L 18003-66 EWT(l)/EWT(m)/FCC/EWA(h) SCTB DD/GW

ACC NR: AP6007752 SOURCE CODE: UR/0293/66/004/001/0172/0174

AUTHOR: Morozov, V. S.; Shashkov, V. S.; Davydov, B. I. 43 8

ORG: none

TITLE: Modeling the biological effect 19 of a depth dose from a monoenergetic proton flux

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 1, 1966, 172-174

TOPIC TAGS: corpuscular radiation, radiation effect, RBE, high energy proton

ABSTRACT: Previous experiments suggested that physical protection (shielding) sometimes aggravates the effect of corpuscular radiation 12 on living organisms. Unlike electromagnetic radiation, heavy particles create a higher ionization density along their path and at the end of their penetration (i.e., linear energy losses increase with decrease in particle velocity, and RBE likewise increases). Thus, corpuscular radiation can have a widely varying biological effect on different parts of an organism. Experiments were conducted to trace the change in biological effectiveness of particles during their passage through tissue until they were stopped. Mice were placed in rows perpendicular to the axis of a monochromatic beam of 120-Mev protons. Animals were irradiated with a dose of 1600 rad (dose power, 50 rad/min from a synchrocyclotron). One group of animals received an intraperitoneal injection of the

Card 1/2 UDC: 629.198.621

L 18003-66

ACC NR: AP6007752

antiradiation agent AET (dose, 150 mg/kg) 15--20 min before irradiation. The survival

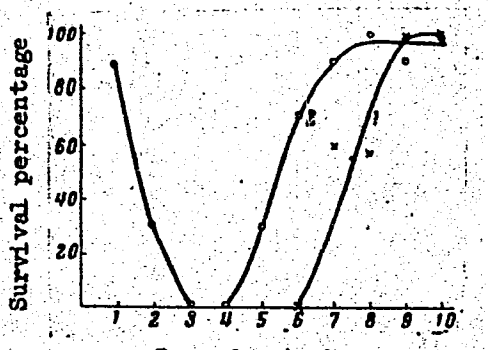


Fig. 1. Survival percentage of irradiated animals depending on the row occupied

1 - Control; 2 - AET.

percentage and average length of life of animals dying within 30 days were determined (see Fig. 1). It should be noted that AET had no protective effect in the 3rd—4th row. Orig. art. has: 3 figures and 1 table. [JS]

SUB CODE: 06/ SUBM DATE: 230ct65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 4213

Card 2/2 mjs

L 34975-66 EWT(1) SCTB DD/RD

ACC NR: AP6019602 SOURCE CODE: UR/0293/66/004/003/0482/0491

50
49
B

AUTHOR: Davydov, B. I.; Antipov, V. V.; Kozlov, V. A.; Saksonov, P. P.; Shashkov, V. S.

ORG: none

TITLE: The problem of using radioprotective pharmacological agents under spaceflight conditions

SOURCE: Kosmicheskiye issledovaniye, v. 4, no. 3, 1966, 482-491

TOPIC TAGS: manned spaceflight, radiation protection, cystamine, methoxytryptamine, acceleration, animal physiology

ABSTRACT: In tests on mice (exposed three times to 44.4 G, 1.4 G/sec accelerations, with 5 min per exposure and 5 min between exposures on a centrifuge with a 4.25 m arm length) and guinea pigs (exposed twice to 22.0 G, 0.7 G/sec with 5 min between exposures), lowered resistance to acceleration was noted after injections of cystamine (80—150 mg/kg), AET (15—150 mg/kg), 5-methoxytryptamine (75 mg/kg), serotonin (50 mg/kg), and aminazine (1—10 mg/kg). A change in resistance after injections of phenatine (2—10 mg/kg) and strychnine (0.05 mg/kg) was insignificant. Thirty min after the combined injection of phenatine (5—10 mg), strychnine (0.5—1.0 mg), and aminazine (2.5 mg), the EKG's and respiration of dogs exposed to 6—8 G (0.2—0.3 G/sec) did not differ from those of control centrifuged animals.

Card 1/2 UDC: 615.7.035.1:614.876(202)

L 34975-66

ACC NR: AP6019602

It was concluded that extreme caution should be exercised in recommending radioprotectors, expecially AET, cystamine, and 5-methoxytryptamine, for use on spaceflights. The authors thank S. N. Komarov for his active participation in the study. Orig. art. has: 5 figures and 3 tables. [CD]

SUB CODE: 06,22/ SUBM DATE: 28Feb66/ ORIG REF: 017/ OTH REF: 013/ ATD PRESS: 5029

Card 2/2 JS

L 03775-67 FSS-2/EWT(1)/EWT(m)/EEC(k)-2/FCC SCTB TT/DD/RD/GW

ACC NR: AP6028342 SOURCE CODE: UR/0293/66/004/004/0630/0633

87
86
B

AUTHOR: Volynkin, Yu. M.; Antipov, V. V.; Davydov, B. I.; Dobrov, N. N.; Nikitin, M. D.; Pisarenko, N. F.; Saksonov, P. P.

ORG: none

19 17 2 16 12

TITLE: Assurance of radiation safety during the Voskhod-1 and Voskhod-2 flights

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 4, 1966, 630-633

TOPIC TAGS: space radiation, ~~radiation safety~~ spacecraft, solar flare ~~radiation~~ particle, radiation shielding, radiation dosimetry, nuclear emulsion, radiation ~~sensor~~, EVA, lysogenic bacteria/Voskhod-1 spacecraft, Voskhod-2 spacecraft

ABSTRACT: The Voskhod-1 and Voskhod-2 flights were characterized by extremely high orbits (apogee 495 km). It was calculated that Voskhod-2 would have a far higher radiation exposure due largely to the proton component in the area of the Brazilian anomaly, where in the course of 20 min the spaceship would acquire about 80% of the daily dose. The extravehicular surface dose of electrons during 20 min could amount to 1 rad. In order to reduce this to zero a protective layer of 100 mg/cm^2 is required. Leonov's spacesuit fulfilled this shielding requirement. Since exposure to radiation may reach dangerous proportions during solar flares the following radiation protection measures were taken during the Voskhod-1 and Voskhod-2 flights. A preliminary study was made of radiation conditions on the proposed orbit. Forecasts

 UDC: 614.876(202)

ACC NR: AP6028342

of the possibility of solar flares were made. The radiation dose was reduced by spacecraft shielding. Changes in the level of radiation in the upper atmosphere were checked by means of ballon sondes. Integral doses and dose rates were measured by on-board radiation meters. Individual dosimeters of the ILK, IKS, and IFKN types and nuclear emulsions were used to measure the total doses acquired by each cosmonaut. Living organisms were carried on board as biodosimeters. Radioprotective drugs were carried for emergency use by the cosmonauts. In order to determine the effect of low-energy electrons during Leonov's EVA the two cosmonauts carried identical sets of dosimeters (on the chest under the spacesuit and in external hip pockets), which were capable of working in high-vacuum conditions. However, Leonov's dose did not exceed Belyayev's. Individual and on-board dosimeters indicated that the total dose received on Voskhod-2 was 70 ± 5 mrad, while that on Voskhod-1 was 30 ± 5 mrad. Analysis of the spectral composition of radiation made by nuclear emulsions indicated the presence of particles with linear energy losses comparable to ions of He, B, O, and Ar. The radiation dose, taking RBE into account, did not exceed several dozen ber. Biological objects carried on Voskhod-1 and Voskhod-2 showed increases in non-disjunction of chromosomes and increases in frequency of dominant lethal mutations in Drosophila, and disruption of the mitotic mechanism in microspores of Tradescantia; these increases, however, were small. Lysogenic bacteria carried on the two Voskhod flights did not show any effect of radiation or other spaceflight factors. Experiments performed by B. B. Yegorov have indicated that various stages of mitosis in Tradescantia microspores possess varying sensitivity to the effects of spaceflight factors. These findings confirmed Yegorov's hypothesis that the chief cause of

L 03775-67

ACC NR: AP6028342

O

disruption of the mitotic mechanism is weightlessness and that chromosome reconstructions are due largely to combined factors related to spaceflight takeoff and reentry. Orig. art. has: 2 tables. [BM]

SUB CODE: 06/ SUBM DATE: 21Aug66/ ORIG REF: 006/ ATD PRESS: 5064

Card 3/3

L 03777-67 FSS-2/EWT(1)/EEC(k)-2/T SCTB TT/DW/JH/AT/GW

ACC NR: AP6028343 SOURCE CODE: UR/0293/66/004/004/0634/0640

AUTHOR: Zhukov-Verezhnikov, N. N.; Mayskiy, I. N.; Delone, N. L.; Rybakov, N. I.; Kozlov, V. A.; Davydov, B. I.; Antipov, V. V.; Saksonov, P. P.; Rybakova, K. D.; Tribulev, G. P.

