

SHVARTSMAN, V. O.

PA 7/49T35

USSR/Communications
Cables, Telephone,
Telephone Lines

Aug 48

"Method for Obtaining Symmetry in Low-Frequency Coil
Loaded Operating Cables," V. O. Shvartsman, Engr,
2½ pp

"Vest Svyazi - Elektrosvyaz'" No 8 (101)

Describes method in detail with circuit diagrams and
graphs; can be carried out without interruption
of telephonic communication since frequency of cur-
rent used is above frequency limit of cable.

7/49T35

SHARAFIY, V. G.

3/111. Nekotoryye sposoby vysheniya terek' s nora nalukhaniya v vysokochastotnykh
falelyakh. Sbornik nauch. trudov (Tsentr. nauch.-issled. in-t svyazi), Vyp. 1,
1949, s. 104-19

SO: Krizhnya, Letopis' Vol. 7, 1955

SHVARTSMAN, V. G.

"Analysis of Various Methods for Making Communications Cables Symmetrical,"
Radiotekhnika, No 5, 1949.

Central Scientific Research Institute of Communications, Ministry of Communications
(TsNIIS)

SHVAL'SKIY, V. G., Engineer

June 1951 (2)

Dissertation: "Investigation of the Methods for Decreasing the Mutual Influences Among High-Frequency Circuits in Communication Cables."

16/3/50

Moscow Electric Engineering Inst of Communications

80 Vecheryaya Moskva
Sum 71

SHVARTSMAN, V. O. and MALYSHEV, V. Z.

"Raise the Quality in Design and Construction of Cable Trunk Lines," Vest.
Svyazi, No.10, 1952

Translation M-674, 27 Jul 55

Scientific worker, Candidate of Science

SHVARTSMAN, V. O.

"Determination of the Place of Damage to Insulation of Communications Cables".
One of a series of Telecommunications lectures given by experts in the scientific
research institutes and educational institutes.

SO: Vest. Svyazi, p 24, No. 6, 1952.

KULESHOV, V.N.; MALYSHEV, V.Z.; SHVARTSMAN, V.O.

[Electric measurements of intercity communication cables] Elektricheskie izmereniia mezhdugorodnykh kabelei svyazi. Moskva, Gos. izd-vo lit-ry po voprosam svyazi i radio, 1953. 234 p. (MLBA 6:12)
(Electric measurements) (Electric cables)

SHVARTSMAN, Vladimir Osipovich; KULESHOV, V.N., redaktor; KOROBOV, Yu.M.
redaktor; MOROZOVA, T.M., tekhnicheskij redaktor.

[Symmetrization of communications cables] Simmetrirovani~~e~~ kabelei
sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio. 1954.
37 p. (MLRA 8:8)

(Electric cables)

SHVARTSMAN, V.O.

USSR/Miscellaneous - Communications

Card 1/1 : Pub. 133 - 6/20

Authors : Shvartsman, V. O., Cand. of Techn. Sc.

Title : Ohmic asymmetry in communication cables, its standardization, detection and preventive measures

Periodical : Vest. svyazi 7, 13-14, July 1954

Abstract : The causes leading to ohmic asymmetry and its effect on high-and low frequency circuit communication cables are discussed. The necessity for strict adherence to fixed standards governing ohmic asymmetry in HF and LF cables is explained. Measures for detection and prevention of ohmic asymmetry during and after assembly of cables are described. Ohmic asymmetry is considered as one of the basic factors which reduces the protection of circuits against internal and external interferences. Table; graph; drawings.

Institution : Central Scientific Research Institute of Communications

Submitted : ...

SHVARTSMAN, V. O.

USSR/Engineering - Interference supression

Card 1/1 ; Pub. 133 - 12/21

Authors ; Malyshev, V. Z.; and Gorodetskaya, N. K.; Shvartsman, V. O.

Title ; A simplified method for decreasing interference effect on cables equipped with K-24 devices

Periodical ; Vest. svyazi 9, 21-22, Sep 1954

Abstract ; Theoretical and experimental studies of mutual interferences of cables carrying high-frequency currents led to an introduction of a new method which provides better non-interference of cables carrying high-frequency currents and at the same time permits speeding up the assembly of cables. Diagrams.

Institution : ...

Submitted : ...

SHVARTSMAN, V.O.

PARFENKOV, S.F.; RUKHOVETS, G.L., nachal'nik lineynogo otdela.

"Electrical measurements of interurban cablelines." V.N.Kuleshov,
V.Z.Malyshov, V.O.Shvartsman. Reviewed by S.F.Parfenkov, G.L.Rukhovets.
Vest.sviazi 14 no.4:31-32 Ap '54. (MLRA 7:6)

1. Glavnyy inshener Upravleniya kabel'noy magistrali (for Parfenkov).
(Kuleshov, V.N.) (Malyshov, V.Z.) (Shvartsman, V.O.)
(Telephone lines)

Shvartsman, V. O.

USSR/ Electronics

Card 1/1 Pub. 133 - 3/19

Authors : Shvartsman, V. O. and Levinov, K. G., Candidates of Tech. Sc. and Senior Scientific Workers, TsNIIS

Title : Concentrated symmetrization during the widening of the frequency range from 60 to 108 kc in multi-channel cables

Periodical : Vest. svyazi 4 (181), 6-8, Apr 1955

Abstract : Practical advice, based on the generalization of the experimental work, is presented. The information deals with the organization for measuring and performing the concentrated symmetrization of main cable systems with frequencies up to 108 kc.

Institution :

Submitted :

TSUPRIKOV, Aleksandr Yefimovich; SHVARTSMAN, V.O., otvetstvennyy redaktor;
USHOMIRSKAYA, M.M., redaktor; LEDEVA, N.V., tekhnicheskiy redaktor.

[Measuring underground lines from cables with polyvinyl chloride
insulation] Izmereniia na podzemnykh liniakh iz kabelei s polikhlor-
vinilovoi izolatsiei. Moskva, Gos. izd-vo lit-ry po voprosam sviasi
i radio, 1956. 26 p. (MIRA 9:6)
(Electric cables) (Electric measurements)

KAZHDAN, A.Ya.; ZAKHAROVA, N.V.; SHVARTSMAN, V.O., otvetstvennyy redaktor;
ANDREYENKO, Z.D., redaktor; SOKOLOVA, R.Ya., tekhnicheskiy redaktor

[Telephone cables with nonmetallic casing] Kabeli GTS s nemetalli-
cheskimi obolochkami. Moskva, Gos. izd-vo lit-ry po voprosam svyazi
i radio, 1956. 41 p. (MLRA 9:7)
(Telephone cables)

SHVARTSMAN, V. O.

Class 21c, ^{1.01.03} No. 10290. V. O. Shvartsman. Method of Concentrated Circuit Balancing for Broad-Band Cable Connections.

