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SHAPIRO, D.K.; SHESTYUK, I.I.; GOLOMSHTOK, M.M.

Characteristics of the development of pears and carbohydrate metabolism during their ripening. Bot.; issl.Bel.otd.VBO no.7:158-167 '65. (MIRA 18:12)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

ZOLOTARSKIY, Aleksey Fedorovich; VERSHINSKIY, Sergey Vasil'yevich; YERSHKOV, Oleg Petrovich; IVASHCHENKO, Georgiy Ivanovich; SHESTYAKOV, Vladimir Nikolayevich; CHERNYCHEV, Mikhail Andreyevich, prof ; PERSHIN, S.P., red.

[Railroad tracks and rolling stock for high speed traffic conditions] Zheleznodorozhnyi put' i podvizhnoi sostav dlia vysokikh skorostei dvizheniia. Moskva, Transport, 1964. 271 p. (MIRA 18:10)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

[illegible], Vasiliy Vasil'yevich; [illegible]ANYUK, Andrey Lavrent'yevich; MAZURKEVICH, M., red.

[Accounting in firms] Bukhgalterskii uchet v firmakh. Moskva, Izd-vo "Finansy," 1964. 64 p. (MIR 17:7)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

21121

S/149/61/000/003/004/004
A006/A106

18.1245 2508, 1416, 1454

AUTHORS: Kurdyumov, A. V., Shestyrev, I. A.

TITLE: On the use of pressure crystallization in casting magnesium alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 3, 1961, 125 - 128

TEXT: Pressure crystallization was proposed by Academician A.A. Bochvar and Professor A. G. Spasskiy as an effective means of eliminating porosity in aluminum alloy castings. This method was as yet not employed in magnesium alloy castings due to the opinion that these alloys in liquid state were inflammable under high air pressure. The present study was made to reveal the possibility of using pressure crystallization for casting magnesium alloys and to determine the effect of pressure on the porosity of the castings. The experiments were made with МЛ 4 (ML4) and МЛ 5 (ML5) alloys. The shape and dimension of castings were selected in such a manner that in one case shrinkage porosity was located in the upper portion of the casting (Figure 1, a and b) and in the other case over its whole height (Figure 1,c). The castings were placed in the bottom of the mold, the riser and the pouring gate were at the top. In all cases the metal was top-poured. The

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21121

On the use of pressure crystallization ... S/149/61/000/003/004/004
A006/A106

foundry mold was made of a standard mixture of 5% moisture and with fluorine admixture. For pressure crystallization the mold was placed in an autoclave. After pouring, the autoclave cover was closed and compressed air was supplied. To prevent ignition, sulfur powder was placed around the air gate and the riser. The mold was held in the autoclave for 10 - 15 minutes, then specimens were cut out and their porosity was determined from the density by double weighing in air and glycerin, and by weighing and measuring. Castings were manufactured by crystallization under conventional conditions and under pressure of 1.5, 3, 4 and 5 atg. The alloy temperature was 760°C. It was found that the density of the specimens increased with higher pressure. The distribution of porosity over the height was studied on specimens shown in figure 1c, cast into two molds. In one mold crystallization proceeded under conventional conditions, in the other one under 1.5, 3 and 5 atg pressure. ML5 alloys were cast at 690 and 800°C. It was found that in all cases but one a higher density was observed in pressure crystallized castings. The dense portion of a conventionally crystallized casting was about 15% of its total height, that of a pressure crystallized casting 30 - 40%. The experiments performed lead to the following conclusions: Pressure crystallization, employed in aluminum alloy casting, can also be recommended for magnesium alloy casting. For this purpose risers having a sufficient volume should be placed above the compact parts

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

S/128/62/000/004/002/010
A004/A127

18.1V+J

AUTHORS: Kurdyumov, A.V.; Shestyrev, I.A.

TITLE: Crystallization of magnesium alloys under pressure

PERIODICAL: Liteynoye proizvodstvo, no. 4, 1962, 4 - 5

TEXT: The authors mention the fact that magnesium-alloy castings rather often show a considerable porosity. The industrial МЛ 4 (ML4) and МЛ 5(ML5) alloys possess a great crystallization temperature range of 210° and 157°C respectively. The volume of micropores may be considered insignificant, it is in the range of 0.75 to 1% of the total casting volume, but the tensile strength of specimens of 0.75% microporosity decreases already by a factor of 2. Investigations were carried out to study the possibility of applying pressurized crystallization in casting the ML4 and ML5 magnesium alloys, and to find out the effect of pressure on the casting porosity. The alloys were produced from fresh metal and master alloys and were cast in ingot molds. To prevent the feeding of the casting from the riser, the gate dimensions were chosen in such a way that the metal in it crystallized in the first place. For pressurized crystallization the mold was placed in an autoclave whose cover was closed after

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

ACC NR: AR7001772 SOURCE CODE: UR/0169/66/000/010/D018/D018

AUTHOR: Pakhomov, I. B.; Ryabchenko, F. M.; Bystritskaya, P. M.; Shestyuk, V. A.; Filatov, K. Ye.

TITLE: Regional works of correlation method of wave refraction (CMWR) in the trans-Volga region of Saratov

SOURCE: Ref. zh. Geofizika, Abs. 10D111

REF SOURCE: Tr. Nizhne-Volzhsk. n.-i. in-t geol. i geofiz. vyp. 3, 1965, 156-165

TOPIC TAGS: seismic prospecting, seismograph, seismology, hodograph, wave refraction data correlation, seismic station/SPEN-1 seismograph, PSL-1 CMWR seismic station, Ural-2 electric power machine

ABSTRACT: A description is given of the method of field observations and interpretations and results of surveys made since 1958 in the border area of the Caspian depression. A study was made of the topography of the basement in order to find large out croppings and structures of the subsalt stratum and upheavals of the platform type. The seismological characteristics of the region are presented. The

Card 1/3 UDC: 550.834.3

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ACC NR: AR7001772

methodology of refraction correlation observations consisted in a continuous longitudinal profiling with a system of counter and overtaking hodographs, which ensured a complete correlation of reference waves, and also in a nonlongitudinal profiling, used only for mapping of the basement relief. In longitudinal profiling, each 5.7 and 11.4 km long station was surveyed from 13—15—21 explosion points. The hodographs were 30 km long and in the area of tracking of the refracted wave, they were 70 km long. On nonlongitudinal profiles, the station was 11.4 km long, and the distance from the explosion point to the profile (on the perpendicular) was 50—60 km. Waves were recorded by SPEN-1 seismographs (100 m from each other) and a 60 channel PSL-1 refraction correlation station with a filtration opening toward Hr, and with a steep right cut of the 27-cps frequency curve. On the territory of the trans-Volga area of Saratov, four main waves were found:— T_1 from the surface of the salt; T_2 from the subsalt bed to the depression; T_3 from the surface of the basement (?); T_4 from the interface in the thickness of the basement (?) [SIC]. Structural diagrams over two horizons were composed: The surface of the carbonaceous sediments of Lower Permian age, which has a monoclynal dip to the South and the South East toward the Caspian depression; the surface of the basement, characterized by a rather sharp dislocation with a general dip to the

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South. On the whole, the outer part of the border zone shows an irregular dip of the basement toward the Caspian depression, while the inner part is a salt dome tectonic formation. T. Polyakova. [Translation of abstract] [GC]

SUB CODE: 08/

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETALOV, I.N.

Automatic apparatus for the statistical processing of electrophysiological reactions. Fiziol.zhur. 50 no.4:514-517 Ap '64. (MIRA 18:4)

1. Laboratoriya fiziologii zritel'nogo analizatora Instituta fiziologii imeni Pavlova AN SSSR, Leningrad.

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Shetechnik, M.M.

Journal of Physical Chemistry
Vol 32, Nr 1, 1958

3

TEMPERATURE DISTRIBUTION IN A REACTION COLUMN IN PROCESSES TAKING PLACE IN THE REGION OF DIFFUSION KINETICS

M. M. Shetechnik (Moscow) page 152

Summary

In a reaction column three types of temperature distributions are possible for processes taking place in the region of diffusion kinetics, in conformity with the ratios between the rates of the "reaction front" and "heat wave" propagations.

If the rate of propagation of the "heat wave" is greater than that of the "reaction front" then at the time of reaction in the layer the temperatures of the gas and the filler equalize and, owing to the reaction, the filler assumes a higher temperature.

In the reverse case the gas temperature at the time of reaction is higher than that of the filler and they become equal only after the reaction.

If the rates are equal there are no limits to the heating up of the column contents.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

ACCESSION NR: AP4018366 S/0120/64/000/001/0061/0068

AUTHOR: Bogomolov, A.V.; Budagov, Yu. A.; Vasilenko, A.T.; Dzhelepov, V.P.; D'yakov, N.I.; Ivanov, V.G.; Kladnitskiy, V.S.; Lepilov, V.I.; Lomakin, Yu. F.; Moskalev, V.I.; Flyagin, V.B.; Shetet, T.I.; Shlyapnikov, P.V.

TITLE: Meter-long bubble chamber in a magnetic field

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 61-68

TOPIC TAGS: bubble chamber, meter long bubble chamber, 10 Gev particle beam, bubble chamber in magnetic field, electromagnet bubble chamber

ABSTRACT: A bubble chamber with a sensitive volume of 1x0.5x0.38 m is described. The chamber is intended for studying the particle beams up to 10 Gev obtained from the OIYaI proton synchrotron. The chamber design was described earlier (Yu. A. Budagov, et al. International Conference on High-Energy Acceleration and Instrumentation, Berkeley, 1960); more details are supplied in the present article. Propane or some other liquid suitable for a particular experiment may serve as a working fluid. The chamber is placed in a 17-kilo-oersted magnetic field derived from a 2,200-kw electromagnet. The error in a

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ACCESSION NR: AP4018366

5-Gev/s-pulse measurement, evaluated from multiple scattering in propane, is [illegible].2%. In 1963, the chamber was installed at the output of the magnetic circuit of a π^--meson beam whose energy lies between 4 and 7 Gev. "The authors consider it their duty to thank V. N. Sergiyenko, N. I. Frolov, K. A. Baycher, and the personnel of the experimental shop for their help in building the outfit. The authors are thankful to V. I. Veksler, N. I. Pavlov, and I. V. Chuvilo for their assistance in constructing the magnetic circuit of the π^--meson beam. We are indebted to A. S. Strel'tsov, B. Ye. Gritskov, B. V. Rozhdestvenskiy, and L. N. Fedulov for designing and building the magnet. The authors are deeply grateful to [illegible]ov, V. A. Lebedev, and S. P. Zunin who spent much effort and skill in the stages of constructing and aligning the outfit." Orig. art. has: 8 figures.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Studies)

SUBMITTED: 22Mar63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: NS NO REF SOV: 003 OTHER: 002

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETI, F., Cand Med Sci -- (diss) "Pre-operational preparation of patients with chronic suppurative processes of the lungs." Moscow, 1960. 16 pp; (First Moscow Order of Lenin Medical Inst im I. M. Sechenov, Chair of General Surgery in Medical Facilities); 200 copies; price not given; (KL, 25-60, 128)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

S/169/63/000/001/043/062
D263/D307

AUTHORS: Gering, S.S. and Shetinina, Yu.Ya.

