"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

AUTHORS: Lyulichev A. N., Levintovich E. V. SOV/131-58-7-7/14

TITLE: The Determination of the Volume Weight of Refractories According to the Absorption of Gamma Radiation (Opredeleniye ob"yemnogo vesa ogneupornykh izdeliy po pogloshcheniyu gamma-izlucheniya)

PERIODICAL: Ogneupory 1958 Nr 7, pp 3 9 324 (USSR)

ABSTRACT: The VNIIO elaborated this method and tested it with refractories of various dimensions as well as within wide ranges of the volume weights of 0.75 to 3.35 g/cm³. The volume weight can be determined for products having two parallel surfaces.

1) Apparatus and method of determination: The determination of the volume weight is based on the character of the absorption of gamma radiation passing through a substance. The apparatus has a gamma radiation source as well as a counter, and prior to its use it is calibrated by means of samples of known density. The scheme of such an apparatus is shown in Fig 1. A Geiger-Müller counter (Geyger Myuller counter) of the type AMM-4 as well as a computer of the type PS 64 are

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The Determination of the Volume Weight of Refractories According to the Absorption of Gamma Radiation

used.

2) The dependence of the accuracy of determination on the energy of the gamma radiation source: In the case of a considerable thickness of the samples to be investigated the error of determination is dependent on the inaccuracy of the calculation $\ln I_x/I_0$ where I_0 denotes the radiation intensity. After this the calculation is carried out in detail.

3) The influence of other factors on the accuracy of determination: Table 1 gives the results of the measurements as dependent on the position of the sample and in Fig 2 those for refractories of different chemical composition are shown. The experimental values obtained prove the applicability of this method.

4) The arrangement of the graphical calibration plan as shown in Fig 3. It was made on the basis of measurements of resorbing samples of different thickness.

5) The checking of the method with various objects and the determination of the accuracy of the results.

Refractories of different dimensions and thickness as well

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SOV/131 58-7-7/14

The Determination of the Volume Weight of Refractories According to the Absorption of Gamma Radiation

as in different positions were checked as to their volume weight. The results of these investigations are given in Table 2 and they show that the deviations between the values obtained according to the gamma radiation and those obtained by the hydrostatic method remain within the framework set up by GOST specifications.

Conclusions:

1) The possibility of the determination of the volume weight by means of the absorption of gamma radiation for refractories of a volume weight of from 0,75 to 3,35 g/cm^3 and of dimensions of from 65 - 180 mm was found.

2) The optimum geometric parameters of the apparatus were determined.

3) The method was checked on products of different kinds and it was found that it corresponds to the GOST specifications.

There are 3 figures, 2 tables, and 7 references, 6 of which are Soviet.

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SOV/131-58-7-7/14

The Determination of the Volume Weight of Refractories According to the Absorption of Gamma Radiation

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov (All-Union Scientific Research Institute for Refractories)

1. Ceramic 2. Gamma radiation--Absorption 3. Geiger counters --Applications 4. Ceramic material--Microvolumetric

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

SOV/32-24-7-51/65

AUTHORS: Kraftmakher, Ya. A., Lyulichev, A. N., Shakhtin, D. M.

TITLE: The Investigation of the Operation of Laboratory Mixers by Means of Magnetic Indicators (Izucheniye raboty laboratornykh smesiteley pri pomoshchi magnitnykh indikatorov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 893 - 895 (USSR)

ABSTRACT: The apparatus constructed is based on the measurement of the magnetic conductivity of the samples in the low-frequency magnetic field. The instrument measuring the magnetic susceptibility was constructed by Ya.A.Kraftmakher. The measuring unit is an H-shaped armature on which three induction coils are arranged. The sample to be investigated is attached in such a way to the measuring unit that the magnetic flux passes through it; thus the inductive voltage in one of the coils is changed and the voltage of the measuring unit serves as a standard for the magnetic susceptibility of the sample. From the schematic representation of the apparatus given may be seen that a low-frequency generator, the measuring unit, a low- frequency amplifier, a detector, a lamp voltmeter as well as a visual in-

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SOV/32-24-7-51/65

The Investigation of the Operation of Laboratory Mixers by Means of Magnetic Indicators

dicator and a supply pack are assembled. The instrument has six measuring ranges of from 10^{-4} to 10^{-1} units of magnetic susceptibility in the CGSM system: the degree of mixing is determined by the measuring of the concentration of the magnetic powder in the samples taken from different places. The concentration of the magnetic powder is measured according to the magnetic susceptibility of the specimens pressed from the samples to be investigated. Granular sizes of quartzite of up to 0,5mm were used in the experiments; iron powder of 2,5% $Ca(OH)_2$, 0,5% sulfite alcohol vinasse, 8% water and 1,5% iron powder served as indicator. The results obtained were obtained from the mean value of the magnetic susceptibility and an equation; a diagram is given. There are 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut ogneuporov (All-Union Scientific Research Institute For Refractories)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

SOV/32-24-10-52/70

AUTHORS: Lyulichev, A. N., Chuprinin, F. I., Kovalenko, S. I.

TITLE: An Apparatus for Determining the Thermal Expansion Coefficient of Refractories (Pribor dlya opredeleniya koeffitsiyenta termicheskogo rasshireniya ogneupornykh materialov)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1282-1283 (USSR)

ABSTRACT: In a number of cases the investigations of mechanical and thermal properties of refractories must be carried out at high temperatures (about 2000°). In view of the fact that differential methods use the application of standards for determining the thermal expansion coefficient α, and that on this occasion also an additional pressure on the sample may occur, the present construction of the apparatus is based on an absolute method. From the diagram and the description given it may be seen that a horizontal microscope of the type MG-1 (provided with dispersion lenses to increase the focal distance) is used as comparator. The measurements were carried out at a temperature of 850-900° within ranges of 100° each. The maximum absolute error of the method described is ± 0,07%. The values of the thermal expansion coefficient of MgO calculated according to the

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SOV/32-24-10-52/70

An Apparatus for Determining the Thermal Expansion Coefficient of Refractories

experimental data obtained agree with those mentioned in publications (Ref 1). The deviations of the experimental points of the curves are not more than 0,04%. There are 2 figures and 1 reference, which is Soviet.

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29997
S/170/61/004/012/007/011
B104/B138

15.2620

AUTHORS: Vishnevskiy, I. I., Lyulichev, A. N., Sukharevskiy, B. Ya.

TITLE: Liberation of gases from vacuum-heated refractory ceramics

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 12, 1961, 94 - 97

TEXT: The authors tested the corundum K_1 and K_2 (K_1 and K_2), aluminous ВГ and ВЛ (VG and VL), and aluminosilicate refractories $AЛ_1$ and $AЛ_2$ (AL_1 and AL_2). The amount of gas liberated was estimated from pressure variations in the experimental apparatus, which was evacuated prior to the experiment. The pressure variations were measured with ЛМ-2 (LM-2) and ЛТ-2 (LT-2) pressure gauges and with a ВИТ-1 (VIT-1) vacuum gauge. The test chamber was a steel tube 50 mm in diameter and 1500 mm long (capacity about 3 liters). Eight cylindrical specimens 36 mm in diameter and 50 mm long were placed in the center of the heating zone. To eliminate impurities, the specimens were previously annealed in air at 1000°C for one hour. Before starting the tests the chamber with specimens in it was evacuated to about $5 \cdot 10^{-5}$ mm Hg. The specimens were heated to 900°C at a

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Liberation of gases from vacuum-heated ... S/170/61/004/012/007/011
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rate of 6°/min. As can be seen from Fig. 1, gas liberation peaks appear at 300-400°C and 700-800°C. It is shown that the first maximum is related to desorption of gases, and the second to reduction of oxides. Finally, the quality of the various refractories is estimated from the amount of gases liberated. The specimens were supplied by A. I. Royzen. There are 2 figures, 2 tables, and 3 references: 2 Soviet and 1 non-Soviet.

