SKOTNIKOV, V.I., kand.med.nauk (Ryazan', ul. Revolyutsii, d.19, kv.4)

Association of secondary osteomyelitis with neurodystrophic ossification following injury of the spinal cord. Vest.rent. i rad. 34 no.4:12-18 Jl-Ag '59. (MIRA 12:12)

1. Iz kafedry rentgenologii i meditsinskoy radiologii (zav. - prof. V.N. Shtern) Saratovskogo meditsinskogo instituta.
(SPINAL CORD wds. & inj.)
(OSTEOMYELITIS etiol.)
(OSSIFICATION etiol.)

SKOTNIKOV, V.I.

Comparative evaluation of the results of chaul therapy and Co^{60} gamma-ray therapy for cancer of the skin and lip. Vop. onk. 6 (MIRA 14:1) no. 11:93-99 N '60.
(SKIN—CANCER) (RADIOTHERAPY) (LIPS—CANCER)

SKOTNIKOV, V.I.; LYANDO, S.N. (Ryazan')

Comparative evaluation of the tomographic and bronchographic methods of study in bronchiectasis. Klin.med. no.4:100-104 '62. (MIRA 15:5)

1. Iz kafedry rentgenologii i meditsinskoy radiologii (zav. - prof. B.A. TSybul'skiy) Ryazanskogo meditsinskogo instituta imeni akademika I.P. Pavlova (dir. - prof. L.S. Sutulov).

(BRONCHIECTASIS) (BRONCHI--RADIOGRAPHY)

SKOTNIKOV, V.I., inzh.

Automatic [illegible] level regulation in a heat supply system.
Energetik [illegible] 13(3):9 D '64 (MIRA 18:2)

SKOTNIKOV, V.M. (Ryazan'); LYANDO, S.N. (Ryazan')

Diagnosis of internal anastomoses of the biliary tract.
Klin. med. 35 no.2:62-64 F '57. (MLRA 10:4)

1. Iz kafedry rentgenologii i meditsinskoy radiologii (zav.-prof. B.A. TSybul'skiy) Ryazanskogo meditsinskogo instituta imeni akad. I.P. Pavlova (dir.-prof. L.S. Sutulov)
(BILE DUCTS, fistula
biliary inter-ductal, diag.)

SKOTNIKOV, V.M.; GUMBAR, A.L.; IVANOV, F.G.; TABAKOV, B.A.

Electrified recorder of currents. Trudy AANII 254:63-66 '68.
(MIRA 17:11)

ACC NR: AT6028741 (N) SOURCE CODE: UR/3116/66/269/000/0127/0134

AUTHOR: Izmaylov, V. V.; Skotnikov, V. M.; Gumbar, A. L.

ORG: none

TITLE: An electrically operated current meter and the results of its testing during Arctic expeditions

SOURCE: Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut. Trudy, v. 269, 1966. Okeanograficheskiye i gidrometeorologicheskiye issledovaniya Arkticheskikh morey (Oceanographic and hydrometeorological studies of Arctic Seas), 127-134

TOPIC TAGS: ocean current, oceanographic equipment, oceanographic instrument, current meter, SIGNAL RECORDING

ABSTRACT: The design, operating characteristics, and test results are described for two models of an electrically-operated current meter (EST). The first model (see Fig. 1), built in 1960 by a group of technicians from the Experimental Workshop of the Arctic and Antarctic Institute, incorporated the BPV-2 and BPV-2r tape-printing current meters. The following are the operating characteristics of the EST current meter: 1) print interval — 10, 20, 30, 60 min, or 2 hr; 2) station time with 1-hr print interval — 6 months; 3) depth limit — 250 m; 4) total assembled weight — 35 kg; 5) weight, packed with spare parts — 54 kg; 6) height — 680 mm;

Card 1/3 UDC: 551.46.085

ACC NR: AT6028741

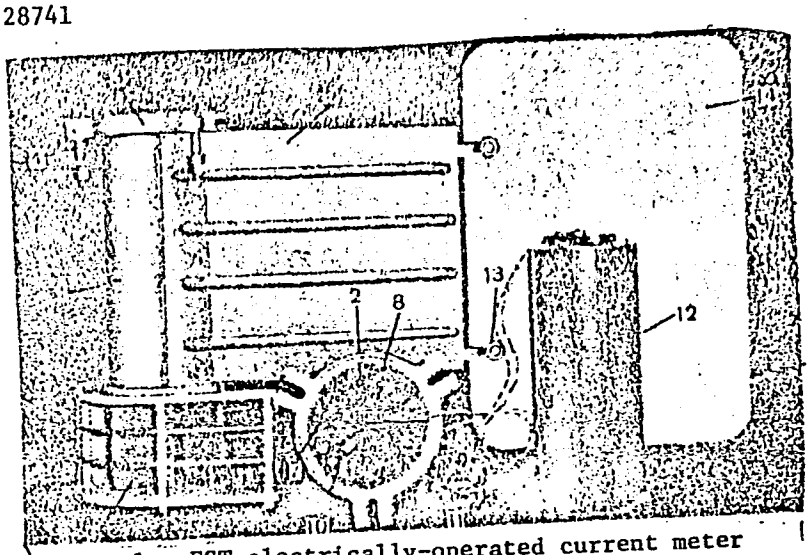


Fig. 1. EST electrically-operated current meter

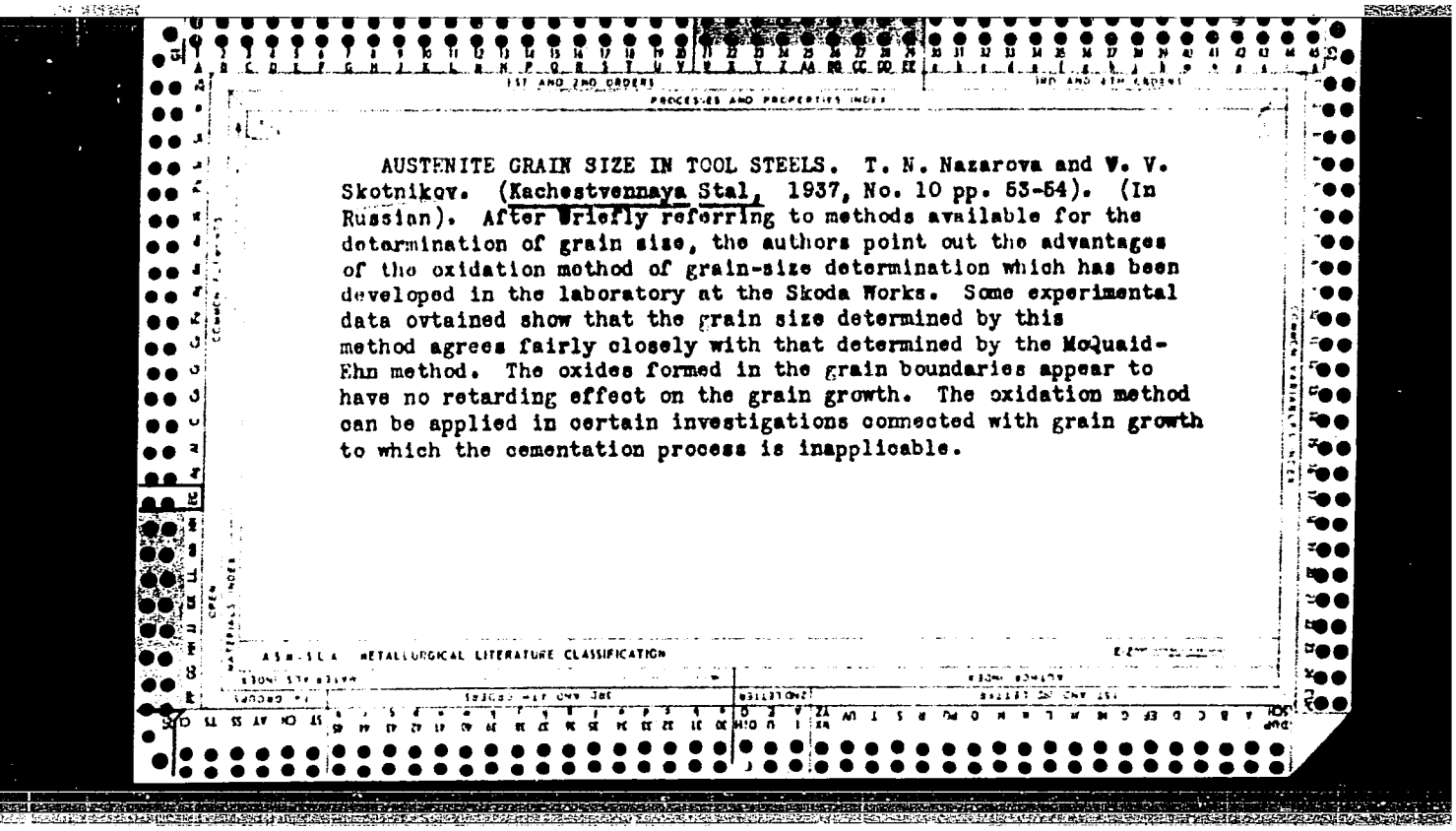
1 - Cylindrical brass casing; 2 - brass casing cover; 3 - flange; 4 - swing bolts; 5 - fairwater; 6 - [not given in original]; 7 - battery retaining plate; 8 - clamping ring for (7); 9 - rotor blades; 10 - fuse; 11 - swivel coupling; 12 - recording unit; 13 - rudder bolts; and 14 - rudders.

