S/262/62/000/009/006/017
1007/1207

AUTHOR: Berthold, Edwin

TITLE: Start accelerator for rocket engines and aircraft

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 9, 1962, 37, abstract 42.9.196 P. GDR patent, class 46 g, 1/05, no. 21756, August 19, 1961

TEXT: The start accelerator for rocket engines and aircraft is equipped with a container filled prior to the start with hot water and steam. The steam is used to feed liquid fuel and oxidizer into the combustion chamber. The hot water circulates in the cavity between the wall and the liner of the combustion chamber; the resulting gas-steam mixture expands in the nozzle. In another version of the start accelerator, the liquid fuel is replaced by solid fuel preliminarily fed into the combustion chamber. There are 2 figures.

[Abstracter's note: Complete translation.]

Card 1/1

Psychiatry

HUNGARY

SAMU, Istvan, Dr, SARKADI, Adam, Dr, BERTHOLD, Eva, Dr, ANTAL, Ilona, Dr; City Council of Balassagyarmat, Hospital, Neurological and Psychiatric Ward for Male Patients (chief physician: SAMU, Istvan, Dr) (Balassagyarmati Varosi Tanacs Korhaza, Ferfi Ideg es Psychiatriai Osztaly).

"Nearly Ten Thousand Successive Electroshock Treatments Under Relaxant Protection."

Budapest, Orvosi Hetilap, Vol 108, No 7, 12 Feb 67, pages 293-295.

Abstract: [Authors' Hungarian summary] The experiences with 9787 successive electroshock treatments administered to 253 patients and performed under succinylcholine chloride relaxation and with mechanical respiration using oxygen, are reported. It is concluded that, in such a manner, electroshock can be administered almost free of complications even while the patients are under neuroleptic and reserpine therapy and that extremely good and rapid therapeutic effects are achieved by it. 3 Hungarian, 32 Western references.



APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205020020-0"

BERTI, Stefan

An extension of the notion of the uniform distribution sequence. Studii cerc mat 15 no. 3:413-416 '64.

BERTI, Stefan N.

On the Monte-Carlo method of integral evaluation. Studii cerc mat 14 no.2:209-212 '63.

BERTI, Stefan N.

Extension of H.Weyl's theorem on the series of uniform distribution. Studii cerc mat 15 no. 4:537-540 '64.

BERTIC, T.

Nephro-toxicity of phenacetin. Lijecn. vjesn. 84 no.5:474-476 '62.

(ACETOPHENETIDIN toxicol) (KIDNEY DISEASES etiol)

S

BERTIN, L.; KAS, O.; SZASZ, GY.

BERTIN, L.; KAS, O.; SZASZ, GY. Main trends in the development of industrial technology. p. 1.

Vol. 9, No. 12, Dec. 1955.
TOBBTERMELES.
TECHNOLOGY
Budapest, Hungary

So: East European Accession, Vol. 5, No. 5, May 1956

BERTIN, L.

Introduction of new products into the machine industry. p. 24.
"Mechanized" vocational training. p. 27.
TOBBTERMELES. (Uzemi Tervgazdasagi es Szervezesi Tudomanyos Egyesulet)
Budapest.
Vol. 10, no. 5, May 1956.

SOURCES: EEAL - LC Oct. 1956. Vol. 5 No. 10

PHASE I BOOK EXPLOITATION SOV/5022

Silina, G.F., Yu. I. Zarembo, and L.E. Bertina

Berilliy; khimicheskaya tekhnologiya i metallurgiya (Beryllium; Chemical Technology and Metallurgy) Moscow, Atomizdat, 1960. 119 p. 4,000 copies printed.

Ed. (Title page): Viktor I. Spitsyn; Ed.: A.F. Alyabyev; Tech. Ed.: N.A. Vlasova.

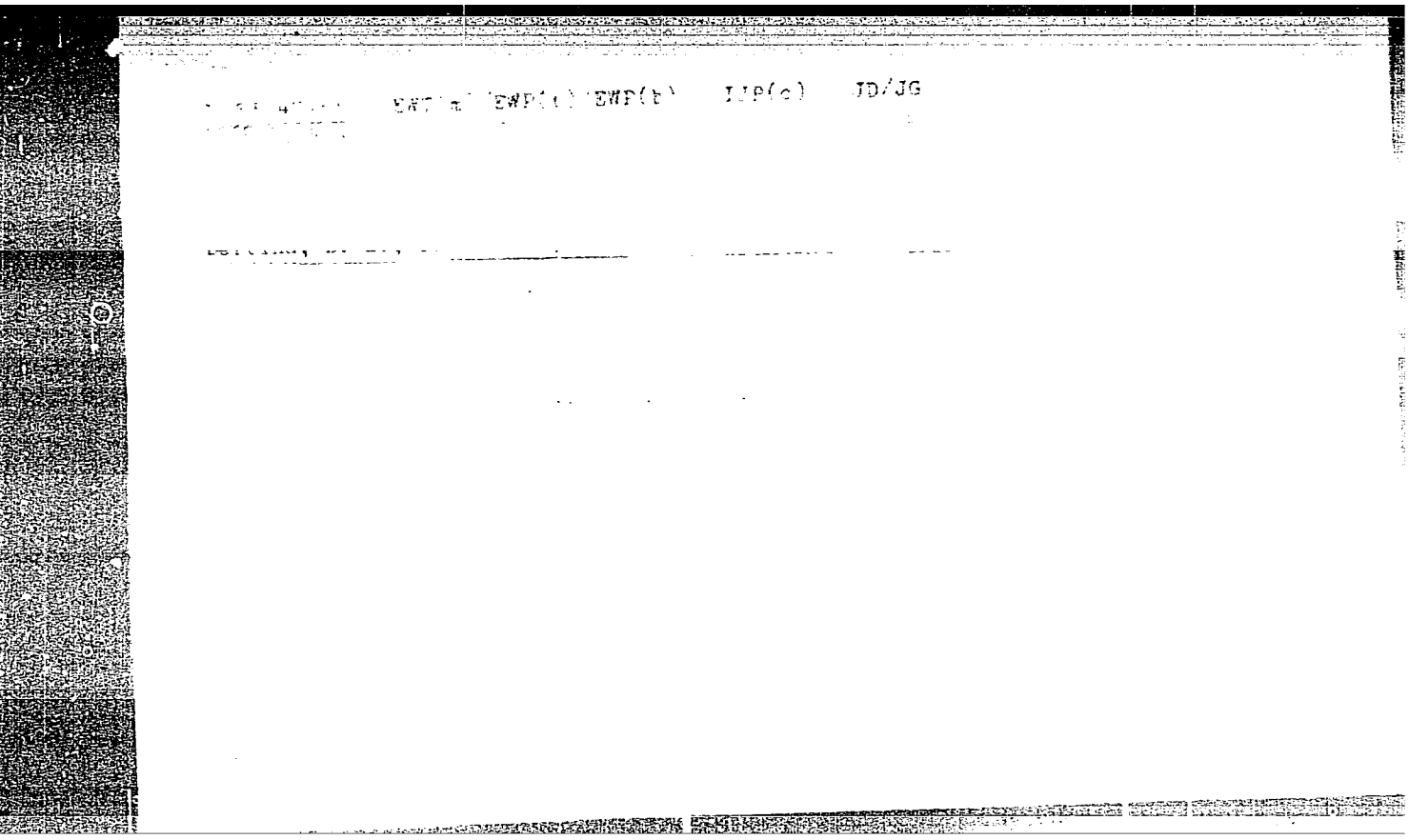
PURPOSE: This book is intended for metallurgists, physicists, chemists and other persons who may be interested in the production, properties, and use of beryllium and its compounds.

COVERAGE: The book gives a critical review of literature published in the last fifteen years on the physicochemical, nuclear, mechanical, corrosion, and chemical properties of beryllium. It describes the industrial processes of producing beryllium and its compounds on the basis of non-Soviet and Soviet literature published up to 1959. Chapters I and II were written by Yu.I. Zarembo; Chapter III, by Viktor I. Spitsyn (Editor), G.F. Silina, and L.E. Bertina; Chapter IV, by G.F. Silina; and Chapter V, jointly by Zarembo and Silina. No personalities are mentioned. The book is based mainly on Western sources. There are 261 references, of which 67 are Soviet.

