

L. 36654-65 EWT(d)/EPA/EWT(m)/EWP(w)/EWP(f)/EPP(n)-2/EWA(d)/EWP(v)/EPE/T/EWP(t)
 S/0000/64/000/004/0287/0297 EWP(k)/EWP(h)/EWP(b)
 ACCESSION NR: AT5000825
 EPA(bb)-2/EWF(1)/EWA(h)/EWA(c) Paa-4/Pf-4/Ps-4/Pea JD/WW/EM/GS 3
 AUTHOR: Gusak, Ya. M.; Tsigel'nik, G. I. 6
 TITLE: Investigation of thermal fatigue of the blades and rotors of centripetal
 gas turbines 26 8+1

SOURCE: Nauchnoye soveshchaniye po teplovyim napryazheniyam v elementakh konstruktsiy, 4th. Teplovyie napryazheniya v elementakh konstruktsiy (Thermal stresses in construction elements); doklady soveshchaniya, no. 4. Kiev, Naukova dumka, 1964, 287-297

TOPIC TAGS: gas turbine, centripetal gas turbine, turbine rotor, turbine blade, thermal fatigue, rotor design 26

ABSTRACT: Even though attention is now being paid to the thermal fatigue of alloys and metals, the designers of turbines are hampered in their efforts to ensure sufficient heat resistance of the blades, rotors, fire tubes, combustion chambers and other important parts of gas turbines by the lack of standard tests, preventing a comparison of the work of different scientists. It is therefore necessary to develop methods for estimating the "structural heat resistance" of parts by models and engine tests. Since models, as yet, cannot be compared with actual conditions, the stand tests reported here were performed with actual parts. Principally, the
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problem was to determine the general picture of thermal fatigue of cast rotors in centripetal gas turbines, including 40 rotors of the TKR-14 turbocompressor, as well as the location of cracks, the effect of shape and contour of blades and rotors on the rate of formation and development of cracks, and other factors. The test conditions were similar to working conditions. The tests indicated that centrifugal loads on the rotor rim are relatively low. Cracks in the rotor appeared, as a rule, at the rim, being caused by peripheral tensile stresses. Under high temperature gradients the rotors with a higher plasticity showed high crack resistance. The rotors warped, at first, at the rim between the blades, until "figure eights" were formed, with cracks arising at the sites with the highest deformation. Radial cracks appeared in the rotor very rapidly when there were thin rims with large differences in rim edge thickness. As a rule, the cracks appeared at the back of the blades, and always in the thin part of the rim. Recesses made on the rotor rim between the blades improved the heat resistance of the rotor. Holes in the rotor were found to concentrate stresses, causing cracks. Sharp changes in rotor rim thickness are very dangerous, as well as holes in the rim. Stress relaxation in the rotor during the high-temperature part of the cycle also causes lowering of the heat resistance in the rotor. For each separate rotor, there is a certain optimal temperature of the rim. Metallographic analysis indicated that coarse-grain metals have lower heat resistance, with cracks forming at the grain boundaries. The disadvantages of centripetal gas turbines in relation to heat

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resistance are thus the rotor shape, direction of gas flow and presence of side blades, while favorable considerations are the air cooling of the rotor and the lack of stress concentration at the rotor rim. The laboratory tests showed that the rotor design of centripetal gas turbines may be improved, lowering thermal fatigue during operation. Orig.art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 02Jun64

ENCL: 00

SUB CODE: PR

NO REF SOV: 001

OTHER: 001

Card 3/3

L 21650-66 EWT(d)/EWT(m)/EWP(w)/EWP(f)/EPF(n)-2/EWP(v)/T-2/EWP(k)/ETC(m)-6 ^{WW/RM}
ACC NR: AP6006138 SOURCE CODE: UR/0114/65/00/010/0022/0025

AUTHORS: Shvets, I. T. (Academician AN UkrSSR); Dyban, Ye. P. (Candidate of technical sciences); Stradomskiy, M. V. (Candidate of technical sciences); Gusak, Ya. M. (Engineer); Zatkovetskiy, G. N.; Klimenko, V. N.; Nasybullina, A. A.; Chepaskina, S. M.

ORG: none

TITLE: Development and investigation of the air cooling system for the high-pressure turbine rotor of GT-6-750 TMZ

SOURCE: Energomashinostroyeniye, no. 10, 1965, 22-25

TOPIC TAGS: turbine, turbine cooling, gas turbine, blade cooling/ GT-6-750 gas turbine

ABSTRACT: In conjunction with the development of gas turbine GT-6-750 (initial gas temperature 750C, pressure 5.8 kg/cm²), several air cooling systems for the high-pressure turbine rotor were designed and tested at the Ural Turbine Factory and Institute of Heat Physics of the AN UkrSSR (Ural'skiy turbomotornyy zavod i Institute tekhnicheskoy teplofiziki AN UkrSSR). The development of the final

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UDC: 621.438:62-71.001.5

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ACC NR: AP6006138

cooling system shown in Fig. 1 is discussed and the temperature distributions at the blade roots and in the turbine wheel are graphically presented for cooling air flows of 0.9 and 0.73 kg/sec respectively (0.73 kg/sec represents 1.7% of the total gas flow). The values of local cooling air pressure, temperature, flow rate, and heat transfer coefficient at the 16 locations in Fig. 1 are tabulated. It was found that the cooling system maintained all metal temperatures below 410C (at 0.73 kg/sec) and calculations show that the cooling flow can be further reduced to 0.4--0.45 kg/sec without dangerous temperatures. With such a cooling system, perlitic steels can be used with gas temperatures of up to 900C. The experiments confirmed the accuracy of previously proposed methods for calculating the cooling system parameters (Ye. P. Dyban, *Issledovaniye sistem vozdušnogo okhlazhdeniya rotorov gasovykh turbin. Avtoreferat dissertatsii. IPI im. M. I. Kalinina, 1964*).

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ACC NR: AP6006138

Fig. 1. Cooling system for
GT-6-750 gas turbine rotor.

Orig. art. has: 1 table and 4 figures.

SUB CODE: 21, 13/ SUBM DATE: none/ ORIG REF: 003

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LJC

L 20928-66 EWT(d)/EWT(1)/EWT(m)/EWP(f)/T-2/ETC(m)-6 WW

ACC NR: AP6002560

(A, N)

SOURCE CODE: UR/0286/65/000/023/0057/0057

AUTHOR: Gusak, Ya. M.

ORG: none

49
23, 31, 34
B

TITLE: Method for determining the forces acting on the grid of a turbocompressor for diesel supercharge. Class 42, No. 176710 /announced by Turbomotor Factory of Sverdlovsk Sovnarkhoz (Turbomotornyy zavod Sverdlovskogo sovnarkhoza) /

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 57

TOPIC TAGS: turbine compressor, supercharger, pressure measurement

ABSTRACT: This Author Certificate presents a method for determining the forces acting on the grid of a turbocompressor for diesel supercharge. The method involves measuring the pressure field in the flow behind the intake equipment of the turbine, and the subsequent harmonic analysis of this field. To facilitate the experimental procedure, the pressure field in the flow is measured with the constant pressure in front of the turbine, equal to the average pressure in the actual flow. This is added to the pressure field in the diesel exhaust collector according to the summation rule of two oscillations of the same frequency.