TITLE: The results of experimental investigations concerned with point-sampling of polymetallic deposits

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1963, 13, abstract 1D65 (Tr. Altaysk. gornometallurg. n.-i. in-ta, 1962, v. 12, 110-112)

TEXT: The results of studies concerned with point- and groove-sampling are given (cf. table), allowing the following conclusions to be drawn: (1) The divergence of the mean contents of metals, obtained by point- and groove-sampling, are slight (2-7%) and bear different signs for different sets of samples and for different metals. In single pairs of samples the amounts of positive and negative divergences are roughly equal, indicating the absence of a systematic difference between the 2 methods of sampling. (2) The mean square divergence of the metal contents and corresponding variation coefficients were considerably higher for pairs of

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D263/D307

The results of experimental ...

1 Компоненты	2 Группы проб	3 Число пар проб	4 Бороздовые пробы: 9 коэфф. вариации отклонений	7 ошибка средняя, %: 10 абсолютная	11 относительная	5 Точечные пробы: 12 коэфф. вариации отклонений	8 Ошибка средняя, %: 13 абсолютная	14 относительная	6 Отклонение средних содержаний точечных и бороздовых проб, %: 15 абсолютное	16 относительное
Свинец Pb	1	26	77	0,22	15	48	0,13	9	−0,10	−7,9
Свинец Pb	2	29	57	0,22	10	37	0,14	6	+0,04	+1,9
Свинец Pb	3	30	86	0,49	15	—	—	—	+0,07	+2,2
Свинец Pb	4	15	—	—	—	21	0,08	5	—	—
Цинк Zn	2	28	67	0,45	13	72	0,47	14	−0,13	−3,0
Цинк Zn	1	26	79	0,27	16	36	0,12	7	−0,17	−6,4
Цинк Zn	3	30	64	0,55	12	—	—	—	+0,25	+5,6
Цинк Zn	4	15	—	—	—	22	0,16	9	—	—
Медь Cu	1	26	71	0,02	12	36	0,01	7	−0,03	−17,6
Медь Cu	2	28	68	0,04	12	46	0,03	8	+0,03	+0,8
Медь Cu	3	30	117	0,10	22	—	—	—	+0,01	+2,2
Медь Cu	4	15	117	—	—	13	0,01	3	—	—

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETKER, O.D.

3(2), 3(4) SOV/6-59-7-4/25

AUTHOR: Sokolova, O. I.

TITLE: Results of the Competition for the Best Improving Suggestion (Itogi konkursa na luchsheye ratsionalizatorskoye predlozheniye)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 7, pp 17-21 (USSR)

ABSTRACT: In May 1959, the ordinary competition for the best improving suggestion in the field of topographic-geodetic and cartographic production was concluded at the Glavnoye upravleniye geodezii i kartografii MVD SSSR (Main Administration of Geodesy and Cartography of the Ministry of Internal Affairs of the USSR). 7 aerogeodetic services, 8 cartographic institutes and NRKCh took part. A total of 30 topographic-geodetic, and 31 cartographic, suggestions were submitted. The 1st prize of 1,000 rubles was awarded to V. A. Morozov and V. V. Urusov (Minskaya kartograficheskaya fabrika (Minsk Cartographic Plant) for the "Seamless Fastening of Atlas Blocks". The 2nd prizes of 750 rubles were awarded to: 1) Ya. L. Bratslavskiy, V. M. Varzugin, Yu. N. Galitskiy, O. P. Shetler and V. P. Stepanov (NRKCh) for "Technology of the Use of Standard Bases (tipovaya osnova)". 2) I. V. Gurevich, V. M. Varzugin, E. O. Radovil'skaya, O. D. Shetker, L. I. Tkeykova for "Technology of the Manufacture of Combined Diapositives" (NRKCh). 3) D. A. Larin (Moskovskoye AGP (Moscow AGP)) for "Reduction of Work in Evaluating the Accuracy of Symmetric Geodetic Nets Formed by Figures of Regular Shape". 4) N. V. Shreyber (Novosibirskoye AGP (Novosibirsk AGP)) for "Light Collapsible Ladder of Dural for Prospecting". - The 3rd prizes of 500 rubles each were awarded to : 1) I. F. Shevaldin (Yakutskoye AGP (Yakutsk AGP)) for "Establishment of Fixed Points by the Method of Thawing by Means of Vapor". 2) V. D. Ol'shanskiy (Yakutskoye AGP (Yakutsk AGP)) for "Construction of an Overhead Trolley for Timber Transport". 3) I. A. Kyzin (Moskovskoye AGP (Moscow AGP)) for "Variation in the Attachment of Photographs on the STD-2". 4) V. F. Zarubin (Moskovskoye AGP (Moscow AGP)) for "Raising of Geodetic Signs by 5-7 Meters". 5) D. I. Smirnov, I. V. Gurevich, Z. I. Aleksandrova, V. M. Varzugin, V. K. Kirillov and I. Ye. Kislyakov (NRKCh) for "Technology of the Completion and Edition of Topographic Maps by the Photorelief Method". 6) M. F. Glushanin (Minskaya kartograficheskaya fabrika (Minsk Cartographic Institute)) for "Vertical Piling Machine for Brochures". 7) A. A. Vnukov (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)) for "Mechanism for the Loading of Trucks With Paper Rolls". 8) A. N. Tsokolenko (Ukrainskoye AGP (Ukrainian AGP)) for "Replacement of the Arc Lamp for the Heliographic-printing Machine KP-1 by an Illuminating Device With Luminescent Lamps DS-40". 9) G. M. Grigor'yev (Sverdlovskoye AGP (Sverdlovsk AGP)) for "Ruler for Drawing in the Preparation of Map Compilations and Final Compilations". 10) L. G. Israilev (Severo-Zapadnoye AGP (North-west AGP)) for "Improvement of the Contact Mechanism in the Micrometer by Vodar". 11) S. M. Andreyev (Moskovskoye AGP (Moscow AGP)) for "Formulas and Form for a More Rational Computation of Superelevations From the Trigonometric Leveling", 12) D. G. Vil'ner (Sverdlovskoye AGP (Sverdlovsk AGP)) for "New Numbering and Painting of Leveling Staffs". 13) G. M. Grinberg (Moskovskoye AGP (Moscow AGP)) for "Formulas and Table for Extreme Divergences Between the Free Terms of Polar and Base Conditions Computed on a Plane and on a Ball". - Besides, the following suggestions were approved by the jury: 1) V. T. Trykov (Sverdlovskoye AGP (Sverdlovsk AGP)), "Underframe for Observations From the Telescopic Tower". 2) B. V. Osinskiy

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SOV/6-59-7-4/25

Results of the Competition for the Best Improving Suggestion

(Severo-Zapadnoye AGP (North-west AGP)) Template (paletka) for Determining the Corrections of Centering and Reducing With an Auxiliary Scale for Determining the Corrections of the Curvature of the Image of the Geodetic Line and of the Spheric Excess". 3) V. G. Mauyerer (Moskovskoye AGP (Moscow AGP)), "Variation of the Construction of the Heliotrope". 4) G. M. Shlofendorf (Moskovskoye AGP (Moscow AGP)), "Zero Thermostat for the Gravimeters of the GAK-ZM-type". 5) P. I. Popov (Moskovskoye AGP (Moscow AGP)), "Device for Cutting Aluminum". 6) A. I. Fikhman and G. M. Grinberg (Moskovskoye AGP (Moscow AGP)), "Prospecting Mast". 7) Ya. I. Negnevitskiy, N. A. Pashukevich and M. P. Glushanin (Minskaya kartograficheskaya fabrika (Minsk Cartographic Institute)), " A Workbench Device for Mixing Offset Colors". 8) I. L. Gintsberg (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), "Device for Grinding the Edges of Plate Glass". 9) A. A. Vnukov (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), a) "Mechanism for Inclining the Grinding Case". b) "Mechanism for Lifting the Trough With the Balls". 10) V. I. Yurchenko and S. A. Lonshteyn (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), "Automatic Switch-off of Arc Lamps". 11) I. V. Vasil'yeva (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Plant), "Increase in the Durability of Light-sensitive Rubber Solution (Adhesive)". 12) V. M. Sher (Kiyevskaya kartograficheskaya fabrika (Kiyev Cartographic Plant), "Correspondence of the Stroke-elements on Topographic Maps With the Letters on the Machine Printing Forms". 13) V. V. Bozrikov, S. P. Yakunin (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "On the Improvement in the Construction of Mechanisms for Pressing-on the Inking Rollers and Friction Drums on the Offset Machines 'Planeta-Super-Kvinta'". 14) A. Ya. Simanovskiy (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "A Rational Method of Making Positives of Printing Forms of Relief Printing on Tracing Paper for Printing Books on Offset Machines". 15) O. M. Yankovskiy (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Synchronization and Automatization of the Switching on and off of Arc Lamps and of the Suction Fan in the Copying Department". 16) V. F. Alampiyev (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Variation in the Technology of Making Sets of Outline Maps of the Fifth Class". 17) V. V. Il'yushin (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Preparation of Collecting- and Corresponding Positives by the Method of the Washed-out Relief on 'viniproz'". 18) V. M. Dudochkin (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Switching off the Motor of the Compressor on the Copying Frame by Means of the Change Lever for Lifting the Glass and by Means of the Vacuum". 19) D. I. Matkava (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Device for Laying on the Negatives in Copying". 20) N. M. Serbin (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Device for Drying Paper on Offset Machines". 21) S. M. Konstantinova (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Progressive Method and Procedure for the Preparatory Work in Calculating and Plotting the Geographic Network on Maps to Be Compiled". 22) K. I. Mironov (NRKCh) "A Workbench for Repairing the Guides of the Offset Machine". 23) Yu. P. Tarasov (NRKCh) "Device for Regulating the "taler" of the Offset Machine". 24) Ye. N. Klyuchanskaya and S. V. Nesterova (NRKCh) "Improving the Method of Precipitating the Silver Nitrate in Used Solutions".

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETLER, G.A.; FEYGIN, L.M.; ZINCHENKO, Ye.M.

[Album on drilling and blasting] Al'bom po buro-vzryvnym rabotam. Moskva, Ugletekhizdat, 1953. 93 p. (MLRA 7:1)
(Boring) (Blasting) (Explosives)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

FEYGIN, Lev Mikhaylovich; SHETLER, Georgiy Arvidovich; SOSNOV, V.D., redaktor; SLAVOROSOV, A.Kh., redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Driller] Buril'shchik. Moskva, Ugletekhizdat, 1955. 215 p. (Boring machinery) (Coal mining machinery) (MLRA 8:7)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETLER, G.A.