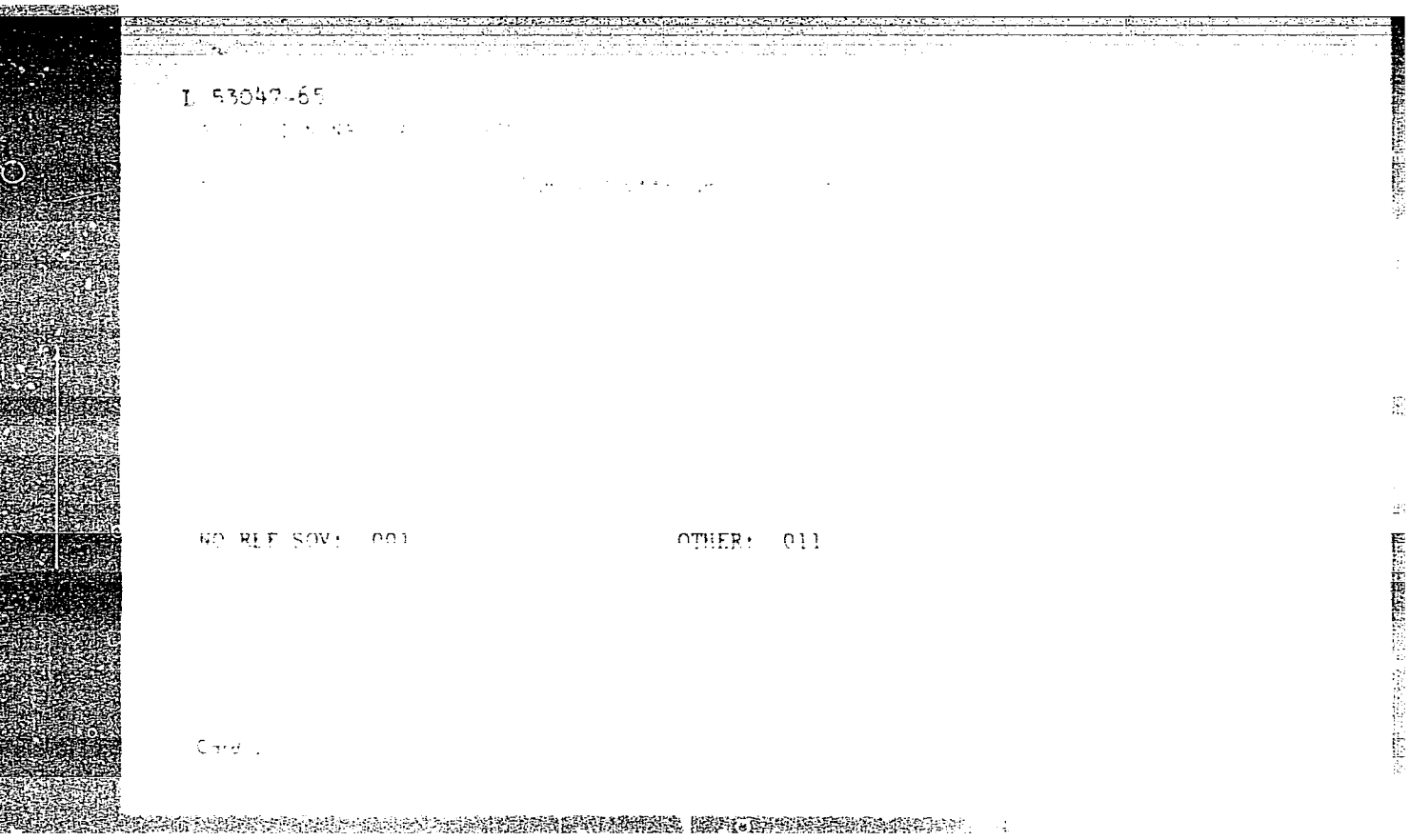
Card 1/3

SILINA, G.F.; ZAREMBO, Yu.I.; BERTINA, L.E.; SPITSYN, V.I., akademik, red.; ALYAB'YEV, A.F., red.; VLASOVA, N.A., tekhn.red.

[Beryllium; chemical technology and metallurgy] Berilliі; khimicheskaia tekhnologiia i metallurgiia. Pod red.V.I.Spitsyna. Moskva, Izd-vo gos.kom-ta Soveta Ministrov SSSR po ispol'zovaniiu atomnoi energii, 1960. 219 p. (MIRA 13:12)
(Beryllium)




APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205020020-0"



BERTING, B.N.; SURASSKIY, L.V.; KOPEYKIN, V.S.

Mechanizing the cleaning of lime vats and the delivery of liming residue to customers. Obm.tekh.opyt. [MLP] no.26:46-50 '56. (MIRA 11:11)

(Tanning) (Waste products)

BERTING, B.N., inzh.

Mechanization of skin sorting. Mekh.i avtom.proizv. 18 no.3: 18-19 Mr '64. (MIRA 17:4)

L 14561-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EEC(k)-2/EPF(n)-2/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWA(h)/ETC(m)-6 IJP(c) JD/WW/JG/EM/DJ/AT

ACC NR: AP6003216 SOURCE CODE: UR/0382/65/000/004/0125/0129

AUTHOR: Aliyevskiy, B. L.; Bertinov, A. I.

ORG: none

TITLE: Experimental investigation of a low voltage homopolar generator used as a power supply for dc conduction pumps

SOURCE: Magnitnaya gidrodinamika, no. 4, 1965, 125-129

TOPIC TAGS: magnetohydrodynamics, pump, generator

ABSTRACT: The characteristics of a homopolar generator operating at low voltage are described. The generator construction and a detailed description of the liquid metal contacts with argon pressurization are given. The generator load was simulated by water-cooled steel tubes with a switching mechanism allowing changes in the load resistance. Generator testing (at 3000, 6000, 9000 rpm) consisted of measuring power losses in various sections of the generator and determining efficiency as a function of rotation speed and load value. It is shown that friction losses in each contact increase rapidly (from 60 w to 1120 w) as rotation increases; internal electric losses are about 50 w and losses in

UDC: 621.313.291.9.001.538.543

Card 1/2

L 14561-66

ACC NR: AP6003216

field coils are 150 w; at the lowest speed, mechanical losses constitute 150 w. It is also shown that the efficiency increases rapidly with increasing output power and reaches a value of about 80%, with the most efficient operation occuring at 3000 rpm. Graphics also show the regulation characteristics. It is recommended that liquid NaK\\ be used in place of the denser mercury in the contacts to increase efficiency. Orig. art. has: 7 figures and 1 table. [14]

SUB CODE: 09,13/ SUBM DATE: 07Feb65/ ORIG REF: 002/ OTH REF: 000/
ATD PRESS: 4190

Card 2/2

L 23177-66
ACC NR: AP6006711 SOURCE CODE: UR/0105/65/000/006/0045/0050

AUTHOR: Avetisyan, Dzh. A. (Candidate of technical sciences, Moscow); Bertinov, A. I. (Doctor of technical sciences, Professor, Moscow)

ORG: none

TITLE: Optimal design of the salient-pole field structure of a synchronous machine

SOURCE: Elektrichestvo, no. 6, 1965, 45-50

TOPIC TAGS: synchronous machine, digital computer, computer calculation, magnetic field, electric field, electric motor

ABSTRACT: An improved method of designing the field structure of a synchronous machine on computer is suggested. The optimality criterion is expressed through a utility function $M = F_0$, where $F_0$ is the magnetizing force required to convey the flux through the airgap and armature, and to offset the armature reaction. The utility function is maximized in this form: $M = F_0(h_m, b_m)$ with $h_m > 0$, $b_m > 0$; here $h_m$ and $b_m$ are geometric parameters. The function maximum is sought by the gradient method which requires iteration operations on a digital computer (the programing is featured). As a result of computer calculations, formulas are

Card 1/2 UDC: 621.313.32:001.12

L 23177-66 2

ACC NR: AP6006711

developed for the maximum useful field magnetizing force, optimal width and optimal height of the pole core. Design data for 8, 16, 30, 60, and 90-kw machines obtained from the above formulas and by conventional techniques are compared (tabulated). "Optimal field parameters were calculated by Engineer V. M. Rybaulina in the Computer Laboratory, MAI, on a BESM-2M computer." Orig. art. has: 4 figures and 17 formulas.

SUB CODE: 09 / SUBM DATE: 08Jun64 / ORIG REF: 002 / OTH REF: 000

Card 2/2 JPC

BERTINOV, A. I.

"Development of the Electrical Industry in the USSR and Tasks of Physics," a report submitted at General Assemblies of OFMN in 1944.

IAN-Ser Fiz, Vol 9, No 3, 1945

A. I. BERTINOV

Okhlazhdeniye aviatsionnykh elektricheskikh mashin pri vysotnykh i skorostnykh poletakh (Cooling of Aircraft Electrical Machines in Altitude and High-Speed Flights).

Moskovskiy aviatsionnyy institut imeni Sergo Ordzhonikidze. Trudy, 1955, no. 50, p. 173-199.

This Publication is not available in the Library of Congress. An Abstract of the article was published in Referativnyy Zhurnal, Mashinostroyeniye, 1956, no. 14, p. 170, abst. 17524.

BERTINOV, A. I. (Cand. Tech. Sci.); MIZYURIN, S. P.

"Stabilisation of Speed of Electric Drive on Direct Current,"

paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of Automatic Production, 15-20 October 1956.
Avtomatika i telemekhanika, No. 2, p. 182-192, 1957.

9015229

BERTINOV A.I.

BRON, O.B.; BEL'KIND, L.D.; SHTURMAN, G.I.; KAMENEVA, V.A.; BERGER, A.Ye.; CHERNICHKIN, D.S.; TISHCHENKO, N.A.; BORISENKO, N.I.; BERTINOV, A.I.; SINEL'NIKOV, Ye.M.

Pavel Petrovich Kopniaev; 25th anniversary of his death. Elektrichestvo no.5:92 My '57. (MLRA 10:6)
(Kopniaev, Pavel Petrovich, 1867-1932)

PHASE I BOOK EXPLOITATION 923

Bertinov, Al'bert Iosifovich and Riznik, Galina Anatol'yevna

Proyektirovaniye aviatsionnykh elektricheskikh mashin postoyannogo toka; uchebnoye posobiye (Design of Direct Current Electric Motors for Aircraft; a Textbook) Moscow, Oborongiz, 1958. 422 p. 5,600 copies printed.

Sponsoring Agency: Moscow. Aviatsionnyy institut im Sergo Ordzhonikidze.

Ed.: Istratov,V.N., Candidate of Technical Sciences; Ed. of Publishing House: Kuznetsova,A.G.; Tech. Ed.: Pukhlikova,N.A.; Managing Ed.: Zaymovskaya,A.S., Engineer.

PURPOSE: This textbook is intended for students specializing in electromechanics in advanced aviation schools; it may be also used in diploma design work.

