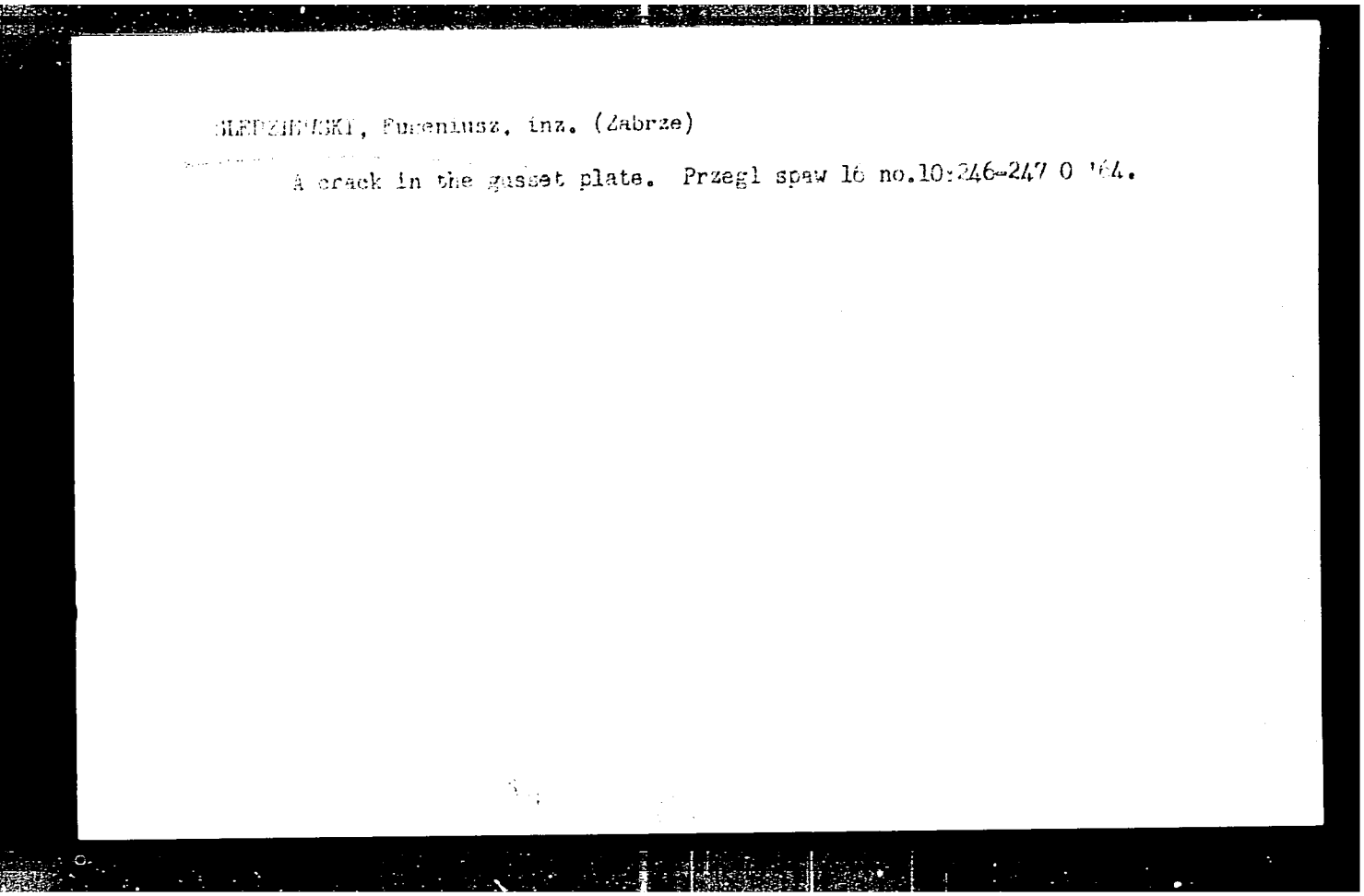


SLEDZIŃSKI, Eugeniusz, inż. (Zabrze)

A crack in the gusset plate. Przegl spaw 16 no.10:246-247 O '64.

SIEDZIEWSKI, Eugeniusz, inz. (Zabrze)

A crack of a crane beam. Przegl spaw 17 no.2:49 F '65.

MOSZEW, J.; SLEDZIEWSKA, E.

Reaction course of the synthesis of benzodiazaanthracene derivatives as determined by the type of triarylguanidine used. Bul chim PAN 12 no.6:399-402 '64.

1. Department of Organic Chemistry of Jagiellonian University, Krakow, and Laboratory No.6 of the Institute of Organic Synthesis of the Polish Academy of Sciences. Submitted April 8, 1964.

MOSZEW, Jar SLEDZIEWSKA, Ewa

Reaction course of the synthesis of diazaanthracene derivates depending on the type of triarylguanidines used. Pts.1-2. Prace chem Krakow no.9:19-38 '64.

1. Department of Organic Chemistry of Jagiellonian University, Krakow. Submitted October 1, 1962.

L 00916-67 EWP(j) RM
ACC NR: AP6035460 (N) SOURCE CODE: PO/0099/66/040/004/0621/0629

Moszew, Jan, Bala, Marian and Sledziewska, Ewa of the Organic Chemistry Department, Jagiellonian University (Katedra Chemii Organicznej Uniwersytetu Jagiellonskiego) Krakow.

"Absorption of Ultraviolet and Visible Light by Tetralin Derivatives of Diazaanthracene and Quinoline"

Warsaw, Roczniki Chemii, Vol 40, No 4, 1966, pp 621-629.

Abstract (Authors' English abstract): The UV and visible absorption spectra for the derivatives of 1,2-benzo-4-(2'-tetralin)-3,9-diazaanthracene, 2-(2'-tetralin)-4-hydroxy-quinoline and 2-(2'-tetraline)-4-anilino-quinoline have been determined. Some suggestions concerning the structure of the studied compounds are advanced. Orig. art. has: 3 figures and 2 tables.
[JPRS: 36,862]

TOPIC TAGS: UV absorption, anthracene, nonmetallic organic derivative

SUB CODE: 07 / SUBM DATE: 01 Jul 65 / ORIG REF: 006

Card 1/1 LC

0921 2178

ZABEK, Zbgniew; SLEDZINSKI, Janusz

Gravimetric liaison Warsaw--A.B. Dobrowolski Station at the Antarctic. Geod i kart 9 no.3/4:197-208 '60.

SLEDZIEWSKI, L.

"Some Problems Of Water Catchments For Water-Supply Purposes." p. 327. (Gospodarka Wodna, Vol. 13, no. 9, Sept. 1953, Warszawa)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, February, 1954 1953, Uncl.

LEWANDOWSKI, Mieczyslaw (Plock); SLEDZIEWSKI, Marek (Plock)

Preparation of the technological elements for the construction on the territory of the "Petrobudowa" Project. Przegl budowl i bud mieszk 34 no.4/5:235-239 Ap-My 62.

SLEDZIEWSKI, Marek (Plock)

Construction of the refining and petrochemical works in the Soviet Union. Przegl budowl i bud mieszk 34 no.4/5:240-243 Ap-My '62.

SLEDZIEWSKI, Roman

An amplifier for a thermal differential analysis. Szklo 12 no.8: 230-231 Ag '61.

SLEDZIEWSKI, Roman

A transistorized decade of an electronic counter. Nukleonika 7 no.2; 123-126 '62.

1. Instytut Fizyki, Uniwersytet Jagiellonski, Krakow

SLEDZIEWSKI, Roman

"Microtron," the electronic cyclotron. Postepy fizyki 13 no.3:335-352 '62.

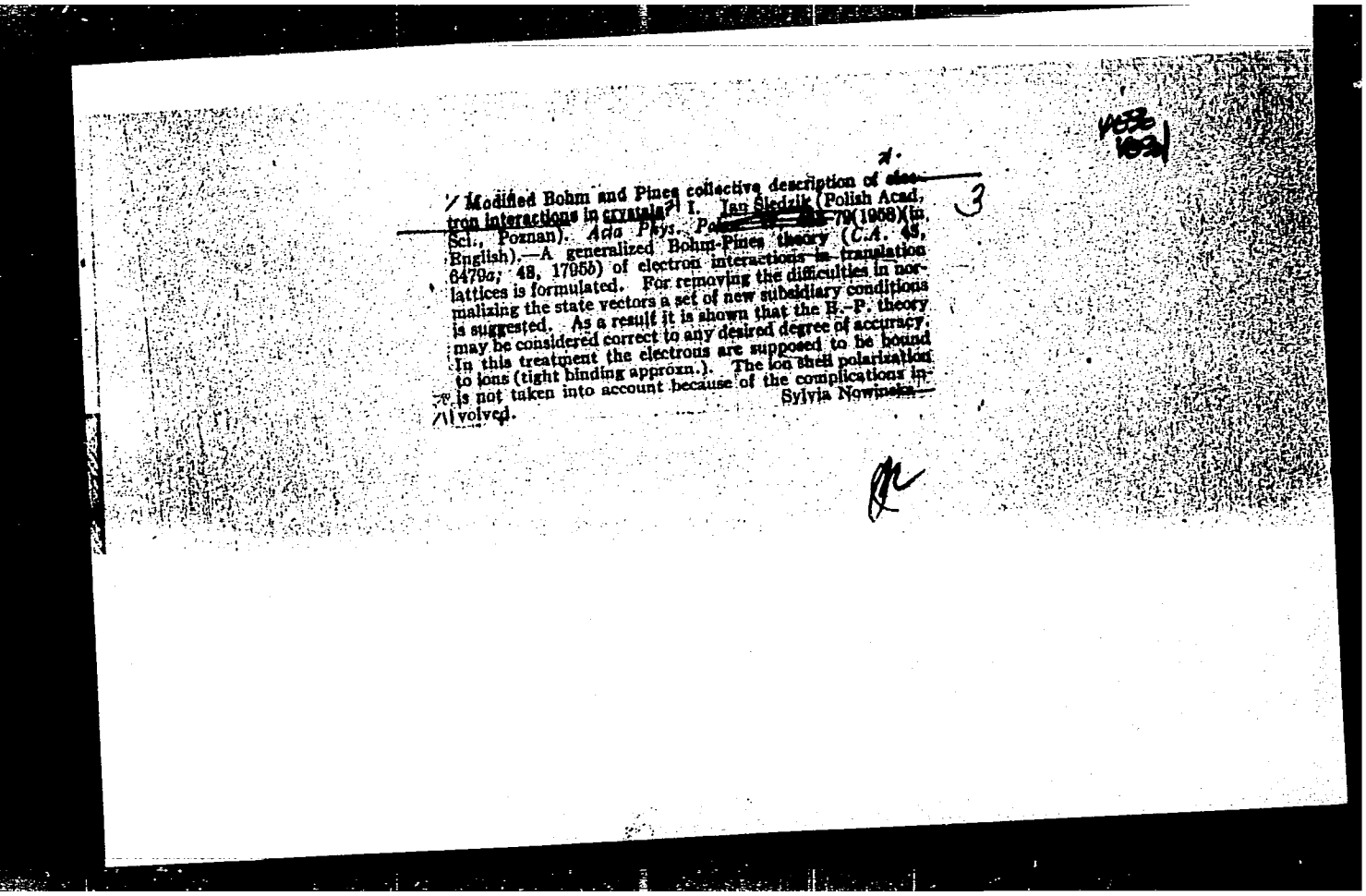
1. Instytut Fizyki, Uniwersytet Jagiellonski, Krakow.

