"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGIN, B.V., inzh.; YEREMIN, O.A., inzh.

Compaction of concrete mix by the method of longitudinal-horizontal vibration. Transp. stroi. 14 no.5:25-27 My '64.
(MIRA 18:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGIN, N.V., podpolkovnik meditsinskoy sluzhby, kand. med. nauk

Effects of an ultrahigh frequency electromagnetic field on man; a review of the literature. Voen.-med. zhur. no.2:36-40 '65. (MIRA 18:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGIN, N.V.

TYAGIN, N.V.

Immobilizing small laboratory animals. Leb.delo 3 no.6:47-48 N-D '57.
(MIRA 11:2)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(LABORATORY ANIMALS)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SAPOV, I.A.; TYAGIN, N.V. (Leningrad)

Cervical novocaine block. Eksp. khir. 3 no.6:46 N-D '58. (MIRA 12:1)
(NOVOCAINE) (NECK—INNERVATION)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGIN, N.V.

Thermal effect of the ultrahigh frequency electromagnetic field [with summary in English]. Biul.eksp.biol. i med. 46 no.8:67-70 Ag '58 (MIRA 11:10)

1. Iz laboratorii chlena-korrespondenta AMN SSSR prof. A.V. Triumfova, Leningrad. Predstavlena deystvitel'nym chlenom AMN SSSR V.V. Parinym.

(BODY TEMPERATURE,
thermal eff. of ultra-high frequency electromagnetic field in animals (Rus))
(ELECTRICITY,
same (Rus))

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

POVZHITKOV, V.A.; TYAGIN, N.V.; GREBESHECHNIKOVA, A.M.

Effect of ultrahigh impulse electromagnetic fields on the onset and course of pregnancy in white mice. Biul. eksp. biol. i med. 51 no.5:103-107 My '61. (MIRA 14:8)

1. Nauchnyye rukovoditeli: chlen-korrespondent AMN SSSR prof. A.V. Triumfov; prof. V.G. Butomo. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.
(PREGNANCY) (ELECTROMAGNETISM--PHYSIOLOGICAL EFFECT)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGLOV, Andrey Petrovich, shofer; ANDREYEV, P.S., red.; GALAKTIONOVA, Ye.N., tekhn.red.

[Lengthen the serviceability of the automobile's component parts] Uvelichenie sroka sluzhby agregatov avtomobilia. Moskva, Nauchno-tekhn.izd-vo avtotransp.lit-ry, 1957. 24 p. (MIRA 12:10)

1. Avtotransportnaya kontora No.1 g.Makhach-Kala (for Tyaglov).
(Motorbuses--Maintenance and repair)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGLOV, A.V., kapitan tekhnicheskoy sluzhby

Predicting the cloud ceiling in winter. Vest.Vozd.Fl. no.1:83-84 Ja '60. (MIRA 13:8)
(Meteorology in aeronautics)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

L 46775-66 EWT(1) DD

ACC NR: AP6031937 SOURCE CODE: UR/0177/66/000/009/0013/0016

AUTHOR: Panov, A. G. (Colonel; Medical corps; Professor); Tyagin, N. V. (Lieutenant colonel; Medical corps; Candidate of medical sciences)

ORG: none

26
B

TITLE: Symptomatology, classification, and expertise of UHF aftereffects on the human organism

SOURCE: Voyenno-meditsinskiy zhurnal, no. 9, 1966, 13-16

TOPIC TAGS: microwave radiation effect, neurophysiology, human physiology

ABSTRACT: There is conclusive factual evidence of the definite biological effects of UHF fields, which may either produce organic disorders, or serve therapeutic ends. Neurological and visceral dysfunctions observed in persons working near UHF generators may be grouped into syndromes: 1) The asthenic syndrome; onset characterized by fatigue and lowered emotional tonus, which may or may not be accompanied by autonomic disturbances (autonomic lability, acrocyanosis, sweating, heightened pilomotor reflexes, dermographism, and pulse and BP lability during orthostatic tests). The asthenic syndrome does not include fainting. Changes are reversible and often respond to dispensary treatment. 2) The autonomic-vascular dystonia syndrome centering on vascular lability (fluctuating pulse and BP, alternating brady- and tachycardia, alternating arterial hypotonus and hypertension, EKG changes,

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L 46775-66

ACC NR: AP6031937 O

capillary shifts, etc.). This syndrome may be accompanied by other autonomic dysfunctions and syncope. Asthenia does not occur. This syndrome is persistent and usually requires hospital care. 3) The diencephalic syndrome, characterized by complex visceral dysfunctions and crises, may be accompanied by asthenic disturbances, apathy, hypersomnia, hypokinesia, hypothalamus-hypophysis-adrenal weakness (overt or latent), and depression of sexual and alimentary reflexes. These changes are not always reversible, and hospital care is required. Diagnosis of UHF-caused disorders must include medical evaluation of the UHF source and exposure conditions (field intensity and exposure duration), as well as the character and severity of damage. [SC]

SUB CODE: 06/ SUBM DATE: none/ ATD PRESS: 5091

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNIBEDA, N. A.

Turning

Centering of a lathe tool. Stan. i instr. 23, No. 7, 1952.

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

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNIBEDA, N. A.

Turning

Centering of a lathe tool. Stan. i instr. 23, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952 XXXXX, Uncl.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNIBIDIN, V.

Friendship cemented by block. Sov.profsoiuzy 5 no.12:71-74 O '57. (MIRA 10:11)

1. Predsedatel' mestkoma sanatoriya "Krasnyy shturm," Sochi.
(Bulgaria--Industries)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNIBIDIN, V.G., vrach

Percussoscope. Nauka i zhizhn' 27 no.2:77-78 F '60.
(MIRA 13:6)

1. Sochinskiy sanatoriy "Salyut," Sochi.
(PERCUSSION)
(MEDICAL INSTRUMENTS AND APPARATUS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

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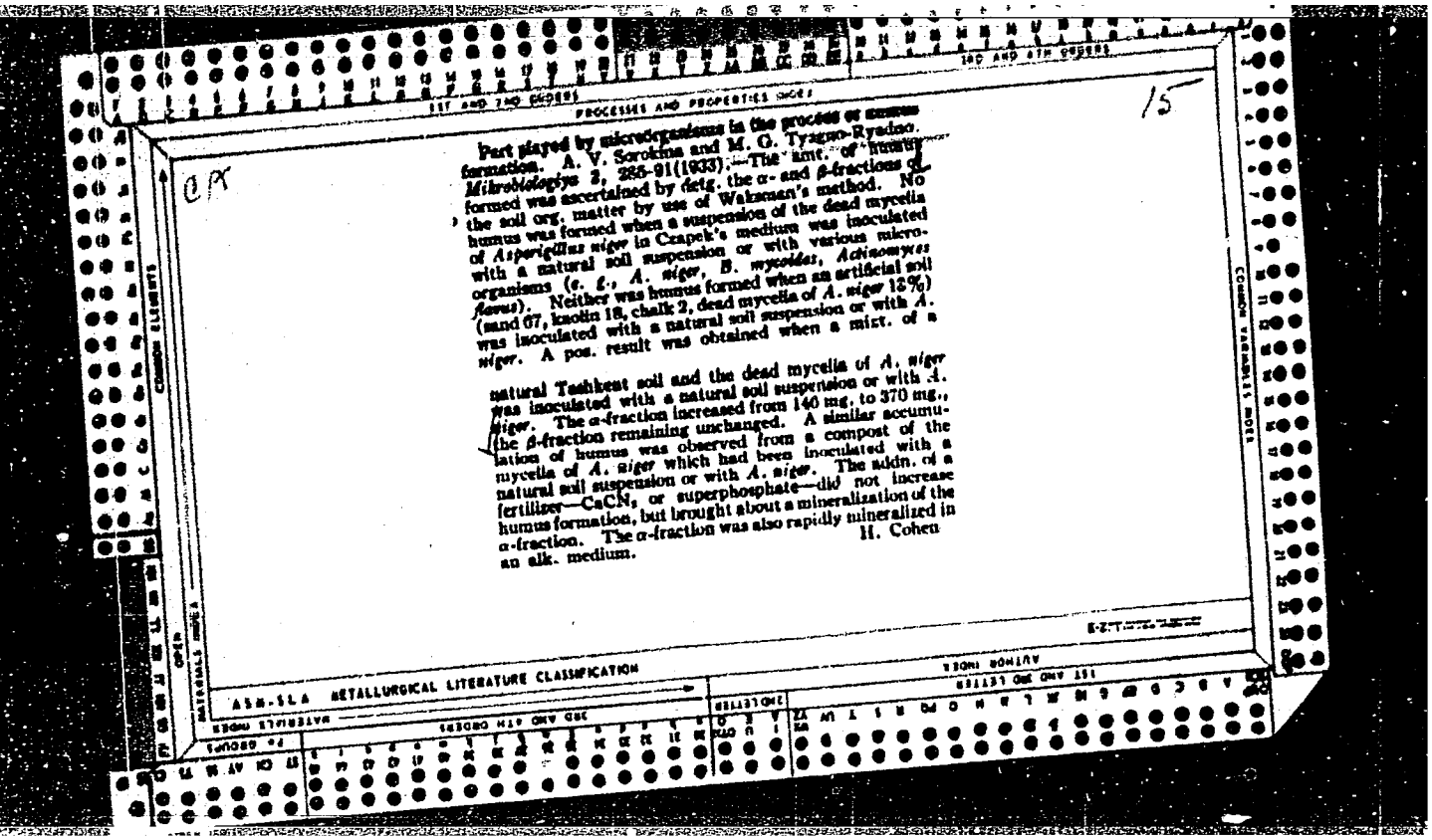

Part played by microorganisms in the process of humus formation. A. V. Sorokina and M. G. Tyagno-Ryadno. *Mikrobiologiya* 2, 285-91(1933).—The amt. of humus formed was ascertained by detg. the α- and β-fractions of the soil org. matter by use of Waksman's method. No humus was formed when a suspension of the dead mycelia of *Aspergillus niger* in Czapek's medium was inoculated with a natural soil suspension or with various microorganisms (*e. g.*, *A. niger*, *B. mycoides*, *Actinomyces flavus*). Neither was humus formed when an artificial soil (sand 67, kaolin 18, chalk 2, dead mycelia of *A. niger* 13%) was inoculated with a natural soil suspension or with *A. niger*. A pos. result was obtained when a mixt. of a natural Tashkent soil and the dead mycelia of *A. niger* was inoculated with a natural soil suspension or with *A. niger*. The α-fraction increased from 140 mg. to 370 mg., the β-fraction remaining unchanged. A similar accumulation of humus was observed from a compost of the mycelia of *A. niger* which had been inoculated with a natural soil suspension or with *A. niger*. The addn. of a fertilizer—CaCN, or superphosphate—did not increase humus formation, but brought about a mineralization of the α-fraction. The α-fraction was also rapidly mineralized in an alk. medium.

