"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ENGLIN, M.A.; YAKUBOVICH, A.Ya.; MAKAROV, S.P.; NIKIFOROVA, T.Ya.; LYSENKO, V.V.; DUBOV, S.S.

Heterogeneous fluorination with elementary fluorine. Part 7: Fluorination of hydrochlorides of aliphatic amines. Zhur. ob. khim. 35 no.7:1167-1171 Jl '65. (MIRA 18:8)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ENGLIN, M.A.; MAKAROV, S.P.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Heterogeneous fluorination by elementary fluorine. Part 5: Fluorination of silver and potassium thiocyanates. Zhur. ob. khim. 35 no.8:1412-1415 Ag '65.

Heterogeneous fluorination by elementary fluorine. Part 6: Fluorination of cyanuric chloride. Ibid. 1416-1418

(MIRA 18:8)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

L 32643-66 EWT(m)/EWP(j)/T WW/JW/RM

ACC NR: AP6015613 (A) SOURCE CODE: UR/0020/66/168/002/0344/0347

AUTHORS: Makarov, S. P.; Englin, M. A.; Videyko, A. F.; Tobolin, V. A.; Dubov, S. S.

ORG: none

TITLE: Reactions of hexafluorodimethylnitroxide

SOURCE: AN SSSR. Doklady, v. 168, no. 2, 1966, 344-347

TOPIC TAGS: chemical reaction, halogen oxygen nitrogen compound, fluorinated organic compound

ABSTRACT: Reactions of hexafluorodimethylnitroxide (I), which was described in an earlier paper by S. P. Makarov, A. Ya. Yakubovitch i dr. (Zhurn. Vsesoyuzn. khim. obshch. im. D. I. Mendeleyeva, no. 1, 106, 1965; DAN, 160, 1319, 1965), with ethylene, tetrafluoroethylene, acetylene, benzene, tetrafluorohydrazine, phosphorus trichloride and trifluoride, lead and tin are described. Photolysis and pyrolysis of I were also investigated. The structure of the reaction products was analyzed by means of elementary analysis, mass spectroscopy, determination of molecular weight, and by formation of derivatives. It was established that in some reactions I acts as a typical free radical, while in others as an oxidizing agent releasing its oxygen. Photolysis leads to dimerization of I, while pyrolysis at 350C results in

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L 32643-66

ACC NR: AP6015613

decomposition (I is stable at temperatures up to 200C). The authors express their gratitude to F. N. Chelobov and A. M. Khokhlov for mass spectrophotometric study of some compounds. This paper was presented by Academician I. L. Knunyants on 29 September 1965. Orig. art. has: 1 table and 17 equations.

SUB CODE: 07/ SUBM DATE: 24Sep65/ ORIG REF: 003/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

L 05870-67 EWP(j)/EWT(m) RM/WW/JW

ACC NR: AP6028898 SOURCE CODE: UR/0079/66/036/008/1419/1420

AUTHOR: Makarov, S. P.; Yermakova, I. V.; Shpanskiy, V. A.

ORG: none

TITLE: Fluorination of liquid acetonitrile with free fluorine

SOURCE: Zhurnal obshchey khimii, v. 36, no. 8, 1966, 1419-1420

TOPIC TAGS: fluorination, acetonitrile, free fluorine, fluorine

ABSTRACT: A study has been made of the fluorination of liquid acetonitrile with free fluorine rarefied with nitrogen. The reaction was conducted at 10—15C with vigorous agitation. There were no flares or explosions. Hydrogen fluoride formed in the reaction slowed down fluorination and had to be bound with sodium fluoride. The reaction products were fluoroacetonitrile, difluoroacetonitrile, N-fluoro-1,1-difluoroethylenimine, and N,N-difluoro-1,1-difluoroethylamine. The reactions can be represented as follows:

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L 05870-67

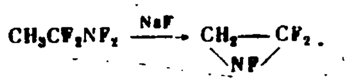
ACC NR: AP6028898

$$CH_3CN \xrightarrow{F_2} [CH_3CF{=}NF] \xrightarrow{F_2} CH_3CF_2NF_2,$$

$$CH_3CN \xrightarrow{F_2} CH_2FCN + HF.$$

$$CH_2FCN \xrightarrow{F_2} CHF_2CN + HF.$$

The cyclic product could have been formed by dehydrofluorination of N,N-difluoro-1,1-difluoroethylamine



[BO]

SUB CODE: 07/ SUBM DATE: 17Jul65/ ORIG REF: 001/ OTH REF: 004

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Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

[redacted]

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

86038

S/020/60/135/003/020/039
B019/B077

6.8000 (3201, 1099, 1162)

AUTHORS: Brekhovskikh, L. M., Corresponding Member of the AS USSR, Yevtushenko, V. A., Makarov, S. S., and Pisarenko, V. F.