SUB CODE: 21, 13/ SUBM DATE: 02Jan64

Card 1/1 UK

UDC: 620.178.53:621.515.5

ACCESSION NR: AP4042861

S/0114/64/000/007/0011/0015

AUTHOR: Mokrushin, S. A. (Engineer); ~~Gusak~~, Ya. M. (Engineer)

TITLE: Calculation of temperature fields and stresses in a cooled rotor of a gas turbine during starting

SOURCE: Energomashinostroyeniye, no. 7, 1964, 11-15

TOPIC TAGS: gas turbine, gas turbine rotor, rotor air cooling, gas turbine cooling

ABSTRACT: An approximate method for calculating unsteady temperature fields and stresses in a cooled or uncooled turbine rotor is proposed. The method leads to the evaluation of the influence of the air-cooling system (lateral heat transfer, cooling air blowing under the shroud of the blades and through the mounting gaps of blade roots, etc.) and also of the materials used (austenite or perlite steels) on the radial distribution of temperature and stresses in cross sections lying below the rotor's collar. The calculation results make possible the adequate selection of: 1) the cooling system; 2) suitable materials for rotor construction; and 3) the optimum starting time, in the

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case when it is limited by the starting stresses in the rotor. The proposed method was used in designing the gas turbine GT-6-750 unit of Ural Turbomotor Plant TM3. The rotors of this installation allow a comparatively quick start at normal operation of the cooling system. The author concludes that: 1) the rotor air-cooling system of the GT-6-750 turbine improves the starting characteristics of the turbine under various starting conditions and increases safety under steady and unsteady operating regimes; 2) perlite rotors are substantially superior to austenite rotors in respect to manufacturability, cost, and operating characteristics when the rotors are air cooled, ensuring allowable temperature levels of the metal; 3) with the application of the "Ural-1" computer it is possible to determine unstable temperatures and stresses in turbine disks without consuming too much time and labour. Orig. art. has: 7 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00

ATD PRESS: 3071

ENCL: 00

SUB CODE: PR

NO REF SOV: 003

OTHER: 001

Card 2/2

L 52314-65 EPA/EPF(n)-2/EPR/EWA(h)/EWP(k)/EWP(z)/EWT(m)/EPA(bb)-2/T-2/EWT(b)/
EWA(d)/EWP(w)/EWP(f)/EWP(v)/EWP(t) Pf-4/Ps-4/Paa-4/Feb EM/WJ/MJW/JD

ACCESSION NR: AP5011771

UR/0096/65/000/005/0032/0036

AUTHORS: Gusak, Ya. M. (Engineer); Zatkovatskiy, G. N. (Engineer)

TITLE: Selection of materials for rotors of air-cooled gas turbines

SOURCE: Teploenergetika, no. 5, 1965, 32-36

TOPIC TAGS: gas turbine, air cooled turbine, turbine rotor / GT 6 750 gas turbine, TVD rotor, LMZ rotor, KhtZ rotor, TMZ rotor, NZL rotor, EI 415 steel, R 2M pearlite steel, EI 612 steel, EI 802 steel, ETsVM Ural 1 computer

ABSTRACT: The problems of design and selection of suitable materials for the construction of rotors in air cooled gas turbines such as the turbine GT-6-750, intended for use in superchargers for gas supplies, are discussed. The three-stage rotor TVD for this turbine was made of EI-415 steel. The choice of this material is intimately connected with the choice of the cooling system, governed by the pick-up conditions of the motor, safety, and economy. A number of materials, including pearlite and austenite steels for rotors of the type LMZ, KhtZ, TMZ, and NZL, were compared with the help of an ETsVM Ural-1 computer. It was found that for stresses corresponding to those in steel EI-612, the optimal starting time was 30 minutes. In EI-415 the stress was 35% lower than that in

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EI-612. It was also found that in Soviet commercial turbines, pearlite steels EI-415 and R-2M insured proper cooling of the rotor. For proper cooling of the disk, chromite steels EI-802 and EI-756 may come to be widely used. Orig. art. has: 3 figures and 1 graph.

ASSOCIATION: Ural'skiy turbomotornyy zavod (Ural Turbomotor Plant)

SUBMITTED: 00

ENCL: 00

SUB CODE: IR

NO REF SOV: 005

OTHER: 001

Card 2/2 MB

LAPPA, M.I., kand.tekhn.nauk, dotsent; GUSAK, Ya.M., inzh.; SHOYKHET, A.I.,
inzh.

Vibration of high-speed gas turbine units. Energomashinostroenie
11 no.11:28-32 N '65.

(MIRA 18:11)

L 35340-66 EWT(d)/EWT(m)/EWP(w)/EWP(f)/EWP(v)/T-2/EWP(k) IJP(c) WW/EM
ACC NR: AP6007786 (N) SOURCE CODE: UR/0114/66/000/002/0018/0021

AUTHOR: Gusak, Ya. M. (Engineer); Tsigel'nik, G. I. (Engineer)

ORG: None

TITLE: Fatigue failure of centripetal gas turbine wheels 26

67
B

SOURCE: Energomashinostroyeniye, no. 2, 1966, 18-21

TOPIC TAGS: gas turbine, fatigue test, mechanical fatigue, diesel engine, supercharger, blade vibration, turbine compressor

ABSTRACT: The authors analyze reasons for blade failure in impulse turbines used in turbine compressors for supercharging diesels. These failures occur on test stands in factories as well as under operating conditions. The fatigue failure of the blades of TKR-23 and TKR-18 rotors is analyzed. The results of the analysis show that fatigue is caused by the resonance vibration of blades at the fundamental frequency where vibrations are set up by nonhomogeneous flow in the gas stream along the periphery and behind the turbine nozzle ring. Fatigue failure of blades on all turbine wheels studied begins at the discharge edge of the blade. The thickness of the discharge edge must be greater than 1.2 mm to increase the vibration strength of the blades. The blades of impulse turbine wheels used in turbine compressors must be made to withstand high frequencies. Resonance on frequencies which are 6 and 10 times the number

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UDC: 621.438.001.5

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ACC NR: AP6007786

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of rpm's presents the greatest danger as to fatigue for turbines with 4 inlets, while resonance on 5, 7, 9 and 11 times the number of rpm's is most harmful for turbines with 2 inlets. Resonance on harmonics above the 12th does not produce high dynamic stresses in blades as a rule. Orig. art. has: 4 figures, 1 table.

SUB CODE: 21/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 000

Card 2/2 *llh*

GUSAKOV, A.A., inzh.

Methods of erecting the main building of a thermal electric plant and their efficiency in the context of assembly-line construction. Energ. stroi. no.26:3-8 '61. (MIRA 15:7)

1. Khar'kovskiy inzhenerno-stroitel'nyy institut.
(Electric power plants) (Precast concrete construction)

GUSAKOV, A.A., kand. tekhn. nauk

Means of raising the effectiveness of capital investments by
the continuous construction of the main building of large heat
and electric power plants. Prom. stroi. 41 no.10:17--23 0 '63.
(MIRA 16:11)

GUSAKOV, A. D.

Monetary circulation in Russia on the eve and during the period of October
Socialist Revolution Moskva, Gosfinizdat, 1946. 123 p. (52-27669)

HG1074.G87

GUSAKOV, A.D., kand. ekon. nauk; MIKHAYLOV, A.M., tekhn. red.

[Accelerating the turnover of working capital] Uskorenie obrachivaemosti oborotnykh sredstv. Moskva, Gosplanizdat, 1949.

122 p.

(MIRA 15:4)

1. Akademiya nauk SSSR. Institut ekonomiki.
(Capital)

GUSAKOV, A. D.

19722 GUSAKOV, A. D. Uskoeeniye obrachivayemosti oborotnykh sredstvishodnykh povysheniya
tempovsotsialisticheskovo proizvodstva

[Obrabot. i dop. stenogramma doklada NA Nauch. Sessii Otoniya ekonomiki i prava Akad. NAUK
SSSR 9 Marta 1949 g.] Izvestiya Akad. NAUK SSSR, Otd.niye ekonomiki i prava, 1949 No. 3.
S. 169-87

SO: LETOPIS' ZHURNAL STATISTIK, Vol. 72, Moskva: 1949

СУДАНОВ, А. В. and ДЫМНИН, И. А.

Denezhnoe Obrashchenie i Kredit SSSR (Monetary Circulation and Credit in the USSR),
306 p., Gosfinizdat and Moscow, 1951.

GUSAKOV, A. D.,

ed. Voprosy ekonomiki sotsialisticheskogo promyshlennogo predpriatiia; sbornik statei / Problems on the economics of a Socialist industrial enterprise; collection of articles/. Vyp. 1. Moskva, Profizdat, 1952. 519 p.

SO: Monthly List of Russian Accessions, Vol. 7 No. 1 April 1954.

GUSAKOV, A. D. (Prof.)

"Money and its Functions in a Socialist Economy," Finansy i Kredit SSSR, No. 4,
1954.

SO: Translation-M-703, 23 Aug 1955.

