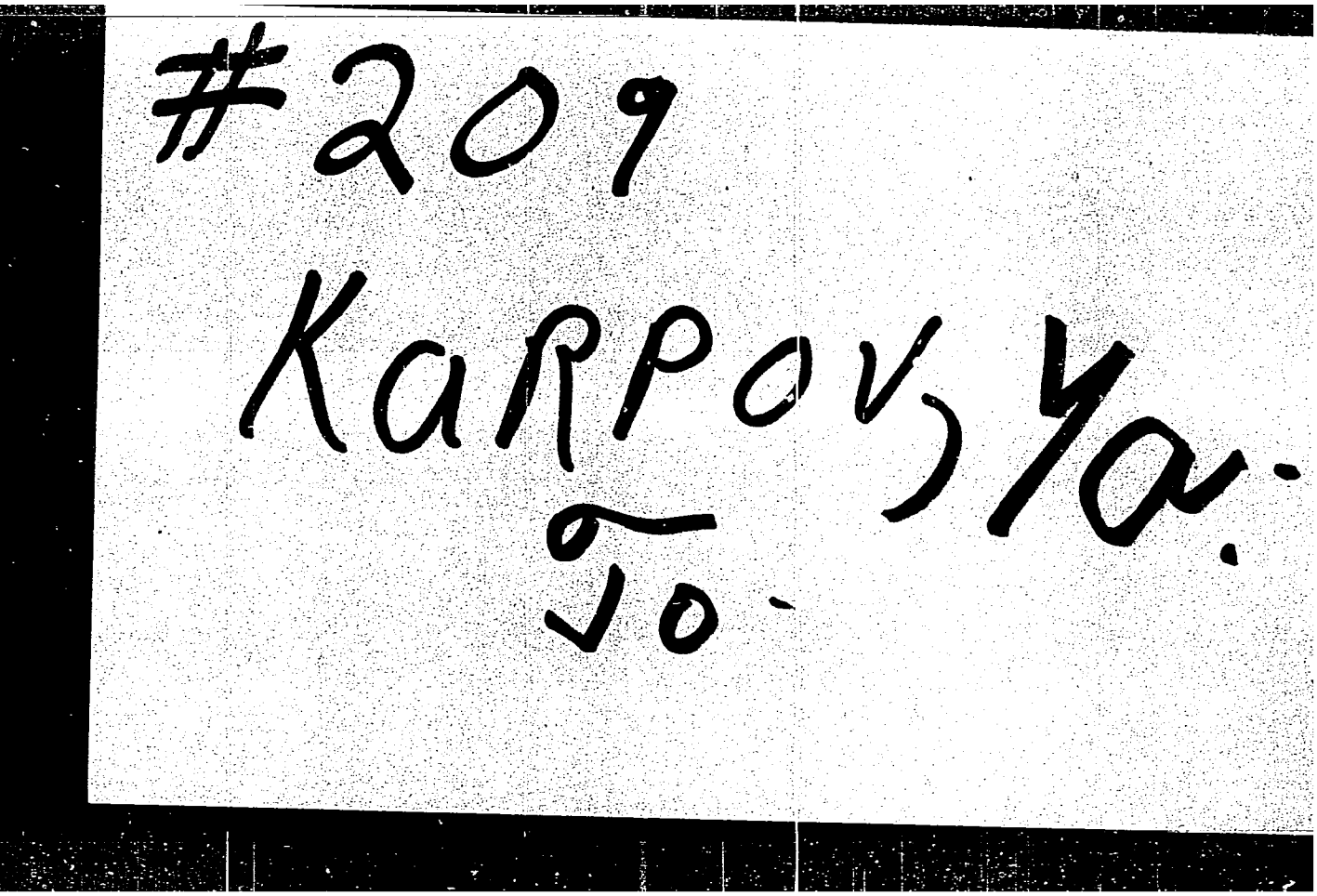

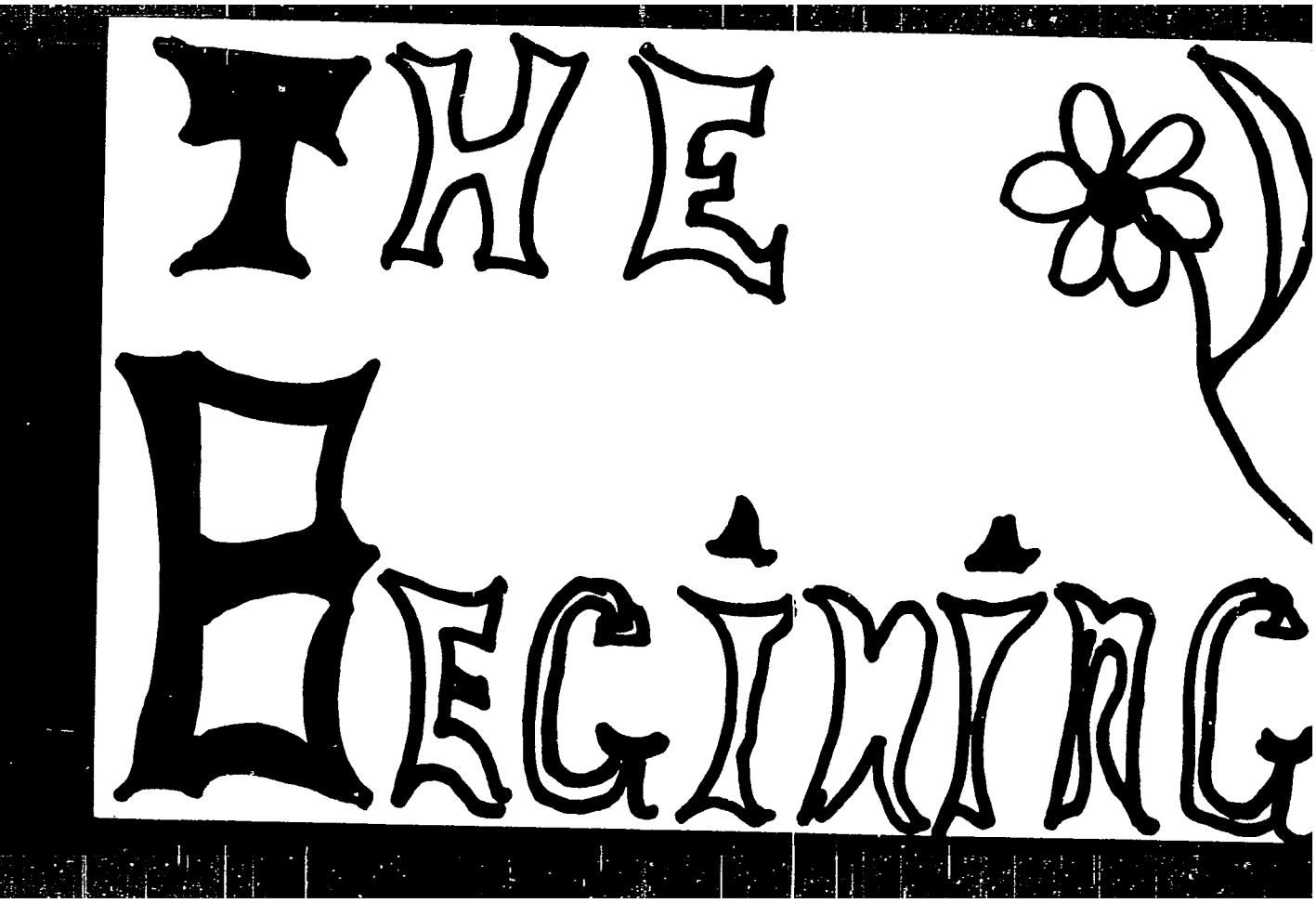

KARPOV, Ya.

Along the lines of technical progress. Sov. profsoiuzy 7 no.13:24-27 Jl '59. (MIRA 12:10)
(Podol'sk--Machinery iniustry)

AUTHORS: Arnautov, L., and Karpov, Ya. SOV/4-59-1-7/42

TITLE: The Giant in the Steppe (Velikan v stepi)

PERIODICAL: Znaniye - sila, 1959, 34 Nr 1, pp 10 - 11 (USSR)

ABSTRACT: One of the first structures to be completed within the 7-year plan of 1959 - 1965 will be the Karagandinskiy metallurgicheskiy kombinat (Karaganda Metallurgical Combine) which is being built in Temir-Tau, Central Kazakhstan. On the huge space from Temir-Tau to Ata-Su, the combine and its auxiliary plants are now being erected. Economists have calculated that Karaganda metal will be the cheapest in the country because of the favorable geographical location of the plant. It will be one of the best-equipped enterprises of great capacity. Its construction has been designed so as to satisfy the requirements of the future. Its iron deposits are just below the surface 370 km south-west of Temir-Tau within the Karaganda Oblast in the Atasuyskiy Iron Ore Basin. The fuel - coking coal - is available 70 km from Temir-Tau at the recently-discovered deposits of Tentekskoye and Shakhanskoye of the Karaganda Coal Basin. The large quantities of water required by the plant

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come from the great lake near Temir-Tau. Quite close to the plant, lime-stone, needed for both ore and coke, can be found. The air temperature in the blast-furnace can be raised to 1,200 degrees instead of the 900 degrees in present furnaces. The author gives a description of what the Karaganda Metallurgical Plant will look like when ready in 1965, and mentions in this connection the famous Russian metallurgist, Academician M.A. Pavlov. The smelting of steel will be carried out in 2 shops - the open-hearth and the converter shops. The open-hearth furnaces will no longer be lined up in one rank but situated like small islands or blocks each holding 2 units. Every block has its own RR line and loading device. Loading and refuelling, and all other work will be done by machines. The steel founder will operate from the control desk. Competing with the open-hearth shop will be the Bessemer shop. This process attracted the metallurgists mainly because of the quickness and inexpensiveness of steel production. A reliable index for the productivity of labor in a metallurgical plant is the quantity of cast iron and steel smelted

by one laborer. In the USA, the highest rate of smelting cast iron per laborer is at the Gary Plant (United Steel Corporation) - 6,680 tons per year. At the Karaganda Combine, production will be considerably higher. This also refers to the smelting of steel. There are 3 drawings.