ORG: none

TITLE: Biological investigations on the Voskhod-1 and Voskhod-2 spaceships

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 4, 1966, 634-640

TOPIC TAGS: biologic spaceflight, ~~effect~~, ~~lysogenic~~ bacteria, ~~E. coli, RNA~~, ~~radio protective~~ drug, ~~β-mercaptopropylamine~~, spaceflight, ~~fruit~~, ~~pine seed~~, wheat seed/ Voskhod 1, Voskhod 2 spacecraft

ABSTRACT: Experiments were performed on the Voskhod-1 and Voskhod-2 spaceships to test the effects of spaceflight on lysogenic cultures of E. coli K-12 (λ). The cultures were carried in 1.5-ml ampules on board spaceships and in Leonov's spacesuit pocket during his EVA. Some of the ampules contained the radioprotective drug β-mercaptopropylamine. Controls were kept at the cosmodrome and at the home laboratory. Results showed that on the basis of viability there was no difference between samples carried on Voskhod-1 and the controls. Experiments on Voskhod-2 resulted in a slightly higher viability on the part of experimental cultures as compared to controls. Phage production of experimental cultures carried on the two flights also did

Card 1/2 UDC: 629.198.621:576.8

L 03777-67

ACC NR: AP6028343

not exceed phage production of controls. Thus, it was not possible to demonstrate the protective properties of β-mercaptopropylamine. An attempt was made to determine whether spaceflight sensitized lysogenic cultures of E. coli K-12 (λ) to consequent exposure to small doses of x-rays. Results showed that phage production in space-flown samples was almost identical to that of the controls. In addition, air-dried seeds of pine and winter wheat (PPG-186) were carried on Voskhod-2 and in Leonov's pocket during his EVA for the purpose of determining the genetic effects of space-flight factors. Results did not reveal any substantial differences between the two spaceflight-exposed groups of seeds and the controls. It is assumed that the absence of the effects of spaceflight factors on lysogenic bacteria and seeds of higher plants in these two flights is due to the particular conditions under which these flights took place. Orig. art. has: 5 tables. [BM]

SUB CODE: 06/ SUBM DATE: 21Apr66/ ORIG REF: 013/ OTH REF: 002/ ATD PRESS: 5063

Card 2/2

L 29363-66 EWT(1) SCTB DD

ACC NR: AP6018063 SOURCE CODE: UR/0020/66/168/003/0691/0693

AUTHOR: Davydov, B. I.

41
B

ORG: none

TITLE: Tolerance to critical acceleration after exposure to ionizing radiation

SOURCE: AN SSSR. Doklady, v. 168, no. 3, 1966, 691-693

TOPIC TAGS: combined stress, acceleration, gamma radiation, ionizing radiation, critical acceleration, acceleration tolerance, acceleration biologic effect, radiation biologic effect

ABSTRACT: The reaction of the irradiated organism to critical accelerations was studied using 1690 male mice. The reaction of the animals was evaluated as a function of their viability after exposure to radial accelerations of 42—44 G on a centrifuge with an arm radius of 0.31 m. The force vector was in a back-to-chest direction. Prior to acceleration, the animals were irradiated with Co^{60} gamma rays in doses ranging from 100—4000 r (13—18 r/min). Exposure to acceleration took place from 1 to 45 days after irradiation. It was found that 42—44 G caused the death of 40—50% of the control animals. Deviations from this percentage reflected altered acceleration stability on the part of irradiated animals. Starting with the first and second day after irradiation, the tolerance of irradiated mice to

Card 1/3 UDC: 612.014.48

acceleration was higher than controls. From the eighth day on, acceleration tolerance decreased. Decreased tolerance during this period corresponded to the onset of radiation mortality. Increased tolerance to acceleration was noted 1—6 days after

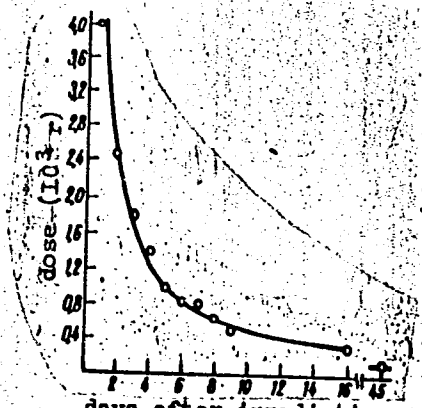


Fig. 1. Dependence between the time after irradiation and the threshold dose for which acceleration tolerance equalled the control value.

200—4000 r irradiation. Later (9—45 days), the reaction of mice irradiated by less than 7000 r was studied and it was noted that lowered tolerance to acceleration was

L 29363-66
ACC NR: AP6018063

maintained up to the 45th day (after irradiation by 200 r). Fig. 1 shows the relationship between irradiation dose and acceleration tolerance equivalent to the control value, calculated by a method of extrapolation-interpolation. In the author's opinion, one reason for the increased tolerance of irradiated animals to acceleration is shifts in the blood coagulation system and cell membrane permeability occurring during given periods of radiation sickness which possibly create better hemodynamic conditions during acceleration. Orig. art. has: 2 figs. [IS]

SUB CODE: 06/ SUBM DATE: 19Jul65/ ORIG REF: 006/ OTH REF: 003/ ATD PRESS: 5008

Card 3/3

ACC NR: AT7011642 SOURCE CODE: UR/0000/66/000/000/0001/0006

AUTHOR: Volynkin, Yu. M.; Antipov, V. V.; Davydov, B. I. Dobrov, N. N.; Nikitin, M. D.; Pisarenko, N. F.; Saksonov, P. P.

ORG: none

TITLE: Radiation safety during the flights of the Voskhod and Voskhod-2 spaceships

SOURCE: International Astronautical Congress. 17th, Madrid, 1966. Doklady. no. 4. 1966. Obespecheniye radiatsionnoy bezopasnosti pri poletakh korabley "Voskhod" i "Voskhod-2", 1-6

TOPIC TAGS: ionizing radiation biologic effect, proton radiation biologic effect, EVA, space physiology, space biologic experiment, space flight / Kosmos-47 space flight, Voskhod-1 space flight

ABSTRACT:

Radiation conditions on the Voskhod-1 trajectory were forecast using Kosmos-47, a satellite launched into the proposed orbit shortly before the manned space-flight. A greater radiation hazard was predicted for

Card 1/7

ACC NR: AT7011642

the Voskhod-w spacecrew because of the higher orbit and extravehicular activity planned for this flight. Preliminary calculations set the maximum 24-hr dose at 0.1 rad, about 80% of which was expected to accumulate during 20 min spent passing through the region of the Brazilian anomaly. It was calculated that the EVA would expose Leonov to as much as 1 rad of electron radiation in a 20-min period, and that shielding of 100 mg cm^2 would be required to eliminate this hazard. Leonov's spacesuit fulfilled the shielding requirement. A total dose of no more than several dozen REM was anticipated for the Voskhod spacecrew for the 24-hr period.