93-57-7-1/22

AUTHOR Vasil'yev, Yu.S., and Shetler, G.A.

TITLE New Instruments for Directional Drilling of Oil Wells (Novyye pribory dlya napravlennogo bureniya skvazhin)

PERIODICAL Neftyanoye khozyaystvo, 1957, Nr 7, pp 1-4 (USSR)

ABSTRACT The azimuth and the angle of inclination of any point of a borehole in relation to the end point of the drilling assembly, to the drilled interval of newly deflected holes, to the angle at which the deflector is set, and to the originally given angle of inclination of the well, can be calculated geometrically with the aid of formulas (Fig. 1). Shan'gin was the first to develop such formulas for rotary drilling. They can also be applied to orientation of deflecting tools in directional turbo-drilling. Calculation with these formulas is cumbersome and is not recommended.

Card 1/3

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New Instruments for Directional Drilling (Cont.) 93-57-7-1/22

The author concludes that the methods recommended above will facilitate the solution of practical problems in connection with the change in the azimuth of directional wells. There are five figures.

ASSOCIATION Yu.S. Vasil'yev is associated with VNIIburneft' (All-Union Design and Planning Scientific Research Institute for Drilling Oil and Gas Wells)

AVAILABLE: Library of Congress

Card 3/3 1. Oil wells-Drilling analysis

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

Sov/93-58-4-7/19

AUTHOR: Vasil'yev, Yu.S. and Shetler, G.A.

TITLE: About I.I. Kurus's Article on "The Mechanics of Bore Hole Curving in Directional Drilling" (Po povodu stat'i I.I. Kurusa "Mekhanika iskrivleniya stvolov naklonnykh skvazhin)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 4, pp. 31-32 (USSR)

ABSTRACT: This is a criticism of I.I. Kurus's article on "The Mechanics of Bore Hole Curving in Directional Drilling", published in Neftyanoye khozyaystvo, 1957, Nr 9. In his article Kurus views bore hole curving in directional drilling as a geometrical problem and neglects to reveal the numerous factors which affect the curving of bore holes. Consequently the title of his article does not reflect its contents. His assertion that inclined wells can be drilled along the arc of a circle with a certain radius is unsubstantiated by drilling practice as pointed out in the dissertation of L.B. Borysenko. Kurus's conclusion, based on directional drilling data from the Zol'nyy ovrag oilfield in Kuybyshevskaya oblast', that the actual intensity of inclination in directional drilling is below the possible maximum, does not consider the fact that this problem can be solved by designing improved deflecting instruments. Kurus presents a method for calculating the radius

Card 1/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

BRONZOV, Anatoliy Samsonovich; VASIL'YEV, Yuriy Sergeyevich; SHETLER, Georgiy Arvidovich; FILATOV, B.S., red.; PETROVA, Ye.A., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Turbodrilling slant holes] Turbinnoe burenie naklonnykh skvazhin. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 144 p. (MIRA 13:7)

(Boring)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

BAGRATOV, Anatoliy Samsonovich; VASIL'YEV, Yuriy Sergeyevich; SHEFTER, Georgiy Arvidovich; GRIGOR'YEV, V.I., red.; ISAYEVA, V.V., ved. red.

[Turbodrilling of inclined wells] Turbinnoe burenie nakhonnykh skvazhin. 2. dop. i perer. izd. Moskva, Nedra, 1965. 247 p. (MIRA 18:2)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

5(2), 3(4) SOV/6-59-7-4/25

AUTHOR: Sokolova, O. I.

TITLE: Results of the Competition for the Best Improving Suggestion (Itogi konkursa na luchshoye ratsionalizatorskoye predlozheniye)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 7, pp 17-21 (USSR)

ABSTRACT: In May 1959, the ordinary competition for the best improving suggestion in the field of topographic-geodetic and cartographic production was concluded at the Glavnoye upravleniye geodezii i kartografii MVD SSSR (Main Administration of Geodesy and Cartography of the Ministry of Internal Affairs of the USSR). 7 aerogeodetic services, 8 cartographic institutes and NRKCh took part. A total of 30 topographic-geodetic, and 31 cartographic, suggestions were submitted. The 1st prize of 1,000 rubles was awarded to V. A. Morozov and V. V. Urusov (Minskaya kartograficheskaya fabrika (Minsk Cartographic Plant) for the "Seamless Fastening of Atlas Blocks". The 2nd prizes of 750 rubles were awarded to: 1) Ya. L. Bratalavskiy, V. M. Varzugin, Yu. N. Galitskiy, O. F. Sheiker and V. P. Stepanov (NRKCh) for "Technology of the Use of Standard Bases (Tipovaya osnova)". 2) I. V. Gurevich, V. M. Varzugin, R. O. Radovil'skaya, O. D. Sheiker, L. I. Zhurkova for "Technology of the Manufacture of Combined Diapositives" (NRKCh). 3) D. A. Larin (Moskovskoye AGP (Moscow AGP)) for "Reduction of Work in Evaluating the Accuracy of Symmetric Geodetic Nets Formed by Figures of Regular Shape". 4) N. V. Shreyber (Novosibirskoye AGP (Novosibirsk AGP)) for "Light Collapsible Ladder of Dural for Prospecting". - The 3rd prizes of 500 rubles each were awarded to : 1) I. F. Shevaltin (Yakutskoye AGP (Yakutsk AGP)) for "Establishment of Fixed Points by the Method of Thawing by Means of Vapor". 2) Y. D. Ol'shanskiy (Yakutskoye AGP (Yakutsk AGP)) for "Construction of an Overhead Trolley for Timber Transport". 3) I. A. Kyzin (Moskovskoye AGP (Moscow AGP)) for "Variation in the Attachment of Photographs on the STD-2". 4) V. F. Zarubin (Moskovskoye AGP (Moscow AGP)) for "Raising of Geodetic Lights by 5-7 Meters". 5) D. I. Smirnov, I. V. Gurevich, Z. I. Aleksandrova, V. M. Varzugin, V. K. Kirillov and L. Ya. Kislyakov (NRKCh) for "Technology of the Completion and Edition of Topographic Maps by the Photorelief Method". 6) M. F. Glushanin (Minskaya kartograficheskaya fabrika (Minsk Cartographic Institute)) for "Vertical Piling Machine for Brochures". 7) A. A. Vnukov (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)) for "Mechanism for the Loading of Trucks With Paper Rolls". 8) A. N. Tsokolenko (Ukrainskoye AGP (Ukrainian AGP)) for "Replacement of the Arc Lamp for the Heliographic-printing Machine KP-1 by an Illuminating Device With Luminescent Lamps DS-40". 9) G. K. Grigor'yev (Sverdlovskoye AGP (Sverdlovsk AGP)) for "Ruler for Drawing in the Preparation of Map Compilations and Final Compilations". 10) L. G. Israilev (Severo-Zapadnoye AGP (North-west AGP)) for "Improvement of the Contact Mechanism in the Micrometer by Vodar". 11) G. M. Amrayev (Moskovskoye AGP (Moscow AGP)) for "Formulas and Form for a More Rational Computation of Superelevations From the Trigonometric Leveling". 12) D. G. Vil'ner (Sverdlovskoye AGP (Sverdlovsk AGP)) for "New Numbering and Painting of Leveling Staffs". 13) G. M. Drinberg (Moskovskoye AGP (Moscow AGP)) for "Formulas and Table for Extreme Divergences Between the Free Terms of Polar and Base Conditions Computed on a Plane and on a Ball". - Besides, the following suggestions were approved by the jury: 1) V. T. Trykov (Sverdlovskoye AGP (Sverdlovsk AGP)), "Underframe for Observations From the Telescopic Tower". 2) B. V. Osinskiy

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307/6-59-7-4/25

Results of the Competition for the Best Improving Suggestion

(Severo-Zapadnoye AGP (North-west AGP)) Complete(Blueprint) for Determining the Corrections of Centering and Reducing With an Auxiliary Scale for Determining the Corrections of the Curvature of the Image of the Geodetic Line and of the Spheric Excess". 3) V. S. Mauyerer (Moskovskoye AGP (Moscow AGP)), "Variation of the Construction of the Heliotrope". 4) G. M. Shlofenfort (Moskovskoye AGP (Moscow AGP)), "Zero Thermostat for the Gravimeters of the GAK-2M-type". 5) P. I. Popov (Moskovskoye AGP (Moscow AGP)), "Device for Cutting Aluminum". 6) A. I. Fikhman and G. M. Grinburg (Moskovskoye AGP (Moscow AGP)), "Prospecting Mast". 7) Ya. I. Negnevitskiy, N. A. Pushkevich and M. F. Glushanin (Minskaya kartograficheskaya fabrika (Minsk Cartographic Institute)), " A Workbench Device for Mixing Offset Colors". 8) I. L. Gintsberg (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), "Device for Grinding the Edges of Plate Glass". 9) A. A. Vnukov (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), a) "Mechanism for Inclining the Grinding Case". b) "Mechanism for Lifting the Trough With the Balls". 10) V. I. Turchenko and S. A. Lonshteyn (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Institute)), "Automatic Switch-off of Arc Lamps". 11) I. V. Vasil'yeva (Tashkentskaya kartograficheskaya fabrika (Tashkent Cartographic Plant), "Increase in the Durability of Light-sensitive Rubber Solution (Adhesive)". 12) V. M. Sher (Kiyevskaya kartograficheskaya fabrika (Kiyev Cartographic Plant), "Correspondence of the Stroke-elements on Topographic Maps With the Letters on the Machine Printing Forms". 13) V. V. Bozrikov, S. P. Yakunin (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "On the Improvement in the Construction of Mechanisms for Pressing-on the Inking Rollers and Friction Drums on the Offset Machines 'Planeta-Super-Kvinta'". 14) A. Ya. Simanovskiy (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "A Rational Method of Making Positives of Printing Forms of Relief Printing on Tracing Paper for Printing Books on Offset Machines". 15) O. M. Yankovskiy (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Synchronization and Automatization of the Switching on and off of Arc Lamps and of the Suction Fan in the Copying Department". 16) V. F. Alampiyev (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Variation in the Technology of Making Sets of Outline Maps of the Fifth Class" 17) V. V. Il'yushin (Rizhskaya kartograficheskaya fabrika (Riga Cartographic Plant), "Preparation of Collecting- and Corresponding Positives by the Method of the Washed-out Relief on 'viniprozi'". 18) V. M. Dudochkin (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Switching off the Motor of the Compressor on the Copying Frame by Means of the Change Lever for Lifting the Glass and by Means of the Vacuum". 19) D. I. Matkava (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Device for Laying on the Negatives in Copying". 20) M. M. Serbin (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Device for Drying Paper on Offset Machines". 21) S. M. Konstantinova (Tbilisskaya kartograficheskaya fabrika (Tbilisi Cartographic Plant), "Progressive Method and Procedure for the Preparatory Work in Calculating and Plotting the Geographic Network on Maps to Be Compiled". 22) K. I. Mironov (NRKCh) "A Workbench for Repairing the Guides of the Offset Machine". 23) Yu. P. Tarasov (NRKCh) "Device for Regulating the "taler" of the Offset Machine". 24) Ye. N. Klyuchanskaya and S. V. Nagirova (NRKCh) "Improving the Method of Precipitating the Silver Nitrate in Used Solutions".