ARNAUTOV, L., KARPOV, Ya.

Marvelous shells. Nauka i zhizn' 27 no.3:62-63 Mr '60.
(MIRA13:6)

(Bridges--Foundations and piers)

ARNAUTOV, L.; KARPOV, Ya.

"North supply" project. Nauka i zhizn' 27 no.8:44-48 Ag '60.
(MIRA 13:9)
(Russia, Northern--Hydroelectric power)

ARNAUTOV, L.; KARPOV, Ya.

Igor Sharov's three vocations. Znan.sila 35 no.3:10-12 Mr '60.
(MIRA 13:6)

(Technological innovations)

KARPOV, Ya. (g.Bryansk)

It is the turn of related industries. Sov. profsoiuzy 18 no.3:11-13 F '62. (MIRA 15:3)
(Bryansk--Machinery industry)

KARPOV, Ya.

Why do the seconds and low quality survive. Sov. profsoiuzy 18 no.21:10-13 N '62. (MIRA 15:11)

1. Spetsial'nyy korrespondent zhurnala "Sovetskiye profsoyuzy".
(Kreenholm—Textile industry)

KARPOV, Ya.

Norms, wage schedules and the central committee of the trade union. Sov.profsoiuzy 18 no.23:13-15 D '62. (MIRA 15:12)
(Food industry—Production standards) (Trade unions)

KARPOV, Ya.

Riches burning in campfires. Sov.profsoiuzy 19 no.3:3-5 F '63.
(MIRA 16:2)
(Perm Province—Forests and forestry) (Wood waste)
(Perm Province—Trade unions)

KARPOV, Ya.(Grodno)

Place the delivery of equipment under public control. Sov. profsoiuzy 19 no.17:7-9 S '63. (MIRA 16:11)

1. Spetsial'nyy korrespondent zhurnala "Sovetskiye profsoyuzy."

KARPOV, Y[illegible]; SEMENOV, G.M., red.

[Trade unions in the effort to develop large-scale chemistry] Profsoiuzy v bor'be za bol'shuiu khimiiu. Moskva, Profizdat, 1964. 189 p. (MIRA 18:2)

PAVLOVA, Mariya Ivanovna; ZHUPIKOVA, Dar'ya Maksimovna; KARPOV, Yakov Alekseyevich; BYKOV, A.P., retsenzent; ZAYTSEVA, T.M., red.; KOGAN, V.V., tekhn.red.

[Four-shuttle British-Northrop loom] Chetyrekhchelnochnyi tkatskii stanok British-Nortrop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1957. 182 p. (MIRA 11:3)
(Looms)

ARNAUTOV, Leonid Ippolitovich; KARPOV, Yakov Karpovich; MESHKOVSKAYA, M., red.; KUZNETSOVA, A., tekhn.red.

[Secret of the Golden Fleece] Taina zolotogo runa. Moskva, Mosk.rabochii, 1961. 62 p. (MIRA 14:4)
(Leather, Artificial) (Fur, Artificial)

KARPOV, Ye. (Moscow).

Control of interference in television reception. Radio no.6:44 Je '53.
(MLRA 6:6)
(Television--Interference)

KARPOV, Ye.

Sports give strength and health. Mast.ugl. 8 no.6:22 Je '59.
(MIRA 12:10)

1. Instruktor Shakhtianskogo gorodskogo soveta dobrovol'nogo sportivnogo obshchestva "Trud."
(Physical education and training) (Coal miners)

L 14268-66 FSS-2/EWT(1)/FS(v)-3 DD/RD

ACC NR: AT6003835 SOURCE CODE: UR/2865/65/004/000/0010/0016

AUTHOR: Gurovskiy, N. N.; Yemel'yanov, M. D.; Karpov, Ye. A. 61

ORG: none 58

TITLE: Basic principles of special cosmonaut training

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 10-16

TOPIC TAGS: cosmonaut training, vestibular training, manned space flight, centrifuge training, space physiology, space psychology, space flight simulation, spacecraft capsule, flight disorientation, physical fitness

ABSTRACT: The individual characteristics of healthy humans are not stable; external and internal stimuli may produce drastic nonpathological deviations from physiological norms. Resistance to external stress, however, may be greatly increased by training. 2,55,11

Special cosmonaut training is based on analysis of those factors which most substantially affect the cosmonaut and his activities in flight. Flight factors fall into four groups: 1) extremal environmental factors (vacuum,

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ionizing radiation, low temperatures); 2) dynamic flight factors (noise, vibration, acceleration, weightlessness, prolonged vestibular stimulation); 3) ship environmental factors (cabin microclimate, restricted movement, special foods and clothing, time-deficit working conditions, emotional tension); and 4) factors associated with landing (especially when the ejection-parachute descent method is used). Since protection against extremal factors (group 1) is provided by the ship, it is with factors of the last three groups (2, 3, and 4) that the special cosmonaut training program is concerned.

The aims of special cosmonaut training, which simulates on the ground the conditions of flight, are twofold: 1) to provide a basis for the selection or elimination of cosmonaut candidates, and 2) to increase the resistance of the candidates selected to the unavoidable stresses of actual flight.

Since certain factors (prolonged weightlessness, the unique psychological "atmosphere" of flight) cannot be reproduced on Earth, the training program must include a number of nonspecific exercises designed to increase the general resistance of the organism. Special methods are used to increase tolerance to psychological stresses and predict behavior of candidates in flight.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000720910001-1"

In addition, the training program includes exercises designed to develop motor habits and skills needed in flight and to train the cosmonaut in the performance of actual flight operations.

The methods discussed are: 1) parabolic airplane flights, 2) isolation in an echoless chamber, 3) cabin mockup flight simulation, 4) thermochamber training, 5) centrifuge training, and 6) special physical and vestibular training.

The brief duration of the weightlessness created by parabolic flights limits their usefulness for training, since adaptation to brief periods of weightlessness does not necessarily help an individual withstand the prolonged weightlessness of spaceflight.

Prolonged isolation in an echoless chamber with deprivation of external information is a useful tool for neuropsychiatric studies of individual ability to perform assigned tasks under novel conditions, circadian physiological rhythms, the ability (with sudden stimuli) to pass quickly from the sleeping to the waking state and back, and memory, attention, and so forth.

Even though space cabins are air-conditioned, thermochamber training is useful in discovering hidden pathologies and studying individual stress reactions.

Centrifuge training is especially important, both for familiarization and for increasing resistance to spaceflight accelerations. The most careful monitoring is required during this training, since existing information on the cumulative effects of acceleration is contradictory and uncertain. The cosmonauts themselves are emphatic about the usefulness and importance of this type of training.

Mockup training is all the more important in view of the fact that training flights with an experienced instructor, such as are used in training drivers or pilots, cannot be conducted for space crews. All training must thus be accomplished on the ground.

A program of special vestibular training was instituted after the flight of G. S. Titov, who experienced some autonomic maladjustments as the result of vestibular stimulation in flight. This training is directed at 1) increasing vestibular resistance to a wide variety of external factors and 2) reinforcing the functional interaction of the vestibular, visual, and

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ACC NR: AT6003835

kinesthetic analyzers in order to eliminate postural-spatial illusions under conditions of altered gravity and to increase inhibition of the vestibular function. This program must be custom-tailored to compensate the individual vestibular weaknesses of each cosmonaut, which are identified beforehand by determining semicircular canal and otolith thresholds for adequate and inadequate stimulation.

All special training must be supplemented by general physical training designed to improve the cosmonaut's physical condition and perfect the visual-motor coordination required by spaceflight.