H. Cohen

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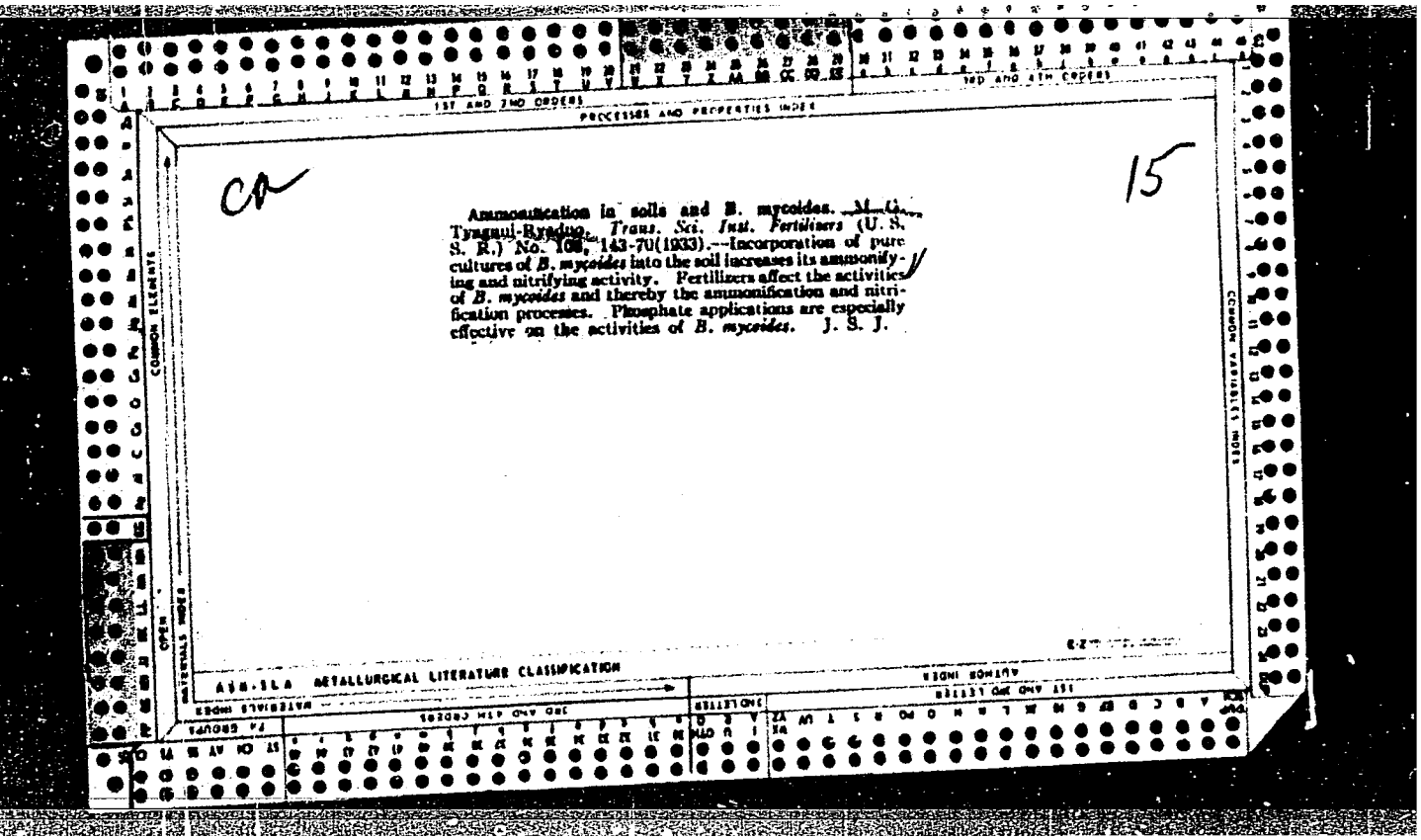

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Ammonification in soils and B. mycoides. M. G. Tyagunj-Ryadno. *Trans. Sci. Inst. Fertilizers* (U. S. S. R.) No. 108, 143-70(1933).—Incorporation of pure cultures of *B. mycoides* into the soil increases its ammonifying and nitrifying activity. Fertilizers affect the activities of *B. mycoides* and thereby the ammonification and nitrification processes. Phosphate applications are especially effective on the activities of *B. mycoides*. J. S. J.

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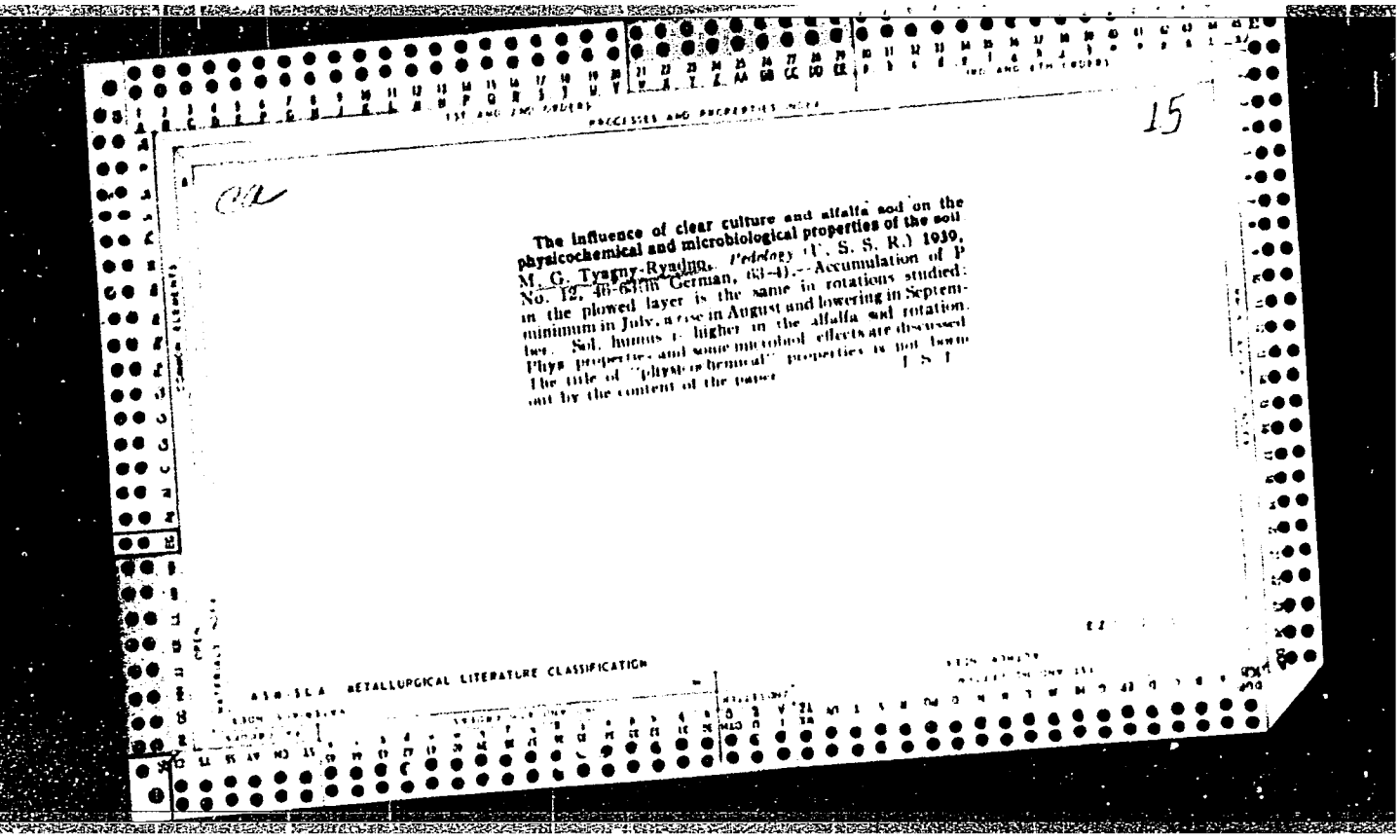

The influence of clear culture and alfalfa sod on the physicochemical and microbiological properties of the soil
M. G. Tyagny-Ryadno. *Pedology* (U. S. S. R.) 1930, No. 12, 40-63 (in German, 63-4).--Accumulation of P in the plowed layer is the same in rotations studied: minimum in July, a rise in August and lowering in September. Sol. humus is higher in the alfalfa soil rotation. Phys. properties and some microbiol. effects are discussed. The title of "physico-chemical" properties is not borne out by the content of the paper. J. S. T.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNY-RYADNO, M.G.; VIZIR, A.P.; YEREMOV, V.V.; SIN'KOVSKAYA, N.A.;
Prinimala uchastiye: FILIMONOVA, N.A.

Microbiocenosis of the soils of main forest types in the "Kivach" Preserve. Trudy Kar.fil.AN SSSR no.34:93-112 '62.
(MIRA 16:1)

(Kondopoga District—Soil micro-organisms)
(Kondopoga District—Forest soils)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNY-RYADNO, M.G.

Microflora of soil aggregates and plant nutrition. Izv. AN SSSR. Ser.biol. no.2:242-251 Mr-Ap'62. (MIRA 16-7)

1. Forest Institute, the Carelian Branch of Academy of Sciences of the U.S.S.R., Petrozavodsk.
(SOIL MICRO-OGGANISMS) (SOIL PARTICLES)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGNY-RYADNO, M.S., kand. biol. nauk; MOCHALOV, Yu.M.

Effect of organic-bacterial fertilizers on soil microflora and the yield of corn. Agrobiologiia no.4:594-597 Jl-Ag '65. (MIRA 18:11)

1. Chernigovskiy otdel sel'skokhozyaystvennoy mikrobiologii, virusologii i immunologii Ukrainskogo nauchno-issledovatel'skogo instituta zemledeliya, g. Chernigov.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGOY, Ye., red.; POPOVA, T., tekhn. red.

[Program on the economics of socialist enterprises for the evening universities of Marxism-Leninism, schools of economics, study groups and seminars of the party educational system] Programma po ekonomiko sotsialisticheskikh promyshlennykh predpriiatii dlia vechernikh universitetov marksizma-leninizma, ekonomicheskikh shkol, kruzhkov i seminarov seti partiinogo prosveshcheniia. Moskva, Gospolitizdat, 1959. 29 p. (MIRA 16:3)

1. Kommunisticheskaya Partiya Sovetskogo Soyuza. Vysshaya partiynaya shkola. Kafedra sovetskoy ekonomiki.
(Industrial management)