GUSAKOV, A.^D; DYMSHITS, I.; SITNIN, V., redaktor; FILIPPOVA, E., redaktor;
DENISOVA, O., tekhnicheskij redaktor

[Currency circulation and credit in the U.S.S.R.] Denezhnoe
obrashchenie i kredit SSSR. Moskva, Gosfinizdat, 1955. 355 p.
(Banks and banking) (Credit) (Money) (MIRA 9:2)

GUSAKOV, A., professor.

V.I. Lenin and the construction of the Soviet monetary system,
Den. i kred. 15 no.7:9-19 JI '57. (MIRA 10:8)
(Lenin, Vladimir Il'ich, 1870-1924)
(Money)

GUSAKOV, Aleksandr Dmitriyevich; LABAZOV, Vasilii Ivanovich; SVESHNIKOV, Mefodiy Naumovich. Primal uchastiye DIMSHITS, I.A. [deceased].
BATYREV, V., otv.red.; NADEZHINA, A., red.izd-va; TELEGINA, T.,
tekh.red.

[Currency circulation and credit in the U.S.S.R.] Denezhnoe
obrashchenie i kredit SSSR. Moskva, Gosfinizdat, 1960. 304 p.
(MIRA 14:3)

(Finance)

IKONNIKOV, VV., prof, *Prinimali uchastiye*: GUSAKOV, A.D., prof.; SHENGER, Yu. Ye., prof.; BATYREV, V.M., doktor ekon. nauk; KAZANTSEV, A.I., dots.; BUZYREV, V.M., prof.; BYSTROV, F.P., prof.; NADEZHINA, A., red.; POGODIN, Yu., red.; TELEGINA, T., tekhn. red.

[Monetary circulation and credit in the U.S.S.R.] *Denezhnoe obrashchenie i kredit SSSR*. Kollektiv avtorov pod rukovodstvom V. Ikonnikova. Moskva, Gosfinizdat, 1962. 470 p. (MIRA 16:1)
(Money) (Credit)

GUSAKOV, A.F.; RADZIVILOV, Ye.N.

Demonstration of the achievements of the Soviet instrument
industry at the All-Union industrial exhibition. Priborostroenie
no.9:1-6 S '56. (MLRA 9:10)

(Measuring instruments--Exhibitions)

GUSAKOV, A. F.

"Conference on Experimental Techniques and Methods in High-Temperature Research," by A. F. Gusakov, Priborostroyeniye, No 10, Oct 56, pp 26-27

A conference on experimental methods and techniques in high-temperature research was held 26-30 June 1956 at the Institute of Metallurgy imeni Baykov, Academy of Sciences USSR.

Sum 1239

GUSAKOV, A.J.

The LPr-54 explosionproof logometer. Priboresceniye no.2:23-24 P '57.
(Electric instruments) (MIRA 10:4)

60 57100, 11 7

AUTHOR: Gusakov, A.F.

115-5-19/44

TITLE: Materials for Planning a Pyrometer Test Laboratory (Materialy k proyektirovaniyu poverochnoy pirometricheskoy laboratorii)

PERIODICAL: "Izmeritel'naya Tekhnika", 1957, No 5, Sep-Oct, pp 39-42 (USSR)

ABSTRACT: This article gives recommendations for planning test laboratories for pyrometers, which will be organized within the special "workshops of testing and measuring instruments and automatic equipment" (tsekh KIP i avtomatiki). These special workshops are presently being organized at industrial plants having large quantities of instruments and measuring devices. The author has utilized materials of a project bureau of the former MPSA. He thinks that his recommendations can be of use for certain organizations and industrial plants. The article contains two charts from which the necessary equipment for a laboratory may be chosen, and the number of different kinds of instruments may be determined. The charts list the equipment items complete with their technical characteristics and the names of producer plants. It further states the mean annual work in man-hours required for checking of single instruments. Recommendations are also given concerning the general conditions in laboratory premises (no sun-

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Materials for Planning a Pyrometer Test Laboratory

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light, no machines causing vibrations, etc). There are 3 charts.

AVAILABLE: Library of Congress

Card 2/2

GUSAKOV, A. I.

MARSHALKIN, Georgiy Aleksandrovich; GUSAKOV, A. I., inzh., retsenzent;
VECHERSKIY, P. A., dots, retsenzent; KRUGLOVA, G. I., red.;
CHIBYSHEVA, Ye. A., tekhn. red.

[Engineering equipment for confectionery production] Tekhnologi-
cheskoe oborudovanie koniterskogo proizvodstva. Moskva, Pishche-
promizdat, 1957. 571 p. (MIRA 11:2)
(Confectionery--Equipment and supplies)

GUSAKOV, A.I.

Socialist competition in enterprises of the confectionery industry
of the Russian Soviet Federative Socialist Republic. Khleb. i kond.
prom. 1 no.5:1-3. My '57. (MLRA 10:6)

1. Glavnoye upravleniye konditerskoy promyshlennosti RSFSR.
(Confectionery)

LUNIN, Oleg Grigor'yevich, kand.tekhn.nauk; SMOLYANITSKIY, Moisey
Yefimovich, inzh.; GUSAKOV, A.I., inzh., retsenzent;
KRUGLOVA, G.I., red.; KISINA, Ye.I., tekhn.red.

[Continuous production lines for confectioneries] Potochnye
linii proizvodstva konditerskikh izdelii. Moskva, Pishcheprom-
izdat, 1961. 160 p. (MIRA 14:6)
(Confectionery)

AYDEYEVA, A.V., doktor tekhn.nauk; ALEKHIN, S.F., inzh.; ALTUNDZHI, K.S.,
inzh.; BRONSHTEYN, I.I., kand.khim.nauk; BRUSHTEYN, M.S.;
GRIGOR'YEV, F.B., inzh.; ZHELEZNOVA, V.V., inzh.; ISTOMINA, M.M.,
kand.tekhn.nauk; KOZLOV, S.A., inzh.; KOLESNIKOVA, V.K., inzh.;
KOCHETKOV, I.A., inzh.; LUNIN, O.G., kand.tekhn.nauk; MANNINA, T.A.,
inzh.; SEREBRYAKOV, M.N., inzh.; SMOLYANITSKIY, M.Ye., inzh.; TYURIN,
A.I., kand.tekhn.nauk; TSYBUL'SKIY, A.A., inzh.; CHERNOIVANNIK, A.Ya.,
inzh.; SHKLOVSKAYA, A.Ye., inzh.; BEN', G.M., inzh., retsenzent;
MARSHALKIN, G.A., kand.tekhn.nauk, retsenzent; GUSAKOV, A.I., red.;
MARTYNOV, M.I., kand.tekhn.nauk, red.; KRUGLOVA, G.I., red.; KISINA,
Ye.I., tekhn.red.

[Confectioner's manual] Spravochnik konditera. Pod obshchei red. M.I.
Martynova. Moskva, Pishchepromizdat. Pt.2.[Technological equipment of
the confectionery industry] Tekhnologicheskoe oborudovanie konditersko-
go proizvodstva. 1960. 630 p. (MIRA 14:3)

(Confectionery--Equipment and supplies)

ZHURAVLEVA, Yekaterina Ivanovna, kand. tekhn.nauk; KONJAKOV, Sergey Ivanovich; TOKAREV, Lev Il'ich; RAKHMANOVA, Ksoniya Georgiyevna; GUSAKOV, A.I., inzh., retsenzent; ORLOVA, O.S., retsenzent; KRUGLOVA, G.I., red.; SOKOLOVA, I.A., tekhn. red.

[Technology of confectionery] Tekhnologiya konditerskogo proizvodstva. Pod obshchei red. E.I.Zhuravlevoi. Moskva, Pishchepromizdat, 1962. 442 p. (MIRA 15:12)
(Confectionery)

L 24317-66 EWT(1)/EWT(m)/EPF(n)-2/ENG(m) NR

ACC NR: AT6006757

SOURCE CODE: UR/3158/65/000/027/0001/001753
BT/

AUTHOR: Pupko, V. Ya.; Malykh, V. A.; Gusakov, I. M.; Petrovskiy, V. G.; Dmitriyev, V. M.; Yur'yev, Yu. S.