The total program must be adjusted to the needs of the individual cosmonaut. The sequence, alternation, and spacing of the various kinds of special training are important here. [ATD PRESS: 4091-F]

SUB CODE: 05, 06 / SUBM DATE: none

GPC

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VOLYNKIN, Yu.M.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; ALTUKHOV, G.V.; BAYEVSKIY, R.M.; BELAY, V.Ye.; BUYANOV, P.V.; BRYANOV, I.I.; VASIL'YEV, P.V.; VOLOVICH, V.G.; GAGARIN, Yu.A.; GENIN, A.M.; GORBOV, F.D.; GORSHKOV, A.I.; GUROVSKIY, N.N.; YESHANOV, N.Kh.; YEGOROV, A.D.; KARPOV, Ye.A.; KOVALEV, V.V.; KOLOSOV, I.A.; KORESHKOV, A.A.; KAS'YAN, I.I.; KOTOVSKAYA, A.R.; KALIBERDIN, G.V.; KOPANEV, V.I.; KUZ'MINOV, A.P.; KAKURIN, L.I ; KUDROVA, R.V.; LEBEDEV, V.I.; LEBEDEV, A.A.; LOBZIN, P.P.; MAKSIMOV, D.G.; MYASNIKOV, V.I.; MALYSHKIN, Ye.G.; NEUMYVAKIN, I.P.; ONISHCHENKO, V.F.; POPOV, I.G.; PORUCHIKOV, Ye.P.; SIL'VESTROV, M.N.; SERYAPIN, A.D.; SAKSONOV, P.P.; TERENT'YEV, V.G.; USHAKOV, A.S.; UDALOV, Yu.F.; FOMIN, V.S.; FOMIN, A.G.; KHLEBNIKOV, G.F.; YUGANOV, Ye.M.; YAZDOVSKIY, V.I.; KRICHAGIN, V.I.; AKULINICHEV, I.T.; SAVINICH, F.K.; STMPURA, S.F.; VOSKRESENSKIY, O.G.; GAZENKO, O.G., SISAKYAN, N.M., akademik, red.

[Second group space flight and some results of the Soviet astronauts' flights on "Vostok" ships; scientific results of medical and biological research conducted during the second group space flight] Vtoroi gruppovci kosmicheskii polet i nekotorye itogi poletov sovetskikh kosmonavtov na korabliakh "Vostok"; nauchnye rezul'taty medikobiologicheskikh issledovanii, provedennykh vo vremia vtorogo gruppovogo kosmicheskogo poleta. Moskva, Nauka, 1965. 277 p. (MIRA 18:6)

L 14268-66 FSS-2/EWT(1)/FS(v)-3 DD/RD

ACC NR: AT6003835 SOURCE CODE: UR/2865/65/004/000/0010/0016

AUTHOR: Gurovskiy, N. N.; Yemel'yanov, M. D.; Karpov, Ye. A. 61

ORG: none 58

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Since certain factors (prolonged weightlessness, the unique psychological "atmosphere" of flight) cannot be reproduced on Earth, the training program must include a number of nonspecific exercises designed to increase the general resistance of the organism. Special methods are used to increase tolerance to psychological stresses and predict behavior of candidates in flight.

2

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kinesthetic analyzers in order to eliminate postural-spatial illusions under conditions of altered gravity and to increase inhibition of the vestibular function. This program must be custom-tailored to compensate the individual vestibular weaknesses of each cosmonaut, which are identified beforehand by determining semicircular canal and otolith thresholds for adequate and inadequate stimulation.

All special training must be supplemented by general physical training designed to improve the cosmonaut's physical condition and perfect the visual-motor coordination required by spaceflight.

The total program must be adjusted to the needs of the individual cosmonaut. The sequence, alternation, and spacing of the various kinds of special training are important here. [ATD PRESS: 4091-F]

SUB CODE: 05, 06 / SUBM DATE: none

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L 38218-66 FSS-2/EWT(1)/EEC(k)-2 SCTB TT/DD/GW

ACC NR: AP6019601 SOURCE CODE: UR/0293/66/004/003/0469/0481

AUTHOR: Karpov, Ye. A.

ORG: none

TITLE: Psychophysiological analysis of activities as criteria for special medical preparation of Voskhod-2 spacecraft crew

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 3, 1966, 469-481

TOPIC TAGS: manned orbital flight, space physiology, extravehicular activity, astronaut, space medicine, ground crew training

ABSTRACT: A psychophysiological analysis is made of the Voskhod-2 astronauts' activities as future criteria for the selection of a space crew. The highlights of the Voskhod-2 flight are reviewed with a special stress on the two-chamber method of initiating the extravehicular activity by A. A. Leonov. A detailed presentation is made of ground crew training with a special stress on simulated extravehicular activities. These were performed by Leonov during several parabolic aircraft flights simulating brief periods of weightlessness in a mock-up space capsule. The steps are reviewed of other ground tests for training Leonov for the space walk. These consist of gymnastics followed by detailed orientation tests on a "supportless" chair capable of multiaxis rotation and the generation of unstable positions. Records are shown of the pulse and breathing rates of Leonov and Belyayev during the 15-minute space walk,

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ACC NR: AP6019601

indicating a substantial increase in both breathing and pulse rates for both astronauts at the initiation of the space walk. This is attributed to emotional stresses involved in performing "pioneering" tasks. The extensive ground training is claimed to have helped Leonov do some menial tasks (disassemble and reassemble camera), orient himself, and make some observations. It is concluded that the selection of the crew on the basis of medical studies followed by special training programs is a rational way of guaranteeing a successful manned flight in space. Orig. art. has: 8 figures. [04]

SUB CODE: 22/ SUBM DATE: 23Feb66/ ORIG REF: 010/ OTH REF: 002/ ATD PRESS: 5045

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35382
S/108/62/017/003/008/009
D299/D303

9.2540 (1139, 1159, 1482)

AUTHOR: Karpov, Ye.A., Member of the Society (see Association)

TITLE: Design and investigation of voltage-doubler rectifier circuits

PERIODICAL: Radiotekhnika, v. 17, no. 3, 1962, 71 - 77

TEXT: A design method is proposed for complicated circuits incorporating rectifier elements. Relationships are obtained between the parameters of the circuit and the harmonics of the current flowing through the rectifier. The operation of symmetrical- and nonsymmetrical voltage-coubler circuits is considered. The method was initially set forth by the author (Ref. 5: Raschet elektricheskikh tsepey s ventil'nymi elementami. Sbornik dokladov Vsesoyuznoy mezhvuzovskoy konferentsii no. 4, Tashkent, 1960). The application of the method to symmetrical voltage-doublers is considered; it is necessary to find the first approximation to the emf-values of one of the rectifiers, while the other rectifier is short-circuited. This amounts to finding the first approximation of the initial pa-

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rameters. Expressions for the emf of the zeroth- and first harmonic are obtained. Analogous expressions are obtained for the second rectifier. Assuming the obtained first-approximations to be correct one obtains the distribution of the currents in the circuit, and then the second approximation of the initial parameters is found. Hence the mean value of the rectified voltage U_0 is obtained. Expressing R in terms of U_0, one obtains an analytical expression for the external characteristic of symmetrical voltage-doubler circuits

$$U_0 = \sqrt{K_1^2 - 1_1^2 I_{\theta_0}^2}. \qquad (18)$$

A figure shows the external characteristics of a rectifier for various capacitance-values. Formula (18) was obtained after considerable simplifications; yet it permits a general analysis of the operation of rectifiers. Other figures show the external characteristics for an actual circuit ($r_1 = r_2 = 3$ ohm, $C_1 = C_2 = 100$ microfarad, U = 20 volt). For comparison, the characteristics were also calculated by another method. It was found that the method used in the present article yields more accurate results. The obtai-

ned characteristics show that the rectifier operates most efficiently if the capacitances are large. In this case the rectified voltage is almost independent of the magnitude of the load current. For a nonsymmetrical circuit, it is not possible to obtain an analytic expression for the external characteristic. By using the method of Ref. 5 (Op.cit.) it was possible however, to determine the external characteristic for an actual circuit having parameters, analogous to the above circuit. A comparison of both circuits shows that the symmetrical circuit has a smoother external characteristic, that the pulsation coefficient of the symmetrical circuit is smaller, and that the voltage at the capacitors (of the symmetrical circuit) cannot exceed the maximum value of the applied voltage, whereas it can in nonsymmetrical circuits. The obtaind calculated values were confirmed by experiment. There are 7 figures and 5 Soviet-bloc references.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications im. A.S. Popov) [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: June 30, 1961

26467
S/177/60/000/011/001/003
D219/D302

27.2100

AUTHORS: Buyanov, P. V., Galkin, A. V., Karpov, Ye. A., Samukhin, N.V., Terent'yev, V. G., Shevchenko, A. I.

TITLE: Contra-indications to the breathing of oxygen at increased pressure

PERIODICAL: Voyenno-meditsinskiy zhurnal, no. 11, 1960, 64 - 68

TEXT: The authors wished to study the effect of systematic breathing of oxygen under pressure and discover medical contra-indications to its use, especially with regard to personnel suffering from physical defects which do not render them unfit for flying duty. 125 persons, 20 - 40 years old, underwent pressure chamber tests and prolonged clinical observation. All were well and fit for flying duty. 43 had various defects such as pleural synechia and adhesions, hypertensive neurocirculatory dystonia (5), 1st degree thyroid enlargement without malfunction (4) and so on. Normal clinical records were taken and analyses done

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Contra-indication to the breathing...

plus X-Ray, neurological, electrophysiological and ENT examination. Subjects took part in 1 - 97 experiments at 7 - 14 day intervals. Physiological effects were noted immediately; rise in heat and respiration rate, arterial pressure, bioelectric respiratory muscle activity; ECG variation; fall of oxyhemoglobin level to 60 - 80% (slowing of circulatory rate; chan ges in latent period of conditioned motor reflexes; occasional subcutaneous emphysema. Subjects usually felt well after tests complaining rarely of fatigue or headache. Clinical examination generally revealed slowing of pulse (by 6 - 18 beats), increase in venous pressure, moderate increase in arterial pressure, slight fall in pulse pressure and increase in heart size. In over 30% of cases heart murmurs - usually pulmonary and aortic- appeared: No pathological ECG changes save extrasystoles in 4 cases. Changes were often recorded in capillary formation, phethysmograph curves and in vasomotor reflexes. Aftereffects: Lung vital capacity decreased by 200 - 400 ml. A third of the subjects had scattered dry rales. Lung X-Ray showed occasional

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shadowing and local disciform atelacteses. There was an increase in neutrophil leucocytes in the peripheral blood and a relative lymphocyte fall. Tendon reflexes became more and more sensitive, finger tremor increased, touch discrimination and co-ordination deteriorated and signs of general fatigue appeared. All changes were reversible, usually in a few hours. As regards personnel suffering from minor defects, the effect of these deficiencies was varies. In some cases e.g., chronic gastritis, they suffered no adverse effect either initially or after prolonged experimentation, but it was clear that systematic participation in such high altitude tests was contra-indicated in all cases of pulmonary tuberculosis, neurocirculatory dystonia, leucopenia, pronounced emotional instability, endocrine deficiency, chronic ENT conditions, or for persons who became rapidly anoxic, had undergone brain trauma or who were suffering from upper respiratory tract infections or exacerbations of chronic upper respiratory tract disease.