The possibility of radiation injury from solar flare protons was carefully considered. Disruptions of the Earth's geomagnetic field after some solar flares are known to affect the "radiation screen" of the geomagnetic field. Thus, approximate total doses from large flares of the type 10 March 1959 and 12 November 1960 were calculated with different shielding thicknesses, discounting the screening effect of the Earth's magnetic field. (see Table 1)

Card 2/7

Table 1

Energy of protons E, Mev	Shielding of air-equivalent substance, g/cm^2	Dose from flare, rad	
		Nov. 12, 1960	May 10, 1959
E> 40	1.5	550	1120
E> 80	5.0	90	70
E> 100	7.0	50	20
E> 200	24.0	10	1

As can be seen from the table, cosmonauts can receive radiation doses sufficient to disrupt working capacity or endanger life during a solar flare. Consequently, an important part of the radiation safety program consists of predicting potentially hazardous solar flares.

In addition to the measures just described, the Voskhod radiation safety system included measurements of radiation levels in the upper atmosphere using sounding balloons. In addition, a radiometer on the craft measured total dose and dose rate, each cosmonaut carried

individual dosimeters (ILK, IKS, and IFKN types, and nuclear emulsions), and there were biological dosimeters on board. Chemical radioprotectors were available for emergency situations.

In order to determine the possible effect of electron radiation during the EVA, both cosmonauts wore an identical set of dosimeters equipped to work in a vacuum, one in the chest area under the suit, and one in the outside hip pocket.

Although the period before the Voskhod-1 launch was one of minimal solar activity, on October 9, 1964, (3 days before the launch) at 8:30 A. M. a 23-fold increase in radioactivity was noted in the upper atmosphere at an altitude of 22 km. The increased radioactivity lasted 2 hr and is still unexplained.

Doses obtained by Voskhod crew members are shown in Table 2.

ACC NR: AT7011642

Table 2. Total radiation doses obtained by crew members on Voskhod-1 and Voskhod-2 spacecraft, in mrad (tissue)

Name of spacecraft	Individual dosimeters		R-ZAM on-board dosimeter	
	average dose for flight, mrad	average dose rate, mrad/day	dose for flight, mrad	dose rate, mrad/day
Voskhod-1	30±5	29±3	27±1	26±1
Voskhod-2	70±5	65±3	65±1	60±1

The total radiation dose received by Leonov was not higher than that obtained by Belyayev due to electron radiation outside the spacecraft, as had been expected. The fact that the absorbed tissue doses received by Voskhod-1 and Voskhod-2 cosmonauts were two and four times higher, respectively, than doses received on the Vostok flights can be explained by the difference in orbits and by some increase in the intensity of primary cosmic radiation characteristic for quiet Sun periods.

Card 5/7

The radiation doses for Voskhod crew members did not exceed several dozen REM each, as calculated. This radiation dose is not considered injurious to human health.

Biodosimeters carried on the Voskhod craft included seeds of higher plants, microorganisms, and fruit flies. In addition, Leonov had pine and wheat seeds and lysogenic bacteria in his hip pocket during the EVA. Analysis of this biological meterial showed that spaceflight factors had the following effects: mitosis was disrupted in Tradescantia paludosa microspores, and there were more dominant lethalities and cases of nonseparation of chromosomes in Drosophila. These shifts were of the same type as those observed in the Vostok-2, -3, and -6 experiments, and were also numerically insignificant. Lysogenic bacteria and plant seeds exposed in open space or kept in the spacecraft did not show the effects of spaceflight factors.

Yegorov's experiment with Tradescantia microspores demonstrated that the various mitotic phases of this organism have different sensitivities to spaceflight

DAVYDOV, B.I.; SHCHEDRENOK, V.P.

Fundamental differences between the social and economic consequences of technological progress under socialism and capitalism. Trudy LIEI no.35:3-23 '61. (MIRA 14:8)
(Technology and civilization)

DAVYDOV, B.L., dotsent, kandidat tekhnicheskikh nauk, laureat Stalinskoy premii.

Calculating the starting resistance of an induction and shunt motor for a given duration of the starting process. Vest.elektroprom. 18 no.10:1-4 O '47. (MLRA 6:12)

1. Giprouglemash.

(Electric motors, Induction)

DAVYDOV, B. L.

Teoriia kolodochno-lentochnogo tormoza. (Vestn. Mash., 1948, no. 1, p. 22-24)

Theory of a block and band brake.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

DAVYDOV, B. L.

USSR/Mines and Mining Jan 1948
Mining Machinery
Machines, Hoisting

"Automatic Regulation of Shaft Elevators According to Academician M. M. Fedorov's Application of Harmonic Elevation," B. L. Davydov, Dr Tech Sci, Laureate of Stalin Prize, 4½ pp

"Ugol'" No 1 (262)

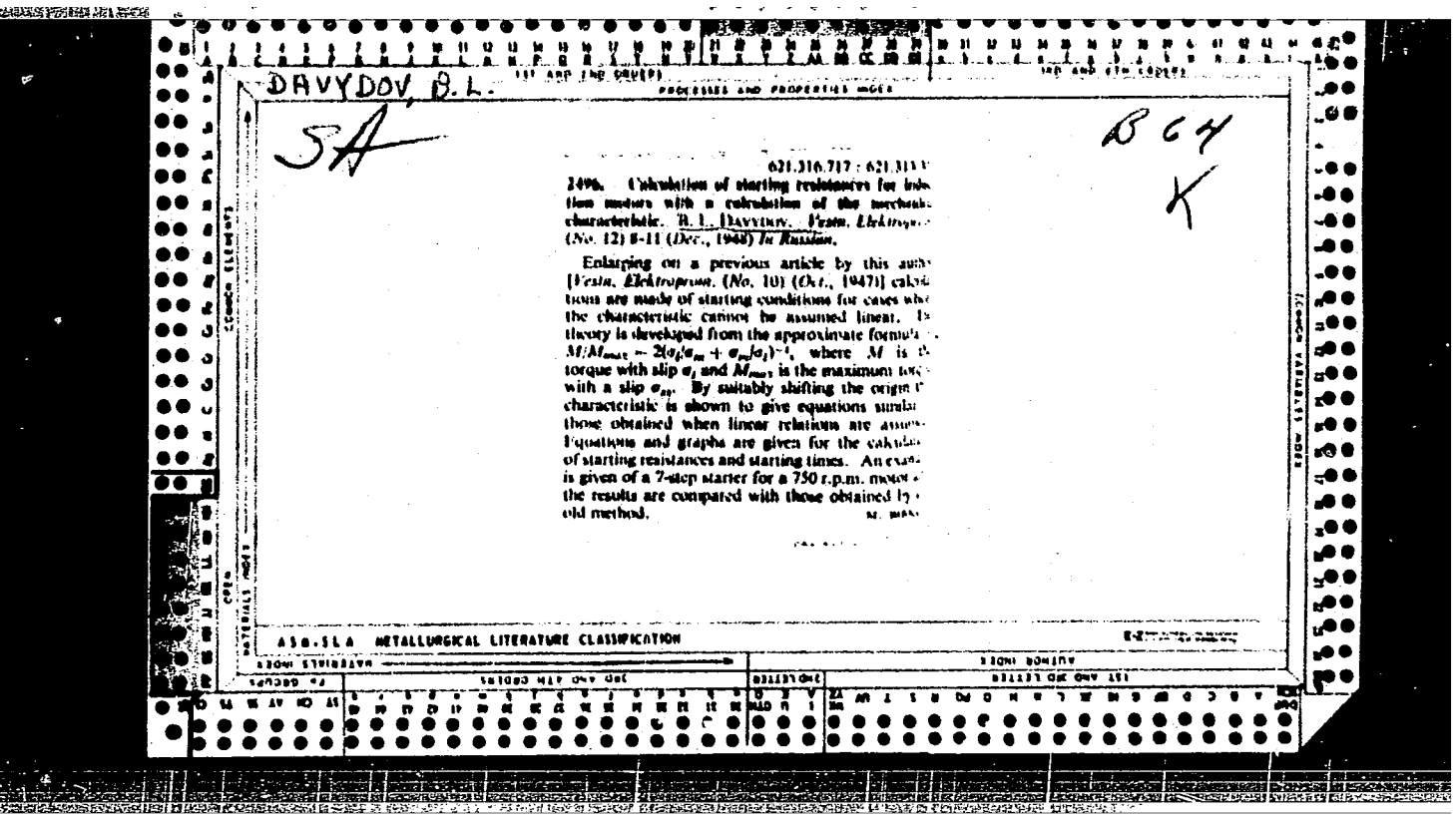
Summary of information contained in thesis submitted to Institute of Mining Mechanics, Academy of Sciences, USSR, in commemoration of death of Academician M. M. Fedorov. Discusses mainly problem of regulating shaft elevators during slow operation of

61T86

USSR/Mines and Mining (Contd) Jan 1948

holsting mechanism. Author states that harmonic theory is a new principle in shaft elevators.