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Card 5/6

Card 6/6

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Penetration of spray solution into leaves of higher plants. I. Shetlik and A. Trukova (*Czekhoslov. Biol.*, 1954, 3, 237—239).—A few leaves were sprayed with aq. NaH_2PO_4 labelled with ^{32}P or with aq. Na_2SO_4 containing ^{35}S. After three days all unsprayed parts of the plants showed radioactivity. The salts penetrated through stomata and also by other routes.

SOILS & FERT. (A. G. P.)

MD

1

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

[illegible], [illegible] I.

Electric Apparatus and Appliances

Sensitive homemade galvanoscope. Fiz. v shkole 12, no. 3, 1952.

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, September 1952. Uncl.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEFNEV, M.I., zasluzhennyy zootekhnik USSR.

Exercising herd bulls. Nauka i pered.op. v sel'khoz. 7 no.9:32 '57. (MLRA 10:9)

(Bulls)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETSER, M.

Combined brigades of indstrial hygiene. Okhr.truda i sots.strakh. no.8:58 Ag '59. (MIRA 12:11)

1. Nachal'nik byuro tekhniki bezopasnosti Novocherkasskogo elektrovozostroitel'nogo zavoda.
(Rostov--Industrial hygiene)

6

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETSIRULI, L.T., nauchnyy sotrudnik

Result of dermatomycosis control in certain eastern regions of Georgia. Vest. ven. i derm. no.5:27-30 S-O '54. (MLRA 7:11)

1. Iz Nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta (dir. dotsent S.M.Machavarili) Ministerstva zdravookhraneniya Gruzinskoy SSR.

(SKIN, diseases,
fungus dis., prev. & control in Russia)
(FUNGUS DISEASES,
skin, prev. & control in Russia)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETSIRULI, L. T. Cand Med Sci -- (diss) "Dermatomycoses in Eastern Georgia and the Experience Gained in [redacted] Organizing Countermeasures." Tbilisi, 1957. 20 pp 22 cm. (Tbilisi State Medical Inst), 200 copies (KL, 27-57, 111)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

EXCERPTA MEDICA Sec 13 Vol 13/8 Dermatology Aug 59

2077. DERMATOMYCOSES IN THE EAST GEORGIAN SSR (Russian text) - Shetsiruli L. T. Tbilisi - SBORN. TRUD. KOZHNO-VENER. INST. (Tbilisi) 1957, 7 (99-111)

Mycologic departments were organized, the terminal network for treatment of dermatomycoses patients was expanded and the level of qualifications of physicians and nurses was raised in the Georgian SSR. Through the organization of a regular mass examination of children and members of families, and extensive health education, early diagnoses and treatment of dermatomycosis patients became possible. The above measures decreased the dermatomycosis cases by 32.5% in 1955 as compared to 1954; in individual areas of the East Georgian SSR the percentage drop reached 82-85.7%. In 99.1% of the cases, the source of the spread of the fungus infection in the East Georgian SSR is formed by dermatomycosis patients; a large part is borne by adult patients with trichophytia and favus.

Mashkilleison Jr - Moscow (S)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETSIRULI, L.T.

The work of mobile X-ray unit [with summary in English]. Vest.derm. i ven. 31 no.1:20-23 Ja-F '57. (MLRA 10:7)

(RINGWORM, ther.
scalp, mobile x-ray-epilation unit)
(RADIOTHERAPY, in various dis.
ringworm of scalp, mobile x-ray-epilation unit)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETSIRULI, I.T., kand.med.nauk; GELASHVILI, A.P., dotsent; ROBAKIDZE, T.I.

Griseofulvin in the treatment of dermatomycosis. Vest. derm. i ven. 38 no.7:57-60 Jl '64. (MIRA 18:4)

1. Kozhno-venerologicheskiy institut (dir. - dotsent S.N. Machavariani) Ministerstva zdravookhraneniya Gruzinskoy SSR, Tbilisi.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHETVERIKOV, P.M.

Electromechanical catch for bridge cranes. Bezop. truda v prom. 7 no.4:32-33 Ap '63. (MIRA 16:4)

(Cranes, derricks, etc.—Safety appliances)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

USSR/Chemistry - Chromatography Jul/Aug 48
Chemistry - Analysis

"Use of Chromatography in Analytical Chemistry: I, Analysis of Hexachlorocyclohexane," N. A. Fuks, L. S. Shetverikova, Sci Inst of Fertilizers Insecticides and Fungicides, 5½ pp

"Zhur Analit Khimii" No 4

Commercial hexachlorocyclohexane is a very complex mixture. Main components are five stereoisomers with general formula $C_6H_6Cl_6$. Since γ-isomer M. P. 113.5° is considerably more toxic than others, analysis of commercial hexachlorethane boils down to determining it. Describes chromatographic method, [redacted]

18/49T4

USSR/Chemistry - Chromatography (Contd) Jul/Aug 48

with several improvements devised by author. Discovered new isomer with M. P. 157°. Isolated δ-isomer. Submitted 15 Nov 47.

[redacted]

18/49T4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

POLOZ, K.; KOSOVSKAYA, A., tekhnik; VENGEROV, A.; SHEUDITIS, B.; KAZLAUSKAS, V., prepodavatel'; ATKOCHAYTIS, Ye. [Atkocaitis, E.], rabotnik; SUPRUNENKO, A.; LITYAGIN, A., starshiy inzh.; KOSHELEV, V.

Exchange of news and experience. Izobr.i rats. no.3:28-29 Mr '62. (MIRA 15:2)

1. Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdeleniya steklotarnogo zavoda, g.Kerch' (for Poloz). 2. Makeyevskiy koksokhimicheskiy zavod, g.Makeyevka (for Kosovskaya). 3. Predsedatel' revizionnoy komissii soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov Zyryanovskogo svintsovogo kombinata, Vostochno-Kazakhstanakaya obl. (for Vengerov). 4. Chlen Litovskogo respublikanskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Sheuditis). 5. Vecherniy institut tekhnicheskogo tvorchestva, g.Kaunas (for Kazlauskas). 6. Vil'nyusskiy molochnyy kombinat (for Atkochaytis). 7. Sekretar' rayonnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov Kiyevskogo otdeleniya Yugo-Zapadnoy zheleznoy dorogi, (for Suprunenko). 8. Oblastnoy sovet Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov g. Tula (for Lityagin). 9. Sekretar' krayevogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov, g. Krasnodar (for Koshelev).

(Technological innovations)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVADZUTSKIY, V.S., gornyy inzhener.

Sectional extraction in open pit mining. Gor.zhur. no.10:57 O '55.
(Strip mining) (Dolomite) (MLRA 9:2)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVADZUTSKIY, V.S., gornyy inzhener.

The use of a "sliding diagram" to standardize the production quality at the mine. Gor.zhur.no.4:59-60 Ap '56. (MLRA 9:7)
(Dolomite) (Quarries and quarrying)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

18 (0), 18 (5) SOV/131-59-7-5/14

AUTHOR: Shevadzutskiy, V. S.

TITLE: Dolomite Sand - the Reserve of the Metallurgic Raw Material - Must Be Utilized (Ispol'zovat' dolomitovyy pesok - rezerv metallurgicheskogo syr'ya)

PERIODICAL: Ogneupory, 1959, Nr 7, pp 307-308 (USSR)

ABSTRACT: Dolomite sand is deposited in the midst of the dolomite in the Yelenovskoye and Novo-Troitskoye deposits of Stalino oblast'. The Donetskiy industrial'nyy institut (Donets Industrial Institute) investigated fractions of the sand, and carried out its chemical analysis (Table 1). The experimental results of the dolomite sand on the different working levels of the Yelenovskoye mine are indicated in table 2; it shows that the sand belongs to the dolomites of 2nd class with respect to its average content of magnesium oxide. Preliminary computations showed that the sand stocks of the mine of the Yelenovskoye deposit alone amount to about 20 % of the total dolomite quantity. The Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories) and the Nikitovskiy dolomitnyy kombinat (Nikitovka Dolomite Kombinat) carried out experiments under laboratory and industrial conditions, and ascertained

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Dolomite Sand - the Reserve of the Metallurgic Raw Material - Must Be Utilized SOV/131-59-7-5/14

that the dolomite sand of the Yelenovsk deposit is a suitable raw material of high quality for the manufacture of burnt dolomites. It is considered necessary to prepare a sample of an agglomerate with the admixture of dolomite sand, test it in a metallurgical plant, and solve the problem of sand utilization in this way. There are 2 tables.

ASSOCIATION: Novo-Troitskoye rudoupravleniye (Novo-Troitskoye Mine Administration)

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVADZHUTSKIY, V.S.; TESLIN, D.F.

Mechanized unscrewing of drilling rods in rotary drilling.
Razved.i okh.nedr. 28 no.4:43-44 Ap '62. (MIRA 15:4)

1. Trest "Ogneupornerud".
(Boring)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKH, V. (Vitebsk, BSSR)

Simplified records in retail pharmacies. Apt.delo 6 no.5:65-66 S-O '57. (MIRA 10:11)
(DRUGSTORES--ACCOUNTING)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

USSR/Engineering - Laboratories Nov 50

"Planning the Plant Laboratories in the Automobile and Tractor Industry," I. P. Samokhin, S. T. Shevakhin, Giproavtotraktoroprom

"Zavod Lab" No 11, pp 1387-1392

Outlines basis for planning with consideration of such factors as estd flow of raw materials, productive capacity of plant, personnel, mean norms of time required for various tests, amt of basic equipment and others. Gives example of layout for lab in large plant and some suggestions for improvements in work of Soviet planning orgn.

180T52

FDD

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKIN, Yu. F., (Engr)

Dissertation: "An Investigation of the Process of Cold Rolling Thin-Walled Tubes." Cand Tech Sci, Moscow Order of the Labor Red Banner Steel Inst imeni I. V. Stalin, 24 Jun 54. (Vechernyaya Moskva, Moscow 15 Jun 54)

SO: SUM 318, 23 Dec 1954

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

PAVLOV, I.P.; SHEVAKIN, Yu.F.; YERMANOK, M.Z.

