AKULOV, I.I.; BARZHIN, V.Ya.; VALITOV, R.A.; GARMASH, Ye.N.; KUCHIN, L.F.; NAYDENOV, V.Z.; PUTSENKO, V.V.; SEMENOVSKIY, V.K.; SIMONOV, Yu.L.; TARASOV, V.L.; TEREKHOV, N.K.; SHEVYRTALOV, Yu.B.; YUNDENKO, I.N.; CHISTYAKOV, N.I., otv. red.; KOKOSOV, L.V., red.; TRISHINA, L.A., tekhn.red.

[Theory and design of principal radio circuits using transistors] Teoriia i raschet osnovnykh radiotekhnicheskikh skhem na tranzistorakh. [By] I.I.Akulov i dr. Moskva, Sviaz'izdat, 1963. 452 p. (MIRA 16:8)

(Transistor circuits) (Electronic circuits)

AKULOV, I.I.; BARZHIN, V.Ya.; VALITOV, R.A.; GARMASH, Ye.N.; KUCHIN, L.F.; NAYDEROV, V.Z.; PUTSENKO, V.V.; SEMENOVSKIY, V.K.; SIMONOV, Yu.L.; TARASOV, V.L.; TEREKHOV, N.K.; SHEVYRTALOV, Yu.B.; YUNDENKO, I.N.; CHISTYAKOV, N.I., prof., otv. red.; KOKOSOV, L.V., red.

[Theory and design of basic radio circuits using transistors] Teoriia i raschet osnovnykh radiotekhnicheskikh skhem na tranzistorakh. Moskva, Sviaz', 1964. 454 p. (MIRA 18:8)

BARZILOV, Vladimir Mikhaylovich; AFANAS'YEV, V.V., red.; ZHITNIKOVA, O.S., tekhn. red.

[High-voltage power transformers] Vysokovol'tnye transformatory toka. Izd.2., perer. i dop. Moskva, Gosenergoizdat, 1962. 247 p. (Electric transformers) (MIRA 15:7)

BARZILOVICH, I.I.

In close cooperation with scientific and planning organizations.
Ugol' Ukr. 2 no.10:13-16 O '58. (MIRA 12:1)

1. Glavnyy insh. Konotopskogo elektromekhanicheskogo zavoda "Krasnyy metallist."
(Coal mines and mining--Research) (Automatic control)

BARZILOV, P. P.

USSR/ Engineering - Ventilation equipment

Card 1/1 : Pub. 71 - 9/17

Authors : Barzilov, P. P.

Title : Equipment of a new design for remote-control and operation of ventilators

Periodical : Mech. trud. rab. [illegible], [illegible]-31, July 19[illegible]

Abstract : A detailed description is presented of a new apparatus for remote-control of mine shaft ventilators. The apparatus was designed by [illegible], [illegible], and [illegible], in cooperation with employees of the Donets Industrial Institute. Diagrams and illustrations, depicting the installation and operation of the above mentioned [illegible], are presented.

Institution : .....

Submitted : .....

BARZILOVICH, P.P., inzhener., laureat Stalinskoy premii; ZAYTSEV, V.I., inzhener

New automatic control board. Mekh.trud.rab. 7 no.5:13-15 My '53.
(Automatic control)

SOV/112-58-3-4521

8(0)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1958, Nr 3, p 161 (USSR)

AUTHOR: Barzilovich, P. P.

TITLE: Equipment Manufactured by "Krasnyy Metallist" Plant
(Apparatura vypuskayemaya zavodom "Krasnyy metallist")

PERIODICAL: V sb.: Avtomatizatsiya proizvod. protsessov v ugol'n. prom-sti. M., Ugletekhizdat, 1956, pp 5-26

ABSTRACT: Ratings are given, and purposes indicated of the following equipment for automation of mining operations manufactured by the plant: (1) dispatcher's supervisory equipment; (2) equipment for automating low-voltage (AVD-3) and high-voltage (AVV-1 and AVV-3) drainage outfits; (3) equipment for remote supervisory control of the main ventilating fans (AVGP-1 and AVGP-1A); (4) equipment for automatic remote control of band-conveyer lines (according to the VUGI scheme); (5) type PA starting units for remote control of electric drilling machines; (6) AZS-1 equipment for heading face signaling; (7) an

Card 1/2

SOV/112-58-3-4521

8(0)

Equipment Manufactured by "Krasnyy Metallist" Plant

electromagnetic loading regulator for the "Donbass-2" Combine (EMR-2); (8) equipment for hydrocontrol of the feed in the Combine (MPA-15); (9) automatic methane indicator IM-2; (10) equipment for remote control of haulage winches; (11) shaft signaling for sinking the pits (SES-1); (12) spark-proof telephone equipment for sinking the pits (TPI-1). Advantages and disadvantages of the equipment are noted; results of laboratory and industrial tests of some specimens of the new equipment are reported. Illustrations: 8.

S.A.P.

Card 2/2

SHCHERBAN', A.N.; FURMAN, N.I., inzhener; ZAYTSEV, V.I., inzhener; ERENBURG, I.I., inzhener; BARZILOVICH, P.P., inzhener.

Automatic continuous duty methane testers. Bezop.truda v prom. 1 no.8:25-29 Ag '57. (MLRA 10:8)

1.Deystvitel'nyy chlen AN USSR (for Shcherban') 2.Institut gornogo dela AN USSR (for Shcherban', Furman) 3. Zavod "Krasnyy metallist" (for Zaytsev, Erenburg) 4.Glavukruglemash (for Barsilovich) (Methane) (Gas detectors)

BARZILOVICH, Vladimir Mikhaylovich; AFANAS'YEV, V.V., redaktor;
ZABRODINA, A.A., tekhnicheskiy redaktor

[High voltage transformers] Vysokovol85nye transformatory toka.
Moskva, Gos. energ. izd-vo 1956. 167 p. (MLRA 9:9)
(Electric transformers)

AUTHORS: Gavurina, R.K. (Candidate of Technical Science), Medvedeva, P.A., Yanovskaya, Sh.G., Shklyar, B.N., Dobrer, Ye.K. and Barzilovich, V.M. (Engineers)

TITLE: Cast Insulation ~~based~~ on Cold-hardening Unsaturated Polyester Resins (Litaya izolyatsiya na osnove nenasyshchennykh poliefirnykh smol kholodnogo otverzhdeniya)

PERIODICAL: Vestnik Elektropromyshlennosti,1958,Nr 8,pp 6-10 (USSR)

ABSTRACT: This article describes work on cast insulation made of unsaturated polyester resins. The manufacture of the resins is briefly described. Reference is made to foreign work on the application of these resins. Soviet resins type KGMS were described in Vestnik Elektropromyshlennosti, 1956, Nr 2. The authors developed and tested casting compounds based on cold-hardening unsaturated polyester resins, and containing quartz dust as a filler. The main technical characteristics of compounds grades AF and F, which were found most suitable for cast insulation, are given in Table 1. Compound AF has the higher strength but the lower resistance to water. The electrical characteristics of the compounds determined on sheets 2 - 4 mm thick

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Cast-insulation based on Cold-hardening Unsaturated Polyester Resins

are displayed in Table 2. Both materials are of high electric strength, but a high dielectric loss at 80°C limits their field of application. Similar sheets were used in determining the influence of moisture on the electrical properties, and the change in power-factor on exposure to humid atmosphere is shown in Fig 1. The casting properties and general behaviour of the compound were tested by incorporating it in current-transformers of type TCh-2, for 2 kV, and TVLD-10, for 10 kV, as illustrated in Figs 2 and 3 respectively. The first of these was developed by Engineers V.M. Barzilovich and S.I. Tamarchina and the second by Engineer N.I. Bachurin. The casting procedure was the same for both resins, using open moulds. A graph of the temperature in the thickness of the insulation of current-transformer type TVLD-10 (insulation weight 5 kg) during the process of hardening of the compound is shown in Fig 4. Even in the thickest layers of insulation the temperature-rise did not exceed 10 - 12°; thermal and shrinkage stresses are therefore negligible. Test results on current-transformers insulated

Cast-insulation based on Cold-hardening Unsaturated Polyester Resins

compound AF are given in Fig 3. After prolonged exposure to high humidity, the insulation resistance of current-transformer type TVLD-10 is reduced but still remains fairly high. Current-transformer type TCh2 was tested for resistance to frost at -50°C, and also for resistance to shock and vibration. The results were satisfactory. Curves of insulation power-factor as functions of voltage and temperature measured on current transformers type TVLD-10 are given in Figs 5 and 6. The results obtained show that the electrical properties of polyester insulation are satisfactory for indoor electrical equipment for voltages of 0.5 - 3 kV.

There are 3 tables, 6 figures, and 9 references, 4 of which are Soviet, 4 English and 1 German.

SUBMITTED: March 10, 1958

1. Electric insulation--Processing 2. Electric insulation--Materials
3. Resins--Applications

Card 3/3

KOCHO, V.S.; BARZILOVICH, V.S.; LYADOV, K.P. Prinimali uchastiye: MRYKHINA, V.I., inzh.; OMEL'CHENKO, T.Ye., tekhnik; SHAKARIMOV, Yu., student; YASTOCHKIN, A.I., student; ULANOVSKAYA, L.V., student

Investigating the operation of continuous furnaces with a rolling hearth. Stal' 24 no.2: 177-179 F '64. (MIRA 17:9)

1. Kiyevskiy politekhnicheskiy institut i Kommunarskiy metallurgicheskiy zavod.

VASIL'YEV, V.Yu; BARZILOVICH, V.S.

Surface energy and process of cast iron inoculation. Nauch.trudy Inst.mash. i sel'khoz.mekh. AN URSR 4:34-50 '54. (MIRA 9:9)
(Cast iron)

AUTHOR: Barsilovich, V. S.

8/032/60/036/03/037/064
B010/B117

TITLE: A Device to Measure the Surface Tension of Molten Metals

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 36, Nr 3, pp 346-348 (USSR)

TEXT: Maximum pressure in a bubble (Refs 1-5) is determined in order to measure the surface tension of molten steel and cast iron. The calculations are considerably simplified if maximum pressure of the growing bubble is determined on the circumference of the cross section of the capillary tube so that the diameter of curvature of the bubble is equal to the outside diameter of the capillary tube. Nevertheless, with larger diameters of the capillary tube, the fact has to be considered that the surface of the bubble is not spherical. For calculations, tables compiled on the basis of the capillarity equation (Ref 1) have to be used. A device has been developed (Fig 2) which makes it possible to determine maximum pressure of the growing bubble on both the inner and the outer circumferences of the capillary tube. A description of the device as well as of its performance is given. The pressure change is recorded with a diaphragm through a pneumatic cell, and data are recorded with a reflected beam of light on rotating photographic paper. Records of this kind obtained by determinations performed on cast iron with a quartz capillary tube (outer diameter 0.604 cm,

Card 1/2

KOCHO, V.S., doktor tekhn. nauk; BARZILOVICH, V.S.; LYADOV, K.P.; NESMACHNYY, A.N.

Improving the operation of roller hearth heating furnaces. Met. i gornorud. prom. no.1:71-72 Ja-F '64. (MIRA 17:10)

KOCHO, V.S., doktor tekhn. nauk; BARZILOVICH, V.S.; PRYADKIN, L.L.; NESMACHNYY, A.N.

