

ACCESSION NR: AP4012881

given; and suggestions are made for data processing techniques. Orig. art. has:
4 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 02Mar64

ENCL: 00

SUB CODE: AM

NO REF SOV: 000

OTHER: 000

Card

2/2

AKULINICHEV, I.T.; ANDREYEV, L.F.; ~~BAYEVSKIY, R.M.~~; BAYKOV, A.Ye.; BUYLOV, G.G.
GAZENKO, O.G.; GRYUNTAL', R.G.; ZAZYKIN, K.P.; KLIMENTOV, Yu.F.;
MAKSIMOV, D.G.; MERKUSHKIN, Yu.G.; MONAKHOV, A.V.; PETROV, A.P.;
RYABCHENKOV, A.D.; SAZONOV, N.P.; UTYAMYSHEV, R.I.; FREYDEL', V.R.;
KHIL'KEVICH, B.G.; SHADRINTSEV, I.S.; SHEVANDINA, S.B.; ESAULOV,
N.G.; YAZDOVSKIY, V.I.

Method and means of medical and biological studies in a space
flight. Probl. kosm. biol. 3:130-144 '64. (MIRA 17:6)

BAYEVSKIY, R.M.; BOGDANOV, V.V.; VOSKRESENSKIY, A.D.; YEGOROV, A.D.
CHEKHONADSKIY, N.A.

Application of mathematical methods in space medicine. Probl.
kosm. biol. 3:379-388 '64. (MIRA 17:6)

BAYEVSKIY, R. M.; GAZENKO, O. G.

Reaction of the cardiovascular system of man and animals under
weightlessness conditions. Kosm.issl. 2 no. 2:307-319 Mr-Ap
'64. (MIRA 17:5)

L 16907-65 EFO-2/EWG(j)/FSF(h)/FSS-2/EWG(r)/EWT(1)/FS(v)-3/EEC(k)-2/EWG(v)/
EWT(d)/EWT(a)/EWT(c) Ph-4/Pa-4/Pe-5/Pq-4/Pic-4/Pee-3/Pi-4 AEDC(a)/CIT/INT/
ACCESSION NR: AP5000171/APLR/APTC(a) S/0293/64/002/006/0936/0938
APTC(b) TT/DD/GW

AUTHOR: Bayevskiy, R. M.; Zhukov, K. I.

TITLE: The influence of prolonged weightlessness on the automatism
of heart muscle

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 6, 1964, 936-938

TOPIC TAGS: weightlessness, zero g effect, heart rhythm, heart
automatism, bed rest, manned spaceflight, Vostok 5, Vostok 6

ABSTRACT: The authors, with the participation of O. G. Gizenko,
made a statistical analysis of a dynamic series of RR-electrocardiogram
intervals which reflected heart arrhythmia and peculiarities of heart-
muscle automatism arising during prolonged spaceflight. Other functions
of the heart were also considered, such as its excitability, conduc-
tivity, and contractibility. These latter functions are of interest
in attempting to understand how the circulatory system adapts to
weightlessness. Preflight data on V. Bykovskiy and V. Tereshkova,
as well as telemetric records of electrocardiograms and electrophono-
grams taken during the 5-min prelaunch period and during the orbital

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L 16907-65

ACCESSION NR: AP5000177

2

flights of Vostoks 5 and 6, were compared. There was a statistically significant difference between orbital and earthside data. Spaceflight indices of heart function compared closely to those taken from earthside studies during night cycles. It is believed that the parasympathetic influence on the heart becomes stronger during sleep, while the sympathetic influence becomes weaker; this same shift occurs during adaptation to prolonged weightlessness. This would explain the cardiac arrhythmia observed during spaceflight. Therefore, the variability of RR intervals can be considered a function of the interrelationships of the sympathetic and parasympathetic systems. Further studies should entail the detailed determination of the normal limits of "space arrhythmia", taking into consideration the possibility that it may be one of the symptoms of a pathological adaptation to weightlessness. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 05Mar64

ENCL: 00

SUB CODE: LS, PH

NO REF SOV: 004

OTHER: 000

ATD PRESS: 3150

Card 2/2

AKULINCHEV, I.T.; BAYEVSKIY, R.M. (Moskva)

Use of radiotelemetry in space medicine. Vest. AMN SSSR 19 no 2:
60-66 '64. (MIRA 18:1)

L 20725-65 EBO-2/ENP(m)/EWO(a)/EWD(c)/EWG(j)/EWG(r)/EEO(k)-2/EWG(v)/EWI(1)/
FS(v)-3/FSP(h)/ Pd-1/Pe-5/Pi-4/PO-4/PQ-4/Pac-4/Pas-2/Pb-4 AFWL/AFMDC/AMD/AFETR/
ACCESSION NR: AP4049502 APTC(b) TT/DD/GH S/0209/64/000/011/0033/0036

AUTHOR: Akulnichev, I. J.; Bayevskiy, R. M.

TITLE: Conditions of prolonged space flight ✓

SOURCE: Aviatziya i kosmonavtika, ⁴⁷⁻no. 11, 1964, 33-36 B

TOPIC TAGS: prolonged isolation, prolonged space flight, interplanetary flight, space medicine, space biology

ABSTRACT: While there have been a number of orbital flights, the article points out that it has become necessary to study longer flights into space. These are needed not only for a more complete study of space close to Earth, but also for coping scientifically with flights to the Moon, Venus, Mars and other planets of the Solar System. Since interplanetary flights will differ from orbital ones not only in navigational and technical aspects, but also in their effects on man's activity, the methods for solving the medico-biological problems must be worked out, not only on the basis of past experience, but by actual study. The authors deal with the special difficulties involved with human illness and the need for a quick return to Earth. They speak of the technical changes that will be required in the construction of space vehicles, and of the variety of specialists that will be needed. The authors also stress the need for space medical staffs to conduct
Card 1/2

L 20725-65

ACCESSION NR: AP4049502

research into little-known conditions, as well as in reliable biological control, and physiological and hygienic research. The need is stressed for studies dealing with the effects of cold, heat, intense light and cosmic rays, all of which may necessitate changes in the way work is done in space. Certain types of work, it is pointed out, will have to be done by a 'Space Service' whose personnel would work in space stations under actual conditions. Studies of the route to the Moon, as well as of the Moon itself, must be made to augment studies in automated systems, bio-indicators, and safety systems. The authors also point out that a great wealth of Soviet experience in physiology is available, and that what humans can actually do in space must be ascertained as a prerequisite to discovering whether changes in navigation systems must be made. The article reviews some of the previous work done along these lines and lists items considered to be essential for the collecting and developing of physiological information. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, SV

NO REF SOV: 000

OTHER: 000

Card 2/2

WRITE BELOW THIS LINE

ACCESSION NR: AP4043720

S/0239/64/050/008/0924/0933

AUTHOR: Parin, V. V. (Moscow); Bayevskiy, R. M. (Moscow)

TITLE: Problems of current biotelemetry

SOURCE: Fiziologicheskii zhurnal SSSR, v. 50, no. 8, 1964, 924-933

TOPIC TAGS: biotelemetry, radio electrocardiography, pulse radio-
phone, manned space flight

ABSTRACT: In this review article the author classifies biotelemetric systems according to the location of the transmitter in relation to the subject under investigation. The three basic classifications are: a) transmitter located some distance from the subject, b) transmitter externally attached to the subject, and c) transmitter located inside the subject. Block diagrams are presented which represent: 1) two systems where the digital computer is either associated with the receiver or transmitter; 2) an aircraft biotelemetric system where the pilot, amplifier, and transmitter are airborne and the receiver and recorder comprise the ground unit; and 3) two space cabin biotelemetric systems, i.e., the present system where astronaut,

Card 1/2

ACCESSION NR: AP4043720

amplifier, and transmitter are in the space module while the receiver and recorder are earthside, and the future system where the astronaut-transmitter unit is connected to an additional receiver-transmitter subunit. The final ground link is the receiver-recorder unit. The author states that two Sverdlovsk pulse radiophones, far smaller than those used for the past 10 years, will soon be manufactured. They are designated the KRP-2M and REK-1. The All-Union Institute of Medical Equipment and Instrumentation is now producing a TEK-1 radio electrocardiograph developed by T. Ye. Timofeyeva and V. A. Antselevich in 1960. It is concluded that, as the miniaturization and technology of biotelemetric devices progresses, reclassification of systems will be necessary. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 20Mar64

ATD PRESS: 3089

ENCL: 00

SUB CODE: LS,EC

NO REF SOV: 021

OTHER: 018

Card 2/2

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, T.A.;
KORESHKOV, A.A.; KAS'YAN, I.I.; KOTOVSKAYA, A.R.; FALIBERDIN,
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.M.; SERYAPIN, A.D.; SAKSONOV, P.P.; TEREENT'YEV, V.G.; USHAKOV,
A.S.; UDALOV, Yu.F.; FOMIN, V.S.; FOMIN, A.G.; KHLEENIKOV, 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 gruppovoi kosmicheskii polet i neko-
torye itogi poletov sovetskikh kosmonavtov na korabliakh
"Vostok"; nauchnye rezul'taty medikobiologicheskikh issledovaniy,
provedennykh vo vremia vtorogo gruppovogo kosmicheskogo poleta.
Moskva, Nauka, 1965. 277 p. (MIRA 18:6)

PARIN, V. V.; PARIN, V. V.; PARIN, V. V. (MIRA)

all reports are problems of inter space cardiology. Kardiologija
no. 13-13 '65. (MIRA 18:10)

L 3659-66 EWT(1)/EWA(h)

ACCESSION NR: AP5026521

UR/0286/65/000/019/0052/0052

616-072.7:53.087.62

15
B

AUTHOR: Bayevskiy, R. M.

