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BURSHTEYN, E.L.; VASIL'YEV, A.A.; MINTS, A.L., akademik; PETUKHOV, V.A.; RUBCHINSKIY, S.M.

High-energy cyclic accelerators with a self-tuning magnetic field. Dokl. AN SSSR 141 no.3:590-592 N '61. (MIRA 14:11)
(Particle accelerators)
(Magnetic fields)

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24.6730

40738

S/120/62/000/004/003/047
E140/E420

AUTHORS: Rubchinskiy, S.M., Batskikh, G.I., Vasil'yev, A.A., Vodop'yanov, F.A., Gutner, B.M., Kuz'min, A.A., Kuz'min, V.F., Lebedev-Krasin, Yu.M., Uvarov, V.A.

TITLE: The electronic system of the 7 Gev proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 20-26

TEXT: The article surveys the electronic system of the 7 Gev proton synchrotron, the individual parts of which are described in individual articles in the same number of the journal. The electronic circuits control the continuous increase of the energy of the accelerated particles. For the chamber aperture used in the apparatus, the deviation of the momentum from the equilibrium value cannot exceed $\pm 5 \times 10^{-3}$. The instantaneous values of H must be held to within 10^{-3} at the start (f = 0.67 Mc/s) and 5×10^{-5} at the end of the acceleration cycle (f = 8.31 Mc/s). The synchrotron frequency varies from 3600 to 130 c/s. To keep the oscillations of phase with passage through resonance less than the adiabatic damping of these oscillations, the harmonic frequency modulation of the accelerating potential by the synchrotron frequency should not exceed 0.5 c/s and the harmonic amplitude

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of the modulation at the same frequencies should be less than 2×10^{-4} at the start and 5×10^{-3} at the end of the cycle. The spectral density of noise modulation should be of the order of 2×10^{-3} cs^2/cs. The precision of measuring H at the instant of injection was prescribed as 3×10^{-4}. These requirements are met by a programmed frequency control with correction for the radial and phase positions of the beam, calculated for beam intensities of 10^8 to 10^{12} particles. The beam measuring system consists of a precise discrete integrator and a meter for the initial level of the magnetic field intensity. Special equipment is required for the automatic measurement of the instantaneous values of frequency and field intensity, the measurement of micromodulation of the frequency and amplitude of the accelerating potential, variations of beam intensity over the acceleration cycle, the azimuthal distribution of particle density in the bunch, and the position of the beam in the vacuum chamber. An overall block diagram of the system is given and also summary descriptions of the systems for generating the accelerating field, the acceleration control and the measuring equipment. The

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particles are accelerated at the seventh harmonic of their frequency of revolution - in the band from 0.67 to 8.31 Mc/s. The energy increase is 4.3 keV per revolution. The accelerating elements are 2.4 m drift tubes located in 11 compensating electromagnets. The transit angle in each tube is about 25° and the ratio of accelerating potential to the potential across the tube is about 0.43. The system ensures a phase oscillation of the beam below 0.05 r and stabilizes the radial position to within ± 1 mm. There is 1 figure.

ASSOCIATION: Radiotekhnicheskiy institut GKAE
(Radio Engineering Institute GKAE)

SUBMITTED: April 23, 1962

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

S/120/62/000/004/014/047
E192/E382

AUTHORS: Vasil'yev, A.A., Batskikh, G.I., Vasina, Yu.A. and Andryushchenko-Lutsenko, N.I.

TITLE: Multichannel precision digital system for measurement of the intensity of the magnetic field and time

PERIODICAL: Pribory i tekhnika eksperimenta, no. 4, 1962, 84 - 89

TEXT: Electronic equipment for accurate measurement of instantaneous values of the magnetic field and time is described. The device is designed for the 7 GeV proton synchrotron and is primarily based on a continuous-discrete computing unit (discrete integrator). The input signal to the integrator is taken from the induction coils situated in the gaps of the electromagnets of the accelerator. The signal is converted into a corresponding "instantaneous frequency" of a frequency-modulated waveform, whose phase is then measured by means of an electronic counter. The output pulses corresponding to a given value of the magnetic field are obtained by employing a coincidence circuit which is connected to suitable elements of the

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electronic counter. Since the induction coil does not pick up the residual field, the integrator is used in two ways. In the case of instability of electromagnets exceeding the prescribed value of 3×10^{-4}, the average value of the field is obtained from the data acquired from the permalloy pick-ups situated in the gaps of practically all the electromagnets; on the other hand, for an instability not exceeding the limiting value, the integrator is switched-on by the pulse from a single permalloy pick-up situated in the measuring magnetic unit. Since the value of the magnetic field in the gap of an electromagnet is an accurate periodic function of time (with an error of less than 0.5%), various devices can be controlled by measuring the time counted from the instant of switching-on the electromagnet current, rather than measuring directly the strength of the field. These measurements can be made by means of a multichannel time pick-up (A.A. Vasil'yev, I.I. Grigor'yev, PTE, 1958, no. 3, 65). The discrete integrator and the multichannel time pick-up are identical, except for the generator which is frequency-modulated

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Multichannel precision S/120/62/000/004/014/047
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in the case of the integrator and quartz crystal-stabilized in the time transducer. The electronic counters for both instruments are identical. The control of the position of the pulses in the integrator and the time transducer is carried out in steps, the minimum steps being 0.8 Oe and 100 μs, respectively. Continuous control can be achieved by using phantastron delay circuits. The operation of the integrator and time-transducer is discussed in some detail. There are 4 figures and 1 table.

ASSOCIATION: Radiotekhnicheskiy institut GKAE (Radio-engineering Institute, GKAE)

SUBMITTED: April 5, 1962

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

S/120/62/000/004/020/047
E192/E382

AUTHORS: Vasil'yev, A.A., Kuz'min, A.A. and Ivanov, Yu.S.

TITLE: Investigation of the beam-based frequency-control system by means of a radioelectronic model of the beam of a 7 GeV proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no. 4, 1962, 111 - 115

TEXT: Considerable difficulties are encountered when designing a control system based on the data provided by the beam of the synchrotron since the problem is nonlinear and the control "ring" contains a number of networks which are described by higher-order differential equations. An electronic simulator has therefore been devised, based on the analogy between the phase of a frequency-modulated oscillator which was synchronized by the accelerating voltage and the azimuthal position of the beam. The block schematic of the analogue is shown in Fig. 1. This consists of: 1 - a phase-detector; 2 - adding circuit; 3 - integrator; 4 - frequency-modulated oscillator; 5 - a mixer and 6 - a balanced modulator. The output voltage of the

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simulator U is applied to the input of the phase-detector. The voltage obtained at the output of the detector is added to the voltage U_o and this is integrated by 3. The output of the integrator modulates the frequency of the oscillator 4. The resulting signal is applied to the balanced modulator 6, together with the signal from the output 1. In this way, the high-frequency signal obtained at the output 2 has an amplitude $\alpha_r U_u B$. The analogue thus produces two signals: the first of these corresponds to the signal obtained from the electrostatic electrode of the phase pick-up, while the second signal corresponds to the signal of the radial pick-up. By using the analogue it was possible to design an accurate system for controlling the frequency of the beam. In particular, an analogue permitted the investigation of the transient processes in the control system. There are 4 figures.