ASSOCIATION: Institut ogneuporov, g. Khar'kov (Institute of Refractory Materials, Khar'kov)

SUBMITTED: February 10, 1961

Fig. 1. Temperature (or time) dependence of infiltration (Δp, μ/min)
Legend to Fig. 1a: (1) K_1; (2) K_2; (3) ВГ (VG); (4) ВЛ (VL); (5) $АЛ_1$ (AL_1); (6) $АЛ_2$ (AL_2); (7) idle run system (without specimens).
Legend to Fig. 1b: (1) first test; (2) after 2-hours in air; (3) after 50 hr; (4) after 250 hr in air 1 roasting at 1000°C; (5) idle run

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L 22027-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(1)/EWA(h)/ETC(m)-6

ACC NR: AP6007917 IJP(c) JD/HM/JH UR/0125/66/000/002/0010/0014

77
73
B

AUTHOR: Verkin, B. I.; Kravchenko, Ye. L.; Lyulichev, A. H.

ORG: Physicotechnical Institute of Low Temperatures, AN UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Interlocking of aluminium with copper in high vacuum

SOURCE: Avtomaticheskaya svarka, no. 2, 1966, 10-14

TOPIC TAGS: metal bonding, cold welding, gas adsorption, compressive stress, high vacuum, adhesion, aluminum, copper, manometric lamp/LM-2 manometric lamp, IM-12 manometric lamp

ABSTRACT: This investigation was intended to determine the effect of the purity of surface on adhesion between metals (Al and Cu in high vacuum -- 10^{-9}-10^{-5} mm Hg), with the required compressive stress used as the criterion of adhesion. A specially developed experimental setup was used for this purpose (Fig. 1). Mounted within the chamber are: working assembly 1-5, device for cleaning the surface of specimens 6-12, and manometric lamps LM-2 and IM-12. The working assembly is designed to compress the specimens together. It is represented by two identical inserts, each consisting of punch 1, rod 2, guide bush 3 and sylphon 4. Specimen 5 is attached directly to the punch. The load is applied via rods 2 by means of a Brinell press. To remove oxide films from the surface directly within the chamber, use is made of a cleaning assembly

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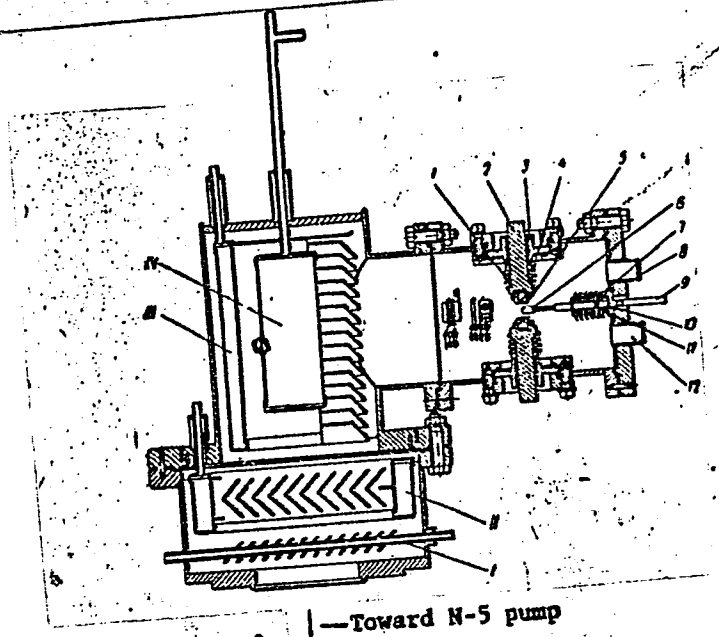

|—Toward N-5 pump

Fig. 1. Diagram of high-vacuum part of the setup:
I - water trap; II, III - nitrogen traps; IV - condensing hydrogen pump

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consisting of scraper 6, sylphon 7, rod 9, pivot 10 and washer 11. Peepholes 8, 12 make it possible to observe cleaning. The setup is evacuated by means of a N-5 diffusion pump. Traps I-III are designed to assure reliable freeze-out of the pump's oil vapors as well as of the decomposition products. Findings: even insignificant contamination of Al and Cu surfaces increases the required compressive stress by one order of magnitude. Cleaned surface of Al in a vacuum of $1 \cdot 10^{-9}$ mm Hg is contaminated by adsorbed gases. The degree of contamination is proportional to the product of pressure and exposure time, i.e. to the amount of gas adsorbed at the surface from the chamber's interior; mechanical cleaning of the surface is naturally ineffective in such cases. Thus more effective methods of surface treatment of specimens are needed before the aspects of adhesion between metals in high vacuum can be properly investigated. It can be established, however, that the compressive stress is not a physical characteristic of the adhesive properties of pure surfaces, since it is a function of surface roughness. Thus it is theoretically possible that atomically smooth and pure surfaces can mutually interlock without requiring mechanical compression: Orig. art. has: 6 figures.

SUB CODE: 11, 13, 20/ SUBM DATE: 09Sep65/ ORIG REF: 006/ OTH REF: 005

vacuum diffusion bonding

bonding of dissimilar metals

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULICHEVA, N. N.

"Application of the Methods of Spatial Metallography in Exposing the Influence of Phase Separation on the Mechanical Properties of Carbon Steel." Cand Tech Sci, Khar'kov Polytechnic Inst imeni V. I. Lenin, Min Higher Education USSR, Khar'kov, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

126-2-19/30

AUTHOR: Lyulisheva, N. N.

TITLE: Volume changes of the carbide phase during tempering of steel. (Ob"yemnye izmeneniya karbidnoy fazy pri otpuske staley).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), Vol.IV, No.2, 1957, pp.319-330, (USSR).

ABSTRACT: In investigating the structure of tempered steel by means of an electron microscope it was found that the quantity of the detected carbide phase is considerably larger than it should be on the basis of the contents of carbon in accordance with the formula Fe_3C. (1-3). The respective authors attribute this discrepancy to the screening of the ferrite by the protruding carbide particles and other inadequacies of the method of photographing by means of an electronic microscope; however, their assumptions have not been confirmed by experiment or by calculation. On the other hand a number of experiments are described in literature on the basis of which the respective authors conclude that low temperature carbide contains more iron than it should on the basis of the stechiometric ratio in accordance with the formula Fe_3C. The author of this paper investigated by methods of 3-dimensional metallography, using an optical

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

Volume changes of the carbide phase during tempering of steel. (Cont.) 126-2-19/30

microscope and an electron microscope, the changes in the volume of the carbide phase and steels with a heterogeneous structure. The investigations were effected on carbon, silicon and manganese steels in the tempering range 450 to 700 C and relations were established which govern the change in the volume of the carbide phase as a function of the temperature and the duration of the tempering. An assumption was expressed on the structure of the carbide phase during low temperature tempering. The specimens were of the steels 25, Y7, Y10, containing respectively 0.31, 0.68 and 1.06% C and also silicon steel containing 1.65% Si and 0.6% C and a manganese steel containing 1.7% Mn and 0.41% C. For obtaining structures with various degrees of dispersion, the specimens were hardened and then tempered at temperatures between 450 and 700 C, with holding times of between 2 and 50 hours at the given temperatures. The cuts were produced from heat treated specimens, photographed with a magnification of 1200 in an optical microscope and with a magnification of 4500 in an electron microscope (using the method of lacquer imprints in the latter case). The technique and the results are described in some detail.

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Volume changes of the carbide phase during tempering of steel. (Cont.) 126-2-19/30

Graph Fig.3 shows the influence of the tempering temperature on the volume changes of the carbide phase in the case of 10 hour holding time; in Fig.4 the influence of the carbon content on the volume of the carbide phase is plotted whilst in Fig.5 the volume changes in the carbide phase in the case of tempering with various holding durations are plotted. Graph Fig.7 shows the influence of the silicon and manganese on the volume of the carbide phase in the case of 25 hour tempering for several steels and graph Fig.8 shows the influence of the tempering temperature on the dimensions of the carbide particles in carbon steels. It is shown that the observed volume of the carbide phase at low tempering temperatures is considerably in excess of the theoretical value and that the observed phenomenon cannot be explained by inadequacies of the experimental method. It was established that on increasing the temperature and the duration of tempering the volume of the carbide phase decreases regularly, remaining all the time larger than the calculated values. Only at temperatures above 650 C and durations of 25 to 50 hours will the volume of the carbide phase correspond approximately to the theoretical value (in

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Volume changes of the carbide phase during tempering of steel. (Cont.) 126-2-19/30

accordance with the formula Fe_3C). It is shown that the carbide particles observed in the microscope contain less carbon than cementite; low temperature carbide consists either of individual submicroscopic blocks of cementite or of a solid α-solution and appears to be a solid solution of cementite and of the α-phase. On increasing the temperature and duration of tempering the carbon content in the carbide increases. The generally accepted conception that with increasing tempering temperature the size of the carbide particles increases continuously has not been confiremd. It was established that with increasing tempering temperature, between 200 and 500 C, the size of the observed carbide particles decreases whilst on increasing the tempering temperature between 500 and 700 C the size of the carbide particles increases. It was established that, compared with carbon steel, the carbide-forming element (manganese) increases and the non-carbide forming element (silicon) reduces the observed volume of the carbide phase. There are 8 figures, 1 table and 14 references, of which 11 are Slavic.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

Volume changes of the carbide phase during tempering of steel. (Cont.) 126-2-19/30

SUBMITTED: December 13, 1955 and after revision July 6, 1956.

