

PHASE I BOOK EXPLOITATION 1088

Chistyakov, Nikolay Iosafovich, Sidorov, Viktor Matveyevich, and Mel'nikov, Viktor Semenovich

Radiopriyemnyye ustroystva (Radio Receivers) Moscow, Svyaz'izdat, 1958.  
895 p. 25,000 copies printed.

Ed. (Title page): Chistyakov, N.I.; Ed. (Inside book): Galoyan, M.A.;  
Tech. Ed.: Shefer, G.I.

**PURPOSE:** This monograph is addressed to students and engineering and technical workers in radio.

**COVERAGE:** The book is based on the program for the course in radio receivers at communications institutes. The authors assume that the reader is familiar with the fundamentals of radio circuit theory (including transient processes), with general methods of amplifier circuit analysis, fluctuation noise in tubes and electric circuits, the operating characteristics of vacuum tubes at very high frequencies, and other related problems. Because of the broad scope of the book the authors have dealt only briefly with certain subjects, e.g., television receiver video tracts, radio relay lines (multichannel reception of very high frequencies), antennas, etc. Transistorized circuit theory has not been fully discussed because of its still early stage of development.

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Radio Receivers

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N.I. Chistyakov wrote the Introduction through Chapter III, Chapter VI, Sections 12 and 13 of Chapter VII, Section 4 of Chapter IX, Sections 1 through 10 of Chapter X, Chapter XII, Section 8 of Chapter XIII, Section 5 of Chapter XV, Section 7 of Chapter XVI, and Chapters XVIII through XX. V.M. Sidorov wrote Chapter V, Sections 1 through 11 of Chapter VII, Chapter VIII through Section 3 of Chapter IX, Sections 5 through 8 of Chapter IX, Section 11 of Chapter X through Section 6 of Chapter XI, and Section 7 of Chapter XIII. V.S. Mel'nikov wrote Chapter VI, Sections 1 through 6 of Chapter XIII, Sections 1 through 4 and Section 6 of Chapter XV, and Section 1 through 14 of Chapter XVII. G.A. Aleksandrov wrote Section 7 of Chapter XI, Chapter XIV and Sections 1 through 6 of Chapter XVI. L.M. Mashbits wrote Section 15 of Chapter XVII and Chapter XXI. In preparing the book for publication, the authors took into consideration suggestions of the staff of the Leningradskiy elektrotekhnicheskiy institut svyazi im. M.A. Bonch-Bruyevich (Leningrad Communications Engineering Institute imeni Bonch-Bruyevich) and the Moskovskiy aviatsionnyy institut im. S. Ordzhonikidze (Moscow Aviation Institute imeni S. Ordzhonikidze). The authors thank Professor V.N. Mil'shteyn for his helpful suggestions concerning a number of chapters. There are no references.

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MEL'NIKOV, Y.

The main direction. Sov. profsoiuzy 6 no. 9:34-37 Ag '58.  
(MIRA 11:8)

1. Predsedatel' profsoyuznogo komiteta kiyevskogo zavoda  
"Tochelektropribor."  
(Kiev--Electric instruments)

MEL'NIKOV, V.S.

AUTHOR: Mel'nikov, V.S.

SOV/106-58-6-2/13

TITLE: Application of the Potential Interference-stability Theory to Problems of Short-wave Telegraphic Communication (Prilozheniye teorii potentsial'noy pom-ekhoustoychivosti k zadacham korotkovolnovoy telegrafnoy svyazi)

PERIODICAL: Elektrosvyaz', 1958, Nr 6, pp 5 - 12 (USSR)

ABSTRACT: The theory of potential interference-stability, developed by V.A. Kotel'nikov (Ref 1) is not directly applicable to the problems of shortwave communications but it can, however, be used for particular cases where the statistical laws of the signals and interference are known. Cases are examined in which the density of the probabilities of the components of the signal and of the interference obeys the normal law of distribution:

$$W(\xi_{ck}) = \frac{1}{\sqrt{2\pi}\sigma_{\xi_{ck}}} e^{-\frac{\xi_{ck}^2}{2\sigma_{\xi_{ck}}^2}} \quad (1)$$

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where  $\xi_{ck}$  is the amplitude of the signal component,  
 $\sigma_{ck}$  is the mean square deviation of the random value  
 $\xi_{ck}$  and :

$$w(\xi_k) = \frac{1}{\sqrt{2\pi} \sigma_{\Pi}} e^{-\frac{\xi_k^2}{2\sigma_{\Pi}^2}} \quad (2)$$

where  $\xi_k$  is the amplitude of the interference component,  
 $\sigma_{\Pi}$  is the mean square deviation of the random value  $\xi_k$ .  
 Ye. A. Khmel'nitskiy (Ref 2) considered a similar prob-  
 lem but for signals with constant phase and random  
 amplitude. In this work, the amplitudes and the phases  
 of signals and interference are considered to be random.

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Application of the Potential Interference-stability Theory to  
Problems of Short-wave Telegraphic Communication

Potential interference-stability for fading signals:  
Two messages,  $A(t)$  corresponding to a mark and  $B(t)$  corresponding to a space, are considered as transmitted for equal times  $\tau$  (one band). The interference  $V(t)$  acts simultaneously with the signal  $A(t)$  or  $B(t)$ . Such a combination of  $A(t)$  or  $B(t)$  with  $V(t)$  occurs in each interval of time  $\tau$  during the transmission of the message. The voltages  $A(t)$  or  $B(t)$  and the interference  $V(t)$  act during the interval of time  $\tau$ , but equal zero outside this interval. A given combination of the voltages  $A(t)$  or  $B(t)$  and  $V(t)$  does not periodically repeat during the time of transmission of a message but if the time  $T$  is taken sufficiently large, then the assumption becomes permissible.

The signals  $A(t)$ ,  $B(t)$  and the interference  $V(t)$ , considered as periodical functions, are resolved into a series of periodical orthogonal functions and since the initial functions (as received) are random, the coefficients of the series will also be random values.

Due to the interference during the reception of signals in

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the interval  $\tau$ , it is not possible to determine with certainty whether the received signal  $Z(t)$  corresponds to  $A(t)$  or to  $B(t)$ . It is possible to assert, however, that the probability that the received signal  $Z(t)$  results from the summation of the interference and  $A(t)$  is  $P_Z(A)$

and, similarly, that the probability that the received signal  $Z(t)$  results from the summation of interference and  $B(t)$  is  $P_Z(B)$ . The signal  $Z(t)$  is a random value being the sum of the random magnitudes  $A(t) + V(t)$  or  $B(t) + V(t)$ : therefore, the probability that some particular value of  $Z(t)$  occurs is  $P(Z)$ . On the other hand, it can be asserted that when the signal  $A(t)$  is transmitted (which occurs with the probability  $P(A)$ ) then some definite signal  $Z(t)$  with a probability  $P(Z)$  is formed at the receiver. Similarly, when  $B(t)$  is transmitted (which occurs with the probability  $P(B)$ ), the probability of the same signal  $Z(t)$  is  $P(B)$ .

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The relationships:

$$P_Z(A) = \frac{P(A)P_A(Z)}{P(Z)} \quad (7)$$

and

$$P_Z(B) = \frac{P(B)P_B(Z)}{P(Z)} \quad (8)$$

enable the received signal  $Z(t)$  to be decoded. With the transmission of signal  $A(t)$ , the following conditions must be fulfilled:

$$P_Z(A) > P_Z(B) \quad (9)$$

and with the transmission of the signal  $B(t)$ , the following condition must be met:

$$P_Z(B) > P_Z(A) \quad (10)$$

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## Application of the Potential Interference-stability Theory to Problems of Short-wave Telegraphic Communication

A receiver meeting these requirements will be interference-stable.

Next is evaluated the probability that these conditions will be fulfilled and the probability that they will not be fulfilled. The latter probability gives the probability of erroneous reception by a receiver, having potential interference-stability.

The results are applied to frequency radio-telegraphy for the particular cases when  $P(A) = P(B) = 0.5$ . Here,

$$A(t) = U_{CA} \sin(\omega_A t + \varphi_A) = U_{CA} \cos \varphi_A \sin \omega_A t + U_{CA} \sin \varphi_A \cos \omega_A t \quad (19)$$

$$B(t) = U_{CB} \sin(\omega_B t + \varphi_B) = U_{CB} \cos \varphi_B \sin \omega_B t + U_{CB} \sin \varphi_B \cos \omega_B t \quad (20)$$

are applicable. Two cases are considered:

- 1) The values  $U_{CA}$  and  $U_{CB}$  are independent random values obeying Rayleigh's Law. The values  $\varphi_A$  and  $\varphi_B$

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are also independent random values having an equal probability angle. If the mean square values of the signals  $A(t)$  and  $B(t)$  are both equal to  $\sigma_c$ , then for uninterrupted transmission:

$$a_1 = a_2 = b_3 = b_4 = a = \sqrt{\frac{\sigma_c}{2T}} \quad (29)$$

$$a_3 = a_4 = b_1 = b_2 = 0$$

2) The second case differs from the first in that the mean square values of the signal components are not equal, i.e.  $a_1 \neq a_2$  and  $b_3 \neq b_4$ .