Automatic control system for heat-treating furnaces with roller sole. Avt. i prob. no.4:77-79 O-D '64 (MIRA 18:2)

ACCESSION NR: AP4041956 S/0280/64/000/003/0038/0045

AUTHOR: Barzilovich, Ye, Yu.(Moscow)

TITLE: Determination of the optimal periods of preventive maintenance for automatic systems

SOURCE: AN SSSR. Izv. Tekhnicheskaya kibernetika, no. 3, 1964, 38-45

TOPIC TAGS: automatic control system, system reliability, control system maintenance, preventive maintenance

ABSTRACT: A continuously working automatic system has a known distribution function F(t) of the time interval of correct performance from the time when it is returned to its initial state to the time of first failure; the intensity of failure is $\lambda(t)$. The length of the period between planned preventive maintenance which assures maximum probability of finding the system in working condition at any arbitrary time t and a maximum probability of its correct performance from time t to the time t + x, denoted by p(x, t) where x is a random variable, are to be evaluated. The initial planned maintenance period for a correctly functioning system is a random variable Y with distribution G(t) and the probability that the system is returned to its initial state at the time t is dH(T). The desired

ACCESSION NR: AP4041956

function is: $$p(x, t) = [1 - G(t)][1 - F(t + x)] + \int_0^t [1 - G(\xi)][1 - F(\xi + x)]\,dH(t - \xi), \quad (1)$$

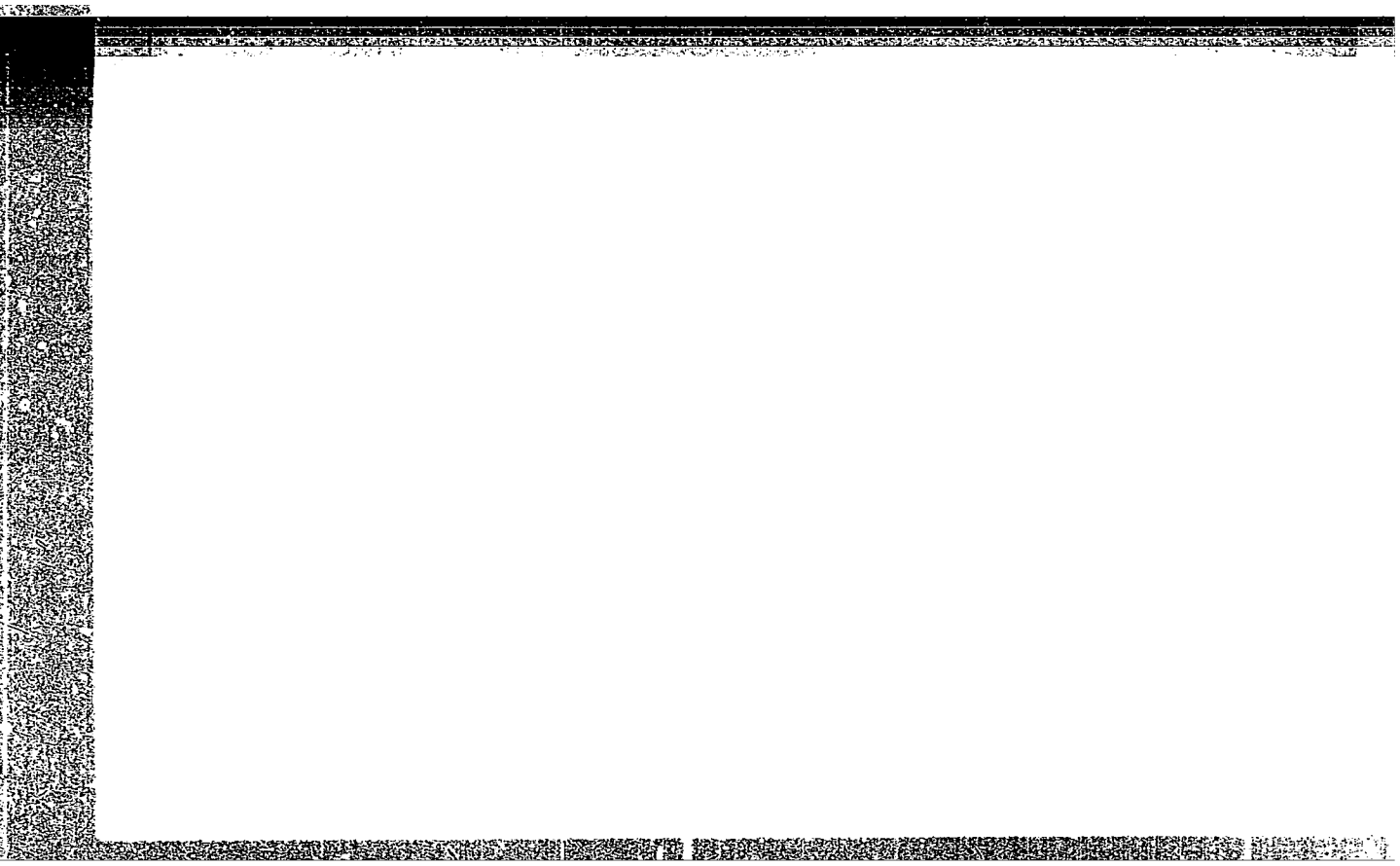
The steady state solution, $\lim_{t \to \infty} p(x, t)$, is obtained for the case when $\lambda(t)$ is a monotonously increasing function of time. This solution is of the form $\frac{T_m}{T_s + x} = \varphi(T_r)$,

where T_m is the time required for planned preventive maintenence, T_s is the time required to remove the failure and T_r is the desired maintenance interval. The optimum value of T_r is obtained graphically from a plot of $\frac{T_m}{T_s + x}$ versus T_r. A numerical example is given for $\lambda(t) = qt$. The expression for $p(x, t)$ is also given for the case of constant λ, which may be applied to systems in storage. Another expression for $p(x, t)$ is derived for an automatic system which consists of n elements, m of which are working and n -m are held in standby reserve. Both preceding cases involve graphical solution for the optimal preventive maintenance interval. Orig. art. has: 36 equations, 4 figures and 1 table.

ASSOCIATION: none

2/3

Card



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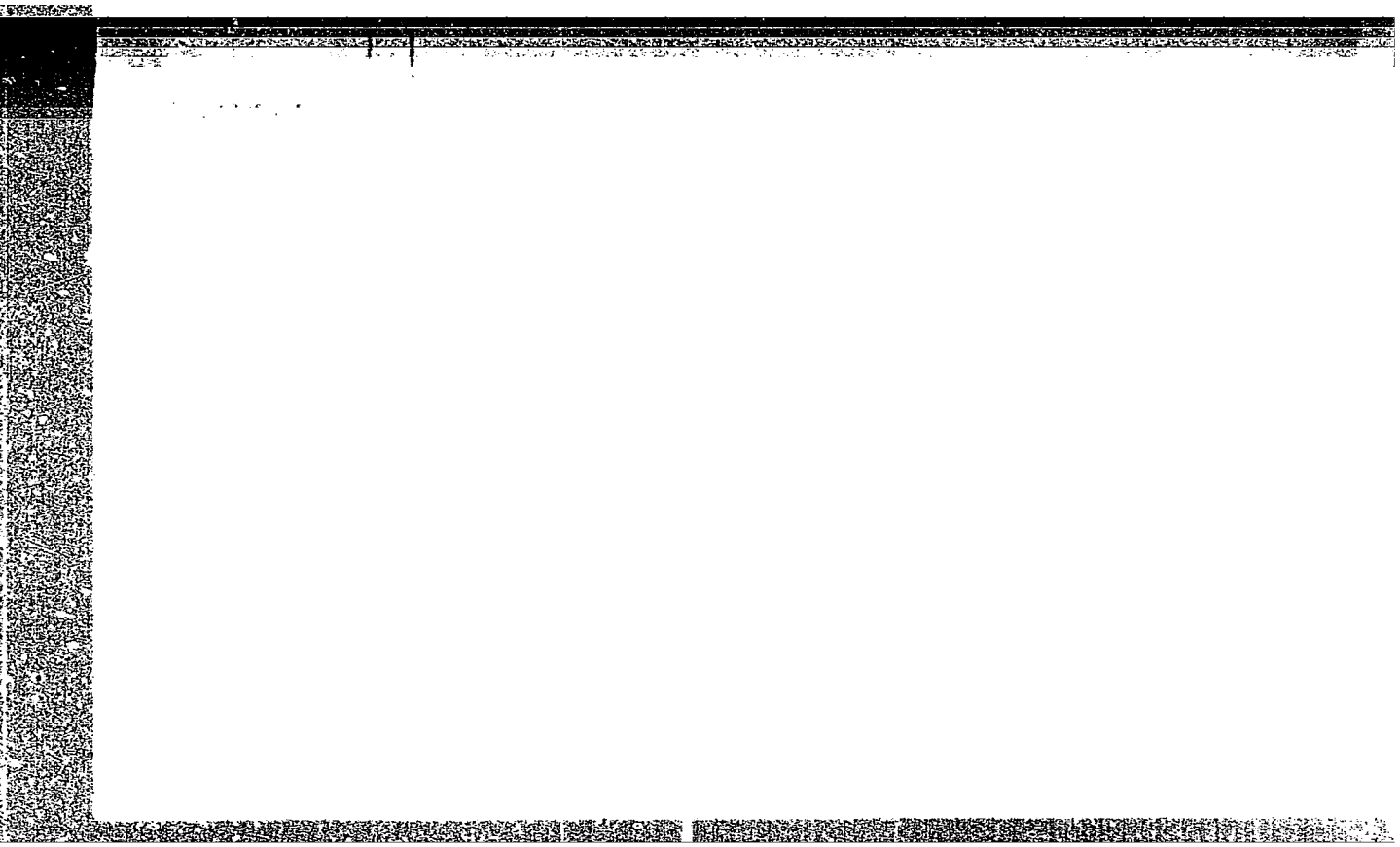

SHISHONOK, Nikolay Andreyevich; REPKIN, Vasiliy Fedorovich; BARVINSKIY, Leonid L'vovich; Prinimali uchastiye LERNER, V.Yu.; LASTOVCHENKO, M.M.; KREDENTSER, B.P.; USHAKOV, I.A.; BARZILOVICH, Ye.Yu.; SENETSKIY, S.A.; ALEKSANDROVA, A.A., red.; GUTCHINA, N.Ya., red.; LYUBIMOVA, T.M., red.

[Principles of the theory of the reliability and operation of radioelectronic apparatus] Osnovy teorii nadezhnosti i ekspluatatsii radioelektronnoi tekhniki. Moskva, Sovetskoe radio, 1964. 550 p. (MIRA 18:2)

BARZILOVICH, Ye.Yu. (Moskva)

Determination of optimum time intervals in preventive maintenance work on automatic systems. Izv. AN SSSR. Tekh. kib. no.3:38-45 Je '64. (MIRA 17:10)

L 07084-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6028544 SOURCE CODE: UR/0280/66/000/003/0144/0149

30
28
B

AUTHOR: Barzilovich, Ye. Yu. (Moscow)

ORG: none

14

TITLE: Optimal control of a monotonically increasing random process

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 3, 1966, 144-149

TOPIC TAGS: optimal automatic control, random process, automatic control theory

ABSTRACT: The author examines the optimal control of a monotonically increasing random process in which the random process is controllable and the control step is constant. Continuous and discrete random processes are taken into account. In determining the optimal curve of the predicted tolerance when operating a technical device (continuous case) it is assumed that the parameter of the technical device is a random monotonically increasing function of time and that the values of this function are known exactly only at equally spaced discrete moments of time. In determining the optimal curve of the predicted tolerance when operating a system with a reserve (discrete system) it is assumed that the random process

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L 07084-67
ACC NR: AP6028544

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examined in the continuous case is discrete and the independent random quantities acquire only integral values and have a common distribution function at a fixed time interval. The author thanks Yu. K. Belyayev and A. D. Solov'yev for help in working on this article. Orig. art. has: 13 formulas and 5 figures.

SUB CODE: 09/ SUBM DATE: 25Dec64/ ORIG REF: 001/ OTH REF: 004

Card 2/2 LC

KALINICHENKO, V.F., kand.tekhn.nauk; KOZLIK, V.I., inzh.; SOV'YAK, M.I., inzh.; BARZILOVICH, Yu.P., inzh.; CHEREPANOV, A.P., inzh.