Card 1/10

Design of Direct Current Electric Motors (Cont.) 923

COVERAGE: The authors describe methods of calculation for the electromagnetics, heating and ventilation of aircraft electrical d-c machines (generators and motors) the basic components of these machines and the design of mechanical parts. They provide working drawings and design examples and specify the necessary design data. There are 14 Soviet references.

TABLE OF CONTENTS:

BERTINOV, A.I., dotsent, kand.tekhn.nauk

Effect of frequency on the dimensions and losses of transformers.
Izv. vys. ucheb. zav.; elektromekh. no.1:107-113 '58. (MIRA 11:6)

1.Moskovskiy aviatsionyy institut.
(Electric transformers)

BERTINOV, Al'bert Iosifovich, kand. tekhn. nauk, dots.

Investigating the performance of induction machines during variations of frequency. Izv. vys. ucheb. zav.; elektromekh. 1 no.3:57-67 '58. (MIRA 11:6)

1. Zaveduyushchiy kafedroy elektricheskikh mashin Moskovskogo aviatsionnogo instituta.
(Electric machinery--Alternating current)

BERTINOV, A.I.
8(3,5) P.2-3 PHASE I BOOK EXPLOITATION SOV/3185

Moscow. Aviatsionnyy institut

Nekotoryye voprosy teorii raboty aviatsionnykh elektricheskikh mashin; sbornik statey (Some Problems in the Theory of Operation of Aircraft Electric Machines; Collection of Articles) Moscow, Oborongiz, 1959. 125 p. (Series: Its: Trudy, vyp. 110) 3,150 copies printed.

Ed.: A. I. Bertinov, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: V. P. Rozhin; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineering and technical workers and students taking advanced courses in electrical machine construction.

COVERAGE: The book contains several articles on the theory and design of special electrical machines, such as: three-winding, bilateral feed transformers (phase discriminator), induction motors with copper-plated ferromagnetic rotor, shielded induction

Card 1/5

motors with copper-plated ferromagnetic rotor and general purpose electrical machines for aircraft. In addition, systems for the stabilization of the frequency of aircraft inverted synchronous converters and their protection are studied. A purportedly new way of speed regulation of induction motors is also examined. References are given after each article.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 5/5

AC/os
3/22/60

KOMISAR, Mikhail Il'ich; BERTINOV, A.I., prof., retsenzent; NOGODYAYEV, L.N., inzh., retsenzent; [illegible]OV, V.N., dotsent, kand.tekhn. nauk, red.; SHEYNFAYN, L.I., izdat.red.; ORESHKINA, V.I., tekhn.red.

[Aircraft electric machinery] Aviatsionnye elektricheskie mashiny. Moskva, Gos.izd-vo obor.promyshl., 1959. 499 p. (MIRA 12:12)
(Airplanes--Electric equipment)

8(5) PHASE I BOOK EXPLOITATION SOV/2304

Bertinov, Al'bert Iosifovich

Aviatsionnyye elektricheskiye generatory (Aircraft Electric Generators) Moscow, Oborongiz, 1959. 594 p. (Series: Aviatsionnyye elektricheskiye mashiny) Errata slip inserted. 10,000 copies printed.

Reviewers: A. N. Larionov, Corresponding Member, USSR Academy of Sciences and M. F. Romanov, Doctor of Technical Sciences, Professor; Ed.: V. N. Istratov, Candidate of Technical Sciences; Ed. of Publishing House: I. A. Petrova; Tech. Ed.: L. A. Garnukhina; Managing Ed.: A. I. Sokolov, Engineer.

PURPOSE: This book was approved by the Ministry of Higher Education, USSR, as a textbook for vtuzes. It is used in aviation vuzes for courses in aircraft and special electrical machines and may be useful in preparing term projects in design.

COVERAGE: The book covers general problems of aircraft electrical machines and the theory of general- and special-purpose aircraft

Card 1/6

generators. It presents an analysis of Soviet and non-Soviet experience in aircraft electrical machine building. Several new circuits are introduced. The author states that no textbook or monograph on aircraft electrical machines has up to now been written and that his book is the first in this field. Owing to the lack of published materials the author has relied on his own experience and drawn from theoretical and experimental investigations conducted by him or in collaboration with others. The author also made use of lectures delivered by him at the Moscow Aviation Institute from 1950 to 1956. It is assumed that the reader is familiar with the following courses: "Theoretical Fundamentals of Electrical Engineering", "Electrical Machines" and "Electrical Measurements." The book consists of two parts. The first part contains general information on aircraft electrical machines and generators for general and special use; the second part contains general information on machines used in aircraft automatic equipment, e.g., electric motors, converters, selsyns and dynamotors. The Introduction presents a brief historical review of the development of electrical machines used in aircraft construction. The

author thanks the reviewers of the book, Professor A. N. Larionov, Doctor of Technical Sciences, Corresponding Member, Academy of Sciences, USSR; Professor G. I. Atabekov, Doctor of Technical Sciences; M. F. Romanov, Doctor of Technical Sciences; F. I. Golgorskiy, Engineer; and A. F. Fedoseyev, Candidate of Technical Sciences. He also thanks A. Ye. Legkovaya-Bertinova, Engineer, for work on calculations, and V. N. Istratov, Candidate of Technical Sciences, for editing the book. There are 20 references: 16 Soviet and 4 English.

TABLE OF CONTENTS:

Aircraft Electric Generators



Card 4/6

Aircraft Electric Generators SOV/2304



AVAILABLE: Library of Congress

JP/jb
10-22-59

Card 6/6

SOV/144-59-8-2/14

AUTHOR: Bertinov, A.I., Cand.Tech.Sci., Acting Professor

TITLE: The Effect of Temperature Change in the Windings on the Characteristics of Induction Machines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 8, pp 12-32 (USSR)

ABSTRACT: The GOST for electrical machines specifies the starting torque at nominal voltage and frequency but does not mention winding temperature for this or the maximum torque. Ambient temperatures in the Soviet Union may range between -60 and +50 °C, while fibreglass insulation permits winding temperatures higher than 250 °C. The table on p 13 shows how the resistances of copper, aluminium and brass vary between -60 and +250 °C. The most important practical case is where the rotor and stator windings are of similar material and change in temperature in a similar fashion. The increase in stator resistance reduces the starting current while the increase in rotor resistance improves the power factor. If the former is the slower process the starting torque increases; if otherwise the torque is reduced. These latter effects are noticed in large and in small (< 100 W) machines respectively. Reduction in the stator temperature

Card 1/3

The Effect of Temperature Change in the Windings on the Characteristics of Induction Machines

increases the short-circuit current, the starting and the maximum torque. Cooling the rotor increases the short-circuit current and the slip but does not affect the maximum torque. If the results obtained in Ref 1 are modified to allow for temperature effects then Eq (6) shows how the power factor changes. The slip is represented by s, the resistance change in the stator by $\alpha_1$, in the rotor by $\alpha_2$ and $\beta$ is the ratio of reactance to resistance. Fig 1 plots Eq (6) for $\alpha = 0.56$ and 1.4 with various values of $\beta$. The secondary current, Eq (13), is plotted against slip in Fig 2. Torque is similarly represented in Fig 3 from Eq (18). When the torque is constant the slip varies with temperature as in Eq (19). The power factor of the stalled rotor and the starting current are plotted in Figs 4 and 6 against temperature. The starting torque, (Eq (31)), is given in Fig 9. Fig 10 shows the starting torque as a function of maximum torque. The maximum torque, Eq (47) against temperature is in Fig 12; the critical slip, Eq (54), is in Fig 14. The higher the

The Effect of Temperature Change in the Windings on the Characteristics of Induction Machines

power the more significant is the effect of temperature on critical slip. Figs 15 and 16, are torque/slip curves. The former is for a large machine, $\beta = 10$ and design temperature 75 °C; the latter is for a 25 W, 400 c/s machine with $\beta = 1$ and the same design temperature. The parameter $\alpha = 0.56, 1.0, 1.4$. It is concluded that the case for specifying winding temperatures has been adequately put.
There are 16 figures, 1 table and 1 Soviet reference.

ASSOCIATION: Kafedra elektricheskikh mashin, Moskovskiy aviatsionnyy institut
(Chair for Electrical Machinery, Moscow Aviation Institute)

Card 3/3

SUBMITTED: June 4, 1959

PHASE I BOOK EXPLOITATION SOV/5819

Bertinov, Al'bert Iosifovich

Elektricheskiye mashiny aviatsionnoy avtomatiki (Electric Machines in Aviation Automation) Moscow, Oborongiz, 426 p. (Series: Aviatsionnyye elektricheskiye mashiny) Errata slip inserted. 10,000 copies printed.

Reviewer: V. D. Nagorskiy, Doctor of Technical Sciences, Professor; Ed.: S. P. Inozemtsev, Candidate of Technical Sciences; Ed. of Publishing House: A. G. Belevtseva; Tech. Ed.: P. V. Shcherbakov; Managing Ed.: S. D. Krasil'nikov, Engineer.

PURPOSE: This textbook has been approved by the Ministry of Higher and Secondary Specialized Education for the courses "Aviation Electric Machines" and "Special Electric Machines" in aviation schools of higher education. It may also be useful in term and degree projects.

COVERAGE: The book is the second volume of the work entitled Aviatsionnyye elektricheskiye mashiny - -

Card 1/5

(Aviation Electric Machines). The principle of operation, structure, theoretical foundations, and certain aspects of the designing of electric machines for aviation automation systems are described. The following devices are treated: induction, synchronous-induction, and hysteresis motors; d-c motors and machines with printed armature winding; transformers; rotary converters; selsyns; and rotary amplifiers. The author thanks F. I. Golgofskiy, V. S. Rybakov, A. Ye. Legkova, D. A. Zavalishin, Corresponding Member, AS USSR, Doctor of Technical Sciences, Professor, V. D. Nagorskiy, Doctor of Technical Sciences, Professor and the faculties of the Departments of Electric Machines of both MAI (Moskovskiy aviatsionnyy institut -- Moscow Aviation Institute) and LIAP (Leningradskiy institut aviatsionnogo priborostroyeniya -- Leningrad Institute of Aviation Instruments) for their help. There are 14 references, all Soviet.

