-95 '59. (MIRA 13:6)

(Thermoelectric phenomenon)  
(Water--Electric properties)  
(Atmospheric electricty)

SHVAYSHTEYN, Z.I.

Drilling ice from the lower surface of the ice cover to the upper.  
Probl. Arkt. i Antarkt. no.13:123-125 '63. (MIRA 16:9)  
(Ice coring rigs)

ACCESSION NR: AT4015836

S/2561/63/000/014/0083/0086

AUTHOR: Shvayshteyn, Z. I.

TITLE: Standard changes for the blasting of ice

SOURCE: Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut. Problemy\* Arktiki i Antarktiki (Problems of the Arctic and Antarctic); sb. statey, no. 14, 1963, 83-86

TOPIC TAGS: blasting, ice blasting, explosive charge, ice breaker, ice destruction, explosive storage

ABSTRACT: The author begins his study of explosive charges for the blasting of ice with the statement that, despite the development of powerful ice-breakers in recent years, such charges are frequently the sole effective means of combating ice bound conditions in Arctic and Antarctic regions even today, including the so-called navigational periods. Noting that, despite its great effectiveness, explosive blasting of ice is infrequently used in the Arctic and only as a last emergency measure, the author reviews certain of the factors that influence the success or failure of this means of effecting a navigational passage. During 1959-1960 period, the laboratory studying ice and the methods of its

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ACCESSION NR: AT4015836

destruction, together with other organizations, designed, manufactured, and tested standard charges of different weight to be used in blasting ice of various thickness. The present article deals with the description of the charges which were considered to be the most economical and simple to use. Among the factors discussed in the article are: placement of the charges (on, within, or under the ice); design of the charge shell; storage properties; manufacture and type of design (liquid or powdered explosive); weight considerations (1-kg charge designed to explode within the ice near the ship to fracture the ice; 5-kg charge designed to explode in the ice and also in pack ice accumulations, as well as underneath the ice, provided the ice is not much more than 1 meter thick; 10-kg charge for underwater destruction of ice of up to 1.5 meters thickness; 25-kg charge for underwater blasting of the thickest ice flows; (see Fig. 1 of the Enclosure) and testing data (tests conducted in the Gulf of Finland, 1 km from the shore with ice 65-70 cm thick). Experimental charges were tested for: 1) hermetic sealing of the physical casing of the charge; 2) failure-proof initiation of the explosive in the charge from the electrodetonator or from the detonating fuse; 3) failure-proof transmission of detonation from charge to charge, with the latter lying end to end and with only the upper charge set off, with no primers in the others. Orig. art. has: 3 figures.

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Card

ACCESSION NR: AT4015836

ASSOCIATION: Arkticheskiy i antarkticheskiy nauchnoissledovatel'skiy institut,  
Leningrad, (Arctic and Antarctic Scientific Research Institute)

SUBMITTED: 16Apr62

DATE ACQ: 02Mar64

ENCL: 01

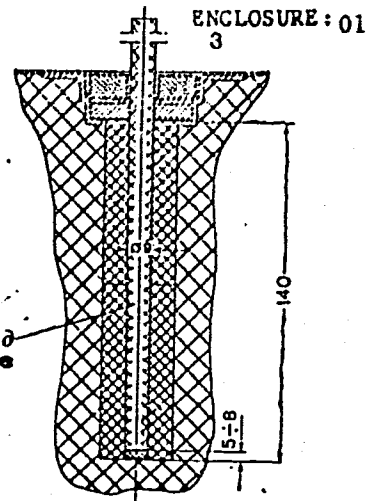
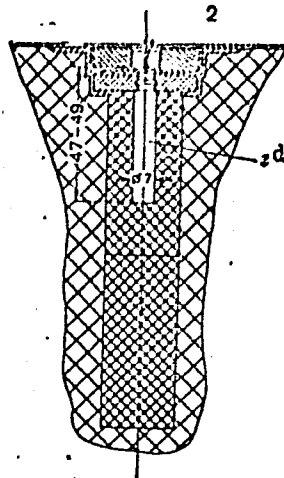
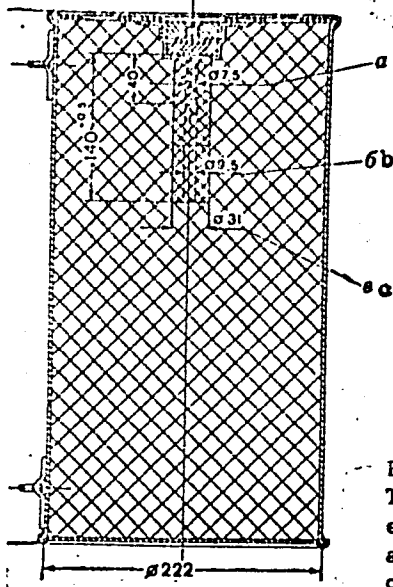
SUB CODE: ES

NO REF SOV: 000

OTHER: 000

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ACCESSION NR: AT4015836



ENCLOSURE: 01

Fig. 1. Ice-blasting charge. Weight: 25 kg (Explosive: TNT) 1 - charge (sectional view); 2 - charge with electrodetonator; 3 - charge with detonating fuse. a - aperture for electrodetonator; b - aperture for fuse; c - aperture for compressed TNT; d- electrodetonator; e - detonating fuse

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SHVAYSHTEYN, Z.I.

Semiconductor salinometer for measuring the salinity of the sea  
ice. Probl.Arkt.i Antarkt. no.15:85-87 '64. (MIRA 17:4)

PESCHANSKIY, I.S.; SHVAYSHTEYN, Z.I.; KAGAN, G.L.; NAZINTSEV, Yu.L.

Mechanical properties of consolidated ice. Probl. Arkt. i Antarkt.  
no.16:45-53 '64. (MIRA 17:6)



RUDAKOV, V.N.; SHVAYSHTEYN, Z.I.

Remote-control (noncontact) electromagnetic methods of measuring the thickness of drift ice. Trudy AANII 267:64-80 '64  
(MIRA 18:1)

SHVAYSHEYN, Z.I.; ENGLIN, R.K.

Ice breaking by vibration. Trudy AANII 267:89-99 '64

SHVAYTSER, L.F.

Pneumatic device for hoisting boring rods of the BA-100 boring  
machine. Sbor.rats.predl.vnedr.v proizvod. no.5:8-9 '60. (MIRA 14:8)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat, Lebyazhinskoye  
rudoupravleniye.  
(Boring machinery--Technological innovations)

1. SHTEKHEVYUS, L. YE., BRISLER, I. D., SHVAYTSEK, YE. G.
2. USSR (600)
4. Bobbins (Textile Machinery)
7. New designs for shuttle bobbins. Tekst. prom. 12, no. 12, 1952.

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

1. SHVAYUN, V. L. Eng. BUGAY, M. A. Eng.

2. USSR (600)

3. Machinery-Design

4. Experience with unification of designing at a plant of an individual manufacturing enterprise.  
Vest. mash. ~~32~~ No. 7 - 1952.

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

SOV/137-59-1-1598

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 212 (USSR)

AUTHOR: Shvayun, V. L.