Increasing the productivity of mills for the cold rolling of pipes. TSvet.met. 28 no.6:41-50 N-D '55. (MIRA 10:11)
(Rolling (Metalwork)) (Pipe)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

PAVLOV, I.M.; SHEVAKIN, Yu.F., kandidat tekhnicheskikh nauk.

Investigating the rolling processes of thin-walled pipes. Shor.Inst.stali no.33:311-357 '55. (MLRA 9:6)

1.Chlen-korrespondent AN SSSR (for Pavlov).2.Kafedra prokatki.
(Rolling (Metalwork)) (Pipe)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKIN, Yu.F., kandidat tekhnicheskikh nauk.

Interrelation between the metal pressure on rollers and the basic process parameter in the cold rolling of pipes. TSvet.met. 29 no.4:69-76 Ap '56. (MLRA 9:8)

1. Moskovskiy institut stali.
(Rolling (Metalwork)) (Pipe)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

A rational profile of passes for cold rolling of tubes. (Cont.) 133-5-15/27

There are 7 figures and 5 Slavic references.

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-

136-3-13/25

AUTHORS: Shevakin, Yu. F., Candidate of Technical Sciences
Yermanok, M. Z.

TITLE: Organization of the Production of Specially Thin-Walled Aluminium-Alloy Tubes. Osvoyeniye proizvodstva osobo tonkostennykh trub iz alyuminiyevykh splavov).

PERIODICAL: Tsvetnyye Metally, 1957, No.3, pp.66-74 (USSR)

ABSTRACT: The purpose of the present work was to study conditions for the production of cold rolling and drawing without a mandrel of very thin-walled (down to 0.20-0.23 mm) aluminium-alloy tubes and to compare this with other methods. In the experiments pass design was calculated by a method developed by Shevakin and rolling pressures were measured. Direct and derived curves are given showing the inter-relation of rolling factors and photographs of tubes with different defects are shown. The operating characteristics of cold-rolling mills with different alloys, data showing the influence of wall thickness on thickening during drawing without a mandrel and recommended drawing and rolling conditions are tabulated. Compared with ordinary methods the recommended procedure secures higher yields of sound tubes with less effort: the productivity of mills for cold rolling very thin-walled tubes is 2-3 times higher than that

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/137-58-10-20926

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 79 (USSR)

AUTHOR: Shevakin, Yu.F.

TITLE: Analysis of Current Methods of Analysis of the Grooving of Rolls for Cold Tube-rolling Mills (Analiz suschestvuyushchikh metodov rascheta kalibrovki valkov stanov kholodnoy prokatki trub)

PERIODICAL: V sb.: Prokatn. i trubn. proiz-vo. Moscow, Metallurgizdat, 1958, pp 259-275

ABSTRACT: An analysis is presented of existing methods of grooving the rolls of cold-rolling mills. Recommendations based on original investigations are made with regard to designing groovings in various practical cases.

V.O.

1. Rolling mills--Equipment 2. Rolling mills--Design

Card 1/1

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/137-58-12-24517

Translation from: Referativnyy zhurnal Metallurgiya, 1958, No 12, pa 78 (USSR)

AUTHOR: Shevakin, Yu. F.

TITLE: Size and Direction of Axial Stresses Operating Upon a Billet in the Cold Rolling of Tubes (Velichina i napravlenie osevykh usiliy, deystvuyushchikh na zagotovku pri kholodnoy prokatke trub)

PERIODICAL: V sb: Prokatn i trubn proiz vo. Moscow: Metallurgizdat, 1958, pp 295-313

ABSTRACT: The size and direction of the axial stress acting upon a billet during deformation make it possible to determine the direction and size of the forces at work in the contact area, to relate the pressure (P) upon the metal (Me) and the pass-groove dimensions to the kinematics of the mill, and to determine the failure stress of a tube (T) with a conical mandrel during Me feed. Measurement of the axial stresses (AS) is done by an instrument, the general description and principle of operation of which are presented. Investigation shows that AS changes unevenly along the length of the working point. There is a sharply defined maximum, corresponding as a rule to the maximum value of the P. On the reverse stroke, AS is 30 to 100% greater than

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKIN, Yu. F.

136-1-17/20

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences, and Rytikov, A.M., Engineer.

TITLE: The Importance of Mill Adjustment in the Cold Rolling of Tubes (Znacheniye nastroyki stana pri kholodnoy prokatke trub)

PERIODICAL: Tsvetnyye Metally, 1958, No.1, pp. 81 - 83 (USSR)

ABSTRACT: The authors discuss the effects of roll wear and of incorrect setting on the size of the gap round the outside of the pass (Fig.1) and on the metal pressure on the rolls. They go on to consider tube-wall deformation, showing a graph of changes in relative deformation and metal pressure with a tapering gap for the alloy Л68. They state that with aluminium alloys such as Д1, Д16 or Л070, such a gap can lead to the formation of transverse cracks in the tubes. After considering ways of minimising pass wear in working rolls, the authors suggest that wall-thickness tolerances of the tube billets can be increased to ± 15%.
There are 6 figures.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/137-58-11-22495

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 94 (USSR)

AUTHOR: Shevakin, Yu. F.

TITLE: A Method of Analysis of Pass Grooving for Mills for the Cold Rolling of Aluminum-alloy Tubes (O metodike rascheta kalibrovki dlya stanov kholodnoy prokatki trub iz alyuminiyevykh splavov)

PERIODICAL: V sb.: Legkiye splavy. Nr 1. Moscow, 1958, pp 485-496

ABSTRACT: A proposed method for analysis of the groove collar provides for changes in the plastic properties of the alloys being worked in proportion to the degree of deformation. This provides a more rational change in pressure between the metal and the rolls and in the deformation curves along the working portion of the groove. Introduction of these pass groovings into production would make it possible to increase the output of mills for the cold rolling of tubes by an average of 40%.

Ye. T.

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SOV/137-59-2-4313

Translation from: Referativnyy zhurnal Metallurgiya 1959, Nr 2, p 283 (USSR)

AUTHORS: Osada, Ya. Ye, Shevakin, Yu. F., Semenov, O. A., Seydaliyev, F. S., Rytikov, A. M.

TITLE: An Investigation of the Roll-separating Pressure as a Function of the Principal Parameters of the Process of Cold Rolling of Pipes (Issledovaniye zavisimosti davleniy metalla pri kholodnoy prokatke trub ot osnovnykh parametrov protsessa)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1958, Nr 4-5, pp 81-93

ABSTRACT: The measurements of the roll-separating pressure (RP) were accomplished with the aid of carbon-type gages mounted within the wedge of the screw-down mechanism, and with the aid of wire resistance strain gages attached to a specially designed wedge in the screw-down mechanism. The following was established: 1) A change in the rate of feed m and in the total elongation μ_{Σ} significantly affects the RP; 2) in order to obtain constant rolling stresses during rolling of identical billets into pipes (P) exhibiting considerable variations in wall thickness it is imperative that the operating conditions of the

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SOV/137-59-2-4313

An Investigation of the Roll-separating Pressure as a Function of the (cont.)

rolling mill (the value of the product $m \cdot \mu \cdot \Sigma$) be appropriately adjusted; in all other instances when the variations in the wall thickness of finished P's are insignificant, the rolling conditions may be regarded as constant; 3) in the case of the rolling mills KhPT 1-1/2" and KhPT 2-1/2", the RP increases by 31% and 16%, respectively, as the wall thickness of the billets is increased by 36%; 4) increasing the width of roll passes in the range where $D_x/B_x = 0.93 \div 0.98$ results in a significant increase in RP; in designing roll passes, all measures should be taken to minimize the width of pass openings as far as possible; 5) increasing the diameter of the P, the dimensions of the billets and the values of the expression $m \cdot \mu \cdot \Sigma$ remaining constant, also leads to an increase in the RP.

Ye. T.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/136-58-12-15/22

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences and Rytikov, A.M., Engineer

TITLE: Cold Rolling of Shaped Tubes (Kholodnaya prokatka profil'nykh trub)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 12, pp 70 - 77 (USSR)

ABSTRACT: The authors enumerate some disadvantages of recently described (Ref 1) roll-pass designs for producing 18-m long rectangular tubes with a round bore. They state that investigation has enabled a system free from these effects to be devised which has been adopted at the "Krasnyy Vyborzhets" Works, has led to a better billet and enabled the shape and dimensions of the initial billet to be determined. They consider that in rolling shaped profiles, the aim should be to reduce to a minimum non-uniformity of deformation and base their treatment of a rectangular tube with a round bore on certain similarities to the rolling of rectangular-bore rectangular tubes (Figure 1). They split the cross-section of the tube and billet into a series of areas to examine geometrical contours. Deducing the conditions for producing rectangular tubes with minimal ovality from round-bore rectangular billets, the authors show (Figure 3)

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the influence on this of wall thickness. They go on to discuss their selection of billet form (Figure 4) and the pass design (Figure 5). The adoption of this pass design increased mill productivity by more than 1.5 times, the load on the mill being simultaneously reduced and better tube dimensions, pass durability and billet pressing were the result. Figure 6 shows the metal pressure in the roll along the length of the groove when rolling copper rectangular 36 x 16 x 16 mm tubes, Figure 7 showing the corresponding deformations. The authors give the pass design (Figure 8) for rolling 16-18 m long square tubes from a round billet and details of the calculations. They go on to consider the applicability of drawing to producing round-bore square tubes, giving several schedules (Tables 1,2) and the pass design for 10 x 10 mm tube with a 6 mm bore. There are 9 figures, 2 tables and 4 Soviet references.

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133-58-3-14/29

AUTHOR: Shevakin, Yu.F., Candidate of Technical Sciences

TITLE: Load Conditions During Cold Rolling of Tubes (Silovye usloviya kholodnoy prokatki trub)

PERIODICAL: Stal', 1958, 18, Nr 3, pp 235-240 (USSR)

ABSTRACT: An investigation of the influence of main parameters of cold rolling of tubes on load conditions of the process is described. During cold rolling, the tube undergoes stresses from the side of the operating tool in two directions - radial (pressure of the tool on the metal) and tangential (axial stresses on the tube). In a number of cases, the value of the axial load limits the output of the mill. The object of the work was to determine experimentally the value of the axial load and to establish its dependence on the basic rolling parameters in order to find conditions under which this load can be decreased. The apparatus used for the measurements of axial load directly acting on the rolled tube is described (Fig.1) and the method of determining the total pressure of metal on roll was the same as described in Ref.2. The values of axial stresses appearing during the reduction of tubes are given in Table 1. The influence of the profile of the pass on the load conditions of the process is shown in Table 2. Changes in the total pressure of metal and axial stress along the length of

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Load Conditions During Cold Rolling of Tubes 133-58-3-14/29

the pass - Fig.2. The influence of lubrication on load conditions of the process - Fig.3. The influence of the smoothness of the surface of the mandrel on load conditions of cold rolling - Table 3. Conclusions: Axial stress during cold rolling of tubes increases proportionally to the increase of the pressure of metal on the roll, constituting about 10-15% of the pressure during reverse stroke and 6-10% during forward stroke (for axial compression stress). The coefficient of friction between the metal and mandrel has a great influence on the load conditions of the process. By changing only the coefficient of friction, the pressure can be reduced by 1.4 times. This can be obtained by using appropriate lubricants. On operating mills, the radius of the driving gear wheel should be decreased. For mills KMPT-75 to 185-190 mm and on mills KMPT-35 to 160-165 mm. In designing new mills, the introduction of a mechanism permitting changes of the radius of the driving gear should be considered. The following participated in the experimental work: F.S. Sevdaliyev and A.M. Rytikov, Engineers. There are 5 figures, 4 tables and 2 Soviet references.