ASSOCIATION: Kharkov Aviation Institute (Khar'kovskiy Aviatsionnyy Institut).

AVAILABLE:

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

SOV/163-59-2-3/49

18(2)

AUTHORS: Lyulicheva, N. N., Pisareva, N. V.

TITLE: The Mechanical Properties of Cold Hardened Chromium-nickel-austenite Steel of the Type 18-8 at Low Temperatures (Mekhanicheskiye svoystva nagartovannykh khromonikelevykh austenitnykh staley tipa 18-8 pri nizkikh temperaturakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 2, pp 217-220 (USSR)

ABSTRACT: The mechanical properties of stainless austenite steels of the type 1Kh18N9 and 1Kh18N9T were investigated at temperatures of +20 and -183° after rolling at room temperature (Fig 1). The dependence of the relative extension of the austenite steel of the type 18-8 on different temperatures is given in figure 2. The higher plasticity of the austenite steels determined at 183° after rolling at +20° is caused by the occurrence of cubic face-centered lattices. The mechanical properties of the metals and alloys after the treatment under pressure at room temperature are summarized in the table. The transformation of martensite into austenite steel during the deformation process at low temperature increases the strength of the alloys. A previous cold hardening

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SOV/163-[illegible]/48

The Mechanical Properties of Cold Hardened Chromium-nickel-austenite Steel of the Type 18-8 at Low Temperatures

is expedient for the use of austenite steel for low temperatures since the flow limit is thus increased without reduction of the plasticity. There are 2 figures, 1 table, and 8 references, 4 of which are Soviet.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Institute of Aviation)

SUBMITTED: May 28, 1958

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

PUBLIC INFORMATION

S/147/59/000/04/020/020
E031/E413

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Khar'kov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 101-105 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place.

Card 8/11

The Technology of Aircraft Construction and Metal Working Section. "A New Model of the Plasticity of Metals" by Instructor, Candidate of Technical Sciences Yu.N.Alekseyev; "The Forging Extrusion of Large Components from Sheet Metal" by Aspirant A.P.Barshukov; "On the Problem of Constructing Second Order Curves in Aircraft Construction" by Senior Instructor M.A.Zaydenvarg; "The Electric Contact Welding of Thin Pieces of Metal" by Assistant N.M.Tarasov; "The Influence of Plastic Deformation on the Properties of Austenitic Stainless Steel at Various Temperatures" by Assistant N.V.Pisarevsk; "The Deformation of Non-Ferrous Metals and Alloys at Low Temperatures" by Assistant N.M.Kvalitkaya; "The Investigation of Phase Changes in Austenitic Steels Previously Deformed at Below Freezing Point Temperatures" by Candidate of Technical Sciences A.N.Chukhleb and Aspirant V.P.Martynov; "The Influence of the Temperature and Velocity of Deformation on the Phase Changes of Austenitic Steels" by Candidate of Technical Sciences A.N.Chukhleb and Fellow V.P.Martynov; "The Determination of Optimum Technical Grouping in the Design and Production of Aircraft" by Assistant

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Yu.A.Boborykin; "On the Use of Explosives in the Technology of Drop Forging" by Assistant K.I.Zavtsev; "Welding by Friction" by Assistant N.P.Ostrovskiy. Structure of Aircraft Section. "On the Problem of Protecting the Structure of Aircraft from Aerodynamic Heating" by Docent P.V.Dybskiy; "Passive Methods of Protection from Aerodynamic Heating" by Candidate of Technical Sciences F.G.Yasinskiy; "The Influence of the Parameters of a Thermally Isolated Packet on Heat Transfer Characteristics" by Assistant A.A.Kobylyanskiy; "Aircraft Structures Made from Fibreglass Sheets" by Docent Candidate of Technical Sciences S.I.Kus'min; "An Apparatus for Investigating Repeated Static Loading and High Temperatures" by Assistant L.A.Nalashenko; "The Approximate Calculation of the Weight Taking into Account the Technical Features of the Aircraft Structure" by Candidate of Technical Sciences L.D.Arson; "The Determination of Stresses in a Shell as a Result of Riveting" by Assistant Yu.G.Fursa; "The Ultrasonic Altimeter (Sounding Device)"

Card 10/11

The Scientific-Technical Conference at Khar'kov Aviation Institute and "The Radio-Control and Autopilot of an Experimental Model" by Engineer L.P.Teplov.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

SOV/129-59-4-4/17

AUTHORS: Lyulicheva N.N. (Candidate of Technical Sciences) and Pisareva N.V. (Engineer)

TITLE: Influence of Rolling at Low Temperatures on the Mechanical Properties of Austenitic Steels (Vliyaniye prokatki pri nizkikh temperaturakh na mekhanicheskiye svoystva austenitnykh staley)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 4, pp 19 - 22 + 1 plate (USSR)

ABSTRACT: Stainless austenitic 18-8 steels are being used at room temperature and at elevated temperatures, as well as temperatures down to -196°C, for instance in cooling equipment for manufacturing liquid gases. The purpose of the work described in this paper was to investigate the influence of the reduction on the mechanical properties of austenitic steels. The deformation as well as the testing of the mechanical properties was effected at temperatures +100°, +20° and -183°C. The specimens consisted of 1.2 mm thick sheets of the steels 1Kh18N9T and 1Kh18N9. The blanks were first quenched from 1050°C in water and following that they were rolled at -183°, +20° and +100°C with reductions of 15 - 60%. The results of tensile tests at +20° and -183°C are

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SOV/129-59-4-4/17

Influence of Rolling at Low Temperatures on the Mechanical Properties of Austenitic Steels

graphed in Fig 1 for the steel 1Kh18N9T, and in Fig 2 the influence is graphed of the reduction at 20°C on the ductility for specimens tested at -183° and +100°C respectively. The authors arrive at the following conclusions: 1) Rolling in the cold state of austenitic steels for the purpose of improving the strength is more effective if it is carried out at sub-zero temperatures; in that case the strength characteristics will be 20 - 30% higher and the ductility will be the same, as in the case of ordinary rolling. 2) At low temperatures austenitic steels have good plastic properties (δ and ψ_p), irrespective of the degree of preliminary work hardening, at above freezing-point temperatures. 3) For work hardening of austenitic steel components operating at below freezing-point temperatures it is advisable to cold-work them at above freezing-point temperatures: such cold-working will bring about only an insignificant reduction in the plastic properties of the material at low temperatures. 4) The effectiveness of shaping by pressure of austenitic steels at low temperatures is the

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SOV/129-59-4-4/17

Influence of Rolling at Low Temperatures on the Mechanical Properties of Austenitic Steels

same irrespective of whether the material has or has not been cold-worked before. 5) Plastic deformation at low temperatures is accompanied by formation of martensite along three planes of an octahedron. Formation of martensite at room temperature during the process of plastic deformation is observed predominantly in a single crystallographic direction.

There are 3 figures and 3 references, of which 2 are Soviet and 1 English.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

SOV/126-7-2-16/39

18(3), 18(7), 24(6)

AUTHOR: Lyulicheva, N. N.

