L 40844-66

ACC NR: AP6011290

0

from analog into digital form, stored in a bank of memory registers and then transferred to magnetic or punched tape. The tape is subsequently analyzed in repeated reruns according to a fixed program. The main disadvantages of this approach are the impossibility of using it for the automatic control of the experiment, slow response, and the necessity for a large memory. An algorithm for the rapid sorting of a large number of elements in real time is described. Incoming signals are converted to digital form and stored in the buffer memory. Simultaneously, the buffer memory is interrogated by the cyclic memory at fixed intervals for stored data having a certain value. In this fashion, a desired progression of data is formed. Should only signals of certain pre-determined values be of interest, a "key" program is stored in the cyclic memory, to which the data in buffer storage are compared for selection and transfer. The formal expression of this algorithm and an appraisal of its performance are given. A variant of the above algorithm for cases where only a limited amount of data from a vast amount of unprocessed information are of interest, is given. To utilize a magnetic drum memory for the implementation of this algorithm, a second magnetic head is used on the same track to retrieve a block of information from a given location, add "one" to it, store the new number in the same location and read the next block. Systems constructed according to the algorithms described in this paper open new possibilities in accumulation and processing of vast quantities of statistical information and selection of certain elements by association with a very large number of possible values. Orig. art. has: 2 figures, 2 formulas.

SUB CODE: 09,12/ SUBM DATE: 26Jul65/ ORIG REF: 010/ OTH REF: 009

Card 2/2 IC

L 40844-66 EWT(d)/EEC(k)-2/EWP(1) IJP(c) BB/GG

ACC NR: AP6011290 SOURCE CODE: UR/0378/66/000/001/0087/0093

AUTHOR: Ofengenden, R. G.

75
B

ORG: none

TITLE: Algorithms for sorting physical information 16

SOURCE: Kibernetika, no. 1, 1966, 87-93

TOPIC TAGS: data processing, signal analysis, analog digital conversion, computer memory, algorithm, real time ~~computer~~ data display

ABSTRACT: Methods for sorting statistical information generated during physical investigations are considered. An algorithm for the construction of high speed, large capacity sorting systems is described. Such a system is possible due to the utilization of both associative and cyclic memory devices. An algorithm for selection based on the general association of certain events is also considered. The methods described here may also be utilized for sorting economic information. The case of detecting nuclear particles by a multitude of detectors is considered. The first task in sorting the generated data is to classify them on the basis of coincidence, then according to particle energy. Due to finite detector resolution, the energy distribution with respect to separate particles is an incremental, rather than a continuous function. An algorithm for "off-line" information sorting is presented. Incoming signals are converted

Card 1/2 UDC: 681.142-1.01

OFENGENDEN, ~~R.G.,~~ BEREZIN, F.N.; LYUBANSKIY, G.B.; SHALEYKO, M.A.

Two-dimensional amplitude-time spectrometer. Prib. i tekh. eksp. 9 no.5:81-87 S-O '64. (MIRA 17:12)

1. Institut fiziki AN UkrSSR.

Conversion of pulse amplitude ratio... S/120/63/000/001/013/072
E140/E135

There is 1 figure.

ASSOCIATION: Institut fiziki AN SSSR
(Physics Institute, AS USSR)

SUBMITTED: April 26, 1962

Card 2/2

S/120/63/000/001/013/072
E140/E135

AUTHORS: Ofengenden, R.G., and Parovik, N.M.

TITLE: Conversion of pulse amplitude ratio to a pulse of proportional amplitude

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1963, 64-66

TEXT: The paper describes a circuit for obtaining a pulse whose amplitude is proportional to the ratio of amplitudes of two input pulses. The circuit is arranged so that the maximum output is obtained for unity ratio; the ratio measured is unity or less, independently of which channel receives the smaller pulse. The ratio is first transformed to a time interval using the discharge of two RC networks, and then converted back to a pulse amplitude by a third RC network. The realization is in vacuum tube technology. The input pulse amplitudes have the range 20 - 80 V, with threshold varying in 10 V steps up to 60 V. The rise times must lie in the limits 0.5 - 20 µs, with a "window" variable in discrete values, 2, 4, 6, 10, 20 µs. The operating cycle of the instrument is 1 ms per output pulse, and the precision is "of the order of several percent".

Card 1/2

S/120/63/000/001/011/072
E140/E135

AUTHORS: Pasechnik, M.V., Ofengenden, R.G., Konenko, L.D., and Shaleyko, M.A.

TITLE: Pulse amplitude analyzer АИМА-2 (AIMA-2)

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1963, 57-60

TEXT: This paper was presented at the 4th conference on nuclear electronics at Moscow in 1959, and describes an instrument completed in 1955. The basic memory unit of the analyzer is a magnetic drum, and the pulse discrimination is carried out by a method described in 1951 (G.W. Hutchinson, G.G. Scarrott, Philos. Mag., 1951, v.42, no.330, 792). There are 3 figures.

ASSOCIATION: Institut fiziki, AN USSR
(Physics Institute, AS UkrSSR)

SUBMITTED: March 15, 1962

Card 1/1

ACCESSION NR: AR4014947

DATE ACQ: 09Jan64 SUB CODE: CP, GE ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

ACCESSION NR: AR4014947

S/0271/63/000/012/B056/B056

SOURCE: RZh. Avt., tel. i vy*chisl. tekhnika, Abs. 12B325

AUTHOR: Ofengenden, R. G.; Savchenko, I. M.; Rozental', O. M.; Shaleyko, M. A.

TITLE: Devices and elements of two-dimensional pulse analyzers

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektronike. T. 2. Ch. 2. M., Gosatomizdat, 1963, 108-114

TOPIC TAGS: pulse analyzer, two-dimensional pulse analyzer, computer circuit

TRANSLATION: The authors describe individual standard circuits with semiconductor triodes and memory units with magnetic drums which are employed in 2-dimensional pulse analyzers. The standard circuits, which include two types of saturated triggers with actuation frequencies of 250 kc and 2 mc, and pulse amplifiers using standard cells with a 46 x 91 mm printed circuit chassis are used in constructing the conversion circuits of trigger registers. The described magnetic drums contain 4, 12, or 70 recording tracks, employ ferrite magnetic heads, and rotate at the rate of 12,000 rpm. Six illustrations. Bibliography with one title. I.V.

Card 1/2

ACCESSION NR: AR4022429

The instrument is designed to operate in conjunction with a mechanical chopper which modulates the neutron beam. The time intervals during which the background and the effect are registered are symmetrical with respect to the neutron pulse. The background events are recorded in 128 channels while the effect is recorded in 896 channels. It is possible to employ also all the 1024 analyzer channels to measure the effect. The channel width for the registration of the effect is regulated between 0.5 and 128 msec. The channel width for the background events is seven times larger. Provision is made for the investigation of individual parts of the spectra. The information is read out to a rapid printer with a printing rate of 10 pulses per second. Yu. Semenov.

DATE ACQ: 03Mar64 SUB CODE: PH ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

ACCESSION NR: AR4022429 S/0058/64/000/001/A026/A026

SOURCE: RZh. Fizika, Abs. 1A253

AUTHOR: Ofengenden, R. G.; Padun, G. S.; Parovik, N. M.; Lyubanskiy, G. B.

TITLE: Analyzer for simultaneous measurement of neutron spectra, background, and effect by the time-of-flight method

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektronike. T. 2. Ch. 2. M., Gosatomizdat, 1963, 7-15

TOPIC TAGS: time of flight spectrometry, neutron spectrometry, background determination, mechanical neutron beam modulation, neutron channel width, background channel width

TRANSLATION: The time analyzer is intended for simultaneous time-of-flight spectrometry of the neutron spectra and the background.

Card 1/2

The small amplitude ... S/185/62/007/011/005/019
D234/D308

Background subtraction is possible with a factor 1, 2 and 4. The analyzer consists of a measuring unit and a supply unit, each 300 x 450 x 500 mm. There are 13 figures.

ASSOCIATION: Instytut fizyky AN URSR, Kyyiv (Institute of Physics of the AS UkrSSR, Kiev)

SUBMITTED: June 8, 1962

Card 2/2

9.7800

44093
S/185/62/007/011/005/019
D234/D308

AUTHORS: Berezin, F.N., Ofengenden, R.G., Rozental', O.M. and Shaleyko, M.A.