Card 2/3

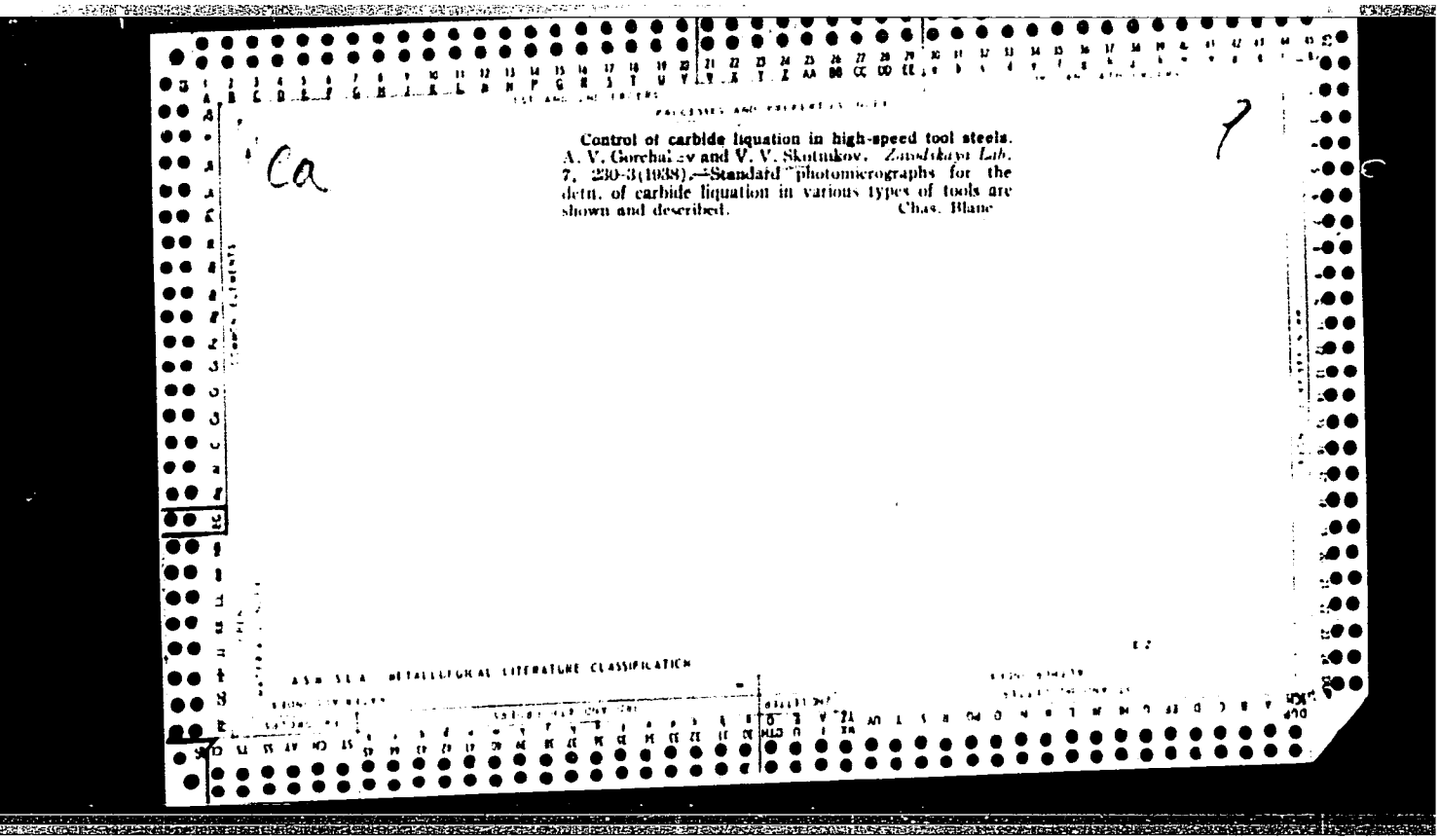
SKOTNIKOV, V. N.

Three-cam self-clamping chuck. Stan. i instr. 33 no.10:40 O '62. (MIRA 15:10)

(Chucks)



AUSTENITE GRAIN SIZE IN TOOL STEELS. T. N. Nazarova and V. V. Skotnikov. (Kachestvennaya Stal, 1937, No. 10 pp. 53-54). (In Russian). After briefly referring to methods available for the determination of grain size, the authors point out the advantages of the oxidation method of grain-size determination which has been developed in the laboratory at the Skoda Works. Some experimental data ovtained show that the grain size determined by this method agrees fairly closely with that determined by the McQuaid-Ehn method. The oxides formed in the grain boundaries appear to have no retarding effect on the grain growth. The oxidation method can be applied in certain investigations connected with grain growth to which the cementation process is inapplicable.



Control of carbide liquation in high-speed tool steels. A. V. Gorchakov and V. V. Skatnikov. *Zavodskaya Lab.* 7, 230-3(1938).—Standard photomicrographs for the detn. of carbide liquation in various types of tools are shown and described. Chas. Blanc

129-58-5-17/17

AUTHOR: None Given.

TITLE: Competitions imeni D. K. Chernov and N. A. Minkevich (O konkursakh imeni D. K. Chernova and N.A. Minkevicha)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 5, pp 63-64 (USSR)

ABSTRACT: In June, 1957 the Metals Technology Division of the Central Directorate of NTO Mashprom announced two competitions, one (imeni D. K. Chernov) for the best research work carried out by the members of the society in the period 1955-1957 and the other (imeni N.A.Minkevich) for the best work on development and introduction of technological processes and equipment for heat treatment of metals. In the first group the first prize was awarded to V. V. Skotnikov for his work "Intermediate Transformation of Austenite". In the second group the first prize was awarded to a team of the ZIL Automobile Works (A. D. Assonov et alii) for the work "Combined Automatic Equipment for High Speed Gas Cementation Applying Induction Heating". Work for which second and other prizes were awarded are also mentioned.

Card 1/1

AVAILABLE: Library of Congress.

1. Metals-Heat treatment 2. Scientific research-USSR
3. Metallurgy-USSR

81513
SOV/137-59-5-10759

18.7500

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 185 (USSR)

AUTHOR: Skotnikov, V.V.

TITLE: On the Formation Mechanism, the Phase Composition and the Structural Shapes of Intermediate Austenite Transformation Products

PERIODICAL: V sb : Materialy Nauchno-tekhn. konferentsii po probl. zakalki v goryachikh sredakh i promezhutochn. prevrashcheniye austenita, Nr 1, Yaroslavl', 1957, pp 52 - 57

ABSTRACT: Generalized experimental results of Soviet and foreign authors are used to advance a new theory on the mechanism and phase composition of austenite transformation products in the intermediate range. It is pointed out that the particles observed in intermediate transformation products are not carbides but represent austenites formed during the transformation process as the constitutional part of a two-phase product of initial austenite decomposition. The high degree of carburizing of austenite particles and the regular character of their distribution

Card 1/2

81525

SOV/137-59-5-10912

18.7100

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 210 (USSR)

AUTHORS: Yelizarov, B.I., Skotnikov, V.V.

TITLE: The Effect of Intermediate Transformation Products on the Proneness to Cold Brittleness of Structural Steels After High Tempering

PERIODICAL: V sb.: Materialy Nauchn.-tekhn. konferentsii po probl. zakalki v goryachikh sredakh i promezhutochn. prevrashcheniyu austenita, Vol 1, Yroslavl', 1957, pp 193 - 205

ABSTRACT: The effect on a_k at +20, -25 and -50°C caused by isothermal quench-hardening within a temperature range of 200° - 400°C and tempering at 500° - 650°C compared to oil-quenching and tempering at the same temperatures, was investigated for several smelts of the following steel grades: 40Kh, 40KhN, 40KhNMA, 45G2 and 35KhGSA. It was established that isothermal quench-hardening of 40Kh, 40KhN and 40KhMNA steel within a range of 200° - 300°C and tempering at 500° - 650°C ensured the same a_k at negative temperatures as conventional quench-hardening and tempering at the same temperatures. Fractures of the specimens were also similar.

Card 1/2

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18.7100
18.7500

SOV/137-59-5-10899

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 208 (USSR)

AUTHORS: Pomerants, D.M., Skotnikov, V.V.

TITLE: Peculiarities in the Manifestation of Irreversible Temper Brittleness in Intermediate Transformation Products of Structural Automobile Steels

PERIODICAL: V sb.: Materialy Nauchno-tekhn. konferentsii po probl. zakalki v goryachikh sredakh i promezhutochn. prevrashcheniyu austenita, Vol 1, Yaroslavl', 1957, pp 228 - 249

ABSTRACT: The authors investigated the effect of the decomposition temperature in isothermal quench-hardening on the development of irreversible brittleness in tempering of the following steel grades: 40Kh, 40KhN, 40KhNMA, 35KhGSA, 40KhGT, 0KhM, 45G2. The authors determined a_k and R_C after oil-quenching or isothermal quench-hardening and 1 hour holding at 200° - 400°C with subsequent tempering at 200° - 650°C. Furthermore, they carried out a magnetometric determination of the amount of residual austenite in 40Kh, 45G2, 40KhNMA, 35KhGSA steels. In steel subjected to

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SKOTNIKOV, Viktor Vasil'yevich; VEDENYAPIN, G.A.,red.; LIPGART, A.A., otv. red.; BORISOV, S.G.,red.; BRISKIN, M.I.,red.; DYBOV, O.V.,red.; ZIL'BERG, Ya. G.,red.; KOZLOVSKIY, I.S.,red.; LOZAR', A.S.,red.; LUKEV, I.S., red.; PEVZNER, Ya.M.,red.; PRYADILOV, V.I.,red.; RAMAYYA, K.S.,red.; SAMOL', G.I.,red.; SEDOVA, Ye.V.,red.; KHANIN, N.S.,red.; CHAPAYEV, A.A.red.; CHISTOZVONOV, S.B.,red.; SHKOL'NIKOV, E.M.,red.; YEGORKINA, L.I.,red.izd-va; SMIRNOVA, G.V.,tekhn.red.

[Intermediate transformation and temper brittleness of automobile body steels] Promezhutochnoe prevrashchenie i otpusknaia khrupkost' v konstruktsionnykh avtomobil'nykh staliakh. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry 1958. 74 p. (Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i avtomotornyi institut Trudy, no.85) (MIRA 12:2)
(Steel, Automobile--Metallography)

SKOTNIKOV, V.V

25(1) p.3 PHASE I BOOK EXPLOITATION SOV/1558

Moscow. Dom nauchno-tekhnicheskoy propagandy im. F.E. Dzerzhinskogo

Sovremennyye splavy i ikh termicheskaya obrabotka (Contemporary Alloys and Their Heat Treatment) Moscow, Mashgiz, 1958. 329 p. 12,000 copies printed.