By concentrated balancing of broad-band cable circuits by means of back connection circuits it is suggested that, for the purpose of increasing the protective effect of the circuits in the wide frequency spectrum: 1) the back connection circuits are connected at the output of two filter systems, whose inputs are connected between the interference circuits of the cable, 2) the back connection circuits consist of two halves each and are connected between cable interference circuits across one system of filters.

Authors' Certificates, Elektrsvyaz' No. 9, 1956.

SHVARTSMAN, V.O., kandidat tekhnicheskikh nauk.

Main cables for multichannel communication systems. **Elektrosviaz'**
10 no.1:39-46 Ja '56. **(MLRA 9:5)**
(Telephone cables)

SHVARTSMAN, V.O.

Maintenance of gas pressure cables. Elektrosviaz' 10 no.7:72-78 J1 '56.
(Electric cables) (MIRA 9:9)

SHVARTSMAN, V.O., kandidat tekhnicheskikh nauk.

Symmetrizing cables used in frequency ranges up to 250 kilocycles
per second. Vest.svyazi 16 no.2:7-9 P '56. (MLRA 9:7)

1. Starshiy nauchnyy sotrudnik Tsentral'nogo nauchno-issledovatel'-
skiy institut svyazi.
(Telephone cables)

SHVARTSMAN, V.O., kandidat tekhnicheskikh nauk.

Coaxial cables. Vest.sviazi 16 no.5:31-33 My '56.
(Electric cables)

(MLBA 9:8)

TRANSMISSION

"Mutual Interference between Circuits of High-Frequency Cables of Symmetrical Construction", by V.O. Shvartsman, Elektrosvyaz', No 8, August 1957, pp 39-49.

Analysis of the transfer parameters and mutual interference between symmetrical cables and circuits containing irregularities. The above parameters are analyzed on the basis of the theory of active four-terminal networks with distributed parameters. Equations are derived for the input impedance of circuit irregularities and for the shielding effect in the case of interference between inhomogeneous circuits with arbitrary distribution of the couplings and of the irregularities.

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- 54 -

SHVARTSMAN, V.O., kandidat tekhnicheskikh nauk.

Technology of symmetrical communication cables for main lines.
Vest. svyazi 17 no.4:32-33 Ap '57. (MLRA 10:5)
(Electric cables)

SOV/111-58-2-7/27

AUTHOR: Shvartsman, V.O., Candidate of Technical Sciences, Senior Scientific Worker at TsNIIS

TITLE: A Pulse Method of Determining the Location of Unpaired Connections of Cable Strands (Impul'snyy metod opredeleniya mest neparnogo soyedineniya zhil kabelya)

PERIODICAL: Vestnik svyazi, 1958, Nr 2, pp 7 - 9 (USSR)

ABSTRACT: A method is described for determining the location of unpaired connections of strands in communication cables. Short electrical pulses which are recorded on the screen of a slave-sweep oscillograph are used. Figure 1 shows the arrangement of the measuring circuit. The measuring instruments "IPS-2k" or "IPU-2k" are used with some minor modifications, as suggested by Engineer N.F. Nekhoroshkov. These instruments give high accuracy but are rather bulky and are not always available. Therefore the instruments "IIL-1" or "IKL-5" may be used for measuring the cable lines of city telephone exchanges. They have smaller di-

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SOV/111-58-2-7/27

A Pulse Method of Determining the Location of Unpaired Connections of
Cable Strands

mensions and are relatively cheap. The author performed experimental measurements with the participation of the following engineers: A.P. Smirnov, TsNIIS; V.I. Lavrukhin, V.I. Novikov, and V.V. Krashevskiy, from the Moscow City Telephone Exchange. The pulse method may also be used for locating other defects in cable lines. Figure 5 shows the instrument arrangement for this purpose. There are 3 diagrams, 2 graphs and 2 Soviet references.

ASSOCIATION: TsNIIS

Card 2/2

SOV/110-58-12-10/22

AUTHORS: Pukhal'skiy, A.Ch., Candidate of Technical Sciences and
Shvartsman, V.O., Candidate of Technical Sciences

TITLE: The Principal Development Trends of Electrical
Communications, Radio Broadcasting and Television on
Cable Lines (Osnovnyye napravleniya razvitiya
elektrosvyazi, radioveshchaniya i televideniya po
kabel'nyy liniyam)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr 12, pp 38-41 (USSR)

ABSTRACT: The principal tasks for the electrical communications
industry during 1959 to 1965 are: 1) further development
of the operational network of trunk telephone channels,
which will form the basis for the transmission of
telephone, telegraph and facsimile signals; the number
of channels for the high-quality transmission of
broadcasting and television signals is also to be
increased substantially; 2) further development of
local and rural telephone networks and an increase in
the capacity of the exchanges. The present state of
cable-line communications in the Soviet Union can be
characterised by the following data. During the last

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SOV/110-58-12-10/22

The Principal Development Trends of Electrical Communications,
Radio Broadcasting and Television on Cable Lines

few years a carrier system, type K-24, operating over a bandwidth of 108 kc/s, has been introduced over a large number of trunk lines. A 60-channel version, type K-60, on a bandwidth of up to 252 kc/s is now being used and another, type K-1800, permitting the transmission of 2,000 telephone channels and television signals, is being introduced; this system has a bandwidth of 8.5 Mc/s and is suitable for the transmission of black-white as well as colour television. The 30-channel system, type KRR 30-60, operating over a bandwidth of 552 kc/s, has recently been introduced for local and short-trunk telephone networks. One of the significant achievements of the Soviet cable industry in recent years has been the introduction of cables with styroflex insulation. The use of styroflex instead of insulating paper leads to a significant economy in the use of copper. During the years 1959 to 1965 the Soviet communication engineering and cable industry has to solve a number of important tasks. The principal task of the communication cable industry is the

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The Principal Development Trends of Electrical Communications,
Radio Broadcasting and Television on Cable Lines

development and production of better and more economical cables. Attention should be paid to the expenditure on copper and lead. Economy in this field can be achieved by replacing these metals by aluminium. The adoption of aluminium sheathing seems to be practicable and can lead to a saving of 40%. Similarly, it is feasible to replace the external copper conductor of a cable by an aluminium conductor. It appears that cables with a non-metallic sheath and with plastic insulation are promising and the Soviet industry should investigate this field. A substantial economy in the production of local-network cables can be achieved by introducing star-type wire systems, instead of the usual pairs, reducing the diameter to 0.4 mm. The cable industry should commence production of such cables. No co-axial cables have been produced with the impedance characteristics necessary in trunk circuits; the deviations of the impedance from the nominal value are too large in these cables. This problem is now

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The Principal Development Trends of Electrical Communications,
Radio Broadcasting and Television on Cable Lines

being tackled and should be solved in the near future.
The development of the rural networks requires the
production of cheap l-quad cables with non-metallic
sheaths. The industry should also produce cables for
a bandwidth up to 1 Mc/s and co-axial cables for
bandwidths of up to 10 Mc/s.