SLEDZIEWSKI, Roman

"Hallotrons" by W.Giriat, J.Raluszkiewicz. Reviewed by Roman Sledziewski. Postepy fizyki 13 no.3:362-363 '62.

SLEDZIEWSKI, Roman

"Technique of measuring radioactive radiation" by V.Kment, A.Kuhn. Reviewed by Roman Sledziewski. Acta physica Pol 23 no.2:275-276 F '63.



Modified Bohm and Pines collective description of electron interactions in crystals. I. Jan Śledziński (Polish Acad. Sci., Poznan). *Acta Phys. Polon.* [illegible]79(1958)(in English).—A generalized Bohm-Pines theory (*C.A.* 45, 6479*a*; 48, 17955*b*) of electron interactions in translation lattices is formulated. For removing the difficulties in normalizing the state vectors a set of new subsidiary conditions is suggested. As a result it is shown that the B.-P. theory may be considered correct to any desired degree of accuracy. In this treatment the electrons are supposed to be bound to ions (tight binding approxn.). The ion shell polarization is not taken into account because of the complications involved.

Sylvia Nowinska

B-5

COUNTRY : Poland
CATEGORY :

16728

ABS. JOUR. : RZKhim., No. 5 1960, No.

AUTHOR : Sledzik, J.
INST. : Not given
TITLE : Modified Bohm and Pines Collective Description of Electron Interactions in Crystals. II.

ORIG. PUB. : Acta Phys Polon, 18, No 1, 57-73 (1959)

ABSTRACT : Application of the appropriate canonical transformation results in the elimination of the interaction term from the Hamiltonian. As a result, the Hamiltonian contains terms characterizing the weak attraction of the electrons and ions for each other and the weak repulsion between electrons and ions. Since the corresponding forces are small, they can be neglected. Assuming the validity of the adiabatic approximation, the Hamiltonian can be markedly simplified. The same approximation is

CARD: 1/2

B-5

COUNTRY : Poland
CATEGORY :

16728

ABS. JOUR. : RZKhim., No. 5 1960, No.

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : applied to the calculation of dispersion relationships. The author notes that inasmuch as the transformations are not rigorously carried out, the Hamiltonian obtained and the additional conditions should be discussed as postulated rather than deduced. For Communication I see RZhKhim, 1959, No 24, 85029.

I. Dykman

CARD: 2/2

Modified Bohm and Pines Collective Description of Electron Interactions in Crystals. Spin Wave Theory of Ferromagnetism. III

POL/45-18-4-3/8

representation, the author obtains the Slater-Bloch equations for the exchange integral $\gamma(\lambda_c)$ [λ_c = screening parameter] and the energy spin waves $\varepsilon(\lambda_c)$. The final results for the spontaneous magnetization of three types of cubic lattices (simple, body-centered and face-centered) are described on the basis of the Slater-Bloch equation. In order to compare the Bloch analysis and the theory presented here, the results obtained are applied to the hypothetical metallic hydrogen. Table I shows numerical values of a derivative function P which implies the energy of the system, supposing that all spins be directed along the external magnetic field. As may be seen from table I, this assumption (saturation magnetization) leads to a maximum energy for the system (the second derivative is negative), while only the minimum value of energy would stabilize the system. Hence, the author concludes that metallic hydrogen cannot be ferromagnetic. Figure 2 shows a comparison of the author's exchange integral with that of Bloch. The author thanks Professor S.Szczeniowski for suggesting the subject of this paper and for many valuable

Card 2/3

89376
P/045/61/020/001/001/006
B108/B209

11.4110
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AUTHOR: Śledzik, Jan

TITLE: Collective oscillations in an electron gas of metallic density. The correlation energy. I

PERIODICAL: Acta Physica Polonica, v. 20, no. 1, 1961, 3-22

TEXT: The present paper is an attempt to describe the collective oscillations of an electron gas of alkali-metal density. According to the theory established by Bohm and Pines (Phys. Rev., 92, 609, 1953), two sets of subsidiary conditions are necessary. According to the present author, these conditions must assume the form of operator identities in order to fulfill the chief requirement, namely to reduce the degrees of freedom to 3N (N denotes the number of electrons in the system concerned). After a presentation of the Bohm and Pines theory the author gives his approach to the problem, consisting in the replacement of a certain number of excited electron-hole pairs and the changes in charge density they cause, by an effective oscillator field describing the long-range density fluctuations.

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B108/B209

The system is assumed to consist of N electrons immersed in a uniform positive charge background within a cube of volume V. N/V = const. Actually, the above-mentioned electron-hole pairs are local charge inhomogeneities arising from electron collision and met by a collective rearrangement of charge. Creation of a certain number (here n'/3) of pairs and charge re-distribution is described through an effective longitudinal field given by the vector potential

$$\vec{A}(r) = \sqrt{\frac{4\pi c^2}{V}} \sum_{|k| \leq k_c} q_k \vec{e}_k e^{ik \cdot r}. \tag{3.1}$$

q_k being the n' field coordinates. Subsidiary conditions are superfluous now, since the total number of degrees of freedom is correct: 3(N-n'/3) of the electrons plus n' of the field = 3N. The Hamiltonian

$$\hat{H} = \frac{1}{2m} \sum_{i=1}^{N'} (\hat{p}_i + \frac{e}{c} \vec{A}_i)^2 + \frac{2\pi}{V} \sum_{|k|>k_c} \frac{\varrho_k \varrho_{-k} - N'e^2}{k^2} - \frac{1}{8\pi} \int dr\, E^2(r) -$$

$$- \frac{2\pi N'e^2}{V} \sum_{|k| \leq k_c} \frac{1}{k^2} - \frac{N'e^2}{V} \sum_{i=1}^{N'} \int \frac{dr}{|r - r_i|} + \frac{N'^2 e^2}{2V^2} \iint \frac{dr\, dr'}{|r - r'|}, \tag{3.2}$$

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P/045/61/020/001/001/006
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Collective oscillations in an electron...

of the system with

$$\vec{E}(r) = \sqrt{\frac{4\pi}{V}} \sum_{|k|<k_c} p_{-k}\, \varepsilon_k\, e^{ik\cdot r}, \tag{3.3}$$

$$N' = N - n'/3, \tag{3.4}$$

and

$$n' = \sum_{|k|<k_c} 1. \tag{3.5}$$

is written down. The various energy contributions are calculated. The resulting total energy is given in

$$E_{11} = \frac{2.2100}{r_s^2}\left(1-\frac{1}{6}\beta^2\right)^{1/2} + \frac{0.8661\,\beta^3}{r_s^{3/4}(1-\frac{1}{6}\beta^3)^{1/2}} - \frac{1.2217\,\beta}{r_s} -$$

$$- \frac{0.9163}{r_s}\left[\left(1-\frac{1}{6}\beta^3\right)^{1/2} - \frac{4}{3}\beta + \frac{\beta^2}{2(1-\frac{1}{6}\beta^3)^{1/2}} - \frac{\beta^4}{48(1-\frac{1}{6}\beta^2)}\right] \text{Ry}, \tag{3.42}$$

for the non-magnetic state ($\sigma = 1/2$) and in

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Collective oscillations in an electron... P/045/61/020/001/001/006
B108/B209

ASSOCIATION: Institute of Physics of the Polish Academy of Sciences, Department of Ferromagnetics, Poznań

SUBMITTED: June 27, 1960

Table I

Metal				Li	Na	K	Rb	Cs
r_s		1	2	3,22*	3.96*	4.87*	5.18*	5.57*
β^{tt}_{min}		0.4450	0.5466	0.6380	0.6820	0.7305	0.7454	0.7625
β^{tt}_{min}		—	—	0.6536	0.6753	0.6994	0.7065	0.7226
E_{tt}	Ry	1.2629	0.0710	−0.0915	−0.1092	−0.1126	−0.1117	−0.1103
E	Ry	1.2937	0.0943	−0.0715	−0.0905	−0.0950	−0.0945	−0.0933
E_{tt}	Ry	—	—	−0.0198	−0.0689	−0.0918	−0.0951	−0.0970
E_{corr}	Ry	−0.0308	−0.0233	−0.0200	−0.0187	−0.0176	−0.0172	−0.0170
E^*_{corr}	Ry	—	—	−0.240	−0.269	−0.308	−0.319	−0.333

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Collective oscillations in an electron...