Additional Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed. (Title page): Yu. A. Geller, Doctor of Technical Sciences; Ed. (Inside book): V.V. Rzhavinskiy, Engineer; Tech. Ed.: B.I. Model'; Managing Ed. for Literatare on Metal Working and Tool Making; R.D. Beyzel'man, Engineer.

PURPOSE: The book is intended for engineering and technical personnel of heat-treatment shops and test laboratories of machine-building plants.

COVERAGE: This collection of 28 articles, compiled by 33 authors, aims to acquaint the reader with modern practice in the heat treatment of steels. The authors are primarily concerned with the development of various types of structural, tool, and heat-resistant steels and with the use of their alloying elements. Materials-handling equipment is described at some length. The treatment of alloys, particularly those of titanium, also comes within the scope of the collection. The book is thoroughly diagrammed, and a good deal of the material is shown in graphical form. Among the problems dealt with are the minimiza-

SOV/1558

Contemporary Alloys and Their Heat Treatment

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SOV/137-59-12-27183

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 12, p 202 (USSR)

AUTHOR: Skotnikov, V.V.

TITLE: The Problem on the Mechanism of the Formation, the Phase Composition and the Structural Shapes of Intermediate Transformation Products of Austenite

PERIODICAL: Tr. Sektsii metalloved. i term. obrabotki metallov. Tsentr. pravl. Nauchno-tekhn. o-va mashinostroit. prom-sti, 1958, Nr 1, pp 29 - 43

ABSTRACT: Investigations were carried out by the microscopical method and by measuring changes in the hardness of specimens of the following steel grades intended for carburization: 15NM, 15KhF, 12KhNZA, 18KhGT, 20KhGR, and medium carbon steel grades, such as 40KhN, 45G2, 35KhGSA; 40KhNMA, OKhM, 40KhGT. All low-carbon, 40KhN and OKhM steels were carburized until a 1.0 - 1.2 mm deep layer was obtained with a concentration of C on the surface as high as 0.9 - 1.05%. Austenization was carried out at 900° and 1,000°C. Isothermic transformation was studied at 200° - 700°C, every 50°; holding varied from 2 seconds to 8 hours. The author also carried out a comparative investigation into hardness of martensite decomposition products after tempering at the same temperatures. It is

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SOV/137-59-12-27183

The Problem on the Mechanism of the Formation, the Phase Composition and the Structural Shapes of Intermediate Transformation Products of Austenite

asserted that intermediate transformation is a special form of austenite diffusion decomposition; it takes place by the diffusion stratification of the γ -phase into ferrite and enriched austenite, ferrite being the prevailing phase. In the developed product ferrite is the main phase, and the enriched austenite is the dispersed distributed phase. This transformation can be considered as a monotectoid one; it is metastable and consequently the composition of phases and their correlations in the monotectoid may vary within a large range. As a result of spheroidization occurring at a high rate in the upper portion of the transformation zone, the specific features of the initial structural forms disappear. The degree of martensite transformation with subsequent cooling is determined by the intensity of asutenite concentration. Due to retarded diffusion and increased elasticity of the medium, proportional to the degree of cooling, ferrite formation of equiponderant concentration becomes impossible. Diffusion stratification also occurs with the formation of two phases, low-carbon martensite being the prevailing phase, where austenite dispersion particles are uniformly distributed. There are 40 bibliographical titles.

V.R.

Card 2/2

SOV/137-59-1-1242

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 169 (USSR)

AUTHOR: Skotnikov, V. V.

TITLE: Employment of New Grades of Steel for the Fabrication of Automobile Parts (Primeneniye staley novykh marok dlya izgotovleniya avtomobil'nykh detaley)

PERIODICAL: V sb.: Materialy Soveshchaniya glavn. metallurgov z-dov i in-tov avtomob prom-sti. Nr 3. Moscow, 1958, pp 31-37

ABSTRACT: A brief communication on work performed at the Central Laboratory of the Yaroslav Automobile Plant during 1956.

T. F.

Card 1/1

SHOTNIKOV, V.V.

129-58-5-16/17

AUTHORS: Yelizarov, B. I., Polerants, D. M. and Shotnikov, V.V.

TITLE: Scientific-Technical Conference on Hardening in Hot Media and Intermediate Transformation of Austenite (Yaroslavl') (Nauchno-tekhnicheskaya konferentsiya po zakalke v goryachikh sredakh i promezhutochnomu prevrashcheniyu austenita (Yaroslavl')

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 5, pp 58-63 (USSR)

ABSTRACT: A scientific-technical conference on hardening steels in hot media and intermediate austenite transformation was held in Yaroslavl', December 16-19, 1957, which was convened by the Yaroslavl' Regional Directorate of the NTO Mashprom jointly with the metals technology and heat treatment section of the Central Directorate of NTO Mashprom. 180 people participated who came from factories, research institutes and teaching establishments of Moscow, Leningrad, Novosibirsk and numerous other towns. The authors of this report state that it can be assumed that the following are established facts relating to intermediate transformation:

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1) Decomposition of the austenite in the intermediate range begins after a certain incubation period,

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2) Intermediate transformation stops when a certain quantity of non-decomposed austenite still remains, whereby the completeness of the transformation increases with decreasing temperature;
3) Diffusion redistribution of carbon takes place during intermediate annealing;
4) Decomposition of austenite in the intermediate range as well as the penetration after completion of the transformation leads to a decrease of the martensitic point of the non-transformed austenite;
5) On changing over from the pearlitic to the intermediate range, a break occurs in the continuity of the change of the degree of dispersion, hardness and other properties of the decomposition products;
6) In the decomposition products of the lower part of the intermediate region existence of the tetragonal α-phase is detected;
7) The products of decomposition of the upper part of the intermediate range are most frequently "feather" shaped, whilst the decomposition products of the lower part are acicular;

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8) Intermediate transformation is accompanied by the formation of a relief on the polished surface of a cut;
9) In steels which are alloyed with carbide forming elements, the intermediate transformation is characterised by a separate branch of the C-shaped curve which is separated from the pearlitic range by a zone of relatively stable austenite;
10) Irrespective of the chemical composition of the steel the carbide in the intermediate transformations is a cementite type carbide and, as regards the contents of alloying elements, it does not differ from the average composition of the steel;
11) The static strength and the physical properties of the decomposition products of the lower part of the intermediate range does not differ materially from similar properties of the martensite products tempered to achieve the same hardness;
12) The decomposition products of the austenite in the intermediate range after high temperature terpering have less favourable mechanical properties than the structure obtained after hardening for obtaining martensite followed

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by high temperature tempering;
13) A full and even a partial decomposition of the austenite in the upper region of the intermediate range causes appearance of a particular variant of irreversible temper brittleness which is characterized by a trans-crystalline fracture.

Doctor of Technical Sciences R. I. Entin and L. I. Kogan in their paper "On the Theory of Intermediate Transformation of Austenite" communicated experimental data on the elementary reactions, structure and composition of transformation products of austenite in the medium range. They pointed out that transformation in this range is not due to redistribution of the alloying elements in the austenite but to diffusional redistribution of carbon in the austenite. Depending on the composition of the steel and the transformation temperature, an increase or a decrease of the carbon concentration in the residual austenite may take place, which is due to separating out of carbides. In some cases (for instance in nickel steels) the process of carbon enrichment of the residual austenite at a later stage of the transformation is followed by a

Scientific-Technical Conference on Hardening in Hot Media and Intermediate Transformation of Austenite (Nauchnyy[illegible]

separation of the carbon phase from the austenite and its impoverishment in carbon. Available data on the tetragonal structure of the α-phase which forms in the intermediate range, on the martensite character of the polymorphous $\gamma \rightarrow \alpha$ transformation in carbon-free alloyed iron in this range and on the formation of a micro-relief indicate that the α-phase during this transformation is formed according to the martensite type. Taking into consideration the obtained data, the authors consider that transformation of the austenite in the intermediate range is due to a redistribution of the carbon in the austenite and a formation of sections with increased and with reduced carbon concentrations. Sections of the austenite with reduced carbon concentration transform into martensite and those with increased carbon concentrations may possess a differing stability depending on the alloying and on the transformation temperature; under certain conditions carbides will start to separate out from the austenite. Transformations similar in character to the intermediate transformation of the austenite are specific features of

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the alloys containing elements with sharply differing speeds of diffusion (iron and carbon in steel). Candidate of Technical Sciences L. M. Pevzner, G. D. Kulyshkina, N. M. Popova, L. S. Zaslavskaya, G. M. Rovenskiy in their paper "On Intermediate Transformation" investigated in detail the phase composition of the products of intermediate transformation. Particularly valuable are the X-ray structural and the chemical analyses of the residual austenite which is precipitated electrolytically. The authors compared products of intermediate transformation in Cr and Si steels. They stated that in chromium steel clear lines of the carbide Fe_3C were observed by X-ray analysis from 280°C onwards, whilst in silicon steels this carbide is detected only from the 400°C isotherm onwards. They also investigated the problem of redistribution of alloying elements (Cr and Si) during intermediate transformation. It was established that in the non-decomposed austenite, the silicon content is approximately equal to its average content in the initial austenite. In chromium steels at 280-350°C, the chromium

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concentration in the carbide does not exceed the average concentration of chromium in the steel. At a higher temperature (400-420°C) an enrichment of the carbide with up to 7 to 8% Cr was observed for a steel containing 3-5% Cr. The authors express the following views on the mechanism of intermediate transformation:

1) Intermediate transformation takes place at lower temperatures than recrystallisation, i.e. at a temperature with a sharply impeded self-diffusion of the iron and diffusion of the alloying elements;

2) the fundamental difference of the intermediate transformation from the pearlitic one is the change in the mechanism of the $\gamma \rightarrow \alpha$ transformation, namely, a change from the ordinary diffusion kinetics to the martensitic one, which is confirmed by the presence of a relief on the surface of a cut and the existence of a relation between the crystallographic directions of the forming α-phase and the original austenite;

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3) the process of decomposition begins with a preliminary redistribution of the carbon in the austenite; it is assumed

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that two elementary processes take place, namely $\gamma \rightarrow \alpha$ transformation according to the martensitic kinetics in the impoverished section and carbide separation from the enriched section.