It is concluded that:

a) the probability of erroneous reception of fading frequency telegraphic signals when the principles of the potential interference-stability theory are observed and the number of errors is small, is proportional to the ratio of the power of the interference over unit bandwidth to the power of the signal and inversely proportional to

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the duration of the elemental message.

b) asymmetry of the signal components with constant total power leads to an increase in the probability of erroneous reception and is equivalent to a reduction of the radiated power.

An example of the application of the theory is given.  
There are 2 Soviet references.

SUBMITTED: March 25, 1958

Card 8/8 1 Communication systems--Interference 2 Communication systems--  
--Analysis 3 Communication systems--Theory

SOV/106-59-3-3/12

AUTHOR: Mel'nikov, V.S.

TITLE: The Potential Noise Stability of Signals in Amplitude and Two-Channel-Frequency-Telegraphy with Fading (Potentsial'naya pomekhoustoychivost' signalov amplitudnogo i dvukhkanal'nogo chastotnogo telegrafirovaniya pri zamiraniyakh)

PERIODICAL: Elektroyaz', 1959, Nr 3, pp 18-26 (USSR)

ABSTRACT: According to Kotel'nikov, a receiver which has potential noise stability distinguishes the transmitted signals according to the inequalities (1) and (2). These are given more explicitly by (3) and (4) in terms of the basic probabilities of the appearance of the signals. The signals themselves and the noise background are defined in (5), (6) and (7) in terms of random quantities, the distributions themselves are defined in (8) and (9). Using these definitions the inequalities (1) and (2) can be expanded into (10) and (11). In amplitude telegraphy two cases are distinguished, in each case the signal has a Rayleigh distribution and the phase is equiprobable. In the first case the mean square deviations of the signal components are equal and the probability of

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SOV/106-59-3-3/12

The Potential Noise Stability of Signals in Amplitude and Two-Channel-Frequency-Telegraphy with Fading

incorrect reception is given by (31). In the second case the mean square deviations are unequal and the corresponding probability is given by (46). Comparison of these last two equations shows that the probability of incorrect reception increases with the asymmetry in between the deviations. With two-channel frequency telegraphy four signals in all must be considered whose overall probability is given by the system of Bayes equations in (47). The separate contributions are defined in (48) to (51). The conditions for correct reception in terms of the random component amplitudes are given by (57). The probability of erroneous reception of a signal in the telegraph channel is given by (60) and making the approximations which are found here, the resulting expression (61) is seen to differ from that previously quoted by the author for a simple frequency channel by only 20%, hence it is concluded that present

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SOV/106-59-3-3/12

The Potential Noise Stability of Signals in Amplitude and Two-Channel-Frequency-Telegraphy with Fading

methods of reception are not far from ideal. There are 2 Soviet references.

SUBMITTED: 5th April 1958

Card 3/3

MEL'NIKOV, V.S.

Separation of frequency-telegraphy signals during fading  
and ideal reception. *Elektrosviaz'* 14 no.3:3-8 Mr '60.  
(MIRA 13:6)

(Telegraph, Wireles)

MEL'NIKOV, V.S.

Addition of constant voltages using a formula of geometrical summations. *Elektrosviaz'* 15 no.9:70-72 S '61. (MIRA 14:9)  
(Electric engineering)



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S/108/62/017/001/001/007  
D271/D304

6.9210

AUTHOR: Mel'nikov, V.S., Member of the Society (see Association)

TITLE: Ideal predirectional reception of phase telegraphy signals subjected to fading

PERIODICAL: Radiotekhnika, v. 13, no. 1, 1962, p. 12

TEXT: Interference stability is analyzed of an ideal receiver based on signal prediction when receiving phase telegraphy signals. In order to compare the error probability of this type of receiver with usual receivers of frequency shift telegraphy. The idea of prediction in phase telegraphy, on the basis of the preceding signal, is based on auto-correlation between two telegraph signals which are sent one after another, and was first elaborated by N.T. Petrovich in his work "Metody peredachi i priyema diskretnykh signalov na osnove sravneniya parametrov elementarnykh posylok (Transmission and Reception Methods for Discrete Signals Based on the Comparison of Parameters of Message Elements) Dissertation for Doctor's degree. Institute radiotekhniki i elektroniki AN SSSR (Institute of Radio Eng- Card 11

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S. 158700/017/001, 19801  
D277 D701

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Engineering and Electronics of the AS USSR). (1960). The potential stability is considered and the situation during the preceding interval is assumed known. In a random parameters channel of the phase telegraphy the signals at the receiver in  $i$ -th time interval of duration  $T$  are

$$\left. \begin{aligned} A_i(t) &= U_{iA} \sin(\omega t + \varphi_i) \\ B_i(t) &= U_{iB} \sin(\omega t + \varphi_i + \pi) \end{aligned} \right\} \quad (1)$$

where  $U_{iA}$  and  $U_{iB}$  are random amplitudes obeying the Rayleigh law,  $\varphi_i$  - random equiprobable phase,  $\pi$  - phase resulting from keying. In all other intervals  $A_i(t) = B_i(t) = 0$ . The resulting signal, composed of the useful component and interference is written as

$$Z_i(t) = x_1 I_{1i}(t) + x_2 I_{2i}(t),$$

where  $I_{1i}(t)$  and  $I_{2i}(t)$  are orthogonal normalized periodic functions with period  $T$ ,  $x_1$  and  $x_2$  are double-valued normal random variables.

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values expressed in terms of  $U_{iA}$ ,  $U_{iB}$ ,  $\varphi_i$  and  $\alpha$ ,  $\tau$  and  $T$ . The total signal in the preceding interval is

$$Z_{(i-1)}(t) = uI_{(i-1)c}(t) + vI_{(i-1)s}(t) \quad (7)$$

In deriving correlation coefficients only the correlation between similar (either space or mark) components in the two adjacent intervals is considered; the correlation coefficient is defined as

$$R = \frac{\xi_{(i-1)ac} \xi_{iac}}{a^2} = \frac{\xi_{(i-1)as} \xi_{ias}}{a^2} = \frac{\xi_{(i-1)bc} \xi_{ibc}}{b^2} = \frac{\xi_{(i-1)bs} \xi_{ibs}}{b^2} \quad (8)$$

+

where  $a$  and  $b$  are mean-square values of signals  $A(t)$  and  $B(t)$ , respectively; coefficients  $\xi$  are defined in terms of  $U_{iA}$ ,  $U_{iB}$ ,  $\varphi_i$ ,  $\alpha$ ,  $\tau$  and  $T$ . The effectiveness of a prediction system is based on the correlation between components of the total signal in the interval  $(i-1)$  and components of the useful signal in the interval  $i$ . this correlation depends on the operational phaseshift  $\alpha$ ; with an arbitrary  $\alpha$  there is a correlation not only between corresponding pairs

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of components, but also a cross-correlation. Only the values of  $90^\circ$  and  $180^\circ$  are, however, considered for  $\alpha$  and all correlation coefficients are written out for these two cases; they are of the type:

$$\alpha = 180^\circ, b = a, R_{\Sigma 1} = \frac{(\frac{E}{\sigma_{\Sigma}}(i-1)ac + \frac{E}{\sigma_{\Sigma}}(1-i)c) \frac{E}{\sigma_{\Sigma}} ac}{\sigma_{\Sigma} a} = \frac{a}{\sigma_{\Sigma}} R, \quad (11)$$

In order to find the conditions of ideal reception it is necessary to find the probabilities  $P(A)P_A(Z)$  and  $P(B)P_B(Z)$  in the interval  $i$  when components and the type (space or mark) of the total signal in the preceding interval are known. If a signal  $A(t)$  is sent in the interval  $i$ , the condition of correct reception is

$$P(A)P_A(Z) > P(B)P_B(Z), \quad (14)$$

A detailed analysis is given for this and other cases, for  $\alpha = 90^\circ$  and  $180^\circ$ . If  $\alpha = 180^\circ$  and assuming  $P(A)$  and  $P(B) = 0.5$ , if also signal  $B(t)$  was sent in the interval  $(i-1)$  and signal  $A(t)$  in the interval  $i$ , the condition of correct reception is

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$$u(\xi_{iac} + \xi_{ic}) + v(\xi_{ias} + \xi_{is}) < R_{\Sigma 1}(u^2 + v^2). \quad (27)$$

The probability of incorrect reception is equal to the probability of non-satisfying the inequality (27), or analogous inequalities for other cases. From the formulae which are derived it is clear that the probability of incorrect reception depends on the stored amplitude of the total signal in the preceding interval; this is termed U. It is a random value correlated with the amplitude in the yet preceding interval, etc.; it obeys the Rayleigh law. The probability is determined of error in receiving the signal A(t) in i, if signal A(t) was also transmitted in (i-1) and the amplitudes of signals in all preceding intervals assume all possible values; the error probability is

$$P(B_A \text{ instead of } A_A) \approx \frac{\Gamma(\frac{1}{2}) \Gamma(N + \frac{1}{2})}{16} \frac{2\sigma_n^2 a^2 + \sigma_n^4 (1 - R_n^2) + a^4 (1 - R_n^2)}{Ra \sqrt{\sigma_n^2 + a^2} (\sigma_n^2 + a^2)} \quad (42)$$

and it is the same in the other three cases, i.e. B<sub>B</sub> instead of A.