TABLE OF CONTENTS:

BERTINOV, Al'bert Iosifovich; NAGORSKIY, V.D., doktor tekhn. nauk, prof., retsenzent; ZAVALISHIN, D.A., doktor tekhn. nauk, prof., retsenzent; INOZEMTSEV, S.P., kand. tekhn. nauk, red.; BELEVTSEVA, A.G., red. izd-va; SHCHERBAKOV, P.V., tekhn. red.

[Electric machinery in aeronatucal automatic control systems] Elektricheskie machiny aviatsionnoi avtomatiki. Moskva, Gos. nauchno-tekhn. izd-vo Oborongiz, 1961. 426 p. (MIRA 14:9)

1. Chlen-korrespondent AN SSSR (for Zavalishin).
(Electronics in aeronatics) (Airplanes—Electric equipment)

BERTINOV, A.I., prof.; ANDREYEV, V.G., kand.tekhn.nauk

Determining parameters of magnetoelectric generators with an asterisk-shaped rotor. Trudy MAI no.133:5-34 '61. (MIRA 14:5)
(Electric generators)

BERTINOV, A.I., prof.; ANDREYEV, V.G., kand.tekhn.nauk

Effect of aluminum lining of rotors of magnetoelectric generators on the degree of their use. Trudy MAI no.133:35-40 '61.
(MIRA 14:5)

(Electric generators)

S/196/61/000/009/028/052
E194/E155

AUTHORS: Bertinov, A.I., and Andreyev, V.R.

TITLE: The influence of steady-state and transient processes on the waveshape of field and voltage of magneto-electric generators

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.9, 1961, 22, abstract 9I 153. (Tr. Mosk. aviats. in-ta, no.133, 1961, 41-54)

TEXT: Results are given of an investigation of the influence of different kinds of demagnetisation of magnets on the waveshape of the field in the air gap. With stabilisation by opening the magnetic circuit the waveshape of the field is quite different from that with stabilisation by short-circuit current. In the latter case demagnetisation of the magnet is not uniform because of the presence of a transverse component in the m.m.f. curve. The greatest distortion occurs during stabilisation by direct current and by instantaneous short-circuit current. The generator voltage curve at no-load and on-load remains practically

Card 1/2

sinusoidal, despite considerable distortion of the field waveshape. This arises from the use of distributed armature windings of shortened pitch, skewed armature slots and cast aluminium damper windings on the rotor.

[Abstractor's note: Complete translation.]

Card 2/2

BERTINOV, A.I., prof.; SINEVA, N.V., kand.tekhn.nauk

Calculating operating characteristics of shielded electric motors. Trudy MAI no.133:55-63 '61. (MIRA 14:5)
(Electric motors)

SAPIRO, David Naftul'yevich; BERTINOV, A.I., doktor tekhn. nauk, prof., retsenzent; FROLOV, S.P., dots., red.; BOGOMOLOVA, M.F., red. izd-va; KARPOV, I.I., tekhn. red.

[Aeronautical electric apparatus and mechanisms]Aviatsionnye elektricheskie apparaty i mekhanizmy. Moskva, Oborongiz, 1962. 359 p. (MIRA 16:3)

(Airplanes--Electric equipment)
(Airplanes--Equipment and supplies)

ACCESSION NR: AT4042299 S/0000/63/003/000/0209/0228

AUTHOR: Aliyevskiy, B.L.; Bertinov, A.I.; Kalugin, V.N.; Khan, V. Kh.

TITLE: Unipolar DC generators for powering conduction pumps

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy* magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady* soveshchaniya, v. 3. Riga, Izd-vo AN LatSSR, 1963, 209-228

TOPIC TAGS: pump, conduction pump, generator, contact, armature reaction, power supply, direct current generator, unipolar generator, current collector

ABSTRACT: The authors discuss the basic requirements which must be met by power supplies for conduction pumps (reliability, long service life, efficiency, relative simplicity of operation, etc.) and show that unipolar generators satisfactorily fulfill these requirements. The operational principle of these generators (i.e., the rotation of the cylinder or disk in a magnetic field of constant polarity) is briefly described, with the pertinent mathematical expressions. A definition is propounded in the following terms: A unipolar (homopolar, acylic) direct-current generator is the name given to a collectorless generator, in which the direction of the electromotive force, induced in the armature



Card

**ACCESSION NR: AT4042299**

conductors, remains constant with respect to these conductors. In a separate section of the article, the basic structural design versions (that is, the cylindrical and the disk types) are considered and their differences are analyzed. An attempt is made at a classification of unipolar DC generators. The authors also take up the problem of the heavy-current movable contact and liquid-metal current collectors. Attention is given to the different kinds of solid brush collectors and also to the recently proposed ionized gas contact based on metal vapors. The use of a mercury- or alkali metal-based liquid-metal current-collecting apparatus in unipolar generators for pump powering purposes is discussed in some detail. The fundamental equations for "no-load" and working mode conditions are derived and formulas are presented for calculating the electromagnetic power and loads of these generators. In a further section of the paper, an analysis is made of the economically advantageous ratios between the current, voltage and power of unipolar generators, and a comparison of the various types is essayed from this point of view. The authors note that since these generators are designed to operate under a heavy working current, problems relating to the theory and calculation of the armature reaction in these devices take on a particular importance.

12/3
Card

ACCESSION NR: AT4042299

Consequently, the article contains a chapter dealing with the general problem of the armature reaction, methods for its quantitative consideration and for the compensation of this reaction. Still further sections take up the question of the so-called reactive triangle and the general characteristics of these generators, magnetic dispersion and the circuitry for the protection of the magnetic system during no-load running, the proper order to be followed in making engineering calculations of a unipolar generator (determination of principal dimensions for given power and linear velocity in the contact for optimal electromagnetic loads). In a final section on "application", the authors state that, as a rule, for pump power it is most advisable to employ generators of the cylindrical type with a ferromagnetic rotor, since these machines have the best weight and energy characteristics. Other areas of possible application mentioned in the article are electrochemistry, electric welding, the engineering of charged particle accelerators, electric-spark machining techniques, and others. Orig. art. has: 11 figures and numerous equations.

ASSOCIATION: none

SUBMITTED: 04Dec63 ENCL: 00 SUB CODE: EE, IE

NO REF SOV: 000 OTHER: 000

Card 3/3

BALAGUROV, Vladimir Aleksandrovich; GALTEYEV, Fedor Fedorovich; LARIONOV, Andrey Nikolayevich, prof. [deceased]; BERTINOV, A.I., doktor tekhn.nauk, prof., retsenzent; YUFEROV, F.M., kand. tekhn. nauk, dots., red.; FRIDKIN, L.M., tekhn. red.

[Electrical machines with permanent magnets] Elektricheskie mashiny s postoiannymi magnitami. Moskva, Izd-vo "Energiia," 1964. 479 p. (MIRA 17:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Larionov).

ACCESSION NR: AP4018289 S/0144/64/000/001/0034/0042

AUTHOR: Bertinov, A. I.; Misyurin, S. R.; Avetisyan, D. A.

TITLE: Dynamics of inverters supplied by a source of commensurable power

SOURCE: IVUZ. Elektromekhanika, no. 1, 1964, 34-42

TOPIC TAGS: inverter, dc ac inverter, aircraft dc ac inverter, aircraft inverter dynamics, inverter supplied by weak source

ABSTRACT: Dc-ac inverters used in aviation and rocketry are often supplied by a source whose power is comparable to that of the inverter. This fact may affect the inverter's automatic voltage and frequency controls. Hence, the dynamic behavior of the system source-inverter is theoretically analyzed in the article; two independent controllers are assumed to be operating in the system (see Enclosure 1). These conclusions are offered: (1) Two reasons may be responsible for the unstable operation of the inverter: (a) half number of the

Card 1/3

ACCESSION NR: AP4018289

commutating poles in the generator which may bring about a positive connection between the generator voltage and the motor current, resulting in the system h-f cycling; (b) the positive feedback in the motor-control system which grows with the load; this may result in the system l-f cycling; (2) With a specified supply source having its own voltage regulator, the system stability may be somewhat enhanced by selecting motor parameters on the basis of the stability conditions given in the article; (3) Generally, the power source impairs the inverter stability; hence, an autonomous control system for the inverter is desirable. Orig. art. has: 4 figures and 15 formulas.

ASSOCIATION: MAI (Moscow Aviation Institute)

SUBMITTED: 17Feb62 DATE ACQ: 23Mar64 ENCL: 01

SUB CODE: CG NO REF SOV: 001 OTHER: 000

Card 2/3

ALIYEVSKIY, B.L. (Moskva); BERTINOV, A.I. (Moskva); TROITSKIY, S.R. (Moskva)

Principal design relationships of unipolar electrical machines.
Izv. AN SSSR. Energ. i transp. no.1:99-105 Ja-F '64.
(MIRA 17:4)

ALIYEVSKIY, B.L. (Moskva); BERTINOV, A.I. (Moskva); VARLEY, V.V. (Moskva)

Calculation of the force of attraction of noncoaxial cylinders with unipolar magnetization. Elektrichestvo no.2:68-72 F '64. (MIRA 17:3)

BERTINOV, A.I. (Moskva); VARLEY, V.V.(Moskva); MIZYURIN, S.R. (Moskva)

Electromagnetic forces in a motor with rolling rotor.
Elektrichestvo no.8:58-62 Ag '64. (MIRA 17:11)

BERTINOV, A.I., doktor tekhn. nauk, prof.; VARLEY, V.V., inzh.;
MIZYURIN, S.R., kand. tekhn. nauk

Principal design equations of an electrical machine with rolling rotor. Elektrotekhnika 35 no.6:38-41 Je '64.
(MIRA 17:8)

AVETISYAN, Dzh.A.; BERTINOV, A.I.; MIZYURIN, S.R.