The authors found that in silicon steel an enrichment with carbon of the residual austenite takes place after ordinary hardening and tempering. The degree of enrichment of the austenite reaches the same values as in the case of iso-thermal intermediate transformation. Taking this fact into consideration, it is assumed that during low temperature tempering decomposition of the residual austenite takes place according to the laws governing the transformation of super-cooled austenite in the intermediate range. Therefore, the authors arrived at the conclusion that the favourable mechanical properties of silicon steels after isothermal hardening are due to a particular structural state: a disperse α-phase with a small quantity of carbide which is coherently linked to it and a considerable quantity of residual austenite.

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V. V. Skotnikov in his paper "On the Mechanism of Formation, Phase State and Structural Shapes of Products

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of Intermediate Transformation of the Austenite" investigated the structural shapes and the properties of the products of intermediate transformation in engineering alloy steels on the basis of micro-structural analysis and hardness measurement. He found that the initial products of intermediate transformation in low and medium carbon steels have a clearly pronounced lamellar structure which is similar to that of the eutectoidal structure, whereby the spacing between the lamellae decreases regularly with decreasing transformation temperatures. It was established that the phase which is redistributed in the products of intermediate transformation (which is usually assumed as being a carbide phase) has the following features: the quantity of this phase exceeds by far the quantity of the carbide phase which can form for a given carbon content and this is particularly pronounced in the case of low carbon steels; the speed of spheroidisation of this phase is incommensurably larger than that of the carbide phase in pearlite; with increasing duration of isothermal annealing, the dimensions of the particles of

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this phase will decrease appreciably, they "dry up". On the basis of his own and other results, the author concludes that the mechanism of intermediate transformation consists in a diffusion layering of the super-cooled austenite and has the character of a eutectoidal decomposition. Since one of the phases differs from the initial austenite only by the sharp difference in the carbon concentration, the intermediate transformation can be referred to as monotectoidal in analogy with monotectic transformations. Sub-division of the intermediate range into two regions is due to differences in the nature of the formed α-phase: in the upper region ferrite forms with carbon concentrations approaching the equilibrium one, whilst in the lower region the ferrite is saturated with carbon (low carbon martensite). The author disputes the phenomenon of self-braking of the process of intermediate transformation since one of the phases of the forming product consists of carbon enriched austenite. The formation of a carbide phase is due to secondary processes which take place after the basic process of layering of the initial austenite.

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P. V. Romanov read the paper "Nature of Intermediate Structures in the Light of Relations Governing the Thermo-Kinetic Transformation of the Austenite". On the basis of a large number of thermo-kinetic diagrams plotted by the author, relations were established governing the transformation of austenite during continuous cooling of binary alloys for iron with carbon, nickel, molybdenum and chromium and also for steels with 1, 2 or a larger number of alloying elements. The author expressed the view that the nature of intermediate transformation of austenite in alloy steels differs from that of isothermal transformation (in the intermediate temperature range) of carbon steel. He proposes to consider the first as a polymorphous transformation of the alloys iron-alloying element with a regular reconstruction of the lattice $\gamma \rightarrow \alpha$. The second is considered as decomposition of the austenite which is determined by the diffusion of the carbon during isothermal annealing. He proposed a differing terminology for designating the decomposition products of the austenite

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of alloy steel and of the products of isothermal transformation of carbon steels.
L. P. Ivanova in her paper "Features of Intermediate Transformation of Austenite in Silicon Steels" investigated the intermediate transformations in the steels 60S2 and 37KhS on the basis of the magnetometric and X-ray structural analysis, measurement of the electric resistance, determination of the mechanical properties and application of chemical and X-ray structural analysis of electrolytically produced sediments. On the basis of the experimental data, the author concludes that, during intermediate transformation, self-diffusion of iron occurs in silicon steels with a slow diffusion of carbon which is impeded owing to the presence of silicon.
V. T. Biryulin and Doctor of Technical Sciences V. D. Sadovskiy in their paper "On the Influence of Isothermal Hardening on the Mechanical Properties of Steel" investigated the impact strength and the hardness of the steels 40KhNMA, 35KhGSA and 38KhMYuA as a function of the hardening and tempering regimes. The magnetometric method was used for measuring the quantity of residual

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austenite and for plotting the thermal kinetic diagrams of the super-cooled austenite. The authors point out that long duration (100 hours and more) annealing in a hot medium leads to a decrease of the impact strength whereby in hot media with temperatures of 200 to 300°C, the impact strength increases at first, reaching a certain value with increasing duration and, then, the impact strength begins to decrease. If the medium has a temperature of 350 - 400°C, a continuous drop is observed in the impact strength with increasing duration. Comparing this phenomenon with the irreversible temper brittleness, the authors point out that embrittlement of the steel after ordinary hardening and tempering develops rapidly (within a few minutes) for the temperature range 300 to 400°C and on isothermal hardening it develops after many hours. After hardening (300°C) the drop in impact strength is accompanied by an inter-crystalline fracture; for the isotherms 350 and 400°C the fracture is intra-crystalline. Occurrence of an intra-crystalline fracture is attributed by the authors to the features of the micro-

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structure of the transformation products in the upper part of the intermediate range. It was established that in steel hardened from 400°C the inter-crystalline fracture, which is characteristic for reversible temper brittleness, is obtained only after high temperature tempering (675°C) followed by rapid cooling and subsequent embrittlement at 550°C.

V. F. Senkevich and Professor I. N. Bogachev in their paper "Isothermal and Step-wise Hardening of Steel" analyse the mechanical properties of the engineering steels 45Kh, 45G2 and 37KhS after treatment in molten alkalies. On the basis of their results the authors arrive at the conclusion that isothermal hardening in molten alkalies is technologically favourable for a number of steels and ensures favourable mechanical properties. However, this is possible only within a narrow range of super-cooling temperatures and deviation from this range can be accompanied by a sharp deterioration in the properties, particularly of the impact strength. For Steel 45G2 and also 40Kh, the hot hardening is a more

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reliable method of heat treatment in molten alkalies and this is particularly suitable for components of small and medium sizes.
Candidate of Technical Sciences N. I. Popova in her paper "Influence of the Products of Intermediate Transformation on the Physical and Mechanical Properties of Engineering Steels" investigated the influence of various quantities of intermediate transformation products (at 300 to 450°C) on the mechanical properties and on the appearance of the fractures of specimens of the Steels 35KhNZM and 35KhNIM. The steel structure was investigated by optical and electron microscopes and also by chemical analysis of the carbide sediment of steels with differing initial structures. Studying the character of the changes in the mechanical properties of the steel, hardened according to various regimes, as a function of the tempering temperature, the author established that the influence of intermediate transformation products on the mechanical properties of the steel depends on the temperature at which these transformations take place. The quantity of

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the decomposition products of the austenite forming at 300°C has practically no influence on the yield point, the impact strength and the character of the fracture of the steel compared with the corresponding characteristics obtained after ordinary hardening and tempering at the same temperature. The decomposition products of the austenite forming at higher temperatures (350 and 400°C) bring about a reduction of the yield point and the impact strength and also a less favourable appearance of the fracture whereby the quantity of the products for which a deterioration of the mechanical properties is observed will be the smaller the higher the decomposition temperature. It was detected by means of the electron microscope that, after hardening, the steel (with products of intermediate transformation) has a non-uniform structure with a non-uniform distribution of the carbides which increase with increasing isothermal temperature. After tempering at 600°C the non-uniformity is conserved and the quantity of carbides remains the same as that after hardening. The structure obtained after tempering of the martensite is uniform and contains a uniform distribution

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of disperse carbides. Analysis of the carbide sediments showed that after ordinary hardening and tempering at 600°C the carbides contain Cr, Mo and Mn in quantities which are near to their respective contents in the carbides of residues of annealed steel. The compositions of the carbides will be the same in the products of transformation of austenite forming at 300°C and equally tempered at 600°C. The carbide deposits of the products of intermediate transformation form at 350, 400 and 450°C (after tempering at 600°C) proved to have a lower content of Cr, Mn and Mo. On the basis of the obtained results, the author concludes that the physical and mechanical properties after tempering of steel hardened to obtain martensite differ from that of steel which contains in its structure products of intermediate transformation. Apparently, this is due to the differing shape, magnitude and character of the distribution of carbides and also to the distribution of Cr and Mo between the carbide and the metallic phases of these structures.

B. I. Elizarov and V. V. Skotnikov in their paper "Influence of the Products of Intermediate Transformation on the Tendency to Cold Shortness of Engineering Steels

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After High Temperature Tempering" investigated the impact strength of the steels 40Kh, 40KhN, 40KhNMA, 45G2 and 35KhGSA at +20, -25 and -50°C. It was established that as regards cold shortness after high temperature tempering of steel following ordinary and isothermal hardening, the investigated steels can be classified in the following sequence: 40KhNMA, 40KhN, 40Kh, 45G2, 35KhGSA. The products of isothermal decomposition of austenite in the upper part of the intermediate range, after high temperature tempering, show a more pronounced tendency to cold shortness than the tempering products of martensite and the products of isothermal decomposition of austenite in the lower part of the intermediate range. The authors explain this phenomenon on the basis of the mechanism of intermediate transformation proposed by V. V. Skotnikov.