TITLE: The small amplitude analyzer AIMA-3 (AIMA-3)

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 11, 1962, 1180-1190

TEXT: This analyzer was designed in order to improve the reliability and some characteristics of AIMA-2. The channel generator circuit is completely changed. Instead of frequency dividers an artificial delay line is used, the delay being 30 or 48 μsec. In the memory unit, two recording heads are used, the distance of one from the playback head being 1.5 times greater than that of the other. This increases the number of channels to 120. In the supply unit, kenotrons are replaced by silicon diodes, which decreases the number of transformers and choke coils. The number of vacuum tubes has been reduced from 128 to 84. The number of channels is 50 (with channel capacity of 65535 pulses), 80 or 120 (1023 pulses).

Card 1/2

time spectra from n detectors, which is being developed, includes a ferrite core cube as an intermediate memory unit. I.M. Savchenko, O.M. Rozental' and M.A. Shaleyko took part in the design. There are 4 figures.

44092
S/185/62/007/011/004/019
D234/D307

9.7400

AUTHOR: Ofengenden, R. G.

TITLE: Principles of the construction of a multidimensional pulse analyzer

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 11, 1962, 1172-1178

TEXT: The author describes a pulse analyzer with 64 x 64 channels. The memory unit uses a magnetic drum. For measuring amplitude-amplitude spectra, pulses from two detectors are fed to a comparison circuit and if they coincide they pass to amplitude-time converters, where a pulse is converted into a series of pulses whose number is proportional to the amplitude. From the converters the pulses pass to a 7-digit and a 6-digit recording circuit. In order to speed up the process, information from the decoding circuits is sent to transistorized recorders serving as intermediate memory units. For measuring time-amplitude spectra, the inputs I and III are used, a selector pulse places two triggers into the state 1,

X

Card 1/2

Amplitude-pulse analyzer S/120/62/000/005/018/036
E192/E382

equipment; however, the quantity of this equipment is negligible in comparison with that initially required for measuring a single spectrum. There are 4 figures

ASSOCIATION: Institut fiziki AN UkrSSR
(Institute of Physics of the AS UkrSSR)

SUBMITTED: September 25, 1961

Card 3/3

Amplitude-pulse analyzer S/120/62/000/005/018/036
E192/E382

and then a potential wave-form is produced whose amplitude is proportional to the amplitude of the measured pulse. This wave-form is applied to an input of a comparison circuit. The second input of the comparison circuit receives a linearly-rising staircase waveform (see Fig. 1), which is produced by the channel pulses. By using the staircase waveform instead of a sawtooth voltage the tolerance on the stability of the angular velocity of the magnetic drum can be relaxed. After carrying out the comparison a signal is produced at the output of the comparison circuit. This is in the form of a pulse which is in-phase with one of the channel pulses. The information in this channel should be increased by a unit. This is achieved by providing track III of the drum with two heads, such that the distance between their front gaps is exactly equal to that between the neighbouring pulses of the channels. Constructionally, the two heads form a single double-head. The staircase waveform generator is based on a phantastron with storage capacitances, the amplitude of a step being determined by the amplitude of each pulse and the ratio of the capacitances. The analyzer can be used for the simultaneous measurement of n spectra by providing some additional
Card 2/13

44438
S/120/62/000/005/018/036
E192/E382

9,7140

AUTHORS: Ofengenden, R.G. and Rozental', O.M.

TITLE: Amplitude-pulse analyzer with a static periodic memory device

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962, 113 - 117

TEXT: The information introduced into the analyser is preserved when its supply sources are switched off. This characteristic is principally due to using a magnetic drum as the memory device, in which the information is continuously circulated and is not erased during the switching-off of the supply. The principle of operation of the analyzer is as follows. Two tracks of the magnetic drum are used for recording synchronizing pulses. Track I carries pulses for marking the start of a cycle while track II contains high-frequency pulses. The latter are divided by 16 and form pulses for individual channels. The pulses taken from track I, the high-frequency pulses and the channel pulses control the operation of the analyzer. The pulses to be analyzed are shaped and lengthened

MAL'NEV, A.F.; KREMENCHUGSKIY, L.S.; BEREZKO, B.N.; SHEVTSOV, L.N.; BOGDEVICH, A.G.; KIRILLOV, G.M.; CHASHECHNIKOVA, I.T.; YARMOLENKO, N.A.; OFENGENDEN, R.G.; SERMAN, V.Z.; DALYUK, Yu.A.; BEREZIN, F.N.; KONENKO, L.D.; SHALEYKO, M.A.; SHEVCHENKO, Yu.S.; STOLYAROV, V.A.; KIRILLOV, G.M.; BOGDEVICH, S.F.; LYSENKO, V.T.; BRASHKIN, N.A.; SKRIPNIK, Yu.A.; GRESHCHENKO, Ye.V.; TUZ, R.M.; SERPILIN, K.L.; GAPCHENKO, L.M.

Abstracts of completed research works. Avtom. i prib. no.3:90-91 Jl-S '62. (MIRA 16:2)

1. Institut fiziki AN UkrSSR (for all except Skripnik, Greshchenko, Tuz, Serpilin, Gapchenko). 2. Kiyevskiy politekhnicheskiy institut (for Skripnik, Greshchenko, Tuz, Serpilin, Gapchenko).

(Research)

33145

A multichannel amplitude ...

S/120/61/000/006/011/041
E039/E420

independent counters together with their background counts, or for measuring four spectra from four separate counters. The results are observed on the screen of a double beam oscilloscope. The dead time is 1.2 μ sec. The number of tubes used is 103 (without the supply) and it is built in two units: a measuring unit and a power supply. The construction of the magnetic drum is described in a previous paper (Ref.4: M.V.Pasechnik, R.G.Ofengenden, L.D.Konenko, Ukr. fiz., zhurnal, v.IV, no.1, 1959, 57). There are 3 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language references read as follows: Ref.1: G.Goldring, M.Birk, Z.Kamit, D.Mydansky. Nucl. Instrum., v.3, no.5, 1958, 307; Ref.2: A.E.Larsh. Nucleonics, no.3, 1959, 92.

ASSOCIATION: Institut fiziki AN UkrSSR
(Physics Institute AS UkrSSR)

SUBMITTED: March 28, 1961

Card 2/2

33149
S/120/61/000/006/011/041
E039/E420

24683

AUTHORS: Ofengenden, R.G., Konenko, L.D.

TITLE: A multichannel amplitude analyser for the simultaneous measurement of several spectra

PERIODICAL: Pribory i tekhnika eksperimenta, no.6, 1961, 65-69

TEXT: The authors give the description of an amplitude pulse analyser for the simultaneous measurement of several spectra as, for example, in nuclear physics experiments where it may be necessary to obtain the amplitude distribution of pulses arriving from several detectors. It makes use of a magnetic drum storage system, with a series of recording heads and corresponding reproduction heads (1.5 mm wide ferrite cores). The capacity of each track on the drum is 900 double figures and erasure is accomplished by means of a uniform magnetic field. Tha analysis and reproduction of the data from a number of counters is handled by a common apparatus, so that the unit is not much larger than a single channel device. A block-diagram is shown in Fig.2 which illustrates the essential differences from a single channel analyser. It allows the facility of measuring spectra from two

X

Card 1/4 2

PASECHNIK, M.V. [Pasichnyk, M.V.]; OFENGENDEN, R.G. [Ofenhenden, R.H.]; KONENKO, L.D.

AIMA-2 pulse-height analyzer [with summary in English]. Ukr. fiz. zhur. 4 no.1:57-71 Ja-F '59. (MIRA 12:6)

1. Institut fiziki AN USSR.
(Radioactivity--Measurement) (Electronic instruments)

Some Questions Connected With the Magnetic Recording of Pulses SOV/108-13-7-10/14

a constant force of magnetization an increase of the amplitude of the reproduced pulses can be observed: the smaller the force of magnetization the greater will be the relative modification of the emission with a modified duration of the recorded pulses. The author presumed that the dependence of the amplitude of the reproduced pulses upon the length of the recorded pulses is also due to this process of reproduction. For the purpose of verifying this assumption an experiment was carried out. The oscillograms obtained show that the amplitude of the reproduced pulses increases with an increased duration of recorded pulses, the amplitudes of the recorded pulses remaining constant. This shows that the modification of the amplitudes of reproduced pulses with a varying length of recorded pulses is essentially due to the process of reproduction. L.D.Konenko assisted in carrying out some of the experiments. There are 7 figures, and 5 references, 3 of which are Soviet.