TITLE: Technical Progress at the Staro-Kramatorsk Machinery-building Plant (Staro-Kramatorskiy mashinostroitel'nyy zavod v bor'be za tekhnicheskiv progress)

PERIODICAL: Tr. Mezhevuz. nauchno-tekhn. konferentsii na temu "Sovrem. dostizh. prokatn. proiz-va". Leningrad, 1958, pp 15-19

ABSTRACT: The plant manufactures machinery for continuous longitudinal cutting of coiled strips, 1500 mm wide and 8 mm thick, into narrow strips up to 120 mm wide. The equipment is capable of operating speeds of 0.5 - 2.5 m/sec and an output of 100-150 tons/hr. The plant also manufactures machinery for continuous transverse cutting of strips up to 1500 mm wide and 8 mm thick into 8 m long sheets at speeds of 0.5 - 2.5 m/sec and with an output of up to 130 tons/hr. The following equipment is included in the continuous line: Receiving and guiding conveyors, a manipulator for coiled strips, a two-position uncoiler, a scale breaker, a sheet-straightening press, a brushing machine, alligator shears, a device for limiting the tension of the strip, a

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SOV/137-59-1-1598

Technical Progress at the Staro-Kramatorsk Machinery-building Plant

finishing four-high mill, flying micrometers, looping pits, disk-type shears, flying shears, a marker device, a sheet-straightening machine with 11 rollers, a lubricating unit, and an electromagnetic stacker equipped with discharge conveyors and scales. To permit mass-production operations, the mills manufactured at the plant are equipped with automatic devices, such as automatic shut-off switches, master controls, light-sensitive devices, and selsyns. The plant manufactured a set of electrically-driven shears for hot cutting of metal, advancing at speeds up to 5.2 m/sec, into sections 5-12 m long; the cross section of the metal varied from 54x54 to 106x106 mm. By employing these shears it is possible to increase the rate of rolling by 40-50% and the output by 25-35%.

Ya. G.

Card 2/2

SHVAZHINSKAS, N. V.; Cand. Tech Sci (diss)

"Investigation of the performance of tractor diesel in the quantitative regulation of the intake air." Kaunas, 1960. 19 pp with graphs; (State Committee of Higher and Secondary Specialist Education of the Council of Ministers of Lithuanian SSR, Lithuanian Agricultural Academy); 170 copies; free; (KL,25-60, 136)



SHVCHUK, S.M., kand. tekhn. nauk, dotsent

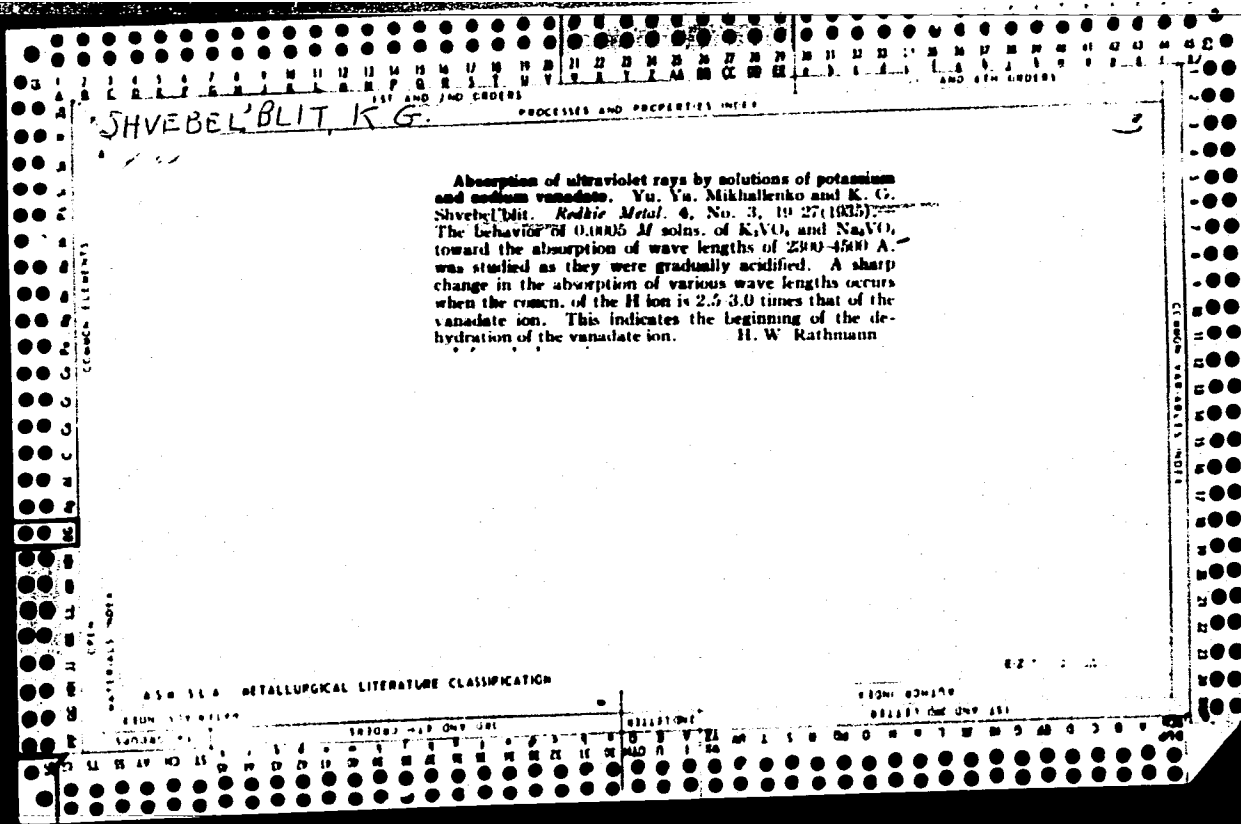
Determination of the overload characteristics of an electric motor. Trudy GPI 16 no.5:12-22 '60. (MIRA 16:4)

(Electric motors)

SHVEBA, G.I. [Shveba, H.I.]

Calculating surface erosion on the basis of data obtained by  
sprinkling. Pratsi Od. un. zbir. mol. vchen. un. 148 no.3:337-356  
'58 (MIRA 13:3)

1. Nauchnyy rukovoditel' - prof. A. M. Befani.  
(Erosion)



SHVEBEL'BLIT, K.G.

✓1618

SPECTRUM AND ENERGY LEVELS OF THE POLONIUM  
ATOM. E. A. Vernyi, A. N. Zaïdel and K. G. Shvebel'blit. 62  
Doklady Akad. Nauk S.S.S.R. 104, 710-12(1955) O&K II.  
(In Russian)

A detailed study of the Po spectrum at 400 to 500°C was made. Discharge of Po vapors was used as the source of light. Registration of spectra in ultraviolet and visible areas was done on a two-meter spectrograph with diffraction grating. Instruments of high dispersion permitted the determination of the wave length of most of the lines with the accuracy up to 0.01 Å. (R.V.J.)

(2)

SHVACHIN, N. S., PISTOVA, N. S., SYTEN, V. I. GIBALIN, V. N. AND BALAKLEYETS, I. I.

"New methods of preparing alpha, beta, and gamma sources," a paper submitted at the International Conference on Radioisotopes in Scientific Research, Paris, 9-20 Sep 57.

17  
KHARKHURIM, Ye., inzh.-podpolkovnik; SHVEBIG, A., inzh.-polkovnik; REVVA, P.,  
inzh.-kapitan; VEREVKIN, I., kapitan; AFONIN, B., inzh.-kapitan.

Training of repairmen. Tankist no.1:22-25 Ja '58. (MIRA 11:3)  
(Tanks (Military science)--Maintenance and repair)

SHVEBS, A.V.

Effect of slope exposition on moisture resources of soil. Trudy  
OGMI no.22:49-57 '60. (MIRA 14:10)  
(Soil moisture) (Slopes (Physical geography))

SHVEBS, A.V.

Methodology of forecasting soil-moisture reserves for  
individual farms. Trudy Ukr NIGMI no.49:53-62 '65.

(MIRA 18:8)



SHVETS, G.I.

Methods of investigating the washing off of soils [with summary in English]. Pochvovedenie no.5:105-109 My '57. (MLRA 10:9)

1. Kafedra gidrologii Odesskogo gosudarstvennogo universiteta imeni I.I. Mechnikova.

(Erosion)

SHVEBS, G.I.

Estimating the washing of soils from the surface of natural slopes.  
Trudy OGMI no.12:245-253 '58. (MIRA 12:7)  
(Erosion)

SHVEBS, G. I., Candidate Tech Sci (diss)-- "Investigation of the dynamics of surface erosion of soils". Kiev, 1959. 15 pp (Min Higher Educ Ukr SSR, Kiev Inst of Water Economy Engineers), 150 copies (KL, No 24, 1959, 143)

SHVEBS, G.I.