TITLE: Device for recording the movement of a writing instrument. Class 30,
No. 175172

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 52

TOPIC TAGS: writing instrument, writing instrument recorder

ABSTRACT: An Author Certificate has been issued for a device which records the movement of a writing instrument. It consists of migration pickups, a recording device and time marker. It differs in that, for obtaining the quantitative characteristics of the writing act by means of recording the migration rate of the writing instrument, a movable stand with two degrees of freedom is attached to it and is connected to the pickups to which the writing field is firmly clamped (see Fig. 1 of the Enclosure). Orig. art. has: 1 figure, [CD]

ASSOCIATION: none

SUBMITTED: 15Sep64

NO REF SOV: 000

Card 1/2

ENCL: 01

OTHER: 000

SUB CODE: EE

ATD PRESS: 4/14

L 3659-66

ACCESSION NR: AP5026521

ENCLOSURE: 01

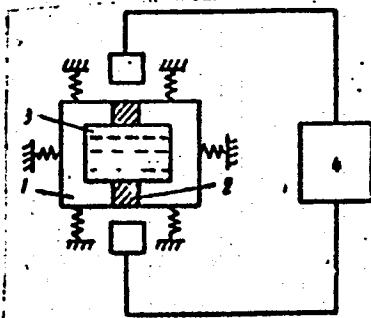


Fig. 1. Writing instrument recorder

- 1 - Movable stand with two degrees of freedom;
- 2 - migration pickup;
- 3 - writing field;
- 4 - recording device.

Beh
Card 2/2

L 2120-66 EWT(d)/FSS-2/EWT(1)/FS(v)-3/EEC(k)-2/EWA(d) TT/AST/RD/OW
ACCESSION NR: AP5021257 UR/0293/65/003/004/0636/0642
629.198.61

AUTHOR: Bayevskiy, R. M.

TITLE: Some problems of physiological measurements during inter-
planetary flights

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 4, 1965, 636-642

TOPIC TAGS: space physiology, biomedical monitoring, manned space
flight, interplanetary flight, medical control, biotelemetry, bio-
medical coding

ABSTRACT: The fundamental problems of biomedical monitoring on inter-
planetary space flights involve medical control and programmed medical
investigations including the diagnosis of illnesses. Of great con-
cern is the transmission of physiological data back to Earth. Medical
control can be accomplished at various stages of the flight through
the use of a minimum number of pickups and electrodes and data trans-
mission over on-board radio circuits. Programmed and diagnostic inves-
tigations can be carried out through the use of on-board computers.
In future interplanetary flights, which may last for years, data trans-

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L 2120-66

ACCESSION NR: AP5021257

mission to Earth will be limited and will differ radically from currently known systems. The block diagram (see Fig. 1 of Enclosure) is representative of physiological systems for short-term and long-term space flights. It is anticipated that the capacity of telemetric channels and data-transmission time will be limited one hundredfold, and the amount of information that can be exchanged between the spacecraft and Earth will be extremely limited because of the lack of necessary on-board power. It is plain that the transmission of oscillogram and numerical data will be impossible. Therefore, coded and correlated information will most likely be the means of exchange between the spacecraft and Earth, and the author proposes that research be initiated to develop a new code language tailored to the needs of space medicine and biology. Such a new code system might be analagous to the Q-signal system presently used in communications by Morse code. The characteristics of such a system are classified in tabulated form in Table 1. In speculating on future automatic-control systems for spacecraft, the author proposes three modes: 1) voluntary control by means of muscle biopotentials of spacecraft systems which would have to be turned off, turned on, or smoothly regulated under extreme conditions which would make manual control impossible; 2) involuntary control of automatic

Card 2/5

L 2120-66
ACCESSION NR: AP5021257

systems with the help of various biological indices ensuring optimum working and living conditions, e.g., air conditioning; 3) voluntary and involuntary control of crew emergency rescue systems. Three types of biological and medical data input systems are proposed: 1) input from a limited number of pickups and electrodes on the cosmonaut's body for medical control; 2) input from pickups and electrodes specially attachable only during an examination; 3) input from pickups and electrodes attachable for a short period during a detailed examination of the cosmonaut, with a data-storage system for future reference. The use of biological information to optimize automatic systems of spacecraft will guarantee the maximum safety of future spacecraft and space flights. Orig. art. has: 1 figure and 1 table. [CD]

ASSOCIATION: none

SUBMITTED: 05Mar64

ENCL: 02

SUB CODE: PH, DP

NO REF SOV: 005

OTHER: 003

ATD PRESS: 4117

Card 3/5

L 2120-66

ACCESSION NR: AP5021257

ENCLOSURE: 01

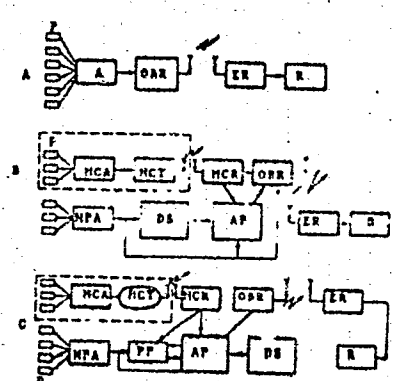


Fig. 1. Block diagram of physiological monitoring systems for short-term and fairly long space flights (A), prolonged space flights (B), and interplanetary ships (C)

P - Pickups; A - amplifiers; MCA - medical control amplifiers; MPA - medical probe amplifiers; ORR - on-board radiotelemetry system; ER - Earthside radiotelemetry; MCT - medical control transmitter; MCR - medical control receiver; DS - data storage; AP - automatic processing system; PP - physician's panel; R - recorder; dotted lines enclose apparatus attached to equipment.

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L 2120-66

ACCESSION NR: AP5021257

ENCLOSURE: 02

Table 1. Characteristics of physiological monitoring systems for different missions

Short-term and fairly long flights (up to 3 days)	Long-term flights (up to 1 month)	Interplanetary flights
All electrodes and pickups attached to cosmonaut for entire flight	Minimum number of pickups and electrodes attached to cosmonaut for medical control, some attached by cosmonaut himself for short examinations	Electrodes and pickups attached to cosmonaut by physician
Cosmonaut attached by leads to on-board systems	On-board radio circuit used for medical control	On-board radio circuit for medical control
On-board medical gear automatically controlled from Earth or from on-board programmed input	Manual control in addition to automatic and programmed control	Cosmonaut-physician controls apparatus
Physiological data recorded only during communication with Earth	Basic volume of physiological data recorded by data storage systems and subsequently transmitted to Earth automatically	Data recorded and processed on board with only a small general portion transmitted to Earth
Transmission of oscillogram data to Earth	Transmission of some oscillogram data with the basic volume of data transmitted in ciphered and coded form to Earth	Only general data transmitted to Earth
Physiological data basically processed after the flight and only partially during the flight (medical control)	Most physiological data processed automatically on board with subsequent deeper analysis on Earth	Physiological data fully processed on board

Card 5/5

L 23704-66 EWT(1) SCTB DD

ACC NR: AT6003856

SOURCE CODE: UR/2865/65/004/000/0217/0226

AUTHOR: Kostikova, V. Ya.; Bayevskiy, R. M.; Kalinovskiy, A. P.; Soshin, B. A. 73

ORG: none

BT

TITLE: Possible application of electronic logical circuits for automatic medical control

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 217-226

TOPIC TAGS: bioastronautics, bioinstrumentation, biotelemetry, automatic control system, logic circuit, *electronic circuit*

ABSTRACT: Space flights of longer duration and covering greater distances will sharply reduce telemetric transmission of medical and biological data. This leads to the problem of developing on board automatic medical control devices for monitoring data on the astronaut's condition. For space flights along established orbits which do not require readjustment of programmed instructions during course of flight, electronic logic circuits are satisfactory because of their simple design, low weight and small size. The algorithm of analysis for each

Card 1/3

2

L 23704-66

ACC NR: AT6003856

Sensors

- Pulse rate
- Respiration rate
- Body temperature
- Electric resistance of skin
- Level of consciousness
- Level of motor activity
- Carbon dioxide level
- Oxygen level
- Temperature

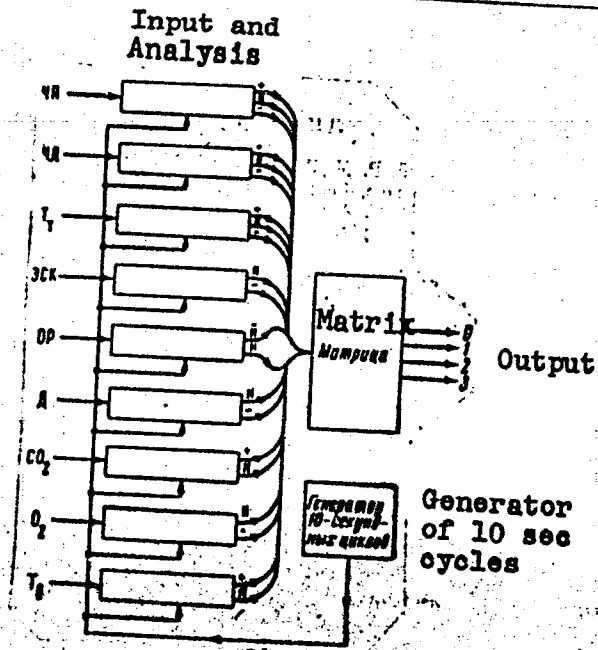


Fig. 6. Block diagram of an electronic logical system for automatic medical control.