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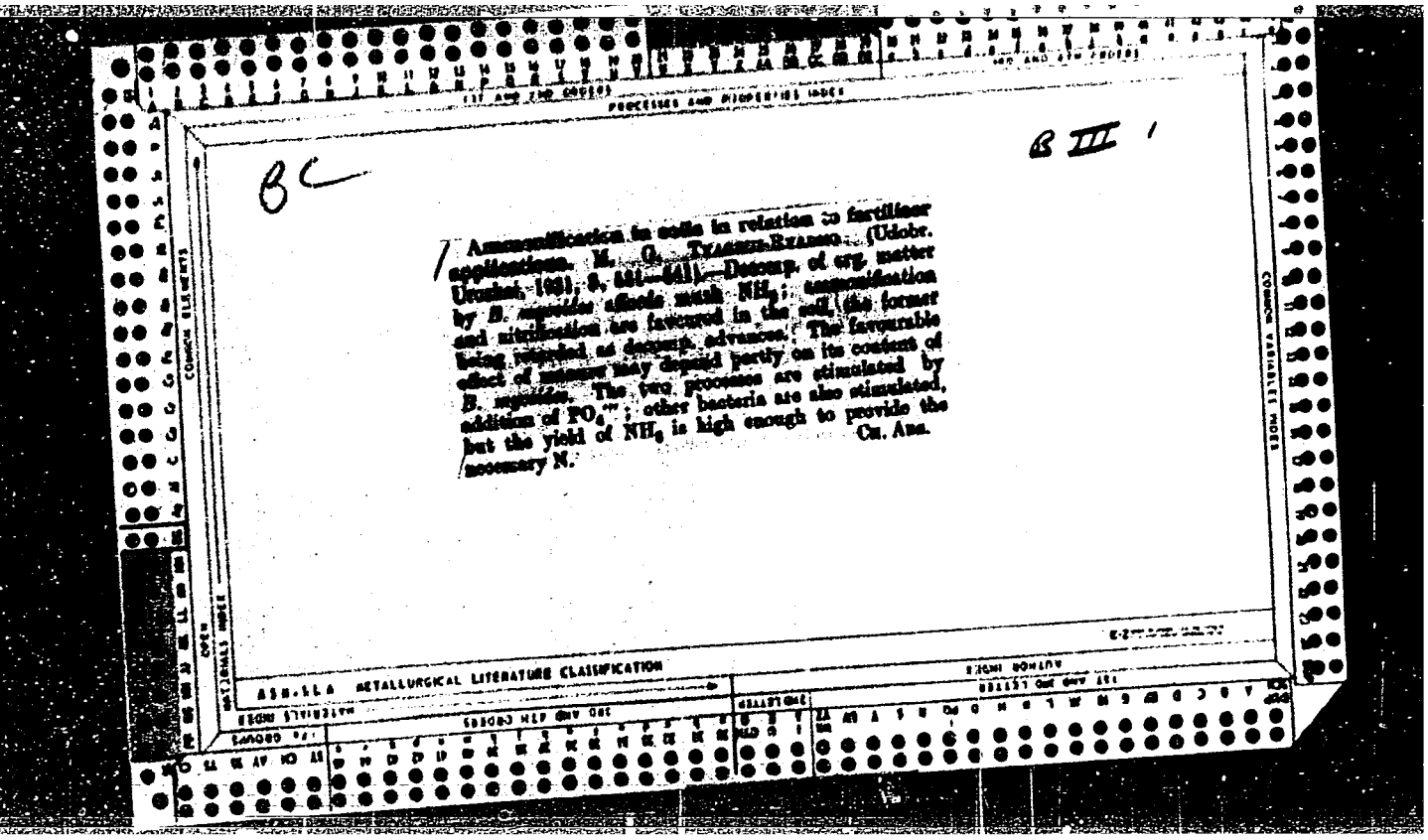

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B III 1

1 Ammonification in soils in relation to fertiliser applications. M. O. Tyulina-Ryazan. (Udobr. Urozhai., 1931, 8, 441—444).—Decomp. of org. matter by *B. mycoides* effects much NH_3; ammonification and nitrification are favoured in the soil, the former being retarded as decomp. advances. The favourable effect of manure may depend partly on its content of *B. mycoides*. The two processes are stimulated by addition of PO_4'''; other bacteria are also stimulated, but the yield of NH_3 is high enough to provide the necessary N. Ch. Abs.

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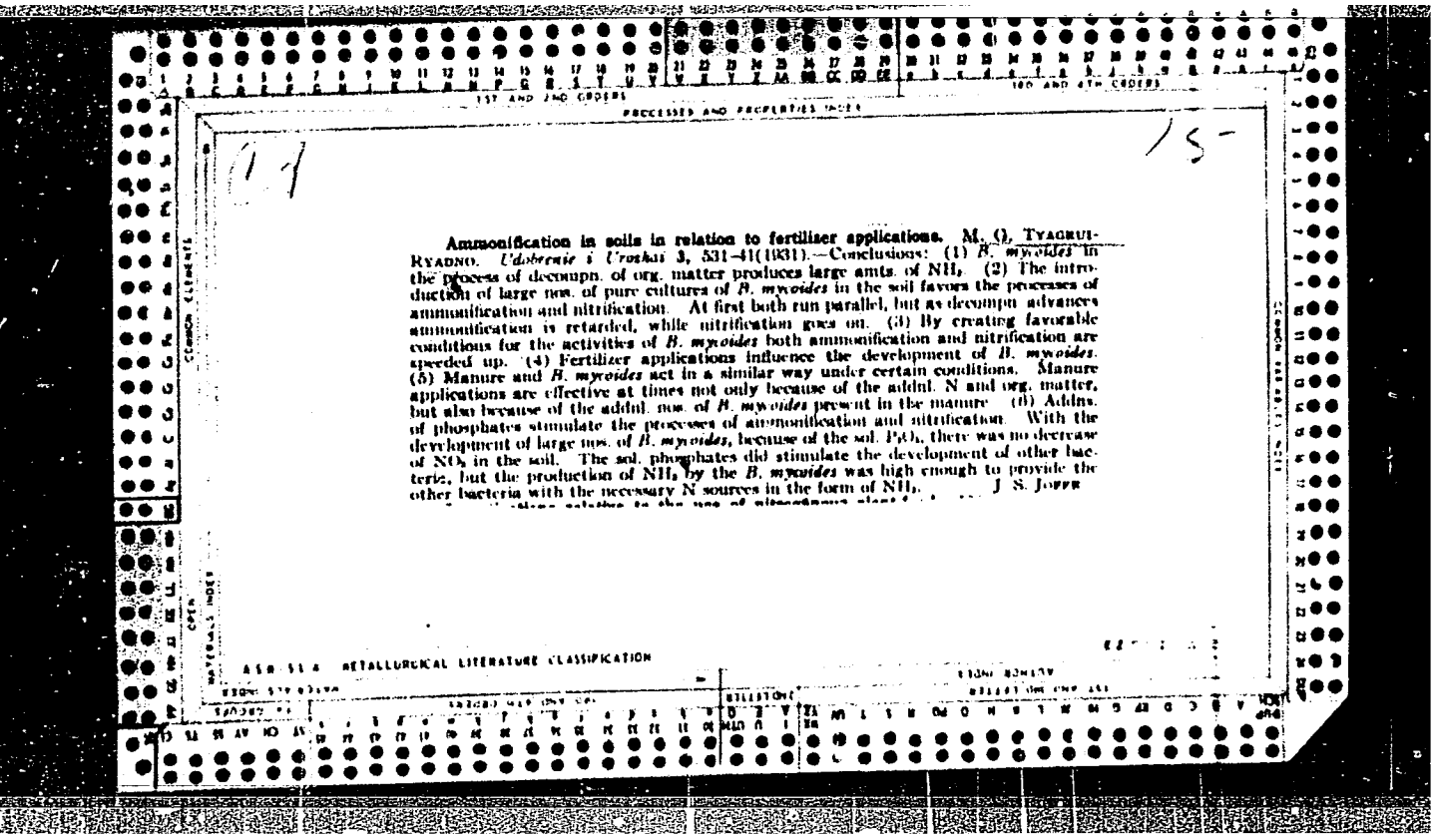

Ammonification in soils in relation to fertilizer applications. M. O. TYAGNU-RYADNO. *Udobrenie i Urozhai* 3, 531–41(1931).—Conclusions: (1) *B. myxoides* in the process of decompn. of org. matter produces large amts. of NH_3. (2) The introduction of large nos. of pure cultures of *B. myxoides* in the soil favors the processes of ammonification and nitrification. At first both run parallel, but as decompn advances ammonification is retarded, while nitrification goes on. (3) By creating favorable conditions for the activities of *B. myxoides* both ammonification and nitrification are speeded up. (4) Fertilizer applications influence the development of *B. myxoides*. (5) Manure and *B. myxoides* act in a similar way under certain conditions. Manure applications are effective at times not only because of the addnl. N and org. matter, but also because of the addnl. nos. of *B. myxoides* present in the manure. (6) Addns. of phosphates stimulate the processes of ammonification and nitrification. With the development of large nos. of *B. myxoides*, because of the sol. P_2O_5 there was no decrease of NO_3 in the soil. The sol. phosphates did stimulate the development of other bacteria, but the production of NH_3 by the *B. myxoides* was high enough to provide the other bacteria with the necessary N sources in the form of NH_3. J. S. JOFFE

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KOL'TSOV, S.; TYAGUCHEV, I.

[Akmolinsk Province, a participant in the all-Union Agricultural Exhibition] Akmolinskaia oblast' - uchastnitsa Vsesoiuznoi sel'skokhoziaistvennoi vystavki. Alma-Ata, Kazakhskoe gos. izd-vo 1955. 34 p. (MLRA 9:9)
(Akmolinsk Province--Agriculture)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUL'SKIY, P.S., inzh.

Choice of a synchronous motor for driving a centrifugal pump with consideration of its start with open pressure latch. Prom. energ. 17 no.9:12-15 S '62. (MIRA 15:8)
(Pumping machinery, Electric) (Electric motors, Synchronous)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAMSHANSKIY, N.D.

Basic work result indices of branch research organizations.
Trudy LIP no.227:187-191 '63.

More on machinery depreciation. Ibid.:206-209 (MIRA 17:4)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

ACCESSION NR: AR4036329 S/0275/64/000/003/A036/A036

SOURCE: Referativny*y zhurnal. Elektronika i yeye primeneniye, Abs. 3A191

AUTHOR: Tyapkin, A. A.; Tsou, Chu-lien

TITLE: Obtaining a discharge in a spark chamber along a particle track

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektronike. T. 3. Gosatomizdat, 1963, 15-22

TOPIC TAGS: spark chamber, particle detection, neon filled spark chamber, inclined discharge production, inclined streamer channel

TRANSLATION: Conditions were investigated for obtaining a discharge inclined to the electric field, along the track of an ionizing particle, in a chamber with electrodes made of aluminum foil 7 microns

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ACCESSION NR: AR4036329

thick without layers of dielectric between the electrodes and the working volume of the chamber. The spark chamber consisted of two gas gaps between three rectangular electrodes. To eliminate the discharge due to the edge effects, the two opposite edges of each electrode were rounded off (with the aid of a special device); the rounding-off radius was determined by the radius of the tube, which was equal to 5 mm. The unrounded edges of the electrodes were far from the discharge gaps of the chamber. The electrode plates were fastened so as to permit gradual variation of the distance between the electrodes. A study of the formation of discharge channels inclined to the field was made at different amplitudes of the supply pulse and with different media in the chamber. Data were obtained with the chamber filled with pure neon or with neon containing 0.5% of argon, to a pressure of 1.5 atm. The largest limiting angle for the formation of an inclined streamer channel is observed when the chamber is filled with pure neon or with neon with 0.5% argon. The results obtained in the investigation do not confirm the hypothesis

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ACCESSION NR: AR4036329

that the presence of dielectric layers between the gas gap and the conducting layers of the electrodes contributes to the formation of a discharge channel inclined to the field along the chain of the electrons produced by the ionizing particle. It is concluded that the distortions in the inclined discharge channel, and also the transition to a discharge along the field with increasing voltage rise time, are due to the shift of the chain of "initial" electrons under the influence of the growing electric field. Several photographs of the discharge are given and the results are analyzed. Bibliography, 4 titles. A. D.