ASSOCIATION: Moskovskiy Institut stali (Moscow Institute of Steel)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKIN, Yu.F., kand.tekhn.nauk; RYTIKOV, A.M., inzh.

Importance of mill adjustment in the cold rolling of pipes.
TSvet.met. 31 no.1:81-83 Ja '58. (MIRA 11:2)
(Rolling mills) (Pipe, Copper)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SHEVAKIN, Yu.F., kand. tekhn. nauk.

Determining the angle of grip and surface of contact between metal and roll during cold rolling of pipe. Sbor. Inst. stali no.38:354-362 '58. (MIRA 11:8)

1. Kafedra prokatki Moskovskogo instituta stali im. Stalina.
(Rolling (Metalwork)) (Pipe)

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SHEVAKIN, Yu. F., Doc Tech Sci (diss) -- "The theory and practice of the process of cold rolling of pipe". Moscow, 1959. 44 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Inst of Steel im I. V. Stalin), 200 copies (KL, No 25, 1959, 132)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/133-59-3-20/32

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences, Osada, Ya.Ye., Candidate of Technical Sciences, Gnezdilov, K.Ye., Engineer, Semenov, O.A., Candidate of Technical Sciences, Seydaliyev, F.S., Zuyev, I.I. and Yerokhov, N.K., Engineers, Naumenko, G.N., Drobot, S.T. and Rumyantsev, N.G., Technicians

TITLE: An Increase in the Productivity of Cold-rolling Tube Mills and in the Durability of the Mandrel (Povysheniye proizvoditel'nosti stanov kholodnoy prokatki trub i stoykosti rabochego instrumenta)

PERIODICAL: Stal', 1959, Nr 3, pp 255 - 258 (USSR)

ABSTRACT: The use of a new roll-pass designing method for cold-rolling tube mills developed by the Moscow Institute of Steel (Ref 1) decreased the total pressure of metal on rolls, increased the durability of the mandrel and the output of the mills by 15-20%. The quality of tubes was also improved by decreasing the conicity of the mandrel. Roll-pass design data for rolling tubes on mills KhPT-32 mm and 55 mm are given in Figure 1 and Table 1.

The characteristic feature is a decrease in the diameter of semis at the beginning of the pass with subsequent

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An Increase in the Productivity of Cold-rolling Tube Mills and in the Durability of the Mandrel

reduction of the wall on a mandrel of a low conicity. There are 5 figures, 2 tables and 2 Soviet references.

ASSOCIATIONS: Yuzhnotrubnyy zavod (Yuzhnotrubnyy Works), Moskovskiy institut stali (Moscow Steel Institute), UkrNITI.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

SOV/136-59-4-11/24

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences, Rytikov, A.M., Sharov, I.Ye., Butomo, D.G., Koshurin, A.V., Sergeyeva, Z.L., Engineers

TITLE: Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods (Ekonomicheskaya effektivnost' proizvodstva trub iz tsvetnykh metallov i splavov kholodnoy prokatkoy po sravneniyu s volocheniyem)

PERIODICAL: Tsvetnyye metally, 1959, Nr 4, pp 57-63 (USSR)

ABSTRACT: Opinion was divided on the relative merits of the different methods of tube production, therefore the present investigation was carried out. All sizes of tubes were tried by the two methods. It was shown that output from cold-rolling was 10-25% higher than that from drawing (table 1). The machine-hours and man-hours for cold-rolling were shorter than for drawing (table 2). Table 3 shows the increase in production by cold-rolling with better equipment. By cold-rolling with modern equipment the machine-hours and man-hours could be cut by two in the production of copper tube. The economy in

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Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods

this case was 224 roubles per ton and in other cases varied from 165 to 374 roubles per ton. The number of operations in the copper tube production was reduced from 27 to 18. The production of condenser tubes in L68 (brass) alloy has been increased from 70-90 to 180-200 m/hr. An advantage of cold-rolling is that deformation can be up to 94% of the initial section. It also allows the manufacture of tubes from L68 without an intermediate temper, giving a tensile strength of 75-77 kg/mm^2 and an elongation of 2.5-3%. For materials which are difficult to deform (e.g. some Ti alloys) cold-rolling is a superior method of tube production as the machinery is cheaper and the number of operations is reduced. At present, work is in hand for a cold-rolling mill which will produce two or three tubes simultaneously.

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SOV/136-59-4-11/24

Comparison of the Efficiency of Tube Production from Non-Ferrous Metals and their Alloys by Cold-Rolling and by Drawing Methods

There are 5 tables and 4 references, 3 of which are Soviet and 1 German.

ASSOCIATIONS. Institut stali; Zavod „Krasnyy Vyborzhets„; Kol'chuginskiy zavod po obrabotke tsvetnykh metallov i splavov (Steel Institute; "Krasnyy Vyborzhets" Works and Kol'chugino Works for Processing of Non-Ferrous Metals and Alloys)

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3/137/61/000/003/014/069
A006/A101

AUTHOR: Shevakin, Yu.F.

TITLE: Calculations of radial sections of passes in cold rolling of pipes

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no.3, 1961, 34, abstract 3D271 ("Tr. Nauchno-tekhn. o-va chern. metallurgii, v.15, 1959, 83-92)

TEXT: The determination of the width of a groove pass, was based on the absence of an oval shape of the working cone during burnishing. Therefore the values of the pass width obtained were underestimated. The investigation shows that the deformation of pipes during cold rolling consists in the horizontal flattening of the pipe, reduction and deformation of the sectional wall in the lateral directions, and deformation of the pipe wall. On the basis of these concepts the following formulae are derived to calculate the pass width of grooves:

$$B_x = D_x + K\, 2m\mu_x (\mathrm{tg}\,\gamma_x - \mathrm{tg}\,\alpha) + 2K_{al} \cdot m \cdot \mu_x\, \mathrm{tg}\,\alpha,$$

where B_x is the pass width in the section x; D_x is the diameter of the pass in the section x; $K = 1.15 - 1.20$; m is the feed value; μ_x is the stretching in the section x; γ_x is the inclination angle of the tangent to the generatrix of

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the working cone; α is the inclination angle of the conic mandrel; K_{al} = 1.15-0.90 (lower limit for hard alloys; upper limit for soft alloys). It is suggested to make the groove edges in the form of a hollow chamfer with 1.0-1.7 mm radius depending on the dimensions of the pipes to be rolled. The formula for calculating the pass width can be applied for rolling non-ferrous alloy pipes and steel pipes as well.

Yu. M.

[Abstracter's note: Complete translation.]

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S/136/60/000/02/014/022
E193/E483

AUTHORS: Koshurin, A. V., Engineer
Shevakin, Yu. F., Candidate of Technical Sciences and
Ryrikov, A. M., Engineer

TITLE: Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

PERIODICAL: Tsvetnyye metally, 1960, Nr 2, pp 64-72 (USSR)

ABSTRACT: Aluminium and aluminium alloy tubes of both symmetrical and asymmetrical cross-section are at present extensively made by extrusion through bridge dies. This method is not suitable for extruding copper tubes of this type owing to much higher extrusion temperature and the tendency of copper to oxidize; the former affects the stability of the die, the latter causes difficulties in the formation of good quality weld between two streams of the extruded material. It was for this reason that the method of extruding copper hollow shapes of asymmetrical cross-section through a die with compensating die aperture(s) has been developed, the present paper reporting the work carried out in this connection. The shape of the tube, whose fabrication

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Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

has been investigated, is shown in Fig 1; the range of dimensions (in mm) is given in the table in Fig 1. It follows from the theoretical considerations that if no precautions were taken, section F_I of the tube would emerge from the die at a rate higher than that of section F_{II} (see Fig 1); the tendency of the metal to emerge at a uniform rate would result in an increase of the area F_I and displacement of the mandrel towards the section F_{II}. The rate at which the metal emerges from the die on the side of section F_I can be reduced only by increasing the quantity of metal extruded on this side and this can be attained only by the provision of an additional compensating aperture(s) in the die. To investigate the effect of the area and circumferences of the compensating aperture(s) and its (their) distance from the mandrel axis on the extrusion process, 14 experimental dies were prepared. The design of these dies is illustrated in Fig 2. the distance of the compensating aperture(s) in dies Nr 1 to 8 is shown in

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Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross Section

the drawings (their diameter in the table in Fig 2; the length of the rectangular, compensating aperture in dies Nr 9 to 14 is shown in the drawing, its width (a) and distance from the mandrel axis (b) are given in the table. These dies were used in extrusion tests, carried out at 900 to 960°C in a 3000 t extrusion press, on billets 300 mm diameter and 400 mm long; the effect of various parameters of the die on the extrusion process was studied by studying their effect on the displacement of the mandrel, Δz. The results of these tests are reproduced in Fig 3; graph "a" shows Δz (mm) plotted against the area of the compensating aperture(s) (F_{np}, mm^2) in dies Nr 1 to 8, graph "b" shows Δz (mm) against the total circumference (Π, mm) of the compensating aperture(s) in dies Nr 4, 7 and 8, the area of the compensating aperture(s) being constant and equal 451 mm^2; graph "v" shows Δz (mm) plotted against the ratio Π/F_{np} in dies Nr 1 to 8, the difference of the areas $F_{II} - F_I$ being constant and equal 423 mm^2;

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E193/E483

Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

finally, graph "g" shows Δz (mm) plotted against the distance (i mm) between the compensating aperture and the mandrel axis in dies Nr 9 to 14, for two areas of the compensating aperture: F_{np} = 783 mm^2 (upper curve) and F_{np} = 1020 mm^2 (lower curve). It was established on the basis of these results that the areas of the compensating aperture, F_{np}, is given by the following general formula:

$$F_{np} = (F_{II} \cdot F_I) \cdot \frac{\Pi_I + \Sigma\Pi_{np}}{II} \qquad (1)$$

where: $\Sigma\Pi_{np}$ - sum of the circumferences of the compensating aperture(s) (mm), Π_I - circumference of part F_I of the cross-section of the extruded shape (mm); Π_{II} - circumference of part F_{II} of the cross-section of the extruded shape (mm). The size of the compensating aperture of a circular shape is given by the formula