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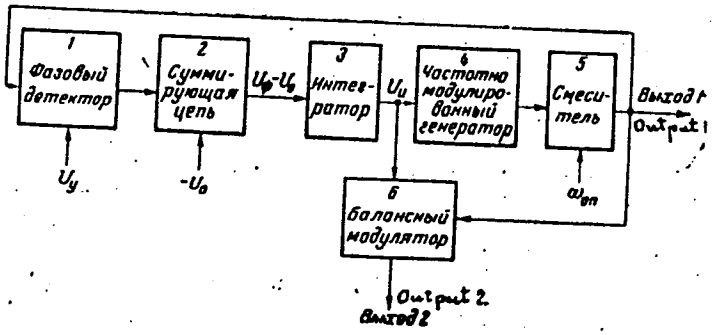
"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

Investigation of S/120/62/000/004/020/047
E192/E382

ASSOCIATION: Radiotekhnicheskiy institut GKAE (Radio-engineering Institute, GKAE).

SUBMITTED: April 6, 1962

Fig. 1:



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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

S/120/62/000/004/022/047
E032/E514

AUTHORS: Vasil'yev, A.A. and Skuratov, V.A.

TITLE: Measurement of the instantaneous frequency of the accelerating voltage of a proton synchrotron by a two-channel heterodyne method

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 118-121

TEXT: The instantaneous frequency is measured with a device whose block diagram is shown in Fig.1. A voltage signal proportional to the accelerating signal whose frequency was to be measured is fed into the mixers 1 and 2 through the $\pi/2$ phase shifter 3. The mixers 1 and 2 also receive a signal U_o having a known frequency. The function of the two mixers is to multiply the signals U_y and U_o with the result that the output contains harmonics having frequencies equal to the sum and difference of the original frequencies. The mixers are followed by filters 4, 5 which remove the higher frequency components and are in turn followed by differentiating circuits 6 and 7. The outputs of the latter are fed into squaring circuits 8 and 9 and the result is finally added by the adding block 10. The

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output U of the adding circuit is proportional to the square of the difference of the required frequency and the frequency of the standard signal U_o. Thus, the output signal passes through a zero value whenever the required frequency is equal to the standard frequency and this can be noted visually on the screen of a CRO. The latter pulse is produced by the shaping circuit 11. This method can be used if the amplitude of the original signal is a slow function of time. If this is not so, then the amplitude must be stabilised with the aid of two identical AGC amplifiers placed in front of the mixers. It is pointed out that this method gives a higher accuracy ($\pm$30 cps) than the digital method described by V. F. Kuz'min and S. M. Rubchinskiy (PTE, 1962, no.4, 115). Moreover, the required circuitry is simpler. There are 3 figures.

ASSOCIATION: Radiotekhnicheskiy institut GKAE
(Radiotechnical Institute GKAE)

SUBMITTED: April 5, 1962

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Measurement of the instantaneous ... S/120/62/000/004/022/047
E032/E514

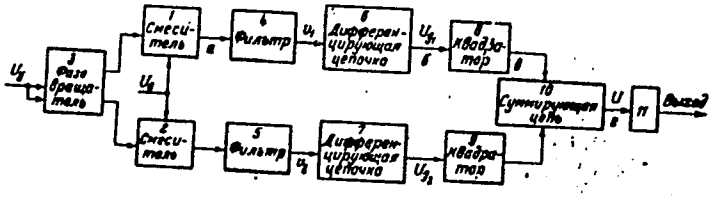

Fig.1

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S/120/62/000/004/026/047
E032/E514

AUTHORS: Vasil'yev, A.A., Kuz'min, A.A. and Uvarov, V.A.

TITLE: Measurement of the frequency of betatron oscillations by the resonance method

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 134-137

TEXT: A description is given of a method of measuring the frequency of betatron oscillations in which the signal induced by the oscillating proton beam in pick-up electrodes is used to excite a resonance circuit. A theoretical analysis of the method is given. It is reported that experiments have shown that when the amplitude of the vertical and radial coherent betatron oscillations excited by a 15 kV voltage pulse is 0.01 cm, the method is capable of yielding an accuracy of about ±0.25%. The 15 kV perturbation of the beam was applied across a plane capacitor with a gap of 11 cm and 20 cm long. It is shown that this perturbation is essential in the case of 7 GeV protons since otherwise the signal could not be detected with the apparatus developed for the 7 GeV machine. There are 2 figures and 2 tables.

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Measurement of the frequency ... S/120/62/000/004/026/047
E032/E514

ASSOCIATION: Radiotekhnicheskiy institut GKAE
(Radiotechnical Institute GKAE)

SUBMITTED: April 5, 1962

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.; BATSKIKH, G.I.; VASINA, Yu.A.; ANDRYUSHCHENKO-LUTSENKO, N.I.

Multichannel precision digital systems for measuring magnetic field strength and time. Prib. i tekh. eksp. 7 no.4:84-89 Jl-Ag '62. (MIRA 16:4)

1. Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Electronic apparatus and appliances)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.; SKURATOV, V.A.

Use of the two-channel heterodyning method in measuring the accelerating voltage in a proton synchrotron. Prib. i tekh. eksp. 7 no.4:118-121 Jl-Ag '62. (MIRA 16:4)

1. Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Synchrotron)

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S/089/62/012/002/002/013
B102/B138

24.6730

AUTHORS: Burshteyn, E. L., Vasil'yev, A. A., Mints, A. L., Petukhov, V. A., Rubchinskiy, S. M.

TITLE: Application of the principle of magnetic field self-correction in superhigh-energy cyclic accelerators

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 111 - 115

TEXT: The authors discuss the possibility of automatically controlling local magnetic field characteristics by using accelerated particle beam data. By this means the chamber cross section could be reduced, the beam energy increased and the accelerator structure simplified. As betatron and synchrotron oscillations are closely related to the chamber parameters, the self-correction of these oscillations is very important. Two main problems arise with betatron oscillations: Control of the equilibrium orbit, and stabilization of the number of oscillations. They are considered in the following. (A). A "smoothened" motion under the action of a constant focusing field is described in linear approximation by the equation $x'' + Q^2x = F_t(\theta)$ without automatic control; x denotes the

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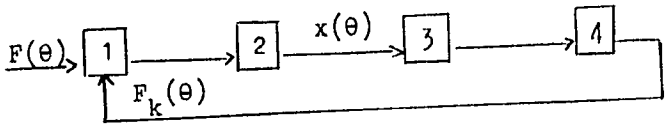
deviation from the chamber axis, Q the number of betatron oscillations per revolution, $F_t(\theta)$ is the perturbation, a periodic function of θ (period 2π) which is slightly time-dependent. A correction function $F_k(\theta) = -L_t(x''+Q^2x)$ is introduced, so that with automatic control the equation reads $x'' + Q^2x = F_t(\theta) - L_f(x'' + Q^2x)$ or $(1 + L_t)(x'' + Q^2x) = F_t(0)$. A possible block diagram (Fig. 1) is proposed: The initial perturbation $F_t(\theta)$ and the correction signal $F_k(\theta)$ act on the controlled object (1), measuring unit (2) measures the $x(\theta)$ deviations, computing unit (3) determines $x'' + Q^2x$ and (4) is the amplifying transducer with the characteristic operator L_t and a time delay T_1 of $\sim$1 msec: $L_t = k/(1 + pT_1)$.