SUBMITTED: January 28, 1957

ASSOCIATION: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (All-Union Scientific-technical Association for Radio Engineering and Electrical Communications im. A.S. Popov) 1. Magnetic recording systems--Performance

Card 3/3

possible (as may be seen from the oscillograms), and it is possible to carry out an even greater superposition. A further advantage offered by this method of forming is the fact that, as a result of differentiation, the maximum values of the reproduced pulses coincide with respect to time with the synchronized pulses (recorded pulses). By the application of the described method of forming pulses, 5.5 pulses per 1 mm with a length of the reproduced pulse of 450 μ and a maximum pulse sequence of 250 megacycles were recorded on the one drum and 500 megacycles on the other. The memory with this resolving power was used as a component of a multichannel amplitude analyzer of pulses for investigations in the field of nuclear physics and has been operating satisfactorily already for one year. - When selecting the optimal parameters of the magnetic recording of pulses it is necessary to know the connection between the reproduced pulses and the length of the recorded pulses. The latter are the product of the duration of these pulses and the linear velocity of the carrier. Experimental investigations of the dependence of the reproduced pulses on the length of the recorded pulses are carried out. From the curves obtained it may be seen that with an increased duration of the recorded pulses and up to a certain value in the case of

AUTHOR: Ofengenden, R.G., Member of the Association SOV/108-13-7-10/14

TITLE: Some Questions Connected With the Magnetic Recording of Pulses (Nekotoryye voprosy magnitnoy zapisi impul'sov)

PERIODICAL: Radiotekhnika, 1958, Vol. 13, Nr 7, pp. 71-75 (USSR)

ABSTRACT: A new method of forming reproduced pulses is described. This facilitates the reliable operation of memory devices with a considerable superposition of pulses. It was found by experiment that with an increase of the recorded pulse-carrier length per unit the amplitude of the reproduced pulses decreases more rapidly than the amount of the greatest steepness of these pulses changes. It was therefore suggested that before forming, the reproduced pulses be differentiated. As a result of differentiation the amplitude ratio of pulses in the case of a difference sequence of the recorded pulses becomes considerably lower than the amplitude ratio of the reproduced pulses before differentiation. If the usual method of forming is used, a superposition of pulses is not permitted because some of the impulses are lost on this occasion. However, in the case of the differentiation of the reproduced pulses such a superposition of pulses is quite

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

OFENGENDEN, R.G.

PHASE I BOOK EXPLOITATION SOV/4012

Akademiya nauk Ukrainskoy SSR. Otdeleniye fiziko-matematicheskikh nauk. Sessiya po mirnomu ispol'zovaniyu atomnoy energii

Trudy (Transactions of the Session on Peaceful Uses of Atomic Energy). Kiyev, Izd-vo AN Ukrainskoy SSR, 1958. 188 p. 2,500 copies printed.

Resp. Ed.: M. V. Pasechnik, Doctor of Physics and Mathematics; Editorial Board: A. K. Val'ter, Academician, Academy of Sciences Ukrainskaya SSR, O.F. Nemets, Candidate of Physics and Mathematics, M. V. Pasechnik, Doctor of Physics and Mathematics; Ed. of Publishing House: T. K. Remennik; Tech. Ed.: E. P. Bakhlina.

PURPOSE: This collection of articles is intended for physicists and scientific personnel working in nuclear research.

COVERAGE: The articles in this collection discuss linear proton accelerators, electron accelerators, electrostatic accelerators, magnetron lenses, the interaction of charged particles and neutrons with nuclei, the applications of tagged atoms in physics research, and experimental methods. Some of the articles are descriptions of already existing nuclear installations and experimental apparatus. No personalities are mentioned. There is a bibliography of Soviet and non-Soviet sources at the end of most of the articles.

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

OFENGENDER, R. G., Engineer

"Memory Devices Employing Magnetic Drums" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

USSR/Electronics - Magnetic Recording OFENGENDEN, R. G. FD-2446

Card 1/1 Pub 90-8/11

Author : Ofengenden, R. G.

Title : Investigation of pulse erasing in magnetic recording

Periodical : Radiotekhnika, 10, 66-72, Apr 55

Abstract : Problems connected with the investigation of the process of pulse erasing of a magnetic recording, and methods of increasing the signal-to-noise ratio, are discussed. For this experiment, the condition of complete magnetic saturation was chosen as the initial stage of magnetic tape recording. The signal recording was accomplished by means of local demagnitization of previously magnetized tape; and erasing was accomplished by means of a reverse pulse of a magnitude close to that of initial magnetization. Erasing and recording pulses were superimposed in such a manner that a small time shift existed between the two. The signal-to-noise ratio was better with lower values of magnetizing force. A block diagram of the apparatus used is given. Graphs. One USSR reference.

Institution: --

Submitted : December 1, 1954

L [illegible]
ACCESSION NR: AP4041463

on a cathode-ray-tube screen during the experiment or after it. The number of pulses accumulated in each channel can be recorded in the decimal system (other data in the [illegible] system) on a paper tape. Printing speed, over 500 numbers per min. A magnetic-tape output is also provided. Orig. art. has: 6 figures.

ASSOCIATION: Institut fiziki AN UkrSSR (Institute of Physics, AN UkrSSR)

SUBMITTED: 14Oct63 ENCL: 00

SUB CODE: DP, NP NO REF SOV: 008 OTHER: 002

OFFENGENDEN, R. G.

"Impulse Obliteration in Magnetic Recording," Radiotekh., 10, No.4, 1955

Translation 224440
F-TS-8641/V

124-57-2-2569

Measuring Equipment for the Static Recording of the Stressed State (cont.)

computing link, if an extremal value of the quantity will occur in the given sub-range. The computers of each sub-range count the number of values and upon completion of a test immediately provide an account of the number of the extremal values contained in the given sub-range. An example is adduced, showing the analysis of a generic curve and the determination of the maximal and minimal values thereof. The equipment described includes electromechanical computers capable of utilizing impulses lasting longer than 1/25 sec. It is possible, however, that computers be used which are capable of utilizing impulses lasting 1/200 sec and even less. A brief description is given of equipment having an analogous purpose, developed at the Institut stroitel'noy mekhaniki AN UkrSSR (Institute of Structural Mechanics, Academy of Sciences, Ukrainian SSR).

1. Recording devices--Performance 2. Stress analysis

N. P. Rayevskiy

Card 2/2

124-57-2-2569

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 2, p 148 (USSR)

AUTHORS: Korsakevich, N. I., Ofengenden, R. G., Kalina, P. N.

TITLE: Measuring Equipment for the Static Recording of the Stressed State of Articles (Izmeritel'nyye ustroystva dlya staticheskoy registratsii napryazhennosti detaley)

PERIODICAL: Nauch. tr. In-ta mashinoved. i s.-kh. mekhan. AN UkrSSR. 1955, Vol 5, pp 51-61

ABSTRACT: The analysis of the results of an experimental determination of the stressed state of any machine part over a sufficient prolonged period of time concludes in the sorting out of a large number of measured quantities according to their magnitudes and in the determination of the statistical distribution of the quantities that characterize the operating conditions of the part. The paper describes the operating principle of an electronic device for the automatic determination of the extremal values of the measured quantities. The input consists of an electric voltage which characterizes the measured parameter. The device automatically segregates the input voltages into six sub-ranges, which are equipped to transmit a signal to the

Card 1/2

OFENGENDEN, R. G.

"Magnetic Recording of Impulses".

Institute of Physics, Academy of Sciences USSR

A report delivered at a conference on Electro-acoustics held by the Acoustic Commission, the Acoustic Institute of the Academy of Sciences USSR, and the Kiev Order of Lenin Polytechnic Inst., from 1-5 1955 in Kiev.