$$-\frac{1}{2}\sum_{|\hbar|<k_e}{}'\,(p_{\hbar}p_{-\hbar}+\omega_p^2 q_{\hbar}q_{-\hbar})+\frac{2\pi e^2}{mV}\sum_{i=1}^{N'}\sum_{\substack{|\hbar|<k_e\\ |\hbar'|<k_e\\ \hbar+\hbar'\neq 0}}{}''\,q_{\hbar}q_{\hbar'}\vec{e}_{\hbar}\cdot\vec{e}_{\hbar'}e^{i(\hbar+\hbar')\cdot r_i}+$$

$$+\frac{2\pi e^2}{mV}q_0\sum_{i=1}^{N'}\sum_{|\hbar|<k_e}{}'\,q_{\hbar}\vec{e}^{\,0}\cdot\vec{e}_{\hbar}e^{i\hbar\cdot r_i}+\frac{2\pi N'e^2}{mV}q_0^2-\frac{2\pi N'e^2}{V}\sum_{|\hbar|<k_e}\frac{1}{k^2}-$$

$$-\frac{N'^2e^2}{V}\int\frac{dr}{r}+\frac{N'^2e^2}{2V^2}\iint\frac{dr\,dr'}{|r-r'|},\qquad \omega_p^2=\frac{4\pi N'e^2}{mV}. \tag{2.1}$$

in order to uncouple the individual electrons from the plasmons, i.e. to eliminate the interaction term (third term in (2.1)). Transformation is performed as follows: $\hat{H}_{new} = \exp(-i\hat{S}/\hbar)H.\exp(i\hat{S}/\hbar)$ with the generating function of the transformation given by

Collective oscillations in an electron...

$$\hat{H}_{\text{new}} = \sum_{i=1}^{N'} \frac{\hat{p}_i^2}{2m^*} + e^2 \sum_{i<j} \frac{1}{|r_i - r_j|} \left(1 - \frac{2}{\pi} \int_0^{k_c|r_i - r_j|} d\tau \frac{\sin \tau}{\tau}\right) +$$

$$+ \sum_{|k| \le k_c} \hbar\omega_k \left(a_k^* a_k + \frac{1}{2}\right) - \frac{2\pi N' e^2}{V} \sum_{|k| \le k_c} \frac{1}{k^2} + \frac{2\pi N' e^2}{mV} q_0^2 -$$

$$- \frac{N'^2 e^2}{V} \int \frac{dr}{r} + \frac{N'^2 e^2}{2V^2} \iint \frac{dr\, dr'}{|r - r'|}, \qquad \hat{H}_{\text{new}} \Psi = E \Psi, \qquad (2.12),$$

with the effective mass m* given by

$$\frac{m}{m^*} = \left(1 - \frac{V}{N'} \frac{k_c^3}{3 \cdot 3! \pi^2}\right) = \left(1 - \frac{\vartheta}{3} \alpha^3\right). \qquad (2.13)$$

(2.13)

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present investigation. V. M. Galitskiĭ and A. B. Migdal are mentioned. Notations: N' number of electrons minus number of excited local charge inhomogeneities (electron-hole pairs) within a cube of volume V (uniform positive charge background); k_F - wave vector of the Fermi surface; $\nu = 1/2$ for the non-magnetic state, $\nu = 1$ for magnetic state; r_s - spacing parameter, introduced by the equation $N \frac{4\pi}{3} a_o^3 r_s^3 = V$; a_o - Bohr radius. There are 3 figures, 3 tables, and 15 references: 2 Soviet-bloc and 10 non-Soviet-bloc.

ASSOCIATION: Institute of Physics of the Polish Academy of Sciences, Department of Ferromagnetics, Poznań

SUBMITTED: August 15, 1960

P/028/60/009/003-4/002/002
AC56/A126

AUTHORS: Zabek Zbigniew, and Śledziński Janusz

TITLE: Gravimetric connection between Warsaw and Station A. B. Dobrowolski in the Antarctic

PERIODICAL: Geodezja i Kartografia, v. 9, no. 3 - 4, 1960, 197 - 208

TEXT: Between December 1958 and March 1959, in the frame of the Antarctic expedition organized by the International Commission of the Geophysical Year under the presidency of the Polish Academy of Sciences, the authors, assistants to the Chair of Geodesy of the Warsaw Polytechnic, realized the gravimetric connection between Warsaw and the Antartic. The first point was located in the Institute (coordinates: φ 52°13'3 N λ = 21° 00'8 E H = 114.3 m) and the second in Station A. B. Dobrowolski - in the Bunger Oasis (coordinates: φ = 66°16'3 S λ = 100°45'0 E H = 35.4 m). The elevation of this point was determined by levelling from the water level of Figurowe Lake, 11.6 m above the sea level of the Indian Ocean according to the measurements of the second Russian expedition in 1956/57. The determination of the variations of the acceleration were carried out with an apparatus "Askania", equipped with four half-second invar pendulums, Sterneck type, and photographic recording of the pendulum passages to the rest point and of the

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SLEDZINSKI, Z.

"Professor Josef Sienkiewicz; An Obituary." P. 187, (PRZEGLAD GEODEZYJNY, Vol. 10, No. 6, June 1954, Warszawa, Poland.)

SO: Monthly List of East European Accessions, (EEAL,) LC, Vol. 3, No. 12, Dec. 1954, Uncl.

ROSLAWSKI, Adam, dr. med.; SLEDZIONA, Zdzislaw

Ankylosing spondylitis in several members of a family. Pol. arch. med. wewnet. 35 no.3:415-418 '65.

1. Z Oddzialu Reumatologicznego Szpitala Wojewodzkiego im. J. Babinskiego we Wroclawiu (Ordynator: dr. med. A. Roslawski).

L 20050-65 EPF(c)/EPF(n)-2/EWT(m)/EPA(bb)-2/T Pr-4/Pu-4 AEDC(a)/AEDC(b)/AEDC(a)/SSD/SSD(a)/AFWL/ASD(p)-3/ESD(t)/ESD(si) DM

ACCESSION NR: AP4049535 S/0089/64/017/005/0349/0359

AUTHORS: Afrikantov, I. I.; Mordvinov, N. M.; Novikov, P. D.; Pologikh, B. G.; Sledzyuk, A. K.; Khlopkin, N. S.; Tsarev, N. M.

TITLE: Operating experience with the atomic installation of the "Lenin" ice breaker

SOURCE: Atomnaya energiya, v. 17, no. 5, 1964, 349-359

TOPIC TAGS: nuclear power system, reactor shutdown, reactor start up, nuclear propulsion

ABSTRACT: The icebreaker covered some 60,000 miles since its commissioning, of which 40,000 miles were in ice. The reactors operate at present with their second fuel charge. Each reactor delivered from its first charge 430--490 thousand MW-hr of thermal energy in more than 11,000 hours. The average yield was 13,000 MW-day/ton of uranium, with the maximum reaching 30,000. The reactors operated

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L 20052-65

ACCESSION NR: AR4039377

of compressors in the experimental engine 2DN-53 (65 hp at 1600 rpm). The design incorporates a RUTA type compressor and an Ebeshpekher gas turbine compressor. A nomogram was plotted for combined operation of the compressors at typical speeds, i.e. 1600 and 1000 rpm. Efficiency cumulates in parallel coupled compressors, while for tandem coupling it depends on the point at which the total resistance line intersects with the compressor curve. It is shown that the gas turbine compressor exerts significant resistance to the flow of air at low load levels and begins to operate efficiently only above engine loads which insure compressor speeds of 10,000 rpm. Up to 60% of the pressure generated by a gas turbine compressor is lost at high load levels to overcome the resistance offered by a drive actuated compressor. Air should be channeled to bypass the drive actuated compressor in the latter case. One illustration. P. Shelest.

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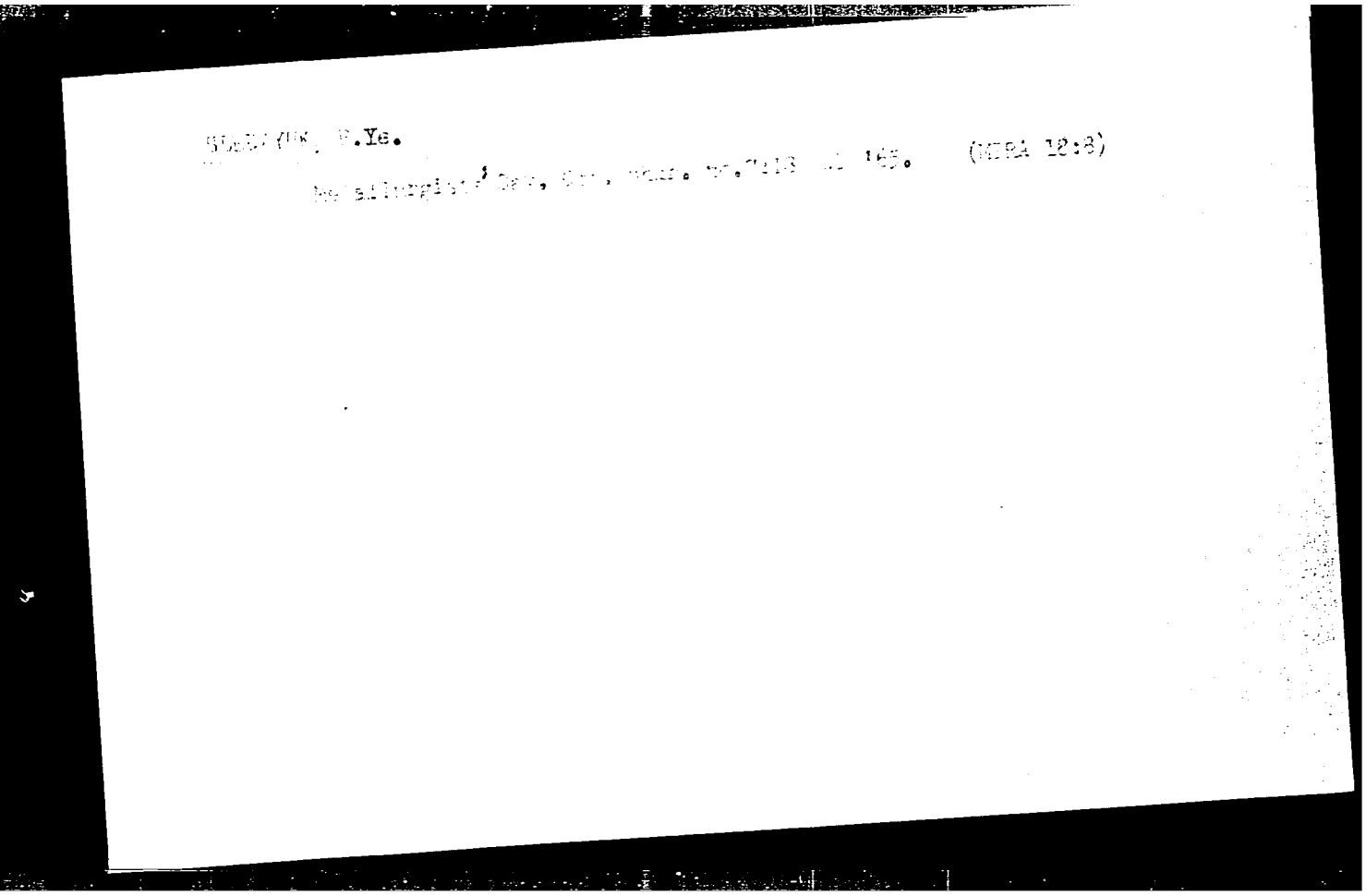


SLEDZYUK, P.Ye., gornyy inzh.; YERSHOV, A.S., inzh.