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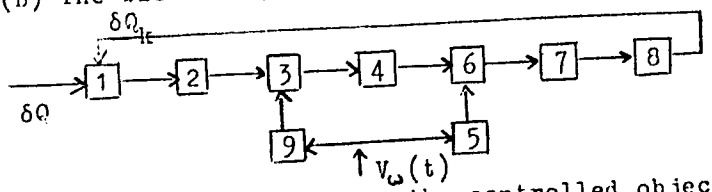
Application of the principle...

(B) The block diagram proposed for the stabilization of Q is the following:



The particle beam, i. e., the controlled object, (1), is excited by a pulsed field betatron oscillations $x(\theta)$ with frequency $Q = Q_o \pm 0.25 + \Delta Q$, Q_o is an integral number and $\Delta Q = \delta Q + \delta Q_k$, the perturbation plus the correcting signal. (2) is a signal electrode mixer, (3) is supplied with voltage from (9), (4) is an l-f filter, (6) - mixer with filter, acting as voltage divider. (7) is a frequency detector and (8) the executive component. The parameters of self-corrected proton accelerators with 300 and 1000 Bev were calculated for small and large radii of curvature. There are 2 figures, 1 table, and 6 references: 2 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: E. Courant

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B102/B138

Application of the principle...

et al. Phys. Rev. 88, 1190, 1952; K. Johnsen, C. Schmelzer. Symposium CERN, v. 1, 1956, p. 395; A. Schoch, Theory of linear and non-linear perturbations of betatron oscillations in alternating gradient synchrotrons. CERN, Geneva, 1958; M. Barton, Rev. Sci. Instrum. 31, 1290 (1960).

SUBMITTED: December 6, 1961

Card 4/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASILYEV, A.A.

S/089/62/012/006/003/019
B102/B104

94 6730

AUTHORS: Vladimirskiy, V. V., Komar, Ye. G., Minto, A. L., Gol'din, L. L., Monoszon, N. A., Rubchinskiy, S. M., Tarasov, Ye. K., Vasil'yev, A. A., Vodop'yanov, F. A., Voshkarev, D. G., Kuryshev, V. S., Malyshev, I. F., Stolov, A. K., Strel'tsov, N. S., Yakovlev, B. M.

TITLE: The design of the 7-Bev proton synchrotron

PERIODICAL: Atomnaya energiya, v. 12, no. 6, 1962, 472-474

TEXT: The history of the first Soviet cyclic accelerator with rigid focusing is briefly described, and the most important data on its planning and operation are presented. Planning was started in 1953. The parameters of this proton accelerator, the energy of which exceeds the antinucleon production threshold, were so chosen that the dependence of the orbital circumference on the particle momenta was completely compensated. This was achieved by employing 14 quadrupole magnets with orbits of negative curvature. Technical data: output current, 10^{10} protons/pulse; maximum field strength, 8475 oe; length of equilibrium orbit, 251.2 m; radius of

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curvature of the trajectories in the bending magnets (C), 31 m, and in the compensation magnets (X), ∞; number of magnetic sectors, 98C + 14X; gap length between the C-magnets, 304.0 mm; gap length around the X-magnets, 417.5 mm; index of the decrease in field strength, 460; internal height and width of the chamber, 80 and 110 mm, respectively; number of betatron oscillations per revolution, 12.75, and per periodic element, 0.91; number of magnets per periodic element, 8; total critical energy, 19.2 Bev; maximum deviation of the periodic orbit with 100% deviation of the momentum from the equilibrium momentum, 1.47 m; rate of energy increase per revolution, 4.3 kev; duration of one cycle, 1.55 sec; 10-12 cycles/min; particle revolution frequency at the beginning of the cycle, 0.11 Mc/sec, and at the end, 1.19 Mc/sec; frequency of synchrocyclotron oscillations, 3600 and 130 cps; weight of the electromagnet steel, 2500 tons; maximum power of the supply system, 25 Mw; Van de Graaff injector (particle energy, 3.8 Mev; field strength 90 oe); admissible deviations from field strength and field gradients, $\sim 10^{-3}$; deviations at the chamber edge due to nonlinearities, $\sim 10^{-2}$; admissible frequency deviation of the accelerating field at the beginning of the cycle, 10^{-3}, and at the end, $5 \cdot 10^{-5}$. There are 1 figure and 1 table.

SUBMITTED: March 12, 1962

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fiveyskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionization losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

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VASIL'YEV, A.A.; KUZ'MIN, A.A.; UVAROV, V.A.

Measuring the frequency of betatron oscillations of the beam by the resonance method. Prib. i tekh. eksp. 7 no.4:134-137 Jl-Ag '62. (MIRA 16:4)

1. Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Betatron) (Oscillations)

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RUBCHINSKIY, S.M.; BATSKIKH, G.I.; VASIL'YEV, A.A.; VODOP'YANOV, F.A.; GUTNER, B.M.; KUZ'MIN, A.A.; KUZ'MIN, V.F.; LEBEDEV-KRASIN, Yu.M.; UVAROV, V.A.

Radio electronic systems of the 7 bev. proton synchrotron. Prib. i tekh. eksp. 7 no.4:20-26 Jl-Ag '62. (MIRA 16:4)

1. Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Synchrotron) (Electronic circuits)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

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VLADIMIRSKIY, V.V.; KOMAR, Ye.G.; MINTS, A.L.; GOL'DIN, L.L.; MONOSZON, N.A.; RUBCHINSKIY, S.M.; TARASOV, Ye.K.; VASIL'YEV, A.A.; VODOP'YANOV, F.A.; KOSMAREV, D.G.; KURYSHEV, V.S.; MALYSHEV, I.P.; STOLOV, A.M.; STREL'TSOV, N.S.; YAKOVLEV, B.M.

The 7 bev. proton synchrotron. Prib. i tekh. eksp. 7 no.4:5-9 Jl-Ag '62. (MIRA 16:4)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR, Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR i Radiotekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.
(Synchrotron)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

Feasibility of lowering the injection energy in superhigh-energy accelerators. Dokl. AN SSSR 148 no.3:577-580 Ja '63. (MIRA 16:2)

1. Predstavleno akademikom A.L. Mintsem.
(Particle accelerators)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

45170

S/020/63/148/003/020/037
B108/B180

24,6700

AUTHOR: Vasil'yev, A. A.