SO: Sum 728, 28 Nov 1955

GINZBURG, P.M., dotsent; OFENGENDEN, O.M. (Donetsk)

Stenosis of the aortic isthmus. Vrach. delo no.9:136-138 S'63.
(MIRA 16:10)
(AORTA--ABNORMITIES AND DEFORMITIES)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

OFENGENDEN, N.Ye.; IL'IN, A.Ye.

Improving hydraulic coal dredgers and pumps for hydraulic mines.
Ugol' 39 no.9:55-59 S '64. (MIRA 17:10)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Ofengenden). 2. Laptevskiy mashinostroitel'nyy zavod (for Il'in).

TSELIKOV, V.K.; OFENGENDEN, N.Ye.; DOLGOPOLOV, V.A.

Increasing the wear resistance of coal suction dredger parts. Ugol' 38 no.1:25-28 Ja '63. (MIRA 18:3)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki (for TSelikov). 2. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Ofengendon, Dolgopolov).

OFENGENDEN, N.Ye., kand.tekhn.nauk; DOLGOPOLOV, V.A., inzh.

High pressure 10N8x4A type pump for operations in the closed wash water circuit in hydraulic mining. Ugol' 37 no.1:27-28 Ja '62. (MIRA 15:2)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Hydraulic mining)
(Pumping machinery)

SPIVAKOVSKIY, Aleksandr Onisimovich; MUCHNIK, Vladimir Semenovich, doktor tekhn. nauk; YUFIN, Andrey Pavlovich, doktor tekhn. nauk; SMOLDYREV, Anatoliy Yevtikheyevich, kand. tekhn. nauk; OFENGENDEN, Naum Yefimovich, kand. tekhn. nauk; BORISENKO, Lev Dmitriyevich, kand. tekhn. nauk; TRAYNIS, Viulen Vladimirovich, kand. tekhn. nauk; Prinimali uchastiye: KURBATOV, A.K., inzh.; MARKOV, Yu.A., inzh.; KORSHUNOV, A.P., inzh.; EKBER, B.Ya., otv. red.; KOVAL', I.V., red.izd-va; IL'INSKAYA, G.M., tekhn. red.

[Hydraulic and pneumatic transportation in mining enterprises]Gidravlicheskii i pnevmaticheskii transport na gornykh predpriiatiiakh. Moskva, Gosgortekhizdat, 1962. 250 p. (MIRA 16:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Spivakovskiy). 2. Institut gornogo dela im. A.A.Skochinskogo (for Smoldyrev). 3. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut po gidrodobyche uglya (for Muchnik). 4. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Ofengenden). 5. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva (for Yufin).

(Pneumatic conveying) (Hydraulic conveying)

OFENGENDEN, N.Ye.

Regulation of the operative capacity of coal suction pumps by means of chocking a part of the channel openings of working wheels. Sbor.DonUGI no.22:104-111 '61. (MIRA 15:6)
(Pumping machinery) (Hydraulic mining)

OFENGENDEN, N.Ye.; GORDIYEVSKIY, G.I.

The "8UVD" coal suction pump. Sbor.DonUGI no.22:91-96 '61.
(MIRA 15:6)
(Hydraulic mining--Equipment and supplies) (Pumping machinery)

OFENGENDEN, N.Ye.; SVYATSKAYA, M.T.; ANDREYEVA, M.F.

Crushing of coal caused by hydraulic mining and conveying. Sbor.-DonUGI no.22:69-90 '61. (MIRA 15:6)

(Hydraulic mining)

NEKRASOV, S.S.; OFENGENDEN, N.Ye.

Investigating the wear resistance of plastics, cast basalt and rubber in an abrasive liquid mixture. Plast.massy no.11:34-36 '61. (MIRA 14:10)

(Plastics—Testing)

OFENGENDEN, Naum Yefimovich; AFONINA, G., vedushchiy red.; BESPYATOV, R., tekhn.red.

[Automatization of mine ventilators] Avtomatizatsiia shakhtnykh ventiliatorov. Kiev, Gos. izd-vo tekhn. lit-ry USSR, 1957. 186 p. (MIRA 10:12)

(Mine ventilation)

OFENGENDEN, N.YE.

OFENGENDEN, N.Ye., kand. tekhn. nauk.

Hydraulic installation for the automatization of powerful mine pumps. Sbor. DonUGI no.15:69-78 '56. (MIRA 10:11)

1. Laboratoriya shakhtnogo vodootliva.
(Mine pumps) (Automatic control)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800029-6

OFENGENDEN, N.Ye., kandidat tekhnicheskikh nauk.

Operation of automatized draining installations of ge capacity without valve control. Ugol' 29 no.10:26-28 O '54. (MLRA 7:11)
(Mine drainage)

1. OFENGENDEN, N. Ye.

2. USSR (600)

4. Mine Pumps

7. Sectional pump with spiral discharge from the last impeller. Ugol', 28 No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

B

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1637* New Floor-Type Shaft Pumps With Plastic Bearings. (In Russian.) N. Gorokhov, N. Ofengenden, and M. Goldin. *Ugol* (Coal), v. 25, Oct. 1950, p. 19-22.

Presents operating data and describes special advantages of above pumps. Among these advantages are decrease of consumption of strategic metals. The plastic bearings are lubricated by the water being pumped and are even capable of short-time operation without lubrication. Operating data for the pumps were determined.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

KOYBASH, B.V.; KOYBASH, V.A.; OFENGENDEN, M.Ye.

Coagulation of the slime from coal preparation plants by means of "PVPN" and "PANG" flocculents. Koks i khim. no.2:9-11 '64.
(MIRA 17:4)

1. Institut gornogo dela AN UkrSSR.

YEL'YASHEVICH, M.G.; OFENGENDEN, M.Ye.

Coagulation of coal slurries by high polymers. Koks i khim. no.10: 18-20 '60. (MIRA 13:10)

1. Donetskiy politekhnicheskiy institut.
(Makeevka--Coal preparation) (Acrylamide)

YEL'YASHEVICH, M.G., dotsent, kand.tekhn.nauk; OFFENGENDEN, M.Ye., dotsent, kand.tekhn.nauk

Flocculation of slime and clarification of return waters in coal preparation plants. Ugol' Ukr. 4 no.8:28-30 Ag '60. (MIRA 13:9)

1. Donetskiy politekhnicheskiy institut.

(Coal preparation)

OFENGENDEN, M.Ye., kand. tekhn. nauk; KONOVALOVA, T.F., inzh.

Introduction of a suspension clarifier in the Dobropolye coal preparation plant. Ugol' Ukr. 3 no.7:11-13 Jl '59. (MIRA 12:11)

(Donets Basin--Coal preparation)

ILLEGIBLE

OFENGENDEN, A.M.; SKOVORODINA, V.Ya.

Material for assembling runner [illegible] Metallug 10 no.9:27 S '65.
(MIRA 18:9)

KAMENSKIY, Mikhail Aronovich; OFENGENDEN, Abram Mikhaylovich; POKRASS, Leonid Moiseyevich; YASTREBTSEV, Iosif Fedorovich

[Open-hearth furnace hearth bottom] Podina martenovskoi pechi. Moskva, Metallurgiia, 1965. 88 p. (MIRA 18:7)

YELIOSOF, A.Ye.; OFENGENDEN, A.M.

Helical method of laying steel-pouring ladles. Metallurg 8 no.2:21-22 F '63.
(MIRA 16:2)

1. Donetskiy metallurgicheskiy zavod.
(Open-hearth furnaces—Equipment and supplies)

Study of the operation of a multi-jet ...

S/137/62/000/001/014/237
A060/A101

by zirconium and high-alumina bushings. Computational formulae are given for determining the channel diameter of the nozzle in the casting unit, which ensures a given flow of rimmed or killed steel.