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etc. Finally an expression is found for the error probability of any signal in any interval. It is concluded that prediction methods are effective when there is a strong correlation between signal and interference components in adjacent intervals, and the error probability is then 2.5 times smaller than for the conventional frequency shift telegraphy. As the correlation weakens, the advantages gradually disappear until, with small correlation values, phase telegraphy is less reliable than frequency shift telegraphy; predictional phase telegraphy has a certain intrinsic error probability independent of interference. A preliminary and approximate evaluation of analytical results on the basis of available experimental data shows that predictional phase telegraphy may produce good results when  $\tau = 3$  msec, but there is no hope for it when  $\tau = 20$  msec. There are 3 Soviet-bloc references.

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

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Ideal predictional reception of ...

... citation taken from first page of journal

SUBM. ED: April 31, 1961 [Abstractor's note. Presumably a mis-  
print]

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L 10809-63

BDS/EEC-2 AFFTC/ASD

ACCESSION NR: AP3000529

8/0106/63/000/005/0003/0008

AUTHOR: Mel'nikov, V. S.

TITLE: Evaluation of telegraph receiver noise rejection with integration of the signal following detection 52

SOURCE: Elektrosvyaz', no. 5, 1963, 3-8

TOPIC TAGS: telegraphy, telegraphic reception, noise rejection, detection probability

ABSTRACT: The method for noise rejection in multichannel telegraphic reception, in which integration takes place after the separation and detection of the signal, is analyzed and compared with the method in which integration takes place prior to detection. In evaluating the former it was necessary to make simplifying assumptions in the mathematical treatment which necessarily limit the validity of the conclusions, i.e., that any noise involved has a discrete spectrum and that detection is of the square-law type. Frequency telegraphy is assumed in which signal amplitudes obey Rayleigh fading and in which signal phases have an equal distribution probability. The same conditions are assumed for the accompanying noise. An expression is derived describing the probability

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of false reception on a channel in the presence of both signal and noise, from which it is concluded that postdetector integration is less effective than pre-detector integration and that the latter may give a probability of false reception up to 0.5. Orig. art. has: 1 figure and 25 formulas.

ASSOCIATION: none

SUBMITTED: 18Oct62

DATE ACQ: 03Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 005

OTHER: 000

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AYNBINDER, A.B.; YEREMENKO, A.; MEL'NIKOV, V.S.

Automatic equipment for vacuuming mold cavities for die casting.  
Lit. proizv. no.8:7-8 Apr '63. (MIRA 16:10)

BALANCHIVADZE, V.P.; MEL'NIKOV, V.S.

Output of conifer lumber in accordance with the new All-Union State  
Standard. Der. prom. 12 no.11:7-9 N '63. (MIRA 17:1)

ACC NR: AT8022719

SOURCE CODE: UR/3032/66/000/073/0213/0222

AUTHOR: Alekseyev, L. F.; Mel'nikov, V. S.

ORG: none

TITLE: Stabilized static frequency converters designed with magnetic elements

SOURCE: Moscow. Vsesoyuznyy elektrotekhnicheskiy institut. Trudy, no. 73, 1966. Avtomaticheskiye regulatory vozbuzhdeniya' (Automatic excitation regulators), 213-222

TOPIC TAGS: frequency converter, frequency multiplier

ABSTRACT: Three types of a new magnetic frequency multiplier were developed by VEI; their characteristics are: input,  $3 \times 380 \text{ v} \pm 30\%$ , 45-55 cps; output, 110 v, 450 cps, 10, 200, and 600 va; frequency ratio, 9; output-voltage variation, 0.5-1% per 10% input-voltage variation and 1-1.2% per 1% frequency variation.

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ACC NR: AT6022719

The multiplier contains 9 saturated transformers whose primary windings are connected in a complex star; the secondary windings form an open nonagon. The output voltage equals the geometrical sum of emf's of all secondary windings. A circuit diagram, a vector diagram, and voltage waveshapes are shown. Formulas and curves for designing such a multiplier are reported. The multiplier is intended for magnetic amplifiers of field regulators and similar applications. Unlimited lifetime of the multipliers is claimed, and their successful "long-time" operation at several Soviet power plants is noted. Orig. art. has: 6 figures and 12 formulas.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 002

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KUDRIN, L.N.; MEL'NIKOV, V.S.; IORYSH, Z.I.; TYMCHISHIN, Ya.D.

Mineral composition and the structure of fossil and present-day shells and skeletons of marine organisms. Min.sbor. 18 no.2:231-235 '64. (MIRA 18:5)

1. Gosudarstvennyy universitet imeni Ivana Franko, L'vov i Institut geologii i geokhimi goryuchikh iskopayemykh AN UkrSSR.

MEL'NIKOV, V.V.

Toxicity of beryllium oxide. *Farm. i toks*, 21 no.3:73-77 *Ky-Je* '58  
(MIRA 11:7)

(BERYLLIUM, toxicity  
oxide (Rus))

MEL'NIKOV, V.V.

Toxicological data on beryllium acetate. Farm. i toka. 22 no.3:  
261-269 My-Je '59. (MIRA 12:7)  
(BERYLLIUM,  
beryllium acetate tox. in animals (Rus))



MEL'NIKOV, V.V.

Analysis of an oxyhemogram in the inhalation of oxygen.  
Trudy Khab. med. inst. 23 no.2:61-63 '62 (MIRA 16:12)

Correlation of the time of the blood flow from the lungs up to the ear with the growth, frequency of the pulse, arterial pressure and other magnitudes. Ibid.:64-67

1. Iz kafedry fiziologii (vremenno ispolnyayushchiy obyazannosti zaveduyushchego kafedroy P.F.Konovalev) Khabarovskogo meditsinskogo instituta.

MEL'NIKOV, V.V.; MISHIN, V.S.

Method of measuring the velocity of blood flow in man. Fiziol.  
zhur. 46 no.10:1293-1295 0 '60. (MIRA 13:11)

1. Kafedra fiziologii Meditsinskogo instituta, Khabarovsk.  
(BLOOD—CIRCULATION)

MELNIKOV, V.V.

Analysis of the oxyhemogram during respiratory arrest. Fiziol.  
zhur. 47 no.9:1142-1148 S '61. (MIRA 14:9)

1. From the Department of Physiology, Medical Institute, Khabarovsk.  
(APNOEA) (BLOOD--OXYGEN CONTENT)

MEL'NIKOV, V. V.; LITVINOV, N. N.; PARFENOV, Yu. D.

Some new data relative to the blastomogenic action of  $Sr^{90}$ .  
Vop. onk. 8 no.7:10-14 '62. (MIRA 15:7)

1. AMN SSSR (rukoviteli raboty - deystv. chl. AMN SSSR, prof.  
N. A. Krayevskiy, prof. D. I. Zakutinskiy)

(STRONTIUM—ISOTOPES) (CARCINOGENS)

ACC NR: AT7004346(A,N) SOURCE CODE: UR/2657/66/000/015/0213/0232

AUTHOR: Yevseyenkov, P. T.; Mel'nikov, V. V.