Accelerate the design and construction of trains with alternating current motorcars for open-pit mines. Gor.zhur. no.7:12-14 Jl '60. (MIRA 13:7)

1. Institut Giproruda, Leningrad.
(Mine railroads—Electric driving)
(Railroad motorcars)

BARDIN, I.P , akademik, otv. red.[deceased]; BELYANCHIKOV, K.P., nauchnyy red.; YEROFEYEV, B.N., nauchnyy red.; ZVYAGIN, P.Z., nauchnyy red.; KOSHELEV, V V., nauchnyy red.; MELESHKIN, S.M., nauchnyy red.; MIRLIN, G.C., nauchnyy red.; MOSKAL'KOV, Ye.F., nauchnyy red.; POKROVSKIY, M.A., nauchnyy red.; SLEDZYUK, P.Ye., nauchnyy red.; FINKELSHTEYN, A.S., nauchnyy red.; KHARCHENKO, A.K., nauchnyy red.; SHEVYAKOV, L.D., akademik, nauchnyy red.; SHAPIRO, I.S., nauchnyy red.; SHIRYAYEV, P.A., nauchnyy red.; OKHRIMYUK, Ye.M., nauchnyy red.; YANSHIN, A.L., akademik, nauchnyy red.; MAKOVSKIY, G.M., red.izd-va; VOLKOVA, V.G.,tekhn. red.

[Oolitic iron ores of the Lisakovka deposit in Kustanay Province and means for their exploitation]Oolitovye zheleznye rudy Lisakovskogo mestorozhdeniia Kustanaiskoi oblasti i puti ikh ispol'zovaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 234 p. (Zhelezorudnye mestorozhdeniia SSSR [no.1]) (MIRA 15:12)

1. Akademiya nauk SSSR. Institut gornogo dela.
(Kustanay Province--Iron ores)

SLEDZYUK, P.Ye.

Results of the first four years of the seven-year plan and problems of the mining industry. Gor.zhur. no.1:3-8 Ja '63. (MIRA 16:1)

1. Zamestitel' predsedatelya Gosudarstvennogo komiteta Soveta Ministrov SSSR po chernoy i tsvetnoy metallurgii.
(Mining engineering)

SLEDZYUK, P.Ye.; TYMOVSKIY, L.G.

Open-pit rail transportation and possible ways of improving it. Gor. zhur. no.8:30-32 Ag '63. (MIRA 16:9)

1. Gosudarstvennyy komitet po chernoy i tsvetnoy metallurgii pri Gosplane SSSR (for Sledzyuk). 2. Leningradskiy gornyy institut (for Tymovskiy).

(Mine railroads)

SLEDZYUK, P.Ye.

On the 80th anniversary of the birth of academician I.P.Bardin. Gor.zhur. no.12:64-65 D '63. (MIRA 17:3)

MEL'NIKOV, N.V.; SLEDZYUK, P.Ye.; ZAV'YALOV, S.S.; BUNIN, A.I.; VASIL'YEV, M.V.; NOVOZHILOV, M.G.; ZURKOV, P.E.; IL'IN, M.V.; VILESOV, G.I.; POPOV, S.I.; SANDRIGAYLO, N.F.; SHILIN, A.N.; ZUBRILOV, L.Ye.; TSIMBALENKO, L.N.; VLOKH, N.P.; OMEL'CHENKO, A.N.

Mikhail Lazarevich Rudakov, 1912-1964; an obituary. Gor. zhur. no.9:78 S '64. (MIRA 17:12)

SLEPA[illegible], V. I., [illegible], M. P., LI[illegible], S. [illegible], S[illegible]A, I. A., [illegible], A. S., S[illegible] [illegible], [illegible]., KHIZ[illegible]A, [illegible]. P., [illegible], S. G., [illegible], V. V.

"On the natural [illegible] of [illegible] larvae in the Ukrainian SSR." p. 146.

[illegible] [illegible] [illegible] [illegible] [illegible] i [illegible] [illegible] [illegible] [illegible]. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 25[illegible].

Basin Sanitary-epidemiological Station, Public Health Min. Uk SSR/Kiev

KRUMPHANZL, V., prof. inz. dr.; KOLLAR, K., inz.; KRIZEK, J., inz.; SCHANKA, J., inz.; STANEK, V., inz. dr.; SIMEK, J., inz.; SLEGR, A., inz.

Surveyor's role in capital constructions. Geod kart obzor 10 no.9/10:235-239 O '64

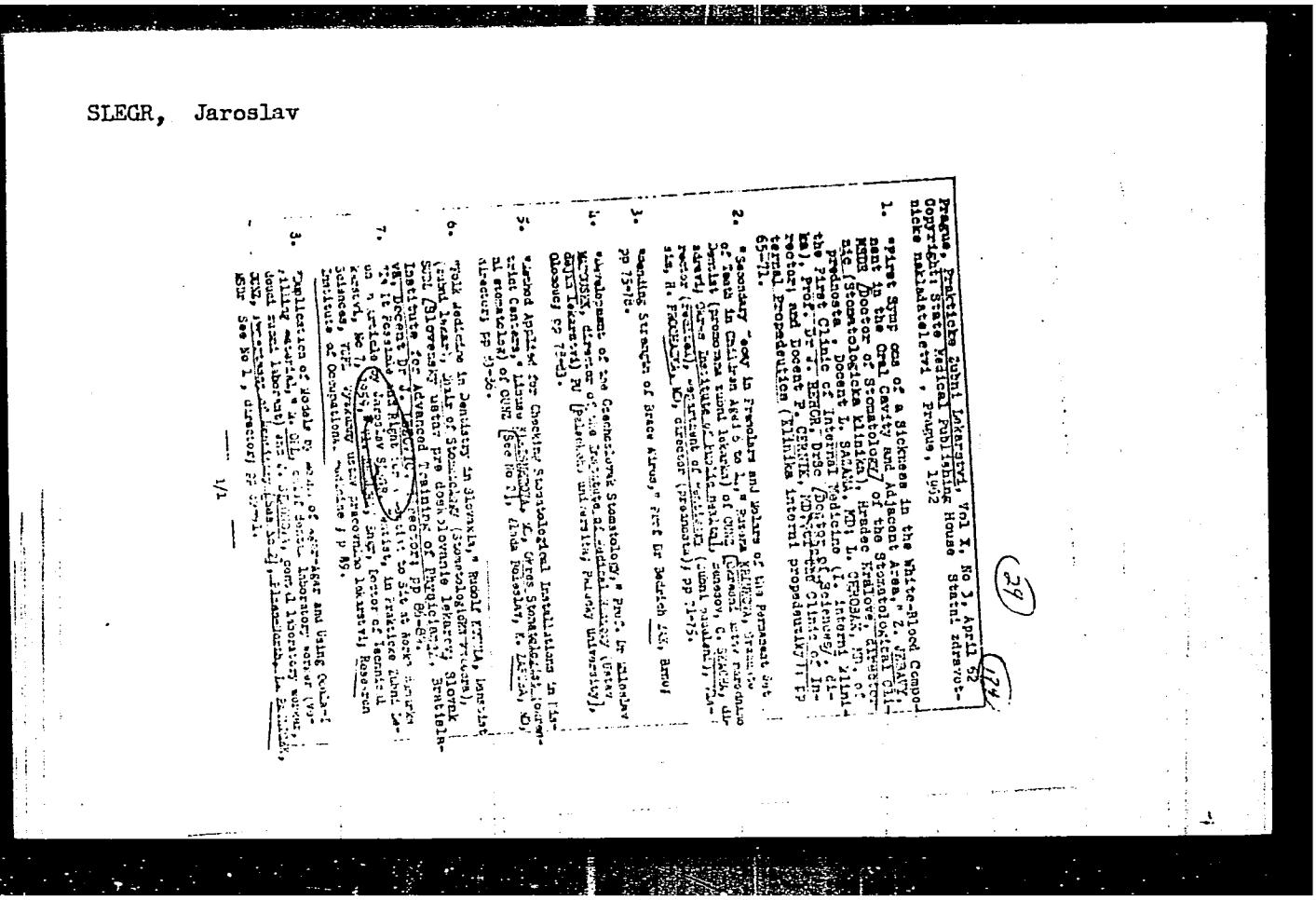
SLEGR, JÁR.

SLEGR, Jar, Dent. (Praha)

Technic of roentgenographic picture. Prakt. sub. lek. 2 no.5: 101-115 1954.

(TEETH, radiography,
*x-ray, technic)

SLEGR, Jaroslav



FRON'KOVA, K.; SLEGR, L.

Method of continuous bloodless registration of blood pressure.
Chekh. fiziol. 4 no.4:444-450 1955.

1. Issledovatel'skiy institut zabolevaniy krovoobrashcheniya, Praga.
(BLOOD PRESSURE, determination,
registration, constant bloodless technic)

FRONKOVA, K.; SLEGR, L.