New communication equipment for mine hoisting. Gor.zhur. no.10:57-59 O '64. (MIRA 18:1)

1. Nauchno-issledovatel'skiy gornorudnyy institut, Krivoy Rog (for Kalinichenko, Kozlik, Sov'yak). 2. Sumskoy zavod elektronnykh mikroskopov i elektroavtomatiki (for Barzilovich, Cherepanov).

YEFIMOV, L.M., kand.tekhn.nauk; LITVINENKO, D.A., kand.tekhn.nauk; BARZIY, L.M., inzh.; MARINOV, A.I., inzh.; YAKUSHIN, V.I., inzh.

Production of semikilled steel (with summary in English). Stal' 18 no.10:885-890 O '58. (MIRA 11:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i zavod "Zaporozhstal'."
(Steel-Metallurgy)

Barziy, V.K.

133-10-21/26

AUTHOR: Koshik, A. I. and Barziy, V. K. Engineers.

TITLE: Non-Metallic Inclusions in Large 08КП Steel Ingots. (Nemetallicheskiye Vklyucheniya v Krupnykh Slitkakh Stali 08КП).

PERIODICAL: Stal', 1957, No.10, pp. 943-945 (USSR).

ABSTRACT: The nature and the distribution of non-metallic inclusions in 9 to 14 t. bottom poured ingots of 08КП steel produced in 195 t., basic open hearth furnaces were investigated. It was found that large silicate inclusions were mainly distributed in the bottom part of the ingots and small inclusions in the crust zone or throughout the whole volume of the ingots. Complex oxide inclusions containing a large proportion of manganous oxide were situated mainly in the top and bottom parts of 14 ton ingots, and in 9 t., ingots mainly in the zone of honeycomb blow holes. In the case of 9 t., ingots the above positioning of inclusions was explained by an insufficient boiling of metal in moulds. Sulphurous inclusions of FeS and (FeMn)S types were mainly distributed along grain boundaries near to the blow holes in the upper part of the ingots. In ingots, the metal of which was boiling insufficiently in moulds, the above inclusions were observed in the zone of

Card 1/2

133-10-21/26

Non-Metallic Inclusions in Large 08kp Steel Ingots.

secondary blow holes. There are 7 figures.

ASSOCIATION: Zaporozhstal' Works. (Zavod Zaporozhstal').

AVAILABLE: Library of Congress

Card 2/2

Barziy, V.K.

AUTHOR: Barziy, V. K., and Kolot, S. S., Engineers. 133-10-24/26

TITLE: A Method of Increasing the Strength of 1X18H9T Steel Sheets for Hot Stamping. (Sposob Povysheniya Prochnosti Listov Stali 1X18H9T Dlya Goryachego Shtampovaniya).

PERIODICAL: Stal', 1957, No.10, p. 950 (USSR).

ABSTRACT: Changes in the mechanical properties with variations in heating practice of hot rolled non-hardened sheets from 1X18H9T steel, work hardened by a 15% reduction were investigated. The results obtained are given in the table. It was found that annealing at 750-780°C produces the required effect (δ_s above 70 kg/mm^2 with $\delta_5 \geq 30\%$). There is 1 table.

ASSOCIATION: Zaporozhstal' Works. (Zavod Zaporozhstal').

AVAILABLE: Library of Congress

Card 1/1

BARZIY, V.K.

AUTHOR: Litvinenko, D.A., Rastorguyev, A.A., Candidates of Technical Sciences and Barziy, V.K., Engineer. 133-5-16/27

TITLE: Cold rolled deep drawing sheets from steels containing vanadium or aluminium. (Kholodnokatanyye listy s vanadiyem ili alyuminiyem dlya g'lubokoy vytyazhki avtokuzovykh detaley)

PERIODICAL: "Stal'" (Steel), 1957, pp. 445-449 (U.S.S.R.)

ABSTRACT: In order to increase the resistance of low carbon steel to ageing the influence of a small addition of vanadium or for killed steel deoxidation with aluminium were investigated. The investigation was carried out on the Zaporozhstal' Works with the co-operation of engineers G.F. Chub, I.S. Marakhovskiy, A.A. Podgorodetskiy, I.L. Zlatkin, T.A. Ksensuk, S.S. Kolot, N.A. Troshchenkov, and on the Gorokov Motor Works (Gor'kovskiy Avtozavod) in co-operation with engineers N.I. Letchford and N.M. Romanychev. The influence of the above additions was studied using metal from industrial open hearth heats (200 tons) which up to deoxidation in the furnace were carried out in the usual manner for low carbon steel BГ. Vanadium or aluminium was added in the ladle during the tapping of steel. Vanadium was introduced as 53% ferro-vanadium after preliminary deoxidation of steel in the ladle with a low carbon ferro-manganese (2.5 kg/ton) and silicon-manganese

Card 1/4

Cold rolled deep drawing sheets from steels containing vanadium or aluminium. (Cont.) 133-5-16/27

(0.5 kg/ton) as well as in undeoxidised metal with an addition to the ladle of 0.1 kg/ton of aluminium. Rimming steel with vanadium was bottom cast while killed steel was top poured into ingot moulds with shrinkage heads. The chemical composition of experimental steels and the usual rimming steel 08KпВГ is given in Table 1. Experimental ingots were rolled into slabs 95-115 mm thick. Slabs were rolled on a continuous mill into strip 2.0-2.5 mm thick with coiling at 820-850°C. After pickling and cutting the hot rolled strip was cold rolled into sheets 0.9-1.2 mm thick (reduction 45-64%), annealed at 680-700 °C and dressed with reduction of 0.8 -1.2%. The proportion of sheets rejected due to surface defects (films) for killed with aluminium steel was much higher (12%) than for rimming steel with vanadium and without additions (about 0.1%). The results of testing cold rolled sheets from experimental melts for stretching and depth drawing as well as determinations of hardness and micro-hardness are compared in Figs. 1 and 2 and Table 2. The micro-structures are shown in Fig. 3. The mechanical properties of cold rolled sheets after dressing and natural and artificial ageing are shown in Table 3. Results of stamping of motor car parts from

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Cold rolled deep drawing sheets from steels containing vanadium or aluminium.(Cont.) 133-5-16/27

experimental sheets (% of rejects for the individual parts) are given in Table 4. The experimental results indicated that an addition to rimming low carbon steel of 0.03-0.04% of vanadium or to killed steel of 0.07% of aluminium inhibits the process of mechanical ageing. In order to decrease the loss of vanadium the addition should be done in the ladle after preliminary deoxidation with low carbon ferro-manganese or silico-manganese. The addition of ferro-vanadium in a proportion of 0.5 - 0.7 kg/ton has no noticeable effect on the boiling of metal in ingot moulds. Sheets made from vanadium alloyed rimming steel (0.03 - 0.04%) possess high mechanical properties which remain practically unchanged with time and with high stamping properties. The use of the above steel on the Gor'kovskiy Motor Works permitted decreasing the number of operations during stamping. Low carbon steel deoxidised with aluminium also possesses stable mechanical properties. It is expected that killed steel will find wide application in the motor car industry providing the technology of its production will improve so as to decrease the proportion of rejected sheets due to surface defects. There are 4 tables, 5 figures and 4 Slavic references.

Card 3/4

Cold rolled deep drawing sheets from steels containing vanadium or aluminium. (Cont.) 133-5-16/27

ASSOCIATION: TsNIIChM and Zaporozhstal' Works.

AVAILABLE:

Card 4/4

BARZIY, V.K. 133-2-12/19

AUTHORS: Barziy, V.K. and Kolot, S.S. (Engineers)

TITLE: Annealing of Cold Rolled Sheets of Steel 08kp. (Otzhig kholodnokatanykh listov stali 08kp)

PERIODICAL: Stal', 1958, Nr 2, pp.159-161 (USSR)

ABSTRACT: A study of the dependence of properties of cold rolled sheets on the degree of reduction during cold rolling and on the temperature and duration of annealing as well as establishing optimum annealing conditions is described. The influence of cold rolling and annealing on the size of ferrite grains was investigated under laboratory conditions, and on the microstructure, mechanical and technological properties under works conditions. The experimental results are given in Tables 1 and 2 and Figs.1-3. The composition of metal used for the investigation: 0.07-0.10% C; 0.30-0.41% Mn; 0.020-0.029% S and 0.008-0.013% P. Conclusions: An increase in the size of ferrite grains on annealing was observed when the temperature was increased up to 650°C. Further increase in temperature (up to temperatures of phase transformations) does not promote the growth of ferrite grains. The most sensitive characteristic of cold rolled sheets to changes in annealing conditions is yield point. The accuracy of the evaluating of the size of

Card 1/2

133-2-12/19

Annealing of Cold Rolled Sheets of Steel 08kп.

ferrite grains according to ГОСТ 5639-51 is insufficient. The quality of cold rolled sheets for stamping according to ВГ group, annealed under conditions established in this work (heating at 680°C with 2 hours soaking instead of the previously used 8 hours) does not deteriorate. The following participated in the work: I.L.Slatkin, M.M. Ioffe, (Engineers), M.T.Ryazanova, T.I.Zorya, N.K.Skorobogatova, G.K.Zamytskaya and Petkova, E.F. (Technicians). There are 2 tables and 3 figures.

ASSOCIATION: Zaporozhstal' Works (Zavod "Zaporozhstal'")

AVAILABLE: Library of Congress.

Card 2/2

SOV/133-58-10-8/31

AUTHORS: Yefimov, L.M., Litvinenko, D.A., Candidates of Technical Sciences, Barziy, V.K., Marinov, A.I. and Yakushin, V.I., Engineers

TITLE: The Production of Semi-killed Steel (Proizvodstvo poluspokoynoy stali)

PERIODICAL: Stal', 1958, Nr 10, pp 885 - 890 (USSR)

ABSTRACT: An investigation of optimum deoxidation conditions for the production of semi-killed steel is described. Experimental heats were carried out when smelting 08ps and MSt3ps steels. Smelting technology was the same as for the production of corresponding rimming steels. Heats were carried out on 185-ton open-hearth furnaces with magnesite-chromite roofs, with supply of oxygen to the bath. The proportion of hot metal - 65%. Smelting conditions are described in some detail. The composition of experimental heats and teeming conditions are given in Table 1. A comparison of chemical non-uniformity of hot rolled strip from rimming and corresponding semi-killed steel is given in Table 2. It was found that semi-killed steel obtained by deoxidation of rimming steel in ingot moulds, corresponds as to microstructure and mechanical

Cardl/2

properties of hot and cold rolled sheets to the requirement of standards for respective rimming steel; as to: chemical uniformity and drawing properties it is noticeably superior to rimming steel, approaching the corresponding properties of killed steel. An addition of 350-400 g/t (for 0.8ps) and 150-200 g/t (for MSt3ps) of aluminium during top teeming at the end of filling of the moulds leads to an increase in the yield of metal on the slabbing mill to 90%. A further large-scale check of the results obtained is recommended. There are 2 tables.

ASSOCIATIONS: TsNIIChM and "Zaporozhstal'" Works.

SOV/133-58-10-17/31

AUTHORS: Borisenko, V.G. and Barziy, V.K.