SUBMITTED: August 1960
Card 3/3

KLIMASHEVSKIY, E.L.; KARPOV, Ye.A.

New types of combined treatment of seeds before sowing. Izv. SO AN SSSR no.12. Ser. biol.-med. nauk no.3:60-65 '63.
(MIRA 17:4)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR, Vladivostok.

KARPOV, Ye. A., Cand Tech Sci -- "~~Computation~~ Design and analysis of electric ~~chains containing~~ circuits with valve elements." Tomsk, Pub House of Tomsk U, 1961. (Min of Higher and Sec Spec Ed RSFSR. Tomsk Order of Labor Red Banner Polytech Inst im S. M. Kirov) (KL, 8-61, 244)

KARPOV, Ye.A.

Performance of a three-phase rectifier with active load.
Trudy OMIIT 41:89-95 '63. (MIRA 18:7)

KARPOV, Ye.A.

Calculation and analysis of track circuits with rectifier shunts.
Trudy OMIIT 36:17-24 '62. (MIRA 17:4)

KARPOV, Yevgeniy Fedorovich; KRAVCHENKO, Vladimir Sergeyevich, doktor tekhn. nauk; LEYBOV, Ruvim Moiseyevich, doktor tekhn.nauk; SHEYNBERG, Samuil Davydovich; MIRSKAYA, V.V., red.izd-va; KOROVENKOVA, Z.A., tekhn.red.; BERESLAVSKAYA, L.Sh., tekhn.red.

[Automatic protective devices in mines] Avtomaticheskie shakhtnye zashchitnye ustroistva. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. 111 p.
(MIRA 13:7)
(Electricity in mining--Safety measures)

KRAVCHENKO, V.S., doktor tekhn.nauk; KARPOV, Ye.F., inzh.; BIRENBERG, I.E., inzh.

Continuous methane-detection relay. Bezop.truda v prom. 4 no.2:22-24 F '60. (MIRA 13:5)

1. Institut gornogo dela AN SSSR (for Kravchenko, Karpov).
2. Giprougle-avtomatizatsiya (for Birenberg).
(Mine gases--Safety measures)

KARPOV, Ye. F. Cand Tech Sci -- "Study of the thermocatalytic (on carriers) principle of detecting methane in an ore atmosphere." Mos, 1961 (Min of Higher and Secondary Specialized Education RSFSR. Mos Mining Inst im I. V. Stalin). (KL, 4-61, 196)

KRAVCHENKO, V. S., doktor tekhn. nauk; KARPOV, Ye. F., kand. tekhn. nauk; BIRENBERG, I. E., inzh.; ERENBURG, I. I., inzh.

AMT-2 thermocatalytic methane analyzer. Ugol' Ukr. 7 no.4: 38-39 Ap '63. (MIRA 16:4)

1. Institut gornogo dela im. A. A. Skochinskogo (for Kravchenko, Karpov). 2. Gosudarstvennyy proyektno-konstruktorskiy institut avtomatizatsii rabot v ugol'noy promyshlennosti (for Birenberg). 3. Konotopskiy zavod "Krasnyy metallist" (for Erenburg).

(Mine gases—Measurement) (Transducers)

KARPOV, Ye.F., kand.tekhn.nauk

Thermocatalytic principle as a basis in constructing methane detectors for an automatic system of protection from gas. Mekh. i avtom. v gor. prom. no.3:252-267 '63. (MIRA 16:10)

L 8447-66

ACC NR: AP5025732 SOURCE CODE: UR/0286/65/000/018/0084/0084

AUTHORS: Birenberg, I. E.; Chubukov, M. P.; Karpov, Ye. F.; Svet, I. S.; Dovedov, A. N.; Gavrilichenko, L. I.; Rasgulyayev, Ye. P.

57
B

ORG: none

TITLE: An instrument for measuring methane concentration, the resistance of the detonation circuit, and the ignition of electrodetonators. Class 42, No. 174819

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 84

TOPIC TAGS: methane, resistance bridge, electric resistance, electric transformer, transistor, detonation, electric detonator

ABSTRACT: This Author Certificate presents an instrument for measuring the methane concentration, resistance of detonation circuit, and the ignition of electrodetonators. It contains a methane meter (see Fig. 1) in the form of a bridge circuit, one arm of which is the methane-combustion element. The second arm is a balancing element. The other two arms have constant resistances. This device also contains a resistance meter for the detonation circuit and a detonation device in the form of a contactless transistor-transformer converter. The latter converts

UDC: 622.817.9.002.56

Card 1/3

2

L 8447-66

ACC NR: AP5025732

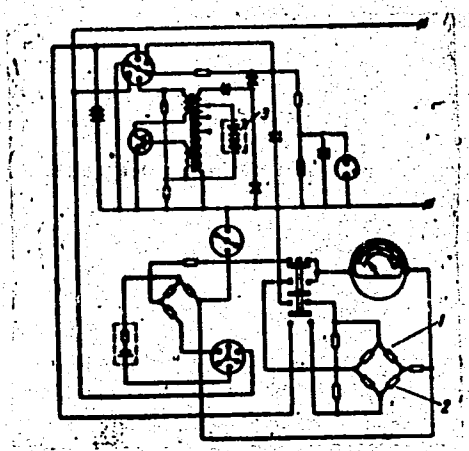

Fig. 1. 1 - A catalytic element;
2 - comparison element;
3 - Zener diode.

low voltage from an independent source to high-voltage alternating current. There is a feedback loop between the secondary winding of the transformer and the base of the transistor. In order to increase the safety of detonation work, to ensure reliability of the device, and to increase its life under difficult mine

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L 8447-66

ACC NR: AP5025732

conditions, the catalytic and comparison elements of the methane meter (which have a working temperature of up to 450C) are installed in a single reaction chamber. The chamber has one-way natural admission of the analyzed gas. The detonation device has a Zener diode connected in opposition to the feedback loop. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 12Mar64

BVK

Card 3/3

50 c

L 41182-65 EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(1) Pf-4
ACCESSION NR: AP5004677 S/0115/64/000/009/0058/0059

70
18
8

AUTHOR: none

TITLE: Fourth scientific and technical conference on "Cybernetics for the improvement of measurement and inspection methods"

SOURCE: Izmeritel'naya tekhnika, no. 9, 1964, 58-59

TOPIC TAGS: cybernetics, electric measurement, electric quantity instrument, digital computer, electronic equipment, electric engineering conference

ABSTRACT: The conference was held 1-4 July at the All-Union Scientific Research Institute of Metrology by the Section of Electrical Measurements of the Council on the Problem of "Scientific Instrument Making" of the State Committee on Coordination of Scientific Research Work in the USSR together with the All-Union Scientific Research Institute of Electrical Measurement Instruments and the Leningrad Regional Administration of the Scientific and Technical Division of the Instrument Making Industry. More than 400 delegates from 29 cities of the country participated. Fifty-seven reports were heard and discussed. Reports were given by: P. V. NOVITSKIY (Leningrad)--"Definition of the Concept of Informational Error in Measurement and its Importance in Practical Use" and "On the Problem of the Average Informational Criterion of Accuracy Throughout the Entire Scale of an Instrument"; Ya. A.