Empirical relationship for quantitative estimation of surface erosion of soils. Sbor. rab. po gidrol. no.1:70-75 '59.  
(MIRA 15:2)

1. Odesskiy gosudarstvennyy universitet.  
(Erosion)

S/050/60/000/06/18/021  
B007/B007

AUTHORS: Terent'yev, Ye. V., Shvebs, G. I.

TITLE: Anatoliy Nikolayevich Befani (On the Occasion of the 50th Anniversary of His Birthday)

PERIODICAL: Meteorologiya i gidrologiya, 1960, No. 6, pp. 50-51

TEXT: This is a short biography of Professor, Doctor of Technical Sciences, Head of the kafedra gidrologii Odesskogo gidrometeorologicheskogo instituta (Chair of Hydrology, at the Odessa Hydrometeorological Institute) Anatoliy Nikolayevich Befani. Befani began his scientific activities in the early thirties; in 1938 he was confirmed and graduated without a dissertation as Candidate of Technical Sciences for a number of works in the field of melioration and hydrology, and in 1940 he graduated as Doctor of Technical Sciences. His dissertation was entitled "The General Theory of the Runoff on the Surface and Its Application in the Field of Hydraulic Engineering, Melioration, and Road-building". He began his practical activities in 1930. From 1934 to 1946 he first

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Anatoliy Nikolayevich Befani (On the Occasion of the 50th Anniversary of His Birthday)

S/050/60/000/06/18/021  
B007/B007

worked as Docent, and later as Head of the kafedra gidrologii Omskogo sel'skokhozyaystvennogo instituta (Chair of Hydrology at the Omsk Agricultural Institute). Since 1946 he has been Head of the same Chair at the Odesskiy gidrometeorologicheskii institut (Odessa Hydrometeorological Institute). Mention is made of his two monographs and his article, which is ready for print, on the "Fundamentals of the Theory of Subsurface Flow". Befani published a total of 34 scientific works in the Soviet Union as well as abroad. In 1958 he lectured in Bulgaria. At the extended session of the Sovet Odesskogo gidrometeorologicheskogo instituta (Council of the Odessa Hydrometeorological Institute) he was handed an honorary document by order of the Glavnoye upravleniye gidrometeoslužby (Main Administration of the Hydrometeorological Service) by the Director of this Institute. ✓

Card 2/2

SHVEBS, G.I.

Methods for studying the disintegration of soil particles in a  
water stream (water-stability of soil). Pochvovedenie no.1:94-99  
Ja '65. (MIRA 18:7)

1. Odesskiy gidrometeorologicheskiy institut.

SHVECHIKOV, M. A.

Economic planning work should be improved. Vest. svyazi 23  
no.4:10-12 Ap '63. (MIRA 16:4)

1. Nachal'nik planovo-finansovogo otdela Ministerstva svyazi  
UkrSSR.

(Telecommunication)



MIN. TRAV. I G. inzh. NVE BICV, M.N., 1968

construction of one of the largest coal preparation plants.  
Shkhtestrol. 2 no. 10-23 My 1968 (MIRA 174)

1. Trast Kraendobromshkhtestroy.

SHAPIRO, I.I.; MIKHAYLOV, D.V.; TSEYTS, I.E.; MOSIMA, T.S., inzh.;  
PETRASHKO, A.S., inzh.; KASHINTSEVA, L.M., inzh.; GVOZDEVA,  
A.N., inzh.; SHVECHKOVA, A.S., tekhnik; SHANDLER, K.S.,  
tekhnik; EL'KIND V.D., tekhn.red.

[General norms of cutting conditions and time used in the machinery industry for technical standardization of machining on milling machines; lot production] Obshchemashinostroitel'nye normativy rezhimov rezaniia i vremeni dlia tekhnicheskogo normirovaniia rabot na frezernykh stankakh; seriinoe proizvodstvo. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 269 p.

(MIRA 13:1)

1. Moscow. Nauchno-issledovatel'skiy institut truda. TSentral'noye byuro promyshlennykh normativov po trudu. 2. Zaveduyushchiy otdelom mashinostroyeniya TSentral'nogo byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for Shapiro). 3. TSentral'noye byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for all except El'kind).  
(Milling machines)

SHAPIRO, I.I.; MIKHAYLOV, D.V.; TSEYTS, I.E.; MOSINA, T.S., inzh.;  
PETRASHKO, A.S., inzh.; KASHINTSEVA, L.M., inzh.; GVOZDEVA,  
A.N., inzh.; SHVECHKOVA, A.S., tehnik; SHANDLER, K.S., tehnik;  
MODEL', B.I., tekhn.red.

[General engineering norms for metal cutting operations and  
time for technological standardization on machining on milling  
machines; large-lot and mass production] Obshchemashinostroi-  
tel'nye normativy rezhimov rezaniya i vremeni dlia tekhnii-  
cheskogo normirovaniya rabot na frezernykh stankakh; krupno-  
seriinoe i massovoe proizvodstvo. Moskva, Gos.nauchno-tekhn.  
izd-vo mashinostroit.lit-ry. 1959. 306 p. (MIRA 12:12)

1. Moscow. Nauchno-issledovatel'skiy institut truda. TSentral'noye byuro promyshlennykh normativov po trudu. 2. Zaveduyushchiy otdelom mashinostroyeniya TSentral'nogo byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for Shapiro).
3. TSentral'noye byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for all except Model').  
(Metal cutting)

LYSENKO, V., dotsent: SHVED, A., dotsent

Follow-up of B. Lubochkin's article entitled: "Final projects in  
marine engineering departments." Mer. flot 21 no. 6:36 Je '61.  
(MIRA 14:6)

1. Odesskoye vyssheye inzhenernoye morskoye uchilishche.  
(Marine engineering--Study and teaching)  
(Lubochkin, B.)

1 8977-06  
ACC NR: AP5027427 EWT(l)/EWT(m)/T/EWP(t)/EWP(h)/EWA(h) LIP(c) JD/GG/AT  
SOURCE CODE: UR/0181/65/007/011/3412/3413

AUTHOR: <sup>44,55</sup> Muravskiy, B. S.; <sup>44,55</sup> Gusev, V. S.; <sup>44,55</sup> Kruzhilina, N. G.; <sup>44,55</sup> Shved, A. G.

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B

ORG: <sup>44,55</sup> Krasnodar State Pedagogical Institute im. 15th Anniversary of the VLKSM  
(Krasnodarskiy gosudarstvennyy institut)

TITLE: Current oscillations in compensated germanium and silicon

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3412-3413 <sup>27</sup> 27

TOPIC TAGS: <sup>21,44,55</sup> silicon semiconductor, germanium semiconductor, electric current

ABSTRACT: <sup>21,44,55</sup> The authors study current oscillations in metal contacts on a semiconductor with an artificially added impurity in the surface layer. Ohmic contacts were electrically formed on the surfaces of n-germanium, n-silicon and p-silicon plates. Preparation of the specimens is briefly described. It was found that the electrical properties of the surface layer are considerably dependent on the type of impurity which is added. Current generation was observed when n-germanium was compensated with elements which form shallow acceptor levels (aluminum, zinc, copper), and when p-silicon was compensated with antimony, which introduces a shallow donor level. No current oscillations were observed when elements which form shallow acceptor levels were added to p-silicon. Compensation by elements which form deep levels of either the donor or acceptor type did not result in current generation. It is assumed that the cur-

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rent generation is due to charge transfer between the surface impurity centers.

SUB CODE: 20/      SUBM DATE: 17May65/      ORIG REF: 004/      OTH REF: 000

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Card 2/2

SHVED, ANATOLIY PETROVICH

BURYSHKIN, Leonid Petrovich; LYSHEIKO, Vsevolod Konstantinovich; SHVED,  
Anatoliy Petrovich; MELNYEV, A.S., redaktor; TIKHONOVA, Ye.A.,  
tekhnikeskii redaktor

[Operation of ships' steam power plants] Eksploatatsiia sudovyykh parasilovyykh ustanovok. Izd. 2-oe, ispr. 1 dop. Moskva, Izd-vo "Morskoi transport," 1955. 471 p. (MIRA 9:3)  
(Marine engines)

YERMILOV, Valentin Georgiyevich; SHVED, A.P., dots., retsenzent;  
DOLGOPOL'SKIY, A.Ya., nauchn. red.; GORYANSKIY, Yu.V.,  
red.; KOTLYAKOVA, O.I., tekhn. red.