TITLE: A Decrease in the Thickness of Coating During Hot Tinning of Black Sheets (Umen'sheniye tolshchiny pokrytiya pri goryachem luzhenii zhesti)

PERIODICAL: Stal', 1958, Nr 10, pp 920 - 922 (USSR)

ABSTRACT: The influence of micro-relief of the surface of strip, small differences in the thickness of simultaneous coated strips, the temperature of tin and speed of strip on the thickness of tin coating was investigated. It was found that the micro-relief of the surface undergoing tinning has an influence on the thickness of coating. With deterioration of the state of the surface, the consumption of tin increases. With an improvement of the degree of cleanliness of the surface from the 7th to the 10th class (GOST 2789-51) the thickness of coating, under other conditions constant, decreases by 6-10%. When tinning simultaneously a few strips with a maximum permissible difference in their thickness (0.03-0.04 mm) and other conditions constant, the thickness of the coating on thinner strips increases approximately by 10%. Tinning at an increased temperature of the tin to 320-330 °C (instead of the usual temperatures of 280-300 °C) and

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A Decrease in the Thickness of Coating During Hot Tinning of Black Sheets

other conditions constant, permits decreasing the coating thickness by 8-9%. The advisability of the decrease in the tin consumption for coating by utilising higher temperature should be checked with regard to the overall tin consumption. With increasing velocity of passage of strip through the tinning bath, the thickness of coating increases. With velocity increasing from 2.2 to 4.45 m/min, the thickness of tin coating increases by 40%. There are 3 figures and 1 table.

ASSOCIATION: Zavod "Zaporozhstal'" ("Zaporozhstal" Works)

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SOV/133-58-10-22/31

AUTHORS: Litvinenko, D.A. Candidate of Technical Sciences and Marinov, A.I., Barziy, V.K. and Yakushin, V.I., Engineers

TITLE: The Production and Properties of Aluminium-Killed Non-ageing Sheet Steel (Proizvodstvo i svoystva uspokoyennoy alyuminiyem nestareyushchey listovoy stali)

PERIODICAL: Stal', 1958, Nr 10, pp 931-938 (USSR)

ABSTRACT: The development of the technology of production of killed non-ageing steel containing aluminium and suitable for the manufacture of cold-rolled sheets which, in addition to high drawing properties and non-sensitivity to slip lines, possessed good surface when rolled from non-dressed slabs. Two deoxidation methods of low-carbon 08kp VGV steel were tested: 1) with aluminium shot in top-poured moulds and 2) with aluminium in the ladle and subsequent bottom-pouring of ingots. The quality of the experimental metal was tested during all manufacturing stages, including stamping of motor-car bodies. It was established that in order to produce motor-car bodies without defects due to slip lines, by stamping, it is advantageous to use cold-rolled sheets of low-carbon steel in which the process of mechanical ageing is localised by stabilising additions

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of vanadium or aluminium. From economic considerations, aluminium is more advantageous. Introduction into low-carbon rimming steel 08kp VGV of aluminium in an amount sufficient to obtain not less than 0.02% of residual aluminium sharply increases the stability of steel against mechanical ageing. Work hardening and a decrease in plastic properties as well as the appearance of the yield stage on the tensile curve of such steel is observed only after an artificial ageing at 200 °C for one hour. On deoxidation of the metal with aluminium shot in moulds, when the level of the metal is about 150 - 200 mm below the filling level, the quality of the surface of cold-rolled sheets is higher than from killed steel deoxidised with aluminium in the ladle and bottom-poured. Moreover, for the deoxidation in moulds about 50% less aluminium is required than for deoxidation in the ladle. Shrinkage defects in ingots of killed steel top-poured into moulds (wide and down) without tops, are completely welded during cold rolling. Therefore, sheets made from the upper third of ingots are not inferior in quality from those made from the bottom half of the ingots. For the above reason, the

yield of slabs from such ingots should be about 90% which is higher than from rimming steel ingots. Large ingots (9-18 ton) of aluminium-killed steel are more uniform in chemical composition and mechanical properties in comparison with rimming steel ingots. The above permits improving the technology of low-carbon steel for hot and cold-rolled sheets VGV by: a) increasing the weight of ingots to 18 tons and above; b) increasing the range of permissible sulphur content to 0.03% instead of 0.025%; c) economising ferromanganese and d) rolling VGV sheets from the head part of the ingots. With regard to microstructure, sheets of killed steel differ from sheets of 08kp VGV steel mainly in the tendency to form finer grains and fine, structurally free cementite, as well as non-equilibrium grains, elongated in the direction of rolling. Non-metallic inclusions of the killed steel consist mainly of uniformly distributed aluminates, the amount of which is

The Production and Properties of Aluminium-Killed Non-Ageing Sheet Steel

higher when aluminium is introduced in moulds than when it is introduced in the ladle.
There are 1 figure, 5 tables and 3 Soviet references.

ASSOCIATIONS: TsNIIChM and zavod "Zaporozhstal'" ("Zaporozhstal' Works)

BARZIY, V.K.

Kalugin, V.F., V.K. Barziy, S.G. Glazunov, T.S. Kuzina, and B.N. Popov (State Committee on Aircraft Engineering, Council of Ministers of the USSR). Production of Large-Sized Cold-Rolled Sheet From Vt-1D Alloy, p. 133. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

AUTHORS: Barziy, V.K., Vaynshtok, M.I. and Gamazov, V.I., Engineers SOV/133-59-5-24/31

TITLE: The Quality of a 13-ton Ingot of Steel 14KhGS (Kachestvo 13-t slitka stali 14KhGS)

PERIODICAL: Stal', 1959, Nr 5, pp 456 - 459 (USSR)

ABSTRACT: In view of the high-quality requirements for sheets from steel 14KhGS (used for the manufacture of tubes) a thorough investigation of a 13-ton ingot of this steel, particularly regarding its chemical uniformity and distribution of non-metallic inclusions, was carried out. Steel was smelted in a 195-ton open-hearth furnace, whereupon the metal was deoxidised in the bath with ferromanganese (8 kg/t), silicomanganese (12 kg/t) and ferrochromium (10 kg/t) and in the ladle with 75% ferro-silicon (7.5 kg/t), aluminium (0.25 kg/t) and ferro-titanium (2.5 kg/t). The metal was top-poured into moulds 2 200 mm high with a cross-section of the shrinkage head 1 100 x 640 mm. Chemical composition, %: C 0.13, Mn 1.07, Si 0.55, S 0.030, P 0.016, Cr 0.63, Ni 0.04, Cu 0.10. Three ingots, the second, eighth and fifteenth in the sequence of teeming, were selected for the

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The Quality of a 13-ton Ingot of Steel 14KhGS

investigation. The investigation of the macro and microstructure, the degree of chemical uniformity, the character and the distribution of non-metallic inclusions and the degree of saturation of metal by gases was done on a plate 25 mm thick, cut out along the height of the eighth ingot (middle position in the sequence of teeming). Sulphur print of the longitudinal cross-section of the ingot is shown in Figure 2, changes in the content of carbon and sulphur - Table 1 and Figure 3, chemical composition of non-metallic inclusions, Table 2, the distribution of gases at various levels of ingot height - Table 3. It was found that: 13-ton ingots of the above steel possess a satisfactory macrostructure; the shrinkage cavity is situated in the shrinkage head of the ingot. In the top part of the ingot a comparatively small positive segregation of sulphur and phosphorus was observed In the bottom part of the ingot there is a zone with a negative segregation of sulphur; the segregation of carbon is positive nearly in the whole ingot. The remaining elements (silicon, manganese and chromium) do not

show any segregation. The largest sulphide inclusions are situated mainly in the axial zone of the ingot and silicate inclusions mainly near to the crust zone - in the head and bottom part of the ingot. Insignificant amounts of alumina and titanium nitrides are distributed uniformly across the cross-section of the ingot. Among non-metallic inclusions, rutile and titanium carbonitrides were found. The content of oxygen in the metal of the ingot investigated varied from 0.0013 to 0.0030% and that of hydrogen from 0.0001 to 0.0002%. The metal was uniform in respect to the nitrogen content (0.004%).
There are 3 tables and 6 figures.

ASSOCIATION: Zavod "Zaporozhstal'" ("Zaporozhstal'" Works)

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77463
SOV/133-60-1-24/30

AUTHORS: Chirkin, V. M., Barziy, V. K. (Engineers)

TITLE: The Effect of Structure on Mechanical Properties and Deep-Drawing Capacity of Steel Killed by Aluminum

PERIODICAL: Stal', 1960, Nr 1, pp 74-77 (USSR)

ABSTRACT: This is a brief report concerning the study of differences in mechanical properties and deep-drawing capacity of nonaging steel with aluminum (steel 08Yu) manufactured by two alternate technological methods resulting in different microstructures of annealed cold-rolled sheets. The test melts of such sheet steel were produced in 200-ton open-hearth furnaces as rimmed steel and (after tapping) were fully oxidized by aluminum. The ingots were heated in soaking pits at 1,350-1,360° C and rolled into slabs which, after holding in continuous furnaces at 1,250-1,350° C for 1-1.5 hours, were rolled in a continuous mill into strips 2-3 mm thick. Part of these strips (after hot-rolling) were coiled without the

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preliminary water-cooling (temperature of the strip over 700° C. Alternate I). Another part (during the movement over the roller conveyor) was subject to water-spray-cooling through the nozzles installed before the coiler (coil temperature under 650° C. Alternate II). The chemical composition, the method of cooling the strips before coiling, and the type of microstructure of cold-rolled sheets of six test melts are given in Table 1. With water-spraying of hot-rolled strips before coiling, the structure of annealed cold-rolled sheets consisted of flattened, stretched in two directions grains of ferrite called "pancake-shaped." Without the application of water-cooling of strip before coiling, the annealed cold-rolled sheets had a regular microstructure of equiaxial grains of ferrite. The metal of six test melts shown in Table 1 was sent to Gor'kiy Automobile Plant (Gor'kovskiy avtomobil'nyy zavod) for deep-drawing.of

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Table 1. Chemical composition and structure of sheets of test melts.

№ of melt	Chemical composition of ladle samples %					Shape of ferrite grains in structure of annealed cold rolled sheets
	C	Mn	S	P	Al**	
1*	0,08	0,35	0,023	0,009	0,04	"pancake"
2*	0,08	0,43	0,024	0,009	0,03	"pancake"
3	0,07	0,35	0,025	0,006	0,03	equi-axial
4	0,08	0,31	0,021	0,008	0,03	equi-axial
5	0,07	0,46	0,025	0,008	0,02	equi-axial
6	0,07	0,42	0,024	0,007	0,02	equi-axial

* strips before winding were cooled by water spray (other melts had no cooling)
** metallic