61T86



DAVYDOV, B. L.

SA

B64

K

621.316.717 : 621.313

2496. Calculation of starting resistances for induction motors with a calculation of the mechanical characteristic. B. L. [DAVYDOV]. *Vestn. Elektroprom.* (*No.* 12) 8-11 (*Dec.*, 1948) *In Russian.*

Enlarging on a previous article by this author [*Vestn. Elektroprom.* (*No.* 10) (*Oct.*, 1947)] calculations are made of starting conditions for cases where the characteristic cannot be assumed linear. The theory is developed from the approximate formula $M/M_{max} = 2(\sigma_s/\sigma_m + \sigma_m/\sigma_s)^{-1}$, where M is the torque with slip σ_s and M_{max} is the maximum torque with a slip σ_m. By suitably shifting the origin the characteristic is shown to give equations similar to those obtained when linear relations are assumed. Equations and graphs are given for the calculation of starting resistances and starting times. An example is given of a 7-step starter for a 750 r.p.m. motor and the results are compared with those obtained by the old method.

M. [illegible]

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

DAVYDOV, B. L.

Davydov, B. L. "Inspecting the winches of lifting machinery when the cable lies in several layers", Vestnik mashinostroyeniya, 1948, No. 12, p. 24-25.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).

DAVYDOV, B. L.

Raschet i konstruirovanie shakhtnykh pod"emnykh mashin. Pod red. N. F. Rudenko. Dop. v kachestve uchebn. posobiia dlia elektromekhanich. spetsial'nosti gornykh vuzov. Moskva, Ugletekhizdat, 1949. 298 p. diagrs.

Bibliography: p (297)

Calculating and designing mine hoisting machines.

DLC: TN339.D3

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

DAVYDOV, B.I. Prof. Dr. Tech. Sci.

33139

Raschet Puskovykh Soprotivleniy Asinkhronnogo Dvigatelya Dlya Shakhtnykh Pod'Emnykh Ustanovok. Vestnik Elektroprom-Sti, 1949, No 10, c. 6-11.

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

Kharkov Mining Inst.

DAVYDOV, B. L.

Nekotorye voprosy proektirovaniia shakhtnykh pod"emnykh ustanovok. Moskva, Ugletekhizdat, 1950. 116 p. diagrs.

Certain problems of designing mine hoisting equipment.

DLC: TN339.D28

DO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

DAVIDOV, B. L., Prof.

USSR/Mining - Mine Equipment 1951

"Calculation of Mine Hoisting Plants Having Limited Number of Start Resistances of Electric Motors," Prof B. L. Davydov, Dr Tech Sci, Laureate of Stalin Prize

"Zap Inst Gornoy Mekh" No 9, pp 90-102

States that usual method for calcg hoisting installations leads, in most cases, to sharp discrepancy between design and actual periods of starting, giving hoisting cycle considerably longer in comparison with rated value. Develops method which eliminates this descrepancy by

204T77

USSR/Mining - Mine Equipment (Contd) 1951

selecting values for start resistances of asynchronous motor at which starting period corresponds to a given time. Also discusses soln of reverse problem: detn of actual hoist at given start resistances.

204T77

DAVYDOV, B.L., professor, doktor tekhnicheskikh nauk; SOLOV'YEV, A.A., (Reviewer) dotsent, kandidat tekhnicheskikh nauk. (Reviewer)

A valuable and necessary book ("Mine haulage." A.O.Spivakovskii. Reviewed by B.L.Davydov, A.A.Solov'ev). Ugol' 29 no.3:46-47 Mr '54. (MLRA 7:3)

1. Khar'kovskiy gornyy institut. (Mine haulage) (Spivakovskii,A.O.)

DAVYDOV, B.L., professor, doktor tekhnicheskikh nauk; KRAVTSOV, K.I.

Improving the design of scraper conveyers. Ugol' 29 no.5:29-32 My '54. (MLRA 7:6)

1. Khar'kovskiy gornyy institut (for Davydov). 2. Khar'kovskiy zavod "Svet shakhtera" (for Kravtsov). (Conveying machinery)

Douglas, R.L.

27. OPTIMUM CHARACTERISTICS OF SCRAPER CONVEYORS. Douglas, R.L. (Ugol (Coal, Moscow), July 1955, vol. 30, 32-38). The article considers the possibilities of increasing the efficiency of scraper conveyors and reducing the weight of the central part of these conveyors by means of selecting the correct speed of the chain and shape of the trough while retaining the standard chains of established weight, rupture strength and durability. Particular attention is given to conveyors installed at long faces (150 metres and over), which are playing an increasingly important part. A number of formulae for calculating these characteristics are proposed and examples are given. (L).

N.C.B.

DAVYDOV, B. L.

USSR/ Engineering - Mechanics

Card 1/1 Pub. 128 - 3/35

Authors : Davydov, B. L., Dr. Mech. Sc., Prof.

Title : On the coasting of mechanisms with a worm drive

Periodical : Vest. mash. 35/3, 8 - 10, Mar 1955

Abstract : An analysis is made of the situation where a mechanism driven by a worm gear continues to run from inertia after the power is no longer applied to the worm, thus putting the mechanism under a strain and causing damage if the worm stops turning too quickly. The principles of mechanics are applied to the analysis and ways of eliminating the danger of damage are presented. Drawing; graph.

Institution : .....

Submitted : .....

DAVYDOV, B.L., professor; TIKHOVIDOV, B.D., dotsent.

Large elevator and ventilator installations in mines of the Chinese People's Republic. Gor.zhur. no.5:35-38 My '56.(MLRA 9:8)

1. Khar'kovskiy gornyy institut.
(China--Mining engineering)

DAVYDOV, B.L., professor.
Exhibition of mining equipment in Peiping. Mekh.trud.rab. 11 no.1:40-42 Ja '57. (MLRA 10:5)
(Peiping--Coal mining machinery--Exhibitions)

DAVYDOV, B.L.

122-2-4/33

AUTHORS: Davydov, B.L., Doctor of Technical Sciences, Professor, and Chzhou Shi-Yuiy, Engineer.

TITLE: Certain Precisions in the Theory of Friction of Flexible Bodies (Nekotoryye utochneniya teorii treniya gibkikh tel)

PERIODICAL: Vestnik Mashinstroyeniya, 1958, No.2, pp. 16-19 (USSR)

ABSTRACT: In the theory of enveloping transmissions, N.Ye. Zhukovskiy introduced the distinction between the sliding and rest sections of the enveloping arc. The sliding arc extends to the point where, with a given friction coefficient, the Euler equation yields the required difference in tension.. In the present paper, the finite thickness of the belt is considered. A method is given by which the length of the sliding arc is computed when a belt of substantial thickness allows some shearing displacement within its thickness. Knowing the geometry of the belt and pulley, the friction coefficient and the elastic constant of the belt, an auxiliary quantity is found (Eq.10), with the help of which, from a relation (Eq.2) expressing the ratio of the belt tensions, the true arc of sliding is computed. In a typical example, an arc of 114° is found, compared with 132° determined on the basis of the simple theory. The difference increases greatly when the belt contains steel reinforcement. Then, the sliding arc drops to

Card1/2

Certain Precisions in the Theory of Friction of Flexible Bodies

to 57° by the new theory, but remains 132° in the old. The sliding arc can disappear altogether. This has been observed with mine conveyor belts. The new theory also modifies the computation of the belt slip loss and shows this to be less severe than the older theory predicted.
There are 4 figures and 5 Russian references.