ORG: none

TITLE: Short-wave and vhf power amplifiers designed with new Soviet-made transistors

SOURCE: Poluprovodnikovyye pribory i ikh primeneniye; sbornik statey, no. 15, 1966, 213-232

TOPIC TAGS: power amplifier, transistorized amplifier, hf amplifier

ABSTRACT: The results of an experimental investigation of several 20--100-Mc transmitters designed with Soviet and U.S. transistors are reported. The V. M. Bogachev et al. method of transmitter calculation ("Calculation of stages of transistorized transmitters," MEI, 1964) based on a harmonic analysis of base

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621.396.6.029.55(62):621.382

ACC NR: AT7004346

and collector currents is regarded as the most accurate (differs from experimental data by 25-30%) and reliable. A common-emitter grounded-collector circuit is the simplest and most convenient for practical use. Effective heat removal, such as described by K. H. McPhee (Electronics, 1961, v. 34, no. 18, pp. 76-78) largely determines the success of using high-power transistors. These transistors were tested in a single-transistor oscillator at frequencies between 9 and 150 Mc: Soviet, KT802A, type 1 experimental, type 2 experimental, type 3 experimental; USA, 3TX-004 Clevite, 2N2947 Motorola, 2N3632 RCA. Further, several 3-stage transistorized transmitters were developed and tested with these results: New Soviet transistors permit constructing transmitters up to 10 w at 100 Mc, or 30 w at 50 Mc, or 40 w at 30 Mc, or 100 w at 20 Mc; in all cases, the output stage has one transistor, and the efficiency is fairly high. Orig. art. has: 9 figures and 2 formulas.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 008 / OTH REF: 006

Card 2/2

L 14 P-56 P(m)/ST(1)

ACC NR: AP6009064 (A)

SOURCE CODE: UR/0207/66/000/001/0148/0152

AUTHOR: Mel'nikov, V. V. (Moscow); Rykov, G. V. (Moscow)

ORG: None

TITLE: Experimental investigation of a stress-strain state of loessial soil of different humidity under the effect of an explosion

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 148-152

TOPIC TAGS: underground explosion, soil mechanics, soil property, detonation wave

ABSTRACT: The present authors, in cooperation with S. S. Grigoryan and G. M. Lyakhov had earlier (Vzryvnyye volny v lessovom grunte. PMTF, 1963, No. 4) presented results of experimental investigations into spherical detonation waves in loessial soil of undisturbed structure and natural humidity. The present article presents the results of analogous investigations performed in the same soils, but with a different humidity

( $w = 19-21\%$  and  $\delta = 1.34-1.38 \text{ g/cm}^3$ ; where  $w$  is the humidity by weight, and  $\delta$  is the specific weight of the skeleton of the soil). Some of the experiments were performed in

Card 1/2

L 74-66

ACC NR: AP6009064

a soil with a disturbed structure ( $\delta = 1.30-1.34 \text{ g/cm}^3$  with  $w = 19-21\%$ ). An analysis of the results obtained shows that with increasing humidity the coefficients of internal friction and cohesion decrease. A disturbance of the structure of the soil leads to a more abrupt decrease in these coefficients. It is noted that during both the application and the removal of the load, the state of plasticity coincides. The authors are grateful to S. S. Grigoryan for participating in the experiments and discussions on this work, and to G. M. Lyakhov and S. D. Mjzyakin for help in the organization and the execution of the experiments. Orig. art. has: 8 figures, 9 formulas, and 3 tables.

SUB CODE: 08, 19 / SUBM DATE: 14Jun65 / ORIG REF: 003

Card 2/2

BLG



L 2886-66 FSS-2/EWT(1)/FS(7)-3/FCC/EWA(d)/EWA(h) TT/GS/GW

ACCESSION NR: AT5023607

UR/0000/65/000/000/0381/0387

AUTHOR: Vernov, S. N.; Mel'nikov, V. V.; Savenko, I. A.; Savin, B. I.; Pervaya, T. I.

TITLE: Recording of charged particles of energies of 0.1--10 kev with a spherical electrostatic analyzer 54

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 381-387

TOPIC TAGS: satellite, satellite data storage, particle counter, electron density, ion density/Elektron 2 satellite

ABSTRACT: Identical spherical electrostatic analyzers were used to record positive and negative particles with energies of up to 1 kev on Cosmos-12 and Cosmos-15 and up to 10 kev on Elektron-2. Each analyzer was comprised of a spherical capacitor some 60 mm in diameter, with input apertures leading to plates spaced 12 mm apart, on which a periodic high voltage was programmed so as to allow passage through the annular gap of only particles of a desired energy range. A Faraday cylinder at the

Card 1/3

L 2886-66

ACCESSION NR: AT5023607

gap output served as the collector. The input apertures and the Faraday cylinder were furnished with biased grids to eliminate thermal particles and secondary emission, respectively. A diagram of the two analyzers used on Elektron-2 is shown in Fig. 1 of the Enclosure; accumulated charge was converted to binary code. The Cosmos data generally showed that electron flux at the 1-kev level did not exceed  $10^7/cm^2/sec/kev$  at night and was only slightly higher by day. A maximum was noted during the southernmost portions of orbit, in a region south of New Zealand, attaining up to  $12 \times 10^8/cm^2/sec/kev$ . Electron fluxes recorded on Elektron-2 showed strong variations at sunrise and sunset (referred to the satellite); these variations reached values on the order of  $10^9/cm^2/sec/kev$ . Irregular variations in flux readings correlated with known geomagnetic events observed during the flight. Data show that the satellite was at all times within the magnetosphere. Positive ion flux registered by Elektron-2 in the 0.1-10-kev range did not exceed  $5 \times 10^7/cm^2/sec$ . Orig. art. has: 5 figures and 1 table.

[SH]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 01

SUB CODE: ES, NP

NO REF SOV: 008

OTHER: 003

ATD PRESS: 4109

Card 2/3

L 2886-66

ACCESSION NR: AT5023607

ENCLOSURE: 01

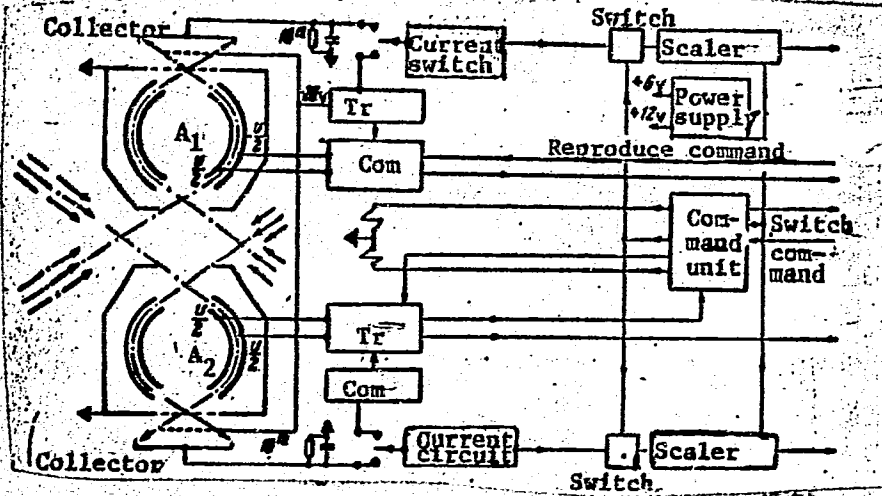


Fig. 1. Spherical particle analyzer on Elektron-2

Tr - High voltage transformers; Com - commutators;  
A<sub>1</sub> - 0.1-1 kev range; A<sub>2</sub> - 1-10 kev range

Card 3/3

MEL'NIKOV, V.V. (Moskva); RYKOV, G.V. (Moskva)

Effect of the deformation rate on the compressibility of loess soils.  
PMTF no.2:158-160 Mr-Apr '65. (MIRA 18:7)

L 2759-66 EWT(d)/FSS-2/EWT(i)/FS(v)-3/EEC(k)-2/FCC/EWA(d)/EWA(h) AST/TT/GI  
ACCESSION NR: AP5021003 UR/0203/65/005/004/0749/0751  
523.165

AUTHOR: Savenko, I. A.; Savin, B. I.; Mel'nikov, V. V.; Shavrin, P. I.;  
Markelova, T. N.

57  
56  
B

TITLE: Study of 1-kev charged particle streams by Kosmos-15

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 749-751

TOPIC TAGS: charged particle measurement, satellite/Kosmos 15

ABSTRACT: A spherical electrostatic analyzer, adjusted to 1-kev electron energies and containing a +12 v grid at its opening to protect the instrument compartment from positive ion bombardment, was installed on "Kosmos-15", launched 22 April 1963. The analyzer's maximum sensitivity was 20 mv, which corresponded to  $\sim 1.2 \cdot 10^7$  particles/cm<sup>2</sup> sec kev. The measurement program included four stages, the first two stages consisting in recording 1-kev electrons, the third stage — 1-kev positive ions, while during the fourth stage the spheres made contact with the satellite body. The cycle was thereafter repeated. Measurement results (see Fig. 1 of Enclosure) indicated the presence of two maxima at identical latitudes on either side

Card 1/3

L 2759-66

ACCESSION NR: AP5021003

of the equator, where the daily shift of these maxima exhibited a motion toward the north. Orig. art. has: 3 figures. [WC]

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta  
(Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 05Oct64

ENCL: 01

SUB CODE: ES, NP

NO REF SOV: 003

OTHER: 000

ATD PRESS: 4/02

Card 2/3

L 2759-66  
ACCESSION NR: AP5021003

ENCLOSURE: 01

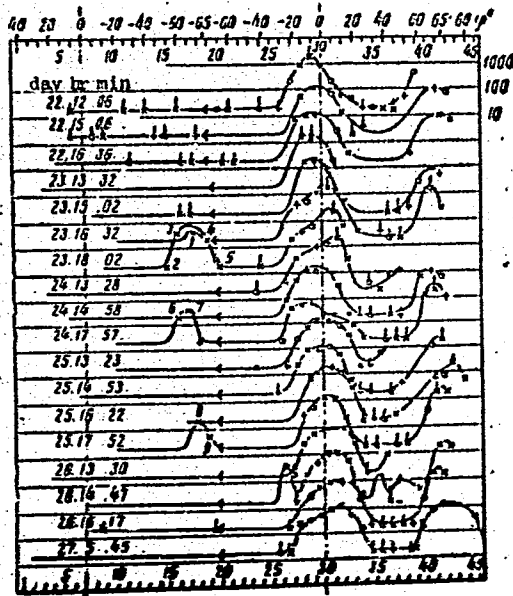


Fig. 1. Measurement results for first few days of flight

Column at left indicates date and time of passage over night equator on a given orbit. Vertical scale indicates difference in potentials on storage capacitor in mv

- φ° - Geographical latitude;
- + - electron measurement;
- x - positive ion measurement;
- o - absence of field.