[Abstracter's note: Complete translation]

I. Granat

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S/137/62/000/001/014/237
A060/A101

Study of the operation of a multi-jet ...

nozzles, it is recommended to heat up the working layer of the lining up to 1,300 - 1,400°C. It is indicated that the raising of the lining temperature of the casting-unit lining between the limits 1,000 - 1,350°C reduces the steel temperature drop by 8 - 10°C per 100°C lining temperature increase. It is pointed out that the total obstruction of the nozzle channels is eliminated at the temperature of molten rimmed and killed (medium-carbon) steel in the furnace before tapping and in the casting unit (after pouring 3-6 tons), equal to 1,625 - 1,650 and 1,530 - 1,550°C respectively. Testing was carried out upon the composite nozzles of fireclay with zirconium, high-alumina, and magnezite bushings, and also upon biceramic ones with argillic-graphite and high-alumina working layer. It was established that in the course of pouring rimmed steel the lowest channel erosion and the most stable metal flow is ensured by high-alumina and zirconium bushings. In pouring killed steel it was established that the method of reducing the steel with Al has an effect upon the nature of steel action upon the nozzle material. In pouring steel reduced with Al during tapping the heat, the nozzle channel becomes stopped up in the course of pouring and requires repeated burning out with O_2. However, also in that case the best result is obtained with a zirconium bushing. In reducing killed steel with Al the most stable flow of metal in the jet from the casting unit was demonstrated

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OFENGENDEN, A.M.

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S/137/62/000/001/014/237
A060/A101

AUTHORS: Glazkov, P. G., Sladkoshteyev, V. T., Telesov, S. A., Ofengenden, A. M., Strelets, V. M., Murzov, K. P.

TITLE: Study of the operation of a multi-jet casting unit for continuous pouring of steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 62, abstract 1V392 ("Sb. tr. Ukr. n.-i. in-t metallov", 1961, no. 7, 133-142)

TEXT: On the basis of temperature measurements of steel in the furnace, in the ladle of 140-ton capacity, and also in a 2-stopper intermediate casting unit, and in the jets from the ladle and the casting unit, the heat losses of molten steel in the process of tapping and founding were determined. It was established that the first 18 - 20 tons of steel proceeding from the ladle and the casting unit have a relatively low temperature, which then increases and remains stable practically to the end of the founding. Taking into account that the low temperature of the first portions of the metal is the result of heat losses expended upon the heating up of the lining of the ladle and the casting unit and leads to a rapid obstruction of the channels of the steel-pouring

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and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute). References follow some of the articles. There are 268 references, mostly Soviet.

TABLE OF CONTENTS:

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New [Developments] in the Theory (Cont.) SOV/5556

COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquets or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, B.P. Nam, V.I. Yavoyskiy, G.N. Oyks and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Umrikhin (Ural Polytechnic Institute); I.I. Fomin (the Moscow "Serp i molot" Metallurgical Plant); V.A. Fuklev (Central Asian Polytechnic Institute)

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OFENGENDEN, A.M.

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PHASE I BOOK EXPLOITATION SOV/5556

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezhvuzovskogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Glinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oyks, Professor, Doctor of Technical Sciences, and V. I. Yavoyskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karasev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

Card 1/14

SHVARTSMAN, L.A., doktor khim.nauk; OSIPOV, A.I., kand.tekhn.nauk; ALEKSEYEV, V.I.; SUROV, V.F.; SAZONOV, M.L.; BUL'SKIY, M.T.; TELESOV, S.A.; SKREBTSOV, A.M.; OFENGENDEN, A.M.; GOL'DSHTEYN, L.G.; SVIRIDENKO, F.F.

Studying the kinetics of scrap melting in the scrap metal and ore process. Probl.metalloved.i fiz.met. no.6:326-343 '59. (MIRA 12:8)

(Open-hearth process) (Scrap metal)

SOV/20-120-3-45/67

On the Equilibrium of Sulfur Distribution Between Metal and Slag in Open--Hearth Furnaces

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy) Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Plant)

PRESENTED: January 9, 1958, by G. V. Kurdyumov, Member, Academy of Sciences, USSR

SUBMITTED: January 9, 1958

1. Open hearth furnaces--Performance 2. Sulfur--Determination
3. Steel--Quality control 4. Slags--Properties

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SOV/20-120-3-45/67

On the Equilibrium of Sulfur Distribution Between Metal and Slag in Open-Hearth Furnaces

the composition of the just formed slag. Then the slag is acidous. The Δ-values are negative (Fig 1) and the values of the equilibrium coefficients are very small. Figure 1 shows that during the melting period the desulfurization tends towards equilibrium along two ways: a) By the passage of sulfur from the slag to the metal and b) By the continuous change in the amount of slag and its composition. An increase in the amount of slag reduces the sulfur concentration, whereas an increase of the basicity increases the equilibrium coefficient of the distribution. In order to guarantee a combination of thermodynamic and kinetic conditions favorable to a successful desulfurization, such a slag regime must be maintained, in which a) The silicon content in the slag is kept low if possible during the entire melting process, and b) The slag is kept in a sufficiently liquid state. This is achieved by the introduction of liquefying additions, such as agents containing ferrous oxide. There are 2 figures and 2 references, 1 of which is Soviet.

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of the slag is decisive for the desulfurization. Contrary to current opinion an increase of the concentration of ferrous oxide does not essentially impair the thermodynamical conditions of steel desulfurization in slags of the Siemens--Martin type. At the same time an increase of the said concentration leads to a reduction of the viscosity of the slag and accelerates the processes of mass transfer in it. Fig 1 shows the values of the sulfur distribution coefficients in dependence upon Δ (difference between the mole--number of the basic and the acidous oxides contained in 100 g of slag = a measure of the basicity of the slag according to Grant and Chipman, Ref 1). From this the following fundamental conclusions can be drawn: 1) During the melting period the sulfur content in the slag exceeds the value corresponding to the equilibrium with the metal. This circumstance is caused by the transition of the sulfur from the furnace atmosphere into the slag. The transition of the sulfur from the slag to the metal proceeds slowly, its content, in the metal, however, rises (Fig 1). Moreover, the sulfur transition to the metal is chemically conditioned by

SOV/ 20-120-3-45/67

AUTHORS: Shvartsman, L. A., Osipov, A. I., Surov, V. F., Sazonov, M. L., Telesov, S. A., Ofengenden, A. M.

TITLE: On the Equilibrium of Sulfur Distribution Between Metal and Slag in Open-Hearth Furnaces (O ravnovesii raspredeleniya sery mezhdu metallom i shlakom v martenovskikh pechakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 3, pp.599-60' (USSR)

ABSTRACT: In the analysis of the desulfurization process in such furnaces a clearing up of the dependence of the equilibrium coefficient of the sulfur distribution on the slag composition and on temperature is primarily necessary. If this is known, that minimum limit-concentration of sulfur in the metal can be estimated, which can be reached at optimum kinetic conditions with the respective slag composition. The difference between the actually observed and the equilibrium coefficient of the sulfur distribution is apparently conditioned by the insufficient velocity of mass transfer in the system slag-metal. From a thermodynamical point of view the basicity

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SOV/137-58-11-22137

D-C Degassing of Steel in Ladles and Molds

cm^3/100 g. Samples of Me taken from rolled ingots (100-160 mm diam) testify to positive segregation of H, a uniform distribution of [N], and some improvement in macrostructure. When Me is degassed in 125-t ladles, the current is delivered through carbon coils mounted on dummy stoppers. The current, of 0.02-0.25 amps/cm^2 density, is transmitted either while the metal is in the ladle or then and, in addition, when it is poured. 12 heats were run. Samples of Me were taken during pouring from the molds. In the experimental heats, the [H] in the ladle was reduced relative to the [H] before tapping by 1.5-2 cm^3/100 g and was 0.5-1.0 cm^3/100 g lower than in ordinary heats. The Me treatment thus described does not affect the content and distribution of N, O, or nonmetallic inclusions.

A. S.

Card 2/2

SOV/137-58-11-22137

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 44 (USSR)

AUTHORS: Yavoyskiy, V. I., Chernega, D. F., Telesov, S. A., Troskunov, Ya. L., Ofengenden, A. M., Bekker, N. I.

TITLE: D-C Degassing of Steel in Ladles and Molds (Degazatsiya stali v kovshakh i izlozhnitsakh pri pomoshchi postoyannogo elektricheskogo toka)

PERIODICAL: Sb. Mosk. in-t stali, 1958, Vol 38, pp 209-225

ABSTRACT: Carbon and low-alloy steels (65G, 55S2, 10G2A, Nr 45, and others) were the objects of investigation. In degassing in molds, either the graphite nozzle or the stool serves as anode, while a graphite electrode immersed in the mold serves as cathode. Current is transmitted for 10-30 min, usually immediately after the ingot is poured. The ingots are 3.1-3.4 t in weight. Samples of the metal (Me) for H determination by the Batalin method are taken from the test ingot and the next one adjacent thereto (the control ingot). Seven ingots were treated in this manner. Increase in current density from 0.06 to 0.17 amps/cm^2 raises the [H] in the top of the test ingot to more than in the control ingot. The difference in [H] attains 15.84

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OFENGENDEN, A.M.