TITLE: Possibility of lowering the injection energy in superhigh energy accelerators

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 577-580

TEXT: High focusing efficiency in the initial stage of acceleration can be achieved by using a magnetic unit consisting of planar and rotational magnets and quadru-pole lenses. The one drawback to a system with two groups of quadru-pole lenses for the first and second acceleration stages is the azimuthal instability of the magnetic field at low injection energy. It is suggested that the first cycle can be corrected by stabilizing a beam of heavy ions by means of measuring electrodes and correcting magnets so that it enters each new cycle under zero initial conditions. If the correcting magnets are placed at distances of 1/4 and 1/2 betatron wavelength from the measuring electrodes the beam deflections can be regulated at the place of the measuring electrodes. There is 1 figure.

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

Possibility of lowering the injection... S/020/63/148/003/020/037 B108/B180

PRESENTED: November 1, 1962, by A. L. Mints, Academician

SUBMITTED: October 30, 1962

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

GS

Accelerators. Dubna, 1963. Trudy.

Moscow, Atomizdat, 1964,

TOPIC TAGS:

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

(1)

Card 2/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 43034-65

ACCESSION NR: AT5[illegible]

where F(θ) is the external [illegible] operator characterizing feedback loop [illegible] If F(θ) is [illegible]

[illegible] (2)

equation [illegible] is resolved into a system [illegible] for the amplitudes of the various harmonics x_n. Orig. has 2 figures, 2 tables, 4 formulas

ASSOCIATION: Radiotekhnicheskiy institut AN SSSR (Radio Engineering Institute, Academy of Sciences SSSR)

SUBMITTED: 26May64 [illegible] SUB CODE: NP

NO REF SOV: 011 OTHER: 004

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

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which corresponds to an energy increment of [illegible] is 2 mm. The first revolution is

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

ACCESSION NR: AT5007920

revolution. Therefore passage of the [illegible] through the entire vacuum chamber neces- [illegible] which the authors

pation in the discussion of the problems touched upon in [illegible]

Card 3/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 2152-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS

ACCESSION NR: AT5007953 UR/0000/64/000/000/0855/0859

58
52
B+1

AUTHOR: Vasil'yev, A. A.

17

TITLE: A cyclic accelerator with super-strong focusing and regulation of the first revolution with respect to a beam of heavy ions

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 855-859

TOPIC TAGS: high energy accelerator, heavy particle, focusing accelerator, automatic control

ABSTRACT: The betatron oscillations in an accelerator with strong focusing, whose magnetic system is formed by turning magnets with flat poles and quadrupolar lenses, are described by linear approximate differential equations of the form

$$\frac{d^2x}{d\eta^2}+K_x(\eta)\,x=0,$$

$$\frac{d^2z}{d\eta^2}+K_z(\eta)\,z=0,$$

Their solution is sought in the form of series expansions

$$z=W(\eta)\,e^{iQ\eta},\quad W(\eta)=\sum_{\nu=-\infty}^{\infty}W_{\nu M}\,e^{-i\nu M\eta},$$

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L 2152-66

ACCESSION NR: AT5007953

(A. Schooch, Theory of Linear and Non-Linear Perturbations of Betatron Oscillations in AGS, CERN, 1958). The author considers the regime during which, in the course of a full cycle of acceleration, the admittance of the accelerator (with respect to betatron oscillations) is in agreement with the emittance of the beam. For a 1000-Gev accelerator with the parameters $r_m = 3.5 \cdot 10^5$ cm and $a = 0.75$ cm, into which is injected a beam from a linear 100-Mev accelerator with emittance $E_i = 1.5 \cdot 10^{-3}$, he obtains the pertinent quantity $Q = 300$. He notes the theoretical possibility of realizing a regime without the passage through the critical energy both in the first and second stage of acceleration, for which in the first stage the critical energy should be higher and in the second state it should be lower than the transit energy E_t. The author discusses the possible procedures for the transition from the first focusing structure to the second. In the first method of transit the quadrupole lenses of the first focusing structure is reorganized at the moment of passage from one structure to the other in such a way that a structure results with a certain period M_2 ensuring the number of betatron oscillations Q_2 in the pertinent equations. In the second method for focusing systems of the first and second stages, use is made of different quadrupole lenses. The author

Card 2/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 2152-66

ACCESSION NR: AT5007953

6

considers the injection of heavy ions into a ring accelerator by means of a suitable lead-in system along with an intensity-modulated beam of ions. The radial and vertical displacement of the ions' orbit are measured by means of sensitive elements distributed along the accelerator's perimeter. These elements are arranged in pairs and measure the deflection of the heavy ions' orbit and the orbit's angle from the longitudinal axis. They permit the realization of an automatic system of correction and regulation of the orbit, which the author describes. "A detailed analysis of the proposed system of handling the first revolution was given by A. I. Dzergach and V. A. Karpov (present collection, p. 867). The author thanks for their discussions A. L. Mints, E. L. Burshteyn, N. L. Sosenskiy, A. I. Dzergach, and V. A. Karpov." Orig. art. has: 2 figures.

ASSOCIATION: Radiotekhnicheskiy institut AN SSSR (Radio Engineering Institute, AN SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 006 OTHER: 002

dg

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 2276-66 EWT(m)/EWA(m)-2 IJP(c) GS

ACCESSION NR: AT5007957 UR/0000/64/000/000/0871/0873

AUTHOR: Vasil'yev, A. A.

TITLE: Automatic control of equilibrium orbit for strong-focusing proton synchrotrons of super-high energy

SOURCE: International Conference on High Energy Accelerators, Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 871-873

TOPIC TAGS: high energy accelerator, proton synchrotron, focusing accelerator

ABSTRACT: With increasing energy of accelerators, the aperture of the vacuum chamber is determined in great degree by the inaccuracy of the position of the equilibrium orbit. Methods of automatic regulation of accelerator parameters are applied to decreasing the forced oscillations of the accelerated particle beam and, especially, the displacement of the equilibrium orbit (Burshteyn, E. L.; Vasil'yev, A. A.; Mints, A. L.; Petukhov, V. A.; Rubchinskiy, S. M. *DAN SSSR* 141, 590, (1961)); Burshteyn, E. L., et al., present collection, p. 67; Vasil'yev, A. A.; Kuz'mina, N. I., NT-3561-60, RTI AN SSSR, 1961). Shifts in the "smoothed" equilibrium orbit in the vertical z and radial x directions due to perturbations in the magnetic system, namely $F_z(x, z, \theta)$ and $F_x(x, z, \theta)$ respectively, are determined by the differential