AVAILABLE: Library of Congress

Card 2/2

DAVYDOV, B.L., prof., doktor tekhn.nauk; CHZHOU SHI-YUY [Chou Shih-yu], inzh.

Most advantageous cross section of troughs and flow of material for mine haulage. Nauch.dokl.vys.shkoly; gor.delo. no.4: 181-187 '58. (MIRA 12:1)

1. Predstavleno kafedroy gornykh mashin i rudnichnogo transporta Khar'kovskogo gornogo instituta.
(Mine haulage) (Coal handling machinery)

DAVYDOV, B.L., prof.

Hydraulic brake theory on mine hoisting machines. Izv.vys.ucheb.zav.; gor.zhur. no.7:94-103 '58. (MIRA 12:3)

1. Khar'kovskiy gornyy institut.
(Mine hoisting) (Hydraulic brakes)

DAVYDOV, B.L., ALEKSANDROVA, M.N.

Investigating an increase in load capacity of mine cars by vibration. Nauch. trudy MGI no. 20:231-241 '58. (MIRA 11:8)
(Mine railroads--Cars)

DAVYDOV, B., inzh.

Repairing plunger pairs of the K-82 carburetor pump. Avt. transp. 36 no.10:47-48 O '58. (MIRA 13:1)
(Automobiles--Engines--Carburetors)

DAVYDOV, B.L., prof., doktor tekhn.nauk

Resonance in mine hoisting units with bicylindroconical drums. Nauch.dokl.vys.shkoly; gor.delo no.1:161-166 '59.
(MIRA 12:5)

1. Predstavlena kafedroy gornykh mashin i rudnichnogo transporta Khar'kovskogo gornogo instituta.
(Mine hoisting) (Hoisting machinery--Vibration)

DAVYDOV, B.L., prof.

Temporary overloading of coal mining machine motors. Izv. vys.ucheb.zav.; gor.zhur. no.7:127-136 '59.
(MIRA 13:4)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornoy elektrotekhniki.
(Coal mining machinery--Electric driving)

DAVYDOV, B.L., prof.

Behavior of the tail rope in balanced mine hoisting systems. Izv. vys.ucheb.zav.; gor.zhur. no.10:126-134 '59.
(MIRA 13:5)

1. Khar'kovskiy gornyy institut.
(Mine hoisting)

DAVYDOV, B.L., prof.

Elements in the theory of two-chain scraper conveyors moving in sections. Izv.vys.ucheb.zav.; gor.zhur. no.2:126-132 '60.
(MIRA 14:5)

1. Khar'kovskiy gornyy institut.
(Conveying machinery)

DAVYDOV, B.L., prof.

Theory of movement of coal-cutting machines with a hauling rope. Izv. vys. ucheb. zav.; gor. zhur. no.3:79-89 '60. (MIRA 14:5)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.
(Coal mining machinery)

DAVYDOV, B.L., prof.

Performance of an asynchronous motor during brief significant overloading. Izv.vys.ucheb. zav.; gor. zhur. no.6:116-121 '60. (MIRA 14:5)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy obshchey elektrotekhniki Sverdlovskogo gornogo instituta imeni V.V.Vakhrusheva.
(Electric motors, Induction)

DAVYDOV, Boris L'vovich, prof., doktor tekhn. nauk; SKORODUMOV, Boris Aleksandrovich, kand. tekhn. nauk; KVITKO, A.K., otv. red.; SHOROKHOVA, A.V., red. izd. BOLDYREVA, Z.A., tekhn. red.

[Dynamics of mining machinery] Dinamika gornykh mashin. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 334 p. (MIRA 14:5)

(Mining machinery)

DAVYDOV, B.L., prof.

Friction in chains moving on driving wheels in mine transport and coal mining machines. Izv. vys. ucheb. zav.; gor. zhur. no.2:105-114 '61. (MIRA 14:3)

1. Khar'kovskiy gornyy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta Khar'kovskogo gornogo instituta.
(Mine haulage) (Coal mining machinery)

DAVYDOV, B.L., prof., doktor tekhn.nauk

Large-scale mine hoists in Czechoslovakia. Gor. zhur. no.4:43-47 Ap '61. (MIRA 14:4)

1. Khar'kovskiy gornyy institut.
(Czechoslovakia--Mine hoisting)

DAVYDOV, B.I.

Statistical dynamics of an incompressible turbulent fluid. Dokl.AN SSSR 136 no.1:47-50 Ja '61. (MIRA 14:5)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR. Predstavleno akademikom M.A.Leontovichem.
(Fluid dynamics) (Turbulence)

DAVYDOV, B.L., prof.

Study of the interaction between the load-bearing and the pulling parts of belt-chain conveyers. Izv.vys.ucheb.zav.; gor.zhur. no.3:117-138 '61. (MIRA 15:4)

1. Khar'kovskiy gornyy institut; rekomendovana kafedroy gornykh mashin i rudnichnogo transporta Khar'kovskogo gornogo instituta.
(Conveying machinery)

DAVYDOV, B.L.

Investigating the interaction of two contiguous flexible bodies. Trudy Inst.mash.Sem.po teor.mash.i mekh. 23 no.89/90:15-26 '62. (MIRA 15:6)

(Strains and stresses)

YEVNEVICH, Anton Vladislavovich; DAVYDOV, B.L., prof., retsenzent; SOLOV'YEV, A.A., prof., retsenzent; SHTOKMAN, I.G., prof., retsenzent; VASIL'YEV, N.V., dots., otv. red.; KOVAL', I.V., red.izd-va; BOLDYREVA, Z.A., tekhn. red.; MAKSIMOVA, V.V., tekhn. red.

[Machines formine haulage] Gornye transportnye mashiny. Izd.2. Moskva, Gosgortekhizdat, 1963. 467 p. (MIRA 16:9)

1. Khar'kovskiy gornyy institut (for Davydov, Solov'yev)
2. Donetskiy politekhnicheskiy institut (for Shtokman).
(Mine haulage)

DAVYDOV, Boris L'vovich, prof., doktor tekhn. nauk; SKORODUMOV, Boris Aleksandrovich, dots., kand. tekhn. nauk; BUBYR', Yuriy Vladimirovich, dots., kand. tekhn. nauk; SLIBKO, V.M., inzh., retsenzent; CHISTYAKOVA, L.G., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Reducing gears; design and testing]Reduktory; konstruktsii, raschet i ispytaniia. Moskva, Mashgiz, 1963. 472 p. (MIRA 16:4)

(Gearing)

DAVYDOV, Boris L'vovich, prof., doktor tekhn.nauk; SKORODUMOV, Boris Aleksandrovich, dots., kand. tekhn. nauk; KHORIN, V.N., doktor tekhn. nauk, retsenzent; ARUTYUNYAN, S.M., otv. red.; KOVAL', I.V., red.izd-va; MINSKER, L.I., tekhn. red.

[Design and construction of coal mining machines] Raschet k konstruirovanie ugledobyvaiushchikh mashin. Moskva, Gosgortekhizdat, 1963. 589 p. (MIRA 16:8)

1. Glavnyy konstruktor Dongiprouglemasha (for Arutyunyan).
(Coal mining machinery)

DAVYDOV, B.M.; SOLOPOV, N.A.

Large block erection of an automatic cement and concrete plant.
Avt.der.18 no.6:13-14 O '55. (MLRA 9:2)
(Concrete plants)

BASOV, A.N.; GUTTSAYT, Z.I.; DAVYDOV, B.N.; KIRPICHEV, V.M.

Differentiation of industrial wholesale prices of motor fuels. Khim. i tekh. topl. i masel 8 no.9:46-51 S '63.
(MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.

DAVYDOV, B.N.; BASOV, A.N.; GEL'MS, I.E.

Cost of spent catalysis. Neftepер. i neftekhim. no.5:17-20 '64. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.