TITLE: Vertical Profile of Sound Propagation Velocity in the Ocean

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 581-583

TEXT: The authors describe a new method of determining the sonic velocity in dependence of the depth of the ocean, using the so-called "characteristic points". The ocean depth is divided into a certain number of layers, taking their physical and chemical characteristics into account. Each curve which characterizes the mutual dependence of sonic velocity and ocean depth is approximated by a broken line, where the dc/dz gradient is constant within each individual layer (c is the sonic velocity, z is the ocean depth). The salient points of this curve are the characteristic points in the c-z plane, for which the mean depth and the sonic velocity are determined. By changing in time the curve c = c(z), a family of curves is obtained which describe the actual conditions much better especially

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86038

Vertical Profile of Sound Propagation Velocity in the Ocean

S/020/039
B019/B077

when there are sharp deviations of the dc/dz gradient. The new method is advantageous through these parameters used to analyze acoustic processes. The authors were able to determine two types of vertical distributions of the sonic velocity in a 10 degree square of the North-west Atlantic. The warm Gulfstream influences the first distribution type and can be divided into five layers. The cold Labradorstream influences the other distribution type and can be divided into four layers. Fig. 2 shows both distribution types. The authors thank V. Ya. Tolkachev, G. I. Merinova, N. P. Markova, and N. A. Smirnova for the calculations done. The Gosudarstvennyy okeanograficheskiy Institut (State Institute of Oceanography) is mentioned. Legend to Fig. 2: A is the first type of the velocity distribution and B the second. There are 2 figures and 4 Soviet references.

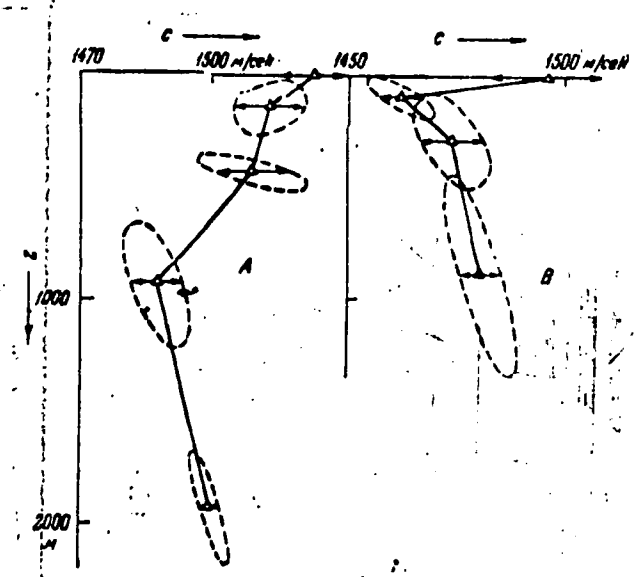
ASSOCIATION: Akusticheskiy institut Akademii nauk SSSR (Institute of Acoustics of the Academy of Sciences, USSR)

SUBMITTED: August 20, 1960

Card 2/3

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9



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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

BLAGOVESHCHENSKAYA, N.M.; ZARUBINA, L.V.; KONDRATENKO, V.F.; MAKAROV, S.V.; MESHCHANNIKOVA, M.F.

Natural focus of Leptospira hebdomadis infections in Rostov Province. Zool. zhur. 40 no.10:1457-1460 O '61. (MIRA 14:9)

1. Rostov-on-Don Institute of Epidemiology, Microbiology and Hygiene.
(ROSTOV PROVINCE--LEPTOSPIROSIS)
(RODENTS AS CARRIERS OF DISEASE)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

The theory of series. Trudy IAFAN SSSR. Ser. fiz. no.4:157 '62. (MIRA 15:12)
(Mathematical statistics)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ACCESSION NR: AP4009782 S/0065/64/000/001/0023/0026

AUTHORS: Man'kovskaya, N.K.; Udovenko, S.A.; Makarov, S.V.