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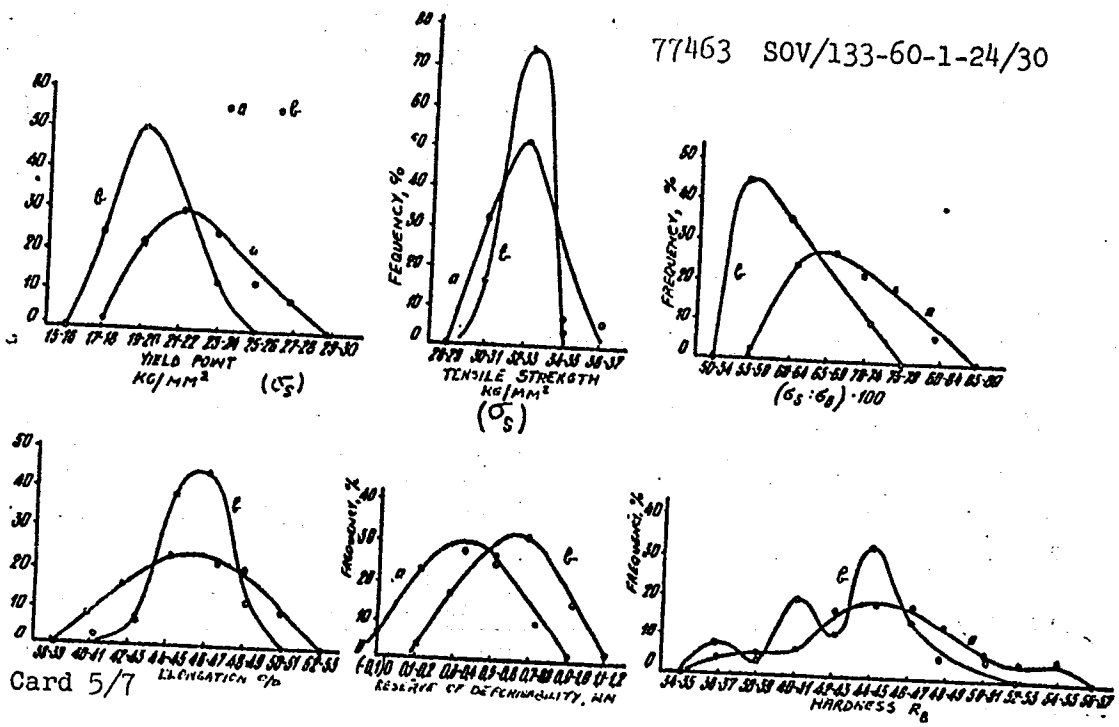
complex body shapes. The sheets of test batches were subject to check tests in the laboratories of the "Zaporozhstal'" Plant (zavod "Zaporozhstal'") and the Gor'kiy Automobile Plant. The results of tests are given in Fig. 3. The authors arrived at the following conclusions. (1) Depending on the applied technology, the annealed cold-rolled sheets of nonaging steel 08Yu may have the microstructure of equiaxial grains or of oblong, stretched in two directions ("pancake-shaped") grains. (2) The hardness, yield point, ratio σ_S/σ_B, and the depth of Ericksen's indentation of 08Yu sheets with "pancake" structure are better than those of the sheets with equiaxial grain. The elongation and tensile strength are about the same for both. (3) The sheets of steel 08Yu with "pancake" grain have higher deep-drawing capacity than the sheets of this steel with equiaxial grain and have equal surface quality after deep-drawing.



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Caption to Fig. 3.

Fig. 3. Mechanical properties (frequency curves) of sheets of 08Yu steel with equiaxial (a) and "pancake-shaped" (b) grains (the reserve of deformability is the algebraic difference between the actual and standard (according to the All-Union State Standard 914-56) (GOST 914-56) depth of indentation by Ericksen).

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(4) The rapid cooling of strips (after hot-rolling) to temperature below 650° C, required for formation of "pan-cake" grain in annealed cold-rolled sheets of 08Yu steel, can be achieved by application of water-spraying before coiling, also (without water-spraying) by the sufficiently long duration of travel of the strip through the conveyor. There are 3 figures; 4 tables; and 3 references, 1 Soviet, 1 U.K., 1 U.S. The U.K. and U.S. references are: A. J. K. Honeyman, Sheet Metal Industries, 1955, Vol 32, Nr 343, pp 855-59; 1957, Vol 34, Nr 357, pp 51-65; R. L. Solter and C. W. Beatte, Journal of Metals, 1951, Vol 3, IX, pp 721-26.

ASSOCIATION: Central Scientific Research Institute of Ferrous Metallurgy and "Zaporozhstal'" Plant (TsNIIChM i zavod "Zaporozhstal'")

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88501

S/133/60/000/012/013/015
A054/A027

18.1130

AUTHOR: Barziy, V.K., Engineer

TITLE: Plastic and Anticorrosive Properties of Cold-Rolled Annealed Sheets of 1 X 18H9T (1Kh18N9T) Type Steel

PERIODICAL: Stal', 1960, No. 12, pp. 1134-1135

TEXT: The more stringent version of the GOST 6032-58 (GOST 6032-58) requires the 1Kh18N9T brand steel to be more resistant against intercrystalline corrosion, which can be attained by an increase in its Ti-content. A high [Ti] : [C] proportion in the steel decreases the workability of the steel, however, and leads to surface defects of the cold-rolled sheets of this steel. The resistance of the steel against general corrosion in agressive media depends on the dispersed condition and the structure of carbides and nitrides separating during heating. It was found that after cold-forming of this steel the separation of carbides takes place not only at the border of the former grains, but also at the sliding surfaces formed during deformation. This makes the dispersion of carbides more uniform. In order to investigate this problem and the possibility of producing 1Kh18N9T brand steel with high plasticity and at low cost, tests were carried out with cold rolled 1Kh18N9T steel sheets, 2 mm thick, from two types, having the following composition:

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	C	Mn	Si	S	P	Cr	Ni	Ti	Ti/C
A	0.10	1,08	0.54	0.010	0.026	17.46	10.03	0.47	4.7
B	0.08	1.01	0.55	0.010	0.028	17.00	10.40	0.56	7.0

In the tests intermediary hardening (at 1,100°C) was replaced by annealing at 850°C for two hours, in rolls. After heat treatment the samples were tested for mechanical properties. The trend to interorystalline corrosion was investigated according to GOST 6032-58 and the corrodibility in general, by boiling in a 65% solution of nitric acid. It could be established that the cold-rolled 1Khl8N9T brand steel sheets displayed high plasticity (satisfying GOST 5582-50) after a 2-hour annealing interval. Additional annealing at 650°C for two hours did not change considerably the properties of the metal. Replacement of one of the two hardening processes by annealing at 850°C, for two hours, will not only simplify the process, but also make it cheaper. There are 3 tables.

ASSOCIATION: Zavod "Zaporozhstal' (The Zaporozhstal' Plant).

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Plastic and Anticorrosive Properties of Cold-Rolled Annealed Sheets of 1Kh18N9T (1Kh18N9T) Type Steel

Indices of mechanical properties of A and B melt samples after heat treatment at various temperatures Table 1

Temp °C	Holding time hour	σ_s, kg/mm²		σ_B *, kg/mm²		δ_5 **, %		R_B	
		A	B	A	B	A	B	A	B
750	2	42,1	35,6	71,4	66,0	47,5	50,7	92	87
	4	41,0	34,2	71,0	64,6	48,4	49,4	91	86
	8	39,0	32,9	70,4	64,6	50,1	50,6	89	85
850	2	36,8	33,9	69,0	65,9	53,4	52,4	87	83
	4	37,2	33,3	69,6	65,4	49,2	53,7	89	86
	8	33,6	31,8	67,0	63,9	53,4	52,4	85	85
900	2	34,2	32,2	67,8	64,4	53,4	54,0	86	85
	4	33,7	31,5	66,5	64,3	52,5	52,4	86	84
1100	8	34,0	30,1	67,2	62,5	51,7	51,5	85	83
	– *	30,7	27,5	65,9	62,9	55,1	62,7	83	78

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S/133/60/000/012/013/015
A054/A027

Plastic and Anticorrosive Properties of Cold-Rolled Annealed Sheets of 1 Х 18 Н 9 Т (1Kh18N9T) Type Steel

* Cooling in air
** According to GOST 5582-50 it should not be less than 54 kg/sq mm
*** According to GOST 5582-50 it should not be less than 40%

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S/133/60/000/012/013/015
A054/A027

Plastic and Anticorrosive Properties of Cold-Rolled Annealed Sheets of 1X18H9T (1Kh18N9T) Type Steel

Table 2

Influence of additional annealing on the mechanical properties, numerators- without additional annealing, denominators; with additional annealing at 650°C for 2 hours; steels of melt B, heat-treated at various temperatures

Temp. of treatment °C	σ_s, kg/mm^2	σ_B, kg/mm^2	δ_5, %	R_B
750	34,2 / 38,2	64,6 / 68,7	47,9 / 50,0	86 / 90
850	33,3 / 33,9	65,4 / 65,8	53,7 / 55,0	86 / 86
900	31,5 / 31,0	64,3 / 64,3	53,4 / 53,4	84 / 84
1100	27,5 / 29,5	62,9 / 63,2	50,1 / 53,4	78 / 80

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NATAPOV, B.S.; BARZIY, V.K.; OL'SHANETSKIY, V.Ye.; Prinimali uchastiye: FILONOV, V.A., inzh.; YUDIN, M.I., inzh.; IOFFE, M.M., inzh.; POPOV, S.M., inzh.; RYBALKO, G.I., inzh.; ODINETS, L.I., inzh.; SIGALKO, F.V., inzh.; TSIVIRKO, D.Ye.; VOLOSHCHUK, M.D., inzh.

Heat treatment of cold-rolled sheet metal. Stal' 22 no.2:163-165 F '62. (MIRA 15:2)

1. Zaporozhskiy mashinostroitel'nyy institut i zavod "Zaporozhstal'". 2. Zavod "Zaporozhstal" (for Filonov, Yudin, Ioffe, Popov, Rybalko, Odinets). 3. Zaporozhskiy mashinostroitel'nyy institut (for Sigalko, TSivirko, Voloshchuk).
(Sheet steel--Heat treatment)

BARZIY, V.K., inzh.; IOFFE, M.M., inzh.; CHERKASHINA, N.P., inzh.; ORLOVA, T.I., inzh.

Increasing the corrosion resistance of electrically welded 1Kh18N9T steel pipe. Stal' 22 no.10:944 O'62. (MIRA 15:10)

1. Zaporozhskiy staleplavil'nyy zavod.
(Pipe, Steel—Corrosion)

S/133/63/000/001/010/011
A054/A126

AUTHORS: Natapov, B. S., Soroko, L. N., Barziy, V. K., Filonov, V. A. (Deceased), Gurskiy, G. L., Ioffe, M. M., Letchford, N. I., Yudovich, S. Z.

TITLE: Improving the stamping properties of 08 Yu (08Yu) grade sheet steel

PERIODICAL: Stal', no. 1, 1963, 84 - 86

TEXT: A new technology has been developed to produce low-carbon (0.04 - 0.08%) steel suitable for cold rolling of automobile sheets having good stamping properties and which do not tend to age. From the tests (carried out in co-operation with I. A. Goncharov, G. Mikhaylov, F. A. Ksenzuk, V. G. Antipenko, M. Ye. Kugayenko, L. Dobrovol'skiy, L. I. Odinets, N. P. Cherkashina, A. K. Yaitskiy, I. N. Avramenko, M. I. Lyakhova, R. I. Razumovskaya, S. M. Popov, A. L. Khudas ("Zaporozhstal'"), N. P. Semperovich, V. Ye. Ol'shanetskiy, M. D. Voloshchuk, F. V. Sigalko (ZMI), K. M. Romanycheva, V. G. Kochevatov (GAZ)) it was concluded that the manganese content of the test grade should be lowered to 0.24 - 0.35%, while the quantity of other elements that increase the hardness

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of the steel (C, N, Si, Cu, etc.) should also be kept as small as possible. The content of residual aluminum, which has a stabilizing effect, should be increased to 0.04 - 0.09% (i. e. 900 - 1,100 g/ton in the mold), the temperature at the end of rolling should be 850 - 920°C, the winding temperature after rolling 540 - 610°C, which promotes the formation of oblong ferrite grains and improves the cementite distribution. The finishing stand should be adjusted to reductions of 0.6 - 1.8%. The new steel is suitable for very deep drawing (according to ГОСТ 9045-59 (GOST 9045-59). In the tests aluminum of a purity of 99.9% and another kind having 13% admixtures were used. However, the favourable results obtained with the 99.9% aluminum could only be approximated, but not achieved with the second grade aluminum, even when in the latter case the annealing time was extended from 8 to 12 hours. There are 1 figure and 2 tables.

ASSOCIATION: Zaporozhskiy mashinostroitel'nyy institut (Zaporozh'ye Engineering Institute), Zavod "Zaporozhstal'" (Zaporozhstal'" Plant), and Gor'kovskiy avtomobil'nyy zavod (Gorkiy Automobile Plant)

KALUGIN, Viktor Filippovich; BARZIY, Vyacheslav Kupriyanovich; GLAZUNOV, Sergey Georgiyevich; KUZINA, Tamara Stepanovna; POPOV, Boris Nikolayevich; OGURTSOV, Aleksandr Ivanovich; OL'SHANSKAYA, I.V., inzh., ved. rdd.; PONOMAREV, V.A., tekhn. red.