TITLE: Determination of Mechanical Properties of Steel by Quantitative Metallographic Methods (Opredeleniye mekhanicheskikh svoystv stali metodami kolichestvennoy metallografii)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol 7, Nr 2, pp 265-273 (USSR)

ABSTRACT: The aim of the investigation was to find the relationship between the mechanical properties of steel in tension and the quantitative and dimensional characteristics of their grain structures, as well as to collect experimental data as to quantitative metallography. The carbon steels 25, 35, U7, U8 and U10 with carbon contents of 0.31, 0.38, 0.68, 0.78 and 1.06%, respectively, were investigated. In order to study the influence of carbide forming and non-carbide forming elements on the quantitative and dimensional structure characteristics, the steels 45G2 (0.41% C and 1.7% Mn) and 60S2 (0.6% C and 1.65% Si) were used. Granular structures of various dispersions were obtained by changing the tempering

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SOV/126-7-2-16/39

Determination of Mechanical Properties of Steel by Quantitative Metallographic Methods

temperature from 450 to 700°C and soaking from 2 - 50 hours. The study of microstructure was carried out from photographs taken through optical (x1200) and electron (x4500) microscopes. The number of carbide particles n per 1 mm^2 of microsection was determined by direct count of the photomicrograph. The volume of ferrite V_f can be calculated according to Moroz's formula (Ref 1):

$$V_f = \frac{1 - \frac{c}{6.68}}{n^{3/2}}, \quad (1)$$

where c is the carbon content of the steel. The specific surface of separation of the phases $\sum S$ and the specific spread of grain boundaries $\sum P$ were calculated according to Saltykov's formula (Ref 4):

$$\sum S = 2m \ mm^{-1} \quad (2)$$

$$\sum P = \frac{\pi}{2} m \ mm^{-1} \quad (3)$$

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where m is the average number of intersections/mm^2 of random secants. The mean path through ferrite was calculated by Lyulicheva's equation (Ref 9):

$$L = \frac{2}{m}\left(1 - \frac{\% V_k}{100}\right) \qquad (4)$$

where 2/m is the distance between the centres of carbide particles, and V_k is the volume of the carbide phase, as determined by A. A. Glagolev's accurate method (Ref 4). The yield point was chosen as the fundamental mechanical property associated with the structure, as it has the greatest practical significance. In Table 1 the tempering condition, a few limiting values of mechanical properties and fundamental results of calculations of structural dimensions, are shown. In order to verify the limits of applicability of conditions expressed by several authors (Refs 1-4, 7), graphs for the dependence of yield points on the corresponding characteristics of structure (Figs 1-3) were plotted. In order to derive

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Determination of Mechanical Properties of Steel by Quantitative Metallographic Methods

an equation for a straight line having the greatest correlation with the experimental results, mathematical statistics methods were used. The straight lines plotted in the diagrams correspond with the correlation equations (5) to (10) in Table 2. From the graphs of Figs 1 to 3 and from Table 2 it follows that no general relationship between yield point and any structural property, V_f, ΣS or L exists for all carbon steels. In Fig 1 the dependence of the logarithm of yield point on the logarithm of the free quantity of ferrite, is shown: a - optical photomicrographs, Eq (5); b - electron photomicrographs, Eq (6); B - Moroz's correlation equation (1). In Fig 2 the dependence of yield point on the specific surface of phase separation is shown: a - optical photomicrographs, Eq (7); b - electron photomicrographs, Eq (8). In Fig 3 the dependence of yield points on the logarithm of the free path through ferrite shown: a - optical photomicrographs, Eq (9); 6 - electron photomicrographs, Eq (10). In Fig 4 the influence of tempering temperature on the

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SOV/126-7-2-16/39

Determination of Mechanical Properties of Steel by Quantitative Metallographic Methods

thickness of the delayed reaction layer is shown: 1 - 60S2, 2 - 45G2, 3 - carbon steels. In Fig 6 the dependence of the yield point and of the true ultimate tensile stress on the reciprocal of the area of the soft phase, is shown. From the above experiments, the author has arrived at the following conclusions:

1. In the tempering temperature range of 450-700°C, there exists a correlation relationship between the quantitative structure characteristic and the strength characteristic of steel.

2. An experimental formula for the determination of the yield point in granular structures is suggested, which gives a good correlation in a wide tempering temperature range, and applies to carbon steels containing from 0.3 to 1.06% C, as well as to the alloy steels 45G2 and 60S2.

3. A linear relationship exists between the true and overall ultimate tensile stress, on the one hand, and the reciprocal of the specific area of the soft phase on the other.

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Determination of Mechanical Properties of Steel by Quantitative Metallographic Methods

4. The influence of silicon and manganese on the improvement of the mechanical properties of steels is associated with a change in quantitative and dimensional characteristics of the structural components, of the properties of the soft phase and of the nature of the phase boundary surface under the influence of these elements.

There are 6 figures, 2 tables and 18 references, 17 of which are Soviet, 1 English.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Institute of Aviation)

SUBMITTED: April 15, 1957

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

S/148/60/000/002/004/008

18.8300

AUTHORS: Lyulicheva, N.N., Pisareva, N.V.

TITLE: Corrosion Resistance of Austenite Steels After Pressure Working at Low Temperatures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1960, Nr 2, pp 78 - 80

TEXT: In chrome-nickel austenite steels low-temperature deformation entails intensified increase in strength due to martensite transformation. It must be expected that the second phase, namely martensite, developing during low temperature deformation, will change corrosion properties of steel. This assumption was checked by speeded-up corrosion tests of 1Kh18N9 steel by a method recommended by [Ref 3]. Loss in weight of electropolished specimens was determined after 100-hour holding in 3.6% HCl dissolved in technical water. As a result the curve of "weight loss versus degree of compression at - 183°C" showed a maximum corresponding to the loss in weight increased by a factor of 2 (Figure 2). After rolling at room temperature and high degree of compression, corrosion resistance of

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S/148/60/000/002/004/008

Corrosion Resistance of Austenite Steels After Pressure Working at Low Temperatures

the steel was less impaired and a maximum on the curve ("weight loss versus degree of compression") was not observed. After rolling at low temperature X-ray examinations of the phase composition in austenite steels were carried out to determine, to which amount of martensite corresponded the maximum decrease of corrosion resistance. Comparison of curves (Figures 2, 3) show a maximum weight loss in 1Kh18N9 steel after compression by 15 - 20%, which corresponded to about 50% martensite. If compression was increased up to 40%, corrosion resistance improved and then became almost equal to that of steel rolled at room temperature. Thus, after rolling at -183°C and 40% compression, the weight loss was 14 g/m^2 and after rolling at room temperature it was 11 g/m^2. Improved corrosion resistance in the presence of a martensite content of over 50% in steel rolled at low temperatures, proved that high-alloy martensite ensured sufficiently high corrosion resistance. The conclusion is drawn that in austenite steels with non-stable austenite,

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Corrosion Resistance of Austenite Steels After Pressure Working at Low Temperatures

the pressure working at low temperatures, carried out to raise the strength, dit not considerably reduce their corrosion resistance.
There are: 3 graphs and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut (Khar'kov Aviation Institute)

SUBMITTED: November 21, 1958

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

S/185/60/005/004/020/021
D274/D306

AUTHORS: Bubley, R.E. and Lyulicheva, N.N.

TITLE: A simple cryostat for metallographic investigations

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 576-577

TEXT: A very simple cryostat was designed and tested for the purpose of studying and photographing metallographic polish at low temperatures. The cryostat is a kind of Dewar cylindrical flask with flat and transparent bottom through which the observations were carried out. The dimensions of the cryostat were as follows: height 100 mm, outer diameter 60 mm, inner diameter 40 mm, thickness of double-walled bottom 7 mm. The more even in thickness the bottom, the better the picture obtained. By using a Lozins'kyy microscope with far-focusing objective, the magnification is 400 times, whereas an ordinary objective magnifies 200 times. But in the latter case the thickness of the cryostat bottom has to be limited to maximum

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

S/185/60/005/004/020/021
D274/D306

A simple cryostat . .

7 mm. For studying structures at low temperatures, the polished surface under investigation was put at the bottom of the cryostat, the cryostat itself being placed under a metalmicroscope. A liquid cooling agent (oxygen, nitrogen, etc.) was poured into the cryostat. Thereupon the temperature was equalized and the specimen was investigated and photographed. As was to be expected, the polished surfaces were not oxidized in liquid oxygen. The quality of the picture did not diminish with time. The polished surfaces which are investigated by means of the cryostat should be etched beforehand slightly stron er than usual. /Abstracter's note: Essentially a complete translation./ There are 2 Soviet bloc references.