[Operation and testing of marine steam power plants] Tekh-  
nicheskaya ekspluatatsiya i ispytaniya sudovykh parosil'-  
nykh ustanovok. Leningrad, Izd-vo "Morskoi transport,"  
1963. 279 p. (MIRA 16:10)

(Boilers, Marine)  
(Steam turbines, Marine)



SHVED, Anatoliy Petrovich; VORUSHILO, Vladimir Ivanovich; SERGEYEV,  
D.I., red.

[Marine power plants and their operation; practical exercises  
for a course] Sudovye silovye ustanovki i ikh ekspluatatsiia;  
prakticheskie zaniatiia po kursu. Moskva, Transport, 1965.  
101 p. (MIRA 18:3)

S/137/61/000/006/016/092  
AC06/A101

AUTHORS: Shved, F.I., Zhukov, D.G., Khizhnichenko, A.M., Kolosov, M.I.

TITLE: Increased silicochrome consumption for stainless steel melting

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 42, abstract 6V299  
("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab. sovnarkhoza",  
1960, no. 2, 57 - 64)

TEXT: A technology was developed for melting stainless 1X18W9T (1Kh18N9T) steel providing for the addition of a higher Si-Cr amount immediately after O<sub>2</sub> blast. It is shown that the addition of 25-35 kg/t Si-Cr 50 or 35-40 kg/t Si-Chr 40 causes an increase in the degree of Cr extraction from the slag and a reduced consumption of carbonless Fe-Cr. [Si] in the finished metal does not increase, since Si-Cr is added to the non-deoxidized bath. It is noted that a further reduction of [Si] in the finished metal is obtained by replacing Fe-Ti, introducing usually about 0.15% Si, by Ti metal waste. A nomogram was developed which may be used to determine the optimum consumption of deoxidizers per heat from the total consumption of O<sub>2</sub>, the amount of Si and C in the charge and also from the basicity of the slag.

V. Shumskiy

[Abstracter's notes: Complete translation]  
Card 1/1

S/133/61/000/002/003/014  
A054/A033

AUTHORS: Shved, F. I.; Zhukov, D. G. and Khizhnichenko, A. M.

TITLE: Increase of Silicon-Chromium Consumption Rate When Melting  
Stainless Steel

PERIODICAL: Stal', 1961<sup>21</sup> No. 2, pp. 128 - 129

TEXT: The consumption of chromium-silicon during the melting of 1Kh8N9T (1Kh8N9T) grade stainless steel in the Soviet metallurgical plants amounted to not more than 15 kg/t, although in some USA-plants stainless steel (with 0.08 % C and 1 % Si) is produced with up to 50 kg/t silicon-chromium in the charge. The authors of the article and D.B. Royak, Ye. S. Lyanin R.V. Bobov-Suetin, Kh. Sh. Samokhuzhin, A. I. Yakunin et al. studied ways and means of increasing the chromium-silicon-amount in melting 1Kh8N9T grade steel which would mean considerable savings in carbon-free ferrochromium. Up to April 1959 this steel was smelted in the Chelyabinsk metallurgicheskii zavod (Chelyabinsk Metallurgical Plant) in the following way: immediately after blowing, 12 - 15 kg/t manganese-silicon and 10 - 15 kg/t crushed

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A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

chromium-silicon or 45 % ferrosilicon were added to the charge and after mixing the slag for a short while, ferrochromium was added. In the new technology no ferrochromium was added after blowing manganese-silicon was replaced by medium-carbon ferromanganese which was added towards the end of the melting process. Next the bath was cooled down after blowing in stainless steel scrap. When blowing was ended, 40 - 45 kg/t waste of chromium-silicon and 25 - 30 kg/t crushed chromium-silicon were added, and the bath was stirred for 20 - 25 minutes. After this the slag was tapped, but a thin remaining layer, samples were taken and finally ferrochromium was added. The correcting additions of ferrochromium and nickel were calculated according to the samples taken before adding ferrochromium. The final smelting phases remained unchanged. The following data characterize the savings effected by this new method, (numerators: conventional technology, average 1958-indices, denominators: new technology, average indices for May-December 1959):

Melting-time, hour-minutes  $\frac{6 - 24}{6 - 10}$

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Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Electricity-consumption, kwh-h/ton of serviceable ingots	<u>559.1</u> 542.5
Consumption of carbon-free ferrochromium, (type 0000-00) kg/ton of faultless steel	<u>167.9</u> 139.5

In spite of the use of a greater amount of chromium-silicon, the Si-content in the finished metal decreased somewhat. However, when adding chromium-silicon after ferrochromium, the Si-content of the metal increased and the total recovery of chromium decreased. This is explained by the higher oxygen content of the chromium-containing metal towards the end of the blowing process. When adding ferrochromium immediately after blowing, a part of chromium oxidized and penetrated into the slag, while the oxygen concentration of the metal decreased. Silicon, added after this phase as chromium-silicon or ferrosilicium is largely assimilated by the metal, which had been already deoxidized beforehand by chromium. The subsequent decrease of

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S/133/61/000/002/003/014  
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Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel ✓

the Si-content in the metal due to the reduction of chromium from the slag took place rather slowly, because it was connected with the diffusion of silicium and chromium in the metal and of their oxides in the slag. Even when the consumption of deoxidizers is low and the recovery of chromium decreases, the Si-content of the metal remains high. When, however, chromium-silicon was charged immediately after blowing, all the oxygen-content of the metal was bonded by silicium; even when applying an increased amount of deoxidizers, the Si-content of the metal was insignificant and by adding ferrochromium to the deoxidizing bath, the total amount of chromium reclaimed increased. The amount of chromium-silicon used in the process and recovery of chromium from the slag can be increased still further by replacing ferro-titanium by metallic titanium metal waste, by increasing the basicity of the slag and by determining the amount of deoxidizers used for each heat according to the amount of oxygen spent. There are 3 figures and 3 references: 2 Soviet, 1 non-Soviet.

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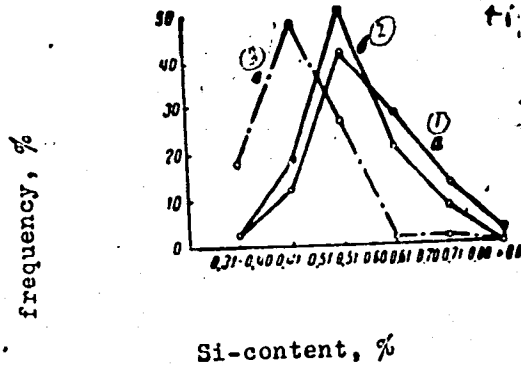
S/133/61/000/002/003/014  
A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Figure 1:

Frequency diagram of the Si-content in the finished (1Kh18N9T) steel depending on the deoxidizing conditions:

- 1 - deoxidizing with ferro-silicium or chromium-silicon (10-12 kg/t)
- 2 - idem, with chromium-silicon (25-30 kg/t)
- 3 - idem, when replacing ferro-titanium by metallic titanium scrap