Effect of the load on the voltage regulation stability of a synchronous generator in an automomous system. Elektrichestvo no.7:57-60 Jl '64. (MIRA 17:11)

1. Moskovskiy aviatsionnyy institut.

L 01465-66 EWT(l)/EWP(m)/EPA(sp)-2/EPA(w)-2/T-2/EWA(m)-2 IJP(c)

ACCESSION NR: AP5016859 UR/0382/65/000/002/0055/0066
533.95 : 538.4

AUTHOR: Bertinov, A. I.; But, D. A.; Vasyukevich, P. V.; Kalugin, V. N. 52 B

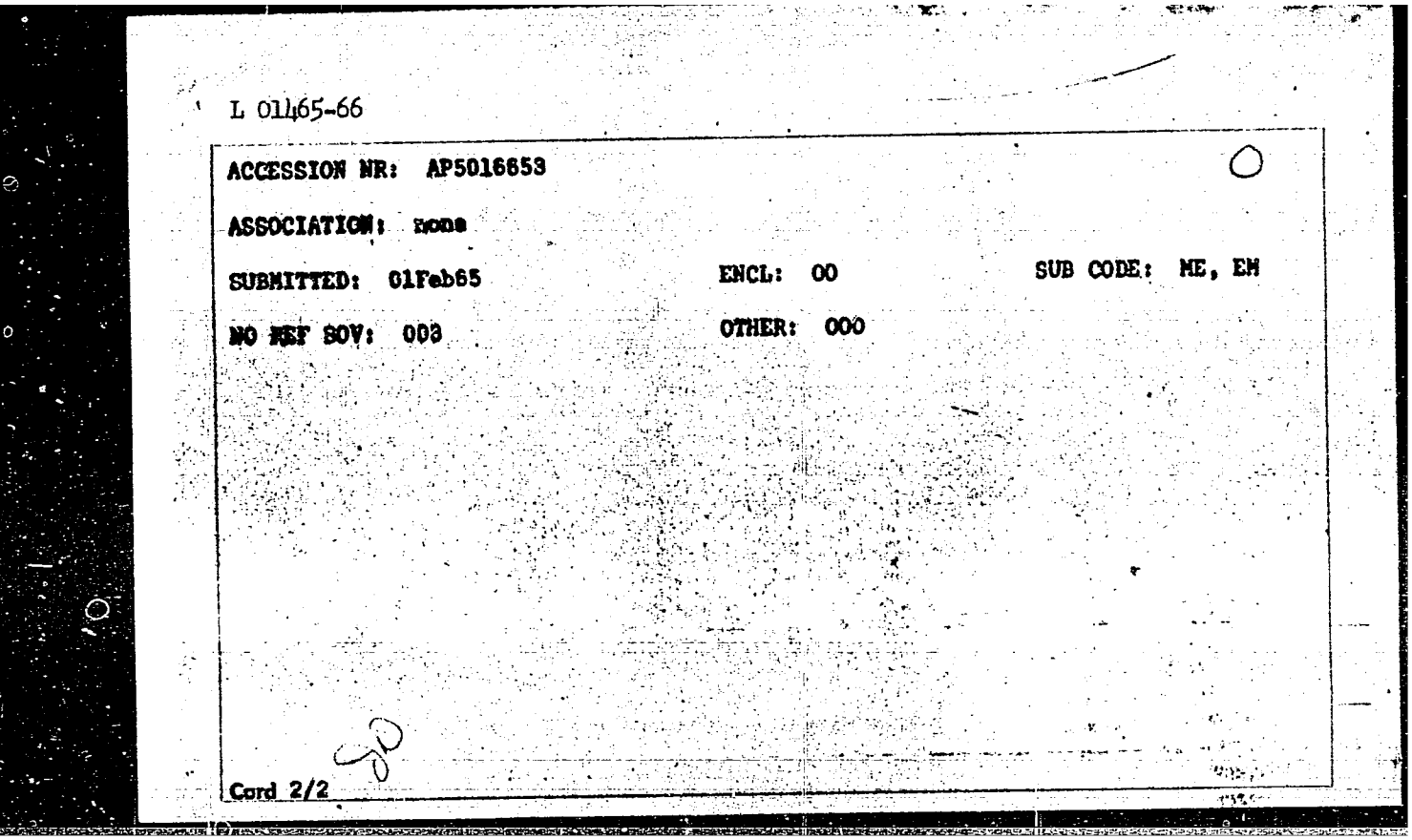
TITLE: Designing channels for vortex flows of a weakly ionized gas in a transverse magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 55-66

TOPIC TAGS: MHD flow, turbulent flow, supersonic flow, subsonic flow

ABSTRACT: The behavior of a vortex flow of an ionized gas under the retarding force of a transverse magnetic field is studied. Magnetohydrodynamic equations are employed without the heat loss and heat transfer terms to describe radial flow in subsonic and supersonic regimes. Three types of channels are considered and it is shown that temperature and Joule heating depend on the channel contours; both behave differently in subsonic and supersonic regimes. The detailed analysis is limited to subsonic cases. Finite solutions are found for constant temperature, constant tangential velocity and constant Mach number. The Appendix contains the solution of the Abel's equation of the second kind. Orig. art. has: 81 formulas, 3 figures.

Card 1/2



L 01465-66

ACCESSION NR: AP5016653

ASSOCIATION: none

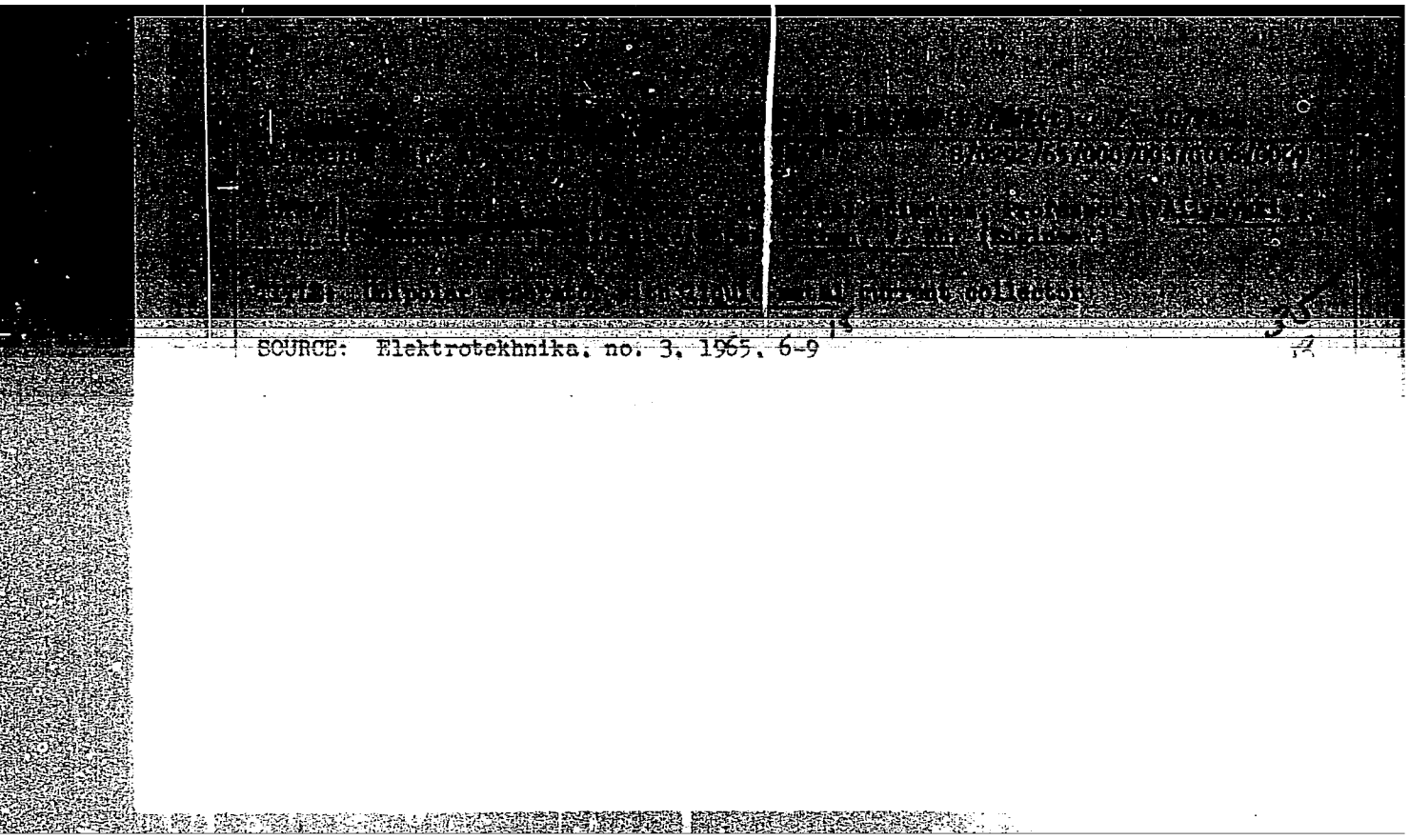
SUBMITTED: 01Feb65 ENCL: 00 SUB CODE: ME, EM

NO REF SOV: 003 OTHER: 000

Card 2/2

BERTINOV, A.I., doktor tekhn.nauk, prof.; ANDREYEV, V.G., kand.tekhn.nauk; GOLUBENKO, Ya.A., inzh.