ASSOCIATION: Kyyivs kyy politekhnichnyy instytut (Kiyev Polytechnical Institute)

SUBMITTED: February 29, 1960

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULICHEVA, N.N.; PISAREVA, N.V.

Heat treatment of cold-worked Kh18N9T steel. Metalloved. i term. obr. met. no.10:41-42 O '63. (MIRA 16:10)

1. Khar'kovskiy aviatsionnyy institut.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULINSKIY, Z.P., inzh.; VELICHKO, T.G., inzh.

Coating cast-iron pressure pipes with compositions based on petroleum bitumens. Mashinostroenie no.4:87 Jl-Ag '63. (MIRA 17:2)

1. Makeyevskiy truboliteynyy zavod.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

CHERKASOV, Boris Aleksandrovich; LYUL'KA, A.M., retsenzent; DOBRYNIN, A.N., kand. tekhn. nauk red.

[Automatic control and regulation of ramjet engines.] Avtomatika i regulirovanie vozdushno-reaktivnykh dvigatelei. Moskva, Mashinostroenie, 1965. 402 p. (MIRA 19:1)

1. Chlen-korrespondent AN SSSR (for Lyul'ka).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

L'VUL'KA, A. N. Cand Med Sci -- (Diss) "~~The~~ Function of the Adrenal Cortex ~~at~~ in the Hyperthyroidal Form of ~~the~~ Goiter ~~Disease.~~ ~~As Indicated by~~ the Urea-Chlorine-Water Index." L'vov, 1957. 15 pp 20 cm. (L'vov State Medical Inst), 200 copies (KL, 10-57, 88)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, A.N., kand.med.nauk; CHEREN'KO, M.P., kand.med.nauk

Nikolai Markianovich Volkovich. Vrach.delo no.1:1331-1333 D '58. (MIRA 12:3)

1. Kafedra khirurgii (zav. - zasl. deyatel' nauki, prof. A.K. Gorchakov) stomatologicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.

(VOLKOVICH, NIKOLAI MARKIANOVICH, 1858-)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, A.N.

Perforation of a single ulcer of the jejunum. Vrach.delo no.5: 531-533 My '58 (MIRA 11:7)

1. Kafedra khirurgii (zav. - zasl. deyatel' nauki, prof. A.K. Gorchakov) stomatologicheskogo fakul'teta Kiyevskogo meditsinskogo instituta. (JEJUNUM--ULCER)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, A.N., kand.med.nauk

Hemorrhage in the gall bladder. Vrach.delo no.10:1087-1088 O '58 (MIRA 11:11)

1. Kafedra khirurgii (zav. - zasl.deyatel' nauki, prof. A.K. Gorchakov) stomatologicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.
(GALL BLADDER--DISEASES)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

CHEREN'KO, M.P., kand.med.nauk; LYUL'KA, A.N., kand.med.nauk

Interrelation between central nervous system function and adrenal cortex in patients with the hyperthyroid form of goiter. Vrach. delo no.11:1169-1172 N '59. (MIRA 13:4)

1. Kafedra khirurgii (zaveduyushchiy - zasluzhennyy deyatel' nauki, prof. A.K. Gorchakov) stomatologicheskogo fakul'teta Kiyevskogo meditsinskogo instituta.
(NERVOUS SYSTEM) (ADRENAL CORTEX) (GOITER)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

OGIY, P.Ye., dotsent; LYUL'KA, A.N., kand.med.nauk

Retrosternal nodular goiter. Vrach.delo no.5:519-521 My '60. (MIRA 13:11)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. A.G.Martynyuk) Ternopol'skogo meditsinskogo instituta.
(GOITER)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, A.N., dotsent (Ternopol', ul. Lenina, d.29, kv.7);
TUSHIN, O.V.

Abdominal manifestations of a thyrotoxic crisis. Klin.khir. no.11:77-79 N '62. (MIRA 16:2)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. A.G. Martynyuk) Ternopol'skogo meditsinskogo instituta.
(THYROID GLAND—SURGERY) (ADRENAL CORTEX)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

The Binding Ene[illegible] of Light H[illegible]
the Meson The[illegible]

[illegible]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

The Binding Energy of Light H [illegible]
the Meson Theory

H^3_Λ : $E = E_{kin} + 2E_c^{2\pi} + E_c^{1K} + \frac{5}{3} E_c^{K\pi} + 2E_c^{2K}$

H^4_Λ, He^4_Λ : $E = E_{kin} + 3E_c^{2\pi} + 2E_c^{1K} + 3E_c^{2K}$

He^5_Λ : $E = E_{kin} + 4E_c^{2\pi} - 2E_c^{1K} + 2E_c^{K\pi} + 4E_c^{2K}$

Calculation [illegible] of [illegible] results [illegible] periment [illegible] D.D.Iv[illegible] Ther[illegible] table Soviet.

ASSOCIATION: [illegible] University)

Card 3/4

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

Lyul'ka, V. A.

ΛN

[illegible]

[illegible] V.A.Lyul'ka, V. [illegible]

[illegible] Ivanenko, [illegible] N.K[illegible]

Hypernuclei [illegible] containing Λ or Σ- hyperons in addition [illegible] and neutrons, are of great interest [illegible] for the [illegible] standing of cosmic [illegible] processes and for research into ordinary [illegible]. By making use of the binding constant known from [illegible] theory, and having carried out the "[illegible] off" as in the Chou-Hartshaus method in the theory of [illegible] nuclei, we obtain values for hyper-[illegible] in satisfactory agreement with experimental results.

An evaluation made on the basis of [illegible] theory reveals the existence of weak forces of Λ-Λ attraction in addition to the stronger Λ-N interaction, which, in turn, is not [illegible] weaker than the N-N forces. [illegible] the binding energies of the normal [illegible] the excited [illegible] nuclei containing one or two Λ- particles [illegible] calculate [illegible] approximation of a short range of [illegible] [illegible] of the [illegible], whose parameters were [illegible] energy of the Λ- particle in $H^4\Lambda$ and $He^5\Lambda$.

The data on Λ-N forces [illegible] calculate the cross sections of [illegible] and capture of [illegible] Λ particles by nuclei.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July [illegible].

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

21(1),21(7)

AUTHORS: Ivanenko, D. D., Lyul'ka, V. A., [illegible]

TITLE: The Theory of Hyper-nuclei (Teoriya giperyader)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 68, Nr 4, [illegible]

ABSTRACT: The authors give a survey of the present stage of [illegible] hyper-nuclei, nuclear systems consisting of nucl[illegible] and hyperons. An investigation of these hyper-nuclei makes possible to obtain data on elementary particles (Λ, Σ, [illegible]) such as spin, parity, and the interaction between particles. The large amount of experimental material available in [illegible] respect makes it possible to deal in theory with hyper-nuclei both from the phenomenological point of view, and by means the quantum field theory. The authors enumerate the most important essential experimental factors [illegible] theoretical investigations concerning hyperons. The experimental part of the paper begins with the discovery of hypernuclei in 1953 by the Polish physicists Danysz and Pniewsky (Ref 1) in nuclear emulsions (Fig 1); in the following, the authors discuss the identification of hyper-nuclei; a table shows a number of hypernucleus observations. It was found that whereas in the

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case of accelerator- and cosmic radiation experiments, the relative frequency with which hyper-nuclei are recorded is about 1.10^{-3} (cosmic rays only $0.2.10^{-3}$), it was found to be between 24 and 57.10^{-3} for the case of K-captures. In the following the question of the life time of hyper-nuclei is briefly discussed; their value is near the order of magnitude of 10^{-10} sec. Further, the frequency of hyper-nuclei as a function of the nuclear charge is discussed. Figures 3 and 4 show the Z-dependence of mesonic and non-mesonic decay. Finally, the binding energy of the Λ-particles in the hyper-nuclei is discussed according to the relation $B_\Lambda = M_\Lambda + M_A - \sum_i m_i - Q$ (Figure 5 shows B_Λ (A) - a straight line; A denotes the number of nucleons in the hypernucleus, m_i the masses of the reaction products, and Q - the sum of their kinetic energies), and also some anomalous cases observed. In the second part of the paper - the theoretical treatment of the hypernucleus problem - the most important properties of the hyperons and K-mesons are discussed (classification of inter-action into strong, electromagnetic and weak interaction, the

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SOV/53-68-4-4/12

The Theory of Hyper-nuclei

theory of the former, special cases, some Σ- and Ξ-processes, after which the decay possibilities of hyper-nuclei (mesonic and nonmesonic decay), as well as the problem of the spin of the Λ-particles. In the following, the authors first mention some general questions of a phenomenological treatment of the hyper-nuclei with $A \leq 5$, followed by the special cases of the hyper-nuclei He^5_Λ, H^4_Λ, He^4_Λ and H^3_Λ. Finally, the treatment of light hyper-nuclei on the basis of the field theory and several questions related to the spins of the hyper-nuclei are discussed. The material (particularly that of the theoretical part) was mainly taken from Western papers. There are 5 figures, 5 tables, and 136 references, 12 of which are Soviet.