Card 2/3

L 23704-66

ACC NR: AT6003856

of the indices (such as, body temperature) includes three operations: (1) measurement of the index during a given interval of time; (2) comparison of the index value with the norm range in the form of symbols, e.g., designating normal by "N", or "+" for higher than normal, or "-" for lower than normal; and, (3) comparison of symbols of different parameters according to a given logical system and determination of a code indicating a "diagnosis." (see Fig. 6). All problems of automatic diagnosis in which linear programming is applicable can be solved by electronic logic circuits. Orig. art. has: 6 figures and 1 table.

SUB CODE: 06, 09/ SUBM DATE: none/ ORIG REF: 004.

Card 3/3 FV

L 04589-67 FSS-2/EWT(1)/EEC(k)-2 SCTR TT/DD/GW

ACC NR: AP6033400

SOURCE CODE: UR/0293/66/004/005/0768/0780

AUTHOR: Bayevskiy, R. M.; Maksimov, D. G.

ORG: none

72
B

TITLE: Methods of programmed physiological measurements and their experimental use on the Voskhod-1 spaceship

SOURCE: Kosmicheskiye issledovaniya, v. 4, no.5, 1966, 768-780

TOPIC TAGS: programmed physiologic measurement, work capacity, vestibular analyzer, motor reaction, space physiology, biotelemetry/Voskhod-1

ABSTRACT: Methods, general principles, and laboratory testing of programmed physiological studies for spaceflight, with emphasis on work-capacity studies, are discussed; program variants are given and results of programmed investigations on the Voskhod-1 flight are presented. Functional division of medical control and medical investigations, use of intracabin telemetry, onboard computers, and memory devices, and the cosmonaut's participation in programming measurements facilitate expansion of information-collection systems. Programming a cosmonaut's activity requires selection of adequate functional tests for flight conditions, sequence of actions, and order and time of measurements. Programmed investigations, even when recordings are distorted, are an index of cosmonaut work capacity. The cosmonaut's accuracy in fitting sensors and electrodes is indicated by the quality of obtained recordings.

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UDC: 001.2 : 629.198.61 (018)

L 04589-67

ACC NR: AP6033400

his capacity for time orientation by the preciseness of the time chart, and his capacity to complete certain work by fulfillment of tests in a given program. A five-min program for general medical investigation which records seven physiological parameters on four recording channels is effective, but evaluates only the condition of the muscular system. A specialized program for studying vestibular and motor analyzers which includes the recording of motor acts during writing is highly effective, but requires ten min. Development of a combined program for studying fatigue and work capacity consists of three stages: 1) dynamography, 2) alternate muscular (static and dynamic work on the dynamogram) and mental (differentiation of three series of light stimuli) stresses, and 3) a combined seven-step program requiring 6.5 min, which investigates work capacity and coordination of motor acts during writing. The training of subjects and studies to reveal the nature of stresses and the structure of the writing test were included in this program which indicated the effectiveness of programmed investigation for studying work capacity and the possibility of developing programmed investigations for both general medical investigations and specific analysis of one part of an organism's function. Results of programmed investigations during the Voskhod-1 flight confirmed the possibility of programmed medical investigations by cosmonauts. Orig. art. has: 8 tables and 5 figures.

SUB CODE: 05 06/ SUBM DATE: 26May66/ ORIG REF: 009/ OTH REF: 001/ ATD PRESS: 5100

Card 2/2 afs

L 03179-67

ACC NR: AP6033118

SOURCE CODE: UR/0239/66/052/010/1273/1275

AUTHOR: Bayevskiy, R. M. (Moscow); Ivanov, V. A. (Moscow); Monakhov, A. V. (Moscow); Freydel, V. K. (Moscow)

ORG: none

42
B

TITLE: The pneumocardiophone 42

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 52, no. 10, 1966, 1273-1275

TOPIC TAGS: human physiology, respiratory physiology, circulatory physiology, medical equipment, pulse rate, respiration rate, biotelemetry, pneumocardiography, *PHYSIOLOGIC PARAMETER, BIOLOGIC RESPIRATION, PHONOCARDIOGRAPHY*

ABSTRACT: A simple system for continuously monitoring pulse and respiration rates over long periods of time is described. A record can be made with any single-channel recorder; the output can also be connected with an amplifier-speaker system or displayed on an oscillograph. Signals from a respiration sensor in which make-and-break is accomplished by expansion and contraction of the rib cage, and cardiac biocurrents, are used as input signals. Silver electrodes 18-20 mm in diameter are held over the fifth intercostal space along the medial axillary line by an elastic harness to which the respiration sensor is also attached (see Fig. 1). The basic idea of the system is the single-channel recording of two parameters. This is done by shaping cardiac biopotentials corresponding to the R rhythm into square pulses whose duration or amplitude is determined by the respiration sensor. Respiration

Card 1/3

UDC: 612.171(018)

L. 03179-67

ACC NR: AP6033118

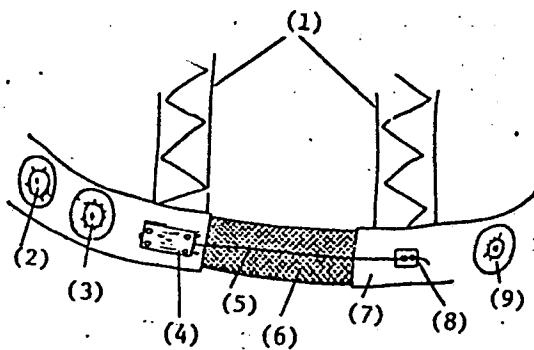


Fig. 1. Harness for pneumocardiophone

- 1 - Shoulder straps; 2 - electrode;
- 3 - neutral electrode; 4 - respiration sensor; 5 - anchor cord; 6 - elastic insert; 7 - web belt; 8 - cord anchor;
- 9 - electrode.

tion signals are thus read from the duration or amplitude of the pulse signals. In the pulse duration modulation setup, the R-wave peak is formed into a square pulse

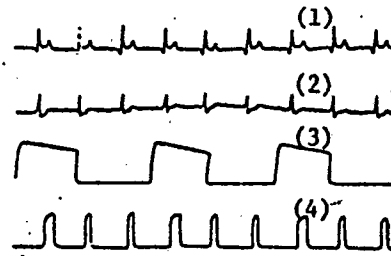


Fig. 2. EKG, PG, and PKG traces compared.

L 03179-67
ACC NR: AP6033118

lasting 100—150 msec during exhalation (contact closed) and 200—300 msec during inhalation (contact open). These pulses can also be used to generate an acoustic signal. Fig. 2 shows EKG (1 and 2) and pneumogram (3) traces, and a simultaneously recorded pneumocardiophone (4) trace. Orig. art. has: 3 figures. 2

SUB CODE: 06/ SUBM DATE: 10Apr65/ ORIG REF: 003/ ATD PRESS: 5099

Card 3/3 *LC*

L 08262-67

BWT(1)

SCTB

DD/OD

ACC NR: AT6036487

SOURCE CODE: UR/0000/66/000/000/0049/0051

AUTHOR: Bayevskiy, R. M.; Berezina, G. A.; Bukharin, Yu. V.; Cherniyayeva, S. A.