D. M. Pomerants and V. V. Skotnikov in their paper "Features of Irreversible Temper Brittleness in the Products of Intermediate Transformation of Engineering Automobile Steels" investigated the dependence of the impact strength and the change in the quantity of the

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residual austenite of the steels 40Kh, 40KhN, 40KhNMA, 35KhGSA, 0KhM, 40KhGT and 45G2 on the temperature of the medium during isothermal hardening and the tempering temperature. They arrived at the following conclusions:
1) No definite relation was established between the irreversible temper brittleness and the change in the quantity of the residual austenite;
2) temper brittleness of the first type will be the less pronounced in isothermally hardened steel the higher the temperature of the isotherm and for the isotherms 350 and 400°C this type of brittleness does not occur;
3) the transformation products in the top part of the intermediate range tend to develop a particular type of irreversible brittleness (second type) which is characterised by intra-crystalline fracture. The authors attribute this type of fracture to the features of the structure of the products of intermediate transformation, which are considered as being a eutectoidal mixture of the α-phase and of the enriched austenite. The first type of brittleness (with an inter-crystallite fracture) is

associated with the process of carbide formation in the matrix α-phase which is over-saturated with carbon in the products of transformation of the lower part of the intermediate region. Brittleness of the second type develops as a result of the processes of tempering of the γ-phase which distributes in the ferrite within the limits of what was originally the austenite grain. In a number of cases, even before tempering, the presence of carbon enriched austenite-martensite can cause brittle fracture along the grain. This elucidates the observed intra-crystalline fracture of transformation products of the upper part of the intermediate region which manifests itself strongly after tempering.

Candidate of Technical Sciences N. V. Kazakova and N. V. Koroleva in their paper "On the Influence of the Decomposition Products of the Austenite in the Intermediate Range on the Tendency of the Steel to Develop Temper Brittleness" investigated the influence of the products of intermediate transformation on the tendency of the steel to develop reversible temper brittleness and to

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elucidate the nature of this phenomena in the steels 35KhN3, 35KhN3M, 35KhN3V and 35KhM after isothermal hardening at 250-450°C and tempering at 600-630°C with various cooling speeds. The impact strength was tested at temperatures between +200 and -180°C, studying also the character of the fracture and the micro-structure of the steel by means of optical and electron microscopes. Evaluation of the tendency to develop temper brittleness was carried out on the basis of the temperature of transition of the steel into the brittle state. The authors arrived at the following conclusions:
1) A partial transformation of austenite in the intermediate range during hardening has practically no influence on the character of separating out of the embritteling intergranular phase during slow cooling of the steel after tempering;
2) the intergranular phase which separates out during slow cooling of the steel after tempering shows less influence on the embrittlement than the orientated acicular

Card 21/29 carbides which form during the intermediate decomposition

of the austenite. Therefore, if products of intermediate decomposition are present in the structure, the fracture of the steel in the case of impact tests will proceed along the grain even if the steel was cooled slowly after tempering and an embrittled phase separated out at the grain boundaries;

3) with increasing temperature of the partial intermediate transformation of austenite (during hardening) and increasing quantities of the products of this transformation, the critical temperatures of brittleness increase both in the case of rapid as well as in the case of slow cooling after tempering. In the first case the increase is more intensive than in the second and, as a result of that, the critical brittleness temperatures are close to each other.

Candidate of Technical Sciences B. N. Arzamasov in his paper "On the Hardenability and Through Hardenability of Engineering Steels During Isothermal Heat Treatment" studied these factors for the steel 30KhGSA by investigating the hardness of the micro-structure and also by

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comparing the cooling curves of the core and of the surface of specimens of various diameters with a thermo-kinetic diagram. Furthermore, the cooling ability was investigated of various hot media based on nitrites and nitrates of sodium and kalium and also of soda lye and of potash lye. The author established that the cooling capacity of the investigated hot media depends on their temperature and does not depend on their composition; with decreasing temperature of the medium, its cooling capacity increases appreciably.

R. P. Radchenko in his paper "On the Selection of the Regime of Heat Treatment of Large Components by Means of Thermo-kinetic Diagrams" gave data on the investigation of the steel 35KhNM of various heats for which thermo-kinetic diagrams were plotted on the basis of dilatometric data for various austenisation temperatures from the inter-critical interval up to Ac_3 + 100°C. He has shown that small quantities of aluminium as an alloying element do have an influence on the hardenability of steel. A

Card 23/29 comparative study was made of the mechanical properties

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along a cross section of a blank of 130 mm dia. (after cooling in oil, in water and through water in oil) with the properties of specimens cooled with various speeds. The following conclusions were arrived at:
1) The products of transformation of the right part of the intermediate range on the thermo-kinetic diagram after high temperature tempering possesses a low impact strength and a low limit of proportionality and the fracture of the specimens has a crystalline structure;
2) if the thermo-kinetic diagram of austenite transformation is available, it is possible to establish the optimum regime of heat treatment (of hardening) of components without testing specimens treated according to various variants, provided that the properties of the structural components and the cooling curve of the core of the component are known;
3) the cooling curves of the component found experimentally for any grade of steel are applicable also for other similar grades of steel.

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Candidate of Technical Sciences B. N. Arzamasov in his paper "Dependence of the Fatigue Limit, the Strength and

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the Plasticity of the Steel 30KhGSA on the Regimes of Isothermal Hardening" investigated the mechanical properties for the purpose of establishing a relation between the fatigue limit and other mechanical characteristics on flat specimens of sheet made of the steel 30KhGSA of a thickness of 2 mm. The specimens were hardened in a hot medium of 250, 300, 350 and 400°C. The duration of heating at these temperatures was such as to obtain the fullest decomposition of the austenite (15 mins, 40 mins, 5 hours and 10 hours respectively). The author concluded that on increasing the temperature of the isothermal hardening from 250 to 450°C under conditions of an as complete as possible decomposition of the austenite, the fatigue limit of 30KhGSA steel increases, in spite of the decrease of the strength and the yield point and also of the breaking strength and the hardness.

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Professor I. N. Bogachev and R. I. Mints in their paper "Combination of Heat Treatment with Oxidation in Melts of Oxidising Agents" investigated the possibility of

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combining hardening or tempering in molten alkalies with oxidation (addition of nitrite and nitrate sodium salts). It was established that the process of oxidation in these media takes place in jumps whereby a transition is observed from the lower oxide types into higher types of oxides and, in addition to oxidation, partial dissolution of the metal takes place. An optimum composition of the medium has been worked out and the treatment time was determined which would ensure obtaining an oxide film which possesses the highest protective capacity. In this case, treatment at 400 to 500°C increases the resistance to corrosion six to sevenfold compared to untreated components and three to fourfold in the case of a treatment temperature of 300°C. Oxidation also increases the wear resistance of cutting tools. The currently applied treatment of tools in a vapour atmosphere can be substituted by treatment in molten oxiding agents.

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I. G. Rivkin in his paper "Influence of Isothermal Treatment on the Strength of Cast and Rolled High Speed

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Steel" drew attention to the fact that a considerable proportion of cutting tools are scrapped due to cracks and not due to natural wear. Therefore, the mechanical properties have been studied of the high speed steel R9 (static compression tests, bending and torsion tests, determination of the impact strength and of the fatigue limit) after various hardening regimes: current type hardening; step-wise hardening in a medium at a temperature of 560°C (15 minutes); isothermal hardening (Variant I) in a medium of a temperature of 250 to 260°C (four hours); isothermal hardening in a medium at 560°C (Variant II, three hours) and transfer into a medium at 250-260°C (three hours); combined isothermal hardening and cooling in a medium of 250-260°C (four hours) followed by transfer to a medium of 560°C (three hours) and cooling again in a medium of 250-260°C (three hours). For all these variants the above treatment was followed by treble tempering for one hour at 560°C. The author concluded that isothermal hardening improves appreciably the mechanical properties of cast and rolled high speed

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tool steels and the most effective proved to be the combined treatment and the treatment according to Variant I. It was established that isothermal hardening increases the service life of the cutting tool.

Main Results of the Conference. There was a discussion relating to the theory of intermediate transformation, the structure and the composition of the products of intermediate transformation as a result of which certain important problems were singled out for further investigation in this field:

a) Investigation of the structure and mechanism of the formation of the α-phase;

b) Investigation of the structure of the steel by electron microscopic and phase analysis;

c) Investigation of the fine structure of the γ-phase (distortion of the crystal lattice, of the size of blocks, etc.) in conjunction with incomplete transformation;

d) Study of the transformation of residual austenite during tempering in the intermediate range;

e) Study of brittleness phenomena.

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The delegates of the conference pointed out the practical value of thermo-kinetic diagrams for working out heat treatment regimes of various components and the necessity of more thorough investigations in various organisations. It was pointed out that isothermal hardening is successfully applied for increasing the structural strength of important components in engineering and also the strength and service life of tools made of high speed and other tool steels. It was also pointed out that hardening in hot media has certain technological advantages, e.g. reduction of the distortion and of the residual stresses, shortening of the heat treatment cycle, possibility of obtaining a bright and an oxidised surface. The necessity was stressed of wider utilisation of progressive methods of heat treatment.
(Note: This is a complete translation and not an abstract).

AVAILABLE: Library of Congress.