DATE ACQ: 10Apr64 SUB CODE: PH, NS ENCL: 00

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/94-58-11-?/?8

AUTHOR: Tyagul'skiy, P.S., Engineer

TITLE: Dynamic Braking of Synchronous Motors Using the Starting Equipment (Dinamicheskoye tormozheniye sinkhronnogo dvigatelya s ispol'zovaniyem puskovykh ustroystv)

PERIODICAL: Promyshlennaya Energetika. 1958, Nr.11, pp 3-7 (USSR)

ABSTRACT: Large synchronous motors arebecoming widely used in industry and as it may take a 10 MVA synchronous motor running at 500 rpm about half an hour to slow down from running speed there is a great need for dynamic braking methods. Certain recent designs have provided for resistance braking of synchronous motors but this is very expensive, for example, the resistance required for a 1 MVA 10,500 V motor running at 500 rpm cost 17,000 roubles. With this equipment it was possible to stop the motor in times varying from 10 seconds to 4 seconds according to the excitation. However, there is probably no need to stop the motor as quickly as this and it would probably suffice if the motor could be stopped in about 1 minute. This will not increase the

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Dynamic Braking of Synchronous Motors Using the Starting Equipment

damage when a fault occurs because in any case the operator will take an appreciable time to realise that damage is occurring and that the motor must be stopped quickly. This makes it possible to use the auto-transformer and reactor normally used for starting for the purpose of braking the motor. In this way an acceptable retardation time can be achieved relatively cheaply and simply. When converter sets are started by auto-transformers the auto-transformers may be used for retardation. The use of this circuit was proposed for an 8,500 kVA motor driving the converter equipment of a steel mill. A schematic diagram for auto-transformer starting of the motor is given in Fig.1. To use this circuit for retardation the line circuit breaker must be opened, part of the auto-transformer shorted and the motor excited. During braking, current will then circulate in the motor armature and part of the auto-transformer windings. Formulae are then given for the stator current and the braking torque. Curves of the motor braking process derived from oscillograms are given in Fig.2. Curves of stator current and torque as functions of motor speed are given in Fig. 3. Tests were made on an 8,500 kVA 6,000 V, 500 rpm motor

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Dynamic Braking of Synchronous Motors Using the Starting Equipment

with a rated stator current of 820 A; other details are given. The motor is started through an auto-transformer delivering 55% rated voltage. The retardation time without braking is 28 minutes. The results given in Fig. 2 show that when the excitation is increased from 200 to 270 A in order to maintain the stator current at 800 A the retardation time is 1 minute 6 seconds. During the first few seconds of retardation the ampere turns on the auto-transformer were four times the rated value. A further test was made with the condition that the voltage on the auto-transformer winding should not be greater than the rated value and in this case the retardation time was 1 minute 45 seconds. It is calculated that three successive starts and stops could be made without overheating and this is enough. A reactor circuit for starting and stopping synchronous motors is given in Fig. 4. The equipment required is expensive and bulky. The circuit of Fig. 5. is recommended for dynamic braking of a motor started by a reactor. In this case the starting reactor is used in the braking circuit. Calculations were made of the

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Dynamic Braking of Synchronous Motors Using the Starting Equipment

retardation characteristics of the motor already described when using a starting reactor for a rated current of 500 A with an inductance of 0.924 ohms per phase using the method of calculation proposed by S.N. Veshenevskiy. It was calculated that with excitation corresponding to no-load the retardation time is 2 minutes and with excitation corresponding to rated load the retardation time is 45 seconds. The characteristics corresponding to this latter case are given in Fig. 6. It will be noticed that the stator current remains approximately constant through most of the retardation period. A method of calculating the dynamic braking characteristics of the circuit of Fig. 5 is briefly explained. The auto-transformer retardation circuit has been in use at a steel mill for 2 years and has proved reliable; the circuit is recommended for new installations with auto-transformer start. The dynamic retardation

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Dynamic Braking of Synchronous Motors Using the Starting Equipment

circuit of Fig. 5 is simple and reliable and is recommended for wide use when reactor starting is used. There are 6 figures.

ASSOCIATION: GPI 'Tyazhpromelektroproyekt', Rostov-na-Donu
(The State Design Institute, Tyazhpromelektroproyekt, Rostov-on-Don)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KAZIMIROV, A.A.; MORGUN, V.P.; OLIFER, G.O.; IVANUSHKIN, G.Ya.; KAPUSTYANOV, Ye.B.; SVINARENKO, I.T. TYAGUN, A.A.

Strength of mass-produced trap gates for railroad gondola cars under the effect of shock loads. Avtom. svar. 11 no.8:46-59 Ag '58. (MIRA 11:10)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (for Kazimirov, Morgun, Olifer). 2.Kryukovskiy vagonostroitel'nyy zavod (for Ivanushkin, Kapustyanov, Svinarenko, Tyagun).

(Railroads--Cars--Fittings)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KAZIMIROV, A. A., MORGUN, V. P., OLIFER, G. O., IVANUSHKIN, G. Ya., Kapustyanov, Ye. V., SVINARENKO, I. T. and TYAGUN, A. A.

Durability of Mass-produced Hatches of Railway Condola Cars While Loading under Pressure

Avtomaticheskaya svarka, 1958, Nr 8, pp 46-59 (USSR)

Abstract: The existing hatches of gondola cars in the USSR are unsatisfactory and cause considerable lossses of coal in railroad transport. Hatches of 60- and 93-ton cars produced by Uralvagonzavod and the Kryukov Car Building Plant were experimentally tested and deficiences of their design were revealed. As a result of the experiments, new hatch designs were developed. Several variations are suggestdd composed of bent, thin-walled profiles. The proprosed hatches are rigid, lighter, and more durable that the hatches presently in use. There are 6 diagrams, 5 graphs, 2 tables, and 2 Soviet references.

Association: Institut elektrosvarki imeni Ye. O Patona, AN USSR (

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KUKLIN, G.V.; TYAGUN, N.F.

Observations of lunar occultations of stars in Irkutsk.
Astron.tsir. no.221:13-14 Ap '61. (MIRA 14:11)

1. SibIZMIR.
(Occultations)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KUKLIN, G.V.; TYAGUN, N.F.

Observations of lunar occultations of stars at the SibIZMIR.
Astron.tsir. no.224:35-36 Ag '61. (MIRA 16:1)

1. SibIZMIR.

(Occultations)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KUKLIN, G.V.; TYAGUN, N.F.

Observations of lunar occultations of stars in Irkutsk.
Astron. tsir. no.229:35 Je '62. (MIRA 16:6)

1. SibIZMIR Sibirskogo otdeleniya AN SSSR.
(Occultations)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

KUKLIN, G.V.; TYAGUN, N.F.

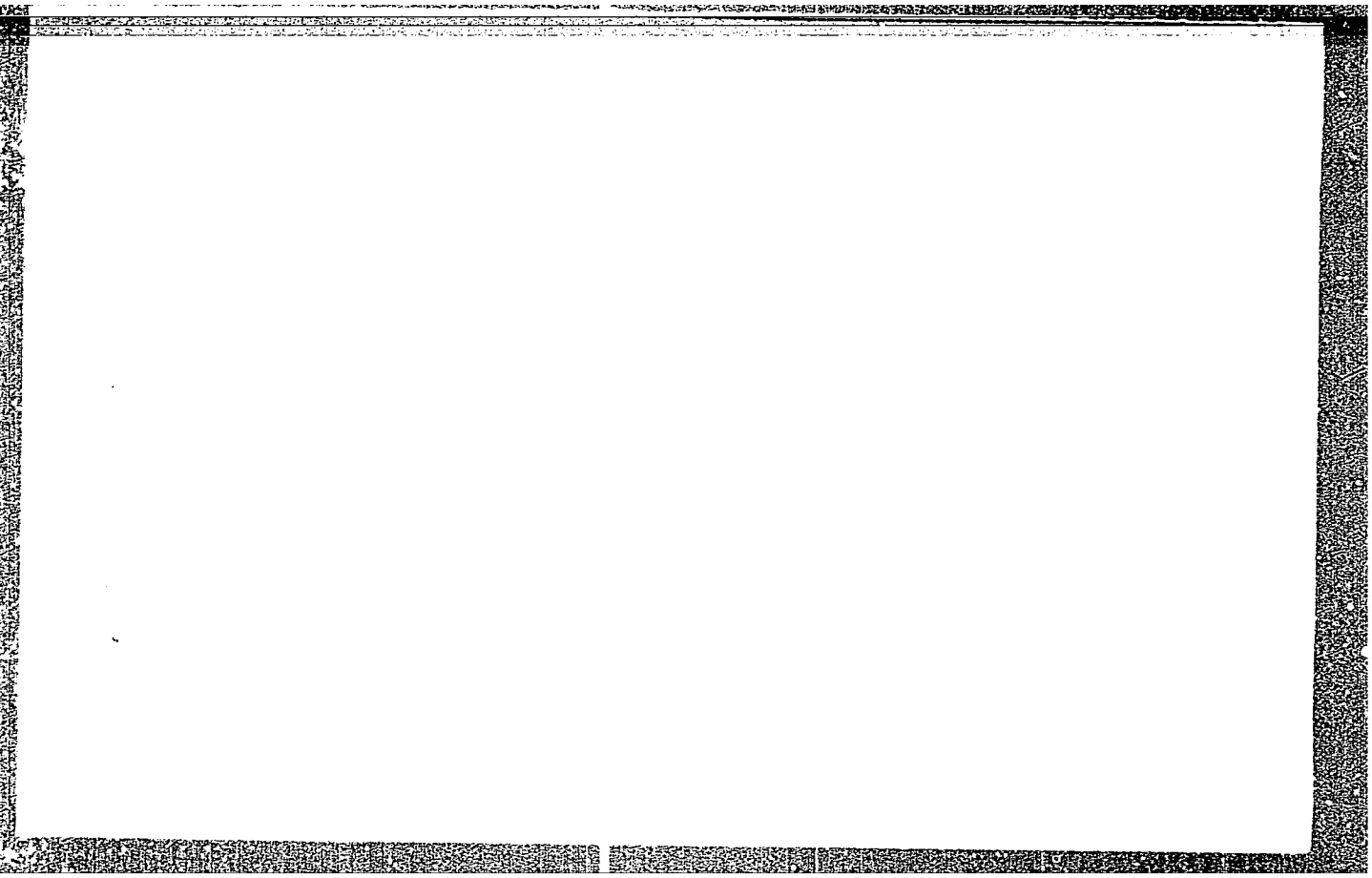
Observations of lunar occultations of stars in Irkutsk. Astron.tsir. no.231:26-27 N '62. (MIRA 16:4)