ORG: Physics and Power Institute, State Committee on the Use of Atomic Energy SSSR (Fiziko-energeticheskiy institut, Gosudarstvenny komitet po ispol'zovaniyu atomnoy energii SSSR)

TITLE: Certain problems in the development of a thermionic emission reactor converter ¹⁹

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 27, 1965. Nekotoryye problemy razrabotki termoemissionnogo reaktora-preobrazovatelya, 1-17

TOPIC TAGS: thermoelectric convertor, neutron physics, nuclear reactor, volt ampere characteristic

ABSTRACT: This is a review article dealing with several neutron-physics and engineering problems connected with the development of a thermionic converter in which heat energy is converted into electricity by using an electron emitter in contact with the fissioning material of a nuclear reactor. The first section of the paper deals with possible neutron-physics characteristics of such reactors, such as the use of fast or slow neutrons in the reactor, the dependence of the U-235 charge and the volume of the active zone of thermionic reactors on the concentration of the uranium in the active zones for different thicknesses of the beryllium reflector and for different cathode materials, the distribution of the energy release over the active zone, the

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ACC NR: AT6006757

degree of burnup, the dimensions of the active zone, the critical reactor load, and the type and amount of moderator. The second section deals with thermodynamic and electrical engineering problems involved in such a converter, such as losses, thermal efficiency, conversion efficiency, volt-ampere characteristics, and methods of minimizing the losses. The third section presents the results of reactor tests of three-element assemblies of thermionic converters, made in the loop channel of the reactor of the first atomic electric stations of the SSSR. Tests were made on different fuel rods both under diffusion and arc-discharge conditions. For the particular reactor tested, the losses amounted to 12% of the theoretical output power for ohmic electrode resistance and commutation, 10% for heat leakage from the cathode, and 5% due to the axial inhomogeneity of the heat release in the assembly. This reduces the theoretical power rating of 2.7--3 w/cm² to a value of 2 w/cm². Orig. art. has: 8 figures.

SUB CODE: 1020/ ^A ORIG REF: 002/ OTH REF: 004

SUBM DATE: none

Card 2/2 FV

PETLYAKOV, M.M., inzh.; SHAPOVALOV, A.P., inzh.; GUSAKOV, A.N., inzh.;
UDOVICHENKO, N.V., inzh.; BESPALOV, V.N., inzh.; KUZNETSOV, D.K., inzh.

Obtaining a flat sheet of transformer steel. Stal' 25 no.12:
1132-1134 D '65. (MIRA 18:12)

1. Novolipetskiy metallurgicheskiy zavod i Tsentral'nyy nauchno-
issledovatel'skiy institut chernoy metallurgii imeni I.P. Bardina.

GUSAKOV, B.

Economical advantages of centralizing equipment. Na stroi. Ros. 4 no.1:
12-14 Ja '63. (MIRA 16:3)

1. Glavnyy inzh. tresta po mekhanizatsii stroitel'nykh robot
Glavstroy mekhanizatsii Ministerstva stroitel'stva SSSR (Novosibirsk).
(Novosibirsk Province--Construction equipment)

RODIONOV, I.V.; SURGONT, F.S.; PRYAZHINSKIY, I.V.; GUSAKOV, B.P.

Machine for the working of frozen ground. Gor.zhur. no. 1274
Ja '65. (MIRA 18:3)

GUSAKOV, B.V., inzh.

Automatic tightening of dowel pins. Mekh. i avtom.proizv. 19
no.2:10-12 F '65. (MIRA 18:3)

24381

S/539/61/000/032/007/017
D202/D301

11.1265

AUTHORS: Khomyakov, V.G., Gusakov, D.Ya. and Podberezina, A.S.

TITLE: Electrochemical synthesis of hexamethylene diamine

SOURCE: Moscow. Khimiko-tekhnologicheskii institut, Trudy, no. 32,
1961. Issledovaniya v oblasti elektrokhimii, 141-146

TEXT: The subject of this experimental work was to find out quantitative data for electrolysis conditions which influence the yield of hexamethylene diamine (HMD) from adipodinitrile as the starting material. The authors used adipodinitrile solutions in HCl as the electrolyte and spongy nickel deposit as the cathode. The reduction of adipodinitrile to HMD proceeds according to the scheme: $\text{CN} - (\text{CH}_2)_4 - \text{CN} + 8 \text{H}^+ + 8\text{F}^- \rightarrow$

$\text{NH}_2(\text{CH}_2)_6 - \text{NH}_2$. Small amounts of E-aminocapronitrile and hexamethylene imine were found in the reaction products which proved that the reduction of adipodinitrile proceeds in stages. The authors investigated the effects 1) of adipodinitrile concentration; 2) of HCl concentration;

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D202/D301

Electrochemical synthesis ...

3) of temperature; 4) of the amount of electricity used. 1) With rising adipodinitrile content from 50 to 100 g/l the rate of its reduction was markedly increased, the formation of side-products increasing to a much lesser extent. 2) With the rise of HCl concentration the yield of HMD decreased; therefore, in further experiments 10-11.4% HCl solutions were used. 3) The rise in temperature from 20 to 35°C has an unfavorable effect. 4) The effect of electricity consumption was studied on solutions of 97 g/l of adipodinitrile in 10% HCl with c.d. 10 a/dm², at 20°C, with electricity consumption from 50 to 150% of the theoretically needed (8F/mol). The authors found that the electricity consumption on the summary reduction process decreased steadily with decreasing reagent concentration; when the energy consumption was equal to the theoretical, the yield of HMD was about 60% both in respect to the current and to the reagent, being equal to 43% and 67% respectively when 150% of theoretical energy amount was used. The authors state that E-aminocapronitrile fraction may be re-used in further processes; in this was the total HMD yield may be increased by about 10%; that the studied method of HMD synthesis is much simpler than the chemical one; that by this method chlorine is produced as a by-product in the amount of ± 6 tons per ton of HMD. Full Card 2/3

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D202/8301

Electrochemical synthesis ...

experimental details are given as well as details of the results obtained. There are 6 figures, 1 table and 9 references: 1 Soviet-bloc and 8 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: P.B. Janardhanan, J.Sci.Ind. Research (India) 12B, 183 (1953); K. Ogura, Memoirs Coll. Science (Kyoto Imp. Univ.) Ser. A, 12, 339 (1929); Fumikazu Kawamura, Shigetaka Suzuki, J. Chem. Soc. Japan, Ind. Chem. Sect. 55, 476, (1952); Masaku Ohta, J. Chem. Soc. Japan, 63, 1762, (1942).

Card 3/3

KOTLYAROV, Stepan Ivanovich; SHELUDCHENKO, Vasilii Yevstaf'yevich; GUSAKOV,
Gennadiy Dem'yanovich; GRISHAYENKO, M.I., otvetstvennyy red.;
MAYEINSKAYA, A.A., tekhn. red.; PROSOROVSKAYA, V.L., tekhn. red.

[Practical work in ventilation, lighting, and mine rescue oper-
ations] Prakticheskie raboty po ventilatsii, osveshcheniu i
gornospasatel'nomu delu. Moskva, Ugletekhizdat, 1958. 248 p.
(Mine ventilation) (Mine rescue work) (Mine lighting) (MIRA 11:9)

~~L 10253-66~~ EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(c)
ACC NR: AP5026766 JD/HM SOURCE CODE: UR/0286/65/000/017/0048/0048

INVENTOR: Roshchin, V. V.; Grinenko, V. I.; Gusakov, G. I.; Frolov, Yu. M.; Novikov, V. I.; Turkov, I. I.

ORG: none

TITLE: Method of automatic TIG welding of fixed tube joints. Class 21, No. 174299

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 48

TOPIC TAGS: welding, metal welding, TIG welding, automatic welding, pipe

ABSTRACT: This Author Certificate introduces a method of automatic TIG welding of fixed joints of pipes of any thickness. The welding is done with the electrode vibrating across the groove according to a program determined by the torch motion. Filler wire is fed at the moment when the electrode crosses it. A modified method, in which the direction of welding is reversed after each pass in accordance with the program and the filler wire is fed correspondingly from two sides, is mentioned. [MS]

SUB CODE: 13/ SUBM DATE: 13May64/ ATD PRESS: 4/60

PC
Card 1/1

UDC: 621.791.753.9-462

GUSAKOV, G. V.