SUBMITTED: 11th August 1958

Card 4/4

SOV/106-58-10-9/13

AUTHOR: Shvartsman, V.O.

TITLE: Investigation of the Interference-Stability of HF Cables
by the Pulse Method (Issledovaniye pomekhozashchishchennosti
vch kabeley impul'snym metodom)

PERIODICAL: Elektrosvyaz', 1958, ^V№ 10, pp 60 - 70 (USSR)

ABSTRACT: Inter-action in cables and aerial lines is commonly investigated by the spectral method, but in recent years the time method of analysis of the propagation of energy along lines has been developed and has found its practical application in the pulse method of measurement. A pulse method of investigation of the mutual interaction of circuits is described in Ref 1 but the authors there have limited themselves to ideal lines and idealized step functions. Furthermore, they did not consider some factors which are of fundamental importance at high frequencies, such as load mismatch, and as a result their expressions are somewhat inaccurate. In this article an attempt is made to obtain more exact theoretical conclusions and also to apply the theory to practical high-frequency cables and probe pulses only approximating to the ideal. First the author considers the spectral

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SOV/106-58-10-9/13

Investigation of the Interference-Stability of HF Cables by the Pulse Method

characteristics of the interaction (equations 1 to 6) and then, by the Laplace transform, the time characteristics for an ideal line and idealized excitation. The effects due to cable amplitude- and phase-distortions and of non-ideal pulses are next considered. The correspondence between the pulse and frequency characteristics are investigated. Experimental results are also given. It is concluded that measurement of the interaction by the pulse method permits: 1), the distribution of the electromagnetic coupling between circuits to be found; 2) the character of the energy transfer to be established and the values of its separate components to be measured; 3) the third circuit, which carries the energy transferred between the basic circuits, to be revealed;

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SOV/106-58-10-9/13

Investigation of the Interference-stability of HF Cables by the
Pulse Method

4) the stability of the circuit against interference at
high frequencies to be measured.
There are 12 illustrations and 9 references, 6 of which
are **Soviet**.

SUBMITTED: March 4, 1958

Card 3/3

SHVARTSMAN, V.O., starshiy nauchnyy sotrudnik: Prinsipali uchastiye:
KULESHOV, V.N., starshiy nauchnyy sotrudnik; MALYSHEV, V.Z.,
starshiy nauchnyy sotrudnik; KLIMOV, M.A., otv.red.;
RYAZANTSEVA, M.M., red.; KARABILOVA, S.F., tekhn.red.

[Handbook for symmetry of communication cables] Rukovodstvo
po simmetrirovaniyu kabelei svyazi. Moskva, Gos.izd-vo lit-ry
po voprosam svyazi i radio, 1959. 82 p. (MIRA 13:2)

1. Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut.
2. Kabel'naya laboratoriya Tsentral'nogo nauchno-issledovatel'skogo
instituta svyazi (TaNIIIS) (for Shvartsmen, Kuleshov, Malyshev).
(Electric cables) (Radio lines)

9 (2)
AUTHOR:

SOV, 111-29-4-8/25
Shvartsman, V. O., Candidate of Technical Sciences,
Senior Research Assistant

TITLE:

Methods of Obtaining a High Interference Protection of
Symmetric Cable Circuits in a Wide Frequency Range
(Metody polucheniya vysokoy pomekhozashchishchennosti
tsepey simmetrichnykh kabeley v shirokom spektre chastot)

PERIODICAL:

Vestnik svyazi, 1959, Nr 4, pp 7 - 9 (USSR)

ABSTRACT:

Soviet industry produces a great quantity of symmetrical high-frequency cables with different types of insulation. The quality of the symmetrical cable determine the characteristic of the cable line, and thereby the frequency range. Finally, it influences the profitableness of a communication line as a whole. During past years, investigations were conducted to find the causes of interference between communication circuits. It was established that one of the most frequent reasons for interference with high-frequency cables is the influence of the third circuit in quadded cables. Since the influence of the third circuit rises by the square of the frequency, it is

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SOV. 111-59-4-8/25

Methods of Obtaining a High Interference Protection of Symmetric Cable
Circuits in a Wide Frequency Range

especially dangerous with regard to HF cables. This influence is reduced by the transportation of wires at the connecting joints. Another reason for interference is that the equipment at the stations is not properly matched with the cables. The author points out that the interference resistance is the basis for a condensation of communication channels in a wide frequency range (more than 250 kc). There are 3 diagrams, 2 graphs and 3 tables.

ASSOCIATION: TsNIIS.

Card 2/2

AUTHOR: Shvartsman, V.O.

SOV/106-59-4-8/13

TITLE: Grouping of Circuits in High-frequency Cables as a Method of Increasing the Homogeneity of Lines (Gruppirovaniye tsepey vysokochastotnykh kabeley kak metod povysheniya odnorodnosti linii)

PERIODICAL: Elektrosvyaz', 1959, Nr 4, pp 64 - 69 (USSR)

ABSTRACT: Due to variation in their physical dimensions, different manufactured lengths of cable have slightly different electrical characteristics. When such cable lengths are joined together, energy reflections and other undesirable effects occur. The homogeneity of the lines can be improved by grouping and connecting together lengths which have the same characteristic impedances. In this article, the author considers the various methods of grouping for both coaxial and symmetrical cables containing several circuits. Three methods of grouping are considered:
1) The whole permissible range of the characteristic impedance is divided into γ groups. The characteristic impedance of the manufactured lengths are measured and the lengths grouped. Lengths having the same characteristic impedance grouping are assembled into one cable.

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Grouping of Circuits in High-frequency Cables as a Method of
Increasing the Homogeneity of Lines

- 2) The separate individual pairs in a cable are arranged in accordance with their characteristic impedances, i.e. are placed in order of increasing or decreasing value of the impedance (usually in a clockwise direction for increasing value).
 - 3) The two methods are combined. Initially the lengths are grouped and then joints are made in accordance with the values of the characteristic impedance.
- For comparison of the effectiveness of the grouping methods, the dispersion of the characteristic impedance values is used as a reference. Measurements on the Russian cable KMB-4 (containing 4 coaxial circuits) gave a normal distribution curve (Figure 1) and a dispersion of 0.35 Ω . The dispersions in the characteristic impedance obtained in the grouping methods are statistically analysed. Compared with the ungrouped results, the formulae obtained show that the first grouping method (with $\sqrt{n}=4$) reduces the dispersion 2.8 times; the second method (with four circuits per cable) reduces the dispersion 1.4 times; the third

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SOV/106-59-4-8/13

Grouping of Circuits in High-frequency Cables as a Method of
Increasing the Homogeneity of Lines

method (with $\tau = 4$ and four circuits) reduces the
dispersion 3.8 times.