GLAZKOV, P.G., inzh.; OFENGENDEN, A.M., inzh.; DRUZHININ, I.I., inzh.; NESTEROVICH, R.P., inzh.; CHEPURNOY, G.T., inzh.

Steel making from low-manganese pig iron (summary in English). Stal' 18 no.3:209-213 Mr '58. (MIRA 11:3)

1. Stalinskiy metallurgicheskiy zavod.
(Smelting)

steel (Figure 3), the increase in weight from 3.1 to 3.4 tons being obtained by increasing the internal width of the mould from 540 to 565 at the base and making the ingot square with parallel instead of convex faces. Here, too, improvements were obtained. Ingot-mould life for the larger ingots of killed steel was not shorter than for the 3.1-ton ingots and the ingot mould consumption per ton of steel was 3.7 kg less. Ingot-mould and refractory consumptions were less and blooming-mill productivity greater for the larger ingots both for killed and rimming steels. There are 3 figures and 1 table.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

1. Steel industry - USSR 2. Steel - Manufacture

AUTHOR: Ofengenden, A.M. SOV/130-58-6-6/20

TITLE: Increasing the Weight of the Ingot for the Blooming Mill (Uvelicheniye vesa blyumingovogo slitka)

PERIODICAL: Metallurg, 1958, Nr 6, pp 13 - 15 (USSR)

ABSTRACT: At the Stalinsk Metallurgical Works, steel is bottom-poured on six-place stools and since the war, ingot weight has been increased from 2.8 to 3.1 to 3.4 tons. The author describes the two larger ingot moulds (Figure 1), the main special features of the design of the latter for killed steel being that the hot top holds about 12% of the ingot steel and that its internal width is equal to that of the ingot mould. Wall thickness at the corners is 95 instead of 115 mm, taper is 4.08% and height to mean width ratio is 2.98. The rolling of the 3.4-ton ingots, like the 3.1-ton ones, is effected in 15-17 passes, an actual increase in the productivity of the mill of 3.1% being obtained. The change to the larger ingots has reduced cracking and defects for types 10, 20 and other steels, an important factor being correct curvature of the mould sides. Considerable improvement in the macrostructure of ingots and rolled metal was also obtained, a notable improvement being at the junction of the hot top and ingot (Figure 2) for type 45 steel. The author also describes ingot moulds for rimming

SOV/130-58-6-5/20

Reducing Aluminium Consumption for the Deoxidation of Steel

rejects when aluminium was replaced by ferrotitanium or silico-calcium. The reduced aluminium consumptions have been adopted as standard practice.
There are 3 tables.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

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1. Steel - Production 2. Aluminum - Reduction
3. Steel - Deoxidation

SOV/130-58-6-5/20

AUTHORS: Ofengenden, A.M., Nesterovich, R.P., Engineers

TITLE: Reducing Aluminium Consumption for the Deoxidation of Steel (Umen'sheniye raskhoda alyuminiya dlya raskisleniya stali)

PERIODICAL: Metallurg, 1958, Nr 6, pp 11 - 12 (USSR)

ABSTRACT: At the Stalino Metallurgical Works, steel is produced in 130-ton basic roofed open-hearth furnaces and bottom-poured into 3.4-ton ingots. According to the authors, calculation of the aluminium requirements for deoxidation by the equation recommended for non-welding steels gives low results for type 10 and especially 20 tube steels and they describe tests at the works in which 0.7 instead of the normal 1 kg/ton and 0.6 instead of 0.7 kg/ton, respectively, of aluminium were used. It was found that pouring was improved and that (Table 1) rejects through surface defects and macrostructure were reduced. After allowing for incorrectly poured heats, reduction in the aluminium consumption was found to reduce rejects through cracks and tears (in agreement with V.A. Yefimov's experimental data). Analysis of rejects through macro-defects (Table 2) and results of experiments showed (Table 3) the deleterious effects of aluminium. The latter showed reduced

Card 1/2

Smelting of Steel from Low Manganese Iron 133-58-3-6/29

if coke oven gas used for firing was desulphurised. There are 2 tables and 7 figures and 9 Soviet references.

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino Metallurgical Works)

AVAILABLE: Library of Congress

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to metal was increased from 31.8 to 42%. On transfer to low-manganese pig, the condition for the desulphurisation of the metal bath deteriorated and the content of sulphur in metal after melt out increased on average by 0.004%. This led to a prolongation of the finishing period and an approximately 1% decrease in the output of open-hearth furnaces. The production of metal with a required low sulphur content becomes more difficult. In heats with low-manganese pig, the content of sulphur in metal after the melt out increases with increasing sulphur content of pig, while with the usual pig, its sulphur content up to 0.05% has no influence on the sulphur content of metal after the melt out. The transfer to low-manganese pig had no influence on desulphurisation of the bath during refining, on the removal of phosphorus and on the process of slag formation, but the yield of good metal increased by 0.3%, the consumption of ore decreased by 0.75 kg/ton of steel and the amount of ferro-manganese used for deoxidation increased by 1.1kg/ton of steel. The quality of steel produced from low-manganese pig did not deteriorate while the production costs somewhat decreased (by 11.62 roubles/ton). The application of low-manganese pig for the production of steel would be effective

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reduction of manganese, the content of which during pure boiling was not controlled. Chemical composition of low-manganese pig: % Si 0.79, Mn 0.91, S 0.034 and that of normal pig: % Si 0.78, Mn 1.86, S 0.046 (Fig.1). Frequency distribution of the manganese content after melting (A) and before deoxidation (B) - Fig.2; changes in the slag composition during smelting with low-manganese pig (nominator) and ordinary pig (denominator) - Table 1; frequency distribution of sulphur in the finished metal - Fig.3; the dependence of the sulphur content in the metal after melting on the sulphur content of the pig - Fig.4; the dependence of sulphur content in metal after melting on the duration of charging and heating of the charge - Fig.5; the dependence of the velocity of desulphurisation and sulphur content at the beginning of boiling on sulphur content of metal after melting - Fig.6; frequency distributions of phosphorus during various smelting periods - Fig.7; and the influence of the transfer to smelting low-manganese iron on the consumption of materials and related to it, the cost of production of steel - Table 2. Conclusions: The content of manganese in metal during the finishing period in heats with low-manganese pig was lower by 0,02-0.04% than that in heats with the usual pig, although the transfer of manganese from charge

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OFENGENDEN, A.M.

133-58-3-6/29

AUTHORS: Glazkov, P.G., Ofengenden, A.M., Druzhinin, I.I., Nesterovich, R.P. and Chepurnoy, G.T., Engineers

TITLE: Smelting of Steel from Low Manganese Iron (Vyplavka stali iz malomargantsovistogo chuguna)

PERIODICAL: Stal', 1958, Nr 2, pp 209 - 213 (USSR)

ABSTRACT: The influence of low-manganese iron on the operation of open-hearth furnaces and the quality of the metal produced was carried out by a comparative study of the individual operating factors for heats in which low-manganese iron (256 heats) and normal iron (222 heats) were used. Heats carried out on the same furnace were usually compared. Low-manganese iron was poured directly into open-hearth furnaces while normal iron for about 40% of heats was passed through a mixer. Smelting of steel was carried out by the scrap-ore process in 130-ton open-hearth furnaces with magnesite chromite roofs, fired with a mixture of coke-oven and blast furnace gas. Due to the high sulphur content in the coke oven gas (13-16 g/m^3) a considerable amount of limestone was used in the charge, about 90 kg/ton of finished steel. During smelting slag was changed twice during the melting and refining periods with subsequent raking of fresh slag by lime additions. Heats were intensive and hot with the

Card1/4

SAMARIN, A.M.; YEFIMOV, L.M.; VESELKOV, N.G.; ORMAN, R.Z.; SHABANOV, A.N.; MOROZENSKIY, L.I.; GRANAT, I.Ya.; TOCHINSKIY, A.S.; ALYAVDIN, V.A.; DANILOV, P.M.; PETRIKEYEV, V.I.; POPOV, B.N.; BOBKOV, T.M.; ROSTKOVSKIY, S.Ye.; GAVRISH, D.I.; D'YAKONOV, N.S.; TIMOSHPOL'SKIY, M.N.; ROMANOV, V.D.; POCHTMAN, A.M.; MELESHKO, A.M.; PODGORETSKIY, A.A.; OFENGENDEN, A.M.; BRONSHTEYN, V.M.; PRIDANTSEV, M.V.; LIVSHITS, G.L.; ROZHKOV, V.A.; RUTES, V.S.