Method of continuous bloodless registration of blood pressure.
Cesk. fysiol. 4 no.4:482-487 22 Oct 55.

1. Ustav pro choroby obehu krevniho, Praha.
(BLOOD PRESSURE, determination,
continuous bloodless registration)

SLEHTA, I., inzhener.

On vertical propellers. Tekh.mol. 22 no.11:19-21 N '54. (MLRA 7:12)
(Helicopters)

KORENEVSKI, S.M. [Korenevskiy, S.M.]; GORKUN, O.P.; ROLLER, A.V.; SLEIMOVICI, R.E.

Prospects of potassium presence on surfaces on the Pre-Carpathian Platform. Analele geol geogr 14 no.2:69-109 Ap-Je '60.

SLEIVA, Jozas, dots., kand. sel'khoz. nauk; BUTKUS, A., red.; GOTLERIS, D., tekhn. red.

[Cattle] Galvijininkyste. Vilnius, Valstybine politines ir mokslines literaturos leidykla, 1963. 283 p. (MIRA 16:6)

(Lithuania--Cattle)

Slejhar, J.

The ripening of viscose. Jiří Slejhar. *Chem. Průmysl* 3, 255-8, 313-16, 356-63(1953).—Latest developments and views on the mechanism of ripening of viscose are summarized and compared with the author's own results. The influence of free alky. and of unesterified OH groups on the ripening process is discussed. The retarding effect of Na_2SO_3 on the ripening process is attributed to prevention of the sulfuration of hemicelluloses, so that all the CS_2 is available for the sulfuration of long cellulose chains. During the ripening, the γ-no. reaches a max. after 3.5 hrs. Viscoses with Na_2SO_3 show higher γ-no. immediately after sulfuration than the viscose without Na_2SO_3. The γ-no. rises again in the 1st phase of ripening and stabilizes itself around 42-44 units. It follows that 2 different xanthates are formed immediately after the initiation of sulfuration: one quick-forming but unstable, belonging probably to secondary OH groups at C atoms 2 and 3, and the other stable, slowly forming, of the OH at C atom 6 most probably. The 2nd peak of γ-no. found on viscoses treated by Na_2SO_3 is due to sulfuration of hemicelluloses delayed by Na_2SO_3, which is becoming effective through gradual oxidation of Na_2SO_3 by atm. O_2. The addn. of Na_2SO_3 by blocking the catalytic action of hemicelluloses on the decompn. of CS_2 maintains this for the later sulfuration of the high-mol. portions of the cellulose. It is possible by the addn. of Na_2SO_3 not only to control the speed of ripening but also to reduce materially the CS_2 and possibly also NaOH consumption. A viscose charge sulfurated by 35% CS_2 attained the same max. of γ-no. as another charge sulfurated by only 30% CS_2 with the addn. of 2% Na_2SO_3. Another advantage of the addn. of Na_2SO_3 is a potential improvement of stability and uniformity of the products. L. A. Helwich

SLEJSKA, FR. MUDr.

BRABEC, S., MUDr; SLEJSKA, Fr., MUDr; ZAHRADNICKY, J., MUDr

Epidemic of angina following consumption of ice cream. Cesk. hyg. epidem. mikrob. 2 no.6 :456-459 Dec. 53.

1. Z krajske hyg.-epidem. stanice v Jihlave, Okresni hyg.-epidem. stanice v Havl. Brode a Ustavu epidemiologie a mikrobiologie v Praze (red. doc. Dr. K.Raska)

(THROAT, diseases,
streptoc. sore throat after ice cream consumption)
(ICE CREAM,
streptoc. sore throat after ice cream consumption)
(STREPTOCOCCAL INFECTIONS,
throat, after ice cream consumption)

SLEKSEYEV, G.A., prof. (Moskva)

Basic trends in the development of clinical hematology in the U.S.A. Data from visits to some hematological centers. Probl. gemat. i perel. krovi 9 no.6:53-60 Je '64. (MIRA 18:2)

BELEVTSEV, Ya.N.; BEYGULENKO, I.L.; BETIN, D.I.; BORISENKO, V.G.; GUBKINA, N.N.; DZHEDZALOV, A.T.; ZHILKINSKIY, S.I., prof.; ZALATA, L.F.; KAZAK, V.M.; MALYUTIN, Ye.I.; MUROMTSEVA, Z.G.; NATAROV, V.D., doktor geol.-miner. nauk; PANASENKO, V.N.; PITADE, A.A.; RADUTSKAYA, P.D.; SLEKTOR, S.M.; SMIRNOV, D.I.; TOKHTUYEV, G.V., kand. geol.-min. nauk; FOMENKO, V.Yu.; SLENZAK, O.I., red.izd-va; MATVEYCHUK, A.A., tekhn. red.

[Methodological guide for the geological service for the prospecting and mining of Krivoy Rog type deposits] Metodicheskoe rukovodstvo dlia razvedochnoi i rudnichnoi geologicheskoi sluzhby mestorozhdenii krivorozhskogo tipa. Pod red. IA.N. Belevtseva. Kiev, Izd-vo AN USSR, 1963. 395 p. (MIRA 16:12)

1. Krivoy Rog. Gornorudnyy institut. 2. Chlen-korrespondent AN Ukr.SSR (for Belevtsev).
(Krivoy Rog Basin--Engineering geology)

H-17

RUMANIA / Chemical Technology. Pharmaceuticals. Vitamins. Antibiotics.

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 78685.

Author : Slemiciu, L., Cruceanu, J., Drcc, J.
Inst : Not given.
Title : The Preparation of Some Sulfoamides of N^4 Mono-substitutes with Dicarbonic Acids.

Orig Pub: Farmacia (Romin), 1956, 4, No 2, 142-147.

Abstract: No abstract.

Card 1/1

SLEMR, E.

Determination of a proper size of hammers without anvil blocks and the number of blows. p. 112.

STROJIRENSKA VYROBA, Praha, Czechoslovakia, Vol. 7, no. 3, 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, no. 7, July 1959
uncla.

SLEMR, Josef

A plea for improved work capacity evaluation in the blind. Cesk. ofth. 17 no.7:545-546 N '61.

1. Ucnovska skola pro mladez s vadami zraku v Praze 4 - Krci.

(BLIND) (DISABILITY EVALUATION)

BALASHOVA, N.I.; LOVACHEVA, M.V.; SELIVANOVA, Ye.P.; ZHIVILIN, N.N.; MANYAKIN, V.I., red.; SLEMZIN, A.A., red.; PYATAKOVA, N.D., tekhn.red.

[Certified seed sowing in the U.S.S.R. (grain and sunflower); a statistical manual] Sortovye posevy SSSR (zernovye kul'tury i podsolnechnik); statisticheskiy sbornik. Moskva, Gos.stat. izd-vo, 1957. 422 p. (MIRA 11:1)

1. Chlen Kollegii TSentral'nogo statisticheskogo upravleniya SSSR (for Manyakin). 2. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye.
(Field crops)

SLEMZIN, A.A.

VEKSLER, A.A.; GRIGOR'YEVA, A.M?; KUL'CHITSKAYA, V.S.; LUTSENKO, A.I.; PEREL'ZON, R.A.; TRYASUNOVA, M.V.; SLEMZIN, A.A., redaktor; FOMICHEV, P.M., tekhnicheskiy redaktor

[Soviet live stock in numbers; a statistical manual] Chidlennost' skota v SSSR; statisticheskii sbornik. Moskva, Gos.stat.izd-vo, 1957. 618 p. (MLRA 10:8)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye.
(Stock and stockbreeding--Statistics)

BRAYLOVSKIY, I.G., inzh., red.; SLEMZIN, V.I., otv. za vypusk; KHITROVA, N.A., tekhn. red.

[Technical instructions for car parts tension tests and flaw detection (superseding the Technical Instructions on Car Parts Tension Tests and Magnetic Flaw Detection issued in 1955)] Tekhnicheskie ukazaniia po ispytaniiu na rastiazhenie i defektoskopirovaniiu vagonnykh detalei (v otmenu Tekhnicheskikh ukazanii po ispytaniiu na rastiazhenie i magnitnomu kontroliu vagonnykh detalei izdaniia 1955 g.) Moskva, Transzheldorizdat, 1963. 85 p. (MIRA 17:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye vagonnogo khozyaystva.

SLEMZIN, V.I., inzh.; SHCHERBAKOV, V.P., inzh.; DOLMATOV, A.A., kand. tekhn. nauk, retsenzent; BRAYLOVSKIY, N.G., inzh., red.; KHITROVA, N.A., tekhn. red.

[Type KVZ-5 and KVZ-TsNII car trucks; design, maintenance and repair characteristics] Telezhki tipa KVZ-5 i KVZ-TsNII; osobennosti konstruktsii, remonta i tekushchego soderzhaniia. Moskva, Tranzsheldorizdat, 1963. 63 p. (MIRA 16:9)
(Car trucks (Railroads))

SLENZAK, I.Ye. [deceased]

Technical and geological building conditions of sites situated close to sliding slopes. Nauk.zap.Kiev,un. 9 no.10:107-121 '50. (MLRA 9:10)
(Landslides) (Hydraulic engineering)

KOSINSKA, Bozena; SLENZAK, Jadwiga

Cases of multiple recurrences of tuberculosis meningoencephalitis in the light of psychological observations. Gruzlica 30 no.10:939-943 '62.

1. Z Oddzialu Rehabilitacyjnego Dzieciecego Osrodka Sanatoryjno-Prewentoryjnego w Rabce Dyrektor: dr med. J. Rudnik Ordynator: lek. med. M. Plesinska.
(TUBERCULOSIS IN CHILDHOOD)
(TUBERCULOSIS, MENINGEAL)
(INTELLIGENCE) (NEUROSES)

SLENZAK, Oleg Igorevich; SIROSHTAN, R.I., kand. geol.-min. nauk, otv.red.; OVCHAROVA, Z.G., red.izd-va; SKLYAROVA, V.IE., tekhn.red.