GEL'MS, I.E.; DAVYDOV, B.N.

Problems of economics in the development of the production of catalysts for the petroleum industry. Khim. i tekh. topl. i masel 9 no.3:45-48 Mr'64 (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.

TITOVA, A.I. prof.; GOLIKOVA, T.M.; VOLKOVA, A.V.; POKROVSKIY, S.A.; DAVYDOV, B.N.; NAZARETSKIY, F. Ye.

Clinical aspects and treatment of chronic pneumonia in children. Sbor. nauch. trud. Ivan. gos. med. inst. no. 28:3-11 ' 63 (MIRA 19:1)

1. Iz kafedry detskikh bolezney (zav. kafedroy - prof. A.I.Titova) Yaroslavskogo gosudarstvennogo meditsinskogo instituta (rektor - prof. N. Ye. Yarygin).

DAVYDOV, B.P.

Treating othematoma. Vest. oto-rin. 19 no.1:107-108 Ja-F '57
(MLRA 10:4)

1. Iz gorodskoy bol'nitsy g. Lebedin Sumskoy oblasti.
(EAR--TUMORS)

DAVYDOV, B.S.

Recent trends in the development of feeler gauges used for the control of surface smoothness. Izm.tekh. no.6:46-48 N-D '55. (MLRA 9:3)

(Surfaces (Technology)) (Measuring instruments)

DAVYDOV, B.S., inzhener.

The necessity of standardizing the basic characteristics of clearance gauges. Standartizatsiia no.2:58-61 Mr-Ap '56. (MLRA 9:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov.
(Gauges)

DAVYDOV, B.S.

Comparative study of the indicated measurements of surface-smoothness gauges and optical instruments. Priborostroenie no.3:23-26 Mr '56. (MLRA 9:8)

(Surfaces (Technology)--Measurement)

DAVYDOV, B. S.

Category : USSR/General Problems - Method and Technique of Investigation A-4

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5607

Author : Yegorov, V.A., Davydov, B.S.
Title : Verification of Feeler Instruments for the Control of Roughness of Surfaces.

Orig Pub : Izmerit. tekhnika, 1956, No 3, 64-66

Abstract : A survey is given of the existing methods for checking feeler instruments, and also a description of various specimens with irregular profiles. Special specimens are proposed for the testing of profilographs (metallic slabs 40 x 40 x 10 mm), on which are located three groups of graduation lines, in groups of five each. The graduation mark has parabolic, triangular, and trapezoidal profiles.

Card : 1/1

DAVYDOV, B.S.

Conference on present-day methods and means for rating surface smoothness. Izm.tekh. no.4:85 Jl-Ag '56. (MLRA 9:11)
(Surfaces (Technology)) (Metals--Finishing)

DAVYDOV, B.S., inzhener.

Some correlations in the readings of surface roughness measurements. Standartizatsiia no.6:25-28 N-D '56. (MLRA 10:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov.
(Surfaces (Technology)--Measurement)

DAVYDOV, B.S.

DAVYDOV, B.S., inzh.

Using pneumatic instruments in checking the surface roughness.
Vest.mash. 37 no.12:66-67 D '57. (MIRA 10:12)
(Surfaces (Technology)--Measurement))
(Pneumatic machinery)

Davydov, B.S.

24(0); 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleyeva

Referaty nauchno-issledovatel'skikh rabot: sbornik No.2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of Institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards, Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev) in Leningrad; Sverdlovsk branch of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Commission on Standards, Measures, and Measuring Instruments); created from MOIMIP - Moskovskiy gosudarstvennyy Institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIFTRI - Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific Research Institute of Physicotechnical and Radio-engineering Measurements) in Moscow; KhOIMIP - Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Khar'kov State Institute of Measures and Measuring Instruments); and NOIMIP - Novosibirskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Card 5/27

SOV/120-58-5-29/32

AUTHOR: Davydov, B. S.

TITLE: Measurement of Small Amplitudes of Mechanical Vibrations (Izmereniye malykh amplitud mekhanicheskikh kolebaniy)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 5, p 107 (USSR)

ABSTRACT: The method of measurement was based on the principle of stroboscopic interference. The stroboscope was driven by the source of electrical oscillations and the strobotron, type STN-1, was used as the source of light. The interference pattern was observed in a micro-interferometer of the Linnik type which had the following characteristics: diameter of the observation field 1.7 mm, linear magnification of the objective 7^{X}-0.18 and the viewer magnification of 15^{X}. When the difference between the oscillation frequencies of the vibrator and the strobotron is suitably chosen, the interference pattern observed is displaced relatively to the fixed visor. By counting the number of fringes,it is possible to determine the amplitude of the oscillations; the amplitude is $A = n\lambda ef/4$ where n is the number of fringes and λef is the effective wavelength.

Card 1/2

Measurement of Small Amplitudes of Mechanical Vibrations

It was found that the amplitude could be determined with an error of not more than 5%. The paper contains 1 table and 4 references; 2 of the references are English and 2 are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (The All-Union Scientific Research Institute of the Committee of Standards, Measures and Measuring Instruments)

SUBMITTED: September 7, 1957.

DAVYDOV, B.S.; KRYNKIN, K.M., inzh., nauchnyy red.; RESHETINA, S.V., red.izd-va; MATVEYEVA, A.Ye., tekhn.red.

[Fundamentals of the feeler method for determining the roughness of surfaces] Osnovy shchupovogo metoda opredeleniia sherokhovatosti poverkhnosti. Moskva, Gos.izd-vo standartov "Standartgiz", 1959. 167 p. (MIRA 13:5)
(Surfaces (Technology)--Testing)

DAVYDOV B.S.

PHASE I BOOK EXPLOITATION SOV/3688

Akademiya nauk SSSR. Institut mashinovedeniya. Kontseptsiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti

Kachestvo poverkhnosti detaley mashin, sbornik 4. Tekhnologicheskiye metrologicheskiye i pribory. Eksplutatsionnyye svoystva (Surface Quality of Machine Parts, Collection of Articles, No. 4. Operational Properties of the Surface Layer) Moscow, Ind-vo AN SSSR, 1959. 291 p. (Series: Its: Trudy) Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp: Ed.: P.Ye. D'yachenko, Professor; Ed. of Publishing House: G.S. Gorshkov; Tech. Ed.: T.P. Polenova.

PURPOSE: This collection of articles is intended for technical personnel concerned with the quality of surface finishes of machine parts.

COVERAGE: This collection of articles deals with problems of surface roughness and the effect of surface roughness on the wear and strength of machine parts. Among the topics discussed are the development of international standards for surface roughness, the effect of cutting feeds and cutting-tool vibration on the surface roughness of machined parts, the effect of lay direction on the wear of plane friction surfaces, methods and instruments for measuring surface roughness, and the processing of profilograms of finished surfaces. No personalities are mentioned. References follow several of the articles.

DAVYDOV, B.S.; KARTASHEVA, A.N.

Feeler-type instruments for determining surface roughness.
Standartizatsiia 24 no.8:40-42 Ag '60. (MIRA 13:9)
(Surfaces (Technology)--Testing)

25100
S/122/60/000/011/020/020
A161/A130

18000

AUTHORS: Davydov, B.S.; Kartasheva, A.N.

TITLE: Particular points of the new standard for feeler instruments for determination of surface roughness in the machine industry

PERIODICAL: Vestnik mashinostroyeniya, no. 11, 1960, 80 - 81

TEXT: Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (The Committee of Standards, Measures and Measuring Instruments at the Council of Ministers of the USSR) has approved a new standard - "Feeler Instruments for Determination of Surface Roughness. Types. Basic Parameters and Accuracy Norms". It complements the ГОСТ 2789-59 (GOST 2789-59) standard for surface roughness, includes the basic R_a parameter of profilometers and profilographs, and standardizes the roughness measurements in the industry regardless of the design features of instruments. It is the first Soviet standard for such instruments, is claimed to be the most complete of analogous standards existing in other countries, and contains some new conceptions and designations needing explanation. The profilometers are subdivided into three types - of the highest accuracy, П-7 (P-7); medium accuracy, П-10 (P-10); and limited accuracy, П-16

Card 1/4

Particular points of the new standard for....