GUSAKOV, G. V.: "Topographical anatomy of the frontal and upper maxillary sinuses of cattle, and changes in them in connection with maternity and age." Moscow, 1955. Moscow Veterinary Academy, Min Higher Education USSR. Chair of Operative Surgery and Topographical Anatomy. (Dissertation for the Degree of Candidate of Veterinary Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

GUSAKOV, G.V., assistant.

Rinsing the nasolacrymal duct in cattle. Veterinariia 32 no.8:
66-68 Ag '55. (MIRA 8:10)

1.Kafedra operativnoy khirurgii Moskovskoy veterinarnoy akademii.
(CATTLE--DISEASES) (NOSE)

USSR/Farm Animals - Large Horned Cattle.

C-2

Abs Jour : Ref Zhur - Biol., No 18, 1958, 83323

Author : Gusakov, G.V.

Inst : Moscow Academy of Veterinary Medicine.

Title : Topographic Anatomy of the Abdominal Wall in Large Horned Cattle.

Orig Pub : Tr. Mosk. vet. akad., 1956, 10, 120-129.

Abstract : A layer by layer description is supplied of topographic anatomy of the abdominal wall. The first layer consists of skin and subdermal cellular tissue; the second layer is formed by surface fascia which encloses the large subdermal muscle; the third layer consists of the obliquus abdominis externus muscle; the fourth layer consists of the obliquus internus muscle (as compared to horses in whom this muscle has a supplementary crus which covers the

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USSR/Farm Animals - Large Horned Cattle.

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Abs Jour : Ref Zhur - Biol., No 18, 1958, 83323

hunger cavity); the fifth layer is represented by the rectus abdominis muscle; and the sixth layer by the transversus abdominis muscle. Between the layers, in the spaces of connective tissue purulent necrotic masses can move freely. -- A.V. Belousov

Card 2/2

GUSAKOV, I.A.

Group wage system for train-making-up brigades without special work assignment. Zhel.dor.transp. 46 no.12: 70 D '64.

(MIRA 19:1)

1. Nachal'nik otdela truda, zarabotnoy platy i tekhniki bezopasnosti Krasnodarskogo otdeleniya Severo-Kavkazskoy dorogi.

PUPKO, V. Ya.; MALYKH, V. A.; GUSAKOV, I. M.; PETROVSKIY, V. L.; SMITAYEV, V. M.;
YUR'YEV, Yu. S.

"Some problems in the development of a thermionic research converter."

report to be presented at Intl Conf on Thermionic Electrical Power Generation,
London, 20-24 Sep 65.

USSR State Comn for Applications of Atomic Energy, Moscow.

GOLUBENTSEV, A.N. [Golubentsev, O.M.] (Kiyev); GUSAKOV, I.Z. [Husakov, I.Z.]
(Kiyev)

Dynamic damping of free vibrations. Prikl. mekh. 10 no.2:226-228
'64 (MIRA 17:7)

1. Institut mekhaniki AN UkrSSR.

REBROV, A.S., inzh. [deceased]; USPENSKIY, V.P., inzh.; PLESHKOV, D.I., kand. tekhn. nauk; BELEN'KIY, V.I., inzh.; BERNADSKIY, G.I., inzh.; VALUTSKIY, I.I., inzh.; BAZANOV, A.F., kand. tekhn. nauk; KOGAN, I.Ya., kand. tekhn. nauk; RATNER, A.I.; VOROB'YEV, A.A., inzh.; BAUMAN, V.A., kand. tekhn. nauk; NOSENKO, N.Ye., kand. tekhn. nauk; FOKIN, M.V., inzh. [deceased]; VINOGRADOV, G.V., inzh.; GUSAKOV, M.A., inzh.; SUDAKOVICH, D.I., inzh.; Prinimani uchastiye: SIGAL', Ya.Ye., inzh.; TITOV, M.A., inzh.; OGIYEVICH, V.Ya., kand. tekhn. nauk; ZIMIN, P.A., kand. tekhn. nauk, retsenzent; LAPIN, F.A., inzh., retsenzent; PETROV, N.M., kand. tekhn. nauk, retsenzent; RYAKHIN, V.A., kand. tekhn. nauk, retsenzent; KHOLIN, N.A., inzh., retsenzent

[Construction machinery; a reference manual] Stroitel'nye mashiny; spravochnik. Izd.3., perer. i dop. Moskva, Mashinostroenie, 1965. 788 p. (MIRA 18:6)

24.3000

301/11-10-10/13

AUTHORS: Frontas'yev, V. P., Gusakov, M. Yu.

TITLE: Thermal Conductivity of Some Organic Liquids

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1959, Vol 29, Nr 10, pp 1277-1284
(USSR)

ABSTRACT: The paper gives results of thermal conductivity measurements of 19 organic liquids. The following liquids were studied: benzene, toluene, xylene, chlorobenzene, nitrobenzene, anilin, carbon tetrachloride, ethyl alcohol, acetone, acetic acid, hexane, heptane, octane, nonane, dichloroethane, dioxan, cyclohexanone, and benzyl alcohol. All liquids were chemically pure. Measurements were made by the optical method developed by Ioffe, A. F., and described in Ref 1 (Phys. Zs. d. Soviet-Union, 5,2,191, 1934). The accuracy of the method is $\pm 0.5\%$. The results of measurements are given in tables where they are compared with those obtained by other investigators. The agreement of the thermal conductivity values obtained by the authors with those obtained by others is very good, varying from -0.5% to $+1.5\%$. It is suggested that

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Thermal Conductivity of Some Organic Liquids

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307/21-29-10-19/18

benzene, toluene, nitrobenzene, acetone, chlorobenzene, bromobenzene, and carbon tetrachloride may be used as standard liquids for calibration of apparatus employed for measurement of thermal conductivity of organic liquids. Gratitude is expressed to Prof. Golubkov, P. V., for his advice. There is 1 figure; 2 tables; and 29 references, 15 Soviet, 1 Dutch, 4 German, 5 U.S., 4 British. The most recent U.S. and British references are: Briggs, D. K. H., Ind. Eng. Chem., 49, Nr 3, 418, 1957; Challoner, A. E., and Powell, R. W., Proc. Roy. Soc., A, 236, 90, 1956; Baxter, S., and Gna, H. A., Davies, S. J. Appl. Chem., 3, 477, 1953; Mason, H. L., Trans. Amer. Soc. Mech. Eng., 76, 817, 1954; Sakiadis, B. C., and Coates, J., J. Amer. Inst. Chem. Eng., 1, 275, 1955.

ASSOCIATION: Saratov State University im. N.G. Chernyshevskiy (Saratovskiy gosudarstvennyy universitet imeni N. G. Chernyshevskogo)

SUBMITTED: July 7, 1958

Card 2/2

GUSAKOV, M.Ya.; GUSEV, V.K.

Delustring of capron fiber. Khim.volok. no.3:28 '62.
(MIRA 16:2)

1. Engel'sskiy zavod.
(Nylon)

S/081/62/000/009/007/075
B177/B138

AUTHORS: Frontas'yev, V. P., Gusakov, M. Ya.

TITLE: New data on the thermal conductivity of 22 organic liquids

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 44,
abstract 9B278 (Uch. zap. Saratovsk. un-t., y. 69, 1960,
237-238)

TEXT: The thermal conductivity λ of a number of liquids was measured with an accuracy of 5% using apparatus previously described (RZhKhim., no. 6, 1957, 18491). The value of $\lambda \cdot 10^6$ (in cal/cm·sec·deg) was found to be: for benzene 347, toluene 325, o-xylene 318, m-xylene 314-319, chlorobenzene 305, bromobenzene 272, nitrobenzene 360, aniline 406, carbon tetrachloride 253, dichloroethane 331, cyclohexanone 333, ethyl alcohol 382, dioxane 368, acetone 386, acetic acid 379, n-hexane 299, n-heptane 310, n-octane 319, isooctane 244 and n-nonane 329. [Abstracter's note: Complete translation.]

Card 1/1

GUSAKOV, N.D.