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B006/B056

24.6900

AUTHOR: Lyul'ka, V. A.

TITLE: The π^--Meson Decays of the H^3_Λ-Hypernucleus 19

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 1(7), pp. 78-79

TEXT: From the half-life ratio of the two H^3_Λ decay modes $H^3_\Lambda \rightarrow He^3 + \pi$ and $H^3_\Lambda \rightarrow d + p + \pi^-$ it has previously been assumed (Refs. 1, 2) that the H^3_Λ-hypernucleus has the spin 1/2, but in these papers the interaction in the final state was not taken into account. In the present paper the author investigates the half-life ratio of the two decay modes in momentum approximation while considering the interaction in the proton-deuteron-system. The interaction of pions with other decay products is low and is neglected. A comparison between the theoretical results obtained for $j = 1/2$ and $j = 3/2$ with the experimentally obtained lifetime ratio of the two decay modes shows that the theoretically obtained results with

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84713

The π^--Meson Decays of the H^3_Λ-Hypernucleus S/056/60/039/001/033/041/XX
B006/B056

spin $J = 1/2$ are in far better agreement with the experiment. Agreement is better than in the work of Picasso and Rosati (Ref. 1). The author finally thanks Professor D. D. Ivanenko for his interest and N. S. Il'ina for numerical computations. There are 6 non-Soviet references.

SUBMITTED: February 4, 1960

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

83198

S/056/60/039/002/035/044
B006/B070

24.6900

AUTHOR: Lyul'ka, V. A.

TITLE: Energy and Angular Distribution in Hypernucleus Decays

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 2(8), pp 471 - 475

TEXT: Recently the three particle π^--mesonic decays of light hypernuclei have been studied and a number of interesting facts have been established. The He^5_Λ and He^4_Λ nuclei are found to show a large asymmetry in the angular distribution of the decay products. The author of the present paper has investigated theoretically, in momentum approximation, the effect of strong interaction on the energy and angular distributions of the decay products from $He^4_\Lambda \to He^3 + p + \pi^-$ and $He^3_\Lambda \to d + p + \pi^-$, and compared the results with those of He^5_Λ decay. The amplitude of the decay of Λ-particles in the hypernucleus is shown to be given by $M = s + pk_0^{-1}(\vec{\sigma}\vec{k})$

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83198

Energy and Angular Distribution in Hypernucleus Decays S/056/60/039/002/035/044 B006/B070

$\vec{k}$ is the pion momentum and k_0 is its value on the decay of a free Λ-particle (~101 Mev/c); s and p are the decay amplitudes corresponding to the channels with l = 0 and l = 1, respectively The interaction of the π^--mesons with the other decay products is neglected on account of its smallness, and only the interaction between the proton and the residual nucleus is taken into account The correction for the deformation of the mesonic cloud of the Λ-particles (See Ref. 5) is insignificant for light hypernuclei. The energy spectrum of the pions for the decay of He^4_Λ was found to be given by $d\sigma/dk \sim \int_{-1}^{+1} |M_{if}(k, \cos\varphi)|^2 k^2 k_f d\cos\varphi$ Fig 1 shows $d\sigma/dk = f(k)$ with and without the consideration of the interaction in the final state. The angular distribution is given by

$d\sigma/d\cos\theta \sim \int_0^{P_{\Lambda max}} |M_{if}(P_\Lambda, \cos\theta)|^2 P_\Lambda^2 q dP_\Lambda$ Fig 2 shows the curves $d\sigma/d\cos\theta = f(\cos\theta)$, again with and without consideration of the inter-

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Energy and Angular Distribution in Hypernucleus Decays

83198
S/056/60/039/002/035/044
B006/B070

action in the final state. This interaction has a significant effect on the energy and the angular distributions of the pions. A comparison with the experimental results shows that, in order to obtain agreement, the interaction in the final state must be taken into account. Fig. 3 shows the energy distribution of the pions in He^3_Λ decay. Also in this case those curves which are drawn by taking into account the interaction show good agreement with experiments (in the range 85 - 100 Mev/c, about 80% of all decays). In conclusion the author thanks Professor D. D. Ivanenko for help and N. S. Il'ina for computations. There are 3 figures and 13 references: 1 Soviet, 7 Italian, 3 US, 1 Dutch, and 1 British.

SUBMITTED: March 22, 1960

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

S/139/61/000/006/013/023
E032/E314

AUTHOR: Ivulka V A

TITLE: The selection rule $|\Delta T| = \frac{1}{2}$ and the decay of hypernuclei

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Fizika no 6 1961, 90-94

TEXT: It has been suggested in the literature that the decay of strange particles can be interpreted by assuming that the strangeness and the isotopic spin follow the selection rule $\Delta S = \pm 1$ $|\Delta T| = \frac{1}{2}$. For example this has led to an explanation of the relative decay probabilities of the Λ -particle Data on the decay of $\Sigma^{\pm}$ and the three pion decay of K-mesons are also consistent with this hypothesis It is therefore of interest to investigate other possible ways of verifying the applicability of the above isotopic spin selection rule in weak interactions The present author is concerned with this problem and derives theoretical expressions for the decay probabilities of the following hypernuclei He^{4}_{Λ} H^{4}_{Λ} He^{5}_{Λ}, Li^{7}_{Λ} and Be^{9}_{Λ} Three and

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The selection rule

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E032/E514

four body decay modes are considered. There are 6 references 1 Soviet-bloc and 5 non-Soviet-bloc. The English-language reference reads as follows. Ref.3 G Iso, M Kavaguchi Progr Theor, Phys., 16, 177, 1956.

SUBMITTED: November 26, 1960

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, V.A.

Isotopic invariance in processes involving antihyperons. Zhur. eksp. i teor. fiz. 40 no.1:256-261 Ja '61. (MIRA 14:6)
(Mesons)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

YELAGIN, Yu.P.; LYUL'KA, V.A.; NEMIROVSKIY, P.E.

Neutron force function in an optical model. Zhur.eksp.i teor.fiz. 41 no.3:959-962 S '61. (MIRA 14:10)
(Neutrons) (Nuclear models)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

39968

S/056/62/042/006/033/047
B104/B108

24 6600

AUTHOR: Lyul'ka, V. A.