TITLE: Synthetic fatty acids prepared by carbon dioxide decomposition of soaps

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1964, 23-26

TOPIC TAGS: monocarboxylic acids, dicarboxylic acids, soap decomposition, synthetic fatty acids

ABSTRACT: Decomposition of technical soaps by carbon dioxide under pressure (not described) permits the preparation of synthetic fatty acids different from the commercial grades prepared by distillation. The reason for this difference is the concentration in the first fraction of all unsaponified compounds left after thermal processing; all dicarboxylic acids concentrate in the last fraction. To demonstrate the results of soap decomposition by carbon dioxide, the SZhK and ZhK technical soaps made by the Shebekinskiy Kombinat, were treated in an experimental installation in three steps, pro-

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ACCESSION NR: AP4009782

ducing five fractions without distillation. The demonstration showed that the first fraction contained 60% of C_{21}-C_{25} acids; the second- 57% C_{17}-C_{20} acids; the third - 85% C_{10}-C_{16} acids. Their purity is higher than that of commercial acids prepared by distillation. The fourth fraction is a 90% concentrate of C_7-C_{20} acids containing all resinous substances from which pure acids can be separated by distillation at 1480 and 5 mm Hg. The fifth fraction is a mixture of 35-40% monocarboxylic C_4 -C_6 acids and 50-55% dicarboxylic C_8 - C_{16} acids. These acids can be readily separated by simple distillation since the former boil up to 1200, while the latter in the 205-2450 range at 5 mm Hg. Orig. art. has 5 figures, no formulas, 2 tables.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.; SVECHNIKOV, M.A.

Observations of the Perseids in 1950. Biul.VAGO no.11:20-21 '52.
(MLRA 6:6)

1. Leningradskiy gosudarstvennyy ordena Lenina universitet imeni A.A. Zhdanova, astronomicheskiy kruzhok vtorogo kursa. (Meteors--August)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV,S.V.; SVECHNIKOV,M.A.

Outline of the earth's umbra during the lunar eclipse of September 26,1950. Uch.zap.Len.un. no.153:158-165 '52. (MLRA 8:6)
(Eclipses,Lunar--1950)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

29658
S/169/61/000/005/014/049
A005/A130

3.2100

AUTHOR: Makarov, S.V.

TITLE: Some calculations of counter telescopes. The light transmission power of a vertical telescope

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1961, 2-3, abstract 5 G 16. (Tr. Yakutskogo fil. AN SSSR. Ser. fiz., 1960, no. 3, 46-49)

TEXT: The author solves the problem of determining the absolute intensity N of cosmic rays recorded per unit time by a counter telescope. The angular distribution of radiation intensity is assumed to be $I(\theta,A) = I_0 \cos^n \theta$, where θ is the zenith angle, A is the azimuth, I_0 is the vertical intensity ($cm^{-2} sec^{-1} steradian^{-1}$). On the basis of the general solution obtained for the problem, the directivity pattern of a vertical counter telescope located 20 m below the earth's surface is calculated. The definitive expression has the form: $b(\theta,A) = I_0 \cos^{n+1} \theta . S(\theta,A)$,

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29658
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A005/A130

Some calculations of counter telescopes. The ...

where S(θ,A) is the section of the plane of the lower base of the telescope on which the cosmic rays impinge from the direction (θ,A).

[Abstractor's note: Complete translation.]

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

Probability calculations of single-pile circuits. Vych. sist. no.4:29-54 '60. (MIRA 18:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

Reliability of multi[illegible] with a small [illegible]
sist. no.5[illegible]
(MIRA [illegible])

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

TITLE: The realization of stochastic matrices by finite automatons

CITED SOURCE: Sb. Vychisl. sistemy. Vyp. 9. Novosibirsk, 1963, 65-70

TOPIC TAGS: finite automaton, Boolean logic, Markov chain, stochastic matrix, stochastic matrix algorithm

TRANSLATION: Finite automatons are discussed, synthesized from Boolean logic elements and single delays. If the random vector of inputs at time t does not depend upon the information referring to the preceding time moments, then the sequence of automaton states will form the homogeneous Markov chain

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depend upon the information referring to the preceding time moments, then the sequence of automaton states will form the homogenous Markov chain characterizing some stochastic matrix of transient probabilities. The given finite automatons will relize this stochastic matrix. It is assumed that each input fed at any