Card 29/29 1. Conferences-Metallurgical-Yaroslavl' 2. Steel-Hardening-USSR
3. Austenitic steels-Transformations

SKOTNIKOV, V. V. Cand Tech Sci -- (diss) "Study of the structural forms of products of intermediate conversion and their effect upon the tempering brittleness of construction steels." Mos, Dept of Sci Tech Information, 1959 18 pp (State Committee of Council of Ministers USSR on Automation and Machine Building. Central Sci Res Inst of Technology and Machine Building TsNIITMash), 150 copies. On the cover only the heading. (KL, 50-59, 127)

S/117/60/000/011/033/035
A004/A001

AUTHOR: Skotnikov, V. V., Candidate of Technical Sciences

TITLE: New Developments in the Work of the Central Plant Laboratory

PERIODICAL: Mashinostroitel', 1960, No. 11, p. 32

TEXT: The author reports on the achievements of the Tsentral'naya laboratoriya Yaroslavskogo motornogo zavoda (Central Laboratory of the Yaroslavl' Engine Plant) in the fields of foundry practice, heat treatment, substitution of scarce materials etc., during the last years. Instead of the 12ХН3А (12KhN3A) grade steel used formerly in the production of engine parts, which did not warrant the necessary surface hardness after cementation, the Laboratory developed the 15ХГНТА (15KhGNTA) grade steel, which, containing only half of the nickel of the 12KhN3A grade, possesses improved technological properties, making it possible to harden machine parts immediately after cementation. Thus the Plant succeeded in introducing a mechanized cementation process with immediate subsequent hardening in muffle furnaces, as a result of which savings of 1 million rubles per year could be achieved. By developing h-f current hardening conditions, the Laboratory succeeded in many cases to substitute bulk hardening by h-f surface hardening, and,

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A004/A001

New Developments in the Work of the Central Plant Laboratory

consequently, alloyed steels could be replaced by the 45 grade carbon steel. However, the Laboratory has not succeeded hitherto to use induction heating for components of complex configuration, so that other steel grades had to be employed. Thus the piston pins formerly made of 12KhN3A steel are now manufactured of the 55C2 (55S2) grade steel which is subjected to preliminary heat treatment to increase the general strength of this component. The Central Laboratory is also carrying out investigations in the field of powder metallurgy. Test series of engine parts made of sintered iron powder with copper and graphite additions are undergoing stand and service tests in serial and new four-stroke diesel engines. In the course of these works a new and efficient way of protecting the parts from oxidation and decarbonization was found. Moreover, the Central Laboratory carried out extensive work to investigate the causes of structural non-homogeneity of cast pistons made of malleable cast iron, as a result of which a duplex process, using cupola and electric furnaces, was introduced to obtain a homogeneous structure of the castings. Based on experimental work, the Plant started to cast bushings in chill molds. In connection with the development of new four-stroke diesel engines, the Laboratory developed new materials and a new technology for the casting of pistons of a high-silicon aluminum alloy and piston pins of tungsten-alloyed gray

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New Developments in the Work of the Central Plant Laboratory

cast iron. The author points out that it was the first time this aluminum alloy (with a silicon-content of more than 20%) was used in the Soviet Union. Furthermore, the Central Laboratory carried out investigation work of great importance for the national economy in introducing cast iron crank shafts and cam shafts which are to replace rolled steel shafts. At present two magnesium cast iron crank shafts are undergoing service tests in serial 2M3-204 (YaMZ-204) diesel engines. In 1957 the chemists of the Central Laboratory developed new cutting fluids on the base of mineral oils, replacing castor oil which is in very short supply. The total savings realized as a result of this work amounted to some 180,000 rubles.

3 SKOTNIKOV, V.V.

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B019/B056

26.2311

AUTHORS: Klukhikh, V. A., Zavarin, D. Ye., Komar, Ye. G., Larionov, B. A., Monoszon, N. A., Skotnikov, V. V., and Stolov, A. M.

TITLE: An Investigation of the Electric and Magnetic Discharge Characteristics of "Al'fa" Research Installation

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 12, pp. 1404 - 1414

TEXT: The authors studied the electric and magnetic discharge characteristics under single-period conditions. The total discharge current is measured by means of a Rogovskiy girdle, having the shape of a spiral made of nichrome. The signal was integrated in an RC element, fed to one of the two channels of a double-beam oscilloscope. In a similar manner, the field strength of the rotational field was measured. According to voltage and current oscillograms the mean resistance of the plasma column and the energy generated in it were calculated, a constant inductivity of the discharge coil being assumed. Accordingly, the

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discharge column has an inductivity of $(2-3)\cdot10^{-6}$ henries. Furthermore, an electron- and ion temperature of about $40\cdot10^{6}$ °K was obtained with a pressure of $2\cdot10^{-4}$ mm Hg and a discharge energy of about 100 kilojoules. The distribution of the magnetic field over the cross section of the chamber was determined with probes. The results obtained are graphically represented in Fig.9. It was found that the electric current lines in the discharge are of helical character similar to the shape of the magnetic field, which leads to an increase of the longitudinal magnetic flux in the chamber. In order to conserve current constancy, it is necessary that rotational currents be induced in the walls of the outer chamber. This leads to a change in the field direction of the longitudinal magnetic field in the exterior discharge ranges and in the space between outer and inner chamber. The already mentioned increase of the field strength of the longitudinal magnetic field corresponds to a maximum azimuthal current in the plasma of $(2-2.5)\cdot10^{6}$ a. Exactly this current must be induced in the walls of

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the outer chamber. From an analysis of the distribution curves of the magnetic fields and the discharge currents, it is found that the density vector of the electric current has a direction over the total discharge cross section, which nearly agrees with the direction of the magnetic field. Further, some experimental conditions were determined, under which the discharge current in the outer regions of discharge has a direction inverse to the discharge current in the inner regions. There are 11 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute of Electrophysical Apparatus)

SUBMITTED: July 15, 1960

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Card 3/3

AMOSOV, V.N.; GRUZDOV, P.Ya.; DMITRIYEV, P.S.; YELISEYEV, M.M.; KIRILLOV, M.I.; SKOTNIKOV, V.V.; YEVSEYEV, A.S.

High-strength cast iron containing sulfur and prospects for its use in the automobile industry. Avt. prom. no. 1:34-37 Ja '61. (MIRA 14:4)

1. Yaroslavskiy motornyy zavod, i Nauchno-issledovatel'skiy tekhnologicheskiy institut avtomobil'noy promyshlennosti.
(Cast iron) (Automobiles--Materials)

VILLEVAL'DE, N.D.; LYSANOV, Yu.V.; SKOTNIKOV, V.V.; KHLEBNIKOV, K.K.; YUDIN, M.F.

The 50 Mev. betatron at the All-Union Scientific Research Institute of Meteorology. Prib. i tekh. eksp. 10 no.1:38-43 Ja-F '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii.

AMOSOV, V.N.; POTANIN, S.L.; SKOTNIKOV, V.V., kand.tekhn.nauk

Using hypereutectic alloyed Silumin for the pistons of four-stroke diesel engines. Avt.prom. 31 no.7:37-39 Jl '65. (MIRA 18:8)

1. Yaroslavskiy motornyy zavod.

137-1957-12-25287

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 333 (USSR)

AUTHORS: Skotnikov, V. Ya., Mart'yanova, K. D.

TITLE: Domestic Non-retentive Alloys for Pulse Technique and High-frequency Telephony (Otechestvennyye magnitomyagkiye splavy dlya impul'snoy tekhniki i vysokochastotnoy telefonii)

PERIODICAL: Sb. tr. Tsentr. n.-i. in-t. chernoy metallurgii, 1956, Nr 15, pp 397-424

ABSTRACT: A 50-40 percent Fe-Ni alloy was utilized as the base in the development of a number of alloys possessing high electrical resistance, high pulse permeability, and small magnetic retentivity; these alloys were manufactured in the form of a strip up to 0.02 mm thick. Characteristics of the alloys are given, as well as the technology of their manufacture, heat treatment of specimens and of products, and methods for electrical insulation between windings.

P. N.

1. Iron-nickel alloys-Development 2. Iron-nickel alloys-Applications 3. Iron-nickel alloys-Properties

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ARNOL'D, R.R.; KALANTAROVA, M.S.; SKOTNIKOV, V.Ya.

Study of different types of magnetic recording heads with cores made of new magnetic materials. Trudy VNAIZ no.7:18-34 '60. (MIRA 14:4)

(Magnetic recorders and recording) (Cores (Electricity))

27413

S/187/60/000/012/002/005
D035/D113

9,7910

AUTHORS: Arnol'd, R.R.; Kalantarova, M.S.; Skotnikov, V.Ya.

TITLE: The use of new soft magnetic materials in magnetic heads

PERIODICAL: Tekhnika kino i televideniya, 1960, no. 12, 13-20

TEXT: The authors discuss the possibility of using new soft magnetic materials in the magnetic head cores of sound recorders. Information is given on new alloys developed at the Institut pretsizionnykh splavov TsNIIChM (Institute of Precision Alloys of the TsNIIChM) , and on their application which was investigated at the Institut zvukozapisi (Institute of Sound Recording). The main purpose of the investigations was to develop alloys with an increased wear resistance at a higher specific electric resistance and a higher initial permeability. Low-nickel (starting with 35-40% Ni) and high-nickel (starting with 79-80% Ni) alloys with various components, including some strengthening and carbide-forming elements together with an increased carbon content, were studied and technological methods for the production of new ferroaluminum alloys were investigated; these alloys known

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The use of new...

of the quality factor, the shunt coefficient (ratio between the useful magnetic flux through the head and the magnetic flux of the tape), and the parallel loss resistance. The dependence of the initial electroacoustic parameters of the heads on mechanical effects occurring during the pressing-out and gluing of the tempered plates into packets was measured on a ballistic device. The results of these magnetic measurements (change in magnetic properties) are given. There are 3 figures, 5 tables, 3 Soviet-bloc and 3 non-Soviet-bloc references. The three references to the English-language publications read as follows: Rettinger, M., Magnetic head wear investigation, JSMPTE, 1955, 64, no. 4, 179-183; Lufcy, E.W., Heath, W.T., Alloy improves magnetic recording, Electronics, 1955, 28, no. 6, 137-139; Nachman, J.F., Buehler, W.J., 16 percent aluminum-iron alloy cold rolled in the order-disorder temperature range, J. Appl. Phys., 1954, 25, no. 3, 307-313.

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S/137/62/000/004/124/201
A060/A101

Alloys for the ores of magnetic amplifiers

alloys 80NKhS, 79NM, and 79NMA with thickness 0.05 mm are utilized in modulators operating at a frequency of 1,000 - 3,000 cps.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 2/2

KUZNETSOV, Nikolay Dmitriyevich; SKOTNIKOV, Vladimir Yevgen'yevich; ALTUF'YEVA, A., redaktor izdatel'stva; ZHOROV, D.M., tekhnicheskiy redaktor

[Manual for individuals building their own homes] Posobie dlia individual'nogo zastroishchika. Moskva, Izd-vo Ministerstva Kommunal'nogo khoziaistva RSFSR, 1956. 155 p. (MLRA 10:2)
(Dwellings)

KUZNETSOV, Nikolay Dmitriyevich; SKOTNIKOV, V.Ye.