Measured dispersion reductions on the Russian cable KMB-4
were somewhat lower than these figures, probably due to
distortions produced when the protective layers were added.
Candidate of Technical Sciences V.M. Shteyn advised in
this work. There are 1 figure and 4 references, 3 of
which are Soviet and 1 English.

SUBMITTED: December 3, 1958

Card 3/3

SOV/111-59-1-11/35

AUTHOR: Shvartsman, V.O., Candidate of Technical Sciences, Senior Scientific Assistant

TITLE: Cable Technology Must Be Improved (Sovershenstvovat kabel'nyu tekhniku)

PERIODICAL: Vestnik svyazi, 1959, Nr 1, p 12 (USSR)

ABSTRACT: Since the new 7-Year Plan provides that the inter-city cable network be doubled, the necessary operations should include the use of better and cheaper materials such as aluminum sheath instead of lead and plastic insulation. New methods, such as spiral quad and bunching, with cable conductors of 0.4 mm instead of 0.5 mm diameter, should be applied

ASSOCIATION: TsNIIS

Card 1/1

SHVARTSMAN, Vladimir Osipovich; SHUKHIN, N.N., otv.red.; BOGACHEVA, G.V.,
red.; KARABILOVA, S.F., tekhn.red.

[Cable inserts in overhead communication lines] Kabel'nye vstavki
v vozdushnye linii svyazi. Moskva, Gos.izd-vo lit-ry po voprosam
svyazi i radio, 1960. 81 p. (MIRA 13:6)
(Electric cables)

6.7000

26235
S/106/60/000/001/005/005
A056/A126

AUTHOR: Shvartsman, V. O.

TITLE: Attenuation of the systematic influence between the circuits of high-frequency cables

PERIODICAL: Elektrosvyaz', no. 1, 1960, 71 - 78

TEXT: The author, starting from the theorem of the three resultants on the far-end of the cable, studies the efficiency of attenuation of the systematic influence between circuits by means of crossing the wires in one of the pairs. From the work of P. K. Akul'shin et al. [Ref. 2: Teoriya svyazi po provodam. Svyaz'-izdat, 1940], the above-mentioned theorem states that the mutual influence, as it appears at the terminals of the cable, can be expressed by the sum of three influences: 1) influence operating on the first section; 2) influence operating on the second section; 3) influence operating reciprocally between those two sections. The author develops a mathematical demonstration of the theorem for a concrete arbitrary case (connections N_{13} and N_{32}). Further, he studies the influence through the third circuit by crossing one pair at the middle section, or by crossings in other places than the middle. The author's conclusion underlines the advantage of

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A056/A126

Attenuation of the systematic influence between...

crossings at every coupling-box, but, in case of material impossibility (e.g. under water), he recommends to cross the wire at the smallest number of points chosen in such a manner that the section would be divided in an even number of parts. There are 3 figures, 1 table and 6 references; 4 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: Toshio Negero. "Crosstalk in open-wire telephone circuits at carrier frequency". Nippon Electrical Communication Engineering, no. 12, 1936; Carson, Hoyt. "Propagation of periodic currents over a system of parallel wires". BSTJ, no. 7, 1927.

SUBMITTED: June 23, 1959

Card 2/2

89831

S/106/60/000/011/007/010
A055/A033

6.7660 (1063, 1524)

AUTHOR: Shvartsman, V.O.

TITLE: Selecting the Pitch of Strand of Circuits in h-f-Communication Cables.

PERIODICAL: Electrosvyaz', 1960, No.11, pp. 54-61

TEXT: To reduce intercoupling or mutual influence, circuits in h-f-cables are twisted into groups, usually in spiral quads. The now prevailing system of cable twisting and selection of the pitch of strand has, however, several important deficiencies. It had be developed for low-frequency cables and then applied, without any further investigation, to high-frequency cables, where it does not allow, for instance, to determine clearly the relationship between systematic and random intercouplings between circuits. There arises, therefore, the necessity of a more detailed analysis of systematic and random intercouplings between circuits in h-f-cables. The present article deals with this analysis and with the ensuing expedient selection of pitches of strand in h-f-cables. Only the direct mutual effect is taken

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A055/ A033

Selecting the Pitch of Strand of Circuits in h-f-Communication Cables

into consideration here, the investigation of indirect effect forming the object of a separate article. Referring to one of his previous articles (Elektrosvyaz', No.8, 1960), the author first reproduces formulae giving the cross-talk attenuation and the electro-magnetic intercoupling, and, in particular, a set of formulae allowing to calculate the systematic component of the electro-magnetic intercoupling between the circuits in h-f-cables. Using these formulae, he then analyses the effect exerted by the electro-magnetic intercoupling and, in particular, by its systematic component, at the near and far ends of the cable. As a result of this analysis, he arrives at the conclusion that the systematic component of this direct mutual effect is dangerous (both at the near and the far ends) only when conditions are approaching the critical conditions as regards the pitch of strand. This enables him to recommend a method allowing a rational selection of pitches of strand for h-f-cables. This method is described in the second part of the article, and some practical examples are given. With an expedient selection of the pitch of strand, intercoupling between the circuits of an h-f-cable

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Selecting the Pitch of Strand of Circuits in h-f-Communication Cables

will be mainly due to the random component of the direct mutual effect. The efforts of the cable manufacturers must therefore be directed at eliminating as far as possible the causes of random intercoupling. However, the indirect effect must also be taken into consideration. There are 1 figure, 3 tables and 5 references; 4 Soviet and 1 non-Soviet.

SUBMITTED: April 7, 1960.

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Card 3/3

SHVARTSMAN, V.O.

Electromagnetic couplings between twisted strands in symmetrical
high-frequency cables. 'Elektrosviaz' 14 no.8:65-73 Ag '60.
(MIRA 13:9)

(Electric cables)

SHEREMETEV, Anatoliy Vladimirovich; ZHITKEVICH, Rimma Grigor'yevna;
SHVARTSMAN, V.O., otv. red.; BOGACHEVA, G.V., red.; SLUTSKIN,
A.A., tekhn. red.

[Use of mathematical statistics methods for treating the results of
the measurement of electrical characteristics] Obrabotka rezul'tatov
izmerenii elektricheskikh kharakteristik metodami matematicheskoi sta-
tistiki. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1961.
36 p. (MIRA 14:11)

(Information theory)

PHASE I BOOK EXPLOITATION

SOV/5267

Grodnev, I. I., A. N. Gumelya, M. A. Klimov, K. Ya. Sergeychuk, and
V. O. Shvartsman

Inzhenerno-tekhnicheskii spravochnik po elektrosvyazi; kabel'nyye i
vozdushnyye linii svyazi (Engineering and Technical Manual in
Electrocommunication; Cable and Overhead Communication Lines)
[Moscow] Svyaz'izdat, 1961. 558 p. 15,000 copies printed.

Resp. Ed.: K. Ya. Sergeychuk; Ed.: G. V. Bogacheva; Tech. Ed.:
G. I. Shefer.