(P-16). The accuracy is characterized by "peredatochnoye otnoshenlye" (ratio), i.e., the relation of R_a reading on the scale in microns to set linear needle displacement (also expressed through R_a in microns). The relative error of the profilometer ratio is determined by the formula

$$\delta_n = \frac{R_a - R'_a}{R'_a} 100\%, \quad (1)$$

where R_a are readings in microns; and R'_a the mean arithmetical value of the needle displacement setting. The ratio error is determined by methods specified in the "148-59" instructions, with the use of a vibrator imparting sinusoidal oscillations to the needle. This eliminates the component errors from the measuring effort P and needle tip radius r. The P-7 profilometers have $\delta_n \leq \pm 7\%$ and are designed nearly exlusively for research, expert decisions, and profilometers of designs analogous with the known profilometer of the "Kalibr" Plant and Vsesoyuznyy elektrotekhnicheskiy institut (All-Union Electrotechnical Institute) that belong to this group. The P-10 with $\delta_n \leq \pm 10\%$ are for both laboratory and shop use; they are less complex and costly, of less weight and size. The major mass of piezoelectric and induction profilometers belongs to them. The simplest P-16 $\delta_n \leq \pm 16\%$) include instruments that are analogous with the latest TI-4 (P-Ch) profilometers. The profilographs (being nearly exclusively laboratory instru-

Card 2/4

Particular points of the new standard for....

ments) are divided into two types - ПГ-5 (PG-5) with ratio error $\delta_{n2} \leq \pm 5\%$ and PG-10 with $\delta_{n2} \leq \pm 10\%$

$$\delta_n = \frac{\frac{H}{V_o} - H_o}{H_o} 100\% , \quad (2)$$

where H is the displacement of the stylus or of the "light spot" of the recorder read from the profilogram, in microns; H_o - the value of set needle displacements, in microns; and V_o - the nominal vertical enlargement of the instrument. The new standard introduces additional requirements for the determination of profilometer reading error, and errors of vertical enlargements of the profilographs. The vertical enlargement error is determined (as per the "149-59" instruction) with "odnoshtrikhovyye mery vysoty nerovnosti" (single-line roughness gages) produced at the repair-and-experiment workshops of VNIIKSMIP, i.e., by single carefully graduated notches. Same gages are used for checking horizontal enlargements with two additional notches. The horizontal enlargement error of a profilograph must not exceed ± 10%. As according to ГОСТ 9017-59 (GOST 9017-59) standard, the feeler instruments are to be provided with needles with r = 10 micron, and profilographs with r = 2 micron needles. The new standard only sets limits to the static effort of feeler instruments; it has to be in the range 0.1 - 2 g. For instruments with a resilient needle suspension (e.g., on a spring parallelogram) the effort constant, or gradient (effort variation in axial displacement

Particular points of the new standard for....

for 1 micron) must be within the range 0.006 - 0.12 g/micron. (The "Kalibr-VEI" profilograph-profilometer has the first suspension kind, and the majority of feeler instruments like the P-Ch have a parallelogram). An important characteristic for the feeler instruments is the range of surface irregularities spacing range within which the ratio error is not exceeded. The standard sets a minimum only for this range (B_{min} = 2 + 3 micron). For the P-16 profilometers this minimum is 5 micron. The maximum spacing is called "otseohka shaga" ("spacing cutoff") and signifies limiting of the spacing of the largest irregularities by switching-on electric filters with certain characteristics. This requirement will be considered additionally. The "cutoffs" are numerically equal to the base lengths per GOST 2789-59, i.e., 0.08; 0.25; 0.8 mm, etc. Apart from electrical methods for eliminating irregularities with larger spacing from the measurement results, the same results can be achieved using a rest with a certain radius sliding on the surface. Vertical enlargement limits for profilographs are 100 - 100,000 and horizontal between 10 and 2,000 - 2,500.

45655

S/115/63/000/001/007/017
E194/E155

AUTHOR: Davydov, B.S.

TITLE: Possibilities of using light interference methods to measure lengths in motion

PERIODICAL: Izmeritel'naya tekhnika, no.1, 1963, 21-22

TEXT: Existing methods of using light interference to measure amplitudes of vibration are of limited use with large amplitudes. Even the stroboscopic method gives difficulties with displacements of more than 30 - 40 bands because of the difficulty of obtaining strictly monochromatic impulse light sources that can work at high frequencies. In developing equipment for testing industrial instruments for measuring surface finish simple light-interference methods were developed in which amplitudes ranging from a few to some tens of microns could be measured with an error of 0.1% or less at frequencies over 300 c/s. In a Michelson-type interferometer one of the mirrors is connected to the moving system and the interferometer can be displaced in the direction of displacement of the mirror. The amount by which the interferometer is moved is measured by an instrument for measuring static displacement, such

Card 1/2

as a second interferometer with band counter. The first interferometer is then used to locate the two extremes of vibration and its displacement measured on the second interferometer is a measure of amplitude. It is not necessary to have a strictly monochromatic discontinuous light source, and large amplitudes can be measured with an accuracy that depends on the accuracy of the static linear measurements. An interference electronic-oscillographic method was also developed so that large amplitudes could be measured without visual examination of the interference pattern in the eye piece. A group of interference bands from an ordinary white light source was observed through a slot by a photomultiplier. The electrical impulses were applied through a cathode follower and displayed on a cathode-ray oscillograph. Depending on the position of the slot relative to the interference bands, the displayed curves either split up or join together, and readings corresponding to these two positions are taken on an instrument for measuring static displacement, the difference between readings giving the full amplitude. With this method high-frequency periodic oscillations can be measured without using complicated high-speed cine cameras to determine the position of the interference bands.

Card 2/2

S/120/63/000/001/035/072
E032/E314

AUTHOR: Davydov, B.S.

TITLE: Two interference methods for determination of the amplitudes of mechanical systems

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963, 139 - 140

TEXT: When the light source of a Michelson interferometer is modulated at a frequency which is nearly the same as the frequency of oscillation of one of the mirrors whose amplitude is to be determined, the central achromatic fringe executes a slow oscillation in the field of view. The amplitude of the oscillations is then given by $A = 0.25CN\lambda$, where λ is the effective wavelength, C is the length of one division in the eyepiece scale and N is the number of these divisions corresponding to the maximum displacement of the fringe. However, for greater amplitudes the achromatic fringe will leave the field of view. A dynamic indicator now described is found to be suitable in such cases. The interferometer is placed so that the achromatic fringe in its extreme lefthand position lies in the middle

Card 1/2

of the field of view. This position of the interferometer as a whole is recorded on some control device suitable for static linear measurements. The interferometer is then displaced until the achromatic fringe in its extreme righthand position is again in the centre of the field of view and the position of the interferometer is noted again. The amplitude of the oscillations is then equal to one-half of the difference in the readings of the interferometer position-indicator mentioned above. In the second method the fringe image is swept across a slit by means of a rotating mirror. A photomultiplier placed behind the slit records the changes in the light intensity. Its output is fed through a cathode-follower to an oscillograph. The amplitude can be deduced from the distance between stationary oscillatory wave trains on the CRO screen. There are 3 figures and 1 table.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Committee of Standards, Measures and Measuring Instruments)

SUBMITTED: April 6, 1962

DAVYDOV, B.S., gornyy inzh.; ARKHIPOV, A.V., gornyy inzh.

Self-propelled unit for sprinkling excavation stopes. Gor. zhur. no.5:74 My '65. (MIRA 18:5)

1. Severnyy gorno-obogatitel'nyy kombinat, Krivoy Rog.

STRELKOV, M.I., kand. tekhn. nauk; BAKLANOV, G.M., inzh.; MININ, V.I., inzh.; DAVYDOV, B.V., inzh.; KUCHMENT, O.V., inzh.