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L 2276-66

ACCESSION NR: AT5007957

equations

$$\left.\begin{aligned}\frac{d^2z}{d\theta^2}+Q^2z&=F_z(x,\ z,\ \theta),\\ \frac{d^2x}{d\theta^2}+Q^2x&=F_x(x,\ z,\ \theta),\end{aligned}\right\}$$

$$\left.\begin{aligned}F_z(x,z,\theta)&=F_{z0}(x,z,\theta)-F_{zk}(x,z,\theta),\\ F_x(x,z,\theta)&=F_{x0}(x,z,\theta)-F_{xk}(x,z,\theta),\end{aligned}\right\}$$

where F_{z0}, F_{x0} and F_{zk}, F_{xk} are respectively the perturbations connected with the basic magnetic system and the correcting magnets. In the first approximation these latter four quantities can be considered independent of x and z, in which case the regulation system resolves into two independent linear systems of automatic regulation in the variables x (radius) and z (vertical) respectively. The problem of an automatic regulation system consists in the following: to develop from the displacements of the equilibrium orbit measured at a finite number of points correcting actions such that the maximum displacements do not exceed a certain allowable amount. Methods for the construction of a computer which are based upon approximate differentiation and harmonic analysis were described by A. A. Vasil'yev and N. I. Kuz'min (NT-3561-60, RTI AN SSSR, 1961). The present report expounds in greater detail the considerations which are connected with the utilization of the method of harmonic

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 2276-66

ACCESSION NR: AT5007957

analysis. The deviations measured by electrostatic electrodes are the sum of the free and forced oscillations. To determine the perturbations of the magnetic field it is necessary to know only the forced oscillations; therefore the computer must isolate the forced part of the oscillations from the free part. The calculation of the spectrum of nonperiodic oscillations requires in principle infinite time. The time for the observation of a process should be sufficient to separate the forced and free betatron oscillations with given accuracy. Since a closed orbit is periodic relative to the angular variable θ, it possesses a linear spectrum. The current spectrum of free betatron oscillations (θ) is determined by the formula

$$S_\theta(\omega) = \int_0^\theta f(\vartheta)\, e^{-j\omega\vartheta}\, d\vartheta$$

and passes to the usual spectrum in the limit $\theta \to \infty$. (Kharkevich, A. A.; *Spektry i analiz*, Moscow, Gostekhizdat, 1957). The rapid action of the auxiliary elements, including the correcting magnets, must be such as to ensure the stability of the regulation system and the effective suppression of all the real fluctuations in the magnetic field. The main part of the perturbations in the magnetic field will be repeated from acceleration cycle to cycle; therefore, it is expedient also to provide for memory storage of the results of correcting the magnetic field during the preceding cycles. Orig. art. has: 9 formulas.

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

L 2276-66

ACCESSION NR: AT5007957

ASSOCIATION: Radiotekhnicheskiy institut AN SSSR (Radio Engineering Institute, AN SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP, EE

NO REF SOV: 004 OTHER: 001

Card 4/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

SOV/120-58-2-29/37

AUTHOR: Vasil'yev, A. A.

TITLE: An Amplifying Stage with a High Coefficient of Amplification (Usilitel'nyy kaskad s bol'shim koeffitsiyentom usileniya)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 2, p 106 (USSR)

ABSTRACT: The amplifier stage shown in Fig.1 may have a considerable coefficient of amplification (greater than 1000) which may be sufficient for the construction of one stage amplifiers and integrators with negative feedback. This amplifier stage is a development of the "cascode" amplifier recommended for circuits with low noise level. The large coefficient of amplification is obtained by the use of tubes L_1 and L_2 which respectively have larger anode current and greater transconductance, and smaller anode current and transconductance than is the case in the cascode amplifier. The small value of the anode current of the valve L_2 allows one to use at

Card 1/3

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SOV/120-58-2-29/37

An Amplifying Stage with a High Coefficient of Amplification.

a given value of the supply voltage a higher anode load which together with the greater transconductance of S_1 ensures a greater value of the coefficient of amplification. A typical circuit giving all the component values is shown in Fig.2. Here the coefficient of amplification is about 9000 with the anode load of 1 Megohm and about 1100 for an anode load of 75KΩ. The frequency bands are 0-12 and 0.150 Kc/s respectively. The integrator works very reliably and shows no tendency to self-oscillation

L. N. Matyushenko is thanked for his help. There

Card 2/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

SOV/120-58-2-29/57

An Amplifying Stage with a High Coefficient of Amplification.

are 2 figures, no tables and 3 references, 2 of which are English and 1 Soviet.

SUBMITTED: August 22, 1957.

Card 3/3

1. Amplifiers--Development 2. Amplifiers--Operation
3. Amplifiers--Performance

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

SOV-120-58-3-14/33

AUTHORS: Vasil'yev, ~~A. A.~~ and Grigor'yev, I. I.

TITLE: A Multi-Channel Time Standard (Mnogokanal'nyy datchik vremeni)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 3, pp 65-68 (USSR)

ABSTRACT: The device was designed for controlling the periodically operating equipment of a synchrophasotron. The device is shown diagramatically in the block schematic of Fig.1, p.65. It consists of a quartz oscillator operating at 1.6 mc/s, an electronic switch, two frequency dividers (giving a total division ratio of 1:160), five decade counters connected in cascade, a selector circuit (whose inputs are connected to the outputs of the decades) and a number of cathode followers. When a triggering pulse is applied to the electronic switch, the signal from the quartz oscillator is applied to the frequency dividers. A frequency of 10 c/s is obtained at the output of the dividers. This waveform is applied to the five counting decades. The required output

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SOV-120-58-3-14/33

A Multi-Channel Time Standard

pulses are chosen by means of the selector circuit. For this purpose an appropriate coincidence circuit is connected to suitable outputs of the counter stages. In this way the instrument can produce trains of pulses having frequencies of 100 kc/s, 10 kc/s, 1 kc/s, 100 c/s, 10 c/s and 1 c/s, which are synchronised with the input trigger pulse. Before accepting another trigger pulse, the frequency divider and the counting stages are reset to zero. The electronic switch of the instrument consists of a pre-amplifier, a trigger circuit, a cathode follower, a switching pentode and an output cathode follower. A block schematic of the switch is shown in Fig.2. Each counting decade of the instrument consists of 10 ring-connected thyratrons. Only one thyratron is conducting at a time and the decade has 10 independent outputs. Detailed circuit diagram of a thyratron decade is shown in Fig.3. A unit of the selector circuit (see Fig.4) is in the form of a coincidence circuit, having 5 inputs feeding into a thyratron. If the coincidence circuit simultaneously receives pulses from all the 5 decades, an output pulse is produced across its load, which operates the thyratron relaxation oscillator. The selector circuit consists of 10 independent channels or

Card 2/3

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SOV-120-58-3-14/33

A Multi-Channel Time Standard

units. Each channel contains 5 switches corresponding to the 5 decades. The instrument is capable of producing up to 25 pulses which can be shifted with respect to the trigger pulse by a time interval ranging from 0 to 10 s. The position of each pulse can be controlled independently in steps of 100 μs, 1 ms, 10 ms, 100 ms or 1 sec. The authors thank S. M. Rubchinskiy and F. A. Vodop'yanov for help and discussion, and N. I. Andryushchenko-Lutsenko, L. N. Matyushenko and V. A. Bachinskiy for their help in the experiments. The article contains 5 figures and 6 references, of which 4 are Soviet and 2 English.