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Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

$$D_{np} = 2a\left(1 + \sqrt{1 + \frac{\pi_I}{\pi \cdot a \cdot n}}\right) \qquad (2)$$

where: D_{np} - diameter (mm) of the compensating aperture; n - number of compensating apertures;

$a = \frac{F_{II} - F_I}{\pi_{II}}$ The application of this formula is illustrated (see the bottom of p 66) by calculating the optimum value of D_{np} for the die shown in Fig 2 (dies Nr 1 to 6), which is found to be equal 24.0 mm, its area of 452 mm^2 corresponds (as can be seen in Fig 3a) to $\Delta z = 0$. The method, described above, was used in designing a series of dies, employed in fabricating a trial batch of hollow shapes as illustrated in Fig 1: the dies were made of steel 3Kh2V8, mandrel of steel E1661. The results showed that, with the aid of

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Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

dies with compensating aperture(s), hollow shapes of the type under consideration can be successfully extruded if the diameter of the hollow (dimension D) is not less than 14 mm. Hollow shapes with D > 14 mm were fabricated by extruding blanks which were then reduced to the required size by cold rolling. The problems associated with the latter operation, are discussed in the second part of the present paper which is concerned mainly with the design of the roll pass for this application. Fig 4 shows (a) the deformation zone and (b) the horizontal projection of the areas of contact in rolling the hollow shape of the cross-section shown in Fig 1. The analytical solution of the roll pass design was based on two fundamental conditions: (1) equality of the total deformation of contours I and II (see Fig 1), (2) equality of the horizontal projections of the areas of contact between metal and the top and bottom rolls. After deriving the necessary formulae the authors show how they are applied in

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Mastering the Technique of Manufacturing Hollow Shapes of Asymmetrical Cross-Section

practical calculations for the design of both open and closed passes. The linear projection of the pass is shown in Fig 5a. Fig 5b showing the variation of the shape of the groove (closed pass) along its working length (sections 01, 4 and 9 on the linear projection); the dimensions of the pass at sections 01 - 9 are tabulated below Fig 5. The shape of the groove in open pass is shown in Fig 6. The dimensions of this pass in sections 01 - 9 are given in the accompanying table. (The taper of the mandrel in both cases is given by 2 tg α = 0.0264). Rolls of this design were used for making hollow shapes with D = 12 mm; a rolling mill, type "Meer" 2 1/2, with the returning mechanism disconnected was used for this purpose. The distribution of the total pressure (P_{Σ}, t) exerted by metal on the rolls along the working part of the groove (L_p, mm) is shown in Fig 7 for both the closed (graph a) and open (graph b) passes; curves 1 and 2 correspond to the forward and reverse runs respectively. Fig 8 shows how the cross-section of the tube changes when passing

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through the rolls with (A) open and (B) closed passes. In order to study the flow of metal during rolling, aluminium pins were inserted in the blanks. X-ray photographs of sections of the tubes before (a) and after (b) rolling in both open (photograph I) and closed (photograph II) passes, reproduced in Fig 9, show that practically no distortion of the pins occurred during rolling, thus confirming the validity of the principles on which the present authors based their calculations, and proving that calculations starting from the external geometry on the hollow shapes of asymmetrical cross-section alone cannot give the correct solution. After rolling, the tubes (30 to 40 m long) were coiled having first passed through two dies: the first die removed the surface imperfections (fins, burrs etc), the second die acting as the sizing die. (The authors point out, in this connection, that passing the tube through the first die is less likely to affect the roundness of the hollow in case of tubes rolled in

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S/148/60/000/009/014/025
A161/A030

AUTHORS: Shevakin, Yu.F., and Seydaliyev, F.S.

TITLE: Specific pressure of metal on rolls in cold rolling of pipes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1960, 102-109

TEXT: The solution of the problem with the use of the differential equilibrium equation in combination with the plasticity equation is very complex. A method suggested by I.Ya.Tarnovskiy, A.A.Pozdeyev and N.N.Krasovskiy (Ref.1) simplifies the matter. The method is discussed and calculation formulae for practical use are suggested. The approximate solution with this method is based on the use of the principle of the least energy and the law of energy conservation. The latter law means that the work produced by external load equals the work of internal stresses and the external resistance forces on the contact surface:

$$A = A_{ideal} + A_{resist} \quad (1)$$

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$$p_x = \frac{K}{n}\left[\left(\frac{t_x}{t}\right)^{\delta}\left[1 + \frac{1}{\delta} + \frac{t}{(d+t)(\delta-1)}\right] - \frac{1}{\delta} - \frac{t_x}{(d+t_x)(\delta-1)}\right\} \quad (8a)$$

The formula for mean specific pressure can be obtained by integration of the equations (6a) and (8a) for the length of the deformation spot:

$$p_{mean} = \frac{\int_c^7 p_x dx}{l}$$

For practical calculations, the following formulae are recommended: for the forward stand travel

$$p_{mean} = \frac{K \cdot t}{n \cdot \delta \cdot \Delta t}\left[\left(\frac{t_o}{t}\right)^{\delta} - 1\right]; \quad (6\delta)$$

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spot. All these assumptions do not unduly affect the accuracy of results. Data calculated with the suggested formulae are compared with experimental data in 5 tables: The effect of the external friction coefficient on specific pressure, in 1Kh18N9T (1Kh18N9T) steel (Table 1); The effect of non uniform deformation on the pipe perimeter (Table 2); The effect of the work roller's radius and compression in the momentary deformation spot on mean specific pressure (in"10" steel), (Table 3); The effect of the radius of the driving roller gear on specific pressure, in forward travel (1Kh18N9T steel) (Table 4); The effect of compression (feed) on the mean specific pressure value (Table 5). The calculated and the experimental data matched. The conclusion is made that the formulae evolved with the subject method correctly reflect the correlation between the various process parameters. There are 4 figures, 5 tables and 4 Soviet-bloc references.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: 20 May 1960

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

S/136/60/000/010/007/010
E073/E335

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences and Rytikov, A.M., Engineer

TITLE: New Method of Determining the Friction Coefficient During Cold-rolling of Tubes

PERIODICAL: Tsvetnyye metally, 1960, No. 10, pp. 76 - 78

TEXT: The method described in the paper differs from current methods by the fact that the friction forces were measured which occur as a result of the flow of the material and not as a result of external mechanical movement of the specimen relative to the tool. In contrast with other methods, the contact area during deformation remains constant, which simplifies the calculations. Thus, the dependence of the specific pressure and the friction forces on the conditions of deformation (wall thickness, degree of deformation) is studied independently of other factors. The basic components (Fig. 1) of the instrument are strikers (3) and a mandrel (4) between which a tube specimen (2) is deformed over a limited length. The designs of the strikers and of the specimen may differ. Due to the effect

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E073/E335

New Method of Determining the Friction Coefficient During Cold-rolling of Tubes

of a blocking bushing the deformation is in a single direction. The friction forces which act on the mandrel are measured by means of a sensor. The forces applied to the strikers during the process of deformation are also measured by sensing equipment; similar friction forces which prevent the flow of the metal occur at the contact surface between the mandrel and the specimen. The force T_3 acting on the blocking bushing is equal and opposite to the sum of the friction forces T_1 and T_2 between the metal in the deformation zone and the strikers (outer wall) and mandrel (inner wall), respectively. Knowing the friction forces, the friction coefficient can be easily determined after determining the normal component of the total pressure. The described instrument permits determining the dependence of the friction forces on the rate of deformation of the material. The method was utilised for investigating the coefficient of copper-steel friction during deformation of

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S[illegible], Yu.[illegible], kand.tekhn.nauk; S[illegible]ZDALI[illegible], F.S., inzh.

Effect of mill kinematics in the cold rolling of pipe on the forces exerted in rolling. Stal' 20 n[illegible].6:537-53[illegible] Je '60. (MI[illegible]A 14:2)

1. Moskovskiy institut stali.
(Rolling (Metalwork)) (Machinery, Kinematics of)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549130010-7

S/136/61/000/001/009/010
E193/E283

AUTHORS: Shevakin, Yu. F., Candidate of Technical Sciences and Rytikov, A. M., Engineer

TITLE: Non-Uniformity of Deformation in Cold Rolling of Profile Tubes

PERIODICAL: Tsvetnyye metally, 1961, No. 1, pp. 84-85

TEXT: The present paper relates to manufacture of profile (regular and irregular cross-section) tubes with small (6-12 mm) diameter bore by cold rolling in a Pilger-type mill. Analysis of the change of shape of the metal in the instantaneous deformation zone has led to the conclusion that it is impossible to ensure uniform deformation in such tubes made by this process. By choosing a suitable method of roll pass design, one can ensure the preservation of the correct shape of the tube during rolling, but it is not possible to prevent non-uniform deformation of the metal; the degree of non-uniformity depending on the D_h/D_w ratio, where D_h and D_w denote deformation coefficients relating to the height and width of the profile. The presence of residual stresses in the leading (tapered) part of a partly rolled tube and in a finished (not annealed) product, was qualitatively determined by tests in which

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E193/E283

Non-Uniformity of Deformation in Cold Rolling of Profile Tubes

the parts studied were immersed in an ammoniacal medium. In the case of tubes made of the 1070-1 (1.070-1) alloy, cracks appeared already after 2-3 days immersion. This indicated that residual compressive stresses were present in the surface metal layers all round the tube perimeter. These stresses were set up owing to the fact that only the surface layer of the tube had been subjected to heavy deformation. The depth of penetration of deformation depends on the ld/H ratio, where ld is the length of the deformation zone and H the thickness of the rolled metal. In rolling of thick plates or blooms, small (0.2-0.6) magnitude of ld/H leads to lateral spreading, which is associated with non-uniform deformation. In rolling of profile tubes of rectangular cross-section (36 x 16 x 10 ⌀ mm), the ld/H ratio varies between 0.2 and 0.5 at the beginning and the end of the compression part of the pass, respectively. Since the possibility of lateral spreading during tube rolling is limited, superficial deformation of the metal leads to the onset of additional stresses. One of the parameters which characterizes the degree of non-uniformity of deformation is the minimum length.

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S/148/61/000/001/006/015
A161/A133

AUTHORS: Shevakin, Yu. F., and Seydaliyev, F. S.