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25251-65

ACCESSION NR: AR5000893

time moment with equal probability will take on the values 0 and 1. The stochastic matrices $A = (p_{ij})$ are discussed, for each of which there exists a number m such that $p_{ij} = b_{ij} / 2^m$ for all i, j, where all $b_{i,j}$ are integer numbers. The algorithm is presented which will afford construction of the class of automatons to realize any such stochastic matrix. V. Marty*nyuk

SUB CODE: MA, DP ENCL: 00

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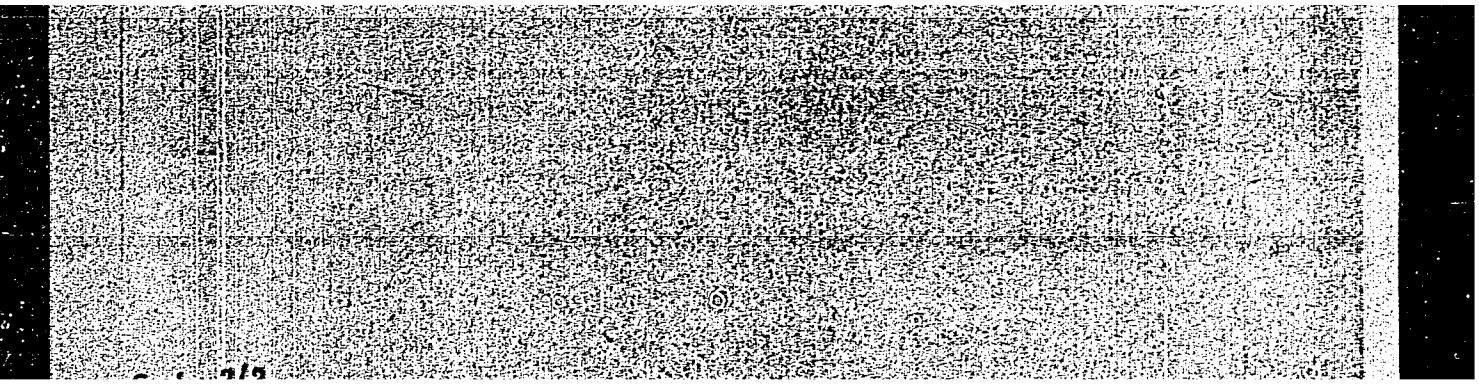

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

Upper bound of the mean length of a disjunctive normal form.
Disk. anal. no.3:78-80 '64. (MIRA 18:9)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

Probability calculation of multicycle systems. Vych. sist. no.13: 3-21 '64.

Peak reliability of simple-cycle systems. Ibid.:22-32

(MIRA 18:2)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAN'KOVSKAYA, N.K.; UDOVENKO, S.A.; MAKAROV, S.V.

Synthetic fatty acids obtained with the method of soap decomposition by carbonic acid. Khim. i tekh. topl. i masel 9 no.1:23-26 Ja '64. (MIRA 17:3)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

L 5055-66 EWT(d)/T IJP(c)

ACCESSION NR: AP5024538 UR/0378/65/000/004/0031/0037
512.932

46
B

AUTHOR: Makarov, S. V.

TITLE: Complexity estimate of the chopping algorithm 16,4455

SOURCE: Kibernetika, no. 4, 1965, 31-37

TOPIC TAGS: cybernetics, finite automaton, Boolean function, algorithm, probability

ABSTRACT: In a study of the structural reliability of finite automatons and of some other continuously acting devices the problem of finding the probability for the transformation of the Boolean function $f(X_1, \ldots, X_n)$ into unity is often encountered. Here all the arguments of the function are random quantities with a known probability distribution. For the solution of this problem the author proposed earlier the so-called "chopping algorithm" (Vychislitel'nyye sistemy, no. 4, Novosibirsk, 1962) which essentially takes the original Boolean function in its orthogonal-nonrepetitive form (ONF) and for each term of this form finds the probability of its conversion into unity. Subsequently, these separate probabilities are combined into the solution of the entire problem. The simplicity of all the necessary calculations is determined basically by the properties of the

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ACCESSION NR: AP5024538

orthogonal-nonrepetitive forms. However, there exist difficulties connected with the chopping algorithm due to the number of ONF terms contained in a particular Boolean function. To estimate the complexity of such an algorithm the present author calculates the mathematical expectation E of the number of terms M in the ONF version of the original function. Extended calculations presented in this paper lead to the result $E(M) \approx 0.235 \cdot 2^n$

with a relative error not exceeding 0.001. The article concludes with an application of the chopping algorithm to monotonic functions. Orig. art. has: 57 formulas, 3 figures, and 2 tables.