[Petrogenesis of the charnockite complex in the Dniester portion of the Ukrainian crystalline shield] Petrogenezys charnokitovoho kompleksu Prydnistrovs'koi chastyny Ukrains'koho krystalichnoho shchyta. Kyiv, Izd-vo Instytut geologicheskikh nauk Trudy. Seriia petrografii, mineralogii i geokhimii, no.47) (MIRA 13:2)
(Dniester Valley--Charnockite)

SLENZAK, Oleg Igorevich; CHEBANENKO, I.I., otv. red.; SHTUL'MAN, I.I., red.

[Structure of the Precambrian of the Ukraine as exemplified by the southwestern part of the Ukrainian crystalline shield] Pro strukturu ukrains'koho dokembriiu; na prykladi pivdenno-zakhidnoi chastyny Ukrains'koho krystalichnoho shchyta. Kyiv, Naukova dumka, 1965. 137 p. (MIRA 18:9)

SLEPAK, E. S.

"Investigation of Spot Welding Low-Carbon Steel of Large Thickness With Low-Frequency Current." Thesis for degree of Cand Technical Sci. Sub 22 May 50, Central Sci Res Inst of Technology and Machine Building

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva. Jan-Dec. 1950.

SIEFAK, E. SH. and GEL'MAN, A. S.

Trekhfaznaia tochechnaia mashina. (Vestn. Mash., 1950, no. 3, p. 48-49)

Three-phase spot welding machine.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

[illegible]

[illegible] Engineering - Welding, Spot Welding, Equipment Apr 50

"Spot Welding of Steel Members of Great Thickness With Low-Frequency Current," Prof A.S. Gel'man, L. S. Slepak, Engr Cen Sci Res Inst of Heavy Mach Constr, 6 pp

"Avtogen Delo" No 4 pp 1-6

Describes new automatic three-phase spot welding machine of low frequency designed by Cen Inst. Equipment permits welding of structural members up to 12 mm. thick, has high efficiency factor (over 0.9), and reveals low sensitivity to introduction into its circuit of steel members of great cross section.

PA 158T34

SLEPAK, E.S., kandidat tekhnicheskikh nauk.

Experience with the adoption of automatic butt welding of boiler tubing. Avtog.delo 24 no.5:14-17 My '53. (MLRA 6:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhniki mashinostroyeniya i metalloobrabotki. (Electric welding)

KABANOV, N.S., kandidat tekhnicheskikh nauk; SLEPAK, E.S., kandidat tekhnicheskikh nauk.

Improved technology of butt welding the pipes of a water economizer. [Trudy] TSNIITMASH 60:174-187 '53. (MLRA 6:11)
(Electric welding)

SLEPAK, E. S.

112-1-1043

Translation from: Referativnyy Zhurnal, Elektrotekhnika, p.166, Nr 1, 1957, (USSR)

AUTHORS: Gel'man, A.S., Tokarskiy, A.P., Komissarov, S.N., and Slepak, E.S.

TITLE: Resistance Butt Welding of Stainless Steel Bands (Kontaktnaya stykovaya svarka polos iz nerzhaveyushchey stali)

PERIODICAL: Sbornik:Vopr. svarki v energomashinostroyenii i metallurgich. proiz-ve, Moscow, Mashgiz, 1955, pp. 120-155.

ABSTRACT: Production methods and machines of the 4KBMM -24 and 4KBMM-12 types were developed for butt welding by flashing off bands from carbon and stainless steels 3 to 4 mm thick and 400 to 450 mm wide. The 4KBMM-24 machine has the same electric circuit as the 4KBMM-12 and differs from it by a more improved gripping mechanism

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Resistance Butt Welding of Stainless Steel Bands (Cont.)

developing a greater fastening force (100 tons), by a greater stiffness of the stand at the expense of anchor ties, by a greater capacity of the setting motor (16 kw) and by a correspondingly greater force of this setting (27 tons). The electric system of the ЦКБММ -24 machine consists of three basic circuits: a power supply circuit of the welding 200-kva transformer with a sectional switch and main contacts of the magnetic controller, a circuit of the MT-42-8 type motor, and a control circuit. Laboratory investigations and industrial practice in butt welding of bands demonstrated the expediency of a transition from band welding with preheating to continuous flash welding, and in addition to that, a very uniform heating of the welded rims is provided, depending lightly on the network voltage and on the accuracy of putting the butts together before welding. The use of machines with a sloping external characteristic gives an even surface of the flashed off faces with reduced requirements for the perpendicularity of the bands' cut. The magnitude of the angle of bend of the band which would not

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Resistance Butt Welding of Stainless Steel Bands (Cont.)

bring about cracks in the seam constitutes a criterion for the evaluation of the quality of the weld from the point of view of a possibility of subsequent cold rolling of the welded band. The machines for butt welding ought to have considerable rigidity, indispensable for obtaining the required high speed of settling and for the prevention of a possibility of displacement of the rims of the welded sheets.

B.S.B.

Card 3/3

GEL'MAN, A.S., professor, doktor tekhnicheskikh nauk; KOMISSAROV, S.N., inzhener; SLEPAK, E.S., kandidat tekhnicheskikh nauk.

Resistance butt-welding techniques of thin steel stripe. Svar. proizv. no.4:17-22 Ap '55. (MLRA 8:9)
(Steel--Welding)

SLEPAK, E. S.

14520* Continuous Flash Welding of Boiler Pipe of Low-Carbon and Low-Alloyed Steel. Svarka nepreryvnym oplavleniem kotel'nykh trub iz maulouglerodistoi i nizkolegirovannoi stali. (Russian.) N. S. Kabanov and E. S. Slepak. *Svarochnoe Proizvodstvo*, 1955, no. 8, Aug., p. [illegible]

Relation between impact strength of metal, in welded union, to various factors; comparison of distribution of impact strength when continuous flash welding is used and when there is preheating; other mechanical properties of the steel tubing and its micro-structure. Graphs, tables, micrographs. 1 ref.

Central Sci. Res. Inst. Technology + Machine Bldg.

GEL'MAN, A.S., doktor tekhnicheskikh nauk, professor; SLEPAK, E.S., kandidat tekhnicheskikh nauk.

Butt welding of boiler tubes made of austenite steel. Trudy TSNIITMASH 76:3-22 '55. (MLRA 9:7)
(Pipe, Steel--Welding)

GEL'MAN, A.S., doktor tekhnicheskikh nauk, professor; TOKARSKIY, A.P., inzhener; KOMISSAROV, S.N., inzhener; SLEPAK, E.S., kandidat tekhnicheskikh nauk.

Contact butt welding of stainless steel strips. Trudy TSNIITMASH (MLRA 9:7) 76:120-155 '55.
(Steel, Stainless--Welding)

1676* (Russian.) Contact Welding of Piping for Boilers of Especially High Characteristics. Kontaktnaia svarka trubnoi chasti kotlov sverkhvysokikh parametrov. A. S. Gel'man and E. S. Slepak. *Metallovedenie i Obrabotka Metallov*, 1956, no. 9, Sept. 1956, p. 41-49.

Data on welding for superhigh-pressure boilers. Welding of pipes of austenitic steel and of pipes of austenitic steel to those of pearlitic steel is discussed.

GEL'MAN, A.S., doktor tekhnicheskikh nauk, professor; KABANOV, N.S.; SLEPAK, E.S.; LEBEDEV, V.K., kandidat tekhnicheskikh nauk, retsenzent; MEZHOVA, V.A., nauchnyy redaktor; TIKHANOV, A.Ya., tekhnicheskiy redaktor

[Contact butt-welding of pipes] Kontaktnaia stykovaia svarka trub. Pod red. A.S.Gel'mana. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 231 p. (MLRA 10:8)
(Electric welding) (Pipe, Steel)

137-1957-12-24141

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 179 (USSR)

AUTHORS: Slepak, E. S., Filatova, M. A.

TITLE: The Weld-joining of Steam Superheater Pipes Made of Different Steels (Svarnoye soyedineniye trub paroperegrevateley iz raznorodnykh staley)

PERIODICAL: V sb.: Issledovaniya i svoystva zharoprochn. materialov. Moscow, Mashgiz, 1957, 140-148

ABSTRACT: An investigation was made of the contact welding of 32 x 5.5 mm pipes made of austenitic steels EI 448 and EI 257 (OKh14N14 with 0.45 percent Mo and 1.6 percent W) to pipes of pearlitic steel 15 K_h M and EI 531 of the following chemical composition (in percent): C 0.08, Cr 2.46, Nb 1.26, Mo 0.5, V 0.36. A high-quality welded connection (WC) was obtained under the following conditions: An induction in the secondary circuit of 6.0-6.5 V, a heating time of 1.5-2 sec., an adjustment length for austenitic steel of 15 mm and for pearlitic steel of 40-45 mm, an allowance for flashing off of 6-6.5 mm, an average rate of fusion of 3-3.3 mm/sec, an allowance for the set of 5-5.5 mm, a setting with the current of 1.5-2 mm, a speed of set of 30 mm/sec, a pressure of set of

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12-14 kg/mm^2. The quality of the WC was judged by mechanical tests for impact and bending at room temperature and by metallographic examination. The WC of pipes made of EI 448 and 15 KhM steels had an a_k of 14.4 kgm/cm^2 and a fold angle of 180°. The junction of the WC has a sharp boundary, and at temperatures > 700° and an exposure time of 10 hrs., a decarbonized zone appx. 0.5 mm wide appears in 15KhM steel and continues to grow to 1.5-2 mm if the exposure is kept up, while the a_k falls to 1.5-3 kgm/cm^2. The welding of EI 448 and EI 531 steels (the C in this type of steel is tied into carbides) produced a questionable WC; the sharp boundary between the steels does not disappear with heating up to 700-750° and an exposure of up to 50 hrs, but the WC becomes brittle and the a_k goes down to 3 kgm/cm^2. WC samples made of EI 257 and 15 KhM steels had an σ_b of 57 kg/mm^2, a fold angle of 180° and a_k of 13 kgm/cm^2. A boiler steam superheater was welded together out of such steels. WC's made of pipes of EI 257 and EI 531 steel were investigated at room temperature and at working temperatures of 400, 450, 500, 550, and 600°. The mechanical properties of the WC's were compared to the mechanical properties of the EI 531 steel. In testing the WC's the minimal

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The Weld-joining of Steam Superheater Pipes Made of Different Steels

value of a_k was 2 kgm/cm^2 at 20° and 12 kgm/cm^2 at 600° and the fold angle was 180°. The greatest a_k (of 12 kgm/cm^2) was obtained after 30 min of annealing at 700°. In the tensile test failure occured as for the EI 531 steel; the δ_s, ψ, and a_k of the WC are somewhat lower than in the basic EI 531 metal. The endurance of the WC is higher than for the EI 531 steel. The a_k of the WC increases at room temperature as a result of aging (long exposure at 600-700°) from 2 to 10 kgm/cm^2. A test of the WC for scale resistance demonstrated that the EI 531 steels belong to the group with lower resistance; the contact welding does not impair the corrosion properties of the EI 531 steel.