Card 3/3 *mlr*

L 4127-66 FSS-2/EWT(1)/FS(v)-3 TT/GW

ACCESSION NR: AP5020220

UR/0048/65/029/010/1794/1799

AUTHOR: Vernov, S.N.; Mel'nikov, V.V.; Savenko, I.A.; Savin, B.I. *CHP*

TITLE: Investigation of low-energy charged particles with the Cosmos 12, Cosmos 15, and Electron 2 satellites *Report*, All-Union Conference on Cosmic Ray Physics held at Apatity, 24-31 August 1964

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1794-1799

TOPIC TAGS: artificial earth satellite, spectrometer, charged particle, electron flux, ion flux, low energy particle

ABSTRACT: Spherical electrostatic charged particle analyzers carried by the Cosmos 12, Cosmos 15, and Electron 2 satellites are described very briefly and preliminary results obtained with them are presented. The radii of the two concentric spherical deflecting electrodes were 5.4 and 6.6 cm, and the charged particles traversing the analyzer were collected in a Faraday cup. The minimum global intensity that could be recorded was approximately  $6 \times 10^6 E_0^{-2}$  particles/cm<sup>2</sup> sec kev; this intensity is two orders of magnitude below the threshold intensity for the instrument carried by Explorer 12. The luminosity at maximum transmission was

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L 4127-66

ACCESSION NR: AP5026220

0.7 cm<sup>2</sup> sterad with  $\Delta E/E_0 \approx 30\%$ , and the geometric factor was 0.1 E<sub>0</sub> cm<sup>2</sup> sterad kev. The analyzer on the Cosmos 12 was sequentially programmed to record 0.5 kev electrons or 1 kev electrons or ions, and that on the Cosmos 15 recorded 1 kev electrons or ions and was provided with a positively charged screen to reject thermal ions. The Electron 2 carried two analyzers, which were programmed to record charged particles of seven different energies ranging from 0.1 to 10 kev. The fluxes of 1 kev charged particles observed with the two Cosmos satellites were ordinarily near or below the threshold. Fluxes exceeding 10<sup>7</sup> particles/cm<sup>2</sup> sec kev observed on the daylight side are ascribed to photoelectrons from the screen, although there are indications of the presence of particle fluxes. Steady fluxes up to 2 x 10<sup>7</sup> particles/cm<sup>2</sup> sec kev were observed south of New Zealand in the region of the maximum southern isochasm. It is suggested that an intensity increase over the equatorial Pacific observed on 27 Dec may be associated with the solar flare of 24 Dec. The Electron 2 measurements revealed a broad region near the Earth of increased electron intensity. The extent of this region and its electron intensity fluctuated considerably. Electron intensities of 5 x 10<sup>8</sup> particles/cm<sup>2</sup> sec kev at 0.2 kev and 5 x 10<sup>7</sup> particles/cm<sup>2</sup> sec kev at 10 kev were observed in this region. Intensity increases were also sometimes observed near the apogee. Orig. art. has: 5 figures.

[15]

Card 2/3

L 4127-66

ACCESSION NR: AP5026220

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP, ES

NO REF SOV: 004

OTHER: 005

ATD PRESS: 4127

Card 3/3

3436

S/203/61/001/006/014/0  
D055/D113

9.6150

AUTHORS: Mel'nikov, V.V., Savenko, I.A., and Savin, B.I.  
TITLE: The use of electrostatic analyzers for studying the soft charged component of cosmic rays  
PERIODICAL: Geomagnetizm i aeronomiya, v. 1, no. 6, 1961, 101-104

TEXT: The authors describe the use of spherical electrostatic analyzers of high light-intensity with large entry windows for studying the spectra of low-energy particles in cosmic radiation. A Faraday cylinder with an electrometrical circuit may be used as a recording device. Transmittance and light intensity for particles with equiponderant energy are calculated for analyzers with either an acute angular or funnel-shaped diagram of sensitivity. The influence of scattered fields is not included in the calculations and it is assumed that the width of the gap between the electrodes of the deflecting capacitor was small, compared with the mean radius of the gap. The study of the soft ion and electron components has an

Card 1/2

S/203/61/001/006/014/021  
D055/D113

The use of electrostatic ...

important application in space radio communication, radio astronomy and radio navigation. Between 1959 and 1961, several different electrostatic analyzers were developed at the Institut yadernoy fiziki (Institute of Nuclear Physics). They have the following advantages: a differential energy spectrum of particles can be obtained; light intensity can be made much greater than in a magnetic analyzer of comparable size; if an open electron multiplier is used as a detector, very small flows of 1 particle/cm<sup>2</sup> sec-sterad with energies of 10<sup>2</sup> ev and higher can be detected; the analyzer's electronic and optical properties do not depend on the particle's mass. There are 8 figures and 6 references, 4 Soviet and 2 non-Soviet. The English-language references are: F.T. Rogers, Rev. Sci. Instr., 1951, 22, 723-726; M. Walt, L.F. Chase, J.B. Cladis, W.L. Imhof, Proc. First Intern. Space Science Symposium, Nice, 1960, no. 11-16, 910.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Institut yadernoy fiziki (Moscow State University imeni M.V. Lomonosov. Institute of Nuclear Physics).

SUBMITTED: October 17, 1961.

Card 2/2

L 27192-65 EWT(d)/EWT(l)/EEC(m)/FSF(h)/FSS-2/FS(v)+3/EEC(k)-2/ENG(s)-2/ENG(v)/  
FOO/EWA(d)/EEC-h/EEC(t)/EWA(h)/EWA(c) Po-4/Pe-5/Pq-4/Pg-4/Pae-2/  
Peb/Pi-4/Pk-4/Pl-4 TT/AST/GW/WS

S/0203/65/005/001/0148/0154

ACCESSION NR: AP5005197

AUTHOR: Mal'nikov, V. V.; Savenko, I. A.; Savin, B. I.; Shavrin, P. I.

TITLE: Experience in the use of an electrostatic analyzer on Cosmos-12 <sup>12</sup> 77

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 1, 1965, 148-154 <sup>gm</sup> 70  
B

TOPIC TAGS: electrostatic analyzer, ionization measurement, ion current, spaceborne ionization measurement, electron detection

ABSTRACT: Cosmos-12 (apogee, 405 km; perigee, 211 km) and Cosmos-15 (apogee, 371 km; perigee, 173 km) were equipped with identical electrostatic analyzers for the study of electron and positive ion currents with energies of 1 kev. The analyzer (see Fig. 1 of Enclosure) is basically a spherical capacitor with symmetrical potentials applied to the plates. The charged particles entering into the gap between the plates are deflected by the electric field and strike a Faraday cylinder, which serves as the collector. The angle of deflection of a particle projected along the zero equipotential in the gap was 120°. Additional deflections at the input and output of the gap did not exceed 2.5°. The copper capacitor plates were silverplated to reduce light reflection in the ultraviolet region. The radius of the outer surface of the gap was 66 mm; that of the inner, 54 mm. Conical shields were mounted

Card 1/3

L 27192-65

ACCESSION NR: AP5005197

in front of the input and behind the output of the gap to reduce the effects of stray fields. The passband width of the analyzer was approx 30%; its threshold sensitivity under isotropic conditions was approx  $6 \times 10^6$  part/cm<sup>2</sup>·sec·kev. The following conclusions are drawn from measurements made with the analyzer during the flight of Cosmos-12: 1) The intensities of electrons and ions with energies of 1 kev on the night side of the Earth were usually lower than the threshold sensitivity of the analyzer. 2) On two orbits, the analyzer registered higher electron and ion intensities ( $> 10^8$  part/cm<sup>2</sup>·sec·kev) over the equatorial regions of the Pacific, due presumably to the effects of a solar flare of magnitude 1 which occurred during the flight. 3) No constant intensity levels exceeding  $6 \times 10^6$  part/cm<sup>2</sup>·sec·kev were measured during the daytime sectors of the flight. 4) To the south of New Zealand, occurrences of increased intensity ( $\sim 10^8$  part/cm<sup>2</sup>·sec·kev) were registered on the 28th and contiguous orbits. Orig. art. has: 4 figures. [DW]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Institut yadernoy fiziki  
(Moscow State University, Institute of Nuclear Physics)