1. SIBIZMIR.

(Occultations)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6



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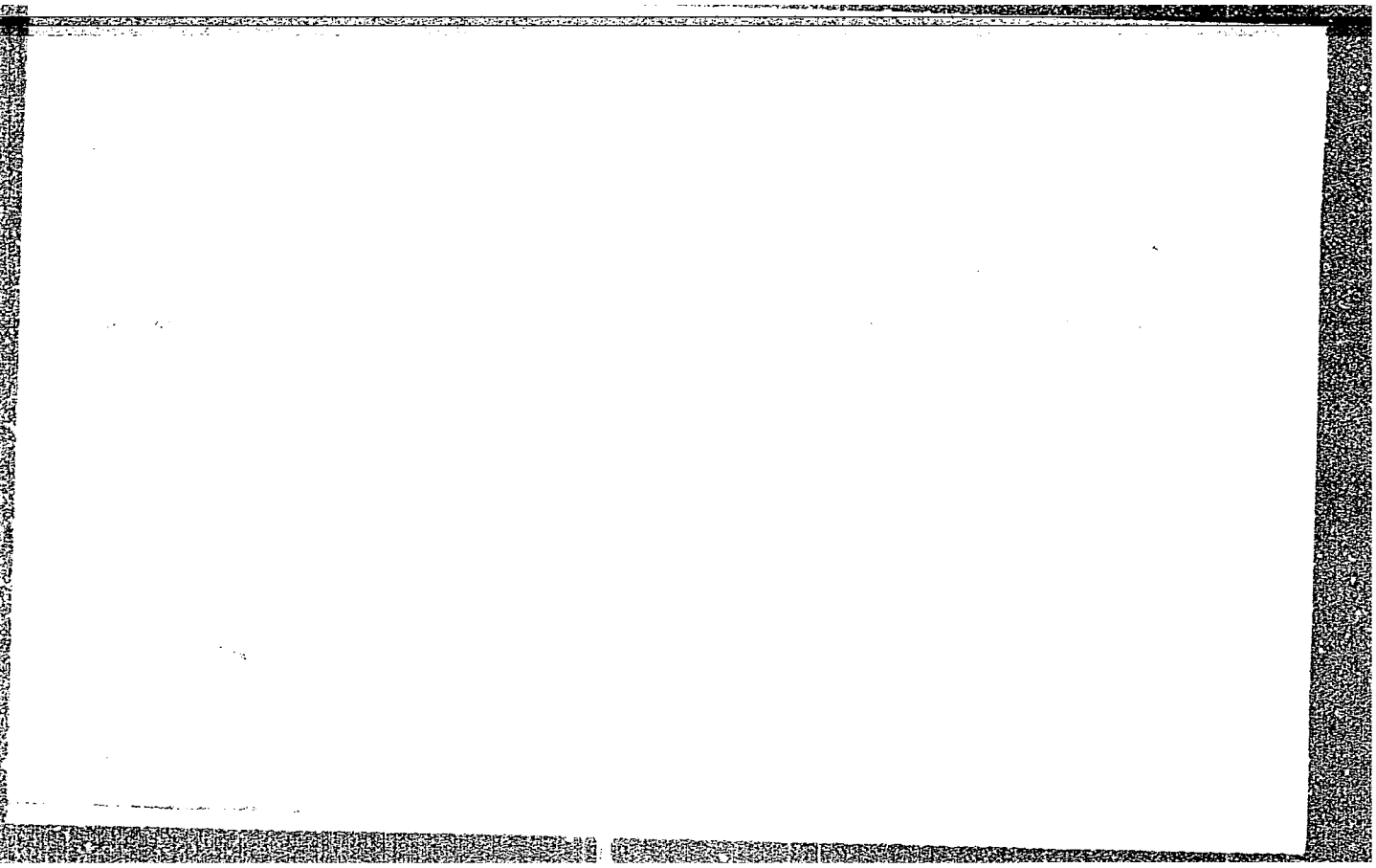

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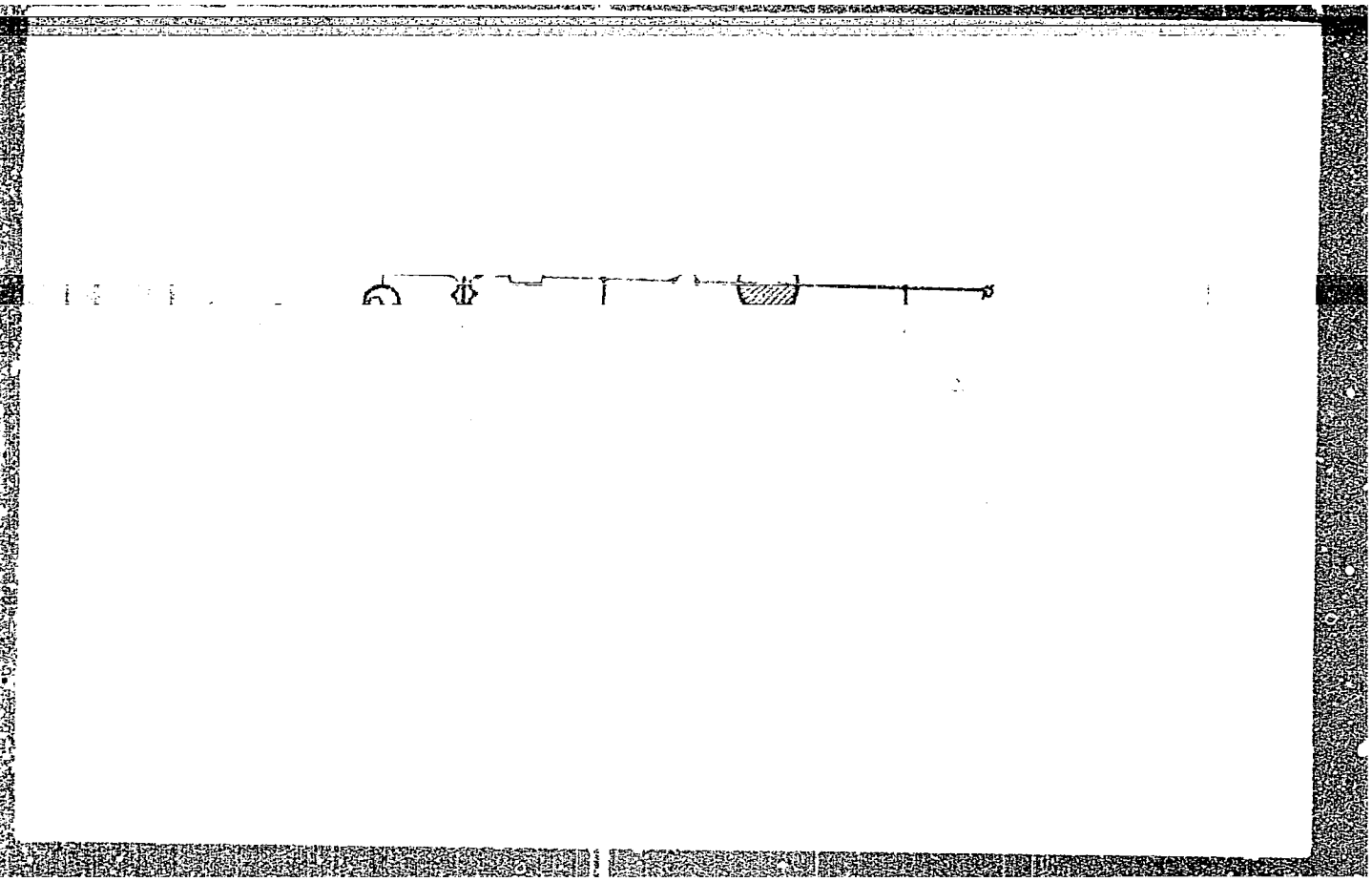

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

ARKHIPOVA, L.I.; BARABANSHCHIKOV, V.V.; BAKHVALOVA, Z.M.; BOROVINSKAYA, M.A.; GOLOVCHINER, I.Ye.; DZHAMGAROVA, P.G.; YEVDOKIMOV, S.V.; KABANOV, M.M.; KNYAZEVA, T.D.; KOBOZEVA, N.V.; KOLEGOV, N.I.; LOPOTKO, I.A.; NEGUREY, A.P.; POLYAKOVA, Z.P.; ROMM, S.Z.; SVETLICHNYY, V.A.; STRAKUN, I.M.; TYAGUN, V.N.; FREYDLIN, S.Ya., prof.

[Dispensary service for the urban population] Dispanserizatsiia gorodskogo naseleniia. Leningrad, Meditsina. 1964. 349 p. (MIRA 17:8)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G. S.

Electric Welding.

Problem of selecting a method of one-sided automatic welding of thin sheet constructions. Avtom.svar. 4, no. 6(21), 1951.

9. Monthly List of Russian Accessions, Library of Congress, June 1952 Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S.

Fusing cutters with powdered wire flux. Avtom.svar. 6 no.4: 75-81 Jl-Ag '53. (MLRA 7:11)

1. Institut elektrosvarki im. Ye.O.Patona Akademii nauk USSR. (Electric welding) (Cutting tools)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S.

Welding 30KhGSA steel by the method of forced forming. Avtom. svar. 6 no.5:53-59 S-O '53. (MLRA 7:11)

1. Institut elektrosvarki im. Ye.O.Patona Akademii nauk USSR.
(Steel--Welding)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

Card

Author

Title

Periodical

Abstract

Submitted

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

PATON, B.Ye., akademik, doktor tekhn.nauk, laureat Leninskoy premii; VOLOSHKEVICH, G.Z., kand.tekhn.nauk, laureat Leninskoy premii; OSTROVSKAYA, S.A., kand.tekhn.nauk; DUDKO, D.A., kand.tekhn.nauk; POKHODNYA, I.K., kand.tekhn.nauk; STERENBOGEN, Yu.A., kand.tekhn. nauk; RUBLEVSKIY, I.N., inzh.; ZHEMCHUZHNIKOV, G.V., kand.tekhn. nauk; ROZENBERG, O.O., inzh.; SEVBO, P.I., kand.tekhn.nauk; NOVIKOV, I.V., inzh.; MEDOVAR, B.I., kand.tekhn.nauk; DIDKOVSKIY, V.P., inzh.; RABKIN, D.M., kand.tekhn.nauk; TYAGUN-BELOUS, G.S., inzh.; ZARUBA, I.I., kand.tekhn.nauk, retsenzent; GREBEL'NIK, P.G., kand.tekhn.nauk, red.; TYNYANYY, G.D., red.

[Electric slag welding] Elektroshlakovaia svarka. Izd.2., ispr. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 409 p. (MIRA 13:4)

1. AN USSR (for Paton).
(Electric welding)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G. S. Cand Tech Sci -- (diss) "Search for a new method of raising the output of suitable cast metal ~~using~~ by means of the electric-slag process." Kiev, 1959. 12 pp (Acad Sci UkSSR. Order of Labor Red Banner Inst of Electric Welding im Ye. O. Paton), 150 copies. List of author's works, pp 11-12 (13 titles) (KL, 41-59, 105)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

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67864
SOV/125-60-1-7/18

AUTHOR: Dudko, D.A., Rublevskiy, I.N., Tyagun-Belous, G.S.

TITLE: On the Influence of the Electroslag Process Conditions on the Dimensions of the Metal Pool During Fusion of Large Cross-Section Electrodes

PERIODICAL: Avtomaticheskaya svarka, 1960, Nr 1, pp 55-61 (USSR)

ABSTRACT: The electroslag process is now being used not only for welding but also in metallurgy for producing irregular castings and ingots without loss of head [Ref 1-3], and for remelting special steels [Ref 4]. The article contains a detailed description of experiments in which the interrelationship of the volume of the metal pool, the position of the electrode in the weld pool, and various process parameters was determined. Experiments were conducted with fusible steel electrodes and non-fusible graphite electrodes in a copper chill mould. It was concluded that: 1) the dimensions of the metal pool during electroslag melting of large cross section electrodes

Card 1/3

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SOV/125-60-1-7/18

On the Influence of the Electroslag Process Conditions on the Dimensions of the Metal Pool During Fusion of Large Cross-Section Electrodes

increases with current, voltage, electrode diameter and with the depth decrease of the slag pool. This is explained by the increase in the quantity of electrode metal melted in a time unit. 2) Other process conditions remaining the same, when a non-fusible graphite electrode is used, the volume of the metal pool is 4.5 to 4.7 times smaller than with a fusible steel electrode. The electroslag process which uses a non-fusible electrode is scarcely effective for the transference of heat to the metal pool. Most of the heat enters the metal pool via superheated drops of electrode metal. 3) It can be assumed that a high-temperature zone exists in the slag pool at the contact surface of the electrode, a fact which explains the phenomenon sometimes observed when the size of the metal pool decreases rapidly, despite a con-

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

On the Influence of the Electroslag Process Conditions on the Dimensions of the Metal Pool During Fusion of Large-Cross-Section Electrodes

siderable increase in the heat power of the process. There are 4 drawings, 1 oscillogram, 5 graphs, and 11 Soviet references.