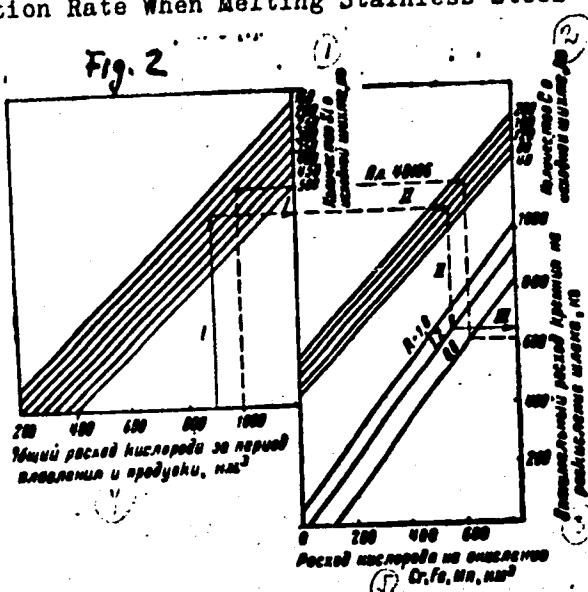


S/133/61/000/002/003/014  
A054/A033

### Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Figure 2:

- Nomogram for the rating of the optimum consumption of chromium-silicon (Si) for deoxidizing the slag (R = basicity of slag)
- 1 - Si-content in the initial charge
  - 2 - C-content in the initial charge
  - 3 - Optimum Si-content for the deoxidation of the slag
  - 4 - total amount of oxygen consumed during smelting and blowing,  $HM^3$
  - 5 - Oxygen consumed for oxydation of Cr, Fe, Mn,  $HM^3$



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S/133/61/000/002/010/014  
A054/A033

AUTHORS: Shved, F.I., Engineer and Kolosov, M.I., Candidate of Technical Sciences

TITLE: On Spotty Liquefaction in 38XMI0A (38KhMYuA) Brand Steels

PERIODICAL: Stal', 1961, No. 2, pp. 164-167

TEXT: According to certain research workers, spotty inhomogeneity in steel is caused by the segregation of phosphorus, sulfur, carbon and also by the separation of hydrogen and its penetration into the crystallizing metal. In order to establish the effect of these factors on spotty liquefaction the control data of 428 smelts of 38KhMYuA steel were studied at the Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant) in the course of 1957-1959. The relation between spotty liquefaction and the P and S content of the metal was plotted and is given in fig.1. It shows that the increase in the concentration of the elements referred to raises metal rejects on account of spot formation. Fig.2 shows the accumulative effect of P + S. To elimin-

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A054/A033

On Spotty Liquefaction in 38XMKOA (38KhMYuA) Brand Steels

ate this detrimental effect it was tried to lower the amount of these two elements simultaneously. Remelting does not solve the problem, because it only decreases the S-content, while the P-content will show an increase. In practice it was found that the optimum effect could be obtained by the total deoxidation of the metal and the slag after charging aluminum into the furnace, by imparting a high desulfurizing property to the slag (low FeO and SiO<sub>2</sub>-content) and by mixing the metal thoroughly with slag, when drawn off together in the ladle. With a 25-35% Si-content slag showed adequate liquidity and activity. The modification of the S-content in the metal during alloying with aluminum was demonstrated by the S-contents in two melts, A (produced by boiling) and B (produced by remelting), in %:

	H e a t s	
	A	B
Before skimming off the refining slag	0.016	0.011
After adding aluminum and the slag mixture	0.012	0.010

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A054/A033

On Spotty Liquefaction in 38XMH0A(38KhMYuA) Brand Steels

Before tapping	0.010	0.008
In the finished metal	0.003	0.003

A relation was observed between the hydrogen content (6-9 cu cm/100 gr) of the 38KhMYuA grade steel smelted in arc furnaces and spotty liquefaction. A similar relation was established for converter and open hearth steels with a hydrogen concentration 3-5 cu cm/100 gr. Although the relationship between hydrogen content and spotty liquefaction could not be established beyond doubt by the authors, it was assumed that spotty liquefaction was caused by the absorption of the mother lye in the cavity of blisters, lifted in the ingot top by hydrogen separated during crystallization. In this case the defects that form in the metal should be in direct proportion to the H-content and liquefying mixtures. The higher the H-content, the greater the chance will be for its separation in the form of blisters at relatively low levels of the ingot, and the greater will be the deterioration by spotty liquefaction, in the ingot. Apart from the marked effect of S, P and H on spotty liquefaction, the effect of other factors in this respect is relatively unimportant. In castings with a

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A054/A033

On Spotty Liquefaction in 38XMYuA (38KhMYuA) Brand Steels

high P, S, and H content, spotty liquefaction was observed in all the ingots of one casting plate, regardless of pouring speed, while with a low P, S, and H-content no spotty liquefaction was found, irrespective of the pouring rates. In general, spotty liquefaction appears in all ingots of a casting plate, produced at identical temperature and pouring rates. However, in ingots poured at higher temperatures, spotty liquefaction increased at higher pouring rates, while in ingots of lower temperature this took place at lower pouring rates (fig.6). All other conditions being equal, a minimum of spotty liquefaction will be found at an optimum heat content of the metal in the ingot mold, towards the end of pouring. There are 6 figures and 10 references, 9 Soviet, 1 Non-Soviet.

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

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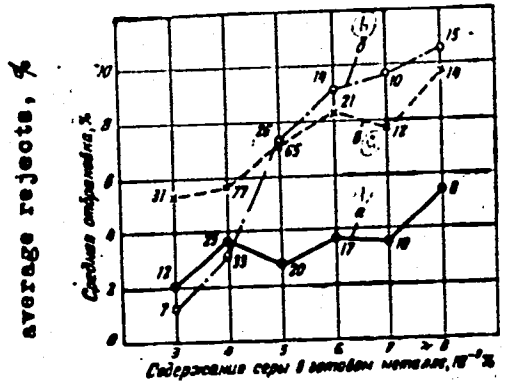
S/133/61/000/002/010/014  
A054/A033

On Spotty Liquation in 38XMH0A(38KhMYuA) Brand Steels

Figure 1:

Effect of P and S on the rate of rejects (in relation to the ingot weight) of 38KhMYuA steel ingots due to spotty liquation (when cropping 25 % of the ingot weight).

- 1- melts with less than 0.020% P;
- 2- idem, with 0.021-0.023% P;
- 3- idem, with 0.024% P and more (the figures at the points - the number of heats)



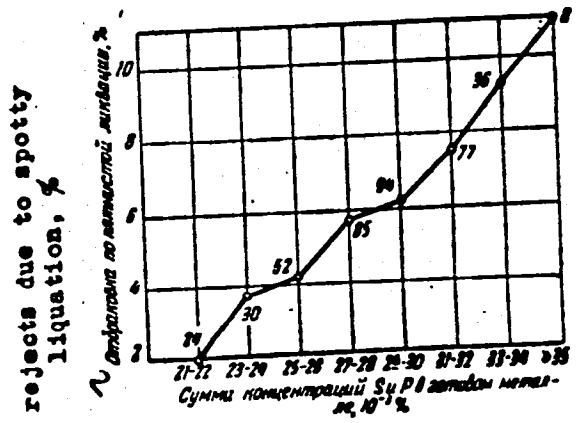
Sulfur content in the finished metal, 10<sup>-3</sup>%

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S/155/61/000/002/010/014  
A054/A033

On Spotty Liquefaction in 38XMI0A (38KhMYuA) Brand Steels

Figure 2:  
Dependence of rejects due to spotty liquefaction on the total content of sulfur and phosphorus (figures at the points - number of melts)



Total amount of sulfur and phosphorus concentration in the finished metal, 10<sup>-3</sup> %

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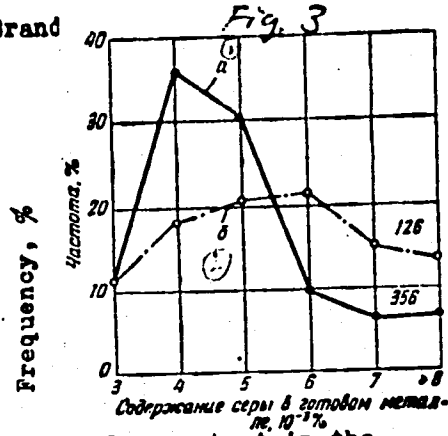
S/133/61/000/002/010/014  
A054/A033

On Spotty Liqutation in 38XMI0A (38KhMYuA) Brand

Figure 3:

Frequency diagram of the distribution of 38KhMYuA steel melts according to sulfur content depending on the smelting method.