Reports (brief annotations). Biul. TSNIICHM no.18/19:15-16 '57. (MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Samarin). 2. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Rutes, Rostkovskiy, Pridantsev, Livshits, Rozhkov). 3. Stal'proyekt (for Shabanov). 4. Kuznetskiy metallurgicheskiy kombinat (for Alvavdin, Danilov, Petrikeyev). 5. Zavod "Elektrostal'" (for Popov). 6. "Dneprospetsstal'" (for Bobkov). 7. Glavogneupor Ministerstva chernoy metallurgii SSSR (for Gavrish). 8. Planovoye upravleniye Ministerstva chernoy metallurgii SSSR (for D'yakonov). 9. Otdel rabochikh kadrov, truda i zarplaty Ministerstva chernoy metallurgii SSSR (for Timoshpol'skiy). 10. Glavvtorchermet Ministerstva chernoy metallurgii SSSR (for Romanov). 11. Giprostal' (for Pochtman). 12. Zavod im. Voroshilova (for Meleshko). 13. Zavod "Zaporozhstal'" (for Podgoretskiy). 14. Stalinskiy metallurgicheskiy zavod (for Ofengenden). 15. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Bronshteyn).

(Steel--Metallurgy)

137-58-6-13417

New Types of Low-alloy Steels, Their Production and Applications

cost of skeleton frame structures is reduced by 5-10%. The steel ARM-90 (0.29-0.30% C, 1.2-1.6% Mn, 0.5-0.9% Si, 0.6-0.9% Cr) with a $\sigma_b \geq 90 kg/mm^2$ was especially designed for reinforced concrete structures. Procedures for experimental smelting and rolling were analogous to those employed for steel 25GS. Replacing the welded framework employed in standard reinforced-concrete structures by rods made of prestressed ARM-90 steel results in a saving of ~40% of metal and reduces the cost of material by as much as 30%.

I. G.

1. Steel--Production 2. Steel--Applications

Card 2/2

137-58-6-13417

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 325 (USSR)

AUTHOR: Ofengenden, A. M.

TITLE: New Types of Low-alloy Steels, Their Production and Applications (Nizkolegirovannyye stali novykh marok, ikh proizvodstvo i primeneniye)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 173-177

ABSTRACT: The smelting of the new type of 25GS steel (0.20-0.29% C, 1.20-1.60% Mn, 0.60-0.90% Si) is carried out in 130-ton open-hearth furnaces operating on liquid pig iron on the principle of the scrap-ore process. The ingots are rolled into periodic shapes ranging from Nr 12 to Nr 32. The mechanical properties of this steel, as well as its shape (a round rod with closely spaced projections, arranged helically along its length, and two longitudinal ribs), make it possible to manufacture flat and three-dimensional frames for stress-free reinforced concrete structures by means of automatic spot welding. Compared with steel 5 employed previously for such purposes, an average saving of 20% is achieved on materials, while the

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Deoxidation of Rimming Steel with Ferromanganese in the Ladle. (Cont.) 130 - 6 - 6/27

also tabulated, showing great reductions in ferroalloy consumption obtained by the ladle procedure. Estimates of the corresponding cost savings are made: 2.85 roubles per ton for 3Kп and 6.52 roubles per ton for the low-carbon rimming steels. Comparative tabulation of mechanical properties of sheet show that ladle deoxidation has no deleterious effects, and sheet surface qualities and micro-structures remain satisfactory. The tapping temperature of the metal must not, however, be lower than for deoxidation in the furnace (1600-1620 C by immersion thermocouple).

There are 3 tables.

ASSOCIATION: Stalinsk Metallurgical Works.
(Stalinskiy Metallurgicheskiy Zavod).

AVAILABLE:

Card 2/2

OFENGENDEN, A.M.

AUTHORS: Gerchikov, D.S., Ofengenden, A.M. and Pokrass, L.M. (Engineers).

130 - 6 - 6/27

TITLE: Deoxidation of Rimming Steel with Ferromanganese in the Ladle. (Raskisleniye kipyashchey stali ferromargantsem v kovshe).

PERIODICAL: "Metallurg" (Metallurgist), 1957, No.6, pp.13-15 (USSR).

ABSTRACT: Deoxidation of rimming steel with ferromanganese in the ladle was introduced in the open-hearth shop at the Stalinsk metallurgical works on the basis of an investigation carried out in 1955 and this process is discussed. The steel is produced by a scrap-ore process with 60-65% hot metal in the metallic charge and is bottom poured. It was found that the carbon content of even low-carbon rimming sheets (Cв08, Cв08A) did not rise through ferromanganese additions in the ladle. Data on the sulphur and phosphorus contents of the steels before tapping and in the ladle for furnace and ladle deoxidation are tabulated for steels 3кп, 2кп and Cв08, showing that for ladle deoxidation the sulphur content of the steel at tapping must not exceed the upper limit of the specification for the finished steel. Data on carbon and manganese contents, ferromanganese consumption and loss for the same steels for the two deoxidation procedures are

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137-58-4-6740

A Radioactive-isotope Investigation (cont.)

per minute, or in the range of 0.13 to 36.5% of the radioactivity of the slag. The samples containing RI in NI came from all levels of the ingot, and the number of samples with RI ranged from 41.2 to 83.5% of those taken from the height, and from 57.3 to 65% of those taken across the section of the ingot. It is remarked that the largest number of specimens having a high RI content was found in the center of the ingot, and the largest amount of RI in the specimens was found at ≪ 9% from the top of the ingot. When RI was introduced into bulk refractory for runners specimens containing RI were also found at all levels in the ingot, but the maximum amount of RI was found in specimens from the edge of the ingot and at distances of 10% and more from its top. It is noted that contamination of rimmed steel by NI due to destruction of runner brick is of random nature, and that diminution of the NI formed by entry of slag from the surface of the metal into the ingot makes for diminution of rimming of the metal in the mold and for mechanical separation of slag therefrom. Measures are recommended to reduce rejects of steel due to accumulations of NI, namely, pouring at 1600-1620°, Fe-Mn deoxidation in the ladle and use of flux mixtures consisting of 65% sand & 35% scale to liquify the slag in the mold. Bibliography 18 references.

A. Sh.

1. Steel--Inclusions 2. Radioactive isotopes--Applications

Card 2/2

OFENGENDEN, A. M.

137-58-4-6740

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 63 (USSR)

AUTHORS: Gerchikov, D.S., Gol'dshteyn, L.G., Ofengenden, A.M.

TITLE: A Radioactive-isotope Investigation of the Nature of Accumulations of Non-metallic Inclusions in Rimmed Steel (Issledovaniye prirody skopleniy nemetallicheskikh vklyucheniy v kipyashchey stali s pomoshchyu radioaktivnykh izotopov)

PERIODICAL: Tr. Donetsk. otd. Nauchno-tekhn. ov-a chernoy metallurgii, 1957, Nr 5, pp 102-123

ABSTRACT: The investigation was performed with the aid of the radioactive isotope (RI) Ca^{45}, 0.83-17.26 millicurie being added per ton of steel to steel rimming in the mold. The addition was in the form of a mixture of $Ca^{45}O$ and slag. The isotope was also used in the runner brick by impregnating it with a solution containing $Ca^{45}O$. Determination of radioactivity by the "thick layer" method was made in samples of slag removed from the surface of the steel in the molds, and in nonmetallic inclusions (NI) precipitated from specimens of the metal when rolled. It was established that when the RI was introduced into the slag the unit radioactivity of the NI varied from 29 to 3658 impulses

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137-58-4-6672

Smelting Rimmed Steel (con.)

quality of the metal was virtually identical in both methods of deoxidation.