ASSOCIATION: Ordena Trudovgo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton US UkrSSR)

SUBMITTED: February 10, 1959

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-HELOUS, G.S.; DUDKO, D.A.

Electric slag heating of ingot and shaped casting tops using a nonconsumable electrode. Avtom. svar. 11 no.11 no.10:36-43 O '58. (MIRA 11:12)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Steel ingots) (Steel castings)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

LATASH, Yu.V.; TYAGUN-BELOUS, G.S.

Effect of slag composition on the melting of large cross-section electrodes during the electrical slag process. Avtom.svar. 11:no.12: 17-27 '58. (MIRA 12:1)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye. O. Patona AN USSR.
(Electric welding) (Slag--Electric properties)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

DUDKO, D.A.; RUBLEVSKIY, I.N.; TYAGUN-BELOUS, G.S.

Effect of electrical slag process conditions on the melting rate of large cross section electrodes. Avtom.svar. 11 no.12:57-62 D '58. (MIRA 12:1)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona.

(Electric welding)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-59-5-3/16

18(5)

AUTHOR: Dudko, D.A., Candidate of Technical Sciences, Rublevskiy, I.N., Engineer, Tyagun-Belous, G.S., Engineer

TITLE: Peculiarities of Drop Transfer of the Large Sectional Electrode Metal during the "Electric Slag" Process

PERIODICAL: Avtomaticheskaya svarka 1959, Vol 12, Nr 5 (74) pp 28 - 33 (USSR)

ABSTRACT: The article presents the dependency between frequency of drop transfer, their weight, and the conditions of the "electric slag" process with electrodes having a large section. Ingots with a diameter of 100 mm and at least 200 mm long were cast in mould. During the time of casting oscillograph of the currency and the voltage were taken. For the casting, alternating current, fed by transformers of type TShS-1000/3 and TShS/3000/3 was used. Following materials were used: rods of steel type M 31 with a diameter of 30, 40 and 60 mm, and flux of type 48-OF-6. All experiments showed a regularly increasing frequency of drop transfer

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

Peculiarities of Drop Transfer of the Large Sectional Electrode Metal during the " Electric Slag" Process

after the beginning of the process. (Fig. 1). The oscillographs, shown in Fig. 1, were taken during the "electric slag" process under following conditions: Current: 1200 A, Voltage: 49 V, depth of slag-tub: 45 mm, diameter of electrode: 40 mm. Special experiments for melting of rods with a diameter of 5.5 mm and 18.2 mm of Woods alloy were made. The authors state that the frequency of drop transfer depends to a high degree on the diameter of the electrode and the electric parameters. There are 3 photographs, 3 graphs, 1 table and 15 Soviet references.

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O. Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR).

SUBMITTED: January 12, 1959

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

ZAYTSEV, Yu.N., inzh.; TYAGUN-BELOUS, G.S., inzh.

Desulfurating properties of fluxes during the electric slag process.
Avtom. svar. 11 no.11:57-60 N '58. (MIRA 11:12)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.
Ye. O. Patona AN USSR.
(Electric welding) (Desulfuration)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S., inzh.; DUDKO, D.A., kand. tekhn. nauk

Additional feed of sheet billets by means of the electric slag welding method. Avtom. svar. 11 no.11:66-70 N '58. (MIRA 11:12)

1.Ordena Trudovogo Krasnogo Znameni Institut Elektrosvarki im. Ye.O. Patona AN USSR.
(Electric welding) (Steel ingots)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-59-3-6/13

18(5),25(5)

AUTHOR: Tyagun-Belous, G.S.

TITLE: Method of Obtaining More Homogeneous Castings from Electrically Molten Metal (Umen'sheniye khimicheskoy neodnorodnosti fasonnykh otlivok pri elektroshlakovoy podpitke)

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 3, pp 51-58 (USSR)

ABSTRACT: The process of cooling down casting as well as welded pieces gives rise to non-homogenous surface structure as results of chemical processes. Photograph 1 shows the section of a piece of casting according to Baumann, obtained in a casting process. Photograph 2 shows the same piece of casting, the difference being that crystallization (or the cooling-down process) was slowed down by applying a layer of slag which was kept liquid by heating with graphite electrodes. Samples were drawn at the points marked in the illustration and were analyzed for their carbon and sulphur content. Results are shown in Table 1. Photograph 3 and Table 2 show the values for

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Method of Obtaining More Homogeneous Castings from Electrically Molten Metal

the same method as per Photograph 2, but with the layer of slag of about 40 mm in thickness and which are continually renewed. This new method is the main subject of this publication. Another suggestion is given in Photograph 4 and Table 3. It adds up to improving the non-homogeneous structure of the molten metal by inserting an iron rod in it. The results show that the dissociation of carbon and sulphur is responsible for the surface becoming non-homogeneous. Another means of improving the homogeneous structure would be, therefore, to extract the sulphur in one of the early stages of the casting process; adding cerium and lenthium will substantially contribute towards this end. There are 7 photographs, 3 tables and 11 references, 10 of which are Soviet and 1 English.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-59-2-6/13

Method of Obtaining More Homogeneous Castings from Electrically Molten Metal

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki im. Ye. O. Patona AN USSR (Order of the Red Banner of Labor Institute for Electro-Welding im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: December 23, 1958

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S.; DUDKO, D.A.

Problems of the technology of casting steel parts with use of electric slag padding. Avtom.svar. 11 no.9:48-55 S '58. (MIRA 11:11)
(Steel castings) (Electric welding)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-58-12-3/13

AUTHORS: Latash, Yu.V., and Tyagun-Belous, G.S.

TITLE: The Effect of Slag Composition on the Fusing of Thick Electrodes in the Electric Slag Process (Vliyaniye sostava shlaka na plavleniye elektroda bol'shogo secheniya pri elektroshlakovom protsesse)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 12, pp 17-27 (USSR)

ABSTRACT: As the existing data does not determine the effect of flux composition and its electric conductivity on the technical-economic characteristics of the electric slag welding process with large section electrodes, special tests were carried out with slags of the CaF_2-Al_2O_3 system. The effect of slag composition in the electric slag process was investigated with the use of grade 45 steel electrodes of 90 mm diameter in a copper water-cooled crystallizer. The tests are described in detail and the following conclusions are made: 1) in fusing with thick electrodes, the reduction of the electro-conductivity of the slag leads to an increase in temperatures of the slag bath, increased productivity and a reduced consumption of electric power at the same electric capacity; 2) with a reduced electro-conductivity of the

Card 1/2

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slag, the electric-slag process technology becomes stable with reduced current; 3) bubbling of the slag bath in currents exceeding the given voltage was caused by arc discharges between the electrode tip and the metal pool. On the basis of results obtained, the use of CaF_2-Al_2O_3 fluxes containing 40 - 45% Al_2O_3 is recommended.
There are 7 tables, 3 diagrams, 5 graphs, 1 oscillogram and 17 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton)

SUBMITTED: September 28, 1958

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-58-12-7/13

AUTHORS: Dudko, D.A., Rublevskiy, I.N. and Tyagun-Belous, G.S.

TITLE: The Effect of the Electric Slag Process Conditions on the Fusion Rate of Thick Electrodes (Vliyaniye rezhima elektroshlakovogo protsessa na skorost' plavleniya elektrodov bol'shogo secheniya)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 12, pp 57-62 (USSR)

ABSTRACT: Experiments were carried out to determine the interdependence of the fusion rate of thick electrodes and electric slag welding parameters (such as current, voltage, slag-bath depth, electrode cross section) as well as the chemical composition of the electrode and the flux. It was stated that the coefficient of electrode fusion increases with a higher current intensity and voltage and with a reduced depth of the slag bath. The coefficient of fusion increases also with larger electrode cross sections, contrary to arc and electric slag processes with the use of an electrode rod. The fusing rate of the electrode also depends on the chemical composition of the electrode metal and slag.

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV/125-58-12-7/13

The Effect of the Electric Slag Process Conditions on the Fusion Rate of Thick Electrodes

There are 2 tables, 1 diagram, 4 graphs and 8 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton)

SUBMITTED: September 22, 1958

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

SOV-125-58-10-4/12

AUTHORS: Tyagun-Belous, G.S., and Dudko, D.A.

TITLE: Electric-Slag Hot-Topping With Unfusing Electrodes of Ingots and Shaped Castings (Elektroshlakovyy obogrev neplavyashchimsya elektrodom golovnoy chasti slitkov i fasonnykh otlivok)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 10, pp 36 - 43 (USSR)

ABSTRACT: To reduce shrinkage cavity formation in castings and to improve the quality of cast metal, the Institute of Electric Welding suggested replacing the usual method of electric-arc hot topping by the method of electric-slag hot topping on three-phase current with three electrodes. As the heat is generated by the slag and not by an arc, the electrode feed process is considerably less complicated and simplifies the installation design. The technology of the new method is described, and the flux used (40 % CaO and 60 % CaF_2) and parameters are given. The welded metal was subjected to chemical analyses, the results of

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Electric-Slag Hot-Topping With Unfusing Electrodes of Ingots and Shaped Castings

which are shown in tables 1 and 2. It was stated that the chemical heterogeneity of ingots was reduced. On the basis of the tests it was stated that electric-slag hot topping can be recommended only for ingots and not for shaped castings where chemical homogeneity cannot be attained. Electric slag hot topping can be used on single-phase and three-phase current feed with one or more electrodes on each phase. The three-phase electric slag heating is recommended for the production of large-size castings with a developed surface of the metal bath. There are 3 diagrams, 4 photos, 1 oscillogram, 3 tables and 9 references, 5 of which are Soviet, 2 English and 2 German.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR)

SUBMITTED: July 3, 1958

1. Metals--Production 2. Metals--Casting 3. Metals--Heating
4. Slags--Heating 5. Electrodes--Performance

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

AUTHORS: Zaytsev, Yu.N., Tyagun-Belous, G.S. SOV/125-58-11-9/16

TITLE: The Desulfurization Capacity of Fluxes in the Electric Slag Process (Obesserivayushchaya sposobnost' flyusov pri elektroshlakovom protsesse)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 11, pp 57-60 (USSR)

ABSTRACT: Information is given on the desulfurizing capacities of different fluxes in the electric slag process with the use of large cross-section electrodes. It was stated that the following fluxes have high desulfurizing capacities: ESCh-1 (CaF_2 + CaO + Al_2O_3 + MgO); ANF-7 (CaF_2 + CaO); ANF-5 (CaF_2 + NaF); 48-OF-6 (CaF_2 + Al_2O_3 + CaO); ANF-6 (CaF_2 + Al_2O_3). These fluxes can be used in the electric slag welding of carbon and alloyed steels and cast iron, and in electric slag casting and feeding-up processes when an intensive desulfurization of the welding bath is needed. The desulfurization process depends on the current voltage and intensity.