PURPOSE: This manual is intended for technical personnel engaged in
planning, building, and operating electrocommunication lines, and
for students in communication schools of higher technical educa-
tion.

COVERAGE: The manual reviews the systems of arrangement and opera-
tion of intercity communication lines. Construction data and
detailed electrical characteristics of symmetrical and coaxial

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Engineering and Technical Manual (Cont.)

SOV/5267

cables and overhead lines are given for a broad frequency spectrum. The book contains the basic definitions and engineering calculation formulas for transmission parameters and for the effect of various types of lines. Problems of protection of communication lines from mutual effects (transposition, balancing, shielding) are examined. Electrical measurements and protective measures against the influence on communication lines of power lines and atmospheric electricity are described. Basic reference data are given for the planning, construction, and operation of intercity electrocommunication lines. No personalities are mentioned. There are 50 references, all Soviet.

TABLE OF CONTENTS:

Foreword

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PART I. CABLE COMMUNICATION LINES

Ch. I. Systems of Construction and Operation of Intercity
Cable Communication Lines

Card-2/12

LAKERNIK, R.M.; SHARLE, D.L.; SHVARTSMAN, V.O.

Survey of the general trends in the development of long-distance
and municipal wire communications technology. Elektrosviaz' 15
no.6:62-67 Je '61. (MIRA 14:6)

(Telegraph lines)
(Telephone lines)

SHVARTSMAN, V.O.

"Shielding of equipment and communication lines" by I. I. Grodnev
and K. IA. Sergeichuk; reviewed by V. O. Shvartsman. *Elektrosviaz'* 15
no.6:71 Je '61. (MIRA 14:6)

(Shielding (Electricity))

(Grodnev, I. I.)

(Sergeichuk, K. IA.)

SHVARTSMAN, V.O., kand.tekhn.nauk

Combination method for measuring the shielding of underground
and overhead communication networks. Vest. svyazi 21 no.4:12-13
Ap '61. (MIRA 14:6)

1. Nachal'nik laboratorii Tsentral'nogo nauchno-issledovatel'skogo
instituta svyazi.

(Shielding (Electricity))
(Telephone lines)

LYUBIMOV, K.A.; MAKHOV, Yu.V.; NAZAR'YEV, O.V.; YARMAK, M.I.;
SHVARTSMAN, V.O., ~~otv. red.~~; VOLODARSKAYA, V.Ye., red.;
~~CHURAKOVA, V.A.,~~ tekhn. red.

[Telephone and wire broadcasting cables with polychlorovinyl
and polyethylene insulation] Kabeli dlia sel'skoi telefonnoi
sviazi i radiofikatsii s polikhlorvinilovoi i polietilenovoi
izoliatsiei. Moskva, Sviaz'izdat, 1962. 42 (MIRA 16:8)

(Electric cables) (Polyethylene)

SHVARTSMAN, V.O.; STRUYKINA, N.S.

Protection of balanced cable networks from side flow.
Elektrosviaz' 17 no.6:49-56 Je '63. (MIRA 16:7)

(Telephone lines)

KULESHOV, Vasilii Nikolayevich; SHVARTSMAN, Vladimir Osipovich;
FROLOV, P.A., otv. red.; BOGACHEVA, G.V., red.; BATRAKOVA,
T.A., red.

[Electrical measurements of long-distance cable lines]
Elektricheskie izmereniia mezhdugorodnykh kabelei sviazi.
Moskva, Izd-vo "Sviaz'," 1964. 263 p. (MIRA 17:5)

SEBASTYAN, I.I.; GOMEL'NYA, E.N.; KILKOV, E.A.; SERGEEVICHUK, A.Ya.;
SHVARTSMAN, V.D.; BUDZINA, E.G., red.; VOLDOVICHUK, V.Ye., PSI.

[Engineering and technical manual on electrical communication; cable and overhead communication lines] Inzhenerno-tekhnicheskii spravochnik po elektrosviasi; kabl'nyye i vozdukhnyye lini svyazi. 2i.2, perer. i dop. Moskva, Svyaz', 1964. 631 p. (MIR 17:11)

ZHUKHOVITSKIY, A.A.; TURKEL'TAUB, N.M.; SHVARTSMAN, V.P.; SHLYAKHOV,
A.F.; Primali uchastiye: NOVIKOVA, L.G.; KORNELIYUK, L.G.

Diffusion of frontal zones and the calculation of the composition
of mixtures in gas carrier-free chromatography. Dokl. AN SSSR
156 no. 3:654-657 '64. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy
geokhimii i geofiziki. Predstavleno akademikom P.A.Rebinderom.

USSR/Chemistry - Hydrocarbons;
Chromatography

Dec 53

SHVARTSMAN, I. I.

"Separation of Hydrocarbon Mixtures By the Chromathermographic Method," N. M. Turkel'taub, V. P. Shvartsman, T. V. Georgiyevskaya, O. V. Zolotareva, A. I. Karymova, Inst of Geophys and Geochem Methods of Prospecting, Moscow

Zhur Fiz Khim, Vol 27, No 12, pp 1827-36

Describes a new procedure for chromatographic separation (cf DAN SSSR, Vol 77, No 3, pp 435-8, 1951) in which an alternating temp gradient is established

275T13

by means of an electric furnace which is moved along the column. By raising the temp of the trailing boundaries of chromatographic layers, desorption at these boundaries is facilitated and the layers are compressed. More precise sepn is achieved thereby, so that industrial application is easier. The method works well on seven-component mixts. Application on gas mixts and the theory of the method are described. Heats of adsorption of ethane, propane, and butane were detd with the aid of the method and accurate values obtained.

SHVARTSMAN, V. P.

USSR/Chemistry - Physical chemistry

Card 1/1 : Pub. 147 - 6/22

Authors : Zhukhovitskiy, A. A.; Turkel'taub, N. M.; and Shvartsman, V. P.

Title : On the theory of chromatography

Periodical : Zhur. fiz. khim. 28/11, 1901-1909, November 1954

Abstract : The factors leading to blurring of the spectral band during chromatography are discussed. An analysis of special experiments led to the conclusion that the basic factor resulting in blurring of the adsorbate band in the investigated zone of concentration is the linear (longitudinal) diffusion. The coefficients of such linear diffusion were calculated. It was established that the utilization of narrow adsorption tubes and fine granulation brings about a considerable reduction in band blurring. Six USSR references (1947-1954). Tables; graphs.

Institution :

Submitted : January 26, 1954

SHVARTSMAN, V. P.
USSR/Physical Chemistry

Card 1/1

Authors : Zhukhovitskiy, A. A., Turkel'taub, N. M., Vagin, E. V., and Shvartsman, V. P.