1- remelting; 2- smelting with complete oxidation



Sulfur-content in the finished metal

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S/133/63/000/004/002/011  
A054/A126

AUTHORS: Kapel'nitskiy, V. G., Shved, F. I., Yartsev, M. A., Tulin, N. A.,  
Pozdeyev, N. P., Sergeev, A. B. Merenishcheva, I. I., Kalinina,  
Z. M., Pozdnyakov, M. V.

TITLE: Melting of steel and alloys in vacuum furnaces

PERIODICAL: Stal', no. 4, 1963, 325 - 328

TEXT:  $\sqrt{v}$   $\delta$   $\delta$   
IIIK 15 (ShKh15) and X20H80 (Kh20N80) grade steels often display  
spotty liquation, bright streaks, and bright skins. Tests for eliminating these  
defects were carried out by V. N. Kuzovatov, R. F. Maksutov, G. Ye. Mysina,  
A. V. Shelgayeva, L. A. Zhivichkin, Yu. A. Gayduk, V. S. Galyan, D. A. Soskov,  
I. I. Khmelev, G. I. Parabina et al. To prevent the rotating movement of the  
liquid metal, the circuit scheme was modified (under the control of I. S. Pinchuk,  
Candidate of Technical Sciences) and upon the suggestion of the NIIM (Chelya-  
binskiy nauchno-issledovatel'skiy institut metallurgii/Chelyabinsk Scientific  
Research Institute of Metallurgy) all ferromagnetic parts were eliminated from  
the electric system which then was redesigned on a bifilar-coaxial scheme. In

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Melting of steel and alloys in vacuum furnaces

S/133/63/000/004/002/011  
A054/A126

the current system of the arc a negative reversed connection was realized for generator-induction. The arc was kept constant by a NIIM-pulse generator. The steel for the self-baking electrodes was produced according to the standard method, while care was taken to limit the content of S to 0.006% and that of P to 0.015%. The induction type vacuum furnace ( OKB-571B /OKB-571B) with a capacity of 0.5 ton and a vacuum of 1  $\mu$  Hg, supplied by a high frequency BFO -250-2500/VGO-250-2500 type generator, with an inductor voltage of 1,000 (formerly 2,000) and a frequency of 2,500 cps was also revised. The vacuum system consisted of 5 mechanical ( H -6Г /VN-6G) and 3 oil-vapor ( BH-4500/BN-4500) pumps. The furnace construction was improved (in co-operation with the Vsesoyuznyy nauchno-issledovatel'skiy institut elektrotekhnicheskogo oborudovaniya/ All-Soviet Scientific Research Institute of Electrotechnical Apparatus and the Chelyabinsk Scientific Research Institute of Metallurgy) by fixing the inductor more rigidly, by applying lever-type vacuum seals, suitable for application in the mnemonic furnace control system, by redesigning the feeding, tilting apparatus, etc. The crucible material - having a marked effect on the metal quality - was also tested. The most uniform macrostructure was obtained with a crucible of melted magnesite, and 30  $\mu$  Hg was found to be the optimum vacuum. The effect

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Melting of steel and alloys in vacuum furnaces

S/133/63/000/004/002/011  
A054/A126

of the reduction of the alloys on their ductility in forging was also studied. The forging properties were improved by adding a nickel-magnesium master alloy and calcium silicate to the bath prior to tapping, calculating 0.12 - 0.15% magnesium for the finished metal. Wires with a 30  $\mu$  thickness could be drawn from the metal produced under the modified conditions. There are 4 figures.

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ACC NR: AR6000433

SOURCE CODE: UR/0137/65/000/009/VOL4/VOL4

AUTHORS: Shved, F. I.; Smirnov, Yu. D.; Khasin, G. A.

25  
B

TITLE: Segregation defects in ingots of arc vacuum smelting

SOURCE: Ref. zh. Metallurgiya, Abs. 9V302

REF SOURCE: Sb. Teoriya i praktika metallurgiya. Vyp. 7. Chelyabinsk, 1964, 59-68

TOPIC TAGS: arc furnace, vacuum arc furnace, metal melting

ABSTRACT: On the basis of literature and experimental data, an explanation is given for the appearance of segregation defects in ingots derived from vacuum arc smelting. The degree of dendritic segregation in one or the other ingot zone depends on the conditions of liquid metal supply to the 2-phase region. During worsening of feeding, the dendritic inhomogeneity may increase. After decrease of power during arc melting, the width and branching of the 2-phase region rapidly increases and the metal supply to the depths of this region is interrupted. In different regions of 2-phase, different conditions arise, giving rise to heterogeneity. During the formation process of different heterogeneity forms, an important role is played by shrinkage displacements of the enriched liquid of the 2-phase region which are determined by the character and extent of the 2-phase zone, feeding conditions, magnitude of alloy shrinkage, as well as the liquid metal composition of the 2-phase

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UDC: 669.18-412:621.746.6.001

1 10162-66

ACC NR: AR6000433

zone. For segregation of nonaxial heterogeneity, the smelting of a metal that tends towards segregation must be carried out at minimum current strength. It is necessary to program the electric current strength which insures the maintenance of a maximum possible temperature gradient in a liquid vat during the whole smelting process. 5 illustrations. D. Kashayeva [Translation of abstract]

SUB CODE: 11

Card 2/2

b12

L 15737-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) MJW/JD  
ACCESSION NR: AP4045656

S/0133/64/000/009/0809/0812

AUTHOR: ~~Shved, E. I.~~ Khasin, G. A.; Dolinin, D. P.; Karyakin, A. P.; Veksler,  
G. D.; Bakhtiarov, N. F.

TITLE: Crystallization and structure of vacuum-arc-melted ingots

SOURCE: Stal', no. 9, <sup>18</sup>1964, 809-812

TOPIC TAGS: steel, <sup>18</sup>ShKh15 steel, steel vacuum arc melting, heat resistant alloy  
melting, alloy vacuum arc melting, vacuum arc melting <sup>18</sup>

ABSTRACT: To determine optimal conditions for vacuum-arc melting of steel and alloys, the crystallization and structure of ShKh15 steel ingots melted in a mold 280 mm in diameter have been studied. It was found that the temperature of the metal bath surface depends upon the current and can vary from 1540C at 3.3 kamp to 1720C at 5.6 kamp. The excess of heat dissipates rapidly from the surface into a layer 40-60 mm thick which corresponds to the part of the ingot in contact with the mold. Therefore, the temperature of the metal bath remains roughly constant. Only the depth of the bath increases with increased current. In ingots 260-280 mm in diameter melted with a current of 3-6 kamp, two structural zones were found: a peripheral zone with fine oriented dendrites and a central zone with large

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L 15737-65

ACCESSION NR: AP4045656

oriented dendrites. The distance between dendrites, the dendritic inhomogeneity, and the content of sulfide and nitride inclusions increase with prolonged crystallization time, i.e. the time during which metal remains in the two-phase region. Nitrides and sulfides are formed as a result of dendritic segregation of impurities (titanium and nitrogen). Formation of various ingot defects is associated with a prolonged duration of the two-phase state which occurs under the effect of a sudden current drop. Dense and uniform steel and alloy ingots are obtained only with a current maintained within certain limits. Melting of ShKh15 steel in a mold 280 mm in diameter should be done with a current of 4 kA max; melting of a heat-resistant alloy in a mold 380 mm in diameter, with a current of 4.5 kA max. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 002

Card 2/2

GAVRILOV, O.T.; BOYANSHINOV, V.A.; SHALIMOV, A.I.G.; DOLININ, D.P.; KHASIN, G.A.;  
KOLYASHNIKOVA, R.I.; SAVENOK, L.L.; Primali uchastiye: KRYLOV, S.M.;  
ANTROPOV, O.F.; VEKSLER, G.D.; SHVED, F.I.