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ACCESSION NR: AP5004677 17

KUPERSHMIDT (Moscow)--"On Determination of the Criteria of Accuracy for Measurement Devices"; S. M. MANDEL'SHTAM (Leningrad)--report on a new criterion of accuracy of measurement instruments; P. F. PARSHIN (Leningrad)--report on optimization when using Fourier transforms on electronic digital computers; S. P. DMITRIYEV, G. Ya. DOLGINTSEVA and A. A. IGNATOV (Leningrad)--proposal of a new method for solving problems of optimum filtering for non-stationary random signals and interference; I. B. CHELPANOV--"Calculation of the Dynamic Characteristics of an Optimum Complex Two-Channel System which Uses Signals from a Position Meter and from a Speed Meter"; R. A. POLUEKTOV (Leningrad)--"Optimum Periodic Correction in the Measurement of Continuous Signals"; S. P. ADAMOVICH (Moscow)--"Analysis and Construction of Devices for Correction of Non-linearity and Scaling for Unitary Codes; G. V. GORBLOVA (Taganrog)--"A Method for Statistical Optimization in Graduating the Scales of Electrical Measuring Instruments"; M. A. ZEMEL'MAN (Moscow)--"Analog-Digital Voltage Converter with Automatic Error Correction"; B. N. MALINOVSKIY, V. S. KALENCHUK and I. A. YANOVICH (Kiev)--"Automatic Monitoring of the Parameters of the Electrical Signals of Complex Radio and Electronic Equipment"; V. P. PEROV (Moscow)--"Operational Cybernetics as an Independent Scientific Specialization"; Ye. N. GIL'BO (Leningrad)--"On the Problem of Effective Non-linear Scales"; A. I. MARKELOV (Moscow)--"Devices for Preliminary Processing of the Results of Measurements Presented in the Form of

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L 41182-65

ACCESSION NR: AP5004677

20

Graphic Recordings For Subsequent Introduction of the Information into universal Digital Computers"; O. M. MOGILEVER and S. S. SOKOLOV (Leningrad)--"On a Method for Reducing Excess Information"; T. V. NIKOLAYEVA (Leningrad)--"A Device for Temporal Discretization of Continuous Signals"; A. A. LYOVIN and M. L. BULIS (Moscow)--"Optimization of the Transmission of Telemetric Information as a Means for Raising the Efficiency and Eliminating Interference"; D. E. GUKOVSKIY (Moscow)--"On a Statistic Approach to the Detection of Events in Automatic Inspection"; M. I. LANIN (Leningrad)--"Method for Calculating the Holding Time of Communications in a Centralized Inspection System or Constant Servicing Time"; O. N. BRONSHTEYN, A. L. RAYKIN and V. V. RYKOV (Moscow)--"On a Single-Line Mass Service System with Losses"; Y. M. SHLYANDIN (Penza)--report on circuit designs for direct compensation electrical digital measuring instruments; A. N. KOMOV (Novocherkassk)--report on a new method for compensation of digital bridges; M. N. GLAZOV (Leningrad)--report on the problem of voltage-to-angular rotation conversion; V. S. GUTNIKOV (Leningrad)--"Methods for Construction of Frequency Capacitance Pickups with a Linear Scale"; R. Ya. SYROPYATOVA and R. R. KHARCHENKO (Moscow)--report on the determination of the amplitude-frequency and phase characteristics of PFM and PWM modulators; Ye. I. TENYAKOV (Novocherkassk)--"The Phototransistor as a Switch for Electrical Measurement Purposes"; N. V. MALYGINA (Leningrad)--a report on ways for making universal equipment for measurement of current, voltage and power; P. P. ORNATSKIY and V. I. ZOZULYA (Kiev)--reports on the construction of static voltmeters, wattmeters and

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L 41182-65

ACCESSION NR: AP5004677

15

phase motors; A. V. TRIKHANOV, I. G. SMYSHLYAYEV, N. I. SABLIN, V. M. RAZIN and V. A. GORBUNOV (Tomsk)--report on a device for automatic processing of the measurements of vibration amplitude of pneumatic hammers; L. K. RUKINA and V. G. KNORRING (Leningrad) --report on the development of a digital compensator for measuring pressure, force, etc.; N. B. DADUKINA (Leningrad)--report on a method for constructing frequency pickups for gas analysis; Ye. M. KARPOV, V. A. BRAZHNIKOV and B. Ya. LIKHTTSINDER (Kuybyshev)--reports on analysis and recording of boring speeds; Yu. V. PSHENICHNIKOV (Kuybyshev)--"A High Speed Voltage-to-Digital Code Converter for ac Pickups"; G. P. VIKHROV and V. K. ISAYEV (Vilna)--"A Highly Accurate Digital Peak-to-Peak Voltmeter"; and S. M. PERGIN (Leningrad)--"A Low Level Analog-Digital Voltage Converter."

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EE, EC

NO REF SOVs: 000 OTHER: 000 JPRS

Card 1/1

L 62093-65 EWT(d)/EWP(1) Pg-4/Po-4/Pq-4 Pk-4/Pl-4 IJP(c) BO
ACCESSION NR: AP5016733 UR/0286/65/000/010/0046/0046

AUTHORS: Karpov, Ye. M.; Barkovskiy, Yu. M. 35 B

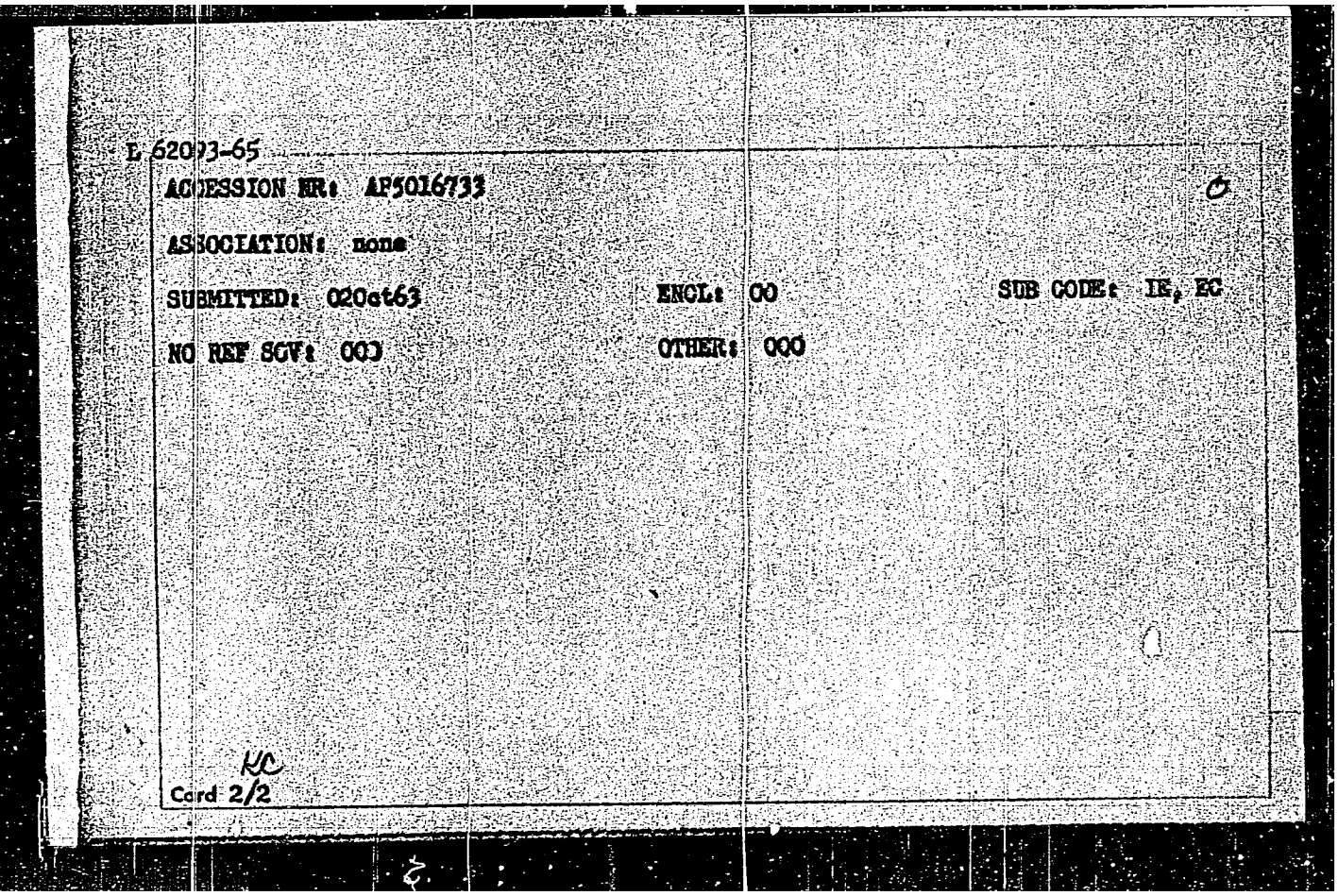
TITLE: Synchronous servosystem. Class 21, No. 171038

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 10, 1965, 46

TOPIC TAGS: servosystem, servomechanism

ABSTRACT: This Author Certificate presents a synchronous servosystem with two degrees of freedom. The transmitter and receiver contain a stator, pickup loop, and central magnetic circuit. For the transmission of large solid angles, the pickup loop is fastened on the central magnetic circuit with a universal joint and is placed in the gap formed by the two spherical surfaces of the stator and central magnetic circuit. To decrease the error, to increase the reliability, and to exclude galvanic coupling between pickup loops, the central magnetic circuit is closed. The coupling coils placed on it are interconnected to form a compensation circuit. The coils of the movable pickup loops are short-circuited. To increase the sensitivity and the possibility of connecting several receivers to one transmitter, an amplifier whose output is connected to the receiver pickup loop is connected in the compensation circuit.

Card 1/2



L 62093-65

ACCESSION NR: AP5016733

ASSOCIATION: none

SUBMITTED: 020ct63 ENCL: 00 SUB CODE: IE, EC

NO REF SOV: 003 OTHER: 000

KC

Card 2/2

KARPOV, Ye.M.; BARKOVSKIY, Yu.M.

Some problems in the theory of a synchronous servosystem with two degrees of freedom. Izv. vys. ucheb. zav.; prib. 8 no.3:49-53 '65. (MIRA 18:11)

1. Kuybyshevskiy politekhnicheskiy institut imeni Kuybysheva. Rekomendovana kafedroy elektroizmeritel'noy tekhniki.

KULIKOVSKIY, L.F.; KARPOV, Ye.M.; POPOVA, G.V.; BRAZHNIKOV, V.A.