SUBMITTED: August 7, 1957.

1. Synchrotrons--Control systems 2. Control systems--Equipment 3. Title: Synchrophosetrons

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

22899

9,2571 (1147)

S/109/61/006/004/014/025
E140/E135

AUTHORS: Mikaelyan, A. L. and Vasil'yev, A.A.

TITLE: The interactions of magnetostatic oscillations in a ferrite sample in the presence of regeneration. I. Interactions of simple oscillation modes

PERIODICAL: Radiotekhnika i elektronika, Vol. 6, No.4, 1961, pp.623-630

TEXT: The authors consider regeneration at microwave frequencies in a ferrite sphere. In the first part the interaction of simple oscillation modes is investigated and the conditions for their excitation are found. In the second part the interaction of more complicated types of oscillations is considered, the possibility of which was negatived by Ya.A.Monosov (Ref.3: Radiotekhnika i elektronika, 1960, 5, 1-2, 59, 278). Finally, a general formula is derived for the generation threshold. The amplitude of the external field is determined which will generate oscillations. It was found that the critical values of the pumping field do not depend on the magnetisation of the ferrite. There are 4 figures, 1 table and 7 references: 4 Soviet

4

Card 1/2

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22899

The interactions of magnetostatic ... S/109/61/006/004/014/025
E140/E135

and 3 English.

SUBMITTED: April 21, 1960

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

FA 38T17

Jun/Jul 1946

USSR/Engineering
Machinery - Construction
Road Building Machinery

"Let Us Increase the Mobility of Road-construction Techniques," Maj A. A. Vasil'yev, Engr, Technical Administration of MSDM, 3½ pp

"Mekhanizatsiya Stroitel'stva" No 6/7

Much of the success of the Soviet Army in World War II was due to the excellent work accomplished by those echelons which were charged with maintaining roads at peak operational efficiency. Construction machinery had to be very mobile. Discusses transport attachments for road-construction machinery, trans-

38T17

LC

USSR/Engineering (Contd) Jun/Jul 1946

portation of road-construction machinery by trucks, special attachments permitting automobile transport of road-construction machinery, and placing of road-construction equipment on trucks.

38T17

VASIL'YEV, A. A., MAJ.

LC

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

Machines for preparatory work in road construction. Mekh.stroi. 4 no.5:9-12 My '47. (MLRA 9:2)

1.Tekhnicheskoye upravleniye Minstroydormash.
(Road machinery)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A. A.

TA 2/49T26

USSR/Engineering May 48
Roadbuilding Machinery
Road Screper

"New Series Road Machines," A. A. Vasil'yev, Engr, 3 pp

"Mekh Stroi" No 5

Describes road machines recently put into production in factories of Ministry of Construction and Road Engineering, including leveller, and snowplow. Includes photographs and diagrams.

2/49T26

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

1. VASIL'YEVA, A. A.

2. USSR (600)

4. Technology

7. Roadbuilding machines. Manual. Borodachev, I. P. Pod red. A.A. Vasil'yeva, Moskva, Mashgiz, 1951

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

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASILYEV, A.A.

"Soviet Truck with Heat Storage for Road Repairs". (Transl.; Mekhanizaciya Stroyitelstva, No. 10, 1951).

SO: "Civil Engineering Review", Vol. II, No. 7, July 1952 (Hungary).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

ANOKHIN,A.I., doktor tekhnicheskikh nauk,prof.[deceased]; BORODACHEV,I.P. kand. tekhnicheskikh nauk; BROMBERG, professor; VASIL'YEV,A.A., laureat Stalinskoy premii; PETERS, kandidat tekhnicheskikh nauk; POLOSIN-NIKITIN,S.M., kandidat tekhnicheskikh nauk; PRUSSAK,B.N., inzhener; RITOV,M.N., inzhener; FEYNBERG,G.M., inzhener; ESTRIN, M.I., inzhener; ALEKSEYEV,A.P., inzhener; BIRULYA,A.K., professor, doktor tekhnicheskikh nauk; BOLDAKOV,Ye.V., doktor tekhnicheskikh nauk;BOCHIN,V.A., laureat Stalinskoy premii,inzhener; VOLKOV,M.I., professor; GIBSHMAN,Ye.Ye., professor, doktor,technicheskikh nauk; DONCHENKO,V.G., dotsent, kandidat tekhnicheskikh nauk; ZHURAVLEV,A.Ya., laureat Stalinskoy premii; IVANOV,N.N., laureat Stalinskikh premii, professor, doktor tekhnicheskikh nauk; KUVASOV,A.S., inzhener; NEKRASOV, V.K., kandidat tekhnicheskikh nauk; POLOSIN-NIKITIN,S.M., dotsent, kandidat tekhnicheskikh nauk; KHLEBNIKOV,Ye.L., laureat Stalinskoy premii, professor; ORNATSKIY,N.V., doktor technicheskikh nauk, professor, redaktor; VOSKRESENSKIY,N.N., redaktor; KOVALIKHINA,N.F., tekhnicheskiy redaktor

[Manual for highway engineers; road building machinery] Spravochnik inzhenera dorozhnika; dorozhno-stroitel'nye mashiny. Moskva, Izd-vo dorozhno-tekhn. lit-ry. Gushosdora MVD SSSR, 1952. 698 p. [Microfilm]

(Road machinery) (MLRA 9:2)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

Roads

Technical progress in road building. Mekh.stroi. 9, No. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzhener, laureat Stalinskoy premii.

Decreasing the weight of building and road machinery. Mekh.stroi. 10 no.8: 6-9 Ag '53. (MLRA 6:8)

(Building machinery) (Road machinery)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzhener, laureat Stalinskoy premii; IVANOV, V.A., inzhener.

Testing new earthmoving machines. Mekh.stroi. 10 no.12:3-9 D '53. (MLRA 6:11)

(Earthmoving machinery) (Tractors)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6"

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VASIL'YEV, A.A.; SURGUCHEV, G.A., laureat Stalinskoy premii, inzhener, retsenzent; NOVIKOV, M.A., inzhener, retsenzent; LETENKO, V.A., kandidat ekonomicheskikh nauk, redaktor

[Training qualified workers in machine building plants] Podgotovka kvalifitsirovannykh kadrov na mashinostroitel'nom zavode. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 115 p. (MLRA 7:9)

(Employees, Training of) (Technical education)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

Changing the design of intake and delivery valves of air compressors. Energ.biul. no.6:32-3 of cover.Je '54. (MLRA 7:6)
(Air compressors)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

USSR/Engineering--Construction

Card 1/1

Author : Vasil'ev, A. A., Laureate of the Stalin prize

Title : Mechanization of building work in agriculture

Periodical : Mekh. Stroi. 11/2, 3-10, February 1954

Abstract : The Government is intent on cultivating more waste land. This requires the building of houses, scholls, clubs and farm structures, as well as doing excavation work. The D-267A ditch digger is used with the C-80 tractor to finish large ditches after the bulldozer has done the preliminary work. This digger has no moving parts but operates like a plow, making ditches with a 45° slope. The D-20B grader may be used for clearing away bushes. For digging narrow and deep ditches the ET-121 excavator is used. This machine works with strong iron buckets on an endless chain. These buckets are provided with prong-like edges. For removing large stones a tractor with a crane mounted on it is used. Halftone illustrations.