Quality of ball-bearing steel made by vacuum arc remelting. Stal'  
24 no.9:836-839 S '64. (MIRA 17:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metalurgi  
imeni I.P. Bardina i Zlatoustovskiy metallurgicheskiy zavod.

L 4(543-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) MJW/JD  
ACCESSION NR: AP5003495 S/0148/65/000/001/0043/0049

24  
22  
B

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

TITLE: Influence of electric parameters on the conditions of metal crystallization during vacuum arc melting

SOURCE: IVUZ. Chernaya metallurgiya, no. 1, 1965, 43-49

TOPIC TAGS: vacuum arc melting, metal crystallization rate, electric steel refining, vacuum steel, steel ShKh15

ABSTRACT: The purpose of this article was to establish the conditions under which electric arc melting for purifying steel from nonmetallic admixtures and gases can be carried out at a predetermined rate of crystallization and solidification in a water-cooled crystallizer. The consumable electrodes were provided with small inserts of iron sulfide at different levels, permitting the identification of various melting zones. The depth and volume of the liquid bath, the linear and gravimetric crystallization rate, and the time during which a metal particle remained in the liquid phase were determined. This indicated the average gravimetric solidification rate in each zone as compared to the rate of melting. Currents from 4.0 to 6.0 kilo amps and voltages from 26 to 28 v were imposed. The data are consolidated in diagrams and a table.  
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L 40543-65  
ACCESSION NR: AP5003495

2

The depth shape of the liquid bath (from 35 to 55 mm) depends on the current. The rates of melting corresponding to currents of 4.0 and 6.0 kiloamps are 2.27 and 3.60 kg/min, respectively. The origins of the formation of the so called "dense spot" in vacuum steel ShKh15 are described. Orig. art. has: 6 figures, 4 formulas and 1 table.

ASSOCIATION: Zlatoustovskiy metallurgicheskiy zavod (Zlatoust metallurgical works);  
Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii (Chelyabinsk metallurgical scientific research institute)

SUBMITTED: 23Mar64

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

Card 2/2

SPB

KHASIM, G.A.; SEVED, F.I.; DOLIMIN, D.P.; SAVENOK, L.L.; VEKSLER, G.D.

Effect of electric conditions on the conditions of metal crystallization during vacuum arc remelting. Izv. vys. ucheb. zav.;  
chern. met. 8 no.1:43-49 '65 (MIRA 18:1)

1. Zlatoustovskiy metallurgicheskiy zavod i Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

(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. 48 B

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 <sup>17</sup>oxide and <sup>27</sup>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 Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> 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. <sup>27</sup> [MS] 3

SUB CODE: 11/ SUBM DATE: 15Jul64/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS: 4/78

HW  
Card 2/2

SOV/137-58-12-24207

Translation from Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 41 (USSR)

AUTHORS Shved, F. N., Rabinovich, Kh. L.

TITLE Oxygen Applications in Steel Melting at the Myshega Plant for Reinforcing Steel (O primeneni kisloroda pri vyplavke stali na Myshegskom armaturnom zavode)

PERIODICAL Byul. tekhn.-ekon. inform. Sov. nar. kh.-va Tul'sk. ekon. adm. r-na, 1958, Nr 1-2, pp 45-46

ABSTRACT O<sub>2</sub> blow of St at the Myshega Plant was adopted in 1952 and is now employed in the melting of acid-resistant steel (St) from scrap. The charge consists of 80-90% scrap. O<sub>2</sub> is employed during the melt-down and oxidizing periods in the melting of carbon St. To protect the metal against excessive oxidation, the percentage of conversion pig iron in the mix is increased to 25%. O<sub>2</sub> consumption during the melting period is 12-15 m<sup>3</sup>/t St. The electric energy saving is 150-180 kwh/t, the melting time is diminished by 15%. The O<sub>2</sub> is introduced into the furnace by Fe lances. The tubes are coated with a bulk mixture of fireclay powder and water glass

V. B.

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SHVEBS, G.I.

Genetic classification of the types of erosion of hills  
by water. Geofiz. i astron. no.8:147-153 '65. (MIRA 19:1)

1. Odesskiy gidrometeorologicheskiy institut.

SHVED, G. L.

"Calculation of the Simplest Cases of Dielectric Heating." Thesis for degree of Cand. Technical Sub. 20 Mar 50, Moscow Order of Lenin Aviation Inst imeni Sergo Ordzhenikidze

Summary 71, 11 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva. Jan-Dec 1950

MOROZOV, N.V.; SHVED, G.L.

Prevent<sup>ing</sup> the spilling of liquids on an accelerating canned-  
food production line. Izv. vys. ucheb. zav.; pishch. tekhn.  
no.3:89-95 '60. (MIRA 14:8)

1. Okesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy  
promyshlennosti, Kafedra tekhnologicheskogo oborudovaniya pishche-  
vykh proizvodstv.

(Canning industry--Equipment and supplies)



MOROZOV, N.V.; SHVED, G.L.

Preventing losses of liquid from open containers conveyed by a star-shaped revolving tray. Izv.vys.ucheb.zav.;pishch.tekh. no.4:107-111 '60. (MIRA 13:11)

1. Odesskiy tekhnologicheskii institut pishchevoy i kholodil'noy promyshlennosti. Kafedra tekhnologicheskogo oborudovaniya pishchevkh proizvodstv.

(Canning industry--Equipment and supplies)

SHVED, G.L. (Odessa)

Steady flow of the Newtonian fluid in a circular cylindrical pipe  
with a fixed insert. Izv.AN SSSR.Otd.tekh.nauk. Mekh.i mashinostr.  
no.4:186-190 JI- Ag '60. (MIRA 13:8)  
(Pipe--Hydrodynamics)

SHVED, G.L.; SASSKIY, K.F.

Efficient designs of screw extractors for juice-producing units.  
Izv.vys.ucheb.zav.; pishch.tekh.no.5:112-117 '60. (MIRA 13:12)

1. Odesskiy tekhnologicheskii institut pishchevoy i kholodil'noy  
promyshlennosti. Kafedra tekhnologicheskogo oborudovaniya  
pishchevykh proizvodstv.  
(Extraction apparatus)

MOROZOV, N.V.; SHVED, G.L.

Design of friction conveyors. Izv. vys. ucheb. zav.; pishch. tekh.  
no. 2:99-103 '61. (MIRA 14:5)

1. Odesskiy tekhnologicheskii institut pishchevoy i kholodil'noy  
promyshlennosti. Kafedra tekhnologicheskogo oborudovaniya  
pishchevykh proizvodstv i Kafedra vysshey matematiki i teoreticheskoy  
mekhaniki.

(Canning industry—Equipment and supplies)  
(Conveyors)

SHVED, G.L.

Determining the volumetric efficiency of screw presses. Izv.vys.  
ucheb.zav.; pishch.tekh. no.1:156-160 '64. (MIRA 17:4)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy  
promyshlennosti, kafedra vysshey matematiki i teoreticheskoy  
mekhaniki.

SHVED, G. M.

"On the thermal effect 15 microns absorption band of CO<sub>2</sub> in the upper atmosphere."

report presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

ACCESSION NR: APL021462

S/0054/64/000/001/0079/0081

AUTHOR: Shved, G. M.

TITLE: Approximation of an insulated line with transfer of radiant energy in the upper atmosphere

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1964, 79-81

TOPIC TAGS: insulated line, radiant energy, upper atmosphere, mesosphere, upper stratosphere, absorption spectrum, radiant energy influx, optical path

ABSTRACT: The use of the approximation of an insulated line for simulation of infrared spectra of absorption in the mesosphere and upper stratosphere is possible, thanks to the decrease in the width of the line with the drop in pressure. The author discusses the limits of validity of this approximation for computing flows and influxes of radiant energy. The first requires the giving

of  $\frac{\partial A_F(z, z')}{\partial z}$ , the second, of  $\frac{\partial^2 A_F(z, z')}{\partial z \partial z'}$ , where  $A_F(z, z')$  is the absorption

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ACCESSION NR: AP4024462

function for radiation flow between levels of the atmosphere  $z$  and  $z'$ . Orig.  
art. has: 2 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 03May63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 002

OTHER: 005

Card 2/2



SHVED, G.M.