ORG: none

TITLE: The choice of diagnostic criteria in constructing algorithms for on-board computers [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

35
B+1

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 49-51

TOPIC TAGS: space medicine, biotelemetry, biocybernetics, diagnostic medicine, spacecraft computer

ABSTRACT: In order to assure diagnostic medical monitoring under conditions of prolonged spaceflight, a method of programmed investigation based on the use of removable sensors and electrodes was proposed. The method envisaged the use of a small number (4 to 6) of amplification channels, while the number of parameters measured could be as high as 20 to 30. The research is conducted in accordance with a strict time schedule and the use of strictly programmed functional loads. However, in order to conduct effective programmed research under spaceflight conditions, it is first necessary to develop and check research programs under

Card 1/4

L 08262-67

ACC NR: AT6036487

laboratory and clinical conditions. The use of a digital computer makes it possible to speed up the diagnostic process, to increase its accuracy, and to make it possible to transmit to ground stations a large volume of medical data along telemetric channels of limited capacity. 0

The experimental checking of one of the variants of the research program on healthy and sick subjects is described in this paper. It was felt that if the program turns out to be effective during investigation of sick persons, then it should prove effective in revealing sudden or gradual deviations in healthy persons, such as cosmonauts during spaceflights. The program was calculated for utilization of a three-channel amplification system and four research methods. The program involved the use of four periods. During the first period EKG, SKG, and pulmonary ventilation were registered for 1.5 min. During the second period, the results of a breath--holding test (inhaled, 20 sec and exhaled, 20 sec), were registered. During the third period, work performed on the wrist dynamograph was measured for a period of 1 min at a rate of one contraction per second. In this case, EKG, pulmonary ventilation, and pulmonary myogram were registered. The fourth period was devoted to rest (recovery), comparable to the first period. This method was tested on 35 healthy subjects and 35 subjects suffering from infarcts of the myocardium, hypertonic disease,

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L 08262-67

ACC NR: AT6036487
and arteriosclerosis.

During analysis of the data obtained from each of the subjects, about 150 different signs were determined. Each of the signs was then processed statistically for each of the groups and classified on the basis of degree of reliability of differences. Signs which were close to one another in the two groups were rejected as diagnostically ineffective. Sufficiently distinct signs achieved the significance of diagnostic criteria.

During the rest period, signs which could be used as criteria were very few. Most of them were indicators of pulmonary ventilation. During the breath--holding test, differences showed up in a number of signs. The most important of these was the nature of changes in the RR intervals of electrocardiograms. During work of the dynamograph substantial differences in many signs appeared between the two groups. During the second rest period, more clearly expressed differences were observed than during the first rest period.

It is assumed that in the future it will be possible to select groups of signs which will make it possible to assure differential diagnosis of many states and even deviations in the functioning of individual systems of the organism.

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L 08262-67

ACC NR: AT6036487

In programmed medical investigations involving the use of computers, it is possible to have direct information inputs from man to machine and also to use memory for temporary information storage. Output from the on-board computer can be sent directly to the telemetric channel, or to memory storage units, or to the doctor. Programmed medical investigations with the use of an on-board computer can turn out three types of output: in the form of values for individual signs (up to 200 digits for a single investigation), in the form of processed results for each of the program periods (up to 20 digits for a single investigation), and in coded form indicating the general condition of the subject, any deviations present, and the measures necessary to correct them (4 to 5 digits).

It has been found that in the course of a programmed investigation it is possible to obtain a large number of different signs and, based on these signs, to formulate diagnostic criteria which will permit a clear differentiation between normal and pathological conditions. Investigation of the diagnostic effectiveness of various programs under clinical conditions has found methodological justification and is useful not only for space but also for earthside medicine. It should be assumed that the method of programmed investigation with automatic processing of information by means of an on-board computer will solve the problems of medical investigation and diagnosis under conditions of prolonged spaceflights.

[W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 4/4

L 08263-67 FSS-2/EWI(1)/EEC(R)-2 SCTB TL/DE/GD/GW

ACC NR: AT6036486

SOURCE CODE: UR/0000/66/000/000/0048/0049

AUTHOR: Bayevskiy, R. M.

36

ORG: none

B+1

TITLE: The use of seismocardiography in space medicine [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 48-49

TOPIC TAGS: space medicine, seismocardiography, biotelemetry, bioinstrumentation

ABSTRACT: Seismocardiography is a method of investigating the contractual function of the heart developed specifically for use under spaceflight conditions. Seismocardiography was first used during the flight of the third orbital spaceship. On the Vostok-5 and Vostok-6, seismocardiography became part of the regular medical-monitoring procedure. During the last few years seismocardiography has found application in clinical practice.

Seismocardiography helped establish a series of important facts concerning the effect of weightlessness on the circulatory mechanism. During the first hours of spaceflight there was an increase in amplitude

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L 08263-67

ACC NO. AT6036486

duration of the entire cardiac cycle. Amplitudes of the first and second fluctuating cycles change with a certain constant phase shift. All of this makes it possible to assume that investigation of phase relationships between indices of the seismocardiogram can have great diagnostic significance. However, the importance of seismocardiography in space medicine is not exhausted by the possibility of investigating circulation. Since the seismocardiographic sensor does not have to be in direct contact with the skin but can be worn on top of clothing or even in an external pocket, it is very convenient for use in continuous medical monitoring of cosmonauts. A small-caliber transmitter has been developed with a built-in seismocardiographic sensor which makes it possible to register seismocardiograms without any attached wires. An algorithm of automatic analysis of the seismocardiogram has been worked out which makes it possible to obtain data not only concerning the condition of the cardiovascular system, but also on respiration, motor activity, condition of the vegetative system, and the emotional condition. Automatic analysis of the seismocardiogram reveals about 15 individual signs on the basis of which it is possible to determine the condition of the cosmonaut. The possibility of building a system of medical monitoring on the basis of a single physiological parameter is of great interest for use in prolonged spaceflights. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3 *eqk*

ACC NR: AT7011640

SOURCE CODE: UR/0000/66/000/000/0001/0019

AUTHOR: Parin, V. V.; Yegorov, B. B.; Bayevskiy, R. M.

ORG: none

TITLE: Physiological measurements in space: Principles and Methods

SOURCE: International Astronautical Congress. 17th Madrid, 1966. Doklady. no. 2. 1966. Fiziologicheskiye izmereniya v kosmose. Printsipy i metody, 1-19

TOPIC TAGS: space medicine, weightlessness, radiation belt, cardiovascular system, carotid sinus, arterial pressure, arterial pulso, dog, space biologic experiment / Kosmos 110 space biologic experiment

ABSTRACT:

The Kosmos-110 experiment with two dogs on board was not only the first flight experiment to pass through part of the radiation belts, but was also the first of a series of experiments designed to investigate the adaptation of the cardiovascular system to weightlessness and its post-flight re-adaptation to conditions

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ACC NR: AT7011640

of terrestrial gravity. Primary attention was paid studies of the neuro-regulatory mechanisms of the cardiovascular system. The dogs were in specially ventilated containers in restraint corsets. They were force-fed through a stomach fistula. This permitted the dogs to be fed prescribed doses at prearranged intervals.

Ugolek, the control dog, had a loop of the carotid artery externalized into a loop of skin, with a catheter implanted in the carotid artery and an electrode implanted in the sinus nerve. These surgical alterations made it possible to administer stimuli upon command from Earth. Occlusion of the carotid artery could be performed by measured clamping of the externalized loop of the carotid artery. The carotid zone of the sinus nerve could be electrically stimulated, and a drug could be administered into the carotid artery. Arterial pressure was measured by a probe suspended in the lumen of the descending aorta at the distal end of the catheter.

In addition, the following measurements were recorded: carotid artery pulse. EKG. seismocardiogram,

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ACC NR: AT7011640

respiration rate, and some other physiological parameters. All of this information was recorded by on-board devices, and the EKG, seismocardiograms, and carotid artery pulse were transmitted to ground control by telemetry.

An analysis of the accumulated data revealed no noticeable pathological changes in the cardiovascular system during the 22-day flight. Thus, it can be concluded that three-week long exposure to weightlessness does not cause any serious shifts in the regulatory mechanisms of the circulatory system.

On-board TV used to monitor movements of the dogs indicated disorientation and impaired coordination of motor activity which began to improve by the 3rd of 4th day. Complete adjustment to weightlessness took place by the 8th or 9th day. The first postflight examination showed significant changes in the motor apparatus. However, improvement was rapid and complete recovery took place after 8 or 9 days.

Postflight examination showed a decrease of muscular mass, but biopsy examination of the liver and other organs gave evidence of adequate nutrition.

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ACC NR: AT7011640

Water was supplied to the dogs at a higher level than in laboratory conditions; thus, weight losses and body dehydration should be regarded as a specific reaction to the flight environment. Calcium metabolism studies showed an increased calcium concentration in the blood and urine on the first postflight day. Calcium washout was confirmed by x-ray examinations of the skeletal bones. During the first few postflight days the animals exhibited some hyporeactivity, a lack of orthostatic reaction, changes in the morphological composition of the peripheral blood, and a high pulse rate (up to 130 beats/min). Normalization tended to set in by the 5th postflight day. The results obtained cannot be considered to be the effect of weightlessness alone but must, to some degree, be due to the unusual experimental environment. It is anticipated that this experiment will lead to others of greater duration.

Orig. art. has: 8 figures.