[Manual for individuals building their own homes] Posobie dlia individual'nogo zastroishchika. Izd.3., ispr. i dop. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1958. 210 p. (MIRA 13:7)
(Dwellings)

SKOTNIKOV, Yu.A.

BURYKH, Ye.B; KOLOBOV, V.M.; SKOTNIKOV, Yu.A.; TIKHONOVICH, S.S.; SHAPOVALOV: T.I.; KONOVALOVA, K.A., redaktor; RAZINKOV, P., redaktor; LIL'YE, A., tekhnicheskiy redaktor

[Memorable places in Moscow province; brief guide] Pamiatnye mesta Moskovskoy oblasti. Kratkii putevoditel'. Moskva, Izd-vo "Moskovskii rabochii", 1954. 352 p. (MLRA 7:10)

1. Direktor Moskovskogo oblastnogo krayevedcheskogo muzeya (for Konovalova)
(Moscow Province--Description and travel)

BURYKH, Ye.B.; KOLOBOV, V.M.; SKOTNIKOV, Yu.A.; TIKHONOVICH, S.S.; SHEPOVALOV, T.I.; KONOVALOVA, K.A., redaktor; RODIONOV, Yu., redaktor; LIL'YE, A., tekhnicheskiy redaktor

[Memorable places in Moscow Province] Pamiatnye mesta Moskovskoi oblasti; kratkii putevoditel'. Izd. 2-e, dop. i perer. Sost. E.B. Burykh i dr. [Moskva] Moskovskii rabochii, 1956. 606 p. (MLRA 9:7)

1. Moscow. Oblastnoy krayevedcheskiy muzey. 2. Zamestitel' predsedatelya Moskovskogo oblastnogo obshchestva krayevedeniya (for Konovalova)
(Moscow Province--Historic houses, etc.)

SKOTNIKOV, Yu.A.

BOGDANOVA, M.V.; KORZHNEVSKAYA, T.I.; KRASNOV, V.I.; KUZMIN, N.F.; MEL'CHIN, A.I.; YURKEVICH, L.N.; NIKONOVA, T.K.; RYBKINA, V.A.; SKOTNIKOV, Yu.A.; LUFEROV, A.U., red.; KALACHEV, S.G., tekhn.red.; STEPANOVA, M.N., tekhn.red.

[Guarding the Soviet fatherland, 1918-1958] Na strazhe Sovetskoy otchizny, 1918-1958. Moskva, Voen.izd-vo M-va obor. SSSR, 1958. 1 v. (chiefly illus.) (MIRA 11:4)

(Russia—Armed forces)

BURYKH, Ye.B.; D'YAKONOV, M.V.; KOLOBOVA, M.I. [deceased]; KOLOBOV, V.M.; KONOVALOVA, K.A.; POPADEYKIN, V.I.; SKOTNIKOV, Yu.A.; TIKHONOVICH, S.S.; SHEPOVALOV, T.I. Prinimali uchastiye YUN'YEVA, N.P.; POLYAK, Ye.V. SULTANOVA, N., red.; YAKOVLEVA, Ye., tekhn.red.

[Memorable places in Moscow Province; a concise guidebook] Pamiatnye mesta Moskovskoi oblasti; kratkii putevoditel'. Izd.3., dop. i perer. Sost.E.B.Burykh i dr. Moskva, Mosk.rabochii, 1960. 734 p. (MIRA 14:2)

1. Moscow. Oblastnoy krayevedcheskiy muzey. 2. Zamestitel' predsedatelya Moskovskogo oblastnogo obshchestva krayevedeniya (for Konovalova).
(Moscow Province--Guidebooks)

SKOTNIKOVA, G.A.

Treatment of periodontitis with streptomycin and biomycin.
Stomatologiia 35 no.3:14-16 My-Je '56. (MLRA 9:9)

1. Iz stomatologicheskogo otdeleniya (nachal'nik A.I.Rybakov) Glavnogo voyennogo gospitalya imeni N.N.Burdenko (nachal'nik I.N. Kurgannikov)
(MOUTH--DISEASES) (STREPTOMYCIN) (AUREOMYCIN)

MOLODKIN, A.K.; SKOTNIKOVA, G.A.

Cesium octarhodanothorate $Cs_4[Th(CNS)_8] \cdot 2H_2O$. Zhur.neorg.khim. 7 no.7: 1548-1551 Jl '62. (MIRA 16:3)
(Cesium compounds) (Thorium compounds) (Thiocyanates)

MOLODKIN, A.K.; SKOTNIKOVA, G.A.

Thermogravimetric study of thorium thiocyanates. Zhur. neorg. khim. 8 no.9:2080-2087 S '63. (MIRA 16:10)

MOLODKIN, A.K., SKOTNIKOVA, G.A.

Molecular refractions of some thorium thiocyanates. Zhur. neorg. khim. 8 no.10:2240-2247 O '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR.

(Thorium compounds) (Thiocyanates) (Refractometry)

MOLODKIN, A.K.; SKOTNIKOVA, G.A.

Thiocyanate compounds of thorium. Zhur.neorg.khim. 9 no.1:60-69 Ja '64. (MIRA 17:2)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova AN SSSR.

MOLODKIN, A.K.; IVANOVA, O.M.; SKOTNIKOVA, G.A.

Mixed acyl complexes of thorium. Zhur. neorg. khim. 9 no.2:295-306 F'64. (MIRA 17:2)

MOLODKIN, A.K.; SKOTNIKOVA, G.A.

Mixed carbonate-oxalate compounds of thorium. Zhur. neorg. khim. 9 no.3:555-561 Mr '64. (MIRA 17:3)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR.

MOLODKIN, A.K.; SKOTNIKOVA, G.A.

Synthesis of $Na_2[Th(NCS)_5OH(H_2O)_{(2-3)}]$. Zhur. neorg. khim. 9 no.6:1493-1494 Je '63 (MIRA 17:8)

MOLODKIN, A.K.; SKOTNIKOVA, G.A.; ARUTYUNYAN, E.G.

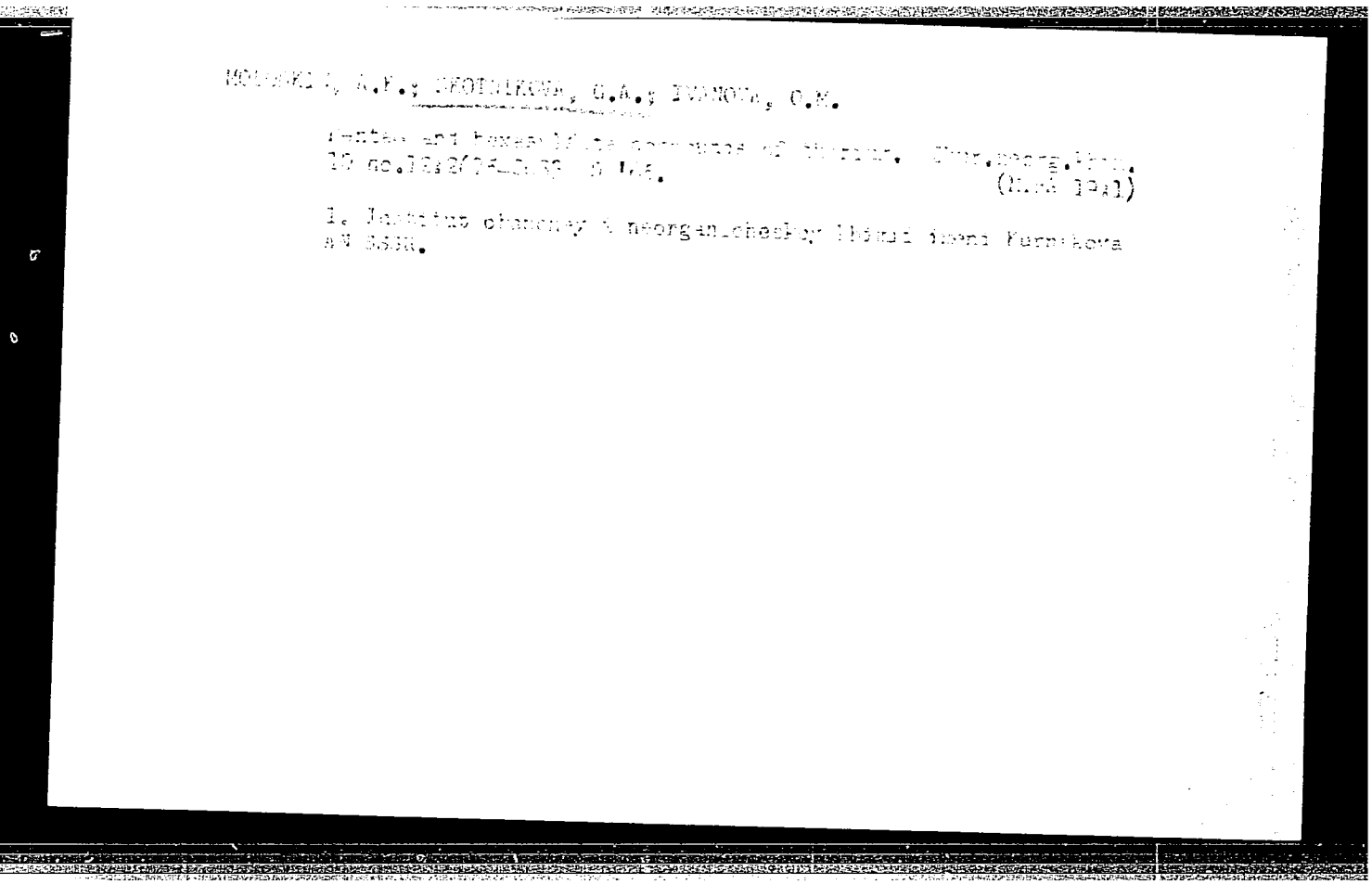
Guanidinium sodium thorium trisulfate. Zhur. neorg. khim. 9 no.12:2705-2709 D '64. (MIRA 18:2)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR.