V. B.

1. Flash welding-Applications
2. Steel-Flash welding
3. Steam pipes-Flash welding

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129-3-4/14

AUTHORS: Gel'man, A.S., Griboyedova, T.S., Ye.A. Davidovskaya, Lazarev, B.I., Lyubavskiy, K.V., Slepak, E.S., Trunin, I.I. and Fedortsov-Lutikov, G.P.

TITLE: Investigation of the Steel 1X18H12T as Tube Material for Power-generation Equipment (Issledovaniye stali 1Kh18N12T v kachestve trubnogo materiala dlya energoustanovok)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.3, pp. 16 - 24 (USSR).

ABSTRACT: For producing tubes operating at super-critical steam parameters, it is necessary to have available a cheap, strong and ductile material which has a stable structure and stable properties at 550 to 650 °C, is not inclined to develop inter-crystallite corrosion and possesses good technological properties. The work carried out in 1952 and 1953 by TsNIITMASh jointly with the imeni Ordzhonikidze Works (Ref.1) proved that it was possible to utilise cheap steel of the type 1X18H9T for operation at high temperatures. Later, complex investigations were carried out with this steel as a material for tubes of super-critical parameter power-generation equipment. The steel 1X18H9T may contain large quantities of ferrite and, after long-duration annealing at 600 to 700 °C, it embrittles due to the formation of a σ-phase. Increase in the nickel content

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Investigation of the Steel 1X18H12T as Tube Material for Power-generation Equipment

to 11-13% brought about an appreciable increase in the stability of the austenite without affecting the high strength. This steel, designated as 1X18H12T steel, does not show any α- or σ-phase separation during ageing at 700 °C for 10 000 hours and at 750 °C for 3 000 hours; only slight quantities of carbides were found to separate out. Thereby, the impact strength is maintained at 22-24 kg/cm^2 for this steel, whilst in the case of the steel 1X18H9T, it drops to 9-18 kg/cm^2. The investigations described in this paper were carried out on commercial tubes, rods and also on laboratory produced steels with compositions as given in Table 1, p.16. The results are entered in tables and plotted in graphs. It is concluded that the steel 1X18H12T, containing 0.08-0.12% C, max. 75% Si, 1-2% Mn, 17-18.5% Cr, 11-13% Ni, max. 0.20% S and max. 0.035% P, is suitable for operation at high temperatures; the Ti content of the steel is thereby determined by means of the formula 5(C-0.02). The best combination of mechanical properties was obtained after annealing at 1 050 to 1 100 °C for 30 min. and cooling in air, and this regime is recommended for tubes as well as for bends. Weld joints should be annealed at 1 000 to 1 050 °C for 1 hour

 and then cooled in air. The mechanical properties of steels

129-3-4/14

Investigation of the Steel 1X18H12T as Tube Material for Power-generation Equipment

ASSOCIATION: TsNIITMASh

AVAILABLE: Library of Congress

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25(1) SOV/135-59-5-8/21

AUTHORS: Slepak, E.S., Candidate of Technical Sciences; Gel'man, Professor, Doctor of Technical Sciences

TITLE: Some Aspects of Flash Welding of Heat-Resistant Austenitic Steel Tubes

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 5, pp 20-24 (USSR)

ABSTRACT: Experiments carried out in TsNIITMASH on the butt-welding of steam-superheater pipes, made of several austenitic steels, made it possible to establish certain characteristics of flash-welding this class of heat-resistant steel. The tubes welded were 32 mm in diameter with walls 5.5-7 mm in thickness and were made of austenitic steels with varying chrome and nickel content (Table 1). The welding was carried out using machines with a power of 75-200 kilovolt-amperes and pneumatic-hydraulic drives, with flashing off and heating proceeding according to an automatic cycle. It was found that the mechanical qualities of well-made thermally untreated welded joints of steam superheater pipes of heat-resistant austenitic steels, during short and long tests in

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Some Aspects of Flash Welding of Heat-Resistant Austenitic Steel Tubes

temperatures ranging from room to working temperature, approached the corresponding qualities of the basic metal of the pipes. The limit of prolonged strength of thermally treated and untreated welded connections of austenitic pipes corresponded to that of the basic metal. As a rule, thermal treatment of the a/m welded connections is not required. During prolonged exposure to working temperatures, marked equalization of the microstructure in the butt zone takes place. The mechanical properties of the welded connection and the basic metal change equally. The chemical composition of the austenitic steel essentially affects the welding procedure. Its higher parameters, in particular those of its precipitation, are required with an increase of the chrome content and reduction of its flowability. In this case, there is no relationship between the mechanical properties of austenitic steel at high temperatures and the parameters of its precipitation during flash welding. The high temperature tests were carried out by D.P. Berezhkovskiy and

Some Aspects of Flash Welding of Heat-Resistant Austenitic Steel Tubes

the flowability of the steels determined by V. G. Gruzin. There are 5 graphs, 2 tables, 1 diagram and 4 photos.

ASSOCIATION: TsNIITMASH

18(5), 25(1,5) SOV/135-59-7-6/15

AUTHORS: Gel'man, A.S. Doctor of Technical Sciences, Professor, and Slepak, E.Z., Candidate of Technical Sciences (TsNIITMASh), Lashchiver, S.N., Candidate of Technical Sciences (NIITAVTOPROM), Mamrikov, P.V., (Mytishchi Machine Building Plant)

TITLE: Projection Spot Welding of Hot Rolled Steel

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 7, pp 19-22 (USSR)

ABSTRACT: The authors review the experience in projection spot-welding of hot-rolled steel sheets at the Mytishchinskiy mashinostroitel'nyy zavod (Mytishchi Machine Building Plant). This method was suggested by TsNIITMASh several years ago, then studied by NIITAVTOPROM and finally it was introduced at the aforementioned plant. There it is used for the manufacture of semi-trailer parts with satisfactory results. The authors present operational data in tables and graphs. There are 3 photographs, 4 diagrams, 3 tables and 1 graph.

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Projection Spot Welding of Hot Rolled Steel

ASSOCIATION: TsNIITMASh; NIITAVTOPROM; Mytishchinskiy mashino-stroitel'nyy zavod (Mytishchi Machine Building Plant)

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18(5) SOV/135-59-8-6/24

AUTHORS: Astaf'yev, S.S., L'vov, D.S., Rozhdestvenskiy, Yu.L. and Slepak, E.S., Candidates of Technical Sciences

TITLE: Butt Welding of Antifriction Bearing Ring Blanks

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 8, pp 18-21 (USSR)

ABSTRACT: At the present time the blanks of antifriction bearing rings are usually produced by hot stamping on horizontal forging machines or by turning from thick-walled pipes. The coefficient of utilization of the metal for conical bearings does not exceed 0.40-0.45. The rapid progress in mechanical engineering, however, which is urged in the resolutions of the XXI Convention of the Communist Party of the Soviet Union, requires a considerable increase in the output of bearings. It is especially important in this connection to find a more efficient technology in the production of the bearing rings. In the following part the results of an investigation are given, which was carried out in the Institute of the Bearing Industry in collaboration with the department for welding in the

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TsNIITMASh and which dealt with contact welding of ring blanks. The material: the bearing rings were made of chrome steels ShKh 15, ShKh 15SG, and the low-carbon steels 18 KhGT, 12Kh 2N4A, and 20Kh2N4. The steels of the first group have a high stability; they have a high resistance to fatigue and wear and are resistant during welding and mechanical treatment. The steels of the second group are cemented, and after the hardening they have a tough core, which improves their working qualities under conditions of dynamical strain. The first thing to be studied was the welding of the outer ring blanks of the bearing 310, which is made of steel ShKh15 and has a section of 30x12 mm (the welding of rings of this steel was studied under the direction of A.S. Gel'man, TsNIITMASh, in 1947). Afterwards the welding of outer ring blanks of the conical bearings 7815, 7514, 46215, and 7718 of the steel 18KhGT (Table 1) with a section of 12x34, 10x27, 8x30, and 12x43 and an outer diameter of 135, 125, 130, and 155 mm was examined. If chrome (about 1%) and manganese (0.17-0.18%) are added to the steel 18KhGT

the durability, impact resistance, and hardness of the steel is improved without impairing the plastic qualities to any considerable degree. Titanium helps to prevent a growing of the core when the steel is heated to 1000-1100°C, combines the carbon in carbides, and reduces the percentage of perlite in the steel, thus improving its plasticity. Besides, the titanium neutralizes oxygen and nitrogen, which are the cause for an ageing, in nitrides and oxides. The equipment: the test rings were welded on a butt welding machine with lever gear and a capacity of 75 KVA and on semi-automatic machines with a capacity of 150 and 300 KVA. The blanks were clamped between the electrodes of the machine with the edges or sides. The welding of the blanks: butt welding was examined with and without preheating. The welding tests with rings of steel of type ShKh15 showed that it is possible to obtain joints of good quality if the butt welding is continuous. In the experiments with this sort of steel it was found that the carbon is to a certain extent reduced along the line of the seam. To get rid of this

undesirable effect an additional investigation will be necessary. The work with steel of type 18KhGT was begun with tests in butt welding with preheating. Good welded joints were obtained with this method. To get a better clamping of the rings in the machine an extention space was left in the welding zone. To compensate the shunt resistance in the welding of the rings a secondary voltage of 5.2-5.6 was taken instead of that used for welding of straight blanks which is only 4.5-5.0. It was confirmed that the best results were obtained with continuous butt welding. In some of the seams, however, flaws in form of oxides were observed. The influence of hot deformation on the mechanical qualities of the welded joints was also studied, and dilatancy tests were carried out. The high requirements to the stability of the products made it necessary to work out control methods, which do not destroy the welded joints, for conditions of mass production. The magnetic and ultrasonic methods are both used. The main advantage of the new technology is the lowering of the cost-price by considerably raising

the coefficient of utilization of the metal. The authors come to the following conclusions: the possibility and practicability of producing embossed welding rings with the new technology are shown, which guarantees an utilization coefficient of the metal up to 0.65. The hot plastic deformation of the welding ring somewhat raises the plasticity of the welded joint, whereby its impact resistance is strengthened while the values of the fluctuation and stability remain fixed. An effective control of the quality of the welded joints can be achieved by distributing the rings after the welding and by using ultrasonic defect detection methods. The working ability of the embossed welding rings of steel of type 18KhGT is as high as of those of steel of type ShKh15, which were manufactured with the described technology by turning from forgings. There are 3 photographs, 2 tables, 4 graphs and 1 diagram.