Title : Blurring of bands during chromatographic and thermal separation

Periodical : Dokl. AN SSSR, 96, Ed. 2. 303 - 306, May 1954

Abstract : Report offers a theory and experimental data pertaining to chromatographic and thermal separation. It is shown that, at the assumed rates of the gaseous mixture, the basic factor leading to blurring of bands is the linear diffusion at greater rates with sorption as the finality. Report also contains data on the verification of the theory and calculation (from experimental values) of constants which characterize this phenomenon. Three USSR references. Tables; graphs.

Institution : All-Union Scientific-Research Geological-Exploratory Petroleum Institute

Submitted : February 1, 1954

5(?)

AUTHORS:

Garnova, T. G., Zlotnikov, L. Ye., SOV/32-25-2-15/78
Moshinskaya, M. B., Paradzhanova, N. G.,
Shvartsman, V. P.

TITLE:

The Testing of Chromathermographic Gas Analyzers (Ispytaniya khromatermograficheskikh gazoanalizatorov)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 157-159 (USSR)

ABSTRACT:

The operation of the thermodynamic gas analyzer KhT-2 and the universal chromathermographic setup of the KhT-3 model was tested. Both apparatus have already been described in another paper (Ref). The KhT-2 model was used to analyze the discharge of the propane column of a gas fractionating unit. It is fully automated, and it has been possible to carry out 1193 analyses in 68 days with this apparatus. The universal chromathermograph KhT-3 was used in the central laboratory of the Moscow Petroleum Processing Plant (see Ass.). Parallel determinations were carried out with the Podbil'nyak apparatus which is in general use (Tables 1,2). The investigation results are in good agreement. The advantage of the KhT-2 apparatus is, however, that the saturated and unsaturated hydrocarbons up to C₄, including the butane isomers can be determined with it in

Card 1/2

The Testing of Chromathermographic Gas Analyzers

SOV/32-25-2-15/78

one operation, while the KhT-3 apparatus in addition to the saturated and unsaturated hydrocarbons also permits the determination of all butane, butylene, pentane, and anylene isomers (15-20 components). In the investigations at the Moscow Petroleum Refining Plant the authors were assisted by L. P. Zhigacheva, T. V. Krasnova, I. P. Lentishchev, V. V. Naumova, A. A. Osaulenko, S. E. Simongau, A. V. Pupkov, S. Sadkov, and B. V. Alekseyev. There are 1 figure, 2 tables, and 1 Soviet reference.

ASSOCIATION: Moskovskiy neftepererabatyvayushchiy zavod (Moscow Petroleum Refining Plant)

Card 2/2

SHVARTSMAN, V.P.

~~Derivation of the equation for thermal adsorption by the chromatographic method. N. M. Turkel'taub, V. P. Shvartsman, V. V. Naumova, and A. A. Zhukhovitskiy. *Zh. Fiz. Khim.* 30, 417-23(1956).—A chromatographic method is described for detg. the equation from nonequil. data. In the absence of longitudinal diffusion and under stationary conditions, the expression $ac = w$ is valid, where a is the linear flow velocity, w the adsorption wave velocity, c the concn., and a the extent of adsorption. At the adsorption max. $a = c_{max}/\gamma$, where $\gamma = w/a$. The heats of adsorption and the adsorption isotherms of butane calcd. for 4 temps. agreed well with results obtained by the dynamic method.~~

~~W. M. Sternberg~~

f 5
 [Handwritten initials and scribbles]

ZHUKHOVITSKIY, A.A.; SEMENKOVA, N.S.; TURKIL'TAUB, E.M.; SHVARTSMAN, V.P.;
SHELYAKHOV, A.F.; SMIRNOVA, I.A.

Chromatography without gas carrier and the phenomenon of adsorption substitution. Zav. lab. 30 no.11:1308-1313 '64
(MIRA 18:1)

SHVARTSMAN, V.Ya.

Apparatus for mixing samples for the spectral analysis. Khim.
prom. [Ukr.] no.1s68-69 Ja-Mr '63 (MIRA 17s7)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR,
laboratorii v Odessa.

SHVARTSMAN, Ya. (g. Riga).

Notes on educational work. Kryl. rod. 8 no.4:7-9 Ap '57.

(Riga--Military education)

(MLRA 10:6)

SHVARTSMAN, Ya.

Discussing acute and disturbing problems. Sov. profsoiuzy 4
no. 11:22-25 N '56.

(MLRA 10:1)

(Omsk--Housing)

FEDOSOV, V.; SHVARTSMAN, Ya.

Pages from the life of Grigorii Gul'tiaev. Kryl. rod. 14,
no.12:9-11 D '63. (MIRA 17:2)

SOV/85-58-9-14/33

AUTHOR: Shvartsman, Ya.

TITLE: Winged Courier (Krylataya estafeta)

PERIODICAL: Kryl'ya rodiny, 1958, Nr 9, pp 12-13 (USSR)

ABSTRACT: The author describes the training years of a young flying cadet, Aleksey Smovdarev, whom he first met on the occasion of the latter's first take-off in a jet fighter plane from the airfield of the Borisoglebskoye ordena Lenina Krasnoznamennoye voyennoye aviatsionnoye uchilishche imeni V.P. Chkalova (Borisoglebsk Order of Lenin Red Banner Military Aviation School imeni V.P. Chkalov). The history of the famous school, the foremost in the country and alma mater of numerous hero pilots, is briefly reviewed and many of its graduates are mentioned. Among them are the chief of flying instruction, fighter pilot Boris Borisovich Glinka, Hero of the Soviet Union;

Card 1/2

SHVARTSMAN, Ya.

Courage. Kryl.rod. 10 no.3:16 Mr '59.
(Kalabushkin, Ivan Nikolaevich)

(MIRA 12:4)

SHVARTSMAN, Ya.

Force of competition. Kryl. rod. 12 no.4:3-4 Ap '61.

(MIRA 14:7)

(Kirov—Aeronautics as recreation)

SHVARTSMAN, Ya.

Always ahead. Kryl.rod. 12 no.9:8-9 S '61.
(Parachuting)

(MIRA 14:9)

SHVARTSMAN, Ya.

After the landing. Kryl. rod. 14 no.8:14-15 Ag '63.
(MIRA 16:8)
(Nikolaev, Andriian Grigor'evich, 1929-)

FEDOSOV, V.; SHVARTSMAN, Ya.

They have to chart the courses in the sky. Kryl. rod. 15 no.7:12..13 J1
'64. (MIRA 18:1)

SHVARTSMAN, Ya (Magnitogorsk)

They are from "Magnitka". Kryn. rod. 15 no.10:2-3 0 '64
(MIRA 18:1)

SHWARTSMAN, Ya. (Gor'kiy)

Along the beaten track. Kryl. rod. 15 no.3:22-23 M. '64.
(MERA 13:8)

SHTIL'MAN, L.Z.; SHVARTSMAN, Ya.M.