TITLE: External friction and technological lubrication in cold tube rolling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 1, 1961, 105 - 111

TEXT: Results are presented of an experimental investigation of the effect of lubricants in rolling processes on pilger mills. The investigations were carried out during rolling on a two-high 150 mill, drawing on a vertical press, and cold rolling on XPT (KhPT) mills. The tube material was 1X18H9T (1Kh18N9T) and "10" steel. Wire pickups were used to measure the deformation stresses. The amplified pickup indications were recorded with a MPO-2 (MPO-2) oscillograph. It was found that lubricating materials had different effects on mandrels with different surface finish. For instance, a mixture of machine oil with silvery graphite used on a sand blasted mandrel made rolling impossible because of tube metal sticking to the mandrel. The following lubricants were tested: machine oil, castor oil,

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sulfurized and mineral oils, oleic acid, water glass, drying oil, soap emulsion, and all these lubricants with different solid fillers, such as silvery graphite, talcum, sulfurous molybdenum, mica, zinc white, organic MoS_2, commercial sulfur. The presence of fatty acids in the lubricant speeded up 10 - 20 times the disappearance of roughness, e.g. oleic acid added to the lubricant made a sand blasted mandrel surface as smooth as class X within a few minutes. In the case of machine oil with graphite the optimum roughness was stated to be 0.5 - 0.9 μ (VIII - IX class finish), and for sulfurous molybdenum with machine oil - 1.5 - 2.0 (VI class). The experiments made it possible to determine the basic requirements for the cold rolling of tubes - to form a tough plasticized layer on the surfaces of tubes and mandrels. Such a layer prevents the sticking of tube metal to the mandrel and evens out deformations in tube wall. It must also have high lubricating properties. Liquid lubricants do not form such layers at the high pressures and temperatures, developed in cold rolling and drawing. Viscous lubricants containing surface-active substances (sulfure or chlorine compounds, or other) or solid fillers (graphite, talcum, mica, or other) can meet the requirements, but the properties of the complex lubricants depend on the lu-

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A161/A153

External friction and technology [illegible]

bricating properties of the base (liquid lubricant) and the filler, and on the physical and chemical affinity of the liquid lubricant and the filler. It is known that a small amount of silvery graphite increases 8 times the surface area moistened with a drop of machine oil (Ref. 4: I. Lomas, Machinery Lloyd, April 1954, no. 9), but the high antifriction properties of the mixture are due not only to the physical-chemical affinity of the components but also to the high lubricating property of silver graphite. Talcum has a lower antifriction property, and added to oil it does not prevent sticking. Sulfur added to castor oil with talcum reduces the metal pressure on the mill rolls due to its surface activeness but it affects the copper film coated on tubes. Colloidal mixtures containing oleic acid and soap emulsion have the same effect and are not good for tool surface. Colloidal graphite is no good filler. Mica is a better filler than talcum. Sulfurous molybdenum has high antifriction properties in combination with machine or castor oil (Fig. 5). The application method was described previously (Ref. 5: I. M. Pavlov, Yu. F. Shevakin, F. S. Seydaliyev, Izv. vyssh. ucht. zav. Chernaya metallurgiya, [illegible], no. 3). Applied to sand-blasted mandrels, MoS_2 reduced the metal pressure on rolls not less than by 15%, considerably decreased the axial pressure on the billet and raised the work life of man-

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External friction and technological

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drels 2 - 3 times. In the case of particularly thin-walled tubes, 41.8 x 0.5 mm, from 1Kh18N9T steel, chromium plated mandrels withstood only 30 m rolled tube, and sand blasted mandrels coated with MoS_2 withstood 300 m tube. Some difficulties were experienced at the very beginning of rolling on such mandrels. The method described in Ref. 5 is being used. Lubricants with MoS_2 should not contain any surface-active substances. MoS_2 forms a highly plasticized layer on surfaces and reduces the wall nonuniformity. The authors think that it is completely wrong to develope the outer friction theory from three different points of view: roughness theory, clocking (welding) theory, and molecular theory, for all three are closely interconnected. The major factor in cold tube rolling from carbon steel and nonferrous metals or alloys is mechanical engagement of the rough surfaces, and in the case of very thin or thin high alloy steel tubes rolled at a pressure attaining 200 kg/mm² on the surfaces in contact - it is welding, and only a highly plasticized lubricant layer makes a normal work process possible. Active molecular interaction between the lubricant and the contacting surfaces is necessary to produce such a layer. Conclusions: 1) The external friction conditions in cold tube rolling are considered and

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the effect of two major factors in the process is determined. 2) A large group of different lubricants and fillers is investigated. The connection is revealed between the lubricating properties of complex lubricants and their components, as well as the role of the affinity of components. 3) A new lubrication method by sulfurous moblybdenum has been developed and tested in practical application. The role and effect of technological lubricants is considered. There are 6 figures and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: I. Lomas, Machinery Lloyd, April, 1954, no. 9.

ASSOCIATION: Moskovskiy institut stal (Moscow Steel Institute)

SUBMITTED: January 20, 1960

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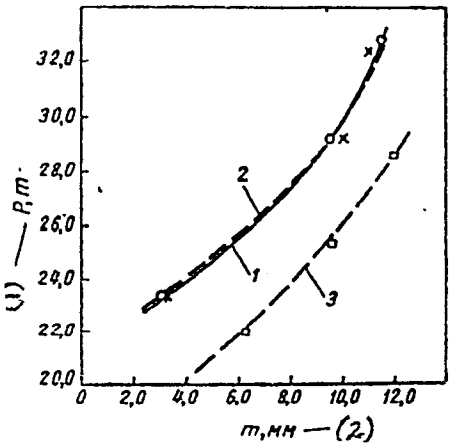
Fig. 5. Dependence of full metal pressure on the rolls from the feed. A $1\frac{1}{2}$" mill with 32 x 2.0 → 20 x 0.95 passes. 1Kh18N9T steel.

Legend: 1 - polished mandrel; 2, 3 - mandrel with sand-blasted surface coated with MoS_2; 2 - the first tube; 3 - the fourth tube. The lubricant was silvery graphite with machine oil.



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S/136/61/000/004/005/006
E193/E183

AUTHORS: Shevakin, Yu.F., Candidate of Technical Sciences, and Rytikov, A.M., Engineer

TITLE: Means of Further Increase in the Productive Capacity of Cold Tube Reducing Mills

PERIODICAL: Tsvetnyye metally, 1961, No. 4, pp. 51-58

TEXT: As a result of improvements in the roll pass design and rolling techniques (Refs. 1, 2) the productive capacity of cold reducing mills has increased to such an extent that cold reducing can now compete with cold drawing. However, analysis of operational data indicates that the productive capacity of cold reducing mills could be further increased by 20-30%. In the present paper, an attempt is made analytically to establish the means by which this increase can be attained and to provide a theoretical basis for determining the maximum productive capacity of a mill either from the characteristics of the mill or from the properties of the metal rolled. The argument presented by the authors is based on the relationship between the roll pass design and various parameters of the reducing process. The working part of the pass,

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L_p, can be represented as $L_p = \ell_o + \ell_r + \ell_p + \ell_k$, where ℓ_o, ℓ_r, ℓ_p and ℓ_k denote the lengths of the compression, reducing, pre-finishing, and sizing zones, respectively. At the same time, $\ell_k = m\mu_\Sigma \Pi_2$, and $\ell_p = m\mu_\Sigma \Pi_1$, where m is the magnitude of feed, μ_Σ is the total elongation, Π_2 is the coefficient of reduction of the wall thickness, and Π_1 is the coefficient of reduction of the tube diameter. When the productive capacity of the mill is increased, ℓ_o decreases, owing to an increase in ℓ_p and ℓ_k. Correspondingly, the roll pressure increases and there is a decrease in, so-called, divisibility of deformation. Consequently, ℓ_o can be determined starting either from the maximum permissible roll pressure or from minimum divisibility of deformation. The coefficient of divisibility of deformation, n_d, is given by $n_d = V_K/V_m$, where V_K is the volume of the working cone in the compression zone of the pass, and V_m is the volume of

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Means of Further Increase in the Productive Capacity of Cold Tube Reducing Mills

the metal feed which is given by the product mF_z, where m is the feed and F_z is the cross-section area of the stock. After deriving an approximate formula for n_d, the present authors discuss the effect of n_d on the plasticity of the metal rolled. It is stated that fracture of plastically deformed metal is caused by tensile stresses set up in certain volumes of the metal. In the case of cold reducing, additional tensile stresses which can, and do, lead to fracture of the metal are set up in the section of the tube in the outlet of the pass, where the wall of the tube is subjected to forced elongation. (These sections can be referred to as out-of-contact sections since it can be assumed that they touch neither the mandrel nor the surface of the pass). At a certain value of n_d, these tensile stresses become sufficiently high to cause fracture of the metal. There is a value of n_d at which no fracture of metal yet occurs, but which when further decreased, causes a decrease in the plasticity of the metal; this is the minimum permissible value of n_d which is denoted by $n_{d_{min}}$.

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The present authors derived an expression in which $(m\mu_{\Sigma})_{max}$ is expressed in terms of nd_{min} and of various parameters of the roll pass and the mandrel. If the value of nd_{min} is known and substituted in this expression, the maximum linear displacement, $(m\mu_{\Sigma})$ of metal per one rolling cycle can be found which means that starting from the data on plasticity of the metal the productive capacity of the mill, expressed in terms of length of tube rolled per unit time (m/min), can be determined. A similar expression in which $(m\mu_{\Sigma})_{max}$ is correlated with the maximum permissible roll pressure, P_{max}, was also derived and from this the maximum productive capacity of the mill, as governed by the strength of the roll and the mandrel, can be determined. In order to determine the magnitude of nd_{min}, tests were carried out during which tubes made of several alloys were cold-reduced under conditions leading to fracture of the tube. Thus, in cold-reducing of tubes of alloy Л070-1 (L070-1) on the ХПТ-75 (KhPT-75) mill through a pass

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Means of Further Increase in the Productive Capacity of Cold Tube Reducing Mills

63 x 9 → 38 x 3 mm, transverse cracks were formed on the tube surface, when deformation of 98% [illegible] 259 mm, and m = 12-13 mm were used, which corresponded to n_d = 7.1-7.6. In cold-reducing of copper tubes on the KHPT-75 mill through a pass 68 x 4 → 42 x 1 mm (reduction of 84%), cracking occurred at m = 14-15 mm, which corresponded to n_d = 5.1-5.5. Since with decreasing $n_{d_{min}}$ the maximum productive capacity of the mill increases, the authors discuss the possible means of reducing the magnitude of $n_{d_{min}}$, and suggest the following measures. (1) The tube should be turned not once, but twice, during one rolling cycle. The effectiveness of this expedient has been proved experimentally. (2) The relative deformation on the consecutive deformation regions should vary in the same manner as the elongation δ, and the reduction of area, ψ, of the metal, so that the relative deformation never exceeds δ and ψ which, of course, decrease as the metal work-hardens while the tube is being reduced. (3) The length of the compression zone,

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by the plasticity of the metal rolled. Consequently, it would appear that the present cold-reducing mills are overdesigned and that mills of much lighter construction could, and should, be used. Acknowledgements are made to L.M. Radchenko and N.N. Voronin, who participated in this work.
There are 6 figures, 3 tables and 7 Soviet references.

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