SUBMITTED: 17Sep64

ENCL: 01

SUB CODE: EC, EM

NO REF SOV: 003

OTHER: 003

ATD PRESS: 3191

Card 2/3

L 27192-65

ACCESSION NR: AP5005197

ENCLOSURE: 01

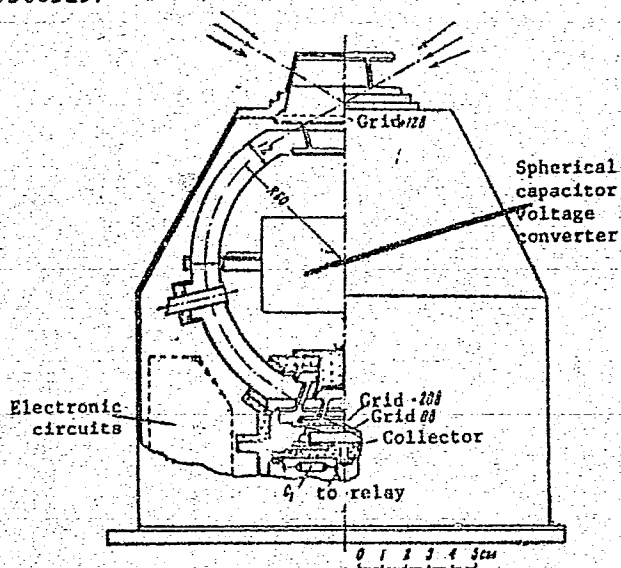


Fig. 1. Electrostatic analyzer

Card 3/3

Mel'nikov, V.V.

3-3-16/40

AUTHOR: Mel'nikov, V.V., Dctsent, Candidate of Technical Sciences

TITLE: Students Gain Production Skills (Studenty priobretayut proizvodstvennyye navyki)

PERIODICAL: Vestnik Vyshey Shkoly, March 1957, # 3, p 67-71 (USSR)

ABSTRACT: The Radiotechnical Faculty of the Ural Polytechnical Institut has experience in teaching engineer students. In the first course the students are taught the cold machining of metals and the assembling of radios. In the training workshops they learn the fitter's trade. The article then deals in detail with the necessity of early training in radio repair and the various operations which the students are taught. The next section of the article describes student practical laboratory work, where methods adopted by the Moscow Physico-Technical Institute and the Moscow Institute of Energetics are applied. The last section quotes a few examples from the Faculty's practice showing how practical skill is obtained by the students in connection with their course-examination. The experience of the Radio-Technical Faculty proves that the students can be

Card 1/2

The Students Gain Production Skills

3-3-16/40

taught practical skill at all stages of training. One must only know how to involve them into the working process which considerably depends on the initiative of the instructors.

ASSOCIATION: Ural Polytechnical Institute imeni S.M.Kirov (Ural'skiy politekhnicheskiy institut imeni S.M.Kirova)

AVAILABLE: Library of Congress

Card 2/2



MEL'NIKOV, V.V., inzhener.

Machining the rim of turbine rotor disks with the aid of a FM-2 pneumatic machine. Elek.sta. 25 no.3:47 Mr '54. (MLRA 7:6)  
(Steam turbines)

MEL'NIKOV, V. V.

Svarka trekhfaznoi dugoi. (Vestn. Mash., 1950, no. 12, p. 34-36)

Three-phase arc welding.

DLC: TN4.V4

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

MEL'NIKOV, V.V., inzhener.

Installing a 43.3 ton boiler drum with a bridge crane of 30 tons capacity.  
Elek.sta. 24 no.9:50-51 S '53.

(MLRA 6:8)

(Cranes, derricks, etc.)

ELIYEV, V. V.

"The Composition and Propagation of Algae in Certain Parts of the  
Vakhshskaya and Gissarskaya valleys of Southern Tadzhikistan." *Trudy Botani-  
Sci, Inst of Botany, Acad Sci USSR, Leningrad, 1963. (ZhBot, No 1, Ser 54)*

SO: Sum 432, 29 Mar 55

10

L 61411-65 EWT(d)/EWP(h)/EWP(1)

ACCESSION NR: AP5019107

UR/0286/65/000/012/0134/0134

AUTHORS: Afonin, A. N.; Yerzhova, G. I.; Ivanovskiy, K. Ye.; Ioffe, F. S.;  
 Komashenko, A. Kh.; Kon'kova, T. F.; Lipovetskiy, V. A.; Mel'nikov, V. V.;  
 Mishedchenko, Yu. D.; Neverovich, A. M.; Paris-Revuel'ta, R. A.; Semenov, V. M.;  
 Preobrazhenskiy, O. A.; Rikman, M. A.; Semenov, B. D.; Sukhanov, A. I.;  
 Shaleg, R. G.; Yaguzhinskiy, S. M.

TITLE: Carriage for a drive chain of an overhead thrust conveyor. Class 81,  
 No. 172230

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 134

TOPIC TAGS: overhead conveyor, drive chain, carriage, crane

ABSTRACT: This Author Certificate presents a carriage for a drive chain of an overhead thrust conveyor. The carriage consists of running rollers mounted on an axle fixed to the casing which supports a thrust cam and which is connected to the chain through fastening elements, including a fastening bolt (see Fig. 1 on the Enclosure). To simplify the construction of the carriage, the thrust cam is made in one piece with the fastening bolt, while the casing is made in one piece with the axle. Orig. art. has: 1 diagram.

Card 1/3

L 61411-65

ACCESSION NR. AP5019107

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut pod'yemno-transportnogo mashinostroyeniya (All-Union Scientific Research Institute of Hoisting and Conveying Machine Construction) 3

44 55

SUBMITTED: 12Aug63

ENCL: 01

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

Card 2/3

ACC NR: AP6034211

SOURCE CODE: UR/0368/66/005/004/0437/0441

AUTHORS: Genkin, V. N.; Mel'nikov, V. V.

ORG: none

TITLE: The possibility of large power dissipation in pulsed xenon lamps

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 4, 1966, 437-441

TOPIC TAGS: xenon lamp, shock wave, UV light source, recombination emission

ABSTRACT: The possibility of using pulsed xenon lamps as light sources in the near UV part of the spectrum was investigated. Such radiation does not normally exceed 3-7% of the electrical energy dissipated in such lamps. Increased voltage is necessary to produce measurable quantities, but this increases the intensity of the shock wave that forms in the tube at the moment of discharge, and the lamp tube is thus in danger of breaking. A successful test was made of a supply circuit with inductive resistance used to eliminate the shock wave in the lamp. Examination of the resulting spectral distribution of emission showed a background associated chiefly with recombination of ions and electrons, with retarded radiation of the electrons. The emission spectra were studied in the range from 3000 to 9000 Å for various parameters of the supply circuit. The amount of capacitance has no effect on the distribution. Increase in voltage increases the UV part of the spectrum, and increase in inductance has the reverse effect. It is thus seen that the energy distribution for xenon-lamp

Card 1/2

UDC: 621.385.8

ACC NR: AP6034211 "APPROVED FOR RELEASE: Wednesday, June 21, 2000

CIA-RDP86-00513R001

emission is not black-body distribution, due to the substantial contribution of ion and atom lines at the discharge energies obtainable in the lamp tube. The authors thank R. P. Vasil'yev for supplying lamps for the experiment. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 03Mar65/ ORIG REF: 010/ OTH REF: 001

Card 2/2

LIVSHITS , B. Ya.; MEL'NIKOV, V. Ye.

Automatic heating of coke ovens. Koks i khim. no.6:20-22 '60.  
(MIRA 13:?)

1. Zaporozhskiy koksokhimicheskiy zavod.  
(Zaporozh'ye--Coke ovens)



LIVSHITS, B.Ya.; DONKOV, V.I.; IVANOV, I.P.; MEL'NIKOV, V.Ye.

Automation of coke oven heating. Koks i khim. no.5:27-30 '63.

(MIRA 16:5)

1. Zaporozhskiy filial Instituta avtomatiki Gosplana UkrSSR (for Livshits, Donkov). 2. Zaporozhskiy koksokhimicheskiy zavod (for Ivanov, Mel'nikov).

(Coke ovens) (Automatic control)

FOFANOV, G.A., inzh., red.; MEL'NIKOV, V.Ye., red.; VOROTNIKOVA,  
L.F., tekhn. red.                     