[Technology of ingot forging and the continuous rolling of large-size, commercially pure, VT1D titanium sheet. Over-all mechanization of the loading and unloading of ingots from holding furnaces] Tekhnologiia kovki slitkov i nepreryvnoi prokatki krupnogabaritnogo lista iz tekhnicheski chistogo titana VT1D. Kompleksnaia mekhanizatsiia protsessov zagruzki i vygruzki zagotovok iz metodicheskoi pechi. [By] A.I. Ogurtsov. Moskva, Filial Vses.in-ta nauchn. i tekhn. informatsii, 1958. 17 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 5. No.M-58-22/3)
(MIRA 16:3)

(Titanium) (Rolling (Metalwork))
(Materials handling--Equipment and supplies)

NATAPOV, B.S.; SOROKO, L.N.; BARZIY, V.K.; FILONOV, V.A. [deceased]; GURSKIY, G.L.; IOFFE, M.M.; LETCHFORD, N.I.; YUDOVICH, S.Z.

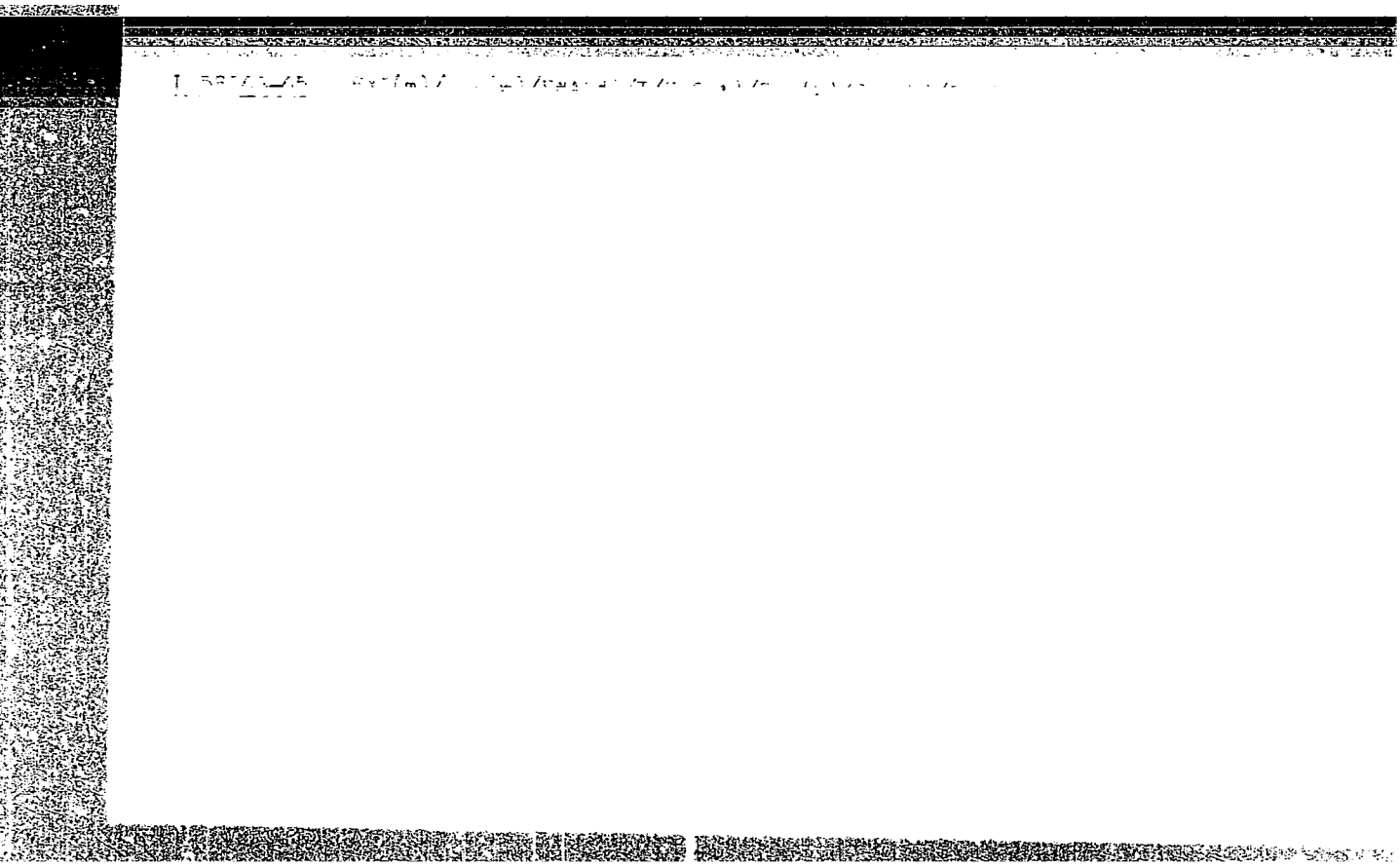
Improving the stampability of nonaging O8IU sheet steel. Stal' 23 no.1:84-86 Ja '63. (MIRA 16:2)

1. Zaporozhskiy mashinostoritel'nyy institut, zavod "Zaporozhstal'" i Gor'kovskiy avtomobil'nyy zavod.
(Sheet steel) (Drawing (Metalwork))

BARZIY, V.K., inzh.; BORISENKO, V.G., inzh.; VAYNSHTOK, M.I., inzh.; MOSHKEVICH, Ye.I., inzh.

Studying 11.3 ton ingots of transformer steel. Met. i gornorud. prom. no.3:57-61 My-Je '63. (MIRA 17:1)

1. Zavod "Zaporozhstal'" (for Barziy, Borisenko, Vaynshtok). 2. Zavod "Dneprospetsstal'" (for Moshkevich).



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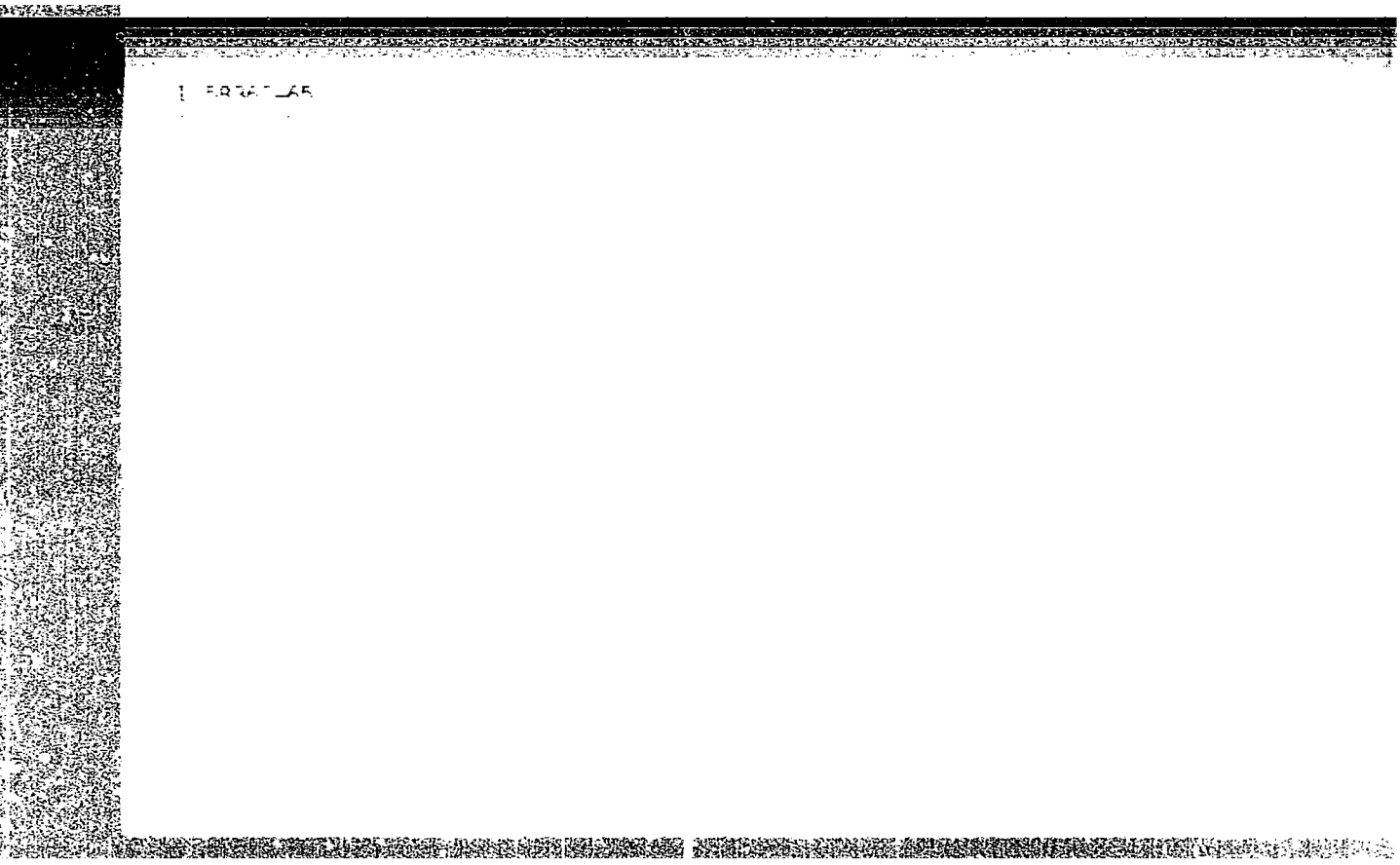

L 04189-67 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD
ACC NR: AT6026545 (A) SOURCE CODE: UR/2776/66/000/046/0020/0029

AUTHOR: Sinel'nikov, M. I.; Babakov, A. A.; Barziy, V. K.; Demchishin, A. V.; Laskaronskiy, E. N.; Lyublin, Ye. B.; Fel'dgandler, E. G.; Cherkashina, N. P.; Chernyavskaya, S. G.

ORG: Central Scientific Research Institute of Ferrous Metallurgy, Moscow (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: A study of the plasticity of 1Kh21N5T (EI811) steel at high temperatures

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 46, 1966. Spetsial'nyye stali i splavy (Special steels and alloys), 20-29

TOPIC TAGS: stainless steel, heat treatment, ~~hot ductility~~ plasticity, metallographic examination, austenite, ferrite, temperature dependence / 1Kh21N5T steel, EI811 steel

ABSTRACT: Ten heats of EI811 steel containing 4.8-5.3% Ni and 0.25-0.53% Ti were prepared in order to study the effect of temperature and ingot cementation time on phase composition. The dependence between phase ratios and metal plasticity at high temperatures was also studied. Samples were water quenched after heating at 1000, 1100, 1200, 1250 and 1300°C for 1, 2, 5 and 10 hr. Hot torsion tests were conducted at a twist rate of 60 rpm at 900, 1000, 1100, 1200, 1250 and 1300°C after a 20 min soak.

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ACC NR: AT6026545

The number of hot twists to fracture increased as a function of temperature. After fracturing, the samples were water quenched to retain the high temperature structure and then examined metallographically. The amount of austenite as a function of heat treatment for each steel is given. Micrographs of each treatment are shown for representative steel samples. The quantity of ferrite increased with rise in temperature or increase in time at temperature, with the most intense $\alpha \rightarrow \gamma$ conversion occurring in the 1200-1300°C range; by holding for 10 hrs in this range almost all of the structure became ferritic. The plasticity at different temperatures depended on the ratio of α- and γ-phases in the structure at the given temperature. Maximum plasticity resulted for γ-phase contents less than 25-30%. It was recommended that the ingots of EI811 steel be soaked at higher temperatures throughout rolling than is normally typical, i. e., at 1290 to 1310°C instead of 1250 to 1270°C. Orig. art. has: 1 table, 6 figures.