[ATD PRESS: 5098-E]

SUB CODE 06,03 / SUBM DATE: none / ORIG REF: 010

Cord 4/4

BAYEVSKIY, Ya. L.

Extraction of foreign bodies with pneumatic instruments. Oft.
shur. 17 no.4:241-242 '62. (MIRA 15:7)

1. Iz glaznogo otdeleniya (zav. - doktor N. S. Yartseva) poli-
kliniki No. 7 Moskv.

(~~EYE~~—FOREIGN BODIES)

(~~OPHTHALMOLOGY~~—EQUIPMENT AND SUPPLIES)

BAYEVSKIY, Ya.L.

"Abstracts of Soviet Medical Literature; Diseases of the Eye,"
nos. 6 and 7. Reviewed by IA.L.Baevskii. Vest. oft. 33 no.4:45-46
Jl-Ag '54. (MLRA 7:8)
(EYE--DISEASES)

BAJEVSKIY, Yu.B.

**Diapause in the embryonal development of sable. Dokl. AN SSSR
105 no.4:866-869 D '55. (MLRA 9:3)**

**1. Predstavleno akademikom Ye.N.Pavlovskiu.
(Martens) (Embryology--Mammals)**

BAYEVSKIY, Yu.B.

Variations in the fertility of Barguzin sables [with summary in English]. Biol.MOIP. Otd.biol. 61 no.6:15-26 N-D '56. (MLRA 10:8)
(BARGUZIN DISTRICT--SABLES)

BAYEVSKIY, Yu. B. Cand Biol Sci -- (diss) "^(embryonic)The fertility and development of
~~embryos~~ Martex zibelina L sables (Morphological study)." Mos, 1957. 12 pp
(Acad Sci USSR. Inst of Morphology of Animals in A. N. Severtsov)
(KL, 4-58, 82)

SOV/ 20-120-2-62/63

AUTHORS: Bayevskiy, Yu. B., Belyayev, D. K., Utkin, L. G.

TITLE: Observations on Intraovarian Eggs of the Sable (Nablyudeniya nad yaichnikovymi yaytsami sobolya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 2, pp. 439 - 440 (USSR)

ABSTRACT: In publications there are descriptions of mature eggs of several species of mammals (References 3-8). There is only an imperfect description of the egg of the sable (Reference 10). A female sable in heat was operated on August 2, 1956, and had 3 intact follicles in its right ovary. 2 Graaf vesicles contained rather grown eggs (figure 1 b and c) in a stage near to deliverance. The sizes of the follicles and of the eggs are given. In 300 times magnification the egg protoplasm looked coarse-grained and rather frothy. It filled the whole space of the zona pellucida so that no peri-vitellin space is visible in this stage. The nuclei of separate eggs and the differences between them are described. The zona pellucida is

Card 1, 2

Observations on Intraovarian Eggs of the Sable

SOV/20-120-2-62/63

surrounded by a radiant crown (corona radiata). Further microscopical details are described. According to the state of the eggs no. 2 and no. 3 it could be supposed that they are in the preparatory stage for the first maturity division. As is well known in some Carnivora (dog, reference 12 -14; fox, reference 15) the first polar body is eliminated after ovulation. In a species related to the sable, the polecat (Reference 11), the egg is released during the metaphase of the second maturity division. With the sable the case seems to be similar. There are 15 references, 1 of which is Soviet.

ASSOCIATION: Institut morfologii zhivotnykh im. A. N. Severtsova Akademii nauk SSSR (Institute of Animal Morphology imeni A. N. Severtsov AS USSR); Vsesoyuznaya nauchno-issledovatel'skaya laboratoriya pushnogo zverovodstva (All-Union Scientific Research Laboratory for the Breeding of Fur-Bearing Animals)

PRESENTED: August 24, 1957, by I. I. Shmal'gauzen, Member, Academy of Sciences, USSR

SUBMITTED: August 13, 1957

Card 2/2 1. Sables--Reproduction 2. Uterus--Physiology 3. Eggs
--Production

BAYEVSKIY, Yu.B.

Observations on certain stages in the intrauterine development of
the sable. Trudy Inst. morf. zhiv. no.30:246-269 '60.
(Sables) (Embryology--Mammals)

BAYEVSKIY, Yu.B.

Resorption and transmigration of embryos in sables (*Martes zibellina*
L.). *Biul. MOIP. Otd. biol.* 65 no. 4:115-119 J1-Ag '60.
(MIRA 13:10)

(SABLES) (EMBRYOLOGY—MAMMALS)

БАЙВСКИЙ, Ю.Б. (Москва, Д 47, 4-я Тверская-Ямская ул., 14, кв. 19)

Observations of the changes in blastocysts in white rats during
"lactation" diapause. Arkh. anat. gist. i embr. 41 no.8:14-18
Ag '61. (MLPA 15:6)

1. Laboratoriya embriologii pozvonochnykh (zav. - prof.
B.M. Matveyev) Instituta morfologii zhivotnykh imeni A.N.
Severtsova AN SSSR.

(EMBRYOLOGY)

(LACTATION)

BAYEVSKIY, Yu.B.

Some characteristics of embryonic diapause in the mink (*Mustela vison* Sireb.). Dokl. AN SSSR 139 no.2:499-502 J1 '61. (MIRA 14:7)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR.
Predstavleno akademikom I.I. Smal'gauzenom.
(Embryology--Mammals) (Minks)

BAYEVSKIY, Yu.B.

Changes in the anterior hypophyseal lobe, yellow bodies of pregnancy and the thyroid gland of the mink (*Mustella vison*) connected with embryo implantation. Dokl. AN SSSR 157 no.6: 1493-1495 Ag '64. (MIRA 17:9)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR. Predstavleno akademikom A.N. Bakulevym.

BAYGALIYEV, R.

Kazakhstan's contribution to export. Vnesh. torg. 42 no.8:43-44
'62. (MIRA 15:9)

1. Predsedatel' Soveta narodnogo khozyaystva Kazakhskoy SSR.
(Kazakhstan--Commerce)

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 7 (USSR) 14-57-6-11659

AUTHOR: Bayganayev, K.

TITLE: The Eighth Class Studies the Economic Geography of
the Kirghiz SSR (Izucheniye ekonomicheskoy geografii
Kirgizskoy SSR v 8-m klasse--in Circassian)

PERIODICAL: Mugalimderge zhardam, 1956, Nr 8, pp 20-26

ABSTRACT: Bibliographic entry
Card 1/1

BAYGAR, L., magistr farmatsevticheskikh nauk (Chekhoslovakiya)

Substance "F." Nauka i shizn' 25 no.5:71 My '58. (MIRA 11:5)
(Demecolcine)

BAYGAZIYEV, Yeleman, Geroy Sotsialisticheskogo Truda; PERISTOV, Yu.,
red.; TURABAYEV, B., tekhn. red.

[My present to the 22d Congress of the CPSU]Moi podarok
XXII s"ezdu KPSS. Alma-Ata, Kazakhskoe gos.izd-vo, 1961.60 p.
(MIRA 15:7)

(Temir-Tau--Steel industry)

BAYGER, J.

SCIENCE

periodicals: WSIĘCHIAT No. 3, Mar. 1959

BAYGER, J. From the story of knowing the Carpathian newt Triturus montandoni (Boulenger). p. 78.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5
May 1959, Unclass.

1. BAYGER, M., KAKASH, Ya., BRAKHACHEK, F., RUSIMOV, A., SHILLER, G.
2. USSR (600)
4. Coal Mines and Mining
7. What we have learned from Soviet miners. Mest. ugl. 1, no. 8, 1952.

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

VALITOVA, F.G.; IL'YASOV, A.V.; SOTNIKOVA, N.N.; BAYGIL'DINA, S.Yu.

Electron paramagnetic resonance study of electrochemically
generated radicals of some hydrazines. Zhur.strukt.khim.
6 no.5:777-779 S-0 '65. (MIRA 18:12)

1. Institut organicheskoy i fizicheskoy khimii AN SSSR, Kazan'.

BAYGMAN, L. L.; SHVEDOV, N. M., elektromekhanik radiosvyazi,
KOMISSAROV, P. N., elektromekhanik radiosvyazi; BOGOLAVLE^{TS}SKIY,
V. I., elektromekhanik radiosvyazi

Pressing problems in radio communications. Avtom., telex. i
svyaz' 7 no.4:37-38 Ap '63. (MIRA 16:4)

1. Starshiy elektromekhanik radiosvyazi Rtishchevskoy distantzii
signalizatsii i svyazi Privolzhskoy dorogi (for Baygman)

(Railroads—Communication systems)

BAYGOZHIN, A.; SERGEYEV, L.V.

Adhesion of organic polymers to silicate glass. Part 1:
Methods of increasing the adhesion of unsaturated polyesters
to optical glass. Vysokom.sped. 4 no.7:972-976 J1 '62. (MIRA 15:7)
(Esters) (Adhesion)
(Glass, Optical)

ACC NR: AP7002966 (A, N) SOURCE CODE: UR/0413/66/000/024/0045/0045

INVENTOR: Sergeev, L. V.; Baygozhin, A.; Panfilenok, Ye. I.; Rodionova, M. S.;
Bereznikovskaya, L. V.; Latynina, A. I.; Brusilovskiy, P. I.