Magnetic field distribution in brushless electrical machines with externally short-circuited magnetic circuits. Elektrotekhnika 36 no.10:8-11 O '65. (MIRA 18:10)



SOURCE: Elektrotekhnika, no. 3, 1965, 6-9

field and armature circuits ended within

L 11455-66 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1)

ACCESSION NR: AP5016342 UR/0281/65/000/003/0094/0095
532.517:538.122

42
B

AUTHOR: Bertinov, A. I. (Moscow); But, D. A. (Moscow)

TITLE: Method for maintaining a specified flow of a conductive gas in a transverse magnetic field

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 3, 1965, 94-95

TOPIC TAGS: magnetohydrodynamics

ABSTRACT: Maintaining the specified isoparametric conditions of a magnetohydrodynamic flow is suggested by means of correcting the profile of the transverse magnetic field. By using an isothermic single-variable flow of a perfect conductive gas as an example, a general approach is shown to the problem of programming the design of an automatic-control system which would stabilize the gas-flow conditions. Orig. art. has: 1 figure and 9 formulas.

ASSOCIATION: none

SUBMITTED: 07Feb65 ENCL: 00 SUB CODE: ME, EM

NO REF SOV: 002 OTHER: 000

Card 1/1

L 6377-66

ACC NR: AP5026765 SOURCE CODE: UR/0286/65/000/017/0045/0045

AUTHOR: But, D. A.; Bertinov, A. I.

ORG: none

TITLE: A transverse magnetogasdynamic Hall generator with a two-component magnetic field. Class 21, No. 174288

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 45

TOPIC TAGS: Hall generator, magnetogasdynamics

ABSTRACT: This Author's Certificate introduces a transverse magnetogasdynamic Hall generator with a two-component magnetic field. The design of the generator is simplified and its operating reliability in a high-temperature gas stream is improved by making the device from two coaxial electrodes with the excitation winding on the same axis.

UDC: 538.4:621.313.12.024

Card 1/2

L 6377-66
ACC NR: AP5026765

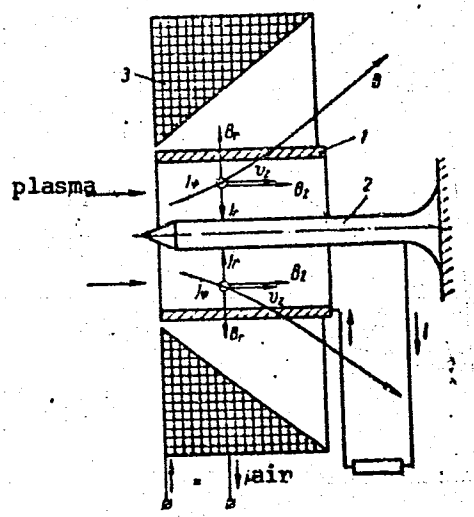



Fig. 1. 1 and 2--coaxial electrodes; 3--excitation winding

SUB CODE: ME,EM,EC/ SUBM DATE: 07Sep64/ ORIG REF: 000/ OTH REF: 000

Card 2/2

AVETISYAN, Dzh. A., kand. tekhn. nauk (Moskva); [illegible], A.I., doktor tekhn. nauk, prof. (Moskva)

Optimal design of a salient-pole inductor of a synchronous machine. Elektrichestvo no.6:45-50 Je '65. (MIRA 18:7)

BERTINOV, A.I.; SINEVA, N.V.

Some problems affecting the design of a three-phase helical electromagnetic pump. Mag. gidr. no.3:103-110 '65.

(MIRA 18:10)

L 13361-66 EWT(1)/EWP(m)/T-2/EWA(m)-2 IJP(c)

ACC NR: AP6001675 SOURCE CODE: UR/0281/65/000/006/0102/0110

AUTHOR: Bertinov, A. I. (Moscow); But, D. A. (Moscow); Gorbatkov, S. A. (Moscow)

95

B

ORG: none

TITLE: Axisymmetrical linear magnetohydrodynamic flow with the Hall effect in a two-component field

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 6, 1965, 102-110

TOPIC TAGS: magnetogasodynamics, magnetohydrodynamics, Hall effect, Faraday effect, MHD generator, axisymmetric flow, EMF, electrode

ABSTRACT: These known magnetohydrodynamic-generator (MHDG) configurations 1,44,55 are briefly examined: (1) Continuous-electrode channel, Faraday emf; (2) Sectionalized-electrode channel, loads fed with Faraday emf's; (3) Sectionalized-electrode channel, Hall emf; (4) Montardi scheme. The potentialities of these two combined configurations are considered: (5) A coaxial channel with a two-component magnetic field in which the emf is generated by both Faraday and Hall effects; no insulating wall is needed, and a small-siz. superconducting magnetic system is

Card 1/2 UDC: 533.99:538.122

2

L 13361-66

ACC NR: AP6001675

applicable; (6) Same, but the electrodes are sectionalized as in (2). The latter two schemes are explored analytically. It is found that: (1) Scheme 5 with continuous electrodes obviates the difficulties connected with insulating walls and inserts in the channel; however, its specific (per unit volume) electric power (maximal at $\beta = 1-2$) is only 1/12 to 1/3 as high as that in other MHDG schemes; the specific power can be stepped up considerably if a higher temperature — and, therefore, higher gas conductivity — be used; (2) The characteristics of scheme 6 approach those of scheme 3; however, scheme 6 has no advantages stemming from the absence of insulating inserts; (3) The axial symmetry of the working flow and the applicability of simple torus superconducting magnetic systems are the two advantages of magnetohydrodynamic flows using the Hall effect and two-component field. Orig. art. has: 5 figures and 38 formulas.

SUB CODE: 20,10,09/ SUBM DATE: 20May65 / ORIG REF: 001 / OTH REF: 001

Card 2/2

L 11263-66
ACC NR: AP6000430 SOURCE CODE: UR/0292/65/000/010/0008/0011

AUTHOR: Bertinov, A. I. (Doctor of technical sciences; Professor); Andreyev, V. G. (Candidate of technical sciences); Golubenko, Ya. A. (Engineer)

ORG: none

TITLE: Magnetic-field distribution in contactless electric machines with an externally closed magnetic circuit

SOURCE: Elektrotekhnika, no. 10, 1965, 8-11

TOPIC TAGS: electric machine, electric generator

ABSTRACT: Unipolar magnetic fluxes were measured by a ballistic method; magnetic test coils were pasted over the external magnetic circuit. Experimental investigation has shown that a considerable alternating component of the working flux passing through the external frame reduces the efficiency and heats up the generator frame. This component amounted to 12% of the total flux (or to 23% of the working flux) in the case of no air gap between the stator core and the machine frame. The gap presence increased the magnetic flux in the stator core and decreased the

Card 1/2 UDC: 621.313.32.013

L 11263-66

ACC NR: AP6000430

alternating flux in the machine frame. This advantage is particularly pronounced in high-frequency high-speed machines. The end leakage flux amounted to about 28% of the working (or 16% of the total) flux. Orig. art. has: 6 figures, 10 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: none

Card 2/2

BERTINOV, A.I.; BUT, D.A.; KALUGIN, V.N.

Magnetic systems of magnetogasdynamic machines. Mag. gidr. no.3:145-154 '65. (MIRA 18:10)

L 14231-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EPF(n)-2/ EWP(v)/T-2/EWP(t)/EWP(k)/EWP(b)/EWA(h)
ACC NR: AP5024909 ETC(m)-6 JD/WW/JG/EM UR/0382/65/000/003/0103/0110

AUTHOR: Bertinov, A.I.; Sineva, N.V.

ORG: None

TITLE: Some design problems of three-phase current electromagnetic pumps

SOURCE: Magnitnaya gidrodinamika, no.3, 1965, 103-110

TOPIC TAGS: induction pump, magnetohydrodynamic pump, spiral induction pump design

ABSTRACT: Spiral induction pumps are similar to polyphase induction motors with a hollow, nonmagnetic rotor. The liquid metal moves along the direction of the traveling magnetic field velocity. The spiral transforms the rotary motion into a combined rotation and translation. The authors present a design theory based upon an analysis of the electromagnetic field components of three-phase induction pumps. Design parameters of the secondary circuit, comprising the liquid metal and the hermetic seal enclosure are found by an analysis of their penetration by the electromagnetic waves. The discussion proceeds from the Maxwell equations, where, in vector form, with the usual notations:

$$\mathrm{rot}\,\bar{H}=\bar{\delta}\,; \qquad \mathrm{rot}\,\bar{E}=-\frac{\partial\bar{B}}{\partial t} \qquad (1)$$

and $\bar{\delta}$ - (current density) and $\bar{H}$, - (magnetic field intensity) are functions of the coordinates, Fig. 1, and (sinusoidal) functions of time. As the result of the analysis,

Card 1/2

UDC 538.4:621.689

L 14231-66

ACC NR: AP5024909

- formulas for the design of spiral (helical) induction pumps are suggested. Fig. 2 shows one of the several results of the analysis, - the dependence of pump pressure, P, upon the slip, s.