MOLODKIN, A.K.; SKOTNIKOVA, G.A.; IVANOVA, O.M.

Tetrasulfate compounds of Th. Zhur.neorg.khim. 10 no.11:2441-2448 N '65. (MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova AN SSSR. Submitted July 25, 1964.



SKOTNIKOVA, K.K.; KOROL'KOVA, Ye.M., master

Experience in achieving waste reduction. Tekst.prom. 19 no.4: 76-77 Ap '59. (MIRA 12:6)

1. Smennyy inzhener Sosnevskoy otdelochnoy fabriki imeni Samoylova (for Skotnikova). Otdel tekhnicheskogo kontrolya Sosnevskoy otdelochnoy fabriki imeni Samoylova (for Korol'kova).
(Textile fabrics) (Clothing industry)

IZMAYLOVA, Yekaterina Vasil'yevna; SKOTNIKOVA, N.B., red.

[Mechanization of statistical accounts in the Ministry of Assembly and Special Construction Operations of the U.S S.R. Report at the seminar "Practice in using computer and organizational techniques in construction" conducted by the Institute of Standard and Experimental Design and Technological Research on May 12-16, 1964] Mekhanizatsiia statisticheskoi otchetnosti v Minspetsstroe USSR. Doklad na seminare "Opyt primeneniia vychislitel'noi i organizatsionnoi tekhniki v stroitel'stve," provedennom institutom Giprotis 12-16 maia 1964 g. Moskva, Giprotis, 1964. 6 p. (MIRA 18:8)

AVDEYEV, Yu.A.; NIKOLAYEVA, A.P.; SKOTNIKOVA, N.B., red.

[Analysis of graphic work schedules without using electronic computers. Report at the seminar "Practice in using computer and organizational techniques in construction" conducted by the Institute of Standard and Experimental Design and Technological Research on May 12-16, 1964] Analiz setevykh grafikov bez primeneniia EVM. Doklad na seminare "Opyt primeneniia vychislitel'noi i organizatsionnoi tekhniki v stroitel'stve," provedennom institutom Giprotis 12-16 maia 1964 g. Moskva, Giprotis, 1964. 7 p. (MIRA 18:8)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR (for Avdeyev, Nikolayeva).

GURVICH, Emmanuil Arkad'yevich; SKOTNIKOVA, L.B., red.

'Organization of dispatching services according to the systems of construction organizations of the cities of Ul'yanovsk and Novo-Ul'yanovsk. Report at the seminar "Practice in using computer and organizational techniques in construction," conducted by the Institute of Standard and Experimental Design and Technological Research on May [illegible], 1964] Organizatsiia dispetcherskikh sluzhb na opyte stroitel'nykh organizatsii g. Ul'ianovska i g. Novo-Ul'ianovska. Doklad na seminare "Opyt primeneniia vychislitel'noi i organizatsionnoi tekhniki v stroitel'stve," provedennom institutom Giprotis 12-16 maia 1964 g. Moskva, Giprotis, 1964. 21 p. (MIRA 18:8)

1. Glavnyy spetsialist otdela organizatsii stroitel'nogo proizvodstva Nauchno-issledovatel'skogo instituta organizatsii tekhnicheskoy pomoshchi Gosstroya SSSR (for Gurvich).

GUSEV, Y[illegible] SOTNIKOVA, M.B., red.

[Practice in using network planning: Report at the seminar "Practice in using computer and organizational techniques in construction," conducted by the Institute of Standard and Experimental Design and Technological Research on May 12-16, 1964] Opyt primeneniia setevogo planirovaniia. Doklad na [illegible] primeneniia vychislitel'noi i organizatsionnoi [illegible] v stroitel'stve," provedennom Institutom Giprotis 12-16 maia 1964 g. Moskva, Giprotis, 1964. 27 p. (MIRA 18:7)

SKOTNIKOVA, M.B.

Survey of the magazine "Ekonomika stroitel'stva" during 1964 (nos. 1-6). Vych. i org.tekh. v stroi. i proekt. no.3:91-92 '64. (MIRA 18:10)

SKOTNIKOVA, M.B.

Cybernetics and production management. Vych. i org.tekh. v stroi. i proek. no.1:100-101 '64. (MIRA 18:10)

VORONITSYN, K.I.; KESSEL', I.V.; SKOTNIKOVA, N.V., red.;

[Central Scientific Research Institute on Mechanization and the Use of Power in Lumbering]TSentral'nyi nauchno-issledovatel'skiy institut mekhanizatsii i energetiki lesnoi promyshlennosti. Moskva, 1962. 8 p. (MIRA 16:1)

1. Khimki. TSentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i energetiki lesnoy promyshlennosti.
(Lumbering--Machinery)

MATYTSIN, N.; SKOTNIKOVA, O.; CHICHERINA, A.; LEVINA, L.

Bonus system for hourly workers in the sausage industry.
Mias. ind. SSSR 31 no.4:43-46 '60. (MIRA 14:7)

1. Moskovskiy myasokombinat (for Matytsin, Skotnikova, Chicherina). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti (for Levina).
(Moscow--Meat industry)
(Bonus system)

LEVINA, L.; SKOTNIKOVA, O.; CHICHERINA, A.; STOL'MAKOVÀ, M.

Standard norms in the meat industry. Sots. trud 7 no.12:90-94 D '62.
(MIRA 16:2)
(Meat industry—Production standards)

SKOTNOV, I.G., kapitan dizel'elektricheskogo paroma (g. Kerch')

Profitability of ferryboat haulage on the Kamysh-Burun- "Azovstal'" line. Zhel.dor.transp. 40 no.10:81 O '58. (MIRA 11:12)
(Crimea--Train ferries)

SKOTOV, Shaya Bentsionovich

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FINANSIROVANIYE I KREDITOVANIYE V UGOL'NOY PROMYSHLENNOSTI SSSR. (FINANCING AND CREDITING IN CONNECTION WITH THE COAL INDUSTRY IN THE USSR) LENNINGRAD, UGLETEKHIZDAT, 1956. 303 p. DIAGRS., TABLES. "LITERATURA": p. 301

SAXL, O.; SKOUPA, M.

A case of kwashiorkor in a 15-month-old infant. Cas.lek.cesk 100 no.7:215-218 17 F '61.

1. Vnitrni oddeleni Krajske detske nemocnice v Brne, prednosta doc. MUDr. Otto Saxl.

(KWASHIORKOR case reports)

SAXL, O.; SKOUPA, M.; SKOUPY, M.

Side-effects of drugs. II. Corticosteroids. Cas. lek. cesk. 102 no.25:Lek. ved. zahr. 6:110-112 21 Je '63.

1. Vnitrni oddeleni fakultni detske nemocnice v Brne, vedouci doc. dr. O. Saxl.

(ADRENAL CORTEX HORMONES) (CORTISONE TOXICOLOGY)
(HYDROCORTISONE TOXICOLOGY) (PREDNISONE TOXICOLOGY)
(WATER-ELECTROLYTE BALANCE)

SAXL, O.; SKOUPA, M.; SKOUPY, M.

Side-effects of drugs. III. Sulfonamides. Cas. lek. cesk. 102 no.25:Lek. ved. zahr. 6:113-115 21 Je '63.

1. Vnitrni oddeleni fakultni detske nemocnice v Brne, vedouci doc. dr. O. Saxl.
(SULFONAMIDES) (DRUG ALLERGY)
(METHEMOGLOBINEMIA) (INFANT, NEWBORN, DISEASES)
(ABNORMALITIES, DRUG-INDUCED)

SAXL, O.; SKOUPA, M.; ZEMANEK, R.

Roentgenological findings in Schonlein-Henoch syndrome. Cesk. rentgen. 17 no.4:246-249 Jl '63.

1. Vnitrni oddeleni detske fakultni nemocnice v Brne-Cernych Polich vedouci doc. dr. O. Saxl. Rentgenologicke oddeleni detske fakultni nemocnice v Brne-Cernych Polich, vedouci dr. R. Zemanek.
(PURPURA) (INFANT, NEWBORN, DISEASES)
(ABDOMEN, ACUTE) (DIAGNOSIS, DIFFERENTIAL)

SAXL, O. ; SKOUPA, M.

Protein - losing enteropathy. Cas. lek. cesk. 103 no.24:649-655 12 Je'64

1. Vyzkumny ustav pediatricky v Brne, klinicka casť; reditel: prof. dr. Z. Brunecky.

SAXL, O.; SKOUPA, M.; SKOUPY, M.

Side effects of drugs. Pt.5. Cas. lek. cesk. 104 no.31: 156-160 30 Jl '65.

1. Klinicke oddeleni Vyzkumneho ustavu pediatrickeho v Brne (reditel prof. dr. Z. Brunecky, CSc.).

CZECHOSLOVAKIA

SAXL, O.; SKOUPA, M.; SKOUPY, M.; Pediatric Research Institute (Vyzkumny Ustav Pediatricky), Brno, Director (Reditel) Prof Dr Z. BRZEZINY, In-Patient Department (Luzkova Cast), Head (Vedouci) Docent Dr O. SAXL.

"Side Effects of Drugs. VII. Analgesics, Antipyretics, Hypnotics, and Antirheumatics."

Prague, Casopis Lekaru Ceskych, Vol 105, No 45, 11 Nov 66, Lekarska Veda v Zahranici, pp 205 - 210

Abstract: The importance of the determination of allergic reactions of patients to the drugs discussed is described. Normally these drugs are very harmless, and may induce looser medical control than is needed. Allergy caused by too high doses of the drugs is discussed. Immunoallergic cases encountered by the authors are described. 160 Western, 4 Czech, 3 Russian, 3 Polish, 1 Hungarian reference.

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