ORG: none

TITLE: Method of protecting lubricants from biological growth. Class 23, No. 189498

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 45

TOPIC TAGS: lubricant, microorganism contamination, ~~lubricant~~ bactericide

ABSTRACT:

An Author Certificate has been issued for a method of protecting lubricants from biological growth, involving the addition of 0.5—1% 4-caproylresorcinol antiseptic.

SUB CODE: 11/ SUBM DATE: 16Oct65/ ATD PRESS: 5112

Card 1/1

UDC: 621.892.091

SERGEYEV, L.V.; BAYGOZHIN, A.; FATTAKHOV, S.G.

Adhesion of organic polymers to silicate glass. Part 2:
Formation of molecular organosiloxane films and their interaction
with the optical glass surface. Vysokom.soed. 4 no.7:977-981
Jl '62. (MIRA 15:7)

(Glass, Optical)
(Silicon organic compounds)

L 12164-65 EVT(m)/ESP(e)/EPF(c)/ENP(v)/EPR/EWP(j)/T/EWP(b) Pz-4/Pq-4/
Pr-4/Ps-4 APWL AS(mp)-2/AFMD(t)/ASD(m)-1/SSD/SSD(a)/ESD(ss) PPD(t) WW/
ACCESSION NR: AR4049263 RM/WH S/0081/64/000, 016, S014, S014

SOURCE: Ref. zh. Khiraiya, Abs. 16S73

AUTHOR: Baygozhin, A., Sergeyev, L. V., Dabagova, A. K., Fattakhov, S. G.

TITLE: Adhesion of methylmethacrylate to optical glass

CITED SOURCE: Sb. Vy'sokomolekul. soyedineniya Adgeziya polimerov. M.,
AN SSSR, 1963, 75-78

TOPIC TAGS: organic polymer adhesion, polymer glass adhesion, glass surface effect,
methylmethacrylate adhesive, oligomeric resin adhesive, optical glass

TRANSLATION: The effects of modifications in the surface of polished optical glass,
caused by treating it with vinyl trichlorosilane (I), 2-cyclopropyl-1-trichlorosilyl-
propane (II) or methacrylatemethylmethoxydiethoxysilane (III), were studied in order
to determine the mechanism of adhesion of organic polymers. Carefully degreased
glass surfaces were modified by treating them with solutions of I or II in benzene or a
solution of III in an aqueous solution of HCOOH (pH 3 to 3.5). Strength of adhesion was
determined from the tear strength of components glued with partially polymerized

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E 17164-65

ACCESSION NR: AR4049263

¹⁶ methylmethacrylate oligomer resin (MOS) ¹⁵ after the samples were maintained for 10 days at about 20C. The authors also studied a method of modifying glass surfaces by incorporating these modifying admixtures into the adhesive compound. It was demonstrated that the adhesion of MOS to glass increased by 250% after treatment with I and by 700% with III. It was increased by 100% in comparison to the untreated sample when III was added to the composition of MOS. Treatment with II did not improve adhesion. The improvement in adhesion when the glass surface was modified was explained in terms of a chemical bond forming between the adhesive and the glass. It is noted that this procedure makes it possible to control strength of adhesion over a wide range. Z. Ivanova

SUB CODE: MT

ENCL: 00

Card 2/2

BAYGOZHIN, A. K.

Label

Tetra-tert-butylzirconium M. G. Vlasov, G. N. Lysakov, and A. K. Baygozhin, *Zhurnal Khimicheskoi Fiziki*, 31, 1022 (1959); *Chem. Abstr.*, 53, 1022 (1959).

C.A. 50, 8516c - Dry $MgCl_2$ (25.4 g, 0.14 mole) dry pyridine, and 300 ml dry $MePh$, treated dropwise with 130 g $SiCl_4$, heated on a steam bath 10 hrs. with stirring and exchange of atmosphere filtered and dried (yield 45 g $MgCl_2 \cdot 2SiCl_4$), 200 ml dry $MePh$, and 10 g Na dry $MgCO_3$ (94.4 g), 200 ml dry $MePh$, and 10 g Na refluxed 6 hrs., cooled, freed of residual Na, transferred to a steel autoclave, 24.9 g I added, and the mixt. heated 18 hrs. at 220° yielded on distn. a range of materials from which was isolated 45 g $(MgCO_3)_2SiCl_4$ m. 48.5-9°, b.p. 222°, b.p. 270°, b.p. 300-370° (supercritical) n_D²⁰ 1.4902; after repeated distn. from 200° $SiCl_4$ m. 51-52°. Its infra-red spectrum was examined in the solid state and in CS_2 , the intense 1054-1050 cm⁻¹ doublet is ascribed to asymmetric stretching of the $SiCl_4$ group. $SiCl_4$ is a colorless liquid, b.p. 57.6° (at 760 mm), m.p. -112.0°.

$SiCl_4$ (the 12.5% solution) is a colorless liquid, b.p. 57.6° (at 760 mm), m.p. -112.0°.

$SiCl_4$ (the 12.5% solution) shows the following bands: 1307 and 1298 (strong), 1192, 1115 (well shown only by the solid), 1054, 1027 (these 3 also shown best by the solid), 910 (weak), 831, 795, 639 (weak).

G. M. Kozlov

CHECHEL'NITSKAYA, S.E.; BAYGULOVA, S.A.; YAKOBSON, D.Ya.; VAYMAN, T.I.

Material on the spread of *Lamblia* and other flagellate parasites
of the intestine among younger children. Med.paraz. i paraz.hol.
28 no.2:231-232 Mr-Apr '59. (MIRA 12:6)

1. Iz Kazanskoy gorodskoy sanitarno-epidemiologicheskoy
stantsii i Kazanskogo nauchno-issledovatel'skogo instituta
epidemiologii i gigiyeny.
(WORMS, INTESTINAL AND PARASITIC)

12/1
CHECHEL'NITSKAYA, S.M.; BAYGULOVA, S.A.

Duration of tertian malaria with long and short incubation periods. Med.paras. i paras. bol.24 no.3:217-220 J1-S '55.
(MLRA 8:12)

1. Iz Kazanskoy gorodskoy protivomalyariynoy stantsii
(sav.stantsiyey S.M.Chechel'nitskaya.
(MALARIA,
tertian, duration in short & long incubation times)

USSR / Pharmacology and Toxicology. Chemotherapeutic Agents.
Antimalarial Agents.

V-10

Abs Jour : Ref. Zhur - *Biologiya*, No 17, 1958, No. 80716

Author : Chechel'nitskaya, S. M.; Baygulova, S. A.

Inst : Not given

Title : Effectiveness of the Use of Quinocide During Treatment of
Three-Day Malaria

Orig Pub : *Med. parazitol. i parazitarn. bolezni*, 1957, 26, No 3,
268-269

Abstract : 80 patients with three-day malaria, treated earlier with
quinacrine-bihumal-plasmocide, received quinocide during
10 days (dosage not indicated). A good therapeutic effect
is noted.

Card 1/1

47

BAYGULOVA, S.A.

BERDINSKIKH, M.I., BAYGULOVA, S.A.

Use of oxygen in treating helminthiasis. M.I. Berdinkikh, S.A.
Baigulova. Med.paras. i paraz.bol. 27 no.2:216 Mr-Apr '58 (MIRA 11:5)

1. Iz 7-y Kazanskoj gorodskoj bol'nitsy i Kazanskoj gorodskoj
sanitarno-epidemiologicheskoy stantsii.
(OXYGEN--THERAPEUTIC USE)
(WORMS, INFESTINAL AND PARASITIC)

SARIKYAN, S.Ya., CHECHEL'NITSKAYA, S.M., BAYGULOVA S.A., LATYPOVA, G.Kh.
MILITSINA, A.N.

The problem of correct organization of malaria control in the
Tatar A.S.S.R. [with summary in English]. Med.paraz. i paraz.bol.
27 no.3:304-309 My-Je '58 (MIRA 11:7)

1. Iz sektora bor'by s parazitarnymi boleznyami pri stroitel'stve
gidrotekhnicheskikh i meliorativnykh sooruzheniy Instituta malyarii,
meditsinskoy parazitologii i gal'mintologii Ministerstva zdravookhra-
neniya SSSR (dir. instituta - prof. P.G. Sergiyev, zav. sektorom -
prof. V.N. Bekhlemishev) i Kazanskoy gorodskoy sanitarno-epidemiologi-
cheskoy stantsii (glavnyy vrach TS.D. Matt).

(MALARIA, prevention and control
in Russia (Rus))

TSAREVA, V.Ya.; MATT, TS.D.; BAYGULOVA, S.A.