Geophysical field equipment, Razved. i prom. geofiz. no.16:42-44
'56. (MIRA 10:8)

(Prospecting--Geophysical methods)

SHVARTSMAN, Ya. N. 18

CA

Treating of Ural pyrites by the Norwegian "orkin"-method. Ya. N. Shvartsman. *Trotskye Metal.* 13, No. 12, 46 (1938); *Chem. Zvezdy*, 1940, II, 3684. —Hitherto, Ural pyrites were used mainly for manufacturing H_2SO_4 , and only a small fraction of it was utilized in the metallurgical industry. Treating pyrites by the "orkin" process, whereby the pyrite is fused in a special, water-jacketed oven to produce a mineral which is then fused again to yield a Cu-rich product is proposed. In both stages, com., elementary S is obtained. The yield of Cu is 85, of S 70-80%. Au and Ag are also obtained. M. Hoach

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

GENERAL INDEX

SYMBOLS

NUMERICAL INDEX

COMMON SYMBOLS

ALPHABETICAL INDEX

SYMBOLS

NUMERICAL INDEX

COMMON SYMBOLS

ALPHABETICAL INDEX

PROCESSES AND PROPERTIES INDEX

9

24

Experimental briquet smelting at the Biava experimental works. Ya. N. Shvartsman. *Tsvetnye Metally*, 1939, No. 6, 803; *Chem. Zentr.* 1940, I, 782. Ores consisting of pyrite, chalcopyrite, chalcantite and some melanterite were freed of particles less than 1 mm in size and pressed into briquets using limestone as binder. Increased efficiency was obtained when these briquets 43.5%, ore 43.5%, SiO₂ 9.8% and CaCO₃ 3.2% along with coke fines 0.6% were treated in a water-jacketed furnace according to the Orkla process. H. E. W.

A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SHVARTSMAN, Ya.N., inzhener.

Redesign of multiple hearth roasters with boiling fuel beds.
TSvet. met. 29 no.8:76-77 Ag '56. (MLRA 9:10)

1. Zavod "Elektrotsink."
(Zinc--Electrometallurgy) (Electric furnaces)

137-58-5-8799

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 10 (USSR)

AUTHOR: Shvartsman, Ya. N.

TITLE: A Heat-resistant Bottom for Furnaces Employed for FluoSolids Roasting in a Boiling Layer (Podina pechey dlya obzhiga v ki-pyashchem sloye)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 11-12, pp 48-51

ABSTRACT: A description of a sectional furnace bottom being employed at the present time and consisting of metallic perforated plates lined with refractory concrete. Diagrams showing the arrangement of the sections and the methods of bracing the bottom sections of a rectangular furnace are given, together with a diagram showing the procedure of sealing the tuyere nozzles into the refractory concrete.

A. Sh.

1. Furnaces--Design 2. Refractory materials--Applications

Card 1/1

SOV/136-58-10-18/27

AUTHOR: Shvartsman, Ya.N.

TITLE: Jacketed Vertical Gas Pipes of Fluidised-bed Roasters for Zinc Concentrates (Kessonirovannyye gazokhody (stoyaki) pechey dlya obzhiga tsinkovykh kontsentratov v kipyashchem sloye)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 10, pp 78 - 80 (USSR)

ABSTRACT: Modern fluidised-bed roasters have the gas pipes connected to the side rather than the roof and have a multiplicity of pipes to enable cleaning to be effected without stopping the roaster (Figure 1). The pipes are often water-jacketed with concentric pipes except their lower parts which end in a dust-catching cone. For cleaning the pipes the author favours the latest practice at the "Elektrotsink" Works where electric vibrators (type I-7 made by the Krasnyy Mayak Works) are used. One of the roasters at the works has been equipped with four jacketed gas pipes providing considerable flexibility for cleaning and maintenance (Figure 2). As examples of poor arrangement of the pipe-roaster connection, the author cites Nr 8 furnace at the Ust'-Kamenogorsk Lead-zinc Combine and that at the "Ukrtsink" Works. In Nr 2 roasting shop at the Ust'-Kamenogorsk Combine, the pipes are cooled by the passage of air (30 000 m³ per hour) through the pipe

Card1/2

SOV/136-58-10-18/27

Jacketed Vertical Gas Pipes of Fluidised-bed Roasters for Zinc Concentrates

jacket with provision for external water sprays; unsatisfactory pneumatic vibrators are provided. At the Elektrotsink Works the hot water is used as boiler feed. The author suggests that the use of waste-heat boilers is a problem for the immediate future; an editorial note indicates that a comparison of the various cooling systems should be effected. There are 2 figures.

ASSOCIATION: Zavod "Elektrotsink" (Elektrotsink Works)

Card 2/2

SHVARTSMAN, Yakov Naumovich; LEYZEROVICH, G.Ya., kand.tekhn.nauk,
retsensent; BABINA, I.V., inzh., retsensent; NEYMAN, M.N.,
inzh., retsensent; KUZNETSOV, N.N., inzh., red.; MISHARINA,
K.D., red.izd-va; KARASHEV, A.I., tekhn.red.

[Fluid bed roasting of zinc concentrates] Obzhig tsinkovykh
konsentratov v kiplashchem sloe; uchebnoe posobie dlia pod-
gotovki i povysheniia kvalifikatsii masterov i rabochikh.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1960. 92 p. (MIRA 13:9)
(Ore dressing) (Zinc) (Fluidization)

SIMAKOV, Boris Leonidovich, SHVARTSMAN, Yakov Samuilovich, VASIL'YEV, A.A.,
red.; KARYAKINA, M.S., tekhn.red.

[Soviet fliers in battles for the motherland; a collection of articles
from the magazine "Kryl'ya rodiny."] Sovetskie letchiki v boiakh za
rodinu; sbornik materialov zhurnala "Kryl'ia rodiny." Moskva, Izd-vo
DOSAAF, 1958. 158 p. (MIRA 11:9)
(Russia--Air Force)

SHVARTSMAN, Ya.S.

On the article "So-called dysentery carriers" by I.V. Seppi, A.M.
Pligin and M.N. Bulavskaia. Zhur.mikrobiol.epid.i immun. 30 no.7:
129-131 J1 '59. (MIRA 12:11)
(DYSENTERY) (SEPPI, I.V.) (PLIGIN, A.M.) (BULAVSKAIA, M.N.)

SHVARTSMAN, Ya., S.; BELINSKIY, V.M.

Rapid bacteriological diagnosis of enteropathogenic Escherichia coli. Report No.1: Agglutination of cultures of Escherichia coli O111:B4, O28:B6 and O55:B5 during growth in liquid media with the addition of antisera. Zhur. mikrobiol. epid. i immun. 31 no.3: 27-31 Mr '60. (MIRA 14:6)

(ESCHERICHIA COLI)
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

SHVARTSMAN, Ya.S.; SINITSYN, V.A.