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The Desulfurization Capacity of Fluxes in the Electric Slag Process

There are 2 tables, 1 diagram and 3 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: August 29, 1958

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

AUTHORS: Tyagun-Belous, G.S., Dudko, D.A. SOV/125-58-11-11/16

TITLE: Electric Slag Feeding-up of Sheet Ingots (Elektroshlakovaya podpitka listovykh slitkov)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 11, pp 66-70 (USSR)

ABSTRACT: It was proved by experiments carried out at the Zavod imeni Il'icha (Plant imeni Il'ich) and by tests of D.F. Cherneg and B.A. Molotkov, that electric-slag feeding-up reduces the structural and chemical heterogeneity of ingots and castings which appear in the form of the so called "lower cone" and V and inverted V-shaped segregations. The electric slag feeding-up method is based on an arcless process combined with a large-section fusing electrode, which, if applied to killed steel ingots, improves their structure by reducing the lower cone and the segregation. It is assumed that the improved structure is obtained by the dilution of the upper portion of the crystallizing metal bath by the pure electrode metal and by braking the convection of the liquid steel. The described method is economical and can be successfully used in the production of sheet ingots.

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Electric Slag Feeding-up of Sheet Ingots SOV/125-58-11-11/16

There are 2 diagrams, 1 photo, 1 table and 4 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (The Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: August 27, 1958

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

AUTHORS: Tyagun-Belous, G.S. and Dudko, D.A. SOV-125-58-9-8/14

TITLE: Technological Problems of Steel-Part Casting With the Aid of a Electric-Slag Feeding-Up Process (Voprosy tekhnologii otlivki stal'nykh detaley s pomoshch'yu elektroshlakovoy podpitki)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 9, pp 48-55 (USSR)

ABSTRACT: Information is presented on a method developed at the Institute of Electric Welding relating to the casting of shaped parts without lost heads by electric slag feeding-up process. Technology of the new method was analyzed at the "Rostsel'mash" Plant, together with "p. ya. 4095", and experimental investigations were carried out on 1 ton steel casts. An optimum stepped technology was found for casts up to 1.2 tons, consisting of a three-stage process with intervals of 8-10 minutes. The new method improves the quality of cast metal due to the elimination of chemical heterogeneity and raises the yield of useful metal by 18-20%.
There is 1 set of diagrams, 1 graph, 2 photos, 2 charts, 2 tables, 1 micro-photo and 2 Soviet references.

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SOV-125-58-9-8/14

Technological Problems of Steel-Part Casting With the Aid of a Electric-Slag Feeding-Up Process

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona, AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: May 20, 1958

1. Metallurgy---USSR 2. Steel---Casting 3. Steel---Processing 4. Steel---Test results

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S.

Solid, electrically conductive flux for excitation of the automatic electric welding under flux process. Avtom. svar. 11 no.4: 65-66 Ap '58. (MIRA 11:6)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Flux (Metallurgy)—Electric properties)
(Electric welding)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

TYAGUN-BELOUS, G.S.

AUTHOR: Tyagun-Belous, G.S., Engineer 125-58-4-9/15

TITLE: Solid Electricity-Conducting Flux for Excitation of Electric Slag-Welding Process (Elektroprovodnyy flyus v tverdom sostoyanii dlya vozbuzhdeniya elektroshlakovogo protsessa)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 4, pp 65-66 (USSR)

ABSTRACT: The electric slag welding process starts with melting a quantity of flux by electric arc to form a slag puddle, after which it turns into an arcless (electric slag) process. The arc discharge in this starting period is extremely unstable and accompanied by splatter of slag and metal as well as "freezing" of the electrode at short circuit. To eliminate this, the arc process must be fully eliminated. This was achieved by the development of flux which conducts electricity in its solid state and melts by the heat developing within it. The composition of this flux - called "AN-25" - is: 35-40% TiO_2, 6-9% SiO_2, 12-15% CaO, 2-4% MgO, 33-40% $CaFe_2$, 2-3% R_2O_3. This flux melts readily, and is not viscous. The electric slag process starts quickly and remains stable at considerable changes of the depth and width of the slag puddle and of the welding current and voltage. After starting with the

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

Solid Electricity-Conducting Flux for Excitation of Electric Slag-Welding Process

125-58-4-9/15

"AN-25"-flux, the process is continued with the usual flux chosen for the given case. The "AN-25" flux is now used at the Novo-Kramatorskiy zavod imeni Stalina (Novo-Kramatorsk Plant imeni Stalin), the Zhdanov zavod imeni Il'yicha (Plant imeni Il'yicha in Zhdanov), at the Zavod Rostsel'mash (Rostsel'mash) and at the Zavod Voroshilovsk (Voroshilovsk Plant). The applications are: for filling of shrinkage cavities, welding metal of large thickness with plate-electrodes, electric slag casting, etc.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR (Electric Welding Institute imeni Ye.O. Paton of the AS UkrSSR)

SUBMITTED: January 24, 1958

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

YAVOYSKIY, V.I., prof., doktor tekhn.nauk; BEKTURSUNOV, Sh.Sh., inzh.; CHERNEGA, D.F., kand.tekhn.nauk; TYAGUN-BELOUS, G.S., kand.tekhn.nauk; DUDKO, D.A., kand.tekhn.nauk; Prinimali uchastiye: MOLOTKOV, V.A.; BELYAYEV, Yu.P.; YAKOBSHA, R.Ya.; AGAMALOVA, L.L.; CHEKALENKO, G.A.; BOCHAROV, V.A.; KISSEL', N.N.; POTANIN, Ye.M.; SYTOVA, N.M.

Electric slag heating and additional feed of large sheet billets made of 10G2SD steel. Stal' 22 no.7:611-615 Jl '62. (MIRA 15:7)

(Steel ingots) (Rolling (Metalwork))

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

IAVOISKI, V.I. [Yavoyskiy, V.I.]; CERNEGA, D.F. [Chernega, D.F.]; DUDKO, D.A.; TEAGUN-BELOUS, G.S. [Tyagun-Belous, G.S.]; BEKTURSUNOV, S.S. [Bektursunov, Sh.Sh.]; BOCIAROV, V.A. [Bocharov, V.A.]; AGAMALOVA, L.L.; MOLOTKOV, V.A.; IAKOBSE, R.I. [Yakobshe, R.Ya.]; POTANIN, E.M. [Potanin, Ye.M.]

Electrolytic phenomena during the slag electric heating of the ingots. Analele metalurgie 16 no.2:5-18 Ap-Je '62.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

YAVOYSKIY, V.I.; CHERNEGA, D.F.; DUDKO, D.A.; TYAGUN-BELOUS, G.S.; BEKTURSUNOV, Sh.Sh.; BOCHAROV, V.A.; AGAMALOVA, L.L.; MOLOTKOV, V.A.; YAKOBSHE, R.Ya.; POTANIN, Ye.M.

Electrolytic phenomena in the electric slag ingot heating process. Izv.vys.ucheb.zav.; chern.met. 4 no.9:32-43 '61. (MIRA 14:10)

1. Moskovskiy institut stali.
(Steel ingots) (Electrometallurgy)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

S/133/62/000/007/002/014
A054/A127

AUTHORS: Yavoyskiy, V.I., Professor, Doctor of Technical Sciences; Bektursunov, Sh.Sh., Engineer; Chernega, D.F.; Tyagun-Belous, G.S.; Dudko, D.A.; - Candidates of Technical Sciences

TITLE: Electroslag heating and additional feeding in casting 10Г2СД (10G2SD) slabs for sheet rolling

PERIODICAL: Stal', no. 7, 1962, 611 - 615

TEXT: The new "electroslag-heating" method described by G.S. Tyagun-Belous and D.A. Dudko (Ref. 1, Avtomaticheskaya svarka, no. 9, 10, 1956, no. 8, 11, 1958) eliminates the drawbacks in the usual methods of reducing metal losses in the riser head. In the upper part of the ingot mold a mixture of 45% crushed chamotte and 55% fine-graded coke is spread on the metal surface, in an amount of 2 kg/ton steel, then 14 kg/ton slag forming materials are added. Through the layer forming from these elements which smelts and becomes electro-conductive, a current of industrial frequency is led. The slag layer developing in the dozzle of the mold is 80 - 100 mm thick. In the electroslag-heating method

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Electroslag heating and additional feeding in ....

carbon electrodes (50 - 150 mm in diameter) are used. If this process is combined with additional feeding, 80 - 100-mm diameter self-baking electrodes of the same grade that is being smelted are used. The ingots cast by the first me.... weighed 7.55 tons, those of the combined method 7.3 - 7.4 tons, while the standard ingots were 8.2 tons. The slag forming elements used were chamotte powder, lime, fluorite. Shrinkage cavities were not found in the ingots cast with electroslag heating, but the highest density was obtained, when electroslag heating and additional feeding were applied. The test ingots and one control ingo.. were examined for chemical nonhomogeneity, the amount of residual hydrogen, pickling and mechanical properties. The positive liquation of carbon was 7% in the ingot heads subjected to additional feeding, 2% in case of electroslag heating, and 200% for the control ingot. The corresponding values for the sulfur content were 0.0 and 10% and for phosphorus 0.5 and 50%. The decrease of liquation can be explained by the activity of the slag layer, which absorbs the additives from the smelted metal at their interface. This process is considerably intensified by the convective flows circulating at a rate of about 4 m/min in the ingot mold during crystallization, entraining liquid metal from the lower, solidifying parts of the ingot upward to the riser, i.e., to the electrical-

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Electroslag heating and additional feeding in ....

ly heated slag layer. For the same reason the hydrogen content of the ingots also decreases. In the test ingots produced with electroslag heating the hydrogen content was 4.09 cm^3/100 g, in the ingot with additional feeding 4.05 cm^3/100 g, and in the control ingot 4.98 cm^3/100 g. The effect of convective flows was investigated by radiometry, using a P^{32}-50 millicurie-isotope. As to mechanical properties, the highest values were found in ingots treated by electroslag heating, without additional feeding: σ_B = 50 - 56 and σ_s = 37 - 42 kg/mm^2; in the riser part of the ingot the highest mechanical parameters were obtained for ingots with additional feeding: σ_B = 50 - 55, σ_s = 40 - 45 kg/mm^2. The effect of the quality of current on the properties of the ingots was also studied by means of a d-c welding generator (1,100 amp, 40 v) and 3.4 ton 10G2SD ingots. The highest parameters and the most uniform distribution of elements were found in ingots heated by direct current with a direct polarity. Similar results can be obtained also with alternating current of industrial frequency, which is important from the practical point of view. If electroslag heating of the riser is applied, the saving in metal is 6 - 7%; if additional feeding is also applied, it is 10 - 11%. The riser volume can be reduced by 3 - 5%. It is also possible to dispense with the riser completely. The methods should be ap-

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Electroslag heating and additional feeding in S/133/62/000/007/002/014
A054/A127

plied mainly for carbon steel and low-alloy steel ingots for heavy-duty products.
There are 3 figures.