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AUTHORS: Slepak, E.S., Candidate of Technical Sciences and Kozhayev, A.F., Engineer

TITLE: Resistance Welding of Steam Superheater Pipes in Boilers for Heavy-Duty Service

PERIODICAL: Energomashinostroyeniye, 1960, No.1, pp.37-40

TEXT: Owing to critical service conditions of boilers ПК-30 (PK-30) and ПК-37 (PK-37), their steam superheaters have to be made of stabilized austenitic steel ЭИ 695Р(EI695R), which contains 0.0083% B and 1.28% Nb, and which has been found to be more suitable for resistance welding than the unstabilized variety. The object of the investigation, described in the present paper, was to obtain more data on the effect of the boron and niobium additions on weldability of austenitic steels of this type. To this end, the effect of various factors on the mechanical properties of resistance-welded tubes (32 mm O.D., 7.5 mm wall thickness) was studied. In the preparation of the first batch of experimental test pieces, two resistance-welding schedules were used, the main differences between which are tabulated below:

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Process Parameter	Schedule	
	I	II
Secondary voltage (no load), V	6.4 - 6.6	6.5 - 7.0
Duration of the pre-heating cycle, sec.	4.0 - 6.0	4.0 - 5.0
"Burn off" allowance, mm	6.0 - 6.5	7.0 - 8.5
Average rate of fusion, mm/sec.	3.4 - 3.6	3.0 - 3.5
"Push up" allowance, mm	5.0 - 6.0	5.5 - 6.5
Upsetting under current, mm	3.5 - 4.0	3.0 - 3.5
Upsetting pressure, kg/mm2	14.0 - 16.0	12.0 - 14.0

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Tubes welded under these conditions could be bent through 180° without cracking. However, in some of the tubes, welded according to Schedule I, tears (sometimes extending throughout the wall of the tube) were found after the bending test. These defects had developed on both sides of the weld, 1.5 to 2.5 mm away from the seam. Fracture of specimens, tested for tensile and impact strength, also took place in these regions, whose hardness was 200 HB, as compared with 144 to 170 HB of the adjacent zones. The results of the next series of experiments showed that the mechanical properties (U.T.S., yield point, elongation, reduction of area, impact strength) of the weld (not subjected to any heat-treatment) were practically the same as those of untreated steel. No embrittlement of the weld was observed in steels EI695 or EI694 (ЭИ 695 or ЭИ 694), containing 0.7% Nb, but increasing the Nb content to 0.5% led to the development of brittle fracture. It was inferred therefrom that the observed defect was caused by the formation of intermetallic

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compounds in the region heated to a high temperature, the effect becoming significant only in steels with a high niobium content. The fact that welds in steel EI695R, containing 1.28% Nb, were ductile when welding Schedule No.II had been used, was attributed to larger "burn off" and "push up" allowances, as a result of which the embrittled parts of the components were fused and squeezed out from the weld. (It has been shown experimentally that the embrittlement of the near-weld region takes place mainly during the pre-heating cycle.) These findings indicated that continuous flush welding should be used for joining steels of this type. However, in the case of tubes with small inside diameter, flush welding with a large "push up" allowance may cause difficulties in the removal of large internal burrs, formed by the large quantity of metal squeezed out from the weld during the upsetting stage. It was for this reason that the effect of heat treatment on the properties of welds, made according to Schedule I, was investigated. The heat

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treatment, carried out in the welding machine, consisted in heating the weld to 1000 to 1200°C for 1 to 5 min. No tendency to cracking during bending tests was observed in welds subjected to this treatment, which had no adverse effects on other properties of the steel. Best results were obtained after 1 to 3 min at 1200°C, this treatment bringing about dissolution of the phase precipitated during welding, homogenization of the microstructure of the weld, and formation of coarsely-crystalline austenite with uniformly distributed carbides. Thus, it was established that the problem of making ductile welds in stainless steel tubes, without the formation of unduly large internal burrs, can be solved by resistance welding according to Schedule I, followed by the heat treatment described above. In the next stage of the investigation, the effect of ageing at 660 to 700°C (i.e. at the service temperature) on the microstructure and mechanical properties of the welds, was studied. It was found that the effect of ageing on both the weld and steel

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itself was the same in that their U.T.S. and yield point increased and their plasticity decreased with increasing time at the ageing temperature. A sharp decrease in the impact strength was observed in both cases after 500 h at 700°C; however, further ageing at this temperature caused no additional deterioration in this property. It was found also, that tubes, welded according to Schedule I without subsequent heat treatment and aged at 700°C, could be bent through 180° without cracking. The object of the next series of experiments was to study the problem of de-burring of welded tubes whose bore (in the case of tubes 17 mm I.D.) was almost completely blocked after the flush welding operation. The pneumatically operated de-burring tool, illustrated in Fig.5, used to get jammed in the metal when used on tubes welded according to Schedule I. This difficulty was overcome by subjecting the weld to the same heat treatment that had been applied in order to render the weld more ductile. After this treatment, the metal blocking the bore of the tube

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disintegrated into several small fragments under the action of the de-burring tool and could be easily removed without causing jamming of the tool. In the last stage of the present investigation, resistance welding of unlike (austenitic and pearlitic) steels was used. To this end, the effect of 3000 h ageing at 600°C on the properties of welds between steel EI695R on one side and steel 15XM (15KhM) or 12XMF (12KhMF) on the other, was determined. Whereas the impact strength of the EI695R + 12KhMF combination increased slightly in the course of ageing, that of the EI596R + 15KhM welds sharply decreased. This effect was attributed to the fact that steel 12KhMF contains 0.17% vanadium, which forms stable carbides, whereas no carbide-forming elements are present in steel 15KhM, as a result of which carbon diffuses freely from the latter steel to the austenitic steel. The resultant decarburization of the pearlitic steel and carburization of the austenitic steel leads to the decrease in

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impact strength observed in welded joints between these two steels. There are 7 figures, 2 tables and 3 Soviet references.

Fig.5.

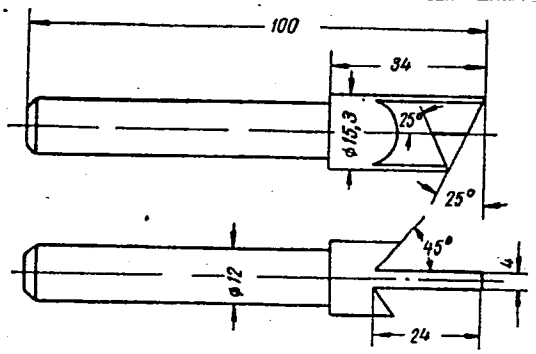

Рис. 5. Общий вид дорна.

PHASE I BOOK EXPLOITATION SOV/5623

Kabanov, Nikolay Sergeyevich, and Ezra Shmulevich Slepak

Tekhnologiya stykovoy kontaktnoy svarki (Resistance Butt-Welding Process) Moscow, Mashgiz, 1961. 249 p. 13,000 copies printed.

Reviewer: S. F. Gusev, Candidate of Technical Sciences; Ed. of Publishing House: G. N. Soboleva; Tech. Ed.: Z. I. Chernova; Managing Ed. for Literature on Hot-Processed Metals: S. Ya. Golovin, Engineer.

PURPOSE: This book is intended for process engineers and designers concerned with resistance butt welding. It may also be useful to students specializing in resistance welding at schools of higher education and tekhnikums.

COVERAGE: The fundamentals of pressure butt-welding methods are discussed. Data on the resistance butt welding of a great number of products made of different steels are presented. Recommendations are made regarding the selection of welding conditions, electrodes, and equipment. Schematics for designing transformers are also included. No personalities are mentioned. There are 68 references, all Soviet.

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Fusion butt welding of austenitic steel. [Trudy] TSNIITMASH 104:30-53 '62. (MIRA 15:6)

(Pipe, Steel--Welding)

SLEPAK, E. S. (Candidate of Technical Sciences) (TsNIITmash)

"Welding of pipes with heating TVCh has a promising future."

Report presented at the regular conference of the Moscow city administration NTO Mashprom, April 1963.
(Reported in Avtomaticheskaya Svarka, No. 8, August 1963, pp 93-95, M. M. Popekhin)
JPRS24,651 - 19 May 64

MIRLIN, G.A., kand. tekhn.nauk, dots.; SLEPAK, E.Sh., kand. tekhn. nauk, retsenzent; SAVCHENKO, V.S., inzh., red.; SOBOLEVA, G.N., red. izd-va; EL'KIND, V.D., tekhn. red.

[Welding in the manufacture of motor vehicles] Svarka v avtostroenii. Moskva, Mashgiz, 1963. 267 p. (MIRA 16:7)
(Welding) (Automobile industry)