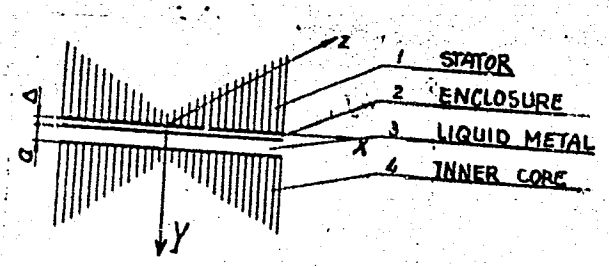



Fig. 1. Developed schematic of the spiral induction pump

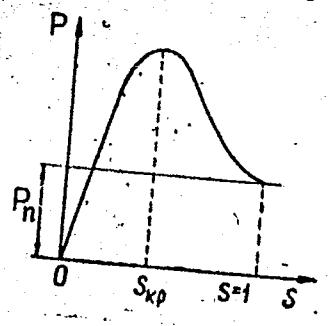



Fig. 2. Dependence of pump pressure, P, upon slip, s; Pn f(s).

Orig. art has 3 figures, 42 formulas.

SUB CODE: 13, 09 SUBM DATE: 24Jan65/ ORIG REF: 001

Card 2/2

L 23902-66 EWT(l)/EWT(m)/EPF(n)-2/T/ETC(m)-6 WW/DJ
ACC NR: AP6009931 SOURCE CODE: UR/0413/66/000/004/0142/0142

AUTHOR: Bertinov, A. I.; Mironov, O. M.

ORG: none

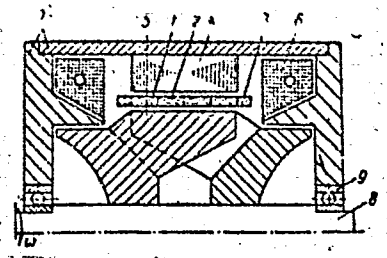
58
B

TITLE: An electromagnetic pump with a revolving rotor. Class 59, No. 179195

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 142

TOPIC TAGS: electromagnetic pump, liquid metal pump, ferromagnetic material, magnetic circuit

ABSTRACT: This Author's Certificate introduces an electromagnetic pump with a revolving rotor, stationary field coils supplied with direct current and a frame made from a ferromagnetic material. The weight is reduced and an alternating magnetic flux is generated by making the rotor claw-shaped in the working air gap.



1--channel; 2--liquid metal; 3--current-closing bus bars; 4--magnetic circuit; 5--field coil; 6--claw-shaped rotor; 7--housing; 8--shaft; 9--bearing //

SUB CODE: 13/ SUBM DATE: 02Feb65/ ORIG REF: 000/ OTH REF: 000

Card 1/1 BK

UDC: 621.689:538.3

L 27948-66

ACC NR: AP6017708 SOURCE CODE: UR/0105/66/000/001/0085/0086

AUTHOR: Bertinov, A. I.; Voronetskiy, B. B.; Gendel'man, B. R.; Girshberg, V. V.; Gromov, V. I.; Druzhinin, N. N.; Kunitskiy, N. P.; Naumenko, I. Ye.; Petrov, I. I.; Vetrov, G. N.; Rusakov, V. G.; Silayev, E. F.; Slezhanovskiy, O. V.; Syromyatnikov, I. A.; Tulin, V. S.; Filin, N. M.; Tselikov, A. I.; Chilikin, M. G.; Yun'kov, M. G.

ORG: none

TITLE: Engineer N. A. Tishchenko (on his 60th birthday)

SOURCE: Elektrichestvo, no. 1, 1966, 85-86

TOPIC TAGS: electric engineering personnel, metallurgic furnace, electric equipment

ABSTRACT: Nikolay Afanas'yevich Tishchenko completed the Khar'kov Electrotechnical Institute in 1930, after working as an electrician in a Metallurgical plant from 1923-1926. He was active in the development of domestically produced electrical equipment for rolling mills and metallurgical furnace works. He was active during WWII in restoring electrical equipment damaged by the Germans. After the war, he was active in developing electrical drive equipment for both domestic and foreign metallurgical plants. He has been active in scientific work, publishing over 45 works in such varied fields as electric drives, equipment reliability and productivity of labor. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09, 13 / SUBM DATE: none

Card 1/1 BLG UDC: 621.34

L 31261-66 EWT(1)/T-2/EWA(d) IJP(c) AT

ACC NR: AP5024915 UR/0382/65/000/003/0145/0154

AUTHOR: Bertinov, A.I.; But, D.A.; Kalugin, V.N.

ORG: None

TITLE: Magnetic systems for rotating plasma magnetohydrodynamic machines

SOURCE: Magnitnaya gidrodinamika, no. 3, 1965, 145-154

TOPIC TAGS: magnetohydrodynamic generator, plasma generator design, plasma generator magnet, plasma generator magnet theory

ABSTRACT: The paper deals with configuration choice and with design parameters determination for magnetic systems of magnetohydrodynamic generators. Efficient design of the magnetic system is here of importance because of its overwhelming relative weight. Two magnetic winding configurations are discussed. System I, with internal winding, Fig. 1, and system II, with external winding, Fig. 2. In the figures, $\Phi_\delta$ is the working flux; $\Phi_{\sigma_1}$, $\Phi_{\sigma_2}$ are the stray flows of the winding, and $\Phi_{\sigma_3}$ is the interpole stray flux. System I has the advantage of low weight and convinient plasma intake, but suffers from yoke saturation and from difficulties with plasma effusion. Its stray flux coefficients in representative designs are less than or equal to 1.5. System II does not have the above disadvantages, but its longer length of the average winding turn leads to an increased weight. Its stray flux coefficients in representative designs are equal to or larger than 2.0. The system has also difficulties with plasma entry. Formulas

Card 1/2 UDC 621.3044:533.95:538.4

L 11160-67 EWT(1) IJP(c)
ACC NR: AP6034904 SOURCE CODE: UR/0382/66/000/002/0025/0031

38

AUTHOR: Bertinov, A. I.

ORG: none

TITLE: Profiling linear channels during braking of slightly ionized gas by a transverse magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1966, 25-31

TOPIC TAGS: transverse magnetic field, conducting gas, approximation, ionized gas

ABSTRACT: Examination in a one-dimensional approximation is made of the braking of a conductive gas by a transverse magnetic field in a rectangular expanding channel within two insulating and two conducting walls connected to variable resistors. Taking into account the changes in gas conductivity, finite analytical solutions for currents with a constant velocity relation to the arbitrary degree of temperature are made, which are generalizations of currents with M = const. The profile of magnetic fields must be coordinated with that of the side walls of the channel in order to achieve a better utilization of the magnetizing force of the

Card 1/2 UDC: 533.95:538.4

L 11160-67
ACC NR: AP6034904 O

magnetic system. The optimum load regime is derived from the condition of minimum production of the channel length on the exit cross-section. Orig. art. has: 2 figures and 40 formulas.

SUB CODE: 20/ SUBM DATE: 14Sep65/ ORIG REF: 002/ OTH REF: 003/

Card 2/2 mlc

L 10027-67 EWT(1)/EWP(m) IJP(c)
ACC NR: AP6034577 SOURCE CODE: UR/0382/66/000/003/0029/0038

44

AUTHOR: Bertinov, A. I.; But, D. A.; Gorbatkov, S. A.

ORG: none

TITLE: Conical magnetogas-dynamic flow with the Hall effect in an axial magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 3, 1966, 29-38

TOPIC TAGS: magnetogas dynamics, magnetogas dynamic flow, Hall effect, axial magnetic field, transverse magnetic field, Faraday effect

ABSTRACT: The authors analyzed a conical magnetogasdynamic flow of an ideal incompressible conducting gas with the Hall effect in an axial magnetic field. The power supplied by the electrodes is produced through the Faraday and Hall effects. The magnetic Reynolds number is assumed to be much less than unity. Analytical relationships have been derived permitting an estimation of the basic electrodynamic and power energy characteristics of flow. Optimization is carried out for output power relating to various parameters. It is shown that by the specific power, the above-mentioned flow, is less than that of MHD flows in a transverse magnetic

Card 1/2 UDC: 533.95:538.4

L 10027-67

ACC NR: AP6034577

field with power takeoff. However, there is no need for insulated duct walls when the above-mentioned effect is involved. It leads to an increase in the permissible temperatures of the working medium simplification of duct design, and increased reliability of the device. Orig. art. has: 4 figures and 55 formulas. [Based on authors' abstract]

SUB CODE: 20/SUBM DATE: 16Feb66/ORIG REF: 002/OTH REF: 001/

Card 2/2 egk

L 34114-66 EWT(1)/EWP(m)/T-2 IJP(c)

ACC NR: AP6008830 SOURCE CODE: UR/0294/66/004/001/0066/0072

AUTHOR: Bertinov, A. I. (Moscow); But, D. A.; Kalugin, V. N.; Vasyukevich, P. V. Vasyukevich, P. V. (Moscow)

ORG: None

TITLE: The approximate computation of the variation in the electric conductivity of a gas in a vortex magnetohydrodynamic flow

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 1, 1966, 66-72

TOPIC TAGS: MHD flow, electric conductivity, gas conductivity

ABSTRACT: A majority of articles devoted to the investigation of vortex MHD flow average out gas conductivity and assume it to be constant. It is known, however, that the conductivity of a weakly ionized gas depends on pressure and to a considerable degree on temperature which may vary substantially along the radius during axisymmetric twisting of a conducting gas in an axial magnetic field. The present authors perform an analysis of vortex MHD flow with the assumption that conductivity depends on temperature as a power function. An ideal conducting gas is studied with part of the total enthalpy being converted to electric power. The authors demonstrate the influence of taking into account the variations of conductivity on the basic parameters of the flow. Orig. art. has: 6 figures and 42 formulas.