Determining the productivity of low resistance sand reservoir
rocks. Geol. nefti i gaza 5 no.4:43-45 Ap '61. (MIRA 14:4)

1. Ozek-Suatskaya promyslovo-geofizicheskaya ekspeditsiya.
(Oil sands)

MECHAY, A.M.; GUSAKOV, N.D.

Use of micrologging data for exposing fissured areas in well cross sections. Razved. i prom. geofiz. no.50:84-87 '63.

(MIRA 18:3)

NECHAY, A.M.; GUSAKOV, N.D.

Estimation of the oil- and gas-bearing capacity of clayey sandstones.
Razved. geofiz. no.1:79-92 '64. (MIRA 18:7)

GUSAKOV, S.F., inzhener; VAYOGANT, A.S., inzhener.

Earthwork under cold weather conditions. Stroil. prom. 34 no.9:
7-10 S '56. (MLRA 9:10)

(Earthwork--Cold weather conditions) (Frozen ground)

GUSAKOV, S.F., inzh., red.; PETROVA, V.V., red.izd-va; RYAZANOV, P.Ye.,
tekhn.red.

[Technical requirements for building and accepting pipelines]
Tekhnicheskie uslovia na proizvodstvo i priemku robot po
ustroistvu magistral'nykh truboprovodov SN 83-60. Moskva,
Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960.
77 p. (MIRA 13:9)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva.

(Pipelines)

GUSAKOV, S.F., inzh., red.

[Temporary technical instructions for installing gas mains of asbestos-cement pipes with a pressure up to 5 kg/cm² outside of cities, inhabited places, and industrial enterprises]
Vremennye tekhnicheskie ukazania na proizvodstvo i priemku rabot po sooruzheniiu magistral'nykh gazoprovodov iz asbestotsementnykh trub s rabochim davleniem do 5 kg/sm² vne gorodov, naselennykh punktov i promyshlennykh predpriatii SN 184-61. Utverzhdeny Gosudarstvennym komitetom Soveta Ministrov SSSR po delam stroitel'stva 26 avgusta 1961. Moskva, Gos. izd-vo lit-ry po stroit., arkhiv. i stroit. materialam, 1961. 22 p. (MIRA 15:3)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. (Pipe, Asbestos--Cement)

GUSAKOV, S.F., inzh., red.; IFTINKA, G.A., red. izd-va; TEMKINA, Ye.L.,
tekh. red.

[Temporary technical instructions SN 185-61 for carrying out and inspecting the construction of experimental sections of underground gas pipelines made of asbestos-cement pipe in urban areas. Settlements, and industrial enterprises with a working pressure of up to 0.5 kg/cm²] Vremennye tekhnicheskie ukazaniia na proizvodstvo i priemku rabot po sooruzheniiu opytno-ekspluatatsionnykh uchastkov podzemnykh gazoprovodov iz asbestotsementnykh trub na territorii gorodov, naselennykh punktov i promyshlennykh predpriiatii s rabochim davleniem do 0,5 kg/sm². (SN 185-61). Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1961. 31 p. (MIRA 15:5)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. (Gas, Natural--Pipelines)
(Pipe, Asbestos--Cement)

GUSAKOV, S.F., inzh., red.; IFTINKA, G.A., red. izd-va; TEMKINA, Ye.L.,
tekh. red.

[Technical specifications on the production and approval of work
in constructing gas networks in cities, popylated places, and
industrial enterprises] Tekhnicheskie uslovia na proizvodstvo
i priemku rabot po ustroistvu gazovykh setei gorodov, naselen-
nykh punktov i promyshlennykh predpriatii (SN 117-60), Moskva,
Gosstroizdat, 1961. 86 p. (MIRA 15:5)

1. Russia (192?- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva.

(Gas distribution) (Gas pipes)

GUSAKOV, S.F., inzh., red.; IFTINKA, G.A., red. izd-va; GOL'BERG, T.M.,
tekh. red.

[Technical specifications SN 161-61 for installing and inspecting exterior water supply and sewerage pipes] Tekhnicheskie ukazaniia na proizvodstvo i priemku rabot po ustroistvu naruzhnykh truboprovodov vodosnabzheniia i kanalizatsii; SN 171-61. Utverzhdeny 13 marta 1961 g. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1961. 93 p. (MIRA 14:11)

1. Russia (1923-- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.
(Water pipes) (Sewer pipe)

GUSAKOV, S.F., inzh., red.; PETROGA, V.V., red. izd-va; SHERSTNEVA,
N.V., tekhn. red.

[Instructions SN 195-61 for laying delivery conduits of outdoor water-supply systems made of asbestos-cement pipes] Instruktsiia po prokladke napornykh truboprovodov vneshnikh vodoprovodnykh setei iz asbestotsementnykh trub (SN 195-61). Moskva, Gosstroizdat, 1962. 34 p. (MIRA 15:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Water pipes)

(Pipe, Asbestos--Cement)

GUSSAKOV, S.F., inzh., red.; IFTINKA, G.A., red. izd-va; SHERSTNEVA,
N.V., tekhn. red.

[Technical specifications SN 161-61 for installing and inspecting the installation of outdoor water-supply and sewer pipelines]
Tekhnicheskie ukazaniia na proizvodstvo i priemku rabot po ustroistvu naruzhnykh truboprovodov vodosnabzheniia i kanalizatsii (SN 161-61). 2. izd. Moskva, Gosstroizdat, 1962. 91 p.
(MIRA 15:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Water pipes)

(Sewerage)

SALUKVADZE, Viktor Samsonovich; GUSAKOV, S.F., inzh., nauchnyy red.;
SAFONOV, P.V., red.izd-va; RUDAKOVA, N.I., tekhn. red.

[Construction of main pipelines] Sooruzhenie magistral'nykh
truboprovodov. Moskva, Gosstroizdat, 1962. 246 p.
(MIRA 15:12)

(Pipelines)

GUSAKOV, S.F., inzh., red.; SHAPIRO, L.L., kand. tekhn. nauk,
red.; YAKOVLEV, G.A., inzh., red.; KOMAYUROV, V.A., inzh.,
red.

[Construction specifications and regulations] Stroitel'nye
normy i pravila. Moskva, Gosstroizdat. Pt.3. Sec.G. ch.7.
[Gaz supply: Outdoor systems and installations; regulations
for the organization, performance and acceptance of work]
Gazosnabzhenie: Naruzhnye seti i sooruzhenia; pravila or-
ganizatsii i proizvodstva rabot, priemka v ekspluatatsiu
(SNiP III-G. 7-62). 1963. 31 p. (MIRA 17:3)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva. 2. Gosstroy SSSR (for Gusakov). 3. Mezhdue-
domstvennaya komissiya po peresmotru Stroitel'nykh norm i
pravil (for Shapiro). 4. Saratovskiy gosudar-
stvennyy nauchno-issledovatel'skiy i proyektnyy institut po
ispol'zovaniyu gaza v narodnom khozyaystve (for Yakovlev,
Komayurov).

GUSAKOV, S.F., inzh., red.; BARANOV, I.V., inzh., red.

[Construction specifications and regulations] Stroitel'nye normy i pravila. Moskva, Stroiizdat. Pt.2. Sec.D. ch.6.
[Automobile roads of industrial enterprises; design standards] Avtomobil'nye dorogi promyshlennykh predpriatii; normy proektirovaniia (SNiP II-D. 6-62). 1964. 36 p. (MIRA 17:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Gusakov). 3. Vsesoyuznyy proyektnyy i nauchno-issledovatel'skiy institut promyshlennogo transporta Gosstroya SSSR (for Baranov).

GUSAKOV, S.F., inzh., red.; GEL'MAN, A.S., inzh., red.; KLIMOVA,
G.D., red.izd-va; RODIONOVA, V.M., tekhn. red.

[Construction specifications and regulations] Stroitel'nye
normy i pravila. Moskva, Gosstroizdat. Pt.2. Sec.D.
ch.2.[Railroad gage of 1524 mm. for industrial enterprises;
design specifications] Zheleznye dorogi kolei 1524 mm pro-
myshlennykh predpriatii; normy proektirovaniia
(SNIIP II-D.2-62). 1963. 42 p. (MIRA 17:1)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva. 2. Gosstroy SSSR (for Gusakov). 3. Gosudar-
stvennyy proyektnyy i nauchno-issledovatel'skiy institut
Promtransniiprojekt Gosstroya SSSR (for Gel'man).