[Advanced methods for fuel economy on diesel locomotives]  
Peredovye metody ekonomii topliva na teplovozhakh; sbornik  
statey. Moskva, Transzheldorizdat, 1963. 42 p.  
(MIRA 16:8)

(Diesel locomotives---Fuel consumption)

LYUBOV, V.Ya., inzh.; NECHAYEVSKIY, M.R., inzh.; SMUSHKOV, P.I.,  
inzh., red.; MEL'NIKOV, V.Ye., red.; VOROB'YEVA, L.V.,  
tekhn. red.

[Repair of locomotives on hoists; experience of the  
Donetsk Railroad] Pod"emochnyi remont parovozov; opyt  
Donetskoi dorogi. Moskva, Transzheldorizdat, 1963. 53 p.  
(MIRA 17:2)

STIGNEYEV, V.S., otv. za vyp.; MEL'NIKOV, V.Ye., red.; BOBROVA,  
Ye.N., tekhn. red.

[Album of drawings of the D12 diesel engine] Al'bom chertezhei dizelia D12. Moskva, Transzheldorizdat. Vol.1.  
[Crankcase, cylinder block, crankgear and gas distribution mechanisms, inlet and outlet manifolds, transmission mechanism] Karter, blok tsilindrov, krivoshipno-shatunnyi i gazoraspredelitel'nyi mekhanizmy, vpusknoi i vypusknoi kolektory, mekhanizm peredach. 1963. 236 p. (MIRA 17:1)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye lokomotivnogo khozyaystva.

TEREKHOV, V.M., inzh.; MURZHIN, I.I., inzh.; LEVITSKIY, A.L., inzh.;  
retsenzent; MOISEYEV, G.A., inzh., retsenzent;  
NOVOSEL'SKIY, B.S., inzh., retsenzent; DENISOVA, T.V.,  
inzh., retsenzent; YEREMEYEV, A.S., inzh., retsenzent;  
DZHAVAKHYAN, T.V., inzh., retsenzent; BOL'SHAKOV, A.S.,  
inzh., retsenzent; SHCHERBACHEVICH, G.S., inzh.,  
retsenzent; KLIMOV, N.N., inzh., retsenzent; KHARLAMOV,  
P.G., inzh., retsenzent; VIL'CHINSKIY, V.L., inzh.,  
retsenzent; KONOVALOV, S.Ye., inzh., retsenzent; MAMCHENKO,  
V.P., inzh., retsenzent; YURCHENKO, I.F., inzh., retsenzent;  
POLEKHA, A.M., inzh., red.; MEL'NIKOV, V.Ye., inzh., red.;  
KHITROVA, N.A., tekhn. red.

[Handbook for the diesel locomotive operator] Spravochnik ma-  
shinista teplovoza. Izd. 2., ispr. i dop. Moskva, Transzhel-  
dorizdat, 1963. 479 p. (MIRA 17:1)

ZASLAVSKIY, Yefim Grigor'yevich, inzh.; FORTNOY, Vladimir Isaakovich,  
inzh.; KOSHEVOY, Vladimir Ivanovich, inzh.; DUBROVSKIY,  
Vladimir Zakharovich, inzh.; KESAREV, A.F., inzh.,  
retsensent; STREL'NIKOV, S.V., inzh., retsensent; MEL'NIKOV,  
V.Ye., red.

[Repair of TE10 diesel locomotives in the roundhouse] Re-  
mont teplovozoov TE10 v depo. Moskva, Transport, 1965. 90 p.  
(MIRA 18:2)

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MEL'NIKOV, V.Ye., red.; MEDVEDEV, G.G., inzh., ~~rets~~senzent;  
MURAV'YEVA, N.D., tekhn. red.

[Maintenance and repair of TGM3 diesel locomotives in the  
depot] Remont teplovozov TGM3 v depo. Moskva, "Transport,"  
1964. 107 p. (MIRA 17:3)

MEL'NIKOV, V.Ye., red.

[Instruction for building-up and welding work in repairing locomotives (cancelling the TsT/1834 instruction of 1955)] Instruktsiia po naplavochnym i svarochnym rabotam pri remonte parovozov (v otmenu instruktsii TsT/1834 izdania 1955 g.). Moskva, Izd-vo "Transport," 1964. 214 p.  
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MIZHICHKOV, Vasilii Ivanovich; REDNIKOV, Vsevolod Anatol'yevich;  
SOBAKIN, V.V., red. [deceased]; MEL'NIKOV, V.Ye., red.

[Weight-lifting rail cranes; design, operation and repair]  
Gruzopod"emnye krany na zheleznodorozhnom khodu; ustroistvo,  
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Transport, 1964. 455 p. (MIRA 17:6)

MONAKHOV, Y.I.; KHARLAMOV, P.G., inzh., red.; MEL'NIKOV, V.Ye.,  
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KHARLANOV, Pavel Georgiyevich; KUZ'MICH, Vadim Dmitriyevich;  
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design, maintenance and repair] Vozdushnye, maslianye i  
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KRYACHKO, I.A., dots., otv. red.; PRIOROV, N.N., prof., red.; MOSHKOV, V.N., prof., red.; LETUNOV, S.P., prof., red.; SOKOLOV, A.A., vrach, zasl. master sporta, red.; LEVANDOVSKIY, L.I., red.; KUKOLEVSKIY, G.M., red.; GOTOVTSEV, P.I., red.; MEL'NIKOV, Ya.A., red.; FILIPPOVA, L.I., kand. med. nauk, red.; BEL'CHIKOVA, Yu.S., tekhn. red.

[Sports medicine; transactions of the Twelfth International Congress on Sports Medicine] Sportivnaia meditsina; trudy Mezhdunarodnogo kongressa sportivnoi meditsiny, 12th, Moscow, 1958. Moskva, Gos. izd-vo med. lit-ry, 1959. 646 p. (MIRA 14:10)

1. Mezhdunarodnyy kongress sportivnoy meditsiny, 12th, Moscow, 1958.
  2. Zamestitel' predsedatelya Organizatsionnogo komiteta i chlen ispolnitel'nogo komiteta Mezhdunarodnoy federatsii sportivnoy meditsiny (for Kryachko).
  3. Deystvitel'nyy chlen AMN SSSR i Tsentral'nyy institut travmatologii i ortopedii (for Priorov).
  4. Chlen-korrespondent AMN SSSR i Tsentral'nyy institut usovershenstvovaniya vrachey i Tsentral'nyy institut kurortologii (for Moshkov).
  5. Tsentral'nyy nauchno-issledovatel'skiy institut fizicheskoy kul'tury (for Letunov).
  6. Sektsiya futbola SSSR Vsesoyuznogo trenerskogo soveta (for Sokolov).
  7. Institut fizicheskoy kul'tury im. I.V.Stalina (for Kukolovskiy).
- Vrachebno-fizkul'turnyy dispanser no.2, Moskva (for Filippova).  
(SPORTS MEDICINE—CONGRESSES)

MEL'NIKOV, Ya.Ya.

Multipurpose printing with a 1A stamp. Stock. 1/2 x 1/2.  
22 no.1:41 Ja '65. (M) 12:

*MEL'NIKOV Ye. A.*  
TRUMBACHEV, V.F.; MEL'NIKOV, Ye. A.

Pressure distribution around development openings depending on  
their depth. Trudy Inst. gor. dela 4:37-53 '57. (MLRA 10:6)  
(Earth pressure) (Mining engineering)



AGOSHKOV, M. I., TRUMBACHEV, V. F., AND MELNIKOV, Ye. A., Mining Engr.

Analysis of Stress Conditions and the Stability of Roofs and Interchamber Pillars in Areas of the Kursk Magnetic Anomaly, p. 87 in book Problems on the Exploitation of Mineral Ore Deposits, Moscow, Izd-vo AN SSSR, 1958, 251pp.

Nearly vertically dipping, tightly folded and compressed ferruginiferous quartzites are extracted by the chamber-pillar method with permanently remaining pillars. To test the adequacy of selected dimensions for both components an analytical method for extreme equilibria and suitable tests are presented.

Ye. A. Mel'nikov

14(5) **PHASE I BOOK EXPLOITATION** 307/1944

Mezhdya nauk SSSR. Institut goruzo dela  
Naukovo problemi razrabotki i razrabotki mestorozhdeniy poleznykh  
iskopayemiy (Scientific Problems in Developing and Exploiting  
Mineral Resources) Moscow, Izd-vo AN SSSR, 1959. 333 p. 3,000  
copies printed. Ervata slip inserted.  
Besp. M.: H.V. Mel'nikov, Corresponding Member, USSR Academy of  
Sciences; M. of Publishing House: Yu.P. Vasil'yev; Tech. Ed.:  
P.S. Mashina.