Institution : .....

Submitted : .....

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzhener, laureat Stalinskoy premii.

Organize the technical maintenance service of construction machinery. Mekh.stroi. 11 no.12:11-14 D '54. (MLRA 8:1)
(Excavating machinery--Maintenance and repair)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzhener, laureat Stalinskoy premii; GRITSEVETS, I.I., inzhener, laureat Stalinskoy premii.

The T-183 sand and gravel unloader. Mekh.stroi. 11 no.12:29-31 D '54. (MLRA 8:1)

(Loading and unloading)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV,A.; ZAPASNOY,A.; IL'INSKIY,Ye.; PAKUSHIN,V.; SHEVCHUK,S.

Business accounting for highway-operation sections. Avt.dor.17 no.1:6 Jl-Ag'54. (MLRA 8:10)

(Roads--Estimates and costs)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

ANDROSOV, Andrey Aleksandrovich, inzhener; VASIL'YEV, Aleksandr Aleksandrovich, laureat Stalinskoy premii; GADZHIESKIY, Pirik Gasanovich, inzhener; KOZLOVSKIY, Boris Aleksandrovich, kandidat tekhnicheskikh nauk; SHARTS Ariy Zel'manovich, inzhener; TOVSTOLUZHSKIY, N.I., redaktor; BROMBERG, A.A., redaktor; KOGAN, F.L., tekhnicheskiy redaktor

[Concrete, asphalt concrete and rock crushing plants for road construction; designs and standard equipment] Betonnye, asfal'tobetonnye i kamnedrobil'nye na dorozhnom stroitel'stve; proektnye resheniia i tipovoe oborudovanie. Moskva, Nauchno-tekhn. izd-vo avtotransportnoi lit-ry. Pt.2. [Asphalt plants and bituminous bases] Asfal'tobetonnye zavody i bitumnye bazy. 1955. 123 p. (MLRA 9:2)
(Asphalt concrete) (Roads)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

ANISIMOVA,V.N., inzhener; TARASOV,V.A., inzhener; VOSKRESENSKIY,N.N., inzhener, redaktor; VASIL'YEV,A.A., inzhener, laureat Stalinskoy premii, retsenzent; MODEL',B.I., tekhnicheskiy redaktor

[Motor road rollers] Dorozhnye motornye katki. Moskva, Gos. nauchno-tekhn.izd-vo mashino-stroitel'noi lit-ry, 1955.139 p.
(Rollers (Earthwork)) (MLRA 9:1)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

ANISIMOV, A.P., inzhener; KASSATSIER, M.S., inzhener, redaktor; VASIL'YEV, A.A., retsenzent laureat Stalinskoy premii inzhener; UVAROVA, A.F., tekhnicheskiy redaktor

[One-bucket excavators] Odnokovshovye ekskavatory. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1955. 194 p.
(Excavating machinery) (MLRA 9:2)

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VASIL'YEV, A.A., laureat Stalinskoy premii, inzhener, redaktor; BORODAUNEV, I.P., kandidat tekhnicheskikh nauk; PRUSSAK, B.N. inzhener; URUSOV, 'I.M., inzhener; EYSMONT, A.V., inzhener; YAROSHEV, D.M., kandidat tekhnicheskikh nauk; NEMIROVSKIY, E.I. inzhener, retsenzent; PETROV, G.I., inzhener, redaktor; PESTRYAKOV, A.I., inzhener, redaktor; POPOVA, S.M., tekhnicheskiy redaktor.

[Road building machinery] Dorozhnostroitel'nye mashiny; spravochnik. 2-oe perer. i dop.izd. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1955. 832 p. (MLRA 8:10)
(Road machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzhener, laureat Stalinskoy premii; GRITSEVETS, I.I., inzhener, laureat Stalinskoy premii.

The EM-503 multi-shovel excavator for lateral digging. Mekh.stroi. 12 no.3:25-28 Mr '55. (MIRA 8:4)
(Excavating machinery)

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VASIL'YEV, A.A., inzhener.

The D-285 lubrication service truck. Stroi. i dor. mashinostr. no.2:10-12 F '57. (MLRA 10:3)
(Road machinery--Maintenance and repair)
(Lubrication and lubricants)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'EV, A.A.

VASIL'EV, A.A., inzhener; [illegible], B.B., inzhener.

Soil compacting machinery. Stroi. i dor.mashinostr. 2 no.3:13-18 Ap '57. (MLRA 10:9)

(Earthwork) (Rollers (Earthwork))

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Vasil'yev, A.A.

VASIL'YEV, A.A., inzhener.

Road-machinery industry during the years of the Soviet regime.
Stroi. i dor.mashinostr. 2 no.10:27-32 O '57. (MIRA 10:11)
(Road machinery industry--History)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

Increasing the maximum depth of pipeline trenching performed by a bucket excavator. Rats. i izobr. predl. v stroi. no.3:120 '57.
(Pipelines) (Excavation) (MIRA 11:1)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.

VASIL'YEV, A.A., inzh.

Machines for complex mechanization of road construction using the method of stabilization and mixing. Stroi. i dor.mashinostr. 3 no.3:10-14 Mr '58. (MIRA 11:3)
(Road machinery)

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VASIL'YEV, A.A., inzh.

Tasks of the road machinery industry during next years. Stroi. i dor. mashinostr. 3 no. 6:20-26 Je '58. (MIRA 11:7)
(Road machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.

Forgotten questions. Sov.profsoiuzy 5 no.12:50-52 O '57. (MIRA 10:11)

(Bezhitsa--Machinery industry)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.

Determining the professional standards of machine-construction workers. Sots.trud no.3:39-52 Mr '58. (MIRA 13:3)
(Machinery industry) (Job analysis)

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VASIL'YEV, A.A., inzh.

Excavators, leaders, and road machinery mounted on truck-tractors. Mekh. stroi. 15 no.11:9-14 N '58. (MIRA 11:12)
(Motortrucks)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

Vasil'yev, N. N.

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Akademiya nauk SSSR. Institut mashinovedeniya

Problemy prochnosti v mashinostroyenii, vyp. 4 (Strength Problems in Mechanical Engineering, No. 4) Moscow, Izd-vo AN SSSR, 1959. 122 p. Errata slip inserted. 2,300 copies printed.