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TYAGUN-BELOUS, G.S.

6

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S/148/61/000/009/001/012
E071/E135

AUTHORS: Yavoyskiy, V.I., Chernega, D.F., Dudko, D.A., Tyagun-Belous, G.S., Bekturganov, Sh.Sh., Bocharov, V.A., Agamalova, L.L., Molotkov, V.A., Yakobshe, R.Ya., and Potanin, Ye.M.

TITLE: Electrolytic phenomena in the process of electroslag heating of ingots

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1961, 32-43

TEXT: Electroslag heating of ingots is based on the ionic nature and structure of slag. On passing a current through the slag, situated on the surface of the shrinkage head, a considerable amount of heat is evolved, sufficient to maintain the slag and metal in the upper part of the ingot during its crystallisation in the molten state. The object of the present investigation was to elucidate the influence of the kind of electric current on the processes taking place during electroslag heating of ingots. It is advantageous to carry out the heating of the ingot tops in such

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Electrolytic phenomena in the process...

a manner that in addition to increasing the yield of good metal there should be an improvement in the metal quality resulting from the electrolytic effect and also from the transfer of a part of the segregating elements into the slag. The experiments were made with four ingots of a square cross-section, weighing 3.4 tons, of steel 10Г2С1Д (10G2SD), smelted in 75 ton basic open hearth furnaces. The electroslag heating was with direct and alternating current. For the first ingot the electrode introduced into the head part was connected to the cathode and the plus to the ingot (straight polarity); the second ingot was heated with direct current of reverse polarity (minus to the bottom of the mould, plus to the electrode in the head part); the third ingot was heated with a 50 c.p.s. alternating current; the fourth ingot was cast by the usual practice and was used as a blank experiment. The first three ingots were top poured through an intermediate funnel and the fourth ingot was bottom poured. A generator capable of producing 1000 A at 60 V was used for heating with direct current. The heating conditions were as follows: voltage 48 V, current for the first 60 minutes 950 A and then

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Electrolytic phenomena in the process..

700 A; the duration of heating 90 minutes. The flux for the formation of slag consisted of 25% fluorospar, 45% finely crushed freshly ignited lime, 30% chamotte powder. The ingots were rolled into slabs 500 x 250 mm. Four templets were cut from each slab and then cut into strips from which test specimens were made. Non-metallic inclusions were determined metallographically and electrolytically. It was found that the distribution of non-metallic inclusions in the ingot was the most advantageous on heating it with direct current of "straight" polarity. This type of heating lowers chemical non-uniformity in comparison with ingots cast by the usual works technology and heated with alternating current, or direct current of reverse polarity. There is a tendency for sulphur to be shifted towards the positive pole, whereupon sulphur near the positive pole is distributed unevenly along the cross-section of the ingot in the form of segregation "spots". No shift of carbon towards the negative pole was established. During the heating with direct current of straight and reverse polarity, in addition to electrolytic phenomena, the Perrin-Tochinskiy effect leading to the refining

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Electrolytic phenomena in the process... S/148/61/000/009/001/012
E071/E135

of the metal of the head part of the ingots was observed. No noticeable effect of direct current on changes in the content and distribution of nitrogen in the rolled metal was observed. It was established that the content of hydrogen in the shrinkage head decreases during crystallisation of the ingot heated with a direct current of reverse polarity and increases with direct polarity (minus on the electrode). The mechanical properties of the metal of the ingot teemed with heating by current of direct polarity are most uniform throughout the whole volume of the slab. The specific gravity of the metal of all the ingots was almost the same. The pickling ability of the metal (weight loss of cylindrical specimens in a solution of 65 wt. parts of HCl, 25 wt. parts of H_2SO_4 and 10 wt. parts of water at 70 °C during 40 minutes) along the whole slab is the highest on heating with direct current of "straight" polarity and lowest on heating with direct current of reverse polarity. On heating with alternating current of an industrial frequency the quality of the ingot metal was better than that of the "blank" ingot and was nearly the same as on heating with direct current of "straight" polarity.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

30879
Electrolytic phenomena in the process... S/148/61/000/009/001/012
E071/E135

There are 6 figures, 4 tables and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Moskovskiy institut stali
(Moscow Steel Institute)

SUBMITTED: May 24, 1961

Card 5/5

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

S/137/62/000/003/019/191
A006/A101

AUTHORS: Chernega, D.F., Dudko, D. A., Tyagin-Belous, G. S.

TITLE: Electric-slag heating and feeding of ingots

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 42, abstract 3V262 ("Sb. nauchn. tr. Zhdanovsk. metallurg. in-t", 1961, no. 7, 266-275)

TEXT: In electric-slag heating the assembly of bottom plates is made as in conventional teeming. The liquid metal surface is filled with a thermite mixture after filling up the riser; during the burning of the mixture slag is being formed which promotes the formation of a slag pool from the synthetic mixture (CaO, CaF_2 and Al_2O_3). It is expedient that the slag contained 8 - 10% oxides of the metal alloying elements. The slag layer should be > 40 - 50 mm thick. Electric-slag heating can be conducted both on d-c and a-c. The magnitude of the power supplied is regulated by the immersion depth of the carbon electrode into the slag pool. The authors compared the properties of metal from conventional 3-ton 60XH(60KhN) steel ingots and of one that was subjected to electric-slag heating. Heating was performed on d-c at I = 1,000 amp; U = 50 v, heating time 90 minutes. The flux was composed of 50% CaO, 30% CaF_2; 20% SiO_2. Flux

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

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A006/A101

Electric-slag heating and feeding of ingots

consumption was 20 kg/t of steel. It was established that electric slag heating eliminates almost completely shrinkage cavities, improves density and macro-structure of the metal. Noticeable chemical heterogeneity of the metal is not observed in the ingot. Heating on d-c of direct polarity (minus on the electrode) promotes a reduction of the H content in the ingot. Simultaneously with a higher yield of finished product, electric-slag heating improves the mechanical properties of metal. In electric-slag feeding a consumable electrode is used which is made of the same metal as the ingot. Pouring gates or steel rods of 30 - 100 mm in diameter are used as electrodes. In electric-slag feeding, simultaneously with heating, the top section of the ingot is continuously filled-up with liquid metal of the consumable electrode. Flux consumption (60% CaO, 20% CaF_2, 20% Al_2O_3) is 15 - 25 kg/t of steel. The volume of the liquid pool for electric-slag feeding must be 4 - 5 times greater than for electric-slag heating. Electric-slag feeding makes it possible to reduce considerably zonal heterogeneity and the volume of the lower cone, and to raise the yield of finished product by 18 - 20%. The plastic properties of the metal in the top portion of the ingot are higher than in the lower portion.

P. Arsent'yev

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

BEKTURSUNOV, Sh.Sh.; YAVOYSKIY, V.I.; CHERNEGA, D.F.; TYAGUN-BELOUS, G.S.; SYTOVA, N.M.

Hydrogen behavior during the processes of electric slag heating and additional feeding of ingots. Izv.vys.ucheb.zav.; chern.met. 4 no.9:44-53 '61. (MIRA 14:10)

1. Moskovskiy institut stali; Kiyevskiy politekhnicheskiy institut; Institut elektrosvarki i Zhdanovskiy metallurgicheskiy zavod.
(Steel—Hydrogen content) (Steel ingots)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710007-6

S/148/61/000/009/002/012
E071/E135

AUTHORS: Bektursunov, Sh.Sh., Yavoyskiy, V.I., Chernega, D.F., Tyagun-Belous, G.S., and Sytova, N.M.

TITLE: The behaviour of hydrogen during electroslag heating and supplementary feeding of ingots

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1961, 44-53

TEXT: The authors carried out experiments on electroslag heating and supplementary feeding of 8.2 ton sheet ingots of a low alloy steel MK 10Г2СД (10G2SD) on a large scale experimental installation in which samples of the metal and slag were taken during the course of crystallisation of the ingots for the determination of hydrogen. The chemical composition of the steel was: ≤ 0.12% C; 1.3-1.65% Mn; 0.8-1.1% Si; ≤ 0.30% Cr; ≤ 0.30% Ni; 0.15-0.30% Cu; 0.02% Ti, ≤ 0.040% S and P. The process was carried out as follows: After filling the mould up to about one third of the height, a slag forming mixture was placed on the surface of the metal; 10-12 min after filling the mould, three electrodes were introduced into the slag, current (55-60 V,

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1000-1400 A) was switched on and an additional amount of the slag forming mixture added so as to form a slag bath 80-100 mm deep. The duration of heating and supplementary feeding was 60-65% of the time necessary for the complete crystallisation of the ingot in normal production (about 2 hours). The slag forming mixture consisted of 40 kg chamotte powder, 60 kg lime and 10 kg spar concentrates. The slag formed had the following composition: 26-28% SiO_2; 38-40% CaO; 16-18% Al_2O_3; 1.0-1.5% FeO; 0.2-0.6% Fe_2O_3; 1.0-1.3% MnO; 5.0-7.0% MgO; 6-8% CaF_2; 0.02-0.03% P_2O_5; and 0.006-0.010% S. The lining of the top was made from magnesite brick. Samples of the metal were taken from the shrinkage head with a silica tube and samples of the slag from the space between the central and one of the peripheral electrodes with a metallic spoon. The extraction of the gas from the samples was done at 950-1000 °C at 3-5 x 10^{-2} mm Hg. To elucidate the influence of the heating on the residual hydrogen content in the metal, four transverse and one longitudinal templets were cut from three ingots (one of the ingots teemed by the usual technology was used for comparison). It was found that in the shrinkage head and 100 mm below the head, the content of hydrogen

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in the ingots teemed with the heating was somewhat lower than in the usual ingots; in the remaining parts of all three ingots the hydrogen content was approximately the same. The average hydrogen contents were as follows: in the usual ingots 4.98 $cm^3/100$ g; in the ingot teemed with electroslag supplementary feeding 4.05 $cm^3/100$ g; in the ingot teemed with electroslag heating 4.09 $cm^3/100$ g. It is concluded that electroslag heating or supplementary feeding of the head of the ingots secures the transfer of some of the hydrogen from the metal to the slag, thus lowering somewhat the concentration of hydrogen in the whole system of the ingots but particularly in their head part. The transfer of hydrogen into the slag bath takes place not only due to the Perrin-Tochinskiy effect, but also due to the electrolytic transfer of OH^- ions and their discharge on electrodes during the half period when the electrodes are acting as anodes. O.A. Yesin, V.I. Yavoyskiy, G.N. Batalin and V.S. Baykov are mentioned for their contributions in this field.
There are 7 figures and 13 references: 11 Soviet-bloc and 2 Russian translations of non-Soviet publications.

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ASSOCIATION: Moskovskiy institut stali, Kiyevskiy politekhnicheskiy institut, Institut elektrosvarki, Zhdanovskiy metallurgicheskiy zavod
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[Development of the economy of the People's Republic of Albania] Razvitie ekonomiki Narodnoi Respubliki Albanii. Moskva, 1960. 78 p. (MIRA 13:11)
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Development of the Albanian economy. New York, USJPRS, 1961.

75 p. tables. (JPRS: 4568; OSO: 1663-S)

Translated from the original Russian: Razvitiye ekonomiki Narodnoy Respubliki Albanii, Moscow, 1960.

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