Recent technological developments in the manufacture of reinforced contrete mine struts. Ugol' Ukr. 7 no.7:22-23 Jl '63. (MIRA 16:8)

(Mine timbering—Equipment and supplies)
(Reinforced contrete construction)

DAVYDOV B. Ye.

O karttsinoze limfaticheskikh sosudov legkikh. [Carcinosis of pulmonary lymph vessels.] Arkh. pat., Moskva 12:3 May-June 50 p. 71-8.

1. Of the Pathologico-Anatomic Division (Head -- Prof. A. I. Strukov), Moscow Oblast Scientific-Research Tuberculosis Institute (Director -- Prof. N. N. Grinchar), Moscow.

CLML 19, 5, Nov 50

DAVYDOV, B . Ya.

DAVYDOV, B. Ya. - "The Synovial Membranes of the Large Joints of Man in Various Forms of Tuberculosis." Sub 3 Jun 52, Acad Med Sci USSR. (Dissertation for the Degree of Candidate in Medical Sciences).

SO: Vechernaya Moskva January-December 1952

ANIN, Yu. L.; DAVYDOV, B. Ya.

Malignant thymoma. Vrach. delo no.6:135-136 Je '62.
(MIRA 15:7)

1. Terapevticheskoye (zav. - Yu. L. Anin) i patologoanatomicheskoye (zav. - B. Ya. Davydov) otdeleniye Khersonskoy bol'nitsy vodnikov.

(THYMUS GLAND--CANCER)

DAVYDOV, B.Z., elektroslesar'

An electronic vacuum meter. Energetik 12 no.3:15-16 Mr '64.
(MIRA 17:4)

DAVYDOV, D.

Construction Industry

"Control by the trade-union organization over residential building construction being carried on by contract." V. Pom. profaktivu, 13, No. 10, 1952.

Monthly List of Russian Accessions. Library of Congress, August 1952. UNCLASSIFIED.

DAVYDOV, D.; FILATOV, I.

In the interest of the people and of production. Pozh.delo 7 no.10:2-4 O '61. (MIRA 14:10)
(Kuybyshev—Electric industries—Fires and fire prevention)

DAVYDOV, D.N.

DAVYDOV, D., inzh.; SMIRNOV, S., inzh.

Making concrete slabs in the winter. Gor. i sel'.stroi. no.5:8-10 My '57. (MIRA 10:10)
(Concrete slabs)

Davydov, D.N.

DAVYDOV, D.N., inzh.; SMIRNOV, S.N., inzh.

Work of an open-type concreting combine under cold weather conditions. Biul. stroi. tekh. 15 no.1:10-12 Ja '58. (MIRA 11:2)
(Concrete construction--Cold weather conditions)

DAVYDOV, D. P., Eng.

Gases - Analysis

Improving the work of gas analysers. Rab. energ. 2 no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 X1953. Unclassified.

DAVYDOV, E. (Ivanovo)

Help and friendship. Okhr.truda i sots.strakh. 5 no.12:12 D '62. (MIRA 16:2)

(Ivanovo—Pensions)

L 48025-65 EWT(1)/EWT(m)/FCC/EWA(h) GW/GS

ACC NR: AT5023945 UR/0000/65/000/000/0323/0337

AUTHOR: Malachov, S.G.; Davydov, B.N.; Nekhorosheva, M.P.

TITLE: Time variations in the concentration of the fission products in the ground level atmosphere in the Moskow region and on the island of Hays, Franz Joseph Land, during 1956-1963.

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radioactivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their use in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 323-337

TOPIC TAGS: atmospheric contamination, atmospheric pollution, radioisotope

ABSTRACT: The concentration of radioactive aerosols in ground level air is measured and the average monthly and yearly concentrations tabulated for Moskow (55°N.L.) and island of Hays (80°N.L.). The aim is to find the meteorological processes pertinent to the distribution mechanism. It is observed that the maximum concentrations of ground level atmospheric contamination happened in 1959, and particularly in 1963, Both are the first years following discontinuation of the nuclear tests. The fallout of Sr^{90} reached 12.5 microcuries/square kilometer in 1963. The atmospheric contamination is found to have a maximum in Spring, and a minimum in the Autumn. The variation is similar for the Moskow, Leningrad and Franz Joseph Land regions. Qualitative

Card 1/2

L 9802-66

ACC NR: AT5023945

conclusions are then developed, as follows. The main source of fission products entry into the atmosphere, particularly in the Spring, - is the region of moderate latitudes. Atmospheric contamination levels and their seasonal variations depend upon the intralatitude atmospheric exchange between the Eurasian continent and the polar regions high latitudes. The differences in radioactive contamination of the ground level air in Thule and on the island of Hays can be due to the presence of the quasistationary Greenland anticyclone. Differences in local meteorological conditions can lead to substantial contamination differences for individual regions, even those belonging to the same latitude belt.

ASSOCIATION: 00

SUBMITTED: 00 ENCL: 00 SUB CODE: 18,08

NO REF SOV: 012 OTHER: 013

(18)

Card 2/2

L 14051-66 EWT(1)/EWT(m)/FCC DIAAP GW

ACC NR: AT5023949 UR/0000/65/000/000/0351/0356

AUTHOR: Davydov, E.N.; Nechorosheva, M.P.

ORG: None

TITLE: Determination of yearly Sr^{90} fallouts in the polar regions from its content in seasonal layers of ice and firn on the glaciers of Franz Josef Land and Severnaya Zemlya.

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radioaktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their utilization in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 351-356.

TOPIC TAGS: radioactive fallout, radioactivity measurement, strontium, snow, precipitation

ABSTRACT: Yearly fallout magnitudes of Sr^{90} in the Arctic were studied as a contribution to the global picture of Sr^{90} distribution. The problem posed by direct measurements in frequent polar blizzards was avoided by determinations of radioactivity concentration, C, (micromicrocuries per liter) in the retained layers of snow and firn. The product of Sr^{90} concentration, C, by the amount of precipitation, H, in millimeters, yields the the fallout as C.H. 10^{-3} millicuries/km. The zone of firn in Franz-Joseph Land and in Severaya Zemlya is found at an altitude of 400 meters.

Card 1/2 UDC: None

L 11051-66

ACC NR: AT5023949

Above this altitude the layer of fallen snow does not fully thaw out and all the Sr^{90} deposited with the precipitation or in a dry way remains in the layer. The yearly layers of firn have ice layer demarkations allowing identification and evaluation. The sampling was done at the summits of the glacier cupolas by sawing out and melting the yearly layers between two parallel trenches dug 50 cm. apart. The melted samples had a volume of about 20 liters. The latitude range of geographical sample coordinates was 79°40' - 81°45' N. Latitude. The longitudes ranged between 58°00' and 60°36 for Franz-Joseph Land and 96°30' and 96°42' for Severnaya Zemlya (East). The years covered were 1956-1963 with some gaps for some places of sampling. From the results obtained it can be seen that the fallout data are quite consistent when expressed as the amount of radioactivity per square kilometer, per millimeter of precipitation. It is concluded that the content of Sr^{90} in the yearly firn layers on glacier cupolas in the Arctic can adequately characterize fallouts in the surrounding regions. The results obtained fit satisfactorily certain U.S. fallout measurements (" Sr^{90} in 1960 soils" Hasl-117, 1961. U.N. Docum. A/AC 82 L/L 856). The relatively low fallout found in the Arctic does not support the hypothesis of preferred fallout exit from the stratosphere in the polar region (the hypothesis is based upon the fact of partial absence of the tropopause during the polar night). Orig. art. has: 2 fig, 1 table.

SUB CODE: 04, 18 SUBM DATE: 28Apr65 ORIG REF: 004 OTH REF: 002

BVK

Card 2/2

DAVYDOV, F.

How the words are born. Znan.-sila 38 no.2:11-12 F '63.
(MIRA 16:3)
(Language and languages--Etymology)

DAVYDOV, F.

Observation techniques. Voen. znan. 25 no.1:5 Ja '49.
(MIRA 12:12)
(Military reconnaissance)