TITLE: Decay of hypernuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1629 - 1631

TEXT: The energy and angular distributions of π-mesons and protons in the decay of $He^5_\Lambda \longrightarrow He^4 + p + \pi^-$ were calculated, allowing for interaction in the system $p - He^4$. The decay is kinematically described by two systems of independent variables: $\vec{k}$, $\cos\varphi$ and $\vec{P}$, $\cos\psi$. $\vec{k}$ is the momentum of the π-meson, φ the angle between $\vec{k}$ and $\vec{k}_f$, where $\vec{k}_f$ is the relative momentum of the proton and of the He^4 nucleus in their c.m.s.; $\vec{P}$ is the momentum of the proton, ψ the angle between $\vec{P}$ and the relative momentum $\vec{k}_\Lambda$ of these particles in their c.m.s. With the aid of the law of conservation of mass, the relations

$$\mathbf{k} = \mathbf{k}_\Lambda - \frac{\mu}{A+\mu-1}\mathbf{P}, \qquad \mathbf{k}_f = \frac{1}{A}\mathbf{k}_\Lambda + \frac{(A-1)(A+\mu)}{A(A+\mu-1)}\mathbf{P},$$

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B104/B108

Decay of hypernuclei

$$2Q = \frac{A}{A-1} k_l^2 + \frac{\mu + A}{\mu A} k^2 = \frac{A \cdot \mu}{A + \mu - 1} P^2 + \frac{A + \mu - 1}{\mu (A-1)} k_\Lambda^2,$$

can be derived, where μ is the mass of a π-meson and $\varkappa$ = 55 Mev is the energy set free in the decay of He^5_Λ. In momentum approximation, the matrix element of the decay can be written as

$$M_{ll} = \int \Psi_l^*(\rho) \exp\left[-i \frac{4}{5} \mathbf{k}\rho\right] \hat{M}(s, p) U_\Lambda(\rho) \chi_1 d\rho.$$

where s and p are coefficients in the expression $\hat{M} = s + p\vec{\sigma k}/k_0$; k_0 is the momentum of the π-meson in the decay of a free Λ-particle. The strong interaction in the system proton - He^4 leads to a peak in the energy distribution of the π-meson at a relative kinetic energy E_f of ~5 Mev. The angular distribution of the π^-- mesons agrees qualitatively with the experimental angular distribution (Figs. 1 and 2). The strong interaction in the final state also reduces a high maximum in the momentum distribution of the protons at about 90 Mev/c. A second maximum lies at 180 Mev/c. Nuclear effects such as deformations of the core of a nucleus or of the meson cloud of Λ-particles have not been considered in

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S/056/62/042/006/033/047
B104/B108

Decay of hypernuclei

[illegible]; the [illegible] can be neglected in a qualitative comparison with experimental results. There are 4 figures.

SUBMITTED: January 18, 1962

Fig. 1. Distribution with respect to relative energy of π^--mesons in the c.s.

Fig. 2. Angular distribution of π^--mesons.

Fig. 1

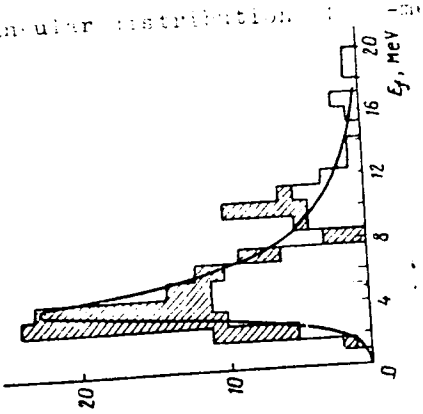
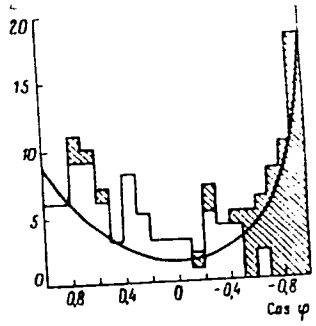


Fig. 2



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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULKA, V.A.

Hyperon production in nucleon-nucleon collisions. Izv. vys. ucheb. zav; fiz. no.1:108-111 '63. (MIRA 16:5)

1. Institut atomnoy energii imeni V.I.Kurchatova AN SSSR.
(Hyperons) (Collisions (Nuclear physics))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, V.A.

Some isotopic relations for reactions of the production of strange particles. Izv.vys.ucheb.zav.;fiz.no.2:24-30 '63. (MIRA 16:5)

1. Institut atomnoy energii imeni I.V. Kurchatova AN SSSR.
(Nuclear spin) (Mesons)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, V.A.

Remarks on hyperon production in nucleon-nucleon collisions. Izv. vys. ucheb. zav.; fiz. no.5:55-57 '63. (MIRA 16:1)

1. Institut atomnoy energii imeni I.V.Kurchatova AN SSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

L 17628-63 EWT(m)/BDS AFFTC/ASD S/056/63/044/003/033/053

51

AUTHOR: Lyul'ka, V. A.

TITLE: Some isotopic relations for reactions involving four particles in the final state

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 5, 1963, 999-1002

TEXT: In existing papers the isotopic analysis is carried out only by assuming the resonant interaction of two-particle systems. Lately, however, systems were discovered experimentally involving resonances of three π mesons, and in the near future one may expect experiments of this kind involving other particles. In this paper the author attempted to analyze such more complex reactions using the charge invariance of strong interactions and he derived relations between the cross sections for reactions involving four particles in the finite state under the condition of resonance interaction in the three-particle system. He considers resonances in the $K\bar{K}\pi$, $K\pi\pi$ (or $\bar{K}\pi\pi$), and $K\bar{K}\bar{K}$ systems.

SUBMITTED: October 10, 1962

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

L 15524-63 EWT(m)/BDS AFFTC/ASD S/0056/63/045/002/0164/0172

52

51

ACCESSION NR: AP3005262

AUTHOR: Lyul'ka, V. A.

TITLE: Lepton decays of hypernuclei

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 164-172

TOPIC TAGS: lepton decay, hypernucleus, four-fermion interaction, proton, electron, energy spectrum, angular correlation

ABSTRACT: Lepton decays of hypernuclei, which are not described by the universal A-V interaction scheme, are analyzed on the basis of the Lee and Yang four-fermion interaction. Proton and electron energy spectra and the electron angular correlation are obtained for the decays $He^4_\Lambda \rightarrow He^3 + p + e^- + \bar{\nu}$. Only the energy spectra and the angular distributions determined by the Pauli principle are considered, while the interaction between the particles in the final state is not included in the calculations. The spectra of the electrons are shown to have a maximum at approximately 80 MeV and are symmetrical, as a consequence of the smallness of the electron mass compared with its energy. The rapid decrease of

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L 15524-63

ACCESSION NR: AP3005262

the angular distribution curves at small angles evidences that lepton decays of the type under consideration occur with the electron and the neutrino emitted in approximately the same direction. The muon decays $H^4_\Lambda \rightarrow He^4 + \mu^- + \bar{\nu}$ and $He^4_\Lambda \rightarrow He^3 + p + \mu^- + \nu$ are also considered. A method of estimating the decay-interaction constant is presented for three-particle muon decays. Estimates are made of the probabilities of lepton decays of hypernuclei under the assumption of the universal V-A interaction. "The author expresses his gratitude to V. A. Filimonov for a discussion of the results of the present work." Orig. art. has: 36 formulas and 7 figures.

ASSOCIATION: none

SUBMITTED: 13Dec63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 011

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KA, V.A.; STARTSEV, A.A.

KN-scattering at low energies. IAd. fiz. 1 no.6:1093-1100 Je '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

TOLOCHKO, A.D.; LYUL'KIN, I.A., glavnyy inzhener; LYUBOMIRSKIY, G.S., nachal'nik tekhnicheskogo otdela.

Glue made of chrome leather waste products. Leg.prom. 15 no.12: 45-46 D '55. (MLRA 9:5)

1. Direktor kozhevennogo zavoda No.7 "Bol'shevik" (for Tolochko)
(Glue) (Leather industry--By-products)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

TOLOCHKO, A.D.; LYUL'KIN, I.A., glavnyy inzhener; LYUBOMIRSKIY, G.S.

Make wider use of advanced methods for soaking and lime pit operations. Leg.prom.15 [i.e.16] no.3:45-46 Mr '56. (MLRA 9:7)

1.Direktor Khar'kovskogo kozhevennogo zavoda No.7 "Bol'shevik" (for Tolochko).2.Nachal'nik tekhnicheskogo otdela (for Lyubormirskiy).
(Kharkov--Leather industry)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KIN, I.P.

TOLOCHKO, A.D.; LYUL'KIN, I.A.; LYUBOMIRSKIY, G.S.

Chemical section of a continuous-flow conveyer line in the lime soak plant. Leg.prom.16 no.12:43-44 D '56. (MLRA 10:2)

1. Direktor Khar'kovskogo kozhevennogo zavoda No.7 "Bol'shevik" (for Tolochko). 2. Glavnyy inzhener Khar'kovskogo kozhevennogo zavoda No.7 "Bol'shevik" (for Lyul'kin). 3. Nachal'nik tekhnicheskogo otdela Khar'kovskogo kozhevennogo zavoda No.7 "Bol'shevik" (for Lyubomirskiy).
(Tanning)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KIN, I.A.