SUB CODE: 11/ SUBM DATE: none

Card 2/2

L 07152-67 EWP(k)/EWT(d)/EWT(m)/EWP(h)/EWP(l)/EWP(w)/EWP(v)/EWP(t)/ETI LJP(c)

ACC NR: AP7001004 JD/HW SOURCE CODE: UR/0383/66/000/003/0036/0038

BARZIY, V. K., TREGER, Ye. I.

37
35

"Tests of Steel 9Kh1SVF Working Rolls for Cold Rolling"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 3, May-Jun 66, pp 36-38

Abstract: Working rolls 400X1200 mm in diameter made at the Elektrostal' Plant of Heavy Machine Building from the new 9Kh2SVF steel developed by the Central Scientific Research Institute of Technology and Machine Building have been used since 1962 on the reversible 1200 cold rolling mill at the "Zaporozhstal'" Plant used basically for rolling low-carbon sheet and transformer steel. The new grade of steel has the following chemical composition (%): C 0.8-0.9 Mn 0.2-0.3 Si 1.2-1.8 Cr 1.9-2.1 N<0.15 W 0.4-0.6 V 0.1-0.2

According to data put out by the Central Scientific Research Institute of Technology and Machine Building, this steel differs from 9Kh2 steel in having higher hardenability, structural stability under the effect of temperature and pressure and increased resistance to surface marring. The use of 9Kh2SVF steel made it possible to increase the annealing temperature of the rolls from 160-180°C to 200-220°C thus reducing the level of internal stresses produced by the use of industrial-frequency current for hardening while maintaining the same hardness in the surface layer of the roller as produced by annealing at 160-180°C for rolls

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ACC NR: AP7001004

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made from 9Kh2 steel. Data from years 1962-1965 show a 45-78 per cent higher stability for rolls made from steel 9Kh2SVF than from 9Kh2 steel. This is due to a slight increase in the effectiveness of the hardened layer (determined in tons of rolled metal per millimeter of reduction in roll diameter) a higher degree of utilization of the working layer of the rollers (determined in millimeters of reduction in roll diameter befor failure) for 9K2SVF steel in comparison with rolls made from 9Kh2 steel. The introduction of rolls made from this type of steel on other cold rolling mills will undoubtedly result in a reduction of roller wear per tone of cold-rolled sheet which is especially important for continual intensification of sheet-rolling production. Orig. art. has: 1 figure and 3 tables. [JPRS: 37,111]

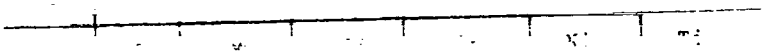
ORG: none

TOPIC TAGS: cold rolling, rolling mill, steel / 9Kh1SVF steel

SUB CODE: 13,11 / SUBM DATE: none

Card 2/2 mLE

I. L5381-65



GONKKIEWICZ, M.; BARZO, P.; BAKONYI, Z.; LANYI, M.

On the treatment of patients suffering from chronic bronchitis.
Orv. Hetil. 105 no.22:1050-1051 My 31 '64.

VAJDA, Istvan, dr.; ASZODI, Lili, dr.; HAJDU, Bela, dr.; STENSZKY, Ernone, dr.; BARZO, Pal, dr.; HORVATH, Endre, dr.

Familial relations of acquired hemolytic anemia. Magy.belorv.arch. 13 no.4:121-124 Ag '60.

1. A Hajdu-Bihar Megyei Tanacs Korhaza (Igazgato: Dr. Manyi Geza) I. sz. Belosztalyanak (Foorvos: Dr. Vajda Istvan), Megyei Verkonzervalo Allomasanak (Foorvos: Dr. Aszodi Lili) es az Orszagos Vertranszfuzios Szolgalat Kozponti Kutato Intezetenek (Igazgato: Dr. Hollan Zsuzsanna) kozlemenye.
(ANEMIA, HEMOLYTIC genetics)

RUMANIA

BARZOI, D., Veterinarian, of the "Pasteur Institute for Veterinary Research and Biological Products (Institutul de Cercetari Veterinare si Biopreparate "Pasteur").

"An Enzooty of Necrobacillosis in Piglets."

Bucharest, Revista de Zootehnie si Medicina Veterinara, Vol 13, No 10, Oct 63, pp 55-60.

Abstract: A review of the nature and effects of necrobacillosis in piglets, followed by a description of an enzooty in the summer of 1962 at a unit in Bucharest regiune. Of 1,369 piglets, 211 died. The author describes the necrotic lesions and gives a detailed case study of the disease for 5 piglets. The techniques used for diagnosis are given, as are the anatomo-clinical, epidemiological, bacteriological and biological data obtained.

Includes 5 references, of which 1 English, 1 Rumanian, 1 German and 2 Russian. Also includes 5 figures.

1/1

GOLDSTEIN, Iosif; BARZOI, Maria; DAVIDOVICI, Cazimir

Considerations on the regional distribution of goods funds. Probleme econ 17 no.2:153-154 F 64.

1. Director, Intreprinderea Comertului cu Ridicata pentru Textile-Incaltaminte Petroseni, reg. Hundeoara (for Goldstein). 2. Seful Serv. Plan, Intreprinderea Comertului cu Ridicata pentru Textile-Incaltaminte Petrosani, reg. Hunedoara (for Barzoi). 3. Seful Serv. Comercial, Intrepriderea Comertului cu Ridicata pentru Textile-Incaltaminte Petroseni, reg. Hunedoara (for Davidovici).

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S/194/62/000/012/023/101
D201/D308

AUTHOR: Barzryn'sh, Ya. M.

TITLE: Some problems of synthesis of abstract automatic devices

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1962, 55-56, abstract 12-2-110 yu (Uch. zap. Latv. un-t, v. 41, 1961, 52-62 (summary in Latv.))

TEXT: The algorithm of synthesis is based on describing the events which can be presented by finite automatic devices, by means of subevents. The notion of substant B (a generalization, to some extent, of the motion of a finite automatic device) is introduced, which denotes an object with a finite number $m \geq 1$ of states $b_1, \ldots, b_m$ and a finite number $n \geq 1$ of inputs $x_1, \ldots x_n$. Some pairs (x_k, b_i) have the property that under the action of x_k the substant B goes over from state b_i into state $b_i = x_k b_i$ (there exists in B a tran-

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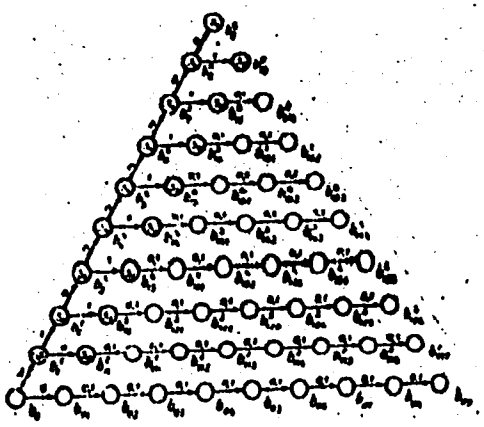
Some problems of ...

sition $x_k b_i$). The characteristic subevent b^M of duration M of event E, as represented in the finite automatic device A with a number of states m, is the set of all sequences belonging to the event E and having the length (number of symbols in the sequence) $1 \leqslant M = 2m - 1$. The subsequences are themselves called characteristic subsequences.



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Some problems of ...

In order to synthetize an automatic device with given characteristic sequences E_1^M, ..., E_k^M and v characteristic subsequences numbered from 0 to v, a symbol S is assigned to every characteristic sequence belonging to E_j^M (j = 1, ..., k). Inductive definition of substants B_0, B_1, ..., B_v is introduced. The substant B_0 has one state b_0 having as its output a null set Λ. The substant B_i is obtained from substant B_{i-1} by adding certain states and transitions. If there is no transition in B_{i-1} corresponding to the j-th characteristic sequence, then a new state b_j^1 with a null set Λ as an output is added to the set of events of B_{i-1} and a corresponding element S_α is added to the outputs of states corresponding to other sequences. The state b_i^r of the substant B_y, for which an input x_j can be shown such that the transition $x_j b_i^r$ does not exist, is called

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Some problems of ...

a limit state. A substant B'_v is constructed by adding to the substant B_v (in which some limit state B^r_i at a distance p from b_o has been chosen) states b^r_i, $b^r_{i_2}$, ..., $b^r_{i_{M-p}}$ with null sets Δ as outputs, transitions $x_j b^r_i = b^r_{i_j}$ for those x_j for which transitions $x_j b^r_i$ in substant B_v do not exist and transitions $x_\alpha b^r_{i_1} = b^r_{i_2}$, ..., $x_\alpha b^r_{i_{M-p}}$ ($\alpha = 1, 2, \ldots, n$). For simplification the set of states of the substant B'_v, at a distance $d \leq u + 1$ ($u = [1/2(M - 1)]$) from the state b_o, are divided into classes R_1, R_2, ..., R_s such that the states b_i and b_j belong to the same class if and only if $b_i = b_j(u)$, i.e. they have the same outputs and there are the same transitions for every sequence of inputs, and the states corresponding to these transitions have the same outputs. An automatic device A_o is set up with R_α ($\alpha = 1, 2, \ldots, S$) states, x_1, ... x_S inputs, and with a

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representation of the set of states on itself $x_\eta R_\alpha = R_\beta$ if and only if there exist in B'_v states $b_i \in R_\alpha$ and $b_i \in R_\beta$ such that $x_\eta b_i = b_j$. It is assumed that the state R_α of A_0 has the property S_i ($i = 1, \ldots, S$) if S_i is an element of its output. If b_0 belongs to the sub-set R_1, then A_0, in the initial state R_1, will represent events E_1, E_2, ..., E_k by the properties of states S_1, S_2, ..., S_k. If the number of states of the automatic device representing given events is not known beforehand, then the number M is chosen in an arbitrary manner and it is checked whether the designed device represents the given event. Two examples of synthesis are given. The figure shows the diagram of transitions of substant B'_v for given characteristic sub-events of events E_1 and E_2: E_2^β = (1, 11, 110, 1100, 11000, 110000, 1100000, 11000000, 1100001, 11000001, 110000001). The characteristic sequences E_1^β are denoted by symbols