Ed.: N.I. Prigorovskiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: G.B. Gorshkov; Tech. Ed.: Yu.V. Rylina; Editorial Board: S.V. Serensen, Academician, USSR (Chairman), F.M. Dimentberg, Doctor of Technical Sciences, V.O. Kononenko, Doctor of Technical Sciences, S.V. Pinegin, Doctor of Technical Sciences, Professor, D.N. Reshetov, Doctor of Technical Sciences, Professor, G.V. Uzhik, Doctor of Technical Sciences, Professor, and R.M. Shneyderovich, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for scientists and engineers concerned with plastic deformation.

COVERAGE: This collection of 6 articles by different authors gives the results of investigations carried out by the Institut mashino-

Card 1/3

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vedeniya AN SSSR (Institute of Machine Science, Academy of Sciences, USSR). The foreword was written by N.I. Prigorovskiy, Professor, Doctor of Technical Sciences, editor of the collection. The collection of articles is the second of a series and discusses the problem of tensile and compressive stresses, elasticity, deformations under loading, and the calculation and analysis of stresses. The authors emphasize advanced methods of analysis and report on experimental results. References follow each article.

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VASIL'YEV, A.A., inzh.; MANUYLOV, Yu.G., inzh.; PRUSSAK, B.N., inzh.; SHIMANOVICH, S.V., inzh.; NECHETOV, G.P., inzh., retsenzent; KRIMERMAN, M.N., inzh., red.; UVAROVA, A.F., tekhn.red.

[Construction and road machinery in agriculture] Stroitel'nye i dorozhnye mashiny v sel'skom khoziaistve. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 390 p. (MIRA 12:8)

(Agricultural machinery) (Building machinery) (Road machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzh.

Testing universal loading bulldozers. Stroi. i dor.mashinostr. 4 no.2:9-13 F '59. (MIRA 12:2)
(Earthmoving machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzh.

Machines needed for completing over-all mechanization of road construction. Avt.dor. 22 no.3:10-12 Mr '59. (MIRA 12:4)
(Road machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzh.

Machines used to complete the over-all mechanization of road construction. Avt.dor. 22 no.4:17-19 Ap '59. (MIRA 12:6)
(Road machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A.; PLESHKOV, D.I.; PRUSSAK, B.N.; SIZOV, G.I., inzh., retsenzent; CHANGLI, I.I., inzh., red.; NIKITIN, A.G., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Road machinery] Dorozhno-stroitel'nye mashiny. Red.serii "Mashinostroenie v 1959-1965 gg." I.I.Changli. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 121 p. (Sovetskoe mashinostroenie v 1959-1965 gg.) (MIRA 13:8)
(Road machinery)

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BROVMAN, Ya.V., inzh.; KHANIN, A.M., inzh.; VASIL'YEV, A.A., inzh.; SHRAYMAN, L.I.; POPOV, A.A.; KALININA, M.D.

Results of testing new boring bits. Shakht. stroi. 4 no. 6:8-12 Je '60. (MIRA 13:11)

1. Kombinat Stalinshakhtostroy (for Brovman, Khanin). 2. Trest Stalinshakhtostroy (for Vasil'yev). 3. Ukrainskiy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva (for Shrayman, Popov, Kalinina).
(Boring machinery)

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VASIL'YEV, A.A., inzh.; YEVDOKIMOVA, V.P., inzh.

Experimental use of prestressed steel beams. Prom. stroi. 38 no.10: 12-14 '60. (MIRA 13:9)
(Girders) (Steel, Structural)

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VASIL'YEV, A.A., inzh.; NEMIROVSKIY, E.I., inzh.

Let's design standard wheeled self-propelled building and road machinery. Stroi i dor. mashinostr. 5.no.12:3-11 D '60. (MIRA 13:11)

(Building machinery) (Road machinery)

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VASIL'YEV, A.A. (Moskva)

Optimum parameters of steel girders with single prestressing. Stroi. mekh. i rasch. soor. 3 no.1:47-51 '61. (MIRA 14:2)
(Girders) (Strains and stresses)

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VASIL'YEV, A.A., inzh.

New road construction machinery. Stroi. i dor. mash. 6 no.3:3-9 Mr '61. (MIRA 14:4)

(Road machinery)

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VASIL'YEV, A.A., inzh.

New types of road machinery. Stroi. i dor. mash. 7 no.5:3-7 My '62. (MIRA 15:5)

(Road machinery)

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VASIL'YEV, A.A., inzh.

Machines made of standardized units. Mekh.stroi. 19 no.11:5-8, 3 of cover N '62. (MIRA 15:11)
(Road machinery)

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VASIL'YEV, A.A., inzh.

Power shovels used in construction and prospects for their development. Stroi. i dor mash. 7 no.6:1-4 Je '62. (MIRA 15:7)
(Power shovels)

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YEVNEVICH, Anton Vladislavovich, kand. tekhn. nauk; VAYNSON, A.A., kand. tekhn. nauk, retsenzent; TARASENKO, M.S., inzh., retsenzent; VASIL'YEV, A.A., inzh., red.; USPENSKIY, K.G., red. izd-va; CHERNOVA, Z.I., tekhn. red.

[Hoisting and conveying machinery at building materials plants]Gruzopod"emnye i transportiruiushchie mashiny na zavodakh stroitel'nykh materialov. Izd.3., perer. Moskva, Mashgiz, 1962. 351 p. (MIRA 15:8)
(Building materials industry) (Hoisting machinery) (Conveying machinery)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858820003-6

VASIL'YEV, A.A., inzh.

New machinery for laying road foundations and surfaces. Avt. dor. 27 no. 3:25-27 Mr '64. (MIRA 17:5)

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Separation of acetaldehyde from bivinyl and ether. A. A. Vasil'ev. *Sintet. Kauchuk* 1933, No. 5, 5-9.—The progress made in developing a method for the sepn. in pure condition of ether, aldehyde and bivinyl from the mixt. formed by alc. decompn. is reported. To remove aldehyde liquid raw bivinyl was washed a no. of times with H_2O at 0°. Gaseous raw bivinyl was washed counter-current with H_2O. Complete removal of aldehyde was found practically impossible in both cases. To sep. an ether-aldehyde mixt. (2:1) it was washed 4 times with concd. NaCl soln.; 90% of the total aldehyde was sepd. with an 0.8% loss in ether. The data obtained in these expts. were used to work out a scheme for the sepn. of a fraction condensing below 75°: the fraction (approx. hydrocarbons 35%, ether 26%, aldehyde 24.5%, H_2O 8.0%, alc. 8.0%) is washed with H_2O (1:8, 4 times) → top layer (insolubles 86%, ether 12%, aldehyde 1.5%), and wash water which is distd. → fraction 75-95° (alc. 44%, H_2O 37%, aldehyde 15.5%, ether 1.5%) which goes to alc. recovery, and a fraction below 75° which is washed with concd. NaCl soln. (1:8, 2 times) → wash brine goes to aldehyde recovery by distn. yielding 97% aldehyde, and the upper layer (raw ether) is distd., giving ether with 1.9% aldehyde which by boiling with 10% of crushed solid NaOH yields ether with 0.09% aldehyde content. James Burrel

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