Control of helminthiasis in Kazan (1951-1959). Kaz. med. zhur.
no.1:89-92 Ja-F '62. (MIRA 15:3)

1. Kafedra infektsionnykh bolezney (zav. - dotsent N.P. Vasil'yeva) Kazanskogo gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni Lenina i parazitologicheskoy otel gorodskoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach - A.I. Krepyшева).

(~~KAZAN~~-WORMS, INTESTINAL AND PARASITIC)

BAYGUSHEVA, V.S.

Khapry fauna of the Liventsovskii sand quarry (Rostov Province).
Bul. Kom. chetv. per. no.29:44-50 '64. (MIRA 17:8)

DUBROVO, I.A.; BAYGUCHEVA, V.S.

Elephants of the Khapry fauna complex according to the materials
of the Liventsovsk quarry. Biul. MOIP. Otd.geol. 39 no.5:133-136
S-0 '64.

(MIRA 18:2)

BAYGUTTIYEV, S.B.; GVOZDETSKIY, N.A.; CHALAYA, I.P.

~~██████████~~
Mapping landform types of Arabel'su mountain pastures in Inner
Tien Shan. Trudy Otd.geog.i Tian.fiz.-geog.sta.AN Kir.SSR
no.1:23-49 '58. (MIRA 12:2)
(Arabel'su Valley--Maps)

BAYGUTTIYEV, S.

Brief historical study of the exploration of the Upper-Haryn
and Sary-Chat syrta of the inner Tien Shan. Izv.Kir.fil.
Geog.ob-va SSSR no.1:13-27 '59. (MIRA 13:5)
(Tien Shan--Physical geography)

BAYGUTTIYEV, S.

Special features in the orography and relief of the Arabel
syrts and their influence on relief formation. Izv.Kir.fil.
Geog. ob-va SSSR no.1:71-91 '59. (MIRA 13:5)
(Dshety-Ogus District--Physical geography)

BAYGUTTIYEV, S.B.

The Sarychat Valley; physicogeographical features. Izv. Vses.
geog. ob-va 93 no.6:487-499 N-D '61. (MIRA 15:1)
(Sarychat Valley--Physical geography)

RAYGUZOV, G. G.

Bayguzov, G. G. -- "Material on the Problem of the Functional State of the Liver in Patients Suffering from Psoriasis." Min Health RSFSR. Saratov State Medical Inst. Saratov, 1956. (Disseration For the Degree of Candidate in Medical Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103-114

L 2895-66 EWT(d)/EWT(m)/EPF(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(z)/
EWP(5)/EWP(1) MJW/JD/DJ
ACCESSION NR: AP5023346

UR/0304/65/000/005/0030/0032
621.910.71

AUTHORS: Baykalov, A. K. (Candidate of technical sciences); Khalfen, R. V. (Engi-
neer)

TITLE: High productivity finish turning of heat resistant steels at high feeds

SOURCE: Mashinostroyeniye, no. 5, 1965, 30-32

TOPIC TAGS: finish turning, metal turning, metal cutting / OKh18N1OT steel,
EP 167 steel, 7 alloy, EI 943 alloy, VK6M alloy, VK4 alloy

ABSTRACT: To evaluate high productivity finish turning (class 6-8) of cylindrical parts, pipes of steels OKh18N1OT, EP-167, and alloys EI-943 and 7 were finish turned at high feed rates (2-16 mm/rev) with cutting tools as shown in Fig. 1 on the Enclosure. The work was done at the Laboratoriya rezaniya Ukrainского instituta sverkhтвердых материалов (Machining Laboratory of the Ukrainian Institute of Extremely Hard Metals). The maximum feed rate for various classes of finish can be calculated from

$$S < \frac{2.6}{ig\lambda} \cdot \sqrt{\Delta(D-2t)} \text{ mm/rev}$$

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(for class 6 finish) and

$$S < \frac{2\pi\sqrt{\Delta(D-2t)}}{1g\lambda(\pi-\sqrt{\Delta(D-2t)})} \text{ mm/rev}$$

(for 7 and 8 finish), where R_m = maximum permissible irregularity in mm. It was found that chromium-nickel austenitic steels as well as most plastic titanium steels could be turned to a 6-8 class finish at feeds of up to 16 mm/rev. The following particulars are mentioned: alloy VK6M is best for chromium-nickel steel turning and alloy VK4 for titanium steels; lubrication is essential (5% oil emulsion or 5% soap solution); cutting tool geometry--front and rear angles 10° , cutting edge $10-45^\circ$ depending on material and lathe stiffness; cutting depth must be less than 0.05-0.1 mm for class 7-8 and 0.5-1.0 mm for class 6 finish; cutting speeds of 100-120 m/min and 80-100 m/min for Cr-Ni and Ti steels respectively correspond to 15-minute tool life; for OKh18N10T feed rate can be found from

$$v = \frac{217}{70.29 \ 70.21 \ 50.034} \text{ mm/min}$$

(for $v = 100-200$ m/min, $t = 0.1-0.5$ mm, $S = 0.3-6.0$ mm/rev) for alloy 7 from

$$v = \frac{142}{70.28 \ 70.21 \ 50.128} \text{ mm/min}$$

$$v = \frac{C}{70.07}$$

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ACCESSION NR: AP5023346

(80-120, 0.1-0.5, 0.3-6 respectively). Orig. art. has: 2 tables, 1 figure, and 4 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SUB CODE: IE, MM

NO REF SOV: 000

OTHER: 000

Card 3/4

L 2895-66

ACCESSION NR: AP5023346

ENCLOSURE: 01

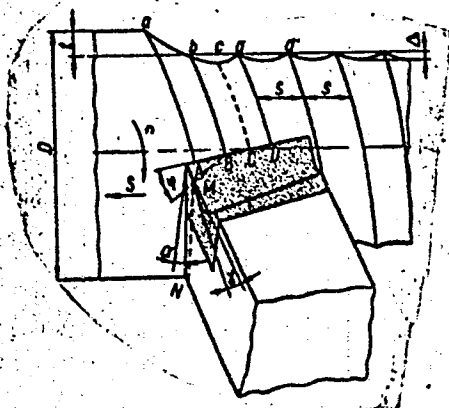


Fig. 1.
Cutting region geometry

KL
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ACCESSION NR: AP4026249

8/0122/64/000/003/0065/0068

AUTHORS: Rozenberg, A. M. (Doctor of technical sciences, Professor); Baykalov, A. K. (Candidate of technical sciences); Vinogradov, A. A. (Engineer)

TITLE: Machinability of cast heat-resistant steel EI316 in turning

SOURCE: Vestnik mashinostroyeniya, no. 3, 1964, 65-68

TOPIC TAGS: EI316 steel, cast steel, heat resistant steel, machining, turning, scale, crust, subcrustal layer, VK8 alloy, coolant, tool bit, tool geometry, cutting depth, feed, lead, cutting velocity, metal structure, spraying, pouring

ABSTRACT: This study represents a part of an investigation at Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute) dealing with the workability of cast heat-resistant steels. It is intended to provide data on: 1) choosing proper tool bit material; 2) determining the optimal shape of tool bits; 3) selecting proper speeds of feeding and cutting; and 4) determining the relative effectiveness of spraying and pouring coolants onto the cutting tool. EI316 steel from two melts differing somewhat in hardness was investigated. The samples were tubular, 250 mm long, with a 185-mm outside diameter and a 40- to 45-mm wall thickness. They contained flaws and inclusions in both the crust and subcrustal layer and carried heavy scale. Their outer and inner circumferences were nonconcentric.

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ACCESSION NR: AP4026249

Tool bits carried either inserted or welded hard alloy plates. Cooling was done by either sprayed or poured emulsion (State Standard 1975-53) applied at the rate of 300-400 g/hr. It was determined that up to the lead velocity of 30 m/min there exists a definite relation between the lasting quality of tool bits and both the lead and the feed velocity. For crust removal with the depth of cut 1-5 mm the formula $v_{cr} = 35.8/v^{0.48} s^{0.57}$ m/min is recommended for cutting velocity [Abstracter's note: terms not clarified]. A characteristic feature of this steel, its subcrystal layer with a fine and uniform structure, is 2-3 times easier to machine than the basic metal. After testing various tool bits, the one carrying a cutting plate of hard alloy VK8 was found most suitable for turning this work. The optimal shape of the tool bit is determined by the following characteristics: $\gamma = +10^\circ$, $\gamma_r = -10^\circ$, $\lambda = +10^\circ$, $\alpha = +10^\circ$, $f = (0.5-0.6)s$ mm. Relation of the tool bit longevity to the rate of feed and the depth of cut is shown in Fig. 1 of the Enclosure. It was determined that there exists an undesirable velocity zone, below and above which the longevity of cutting tool and the progress of metal turning increase markedly. Spraying of 5% emulsion on the rear face of the cutter was found just as effective as the usual pouring of the same coolant, and twice as effective as spraying it on the foremost face of the tool. After taking all the investigated factors into consideration, the authors derive a formula for calculating the cutting speed for basic metal:

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$$v = \frac{C_v}{T_m (v_{s,rv})} \text{ m/min}$$