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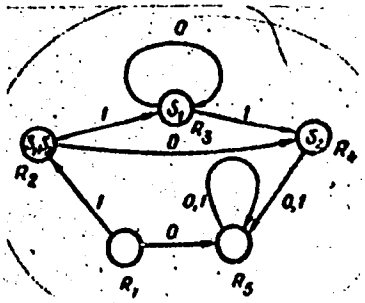
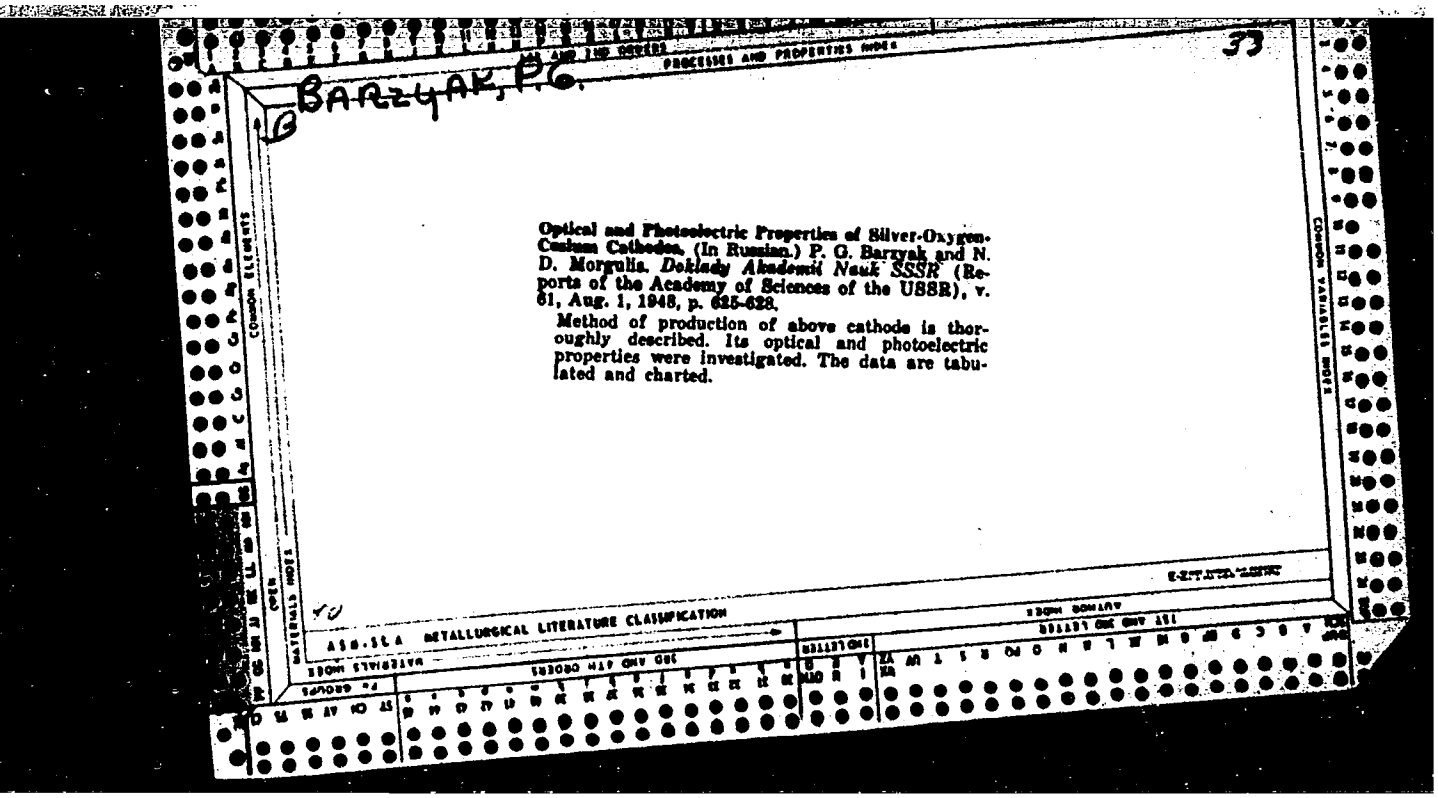
S_1; E_2^g by S_2. From B_v' all elements of sets R_α are determined: $R_1 = (b_0)$, $R_2 = (b_1^1)$, $R_3 = (b_2^2, b_3^3, b_4^4, b_5^5)$, $R_4 = (b_{11}^2, b_{12}^3, b_{13}^4, b_{14}^5)$, $R_5 = (b_{0_2}, b_{0_3}, b_{0_4}, b_{0_5}, b_{11_2}^2, b_{12_1}^3, b_{11_3}^2, b_{12_2}^3, b_{13_2}^4)$. A_0 is constructed according to the above and diagram of transitions for it is given in Fig. 2. 5 references. [Abstracter's note: Complete translation.]



Card 6/6



BARZYAK, P.G.

Optical and Photoelectric Properties of Silver-Oxygen-Cesium Cathodes. (In Russian.) P. G. Barzyak and N. D. Morgulis. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), v. 61, Aug. 1, 1948, p. 625-628.

Method of production of above cathode is thoroughly described. Its optical and photoelectric properties were investigated. The data are tabulated and charted.

BARZYALIS, L.S., aspirant [Barzialis, L.]

Experimental induction of infectious atrophic rhinitis in swine. Veterinariia 40 no.11:52-53 N '63. (MIRA 17:9)

1. Litovskiy nauchno-issledovatel'skiy veterinarnyy institut.

BARZYKIN, V.M.

"Mechanization of the Agricultural Industry," Moscow, 1946

BARZYKIN, V M

Mekhanizatsiya Sel'skokhozyay-Stvennogo Proizvoostva. (Mechanization of the Agricultural Industry)...(Uchebnik)...Moskva, Sel'khozgiz, 1948.

567 p. Illus., Diagrs.

Bibliografiya: p. 559

At head of title: Uchebniki Uchebnyye Posobiye...

BARSUKIN, V.M.

[Principles of the mechanization and electrification of agriculture] Osnovy mekhanizatsii i elektrifikatsii sel'skogo khoziaistva. Izd.2., dop. i ispr. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 479. (MIRA 11:9)
(Agricultural machinery)
(Rural electrification)

SOV/2o-12o-6-29/59

AUTHORS: Barzykin, V. V., Merzhanov, A. G.

TITLE: A Boundary Problem in Thermal Explosion Theory (Krayevaya zadacha v teorii teplovogo vzryva)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 12o, Nr 6, pp 1271 - 1273 (USSR)

ABSTRACT: In this paper thermal explosions of substances in the condensed phase are considered. In such processes the temperature on the boundary between the substance and the surrounding medium can remain constant only under definite experimental conditions. Ordinarily the heat exchange across the boundary is more complicated. The heat liberated in the reaction causes a combustion of the nearest layers of the surrounding medium. Thus the temperature of the medium deviates from the temperature at infinity. This paper is a study of the critical conditions of the thermal explosion with a heat exchange as mentioned above. The respective boundary conditions are given first. The equation of steady heat conduction and the boundary conditions read as follows:

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A Boundary Problem in Thermal Explosion Theory

$$\frac{d^2\theta}{d\xi^2} + \frac{m}{\xi}\frac{d\theta}{d\xi} = -\delta e^{\theta} \quad \text{at } \xi = 1, \left(\frac{d\theta}{d\xi}\right)_S = -Bi\theta_S.$$

m=0 for an infinite plane parallel slab, m=1 for an infinite cylinder, and m=2 for a spherical domain. The Frank-Kamenetskiy criterion δ is a function of the criterion $Bi = \alpha r/\lambda$ on the boundary of the explosion. If $Bi \to \infty$ and $\theta_S \to 0$ the problem is reduced to that of Frank-Kamenetskiy. By varying Bi from ∞ to 0 all possible cases of heat exchange are taken account of, from an ideal heat exchange to the case of no heat exchange (adiabatic case). The authors determine the steady temperature distribution and the critical conditions for the domains mentioned above. The case of an infinite cylindrical domain can be solved analytically all the way through. Expressions for the critical condition and for their distribution on the boundary of the explosion are given. No general integral has hitherto been found for the spherical problem. It possibly does not exist at all. The critical dependence δ (Bi) can also be determined by an approximation method within the frame work of unsteady theory. A corresponding formula is given.

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A Boundary Problem in Thermal Explosion Theory SOV/2o-12o-6-29/59

There are 3 references, 2 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, AS USSR)

PRESENTED: February 26, 1958, by V. N. Kondrat'yev, Member, Academy of Sciences, USSR

SUBMITTED: February 24, 1958

1. Explosions--Analysis 2. Explosions--Heat transfer 3. Mathematics--Applications

Card 3/3

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S/020/63/148/002/035/037
B124/B186

11.8300

AUTHORS: Merzhanov, A. G., Barzykin, V. V., Gontkovskaya, V. T.

TITLE: Problem of focal heat explosion

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 2, 1963, 380-383

TEXT: The local heating focus causing a heat explosion is given by a Π-shaped temperature profile at the initial instant of time in a spherical system of coordinates. The dimensions of the focus are assumed to be much smaller than the main mass of the substance. The initial differential equation $\partial\theta/\partial\tau = e^{\theta/(1+\beta\theta)} + (1/\delta[(\partial^2\theta/\partial\xi^2) + (2/\xi)(\partial\theta/\partial\xi)]$, $0 \leq \xi < \infty$, $\tau \geq 0$ with the initial and boundary conditions $\tau = 0$, $\theta = 0$ for $\xi \leq 1$; $\theta = -\theta_0$ for $\xi > 1$; $\theta = -\theta_0$ for $\xi = \infty$ was solved with an electronic computer. The temperature distribution was determined as a function of time and of the parameters of the system $\theta = \theta(\xi, \tau, \delta, \theta_0)$. Here $\theta = (E/RT_0^2)(T-T_0)$; $\xi = x/r$; $\tau = (QEk_0/cQRT_0^2)e^{-E/RT_0}t$; $\delta = (QEr^2k_0/\lambda RT_0^2)e^{-E/RT_0}$; $\beta = RT_0/E$ and $\theta_0 = (E/RT_0^2)(T_0-T_1)$, x is the radial coordinate, t is the time, T(x,t) is

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the temperature, T_o denotes the initial temperature of the focus, T_1 is the temperature of the mass of the substance at a certain distance from the focus, r is the initial radius of the focus, Q is the heat effect of the reaction, k_o is the factor of the exponential function, E is the activation energy, λ is the heat conduction coefficient, c is the thermal capacity and ϱ is the density. β was taken to be 0.03; furthermore, $4 < \theta_o < 25$. The approximation formulas $\delta_{crit} \simeq 12.1(\ln\theta_o)^{0.6}$, $r_{crit} \simeq 3.48\, T_o\sqrt{(\lambda R/k_o Q E)}e^{E/2RT}\ln[(E/RT_o^2)T_o - T_1)]^{0.3}$ and $\delta_{crit} \simeq 20$; $\tau_{crit} \simeq 2$; $\theta_{max.crit} \simeq 4$ were obtained. It has been found, for example, that for $\theta_o = 10.35$ and $\delta/\delta_{crit} = 1.4$ $\tau/\tau_{adiab} = 1.03$ where $\tau_{crit}/\tau_{adiab} = 1.63$. The properties of the focus depend only slightly on β. The characteristics of the process are hardly influenced by the burn-out. The focal explosion is not influenced by the reactivity of the neighborhood or the fulfillment of the boundary conditions on the surface of the focus. The presence of a neighborhood capable of reaction is, however, of considerable importance in the second stage of the reaction, i.e. when a self-propagating process is

Problem of focal heat explosion

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excited in the main mass of the substance. On the basis of calculations it could be concluded that during the induction period the dimensions of the focus reduce to temperature levels that correspond to the reaction maximum. In first approximation $(d\xi/dt)_{initial} = b/\delta$ is valid for the initial propagation rate of the process near the boundary where b depends only slightly on Θ_0 and δ so that $(dx/dt)_{initial} = (2 \text{ to } 5)10^3 a/d$ (a denotes the temperature diffusivity and d the initial diameter of the focus). The dependence of the initial propagation rate on the diameter is obviously connected with the non-steady excitation of the process. There are 4 figures and 3 tables.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: July 12, 1962, by N. N. Semenov, Academician

SUBMITTED: July 12, 1962

BARZYKIN, V.V.

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B020/B061

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AUTHORS: Dubovitskiy, F. I. Barzykin, V. V., Merzhanov, A. G.

TITLE: Thermal Explosion of Dinitroxydiethylnitramine Under Conditions of Purely Convective Heat Transfer

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 6, pp.1124-1126

TEXT: A method of studying the thermal explosion of liquid and molten explosives in purely convective heat transfer has been developed. In the tests, the method previously described by the authors (Ref. 1) for determining the critical conditions of thermal explosion was used, a device for mixing the substances (Fig. 1) being used in addition. This mixer was used for examining the critical conditions of the thermal explosion of dinitroxydiethylnitramine. The experimental results were compared with data calculated from N. N. Semenov's formula (Refs. 8,9), and good agreement was noted. There are 1 figure, 1 table, and 9 references: 5 Soviet, 3 Canadian, and 1 German.

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