GUSAKOV, S.F., inzh, red.; NEMIROVSKIY, B.S., kand. tekhn. nauk,
red.; DUBROVSKIY, A.I., inzh., red.

[Construction specifications and regulations] Stroitel'-
nye normy i pravila. Moskva, Stroiizdat. Pt.3. Sec.D. ch.2.
[Bridges and pipes; regulations for the work organization,
execution of work, and acceptance of completed work] Mosty
i truby; pravila organizatsii i proizvodstva rabot, priemka
v ekspluatatsiiu (SNiP III-D.2-62) 1964. 86 p.

(MIRA 17:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po de-
lam stroitel'stva. 2. Gostroy SSSR (for Gusakov). 3. Mezhd-
vedomstvennaya komissiya po peresmotru Stroitel'nykh norm
i pravil (for Nemirovskiy). 4. Vsesoyuznyy nauchno-issledo-
vatel'skiy institut transportnogo stroitel'stva (for Dubrovskiy).

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S/120/60/000/004/001/028
E032/E414

21,2300

AUTHORS: Gel'perin, B.B., Gusakov, V.D., Luban, Kh.L. and Trofimova, N.N.

TITLE: Methods of Adjustment of Betatrons to Maximum Intensity

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.13-17

TEXT: The intensity of γ -rays produced by a betatron depends on a large number of factors, all of which have to be taken into account in order to obtain the maximum possible intensity. The present authors describe measures which were taken by them to ensure this maximum intensity. The first section of the paper describes devices which were used to obtain the optimum orbit radius. The radius of the orbit was controlled by special coils located on the electromagnet pole-face. The emf induced in these coils by the field produced by the electromagnet was balanced by externally applied emf. When the two emf's are in fact balanced, the radius of the orbit remains unaltered. If, on the other hand, the external emf is less than the emf induced in the coil, then the current produced in the coil gives rise to a magnetic flux which can be used to control the radius of the orbit. By plotting the intensity of the γ -rays as a function of the orbit radius, the

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Methods of Adjustment of Betatrons to Maximum Intensity

optimum radius can be determined. This scheme was used with a 15 MeV betatron in which the radius could be varied by 10 mm, using a current of 36 A. The second section of the paper is concerned with compensation of magnetic field nonuniformities in the air gap of the electromagnet. Since the static nonuniformity remains practically constant, only the phase nonuniformity of the field is considered. Of all the harmonics of the phase azimuthal field nonuniformity, only the first and the second are of importance in the betatron. Therefore, the compensation of the phase nonuniformity is reduced to the minimization of the first and second harmonics. The two harmonics are compensated by two groups of compensating coils which are located at 90° intervals. This is particularly simple in electromagnets with four-yoke construction as shown in Fig.4. It was found in the case of a 25 MeV betatron that the compensation of the phase nonuniformity increases the intensity by a factor of 2. The final section of this paper is concerned with devices which are capable of altering the field index n at the instant of injection. In the case of a 15 MeV

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Methods of Adjustment of Betatrons to Maximum Intensity

betatron two turns (in series) were used, having a radius equal to the radius of the equilibrium orbit. One of the turns was located above the chamber and the other below. The turns were connected through a stepdown transformer and a series resistor to the source supplying the electromagnet of the betatron. When only one turn was included in the circuit (either the upper one or the lower one), no change in the intensity occurred when the current was varied between 0 and 0.7 A. However, the intensity was increased by 20% when both coils were included, the current through them being 0.37 A. In one of the electromagnets it was found that there was a large phase shift along the radius and the shift increased with the radius. Although the static field index n for this magnet was 0.56 to 0.7 (in the region of the equilibrium orbit), the radial phase shift tended to increase n to about 1 at the instant of injection. This was counteracted by using distributed coils of the form shown in Fig.6. The coils were arranged so that the phase shift produced by them decreased with increasing radius. One group of such coils was placed below the

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Methods of Adjustment of Betatrons to Maximum Intensity

chamber and another above it. In this way it was possible to ensure that the field index n did not exceed a certain limiting value at the instant of injection. In some betatrons use was made of orbit contracting coils. These consisted of two turns located above and below the chamber (Fig.8). In a 15 MeV betatron, the γ -ray intensity was increased by the superposition of an additional field at the instant of injection over a 130° sector. This was achieved with the aid of two four-turn coils, placed above and below the chamber respectively (Fig.9). There are 9 figures and 1 table.

ASSOCIATION: Moskovskiy transformatornyy zavod
(Moscow Transformer Factory)

SUBMITTED: July 10, 1958 (initially)
June 9, 1959 (after revision)

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S/120/60/000/004/001/003
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Methods of Adjustment of Betatrons to Maximum Intensity

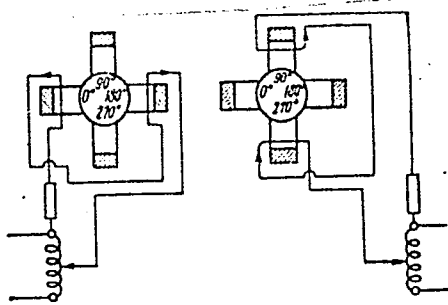


Рис. 4. Схема соединений компенсационных обмоток в электромагните четырехъяремной конструкции

Fig.4

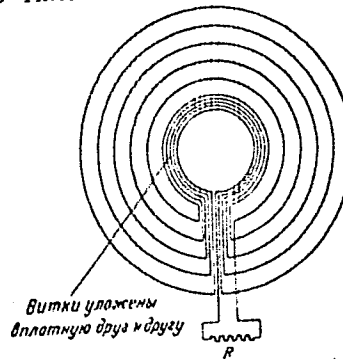


Рис. 6. Схема регулирования коэффициента спада поля λ

Fig.6

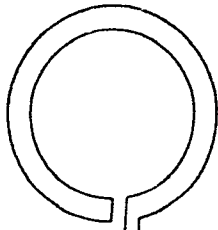
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E032/E414

Methods of Adjustment of Betatrons to Maximum Intensity



к импульсному генератору тока

Рис. 8. Схема сужения орбиты в момент инжекции (контракция)

Fig.8

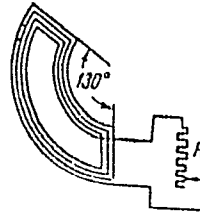


Рис. 9. Секторные вилки для наложения дополнительного поля

Fig.9

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ALEKHIN, I.M.; GUSAKOV, V.F.; PANTSYREVA, N.S.

Reserves in constructing oil and gas wells in the Kuban fields.
Trudy KF VNII no.11:179-191 '63. (MIRA 17:3)

GUSAKOV, V. I.

"On hydraulic mechanisms."

report presented at the Second Conf. on the Problem of Pneumatic Hydraulic
Automation, at Inst. of Automation, AS USSR, 17-19 Mar. '58.

GUSAKOV, V I

8(2)

PHASE I BOOK EXPLOITATION

SOV/3393

SOV/11-M-113

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

O dinamicheskikh svoystvakh sledyashchikh privodov; sbornik statey (On the Dynamic Properties of Servodrives; Collection of Articles) Moscow, Oborongiz, 1959. 78 p. (Series: Its: Trudy, vyp. 113) 6,100 copies printed.

Sponsoring Agency: USSR. Ministerstvo vysshego obrazovaniya *

Ed. (Title page): S.V. Kostina, Candidate of Technical Sciences, Docent;
Ed. (Inside book): S.I. Bumshteyn, Engineer; Ed. of Publishing House:
S.I. Vinogradskaya; Tech.: V.I. Oreshkina; Managing Ed.: A.S.
Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers working in the field of electric and hydraulic servomechanisms, and for students taking courses at electronic and aeronautical institutions of higher learning.

COVERAGE: This book contains four articles on problems of stability and dynamic accuracy of electric and hydraulic servomechanisms. A study is made of the effect

Card 1/2

On the Dynamic Properties of Servodrives

SOV/3393

of a mechanism's parameters on its dynamic properties and ways of increasing the precision of servomechanisms in electrochemical equipment of systems. References appear at the end of each article.