Reactions of indirect hemagglutination. Zhur. mikrobiol., epid. i
immun. 32 no.9:97-102 S '61. (MIRA 15:2)
(BLOOD-AGGLUTINATION)

SHVARTSMAN, Ya.S.; BELINSKIY, V.M.; ZHAMERICHEV, S.S.; MIZRAKHI, Ya.I.

Importance of enteropathogenic intestinal bacteria in the etiology
of intestinal disorders in adults. Zhur.mikrobiol., epid. i immun.
32 no.11:139-140 N '61. (MIRA 14:11)
(INTESTINES--DISEASES) (ESCHERICHIA)

SINITSYN, V.A.; SHVARTSMAN, Ya.S.

Reaction of indirect hemagglutination with preserved erythrocytes;
preliminary report. Lab. delo 8 no.2:30-35 F '62. (MIRA 15:2)
(BLOOD_AGGGLUTINATION) (ERYTHROCYTES)

SHIBANOV, Y.I.; KASHIN, M.E.; KUYEV, A.O.

Immunological reactions of isolated cells. Report No. 1:
Antibody synthesis by single cells isolated from animals
immunized with two antigens. Zhur. mikrobiol., epid. i
immun. 41 no.16:42-47 1964. (MIRA 18:5)

Leningradskiy institut vaktain i syzerotok.

SHVARTSMAN, Ya. V.

SHVARTSMAN, Ya. V. --"Effect of Heterogeneous Hardening on the Characteristics of Friction and Wear." *(Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Tomsk State U Ineni V. V. Kuybyshev, Tomsk, 1955

SO: Knizhnaya Letopis', No. 35, 13 Jun 55

* For the Degree of Doctor of Physicomathematical Sciences

SHVARTSMAN, Ya. V. and SAVITSKIY, K. V.

"Effect of Heterogeneous Hardening on Friction and Wear Characteristics of Alloys" p. 79-85, in book Research in the Physics of Solids, Moscow, Izd-vo AN SSSR, 1957. ~~XXX~~ 277 p. Ed. Bol'shanina, M. A. Tomsk Universitet, Siberskiy fiziko-tehnicheskiy institut.

Personalities: Matsin, E. A.; Khrushchov, M. M.; Kuritsyna, A. D.; Zagrebennikova, M. P.; and Bochvar, A. A. Tested materials: Al-Cu and Cu-p alloys and steel U 12. There are 4 tables, 1 figure, and 4 references, all Soviet.

This collection of articles is meant for metallurgical physicists and for engineers of the metal-working industry. This book contains results of research in the field of failure and plastic deformation of materials, mainly of metals. Problems of cutting, abrasion, friction, and wear of solid materials. (metals) are discussed.

SHVARTSSHTEYN, Ya. V.

Using screw and belt conveyers for the removal of pyrite cinders.
Khim. prom. no.2:103 Mr '57. (MLBA 10:6)

1. Nauchnyy institut po udobreniyam i insektofungitsidam imeni
Ya. V. Samoylova.
(Pyrites) (Conveying machinery)

81518

SOV/137-59-5-10837

18.8000

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 198 (USSR)

AUTHORS: Savitskiy, K.V., Shvartsman, Ya.V.

TITLE: The Effect of the Structural Arrangement of Solid Components in
Cu-P and Al-Cu Alloys on the Intensity of Heat Generation During
a Friction Process

PERIODICAL: Sb. nauchn. tr. Tomskiy inzh.-stroit. in-t., 1958, Vol 4, pp 97-106

ABSTRACT: Information is given on the investigation by a calorimetric method into the intensity of heat generation during friction of Al-Cu (8.2% Cu) and Cu-P (0.92% P) alloys with different arrangement of solid components. Furthermore, the authors present results of investigations into hard-facing of friction surfaces as well as results of measurements of the magnitude of friction forces with changes in the slipping speed from 0.29 to 2.94 m/sec and in normal pressure from 12 to 50 kg/cm². The test was carried out on a device operating by the shaft-bearing principle under dry friction conditions. The intensity of heat generation was estimated from the amount of heat accumulated in the specimen under given friction

Card 1/2

81518

SOV/137-59-5-10837

The Effect of the Structural Arrangement of Solid Components in Cu-P and Al-Cu Alloys on the Intensity of Heat Generation During a Friction Process

conditions during 5 minutes per unit of the course. The degree of hard-facing was determined from changes in the microhardness of the plastic components of the alloys. It was stated that alloys with solid impurities in the form of a lattice around the plastic grains of solid solutions, under all the conditions of friction investigated, were less hard-faced and heated than alloys with separate inclusions of the strengthening phase. The strengthening phase in the form of a lattice reduced friction forces, not only on account of blocking the development of plastic shears, but also due to the reduced surface of the actual contact. It is pointed out that due to the qualitative correspondence in the variation of friction forces and the intensity of heat generation under various friction conditions, the calorimetric method can be brought into wider use to evaluate anti-friction of a frictional couple.

A.N.

Card 2/2

SOV/137-59-3-6331

Translation from. Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 199 (USSR)

AUTHORS: Savitskiy, K. V., Shvartsman, Ya. V.

TITLE: An Investigation of Plastic Deformations Arising From Friction Between Two Metallic Surfaces (Issledovaniye plasticheskikh deformatsiy, vznikayushchikh v protsesse treniya metallicheskoj pary)

PERIODICAL: Sb nauchn tr. Tomskiy inzh-stroit. in-t, 1958, Vol 4, pp 107-116

ABSTRACT: Plastic deformations (PD) due to friction (F) were studied on U-12 steel and on Al-Cu (8% Cu) and Cu-P (1% P) alloys, the solid constituents of which were distributed either in the form of a continuous network along the boundaries of plastic grains or in the form of isolated inclusions in a soft matrix. The experiments were conducted under conditions of dry F at a velocity of 0.29 m/sec and at specific pressures of 12-50.4 kg/cm². In studying the PD, the microhardness method was employed together with a metallographic analysis and slip-line studies. It is shown that the magnitude of the PD is a function of the parameters of F and that it is governed by the structure of the F couple. Compared with alloys

Card 1/2

SOV/137-59-3-6331

An Investigation of Plastic Deformations Arising From Friction (cont.)

having a hard network-type phase, work-hardening of the contact surfaces of specimens having isolated inclusions in their structure becomes more intense, particularly in the case of the Al-Cu alloy, as the loading is increased. Such specimens exhibit a considerably larger number of slip lines and a greater depth of PD. The presence of networks of a solid phase in cast alloys and in steel containing lamellar pearlite restricts the propagation of the slip lines. In this instance, a reduction in the depth of the PD is attributable to the destruction of this hard-phase shell.

A. N.

Card 2/2

SHVARTSMAN, Ye.B., klinicheskiy ordinator

The so-called Kirlet's disease. Vest.derm. i ven. 32 no.2:87-88
Mr-Apr '58. (MIRA 11:4)

1. Iz kliniki kozhnykh i venericheskikh holezney Chernovitskogo
meditsinskogo instituta.
(KERATOSIS)

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