Using a water-oil emulsion as a fracture liquid and liquid sand-carrier. Nefteprom. delo no.6:17-19 '65.

(MIRA 18:10)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

L 2171-66 EWT(1)/EWT(m)/EPF(c)/FCC/EWA(h) RPL - GW/WW  
ACCESSION NR: AP5022926

UR/0362/65/001/009/1001/1002  
551.521.3:539.196

BB  
32  
B

AUTHOR: Shved, G. M.

TITLE: The determination of inelastic collision cross sections of CO<sub>2</sub> molecules colliding with air molecules in the upper atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 9, 1965, 1001-1002

TOPIC TAGS: carbon dioxide, upper atmosphere, collision cross section, air, atmospheric model

ABSTRACT: In the mesopause region, the frequency of collisions between CO<sub>2</sub> and air molecules becomes so small that the radiation field begins to play a major part in the population of the vibrational states, causing Kirchhoff's law of radiation to break down and the absorption coefficient to deviate from its equilibrium value. The indeterminacy in the evaluation of the cross sections of the inelastic collisions considered may cause marked differences in the radiant heat fluxes. Table 1 of the Enclosure shows the discrepancies in heating rates when the inelastic cross sections differ by a factor of 19. The radiant heat fluxes cited

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I. 2171-66

ACCESSION NR: AP5022926

6  
pertain to the most important transition  $0\ 0^0 \rightarrow 0\ 1^1\ 0$  of the main isotopic species  $C^{12}O_2^{16}$  in the case of the CIRA-1961 atmospheric model for a volume concentration of carbon dioxide equal to  $3 \times 10^{-4}$ . The case of fundamental transitions is considered. Above 80 km, the tropospheric volume concentration of  $CO_2$  is not preserved because of gravitational separation of gases and closeness of altitudes at which  $CO_2$  decomposes photochemically; however, the  $CO_2$  concentration can be measured with the same spectrometer which records the heat radiation. The difficulty caused by the necessity of measuring the infrared radiation is discussed. Orig. art. has: 2 tables.

ASSOCIATION: Leningradskiy gosudarstvenny universitet (Leningrad State University)

SUBMITTED: 29Mar65

ENCL: 01

44.55  
SUB CODE: ES, NP

NO REF SOV: 003

OTHER: 002

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L 52619-65 EWT(1)/EWG(v)/FCC/EEG-l/EEC(t)/EWA(h) Po-l/Pe-5/Pq-l/Pae-2/Peb/Pi-l

GW

ACCESSION NR: AP5008263

S/0054/65/000/001/0067/0079

AUTHOR: Shved, G. M.

38  
B

TITLE: A method for calculating deviation from Kirchhoff's law in the mesosphere in the case of radiation transfer in the 15 micron dioxide band

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 1, 1965, 67-79

TOPIC TAGS: Kirchhoff's law, radiation transfer, ionospheric physics, gas radiation, upper atmosphere radiation

ABSTRACT: An attempt was made to derive a more accurate method for calculating the deviation from Kirchhoff's law during radiation transfer in the 15  $\mu$  CO<sub>2</sub> band. Radiation transfer and gas kinetic equations are derived as well as equations which give the probability for nonelastic collisions in a dry atmosphere. The effect of water vapor on the vibrational relaxation of CO<sub>2</sub> is taken into account. It is found that the vibrational relaxation time of CO<sub>2</sub> in dry air at 200°K and one atmosphere should fall between  $2 \times 10^{-6}$  and  $20 \times 10^{-6}$  seconds. "The author expresses gratitude to V. A. Solov'yev for a number of useful remarks." Orig. art. has: 1

Card 1/2

L 52619-65

ACCESSION NR: AP5008263

figure, 2 tables and 36 formulas.

ASSOCIATION: none

SUBMITTED: 07Jan64

ENCL: 00

SUB CODE: ES

NO REF SOV: 010

OTHER: 010

0

282

Card 2/2

SHVED, G.M.

A method under which allowance is made for deviation from  
Kirchhoff's law in the atmosphere during radiative transfer in  
the  $15\mu$   $\text{CO}_2$  band. Vest. LGU 20 no.4:67-79 '65.

(MIRA 18:4)

IVANOV, P.A.; AKULININ, A.I.; SHVED, G.M.

Reinforcing the well-bottom zone with "M" binder; carbamide resin.  
Nefteprom. delo no.12:22-25 '63. (MIRA 17:4)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

SHVED, G.M.

Recent developments in the technology of reinforcing the bottom zone of a well with carbamide resin. Nefteprom. delo no.8:21-23 '64.  
(MIRA 17:12)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.



SHVED, L.V.; SLESAREV, V.V.

Prolapse of the mucosa of the antral section of stomach into the duodenal bulb. Zdrav. Turk. 5 no.1:28-30 Ja-F '61.

(MIRA 14;6)

1. Iz kafedry rentgenologii i meditsinskoy radiologii (ispolnyayushchiy obyazannosti zaveduyushchego - V.V.Slesarev) Turkmenskogo gosudarstvennogo meditsinskogo instituta imeni I.V.Stalina.

(STOMACH--DISEASES)

SOV/21-59-1-5/26

25(1)

AUTHOR: Yatsyuk, A.I.; Shved, M.M.

TITLE: On the Effect of the Pre-heating Temperature on the Residual Stresses of the First and Second Kinds and the Fatigue Strength of Rolled Steel (O vliyanii temperatury predvaritel'nogo nagreva na ostatochnyye napryazheniya pervogo i vtorogo roda i na ustalostnuyu prochnost' obkatannoy stali)

PERIODICAL: Dopolvidi Akademii nauk Ukrain'skoi RSR, Nr 1, 1959, pp 18-20 (USSR)

ABSTRACT: The authors describe the results of experimentations with groups of 10 mm diameter specimens of "45" steel (perlite-ferrite), on the influence of temperature of pre-heating upon the residual compression stresses of the first and second kind, and upon the fatigue limits. At first, all specimens were subjected to grinding, in accordance with the instruction of the Instytut

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SOV/21-59-1-5/26

On the Effect of the Pre-heating Temperature on the Residual Stresses of the First and Second Kinds and the Fatigue Strength of Rolled Steel.

budivel'noi mekhaniky AN UkrRSR (Institute of Construction Mechanics of the AS UkrSSR). After grinding, the specimens were treated with 28 mm diameter, 5 mm profile radius rollers, in a three-roller stand, by the TsNDIVMAsh method, under a pressure of 20 kg, at the speed of revolution of specimens of 400 rpm, feed 0.1 mm, at one passage. This rolling produced the surfaces of the ninth-tenth classes of purity. All rolled specimens were separated into groups, and subjected to heating to various temperatures. The residual stresses on the surface were examined by roentgenographic methods and compared with data of specimens that had not been subjected to heating. The roentgenogram was made in the Zaks camera, on a tube with a cobalt anode. The results proved, that a rise in the

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SOV/21-59-1-5/26

On the Effect of the Pre-heating Temperature on the Residual Stresses of the First and Second Kinds and the Fatigue Strength of Rolled Steel.

pre-heating temperature up to  $300^{\circ}\text{C}$  causes an increase in the residual compression stresses of the first and a rise in the residual stresses of the second kind. A further rise in the pre-heating temperature leads to a decrease in these magnitudes, and at a pre-heating of over  $550^{\circ}\text{C}$ , the residual stresses and the effect of rolling vanish, so that the boundary of hardness of rolled specimens becomes equal to that of non-rolled ones ( $30\text{kg/mm}^2$ ). This phenomenon can be explained by an increase in the specific volume of the plastically-deformed zone in the metal. With a rise in the pre-heating to  $300^{\circ}\text{C}$ , there is a development of deformations in the cold-hardened layer of the metal, which rise to an increase in residual stresses of the second kind. There are one graph and five Soviet references.

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