UDC 537.311.37

Card 1/2

L 34114-66
ACC NR: AP6008830

SUB CODE: 20 / SUBM DATE: 23Feb65 / ORIG REF: 003 / OTH REF: 002

Card 2/2 pla

ACC NR: AT6036257 SOURCE CODE: UR/2535/66/000/165/0005/0026

AUTHOR: Bertinov, A. I. (Doctor of technical sciences, Professor)

ORG: none

TITLE: I. Basic dimensions of synchronous magnetoelectric generators

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 165, 1966. Beskontaktnyyi i unipolyarnyye elektricheskiye mashiny (Contactless and unipolar electrical machines), 5-26

TOPIC TAGS: generator, electric generator, electric power source, magnetoelectric generator

ABSTRACT: In connection with the increasing application of contactless magnetoelectric machines, the problem of deriving the basic equations for calculating dimensions of a synchronous magnetoelectric generator is considered. The problem of determining the minimum basic dimensions of such a machine is essentially reduced to finding the coefficient of maximum utilization of the fictitious energy of the magnet. An expression is then analyzed for determining the relative value of nominal short-circuit power of the generator. Several particular limiting cases are considered, including: a high-power generator in which the energy dissipation in the winding is neglected, a low-power generator in which the impedance is prevailing, and a real case of a very low-power generator. Next the maximum value of relative

UDC: 621.373.001(04)

Card 1/2

ACC NR: AT6036257

power of the generator is examined, including several particular cases: a high-power generator, a low-power generator, and a very low-power generator. Nomograms are included for determining both the nominal and relative power of the generator. Orig. art. has: 31 formulas, 2 tables, and 5 figures.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

ACC NR: AT6036258 SOURCE CODE: UR/2535/66/000/165/0027/0060

AUTHOR: Bertinov, A. I. (Doctor of technical sciences, Professor)

ORG: none

TITLE: II. Maximum short circuit power of a magnetoelectric machine

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 165, 1966. Beskontaktnyye i unipolyarnyye elektricheskiye mashiny (Contactless and unipolar electrical machines), 27-60

TOPIC TAGS: generator, electric generator, electric power source

ABSTRACT: This is a continuation of a previous work by the same author on contactless magnetoelectric machines with special emphasis on the maximum short-circuit power. Expressions are analyzed for determining both the relative short-circuit power and the maximum relative short-circuit power of a synchronous generator. Stabilization conductance is analyzed for which the maximum of the relative short-circuit power is realized. The relative short-circuit power which depends on the properties of the magnetic material and parameters of the magnetic circuit is determined graphoanalytically by an approximation of the demagnetization curve. Equivalent magnetic circuits and relative diagrams of the magnet of salient-pole synchronous magnetoelectric generators with different rotor types are presented. Orig. art. has: 64 formulas and 28 figures.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 002 UDC: 621.373:621.3.064(04)

Card 1/1

ACC NR: AP6027916 SOURCE CODE: UR/0105/66/000/006/0069/0074

AUTHOR: Avetisyan, Dzh. A. (Candidate of technical sciences; Moscow); Bertinov, A. I. (Doctor of technical sciences, Professor; Moscow)

ORG: none

TITLE: Multistage processes in the selection of optimal sizes for electrical machines

SOURCE: Elektrichestvo, no. 6, 1966, 69-74

TOPIC TAGS: dynamic programming, Monte Carlo method, system design, optimization, analog computer, nonlinear programming

ABSTRACT: The authors consider the problem of the optimal design of electrical machines as a general problem of nonlinear programming in a formulation such as to permit the use of modern computers employing mathematical programming techniques. Familiar methods for finding the maximum function of many variables (limited and unlimited search methods) are briefly reviewed, and the need for more rational methods for computer analysis of optimal electrical machines is noted. In the present article a multistage process is proposed for the solution of optimization problems, with primary attention given to the logical structure of a multistage computer model, apart from a strict substantiation of the limits of its applicability. The consecutive approximation method underlying the multistage search process is analyzed, and it is shown how such computer models for any number of unknown variables can be described.

UDC: 621.313:001.12

Card 1/2

ACC NR: AP6027916

The logical structure of a multistage process for the location of the maximum function of three variables is diagrammed and the basic properties of this process are analyzed. These properties are a single-stage process for the maximization of many variables is converted to a sequential multistage process, and a multistage process is carried out in the form of a series of iteration processes, easily realizable on analog computers. It is shown that the method of dynamic programming can be applied to the specific case of a synchronous generator with rotating inductor and electromagnetic drive. The logical operations at each step of the process are analyzed, and specific computer algorithm recommendations are advanced. Using a BESM-2M computer, determination of optimal values for seven independent dimensions required no more than 7-8 min. Orig. art. has: 25 formulas and 6 figures.

SUB CODE: 09/ SUBM DATE: 03Nov65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

ACC NR: AT6036260 SOURCE CODE: UR/2535/66/000/165/0088/0102

AUTHOR: Bertinov, A.I.(Doctor of technical sciences, Professor);Varley, V.V.(Engineer)

ORG: none

TITLE: IV. Acceleration of an induction hydromotor

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 165, 1966. Beskontaktnyye i unipolyarnyye elektricheskiye mashiny (Contactless and unipolar electrical machines), 88-102

TOPIC TAGS: electric motor, electric rotating equipment, induction motor

ABSTRACT: Several problems associated with the operation of an induction hydromotor in unsteady conditions during acceleration are studied theoretically. In particular, in analyzing the acceleration of the motor the following problems are considered: 1) acceleration time, 2) shortening of the acceleration time, 3) energy losses due to acceleration, and 4) heating of the working windings during acceleration. It is shown that the acceleration time of an induction hydromotor may be determined by the kinetic gyroscope moment, by the parameters of surrounding medium, and by the parameters and characteristics of the motor. Special expressions are derived for determining the acceleration time. It is also shown that the acceleration time, provided both the kinetic moment and the parameters of the surrounding medium are given, can be determined by assuring an optimum ratio of the parameters of the electric motor,

Card 1/2 UDC: 621.313:531.383.001(04)

ACC NR: AT6036260

By utilizing a symmetric starting capacitor, and by increasing the supply voltage during starting. However, it is found that an increase in the current load during starting causes additional heating of the working windings. Orig. art. has: 36 formulas and 7 figures.

SUB CODE: 10/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

ACC NR: AT6036261 SOURCE CODE: UR/2535/66/000/165/0103/0112

AUTHOR: Bertinov, A.I.(Doctor of technical sciences, Professor);Varley, V.V.(Engineer)

ORG: none

TITLE: V. Acceleration of a hysteresis hydromotor

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 165, 1966. Beskontaktnyye i unipolyarnyye elektricheskiye mashiny (Contactless and unipolar electrical machines), 103-112

TOPIC TAGS: electric motor, electric rotating equipment, electric hysteresis ~~equipment~~

ABSTRACT: Some problems associated with the determination of the acceleration time of a hysteresis hydromotor are discussed. In particular, expressions are derived for determining the acceleration time of an ideal hysteresis motor and a real hysteresis motor. It is indicated that synchronous hysteresis hydromotors should be used in gyroscopic systems which require kinematic moments invariable in time. It is shown that the acceleration time of a hysteresis hydromotor, other conditions being equal, is inversely proportional to specific hysteresis losses and to electromagnetic loads. The relative acceleration times of real applicable asynchronous and hysteresis synchronous hydromotors are found to be identical and equal to 1.7. However, the theoretical overload factor for the hysteresis hydromotors is approximately one half that of the asynchronous hydromotors. If the nominal relative load moment is equal

Card 1/2 UDC: 621.313.392.001(04)

ACC NR: AT6036261

to 0.3 for a hysteresis hydromotor, then the relative acceleration time will be 35% larger for an asynchronous motor with a relative load moment equal to 0.3. The relative current overload of a hysteresis hydromotor during its acceleration is insignificant. Therefore, the acceleration process has no appreciable effect on the nominal thermal regime of a hysteresis motor. Orig. art. has: 19 formulas and 6 figures.

SUB CODE: 10/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

ACC NR: AT6036265 SOURCE CODE: UR/2535/66/000/165/0153/0183

AUTHOR: Bertinov, A. I. (Doctor of technical sciences, Professor); Aliyevskiy, B. L. (Candidate of technical sciences)

ORG: none

TITLE: Magnetic leakage in unipolar dc machines

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 165, 1966. Beskontaktnyye i unipolyarnyye elektricheskiye mashiny (Contactless and unipolar electrical machines), 153-183

TOPIC TAGS: electric generator, electric power source, electric motor, dc generator

ABSTRACT: Approximate expressions are derived for calculating the magnetic permeance and leakage currents in cylindrical and disk-type unipolar dc machines (generators and motors) for the different number of pole pairs and the given regime of machine operation. It is shown that in calculating a magnetic circuit the leakage factor (1.5--1.35) should be initially given and the correctness of its selection should be subsequently verified in accordance with the obtained formulas. In comparison to machines with ferromagnetic rotors, relatively large leakage currents and factors are obtained for the disk-type machines because of reduced magnetic permeance in the space between the poles. A formula is derived for calculating the leakage inductance of the excitation winding which may also be used in determining the electromagnetic time constant of the winding in a transient process. The applicability of the formulas



UDC: 621.313.291.001(04)

ACC NR: AT6036265

derived to approximate engineering computations has been experimentally verified on models of magnetic systems of unipolar machines. Orig. art. has: 75 formulas and 16 figures.

SUB CODE: 09, 10/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

BERTLIK, J.

The present level of electric installations, their inspection and maintenance.

p. 469 (Energetika. Vol. 7, no. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

BERTMAN, A.A. (Moskva); SAMARIN, A.M. (Moskva); YAKOBSON, A.M. (Moskva)

Structure of liquid eutectics. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.3:17-19 My-Je '60. (MIRA 13:6)
(Liquid metals—Testing) (Eutectics)