A.D.

1. Steel--Smelting 2. Deoxidation--Processes

Card 2/2

137-58-4-6672

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 51 (USSR)

AUTHORS: Gerchikov, D.S., Ofengenden, A.M., Pokrass, L.M.

TITLE: Smelting Rimmed Steel with Deoxidation by Ferromanganese in the Furnace and in the Ladle (Vyplavka kipyashchey stali s raskisleniyem ferromargantsem v pechi i v kovshe)

PERIODICAL: Tr. Donetsk. otd. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Nr 5, pp 92-101

ABSTRACT: The results of an investigation of the comparative effectiveness of deoxidation (D) of rimmed Fe-Mn steel in a 130-t open-hearth furnace and in the ladle, based on a study of >80 experimental heats, are presented. In furnace D, 69.5% of the Mn was lost by burning in 3kp steel, while with Sv08 steel the figure was 76.5%, the Fe-Mn consumption per ton of liquid steels of these grades being 6.6 and 14.2 kg. When D was in the ladle, the corresponding figures were 44 and 49%, 3.99 and 5.81 kg. Burning loss of S and reduction of the phosphorus from the slag were lower. No carburization of the metal by C in the Fe-Mn occurred, and the degree to which the Mn and C analysis corresponded to the desired levels was higher. The Mn distribution and the

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Офенгенден А.М.

OSIPOV, A.I.; SHVARTSMAN, L.A.; ALEKSEYEV, V.I.; SUROV, V.F.;
SAZONOV, M.L.; BUL'SKIY, M.T.; TELESOV, S.A.; SKREBTSOV,
A.M.; OFENGENDEN, A.M.; GOL'DSHTEYN, L.G.; SVIRIDENKO, F.F.

Radioisotope studies of scrap fusion kinetics and slag formation in the scrap-ore process. Atom.energ. 3 no.10:352-355 O '57.
(MIRA 10:10)
(Steel--Metallurgy) (Radioisotopes--Industrial applications)

CHAYKIN, I.M., kandidat tekhnicheskikh nauk; TELESOV, S.A., inzhener.
TROSKUNOV, Ya.L., inzhener; OFENGENDEN, A.M., inzhener.

Low-alloy reinforcing steel. Stal' 16 no.2:157-160 F '56.
(MLRA 9:5)

1. VNIIzhelezobeton, Stalinskiy metallurgicheskiy zavod.
(Steel, Structural)

OFENGENDEN, A.M.; SAMOTESOV, N.V.

Interfactory institute for the improvement of technological and quality control of the production. Metallurg no.9:24-28 S '56. (MLRA 9:10)

1.Rukovoditel' martenovskoy gruppy TSentral'noy zavodskoy laboratorii. 2.Nachal'nik Otdela tekhnicheskogo kontrolya Stalinskogo metallurgicheskogo zavoda (for Samotesov).
(Metallurgical research)

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OFENGENDEN, A. M.

Telesov, S. A., Troskunov, Ya. L. and Ofengenden, A. M. "The problem of the reduction in the heterogeneity of the boiling steel," Trudy Stalinskogo obl. otd-niya VNITOM, No 1, 1949, p. 34-39

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

C A

7

Use of martenite for open-hearth furnace bottoms. M. A. Kamenskii and A. M. Olengenden. *Stal* **8**, 893-7 (1948).—Martenite, a synthetic fettling material, was tested with good results for sintering bottoms. The approx. compn. (variable) of martenite was SiO_2 5.2, Al_2O_3 2.1, Fe_2O_3 10.5, CaO 13.9, MgO 66.5 (ignition loss 2.3%). Martenite is sintered faster than magnesite, thereby reducing repair time. It is fully as wear resistant as magnesite and has no effect on the compn. or fluidity of the s[illegible]. Martenite is also suitable for hot patching. When [illegible]ing the entire bottom it is advisable to sinter the [illegible]er of magnesite and then the successive layers of [illegible]s. M. Hosch

OFENGENDEN, A. M., KAMENSKIY, M. A.

Mbr., Stalin Metal Factory & Factory im. Serov, -c1948-.

"The Use of Martinite for welding the grating on Martin furnaces," Stal', No. 7, 1948

The Use of Radio Isotopes When Investigating the Kinetics of Scrap Fusion and Slag Formation in the Scrap-Ore Process. 89-10-22/36

$$\frac{dx}{dt} = K_{SCH} (100 - x)^{2/3}$$ was experimentally confirmed.

x here denotes the weight of the CaO already dissolved and K_{sch} - the proportionality coefficient for slag formation. There are 4 figures and 2 Slavic references.

SUBMITTED January 15, 1957

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Card 2/2

Ofengenden, A.M.

AUTHORS: Osipov, A.I., Shvartman, V.A., Alekseyev, V.I., Surov, V.F. Sazonov, M., Bul'skiy, M.T., Telesov, S.A., Skrebtsov, A.M. Ofengenden, A.M., Gol'shteyn, LG., Sviridenko, F.F.

TITLE: The use of Radio Isotopes when Investigating the Kinetics in Scrap Fusion and Slag Formation in the Scrap-Ore Process. (Primeneniye radioaktivnykh isotopov dlya izucheniya kinetiki plavleniya skrapa i shlakoobrazovaniay pri skrap-rudnom protsesse)

PERIODICAL: Atomnaya Energiya, 1947, Vol. 3, Nr 1o, pp. 352-355 (USSR)

ABSTRACT: 1) Investigation of the kinetics of scrap fusion.
The fusion velocity in the 13o and 35o ton open hearth furnaces is shown on the basis of the reduction of the specific activity of standard metal samples (4oo g), which contain Co-60 with the help of 12 counting tubes of the MC-4 type.
From the dependence obtained between the molten scrap quantity and the time which as elapsed since introduction of the scrap, it follows that nearly 100% of the scrap is molten already after about 2oo minutes.
2) Investigation of the kinetics of slag formation.
CaO, in which Ca-45 was included, was used for this investigation. The CaO is introduced into the liquid slag in closed metallic tubes and standard samples for measuring are taken out only after a lapse of time fo 3o-35 minutes. As measuremnt for the velocity in which Ca Dissolves in the slag, the relation.

Card 1/2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Production of manganese sheet steel. F. N. Grigor'ev and A. M. Ofengenden. *Teoriya Prakt. Met.* 11, No. 12, 34-40(1939). The defects of Mn steel are mainly due to nonmetallic inclusions. The conditions under which high-grade Mn steel is produced are: (1) melting should be rapid; (2) the fluidity (by the Herty viscometer) after melting, at the beginning of boiling and before deoxidation, should be, resp.: 75-100, 60-80 and 60-80 mm.; the ratio CaO:SiO_2 before melting and before deoxidation must be not less than 1.5 and 2.0-2.5, resp.; (3) the bath must boil violently and the velocity of decarburization must not be below 0.004% of C per min.; (4) the furnace must be deoxidized with silicomanganese. The optimum temp. of the beginning of pouring was 1440-55°; a lower temp. produces porous and contaminated steel. Three references. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TELESOV, S.A.; OFENGENDEN, A.M.

Increasing the yield of killed steel ingots. Metallurg 9 no.4:18-19 Ap '64. (MIRA 17:9)

1. Donetskiy metallurgicheskiy zavod.

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KALLYUS, Vyacheslav Yaroslavovich; KONDRATYUK, P.I., kand. tekhn. nauk, dots., retsenzent; OFAT, Ye.A., inzh., retsenzent; PILIPENKO, Y.P., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Hay-harvesting machines; design, calculations, and the principles of utilization] Senouborochnye mashiny; konstruktsiia, raschet i osnovy ekspluatatsii. Moskva, Mashgiz, 1961. 274 p. (MIRA 14:12)
(Hay--Harvesting) (Agricultural machinery)

OFAT, Ye. A.

Cand Tech Sci - (diss) "Study of the technological process of the selection and transporting of straw materials." Minsk, 1961. 19 pp; with diagrams; (Belorussian Scientific Research Inst of Agriculture, ASKhN Belorussian SSR); number of copies not given; price not given; (KL, 6-61 sup, 223)