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Petrov, B.I. Transient Processes in D-C Electric Servomechanisms	5
Terskov, V.G. Increasing the Dynamic Accuracy of a Servomechanism by the Introduction of Noise Feedback	27
Borisova, N.A. Theory and Calculation of the Transient Processes of a Hydroservomechanism with Throttle Control, Taking into Account the Nonlinearity of the Throttle Characteristic	55
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AVAILABLE: Library of Congress

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GUSAKOV, V.I., inzh.

Characteristics of electromechanical converters with magnetic
springs. Trudy MAI no.134:107-120 '61. (MIRA 14:8)
(Servomechanisms)

ACCESSION NR: AP4042270

S/0145/64/000/005/0133/0146

AUTHOR: Gusakov, V. I.

TITLE: Transition and frequency curves of an ideal throttle-type hydraulic drive

SOURCE: IVUZ. Mashinostroyeniye, no. 5, 1964, 133-146

TOPIC TAGS: hydraulic drive, throttle type hydraulic drive, drive frequency curve, drive transition curve, frequency curve calculation formula, drive response, phased input signal, sinusoidal input signal, throttle effect, ideal drive calculation

ABSTRACT: The dynamic curves of an idealized drive, calculated by direct solution of a system of three non-linear equations which allows accurate consideration of the effects of a drive's basic parameters, are analyzed and the author concludes that solution of this system of equations is not possible without the use of computers. Formulas and graphs are presented for use in calculating frequency curves of idealized and real drives. It is demonstrated that the transition curves of an ideal drive remain non-oscillatory for any ratio of parameters. Specifically, the response of a drive to a phased input signal involves a transition constituent whose duration depends in part on the magnitude of the control

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ACCESSION NR: AP4042270

signal. Regulation periods of a non-linear drive and a linear component with the same time constant are practically coincident. Frequency curves are governed not only by input signal frequency, the type and magnitude of load, but also by the magnitude of the input signal amplitude. The response of a drive to a sinusoidal input signal is shown to be of complex harmonic character, but analysis proved that it can be approximated by a sinusoid with a phase differential relative to input signal. Here the throttle effect manifests itself primarily in the form of a non-linear lag component. Leakage and compressibility of the fluid can be accounted for, approximately, in the form of an oscillatory term of the second order. Orig. art. has: 6 graphs and 42 equations.

ASSOCIATION: Moskovskiy aviatsionny*y institut (Moscow Aviation Institute)

SUBMITTED: 12Mar63

ENCL: 00

SUB CODE: IE, PR

NO REF SOV: 002

OTHER: 000

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GUSAKOV, V.K., aspirant

Importance of urepepsinogen in the evaluation of the functional
activity of the stomach in swine. Veterinarskiy Zhurnal no. 4:73-75 Ap
'65. (MIRA 18:6)

1. Vitebskiy veterinarnyy institut.

GUSAROV, V.N.; VOZNESENSKIY, B.V.; NYSD, M.A.; LMITRIYEVA, G.V.;
BEITRIYEVA, R.Ye.; KOTLYAROVA, T.V.; SVET, Ye.B., red.

[Chelyabinsk electrometallurgy workers are striving for
technical progress] Cheliabinskije elektrometallurgi v
bor'be za tekhnicheskii progress. Cheliabinsk, Cheliabin-
skoe knizhnoe izd-vo, 1963. 94 p. (MIRA 17:8)

GUSAKOV, V.N., kandidat tekhnicheskikh nauk

Concerning joints in precast reinforced concrete columns.
Stroi. prom. 33 no.7:20-23 J1 '55. (MIRA 8:9)
(Columns, Concrete)

GUSAKOV, V.N.; ZABOLOTSKIY, M.V.; TEREENT'YEVA, V.V.

Continuous distillation of weed tars. *Gidroliz.i lesekhim.prom.9 no.2:*
6-9 '56. (MLRA 9:7)

1. *Sentral'nyy nauchno-issledovatel'skiy lesekhimicheskiy institut*
(for Gusakov, Zabolotskiy). 2. *Giprolesekhim* (for Terent'yeva)
(Weed tar) (Distillation apparatus)

GUSAKOV, V. N.

✓ Formation of vapors in wood chemical processes and its prevention. V. N. Gusakov. *Gidrolit. i Lesakim. Prom.* 9, No. 8, 5-6 (1936).—An investigation of the temp. region in which vapors (I) (carrying over foreign materials) are formed. The causes leading to the build-up of I were found to be the difference between the temp. of I and that of the walls of columns and coolers, the amt. of resins and oils in I, and the rate of vapor release. I could be purified by partial cooling followed by filtration through cotton or by elec. pptn. F. Jurcic

Walt

(Gusakov, V.N.)
USSR/Chemical Technology - Chemical Products and Their I-9
Application. Wood Chemistry Products. Hydrolysis Industry

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2659

Author : Uvarov, I.P., Gordon, L.V., Gusakov, V.N.

Inst :

Title : Wood-Tar Pitch as Binder in the Production of Wood-Coal
Briquettes

Orig Pub : Gidroliznaya i lesokhim. prom-st', 1957, No 4, 10-11

Abstract : Description of experiments on making of briquettes from birch wood coal (moisture content 1%) and wood-tar pitch (softening point, Maken transliterated block method, 90°). Strength to crushing (in kg/cm²) of briquettes (unbaked) containing 10, 15, 20% pitch and produced with low pressure, is respectively, 4.4, 7.4, 17.3; that of baked briquettes is 16.3, 23.3, 26.8. With a press-working pressure of 65 kg/cm² the average strength of baked briquettes was of about 40 kg/cm²; increase in pressure

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USSR/Chemical Technology -- Chemical Products and Their I-9
Application. Wood Chemistry Products. Hydrolysis Industry

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2659

to 150 kg/cm² increases the strength to 100 kg/cm².
Strength of unbaked briquettes could be increased to 50-
80 kg/cm², by raising the pressure. Strength of briquet-
tes on attrition is low.

Card 2/2

AUTHOR: Barshteyn, M.P.,) Candidate of Technical ^{SGV} /97-57-11-9/10
Gusakov, V.N.) Sciences

TITLE: Practical Tests on Load-Carrying Constructions for the Games Arena at the Central Stadium imeni V.I. Lenin. (Naturanyye ispytaniya nesushchikh konstruktsey areny ruchnykh igr Tsentral'nogo stadiona imeni V.I. Lenina).

PERIODICAL: Beton i Zhelezobeton, 1957, Nr 11, pp 465-466.

ABSTRACT: The TsNIPS and the Institute for Building Technique of the Academy of Building and Architecture of USSR carried out statical and dynamic investigations of load-bearing constructions for the above stadium. Tests were carried out by Candidate of Technical Sciences N.P. Korovin, Engineers V.S. Pavlyk, P.K. Shklyarevskiy (through the TsNIPS) and I.P. Ryzhov, A.V. Pan'kov, Ya. Ya Svetova and N.M. Belyayeva of the Institute for Building Technique. The aim of these investigations was to determine the actual load-bearing capacities of the precast standard reinforced concrete units. Various tests are described in detail. Investigations showed that during the calculation and design of deformations of typical joints

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SOV/97-57-11-9-10

Practical Tests on Load-Carrying Constructions for the Games Arena
at the Central Stadium imeni V.I. Lenin.

of these prestressed elements a considerable quantity of reinforcement and concrete could have been saved. This could have been effected if sufficient protection had been taken against the corrosion of the reinforcement and the deformations by testing full-scale units. There is one illustration.

1. Structures--Analysis
2. Reinforced concrete--Loading
3. Reinforced concrete--Testing equipment
4. Reinforced concrete
--Test results

Card 2/2

SUMAROKOV, V.P.; GUSAKOV, V.N.; KURDYUMOV, V.A.; VOLODUTSKAYA, Z.M.

Extraction of acetic acid by wood-tar oils from vapor and ~~gas~~
products obtained in a vertical gas-circulating retort. Sbor.
trud. TSNILKHI no.13:46-59 '59. (MIRA 13:10)
(Acetic acid) (Wood—Chemistry)