Drilling footage recorder. Izv. vys. ucheb. zav.; neft' i gaz. 8 no.4:91-94 '65. (MIRA 18:5)

1. Kuybyshevskiy politekhnicheskiy institut im. V.V.Kuybysheva.

KARPOV, Ye.M.

Motion stability of the moving part of the receiver of a synchronous servosystem with two degrees of freedom. Izv. vys. ucheb. zav.; prib. 8 no.5:62-67 '65. (MIRA 18:10)

1. Kuybyshevskiy politekhnicheskiy institut imeni Kuybysheva. Rekomendovana kafedroy elektroizmeritel'noy tekhniki.

L 03013-67 EWT(d)/EWP(1) IJP(c)

ACC NR: AP6028701 SOURCE CODE: UR/0410/66/000/003/0125/0128

AUTHOR: Karpov, Ye. M. (Kuybyshev); Kulikovskiy, L. F. (Kuybyshev) 29

ORG: none B

TITLE: The accuracy of the solid angle reading by the receiver of the synchronized servo system with two degrees of freedom 9

SOURCE: Avtometriya, no. 3, 1966, 125-128

TOPIC TAGS: angle measurement instrument, servomechanism system, well drilling machinery

ABSTRACT: The remote determination is of special importance during the measurement of angles of petroleum or gas bore holes during the drilling of wells. For this purpose, the authors earlier developed induction sensors and synchronized servosystems with two degrees of freedom (L. F. Kulikovskiy, Author's certificate No 104141, Byulleten' izobretenly, 1965, No 9; Ye. M. Karpov, Yu. M. Barkovskiy, Author's certificate No 171038, Byulleten' izobretenly, 1965, No 10). In this paper they present appropriate theoretical expressions giving the sensitivity of the system. Orig. art. has: 7 formulas and 2 tables.

SUB CODE: 13,14/ SUBM DATE: 21Jan65/ ORIG REF: 003 08

Card 1/1 egh UDC: 62-503.53

L 7985-66 EWT(l)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/T/ETC(m) WW/DJ

ACC NR: AP5026519 SOURCE CODE: UR/0286/65/000/019/0050/0050

AUTHORS: Gusev, V. I.; Mironov, S. G.; Piskalov, L. M.; Karpov, Ye. N.

ORG: none

TITLE: A device for lubricating vacuum pumps. Class 27, No. 175165 [announced by Enterprise of the State Committee for Defense Technology, SSSR (Predpriyatiye gosudarstvennogo komiteta po oboronnoy tekhnike SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 50

TOPIC TAGS: pump, vacuum pump, mechanical engineering

ABSTRACT: This Author Certificate presents a device for lubricating vacuum pumps. The device contains a cutoff valve operated by a centrifugal governor kinematically connected to the shaft of the pump (see Fig. 1). To simplify the construction, the governor is mounted on the shaft bracket, and the movable clutch of the governor is provided with a bearing which opens or closes the valve when the pump is being stopped or started.

Card 1/2 UDC: 621.521--72

L 7985-66

ACC NR: AP5026519

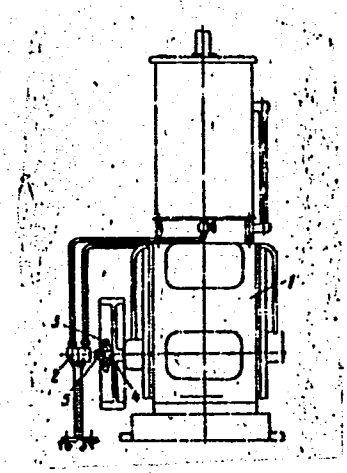


Fig. 1. 1- pump; 2- valve; 3- centrifugal governor; 4- pump shaft; 5- bearing

Orig. art. has: 1 figure.

SUB CODE: IE/ SUBM DATE: 21Jul64

Card 2/2

KARPOV, Ye.S.

Introduce on a large scale casing strings with minimum thickness of walls. Neft. khoz. 39 no.4:65-67 Ap '61. (MIRA 14:6)
(Bashkiria—Oil well casing)

STAROGORODSKIY, Nikolay Nikolayevich; KARPOV, Yevgeniy Vasil'yevich; IVANOV, G., red.; DANILINA, A., tekhn.red.

[Volga giant] Volzhskii gigant. Moskva, Gos.izd-vo polit. lit-ry, 1959. 78 p. (MIRA 12:12)
(Stalingrad Hydroelectric Power Station)

KARPOV, Yu.

Devices for removing air from hydraulic brake system. Avt. transp. 36 no. 7:26 Jl '58. (MIRA 11:8)
(Automobiles--Brakes)

AUTHORS: Karpov, Yu., Engineer, Krasnoperov, V., Engineer, Okunev, Yu., Engineer SOV/29-58-9-26/30

TITLE: An Unusual Motor (Neobychnyy dvigatel')

PERIODICAL: Tekhnika molodezhi, 1958, Nr 9, pp 37 - 37 (USSR)

ABSTRACT: In the course of their studies at the Leningradskiy elektrotekhnicheskiy institut imeni V.I.Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V.I.Ul'yanov (Lenin)) the authors of this paper invented an electrical motor which they called "dielectric motor". This is a description of its principle of operation. This motor has neither a conventional steel stator with a copper winding nor a massive rotor. It operates by using the principles of static electricity - the interaction of stationary electric charges. The disk does 6000 revs/min. Attempts were made to increase the speed of the motor by producing the rotor from different materials. The best results were obtained with plexiglass. The speed can also be increased by placing the rotor in a vacuum, thus reducing air friction. The power of the motor can be increased by

Card 1/3

placing it in a high-pressure chamber . In a fluid dielectric the nominal voltage is reduced almost by a factor of 10. As a compensation the speed is considerably reduced owing to the increased friction of the rotor in the fluid. The dieelectric motor is still anything but perfect. Nevertheless it is capable of being used in practical work. If a vane is attached to it it may serve as a ventilator. If the shaft of the rotor is arrested by a spring this motor is transformed into an instrument measuring high d.c.tension. The angle of deflection of the rotor will be proportional to the potential applied to the electrodes. The high speed of such motors and the lacking of a commutator recommends such motors for use in gyroscopes. Although at present it may sound phantastically, there is no denying that in principle such a motor could be used in connection with a radioactive electrostatic generator. There are 3 figures.

ACCESSION NR: AP4033096 S/0120/64/000/002/0005/0016

AUTHOR: Karpov, Yu. A.; Kontor, Ye. I.; Talenskiy, O. N.

TITLE: Magnetic-discharge cold-cathode pumps (A review)

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 5-16

TOPIC TAGS: magnetic discharge pump, vacuum pump, fine vacuum pump, magnetic discharge cold cathode pump, Vacion pump, Penning discharge pump, NEM Soviet make pump

ABSTRACT: A review of the exhaustion mechanism, designs, and applications of magnetic-discharge cold-cathode pumps, based on 1956-63 Soviet sources and 1937-61 Western sources, is presented. Both the advantages and disadvantages of these pumps are listed and characteristics of some Soviet-made pumps are supplied. "In the Soviet Union, pumps of this kind are built for a rate-of-exhaustion of 0.2, 8, 30, 100, 300, and 1,000 ltr/sec; also, oilless exhaustion

Card 1/2

ACCESSION NR: AP4033096

sets based on magnetic-discharge pumps with 30, 100, and 300 litr/sec." The weight, size, and some design details of Soviet NEM-30-2, NEM-100-2, and NEM-300-1 pumps are given, as well as the weight and size of their power-supply units. Orig. art. has: 9 figures and 2 tables.

ASSOCIATION: Institut metallurgii (Institute of Metallurgy)

SUBMITTED: 09Apr62 DATE ACQ: 11May64 ENCL: 00

SUB CODE: PH, IE NO REF SOV: 005 OTHER: 024

Card 2/2

S/0032/64/030/003/0306/0308

ACCESSION NO: AP4020044

AUTHORS: Glavin, G. G.; Karpov, Yu. A.

TITLE: Determination of oxygen in rare earth metals and their fluorides

SOURCE: Zavodskaya laboratoriya, v. 30, no. 3, 1964, 306-308

TOPIC TAGS: oxygen, rare earth, rare earth metal, rare earth fluoride, yttrium oxide, gadolinium oxide, argon chamber, vacuum furnace, graphite liner, vacuum fusion

ABSTRACT: The authors have worked out a method for determining oxygen in rare-earth metals and their fluorides by vacuum fusion, using a platinum tank, graphite liners, and an argon chamber. They have undertaken this study because of the lack of sensitivity or precision in other methods. The vacuum-fusion method makes use of oxygen extraction from rare-earth metals and their fluorides by thermal dissociation of oxides. The authors used the method of Yu. A. Klyachko and Ye. M. Chistyakova (Zavodskaya laboratoriya, XXVI, 12, 1335, 1960) for reducing the oxides. Degassing of a set of graphite liners was carried out for an hour at 1900C in the vacuum furnace of an argon chamber. The samples were then placed in the graphite

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ACCESSION NO: AP4020044

liners, which were set in a charging apparatus. The gas was extracted from the samples at a temperature of 1850C for a period of 15 minutes. Free F was not given off by the vacuum furnace, but formed fluorine-carbon compounds was formed. The addition of fluorides did not affect the extraction of oxygen from yttrium and gadolinium oxides. The sensitivity of the method is 0.01% and the reproducibility in the concentration interval 0.1-0.6% is 20%. Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut redkometallicheskoy prom*shlennosti (State Scientific Research and Planning Institute of the Rare-Metal Industry)

SUBMITTED: 00 DATE ACQ: 27Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 003

Card 2/2

CHUPAKHIN, M.S.; GLAVIN, G.G.; KABLOV, Yu.A.; KORNILOVYN, D.Y.