TOLOCHKO, A.D.; LYUL'KIN, I.A.; LYUBOMIRSKIY, G.S.

Improved method of splitting chrome-tanned pigskins. Leg.prom. 17 no.8:39-40 Ag '57. (MIRA 10:10)
(Hides and skins)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, A.V.

Cancer of a horseshoe kidney; a case report. Vop. onk. 11 no.1:78-79 '65. (MIRA 18:6)

1. Iz urologicheskogo otdeleniya Dnepropetrovskoy gorodskoy bol'nitsy No.2 (glavnyy vrach - P.F.Kryshen').

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, B.V., inzhener

Method for rapid production of oval shaped railroad culverts. Tekn. zhel.dor.6 no.12:27-28 D'47. (MLRA 8:12)
(Culverts)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, V.A., inzh.

Wave parameters of turbogenerators. Elektrichestvo no.9:49-52 S '60. (MIRA 13:10)

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhniki.
(Turbogenerators)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, V.A., inzh.

Calculation of the input resistances and equivalent parameters of ladder networks used for simulating electric machinery windings. Izv.vys.ucheb.zav.; energ. 5 no.5 44-50 My '62. (MIRA 15:5)

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo institut elektromekhaniki.
(Electric machinery—Windings)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, V.A.; MAMONOVA, O.M.

Overvoltages in the neutral line and wave attenuation in turbogenerator windings. Elektrosila no.22:41-44 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Ye.V., inzh.

Some timely problems in improving building estimates. Shakht. stroi. no.4:6-8 '58. (MIRA 11:6)

1. Yzhgiproshakht. (Building--Estimates)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Yefrem Vladimirovich; MONIN, Grigoriy Il'ich; FIALKOVSKIY, Aleksandr Makarovich; SANOVICH, P.O., otv.red.; CHEKHOVSKAYA, T.P., red.izd-va; PROZOROVSKAYA, V.L., tekhn.red.; SHKLYAR, S.Ya., tekhn.red.

[Standard practices for mine construction estimates] Smetnaia dokumentatsiia dlia stroitel'stva shakht. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 352 p. (MIRA 13:9)
(Mining engineering)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Ye.V., inzh.

Organize the computation and payment of general mine expenditures for mining operations. Shakht.stroi. 4 no.9:4-5 S '60. (MIRA 13:8)

1. Yuzhgiproshakht.
(Mining engineering--Accounting)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Ye.V.

Ways of reducing the volume of estimate documents. Ugol' 36 no.4: 40-41 Ap '61. (MIRA 14:5)

1. Yuzhgiproshakht.
(Coal mines and mining—Accounting)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Yefrem Vladimirovich; MONIN, G.I., otv. red.; MIROSHNICHENKO, V.D., red.izd-va; BOLDYREVA, Z.A., tekhn. red.

[Handbook on the cost of exploiting mining equipment] Stoimost' ekspluatatsii gornoprokhodcheskogo oborudovaniia; spravochnoe posobie. Moskva, Gosgortekhizdat, 1963. 191 p. (MIRA 16:7)

(Mining engineering--Costs)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'KO, Ye.V., inzh.

Price lists for mine constuction items. Shakht. stroi. 7 no.2:28-29 F '63. (MIRA 16:3)

1. Gosudarstvennyy institut po proyektirovaniyu shakhtnogo stroitel'stva v yuzhnykh rayonakh SSSR.
(Mining engineering--Prices)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

FERBEROV, Leonid Yakovlevich; TOPIL'SKIY, Nikolay L[illegible]; LYUL'KO, Ye.V., retsenzent; GRAMATIKOV, A.N., [illegible]

[Preparing estimates and the payment procedure for capital construction in the coal industry. Estimates [illegible] construction work, and the acquisition and assembly [illegible] equipment] Sostavlenie smetnoi dokumentatsii [illegible] stvo raschetov v kapital'nom stroitel'stve [illegible] myshlennosti. Moskva, Nedra. [illegible] (MIRA [illegible]

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

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LYUTIN, L.V.; BURDYN', T.A.; OL[illegible], I.I.; [illegible], Z.I.

Effect of surfactants on the flooding of oil from a [illegible]ous medium. Nauch.-tekh. sbor. po dob. nefti no.24:140-153 [illegible]. (MIRA 17:10)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

FEDOROV, A.M., kand. tekhn. nauk; IVANOV, A.M., inzh.; LYUL'KO, Ye.V., inzh.; UMANSKIY, P.Ya., inzh.

Simplify and put in good order the bookkeeping and settlement of general expenses in mining. Shakht. stroi. 9 no.9:6-8 S '65. (MIRA 18 9)

1. Gosudarstvennyy komitet po toplivnoy promyshlennosti pri Gosplane SSSR (for Fedorov). 2. Gosudarstvennyy institut po proyektirovaniyu shakht v yuzhnykh rayonakh SSSR (for Ivanov, Lyul'ko, Umanskiy).

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYUL'SKIY, V.

Consider the experience of grain drying and cleaning towers in organizing the repair and adjustment of grain dryers. Muk.-elev.prom. 24 no.2:3-5 F '58. (MIRA 11:4)

1. Glavnoye upravleniye elevatorno-skladskogo khozyaystva Ministerstva khleboproduktov RSFSR.
(Grain--Drying) (Grain elevators--Equipment and supplies)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, Gennadii

Building helps us improve and grow. Transp.stroi. 11 no.4:6-8 Ap '61. (MIRA 14:5)

1. Severnyy morskoy pnt' no.159 upravleniya Abakanstroyput'.
(Siberia--Railroads)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, M.I.

Conference of workers of the disinfection service of the R.S.F.S.R. Gig. i san. no.5:56-58 My '53. (MLRA 6:5)

(Disinfection and disinfectants)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, V. K.

Dec 48

USSR/Electricity
Voltage Regulation
Generators

PA 54/49T39

"Protective Device for an Electronic Regulator," V. K. Lyulyayev, K. A. Khudobashev, Engineers, 1 p

"Elek Stanta" No 12

Describes protective scheme to prevent excitation losses occurring when the electronic regulator goes out of operation. Relay circuit used for this purpose is equivalent in its simplicity to a normal VEI voltage relay. Describes actual case of generator falling out of synchronization when concenser in feedback of electronic regulator broke down, and compares with new protective circuit which provided satisfactory operation for various positions of the shunt rheostat across the excitation winding.

54/40T39

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

1. LYULYAYEV, V. K., Eng.

2. USSR (600)

4. Electric Substations

7. Automatically reclosing circuit breakers of bus bar at substations.
Elek. sta. 23 No. 9, 1952

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

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, V. K. Eng., TSIGER, [illegible] M. Eng.

Electric Switchgear

Transfer of synchronous compensators to asynchronous operation at automatic reclosing. Elek. Sta. 2 No. 2, 1953.

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

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, V. K., Eng.

Electric Switchgear

Controlling synchronism with automatic reclosers by means of auxiliary wires. Elek. sta. 23, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October, 1952. Unclassified.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

LYULYAYEV, V.K., inzhener; MOVSESOV, N.S., inzhener; ORLOVSKIY, A.V., professor; ZENSHTEYN, L.Ya., inzhener.

Expanding the field of application of an operative alternating current. Elek. sta. 24 no.10:44-49 O '53.
(MLRA 6:10)
(Electric currents, Alternating)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031220012-9

DOROFEYEV, V.I., inzhener; PESOCHIN, M.I., inzhener; TOPOLYANSKIY, L.B., inzhener; LYULYAYEV, V.K., inzhener; TSIGER, R.M., inzhener.; YEGANOV, B.N., inzhener; BARZAM, A.B., inzhener.

Simplifying relay protection. Elek.sta. 28 no.1:62-68 Ja '57. (MLRA 10:3)

1. Dneproenergo (for Dorofeyev, Pesochin, Topolyanskiy) 2. Azenergo (for Lyulyayev, TSiger) 3. Azizbekovskiy setevoy rayon Azenergo (for Yeganov) 4. ODU Glavtsentrenergo (for Barzam).
(Electric lines)

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