Orig. art. has: 2 formulas, 4 tables, and 2 graphs.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 20Apr64

ENGL: 01

SUB CODE: ML

NO REF SOV: 001

OTHER: 000

FOR STAFF USE ONLY

Card 3/43

L 13527-63

EWP(q)/EWT(d)/EWT(m)/BDS AFFTO/ASD JD

ACCESSION NR: AP3002604

S/0122/63/000/006/0063/0065 62

AUTHOR: Rozenberg, A. M. (Doctor of technical sciences, Prof.);
Baykalov, A. K. (Candidate of technical sciences, Docent); Vino-
gradov, A. A. (Engineer)

TITLE: Planing of heat-resistant cast steel, Kh25CN3

SOURCE: Vestnik mashinostroyeniya, no. 6, 1963, 63-65

TOPIC TAGS: planing, heat-resistant cast steel, cutting tool,
tool steel

ABSTRACT: A study was made at Laboratoriya rezaniya Tomskogo politehnicheskogo instituta (The Laboratory of Cutting at Tomsk Poly-
technic Institute) to find an economical material for the most
durable tool bits and to determine the best geometrical shape of
bits for machining heat-resistant cast steel. Samples of the heat-
resisting steel Kh25CN3 were experimented upon. The following tool
steels were tested: VK8, VK6M, T14KV, TT/K12 and R18. The depth of
the cuts varied from 2 to 5 mm; the influence of the casting scale
and the effects of the cutting and feeding speeds on durability of
the bits were investigated. The formation of chips was observed in
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ACCESSION NR: AP3002604

all experiments. It is concluded that the hard alloy VK8 is the most suitable material for cutting bits, and that the best rear rake angle is 8 to 10 degrees. Orig. art. has: 2 tables and 2 figures, and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 15Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 002

OTHER: 000

Card 2/2

ROZENBERG, A.M.; BAYKALOV, A.K.; VINOGRADOV, A.A.

Machining cast heat-resistant Kh25SN3D steel on lathes. Stan.
1 instr. 34 no.12:17-19 D '63.

(MIRA 17:11)

I 13539-65 EWP(x)/EWP(a)/EWP(d)/EWT(1)/EWT(m)/EWP(h)/EWP(b)/EWA(d)/EWP(1)/EWP(v)/

ACQUISITION NO. ARD 13539-65

REF ID: A13539/01/13539/13539

AUTHOR: Rezenberg, A. M.; Baykalov, A. K.; Vinogradov, A. A.

ACTOR: Rezenberg, A. M.; Baykalov, A. K.; Vinogradov, A. A.

TITLE: Investigations of shaping of heat resistant cast steel

DATE SOURCE: Tr. K. goschensk. aviats. inst. vol. 12, 1963, 113-118

TOPIC TAGS: east steel shaping, heat resistant steel, cutter sharpening, cutting program geometry, hard alloy selection/ VK8 cutter, EI316 steel, 7M37 shaper

TRANSLATION: The authors report the results obtained in a study of the process of shaping cast fillets of EI316 steel hard alloy cutter shaper model 7M37, carried out to select appropriate angles of taper and cutting conditions. It is established that fillets of EI316 steel should employ VK8 cottage alloy at $\alpha = 10^\circ$ and $\psi = 10^\circ$ at cutting speeds $v = (0.6 - 0.8)s$ at angle -10° ; $\psi = 45^\circ$; $\psi_1 = 10^\circ$; $\psi_2 = 10^\circ$; $r = 1.0$ mm at $v = 0.6 - 0.8$ mm/min; $t = 2$ to 4 mm, $s = 0.25 - 0.75$ mm/dvkh. The VK8 cutter wears only along its leading edge within the range of speeds at which edge buildup occurs. The presence of

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L 43539-65

ACCESSION NR: AR5009342

skin on the billet's side surfaces improves the machinability of EI316 steel, a result of the lesser hardness of the casting skin which softens the impact load during the recurrent incisions into the metal. The authors also present an empirical function

$$v = \frac{10.5}{f^{0.25} p^{0.15} a^{0.1}} \text{ m/min}$$

obtained for EI316 steel. Three illustrations and 2 tables. S. Pinchuk.

SUB CODE: IE, MM

ENCL: 00

Card 2/206

Handwritten: #104 K. K. A. K.

ROZENBERG, A.N.; BAYKALOV, A.K.

~~_____~~
Degree of cutting tool wear caused by machining gray iron.

Izv.TPI 85:230-239 '57.

(MIRA 10:12)

(Mechanical wear) (Metal cutting)

Байкалов, А. К.
BAYKALOV, A. K.

Dimensional wear of the BK8 and BK3 alloys and the TSM-332 tips
caused by machining gray iron. Izv.TPI 85:240-248 '57.

(MIRA 10:12)

1. Predstavleno prof. doktorom tekhn.nauk A.M. Rozenbergom.
(Mechanical wear) (Metal cutting)

BAYKALOV, L.K., kand.med.nauk

Use of protamine-zinc-insulin in the treatment of diabetes mellitus. Sov.med. 28 no.7:101-103 JI '65.

(MIRA 18:8)

1. Truskavetskaya klinika bolezney organov pishchevareniya (zav. - kand.med.nauk L.K.Baykalov) Ukrainского nauchno-issledovatel'skogo instituta kurortologii (direktor - dotsent F.Ye.Kurkudym).

BAYKALOV, L.K.; AL'PERIN, A.I.

Clinical aspects and treatment of some diseases of the liver and the bile ducts in patients with diabetes mellitus. Trudy Ukr. nauch.-issl. inst. eksper. endok. 19:134-140 '64. (MIRA 18:7)

1. Iz otdela patofiziologii Ukrainskogo instituta eksperimental'noy endokrinologii i Sanatoriya No.1 kurorta Truskavets.

SARATOVSKIY, V.G.; BAYKALOV, L.K.

First Ukrainian conference on therapeutic and prophylactic
nutrition. Vop. pit. 21 no.5:92-94 S-0 '62. (MIRA 17:5)

BAYKALOV, L.K.

Use of sulfanilamide preparations in the compound treatment of
diabetes mellitus at the Truskavets Health Resort. Zdrav. Turk.
5 no.1:21-24. Ja-F '61. (MIRA 14:6)
(DIABETES) (SULFONAMIDES)

BAYKALOV, L.K.; SOKOLOVSKIY, A.N.

Effect of "Naftusia" spring mineral water on some gastric functions.

Sbor. nauch. rab. vrach. san.-kur. uchr. profsoiuzov no.1:56-63 '64.

(MIRA 18:10)

1. Kurort Truskavets.

BAYKALOV, L.K.; SARATOVSKIY, V.G.

Active manifestation of latent forms of diabetes mellitus. Sbor.
nauch. rab. vrach. san.-kur. uchr. profsoiuzov no.1:219-223 '64.

(MIRA 18:10)

1. Kurort Truskavets.

BAYKALOV, L.K.

Health resort treatment of patients with diabetes mellitus. Trudy
Ukr. nauch.-issl. inst. eksper. endok. 19:127-133 '64. (MIRA 18:7)

1. Iz otdela patofiziologii ~~Ukrainskogo~~ nstituta eksperimental'noy
endokrinologii i Sanatoriya No.1 kurorta Truskavets.

SOKOLOVSKIY, A.N.; BAYKALOV, L.K.

Effect of mineral water from the Naftusia spring on the acidity of gastric juice and the motor and evacuative function of the stomach and gallbladder. Vop. kur., fizioter. i lech. kul't. 30 no.4:312-315 J1-Ag '65. (MIRA 18:9)

1. Terapevticheskoye otdeleniye (zav. A.N. Sokolovskiy)
klinicheskogo sanatoriya No.1 (glavnyy vrach M.I. Kutsevich)
kurorta Truskavets.

ACC NR: AR6013633

SOURCE CODE: UR/0058/65/000/010/A057/A057

AUTHOR: Baykalov, S. N.; Vasil'yev, R. D.; Garapov, E. F.

TITLE: Methods for standardizing radioactive sources and calibrating radiometers and dosimeters

SOURCE: Ref. zh. Fizika, Abs. 10A468

REF SOURCE: Tr. Soyuzn. n.-i. in-ta priborostr., vyp. 1, 1964, 199-212

TOPIC TAGS: metrology, scientific standard, radioactive source, instrument calibration equipment, radiometer, dosimeter

TRANSLATION: Problems that the Metrology Laboratory for Ionizing Measurements faced from the time of its organization are discussed. These included the development of systematic procedures for calibrating reference and operational emitters, preparation of programs for the development of reference equipment and emitters, assistance to industry, certification and verification of reference equipment, review and improvement of checking procedures. In addition to these ordinary problems, the laboratory is concerned with the development of methodology for the field of the metrology of α -, β -, γ - and neutron radiation. Much work has gone into the development of unique apparatus for transposing the size of various units of measurement from standard measures up to operational measures and also into the development of equipment to facilitate the

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