Mass spectrum analysis of oxygen in titanium. Dokl. AN SSSR 158 no.3: 689-691 S '64. (MIRA 17:10)

1. Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo AN SSSR. Predstavlena akademikom A.P.Vinogradovym.

KARPOV, Yu.A.; GLAVIN, G.G.

Analysis of gases in metals. Zav. lab. 31 no.2:139-142 '65. (MIRA 18:7)

KARPOV, Yu.A.; GLAVIN, G.G.; ZAV'YALOV, O.V.; IVANOVA, R.V.

Evaluation of the sensitivity of oxygen detection in niobium by the vacuum melting method. Zav.lab. 31 no.10:1190-1191 '65. (MIRA 19:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

KARPOV, Yu. S.

PHASE I BOOK EXPLOITATION SOV/5058

Bogoroditskiy, N. P., and V. V. Pasynkov, eds.

Spravochnik po elektrotekhnicheskim materialam. V dvukh tomakh. t. 2: Magnitnyye, provodnikovyye, poluprovodnikovyye i drugiye materialy (Handbook on Electrical Engineering Materials. In two volumes. Vol. 2: Magnetic, Conducting, Semiconducting, and Other Materials) Moscow, Gosenergoizdat, 1960. 511 p. Errata slip inserted. 30,000 copies printed.

Eds. of Handbook: K. A. Andrianov, N. P. Bogoroditskiy, Ya. V. Koritskiy, V. V. Pasynkov, and B. M. Tareyev; Eds. (This vol.): N. P. Bogoroditskiy and V. V. Pasynkov; Tech. Ed.: Ye. N. Soboleva.

PURPOSE: This handbook is intended for technical personnel of electrical and radio engineering establishments, power stations and substations, electric repair shops, laboratories, and scientific research institutes.

COVERAGE: This volume of the handbook contains basic information on magnetic materials, metallic conductors, electrical carbon, and important electrolytes used in modern engineering. It describes characteristics of semiconductor, ferroelectric, and piezoelectric materials. It does not include insulating materials, which were covered in Volume I. The authors thank the scientists associated with the Department of Dielectrics and Semiconductors of the Leningradskiy elektrotekhnicheskiy institute imeni V. I. Ul'yanova (Lenina) [Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)], especially Ya. I. Panov, Candidate of Technical Sciences, R. K. Manakov and R. F. Voylochnikov, assistants, and G. I. Panteleyev and O. N. Kornev for their assistance. References accompany each part.

550

KARPOV, Yu.S.

PHASE I BOOK EXPLOITATION SOV/4379

Vsesoyuznaya konferentsiya po fizike dielektrikov. 2d. 1958

Fizika dielektrikov; trudy vtoroy vsesoyuznoy konferentsii (Physics of Dielectrics. Transactions of the 2d All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1960. 532 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fizicheskiy institut imeni P.N. Lebedeva.

Ed. of Publishing House: Ye.L. Starokadomskaya; Tech. Ed.: I.N. Dorokhina; Editorial Board: (Resp. Ed.) G.I. Skanavi, Doctor of Physics and Mathematics (Deceased), and I.V. Filippova, Candidate of Physics and Mathematics.

PURPOSE: This collection of reports is intended for scientists investigating the physics of dielectrics.

COVERAGE: The Second All-Union Conference on the Physics of Dielectrics held in Moscow at the Fizicheskiy institut imeni P.N. Lebedeva (Physics Institute imeni P.N. Lebedev) in November 1958 was attended by representatives of the principal scientific centers of the USSR and of several other countries. This collection contains most of the reports presented at the conference and summaries of the discussions which followed. The reports in this collection deal with dielectric properties, losses, and polarization, and with specific inductive capacitance of various crystals, chemical compounds, and ceramics. Photoelectrets, ferroelectric crystals, and various radiation and irradiation effects on dielectrics are investigated. The volume contains a list of other papers presented at the conference dealing with polarization, losses, and breakdowns of dielectrics, which were published in the journal Izvestiya AN SSSR, seriya fizicheskaya, No. 2, 1960. No personalities are mentioned. References accompany each report.

Card 1/

S/194/61/000/009/036/053
D249/D302

9, 4310

AUTHOR: Karpov, Yu.S.

TITLE: On the subject of fluctuating noise temperature dependence in junction transistors

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 9, 1961, 22, abstract 9 D141 (Izv. Leningr. elektrotekhn. in-ta, 1960, no. 43, 174-182)

TEXT: Results in the form of graphs are given of noise factor (F) measurements carried out at 1000 c/s and in the temperature range of 60 - 85°C on transistors types P401 (P401), P402, P403 and P101 (n-p-n). In the above temperature range all samples exhibit a minimum value for F which, apparently, is explained by the surface noise in the case of the lower temperatures, and by the leakage noise in the case of the higher temperatures. The measurements show that for a given emitter current the fluctuation noise is independent of temperature while the thermal noise increases

Card 1/2

S/194/61/000/009/036/053
D249/D302

On the subject of...

monotonically with temperature. The experimental curves obtained for the two types of transistors, the n-p-n and p-n-p, correspond to each other. A description is given, including the block diagram, of the transistor noise-measurement set-up, whose voltage gain is of the order of a few millions. 11 references. [Abstracter's note: Complete translation.]

Card 2/2

23127
S/181/61/003/005/032/042
B108/B209

9,4340 (1003, 1143)

AUTHOR: Karpov, Yu. S.

TITLE: Temperature dependence of low-frequency conductivity fluctuations in reversely biased germanium p-n junctions

PERIODICAL: Fizika tverdogo tela, v. 3, no. 5, 1961, 1571 - 1573

TEXT: The author presents the results of measurements of the temperature dependence of low-frequency conductivity fluctuations in p-n junctions in germanium with reverse bias. The junctions were obtained by introducing indium into n-type germanium (resistivity of about 1 ohm. cm) by fusion in a hydrogen atmosphere. The samples were etched electrolytically, rinsed, dried in a vacuum furnace, and sealed in dry air. The spectral density of the noise current $\frac{\overline{i_n^2}}{\Delta f}$ served as a measure of fluctuations, where $\overline{i_n^2}$ is the mean square noise current of the short-circuited diode in the frequency band Δf. Measurements were made at 75 cps. The noise band Δf passing the measuring amplifier was 8 cps. The fluctuations at this

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Temperature dependence of...

frequency are considerably higher than the shot effect and thermal noises. so that these may be neglected. Figs. 1 and 2 show the spectral density of the noise current as depending on temperature for various voltages. The rise in fluctuation intensity shown by some of the samples at higher temperatures is related to leakages. It is believed that the rise in fluctuation intensity at low temperatures observed in all samples is connected with a carrier avalanche in the junction layers. The most probable site where such a particle avalanche will arise is the boundary between a p-region and an n-region reaching the surface of the germanium sample. There are 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The reference to an English-language publication reads as follows: W. Fonger. Sb. "Transistors I", RCA Lab. Princeton, 239, 1956.

SUBMITTED: November 30, 1960

Card 2/3

S/181/61/003/006/008/031
B102/B201

9.4340

24911

AUTHOR: Karpov, Yu. S.

TITLE: Experimental verification of the existence of two components of low-frequency fluctuations in devices with p-n junctions

PERIODICAL: Fizika tverdogo tela, v. 3, no. 6, 1961, 1691-1693

TEXT: W. Fonger (Transistors I, RCA Lab., Princeton, 239,1956) introduced the notion of two chief components of low-frequency noises in studies of low-frequency noise in semiconductor diodes and triodes; the first component is caused by fluctuations of the rate of recombination surfaces, and the other is the leakage noise. With a view to checking this assumption the author of the present paper studied the noise properties of junction-type transistors at low frequencies. He succeeded in showing that there are at least two different sources of low-frequency fluctuations, each of which having a frequency spectrum which is about inversely proportional to the frequency. Fonger's theory was confirmed and completed. The author worked with germanium p-n-p transistors having

the following parameters: resistivity: 1 ohm·cm, reverse current ≤ 3μa (at 5v collector voltage), current amplification ≥ 0.95. The noise coefficient was chosen as the noise characteristic to indicate by how many times the total level of the inner fluctuations in the transistor exceeds the thermal fluctuations of the generator impedance R_g (all referred to the input). If the noise coefficient is denoted by F, the following relation will hold for the mean square of the noise voltage (referred to the transistor input): $\overline{u_n^2} = F4kTR_g\Delta f$ (k being the Boltzmann constant, T the absolute temperature, Δf the narrow frequency band in which the noise is measured). The measurements were conducted at different frequencies in the frequency range from 20 cps to 16 kc/sec. Experiments showed that all specimens concerned could be divided into two groups. The transistors of the first group displayed a monotonic growth of the noise coefficients with growing emitter current (in the frequency range in which the low-frequency fluctuations prevailed); it was found typical of the specimens mentioned that practically no low-frequency fluctuations occurred at frequencies above 500 cps with any emitter currents (F was frequency-independent above 1 kc/sec). At 500 kc/sec the low-frequency

fluctuations were considerable with 0.2 ma emitter currents. At 175 and 75 kc/sec the low-frequency fluctuations prevailed upon the remaining noise components. Transistors of the first group displayed practically no dependence of F on the collector voltage. In transistors of the second group, F was considerably larger as compared with those of the first group. In those transistors, the low-frequency fluctuations were the chief noise component in the entire frequency range concerned. In specimens of the second group, F was little dependent on the emitter current; it grew, however, quickly with growing collector voltage. This difference between the two groups may be explained in that either one or the other component of low-frequency fluctuations prevailed. This could also be proved. The two sources of low-frequency fluctuations have a spectrum of the form $1/f^n$, where f is the frequency and $n \approx 1$. There are 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to English-language publications read as follows: W.Fonger. Transistors I, RCA Lab., Princeton, 239, 1956; A.Van der Ziel.Proc.IRE. 46, No.6, 1019, 1958.