**FOREWORD:** This book is intended for coal and ore mining engineers.  
**CONTENTS:** The collection of articles reports on the results of scienti-  
fic studies conducted by members of the Institute of Mining In-  
dustries of the AN SSSR. The book is divided into two parts. Part  
I discusses the development and exploitation of coal deposits. It  
trends in developing underground and surface exploitation methods.  
the scientific and principal conditions in mining determination  
tion methods for different natural conditions. It shows the  
of the basic elements in the use of modern mining equipment  
is underground development, and the preparation and exploitation  
of sections of ore deposits, the drainage and mining methods  
of exploitation of ore deposits, the drainage and mining methods  
used in underground exploitation of open pit mining method used in  
USA (Buzak Magnetic Anomaly), the determination of size of ore  
exploiting the rich KMA ores, the determination of size of ore  
and further ore dressing. The book is dedicated to Academician  
Lev Dmitriyevich Shvaykov, mining engineer. The articles are  
accompanied by diagrams, tables, and bibliographic references.

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TRUMBACHEV, V.F., kand.tekhn.nauk; MEL'NIKOV, Ye.A., gornyy inzh.

Greater use of optical methods for the study of strains in  
mining. Gor.zhur. no.7:77 J1 '60. (MIRA 13:7)

1. Institut gornogo dela AN SSSR, Lyubertsy, Moskovskoy  
oblasti.  
(Rock pressure) (Optical measurements)

TRUMBACHEV, Vladimir Fedorovich; MEL'NIKOV, Yevgeniy Andreyevich; RUP-  
PENEYT, K.V., otv. red.; RATNIKOVA, A.P., red. izd-va; IL'INSKAYA,  
G.M., tekhn. red.

[Pressure distribution in interchamber pillars and untouced blocks  
of ore] Raspredelenie napriazhenii v mezhdukamernykh tselikakh i  
potolochinakh. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gor-  
nomu delu, 1961. 102 p. (MIRA 14:9)  
(Mining engineering)

TRUMBACHEV, V.F., kand. tekhn. nauk; MEL'NIKOV, Ye.A., inzh.

Distribution of pressure in intermediate and barrier pillars.  
Nauch. soob. IGD 11:76-83 '61. (MIRA 16:4)

(Mining engineering) (Rock pressure)

MEL'NIKOV, Ye.A., inzh.

Conference on problems of rock pressure and the reinforcement  
of vertical workings. Shakht. stroi. 6 no.3:30 Mr '62.

(MIRA 15:3)

(Rock pressure--Congresses) (Mine timbering--Congresses)

TRUMBACHEV, V. F.; MELNIKOV, Ye. A.

"Distribution of Stresses in the Intervening Pillars at Medium and Steep Dips."

paper to be presented at the Intl Mineral Dressing Conf, New York City, 20-24 Sep 64.

Inst of Mining Affairs im A. A. Skochinskiy, Moscow.

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"Distribution of stresses in the intervening pillars at medium and steep dips."

Report to be submitted for the 4th Intl. Conference on Strata Control and Rock Mechanics New York, 4-8 May 1964.



TRUMBACHEV, V.F., kand. tekhn. nauk; MEL'NIKOV, Ye.A., inzh.

Using the optical method to determine deformations in pillars.  
Nauch. soob. IGD 15:99-109 '62. (MIRA 17:2)

KHESIN, Gennadiy L'vovich; BABENKOV, Igor' Sergeevich; IVANOV, Konstantin Ivanovich; MEL'NIKOV, Ye.A., otv. red.; LEDOVSKAYA, V.V., red.; IVLEVA, I.P., red.

[Stress distribution in a boring instrument and in rock;  
static and dynamic investigation by the photoelastic method]  
Распределение напряжений в буровом инструменте и породе;  
статические и динамические исследования методом фото-  
упругости. Москва, ТСентр. научно-иссл. ин-т информатсии и  
технико-экон. исследований угол'ной промышленности, 1963. 89 p.  
(MIRA 17:4)

MEL'NIKOV, Ye.A.

Study of the stressed state of pillars and measures for increasing  
their supporting power. Nauch.soob. IGD 22:56-64 '63.  
(MIRA 17 5)

IL'SHTEYN, A.M., doktor tekhn. nauk; LIBERMAN, Yu.M., kand.  
tekhn. nauk; MEL'NIKOV, Ye.A., kand. tekhn. nauk; RAKHIMOV, V.,  
kand. tekhn. nauk; RYZHIK, V.M., kand. fiz.-matem. nauk

[Methods of calculating pilars and ore blocks of chambers in  
ore deposits] Metody rascheta tselikov i potolochin kamer  
rudnykh mestorozhdenii. Moskva, Nauka, 1964. 141 p.  
(MIRA 18:3)

ACC NR: AT7002110

(A)

SOURCE CODE: UR/0000/66/000/000/0423/0432

AUTHORS: Mel'nikov, Ye. A.; Trumbachev, V. F.

ORG: none

TITLE: Principal results and trends in application of the optical method of investigating stresses in the mining industry

SOURCE: Vsesoyuznaya konferentsiya po polarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 423-432

TOPIC TAGS: stress analysis, mining engineering, optic analysis

ABSTRACT: In recent years, optical studies of stress have been made on two- and three-dimensional models representing various tunnels and other mine workings. These studies are reviewed by the authors. It is pointed out that the most convincing argument in favor of the optical method in studying the stress state in rocks is comparison of results thus obtained, using models of optically active material, with actual measurements in mines. Several figures are given to show the agreement between the two sets of data. It is concluded that the optical method is well suited to the study of rock pressure but that it has been little used because of inadequate

Card 1/2

ACC NR: AT7002120

development of techniques. The method has been used even less commonly in studying other mining problems. Objectives in developing the method should include improvement of techniques in making model studies. Primarily this involves the necessity of producing new, improved, optically active material to simulate rocks in all their various properties. The stress distribution about mine workings must be investigated in more detail in order to work out all the problems relative to optimum size, shape, and spacing of tunnels and other workings, relative to the effects at contacts with supports, relative to the stability of walls, and so forth. Photoelastic coatings may be of considerable value, but they cannot replace the function of optically active material. More experimental work and comparison with actual measurements in mines are needed. Orig. art. has: 3 figures. (W. A. 101)

SUB CODE: 20, 08/ SUBM DATE: 14Jun66/ ORIG REF: 021/ OTH REF: 005

Card 2/2

MEL'NIKOV, Yevgeniy Borisovich; CHERNIKOV, A.P., red.; BUL'DYAYEV, N.A.,  
tekh.red.

[Fight silicosis] Bor'ba s silikozom. Moskva, Gos. izd-vo med. lit-  
ry, 1957. 40 p. (MIRA 11:4)  
(LUNGS--DUST DISEASES)

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L.N.; TROYANKIN, Yu.V.; SHURYGIN, A.P.; YAGODINA, T.N.

Hydrothermal treatment of phosphates in a cyclone furnace. *Khim.*  
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1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i  
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(Phosphates)



ANDROSCVA, S.O.; APROSINA, Z.G.; BEZHODNYKH, A.A.; VERMEL', A.Ye.;  
VINOGRADOVA, O.M.; LEVITSKIY, E.R.; MAKARENKO, I.I.;  
MAKSHANOV, D.A.; POLYANTSEVA, L.R.; SUMAROKOV, A.V.;  
SHATALOV, N.N.; SHAPIRO, L.A.; TAREYEV, Ye.M., prof.,  
red.; MEL'NIKOV, Ye.B., red.

[Occupational diseases] Professional'nye bolezni; ucheb-  
noe posobie dlia studentov sanitarno-gigienicheskikh fa-  
kul'tetov. Pod red. E.M.Tareeva. Moskva, 1963 p. 223 p.  
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GOMEL'SKAYA, G.L.; KOSAGOVSKIY, I.V.; LAVROVA, I.G.; RODOV, Ya.I.;  
SOBOLEVSKIY, G.N.; TROSHINA, I.M.; FERSHTUDT, V.I.;  
SHTRAUS, Z.E.; MEL'NIKOV, Ye.B., red.

[Problems for practical work on the organization of public  
health] Zadaniia k prakticheskim zaniatiiam po organizatsii  
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zdravookhraneniya. 2. Kafedra organizatsii zdravookhraneniya  
Pervogo moskovskogo meditsinskogo instituta (for all except  
Mel'nikov).

(PUBLIC HEALTH—HANDBOOKS, MANUALS, ETC.)

1. MEL'NIKOV, Ye.F.
2. USSR (600)
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9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

MEL'NIKOV, YE. F., CAND BIO SCI, <sup>Ecology of the</sup> "ECOLOGICAL PRINCIPLES  
OF ~~GROWTH~~ INTENSIFICATION OF TENCH TINCA TINCA L IN POND  
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SPEC ED UKSSR, DNEPROPETROVSK STATE UNIV IM 300TH ANNIVER-  
SARY OF THE <sup>Union</sup> ~~REUNION~~ OF UKRAINE <sup>and</sup> ~~WITH~~ RUSSIA). (KL, 3-61,  
<sup>the</sup> 211).