SUBMITTED: December 23, 1960

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S/181/62/004/003/022/045
B125/B108

AUTHORS: Mirlin, D. N., and Karpov, Yu. S.

TITLE: Recombination fluctuations of the photocurrent from illumination of p-n transitions

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 700-704

TEXT: The intensity spectrum $\overline{\Delta i_f^2} = i^2\left(\frac{1}{\alpha}\frac{\partial Q}{\partial s}\right)^2 \overline{\Delta s_f^2}$ (3) of the photocurrent fluctuations owing to fluctuations in the recombination rate s during the illumination of p-n junctions (germanium with fused-in indium) was studied in the frequency range of 10^2 - $5\cdot10^3$ cps. $i=eIQ$ denotes the ideal net current of the photodiode; I is the number of light quanta absorbed per unit time, α the quantum yield of the photocell. Twelve samples with distances of d = 0.05 - 0.5 mm between the illuminated surface and the junction surface were investigated. Fig. 1 shows the typical curves for the spectrum of the intensities of photocurrent fluctuations for three samples with d = 0.05, 0.11, and 0.4 mm. With some kilocycles per second, the fluctuation intensity which is practically

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Recombination fluctuations of the ...

equal for all samples lies near the shot noise level (25-35 μa) of the vacuum photocell. At lower frequencies, an increase in d notably increases the fluctuation intensity, in the thickest samples to about an order above the shot noise. In the spectrum of thin samples, which is continuous in the frequency range investigated, a low-frequency component appears when these samples are illuminated with a broad light beam. In thin samples, the intensity of fluctuations is nearly proportional to the first power of the photocurrent, even at low frequencies. In thick samples, however, $\overline{\Delta i^2}$ increases as i^k, k lying between 1.6 and 2 for the different samples. On irradiation of the samples with small absorption coefficients, the intensity of low-frequency fluctuations decreases. On longwave irradiation, the pair production is rather uniformly distributed over the entire thickness of the sample, and the effect of surface recombination on the photocurrent is less. M. I. Kornfel'd and G. Ye. Pikus are thanked for discussions. There are 4 figures and 11 references: 5 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: M. I. Kornfeld, D. N. Mirlin. Proc. Intern. Conf. on Semicond. Phys., Prague, 262, 1960; U. F. Gianola. J. Appl. Phys., 27, 51, 1956; D. E. Sawyer, R. H. Rediker. Proc. IRE, No 6, 1122, 1958;

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L 25248-65 EWT(1)/EWG(k)/EEC(k)-2/T/EEC(b)-2/EWA(h) Pm-4/Pz-6/Peb
IJP(c)

ACCESSION NR: AR4045038 S/0275/64/000/005/B021/B021

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 5B143

AUTHOR: Karpov, Yu. S.

TITLE: Low-frequency noise in junction transistors

CITED SOURCE: Izv. Leningr. elektrotekhn. in-ta, vyp 51, 1963, 32-44

TOPIC TAGS: transistor, junction transistor, transistor noise

TRANSLATION: The noise of a common-emitter junction transistor was investigated in the AF range, with a master-oscillator resistance of 600 ohms. Effects of frequency, emitter current, collector voltage, and temperature on the noise factor were studied. These conclusions are reported: (1) The collector-junction leakage is largely responsible for noise characteristics; heavy leakage results in a much higher noise factor and aggravates the dependence of the noise factor on temperature and collector voltage; (2) For transistors with negligible leakage noise, used at frequencies under 1 kc, minimum possible emitter currents are recommended; this results in a considerable reduction in the noise factor;

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ACCESSION NR: AR4045038

(3) A transistor with a low leakage noise can operate at any frequency with fairly high collector voltage without aggravating noise conditions; (4) At higher or lower temperatures, the noise properties of junction transistors become worse. Bibliography: 9 titles.

SUB CODE: EC ENCL: 00

Card 2/2

KARPOV, Yu.S.; POLYAKOV, Yu.A.

Errors in measuring the noise coefficient of transistors at low frequencies. Izv. vys. ucheb. zav.; prib. 8 no.2:7-10 '65. (MIRA 18:5)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina). Rekomendovano kafedroy avtomatiki i telemekhaniki.

ACC NR: AP6034939 (N) SOURCE CODE: UR/0146/66/009/005/0020/0022

AUTHOR: Mertins, V.; Karpov, Yu. S.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov -Lenin, Novgorod Branch (Novgorodskiy filial Leningradskogo elektrotekhnicheskogo instituta)

TITLE: Low frequency voltage fluctuations in film resistors

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 5, 1966, 20-22

TOPIC TAGS: fixed resistor, signal to noise ratio , low frequency

ABSTRACT: Low frequency noise in the 120—20,000 cps range of thin film and MLT, VS, and ULM type commercial resistors was measured. The commercial resistors had nominal values from 12 to 180 kΩ; the thin film resistors, made from vacuum-deposited Nichrome on a glass base, had nominal values from 2 to 70 kΩ. The measurements were made by comparing noise voltages developed across samples to those developed across a standard, reactance free, wire-wound resistor. The measuring equipment included a low-noise tube-type preamplifier with a calibrated attenuator, and an RMS voltage analyzer. The noise for all of the samples decreased with frequency and was relatively independent of the applied voltage across resistors. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 09/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 008

Card 1/1 UDC: 621.391.822.3

KARPOVA, A.; NEZHEVENKO, G.

Machine Tools

Improve tools and technology Tekh. molod. no. 3, 1952

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KARPOVA, A. AND OTHERS

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CA KARPOVA, A. I. 12A

Protecting crops from Hessian fly injury by treating the soil with hexachloran. A. I. Karpova. *Doklady Vsesoyuz. Ordena Lenina Akad. Sel'sko-Khoz. Nauk im. V. I. Lenina* **15**, No. 2, 33-8(1950). Three to five kg. of the active ingredient mixed with rock phosphate flour per ha., worked into the soil, was effective against Hessian fly. The application was made prior to seeding of the grain. Dusting the seed, 1 g. kg. of seed, when moist is also effective in reducing the no. of flies. No bad effects on the crop were noted. I. S. Jolle

GRIGOR'YEVA, T.G.; KARPOVA, A.I.

Feeding specialization of the frit fly Oscinella pusilla Meig. in the trans-Volga region. Zool.zhur. 32 no.5:893-902 S-O '53. (MLRA 6:10)

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(Volga valley--Frit flies) (Frit flies--Volga valley)

KARPOVA, A.I.

Some data on the ecology and harmfulness of the frit fly. Zool zhur. 35 no.5:729-740 My '56. (MLRA 9:9)

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KARPOVA, A.I.

Development and harmfulness of the frit flies Oscinella pusilla Mg. and O. frit L. (Diptera, Chloropidae) occurring on corn in non-Chernozem regions [with summary in English]. Ent.oboz. 37 no.4:812-819 '58. (MIRA 11:12)

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KARPOVA, A.I.

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(Bryansk Province--European corn borer)

KARPOVA, A.I.

Fauna of frit flies (Diptera, Chloropidae) of wheat fields and virgin steppes in the northern provinces of Kazakhstan. Trudy Vses. ent. ob-va 50:73-88 '65. (MIRA 18:5)

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Species and population dynamics of injurious insects in seedless corn fields. Ent. oboz. 44 no.3:495-502 '65. (MIRA 18:9)

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Chemical Abstracts
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Effect of gelatin on the thermal decolorization of tricarbocyanine dyes and the chemical nature of the sensitizing component of gelatin. Yu. Sh. Moshkovskii and A. L. Karpova. *Doklady Akad. Nauk S.S.S.R.* 91, 299–300 (1953).—The effect of 3 gelatins on the decolorization of 3,3'-diethylthiatricarbocyanine iodide (I) was detd. at 41.3° for mixts. of 100 ml. of 4% aq. soln. of gelatin and 12 ml. of 4×10^{-4} *M* I in EtOH. The chem. sensitizer content of the gelatin samples was detd. by reaction with Ag ion. Gelatin retards the decolorization of I, and the effectiveness increases with sensitizer content. $Na_2S_2O_3$ also retards decolorization. Conclusion: the sensitizer is $Na_2S_2O_3$ or an inorg. compd. of similar structure.