ASSOCIATION: none

SUBMITTED: 18Jan65 ENCL: 00 SUB CODE: DP, MA

NO REF SOV: 006 OTHER: 000

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V.

Topological evaluation of the memory capacity of a multitact system.
Probl. pered. inform. 1 no.2:108-111 '65. (MIRA 18:7)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAN'KOVSKAYA, N.K.; PONOMARENKO, I. Ya.; UDOVENKO, S.A.; MAKAROV, S.V.; KHLUD, M.L.

New method for separating and dividing synthetic fatty acids into fractions. Khim. i tekh. topl. i masel 9 no.6:52-57 Je'64 (MIRA 17:7)

1. UkrNIIgipronefť i Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut sinteticheskikh zhirozamenitelej.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S.V., assistent

Clinical observations on the use of some therapeutic pastes in the treatment of deep caries. Vop. obshchei stom. 17:27-29 '64. (MIRA 18:11)

Methodology for the study of the morphological reaction of the pulp of the carious tooth to the effect of therapeutic pastes. Ibid.:35-36

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S. YA.

Mozhno li oblegchit' istrebitel'. (Tekhnika vozdushnogo flota, 1943, no. 3, p. 5-9, tables, diagrs.)

Title tr.: Is it possible to reduce the weight of a fighter?

TL504.T4 1943

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S. YA.

O priblizhennom opredelenii poletnogo vesa samoleta i ego chastei.
(Tekhnika vozdushnogo flota, 1945, no. 4, p. 8-10, 22, tables.)

Title tr.: Estimate of gross weight of an aircraft and its components.

TL504.T4 1945

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, S. Ya.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 510 - I

BOOK Call No.: AF 641131

Authors: ASTAKHOV, M. F., KARAVAYEV, A. V., MAKAROV, S. Ya., and SUZDAL'TSEV, Ya. Ya.

Full Title: HANDBOOK OF AIRCRAFT STRENGTH CALCULATIONS

Transliterated Title: Spravochnaya kniga po raschetu samoleta na prochnost'

PUBLISHING DATA

Originating Agency: None

Publishing House: State Publishing House of the Defense Industry (Oborongiz)

Date: 1954 No. pp.: 708 No. of copies: NOt given

Editorial Staff: The authors express thanks for help to the following: Shishkin, S. N., Doc. of Tech. Sci., Cheremuzhin, A. M., Prof., Doc. of Tech. Sci., Dubrovin, A. A., Kand. of Tech. Sci., Kurguzov, D. N., Eng., and Belous, A. A.

TEXT DATA

Coverage: This book is concerned exclusively with statics and does not contain problems not yet thoroughly verified in practice. The general character of the composition is entirely subordinated to the needs of engineers who start working in the field of aircraft strength calculations. Wherever it was possible, formulae were reduced through transformations or graphical interpretations to their practical form. Chapters in which new problems are considered contain more details than it should be expected from a handbook. The book contains, especially in parts 4 & 5, a comparatively large number of American and other foreign references, diagrams, graphs, tables, formulae.

On the basis of a general examination it may be stated that the book does not contain

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

unknown in the USA methods of calculation. The novelty of it consists of the compilation of methods of strength calculation which otherwise must be looked for in various handbooks, textbooks and technical periodicals.

Table of Contents

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Spravochnaya kniga po raschetu samoleta na prochnost' AID 510 - I

Purpose: This book is intended for engineers and designers; it may be useful also to students of aviation institutes of higher learning.

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Spravochnaya kniga po raschetu samoleta na prochnost' AID 510 - I

Facilities: None
No. of Russian and Slavic References: 14 before 1939, 38 after this date. A number of footnotes are given in parts 4 and 5.
Available: A.I.D., Library of Congress.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

SHEYNIN, Viktor Mikhaylovich; YAGODIN, Ye.I., inzhener, retsenzent; MAKAROV, S.Ya., inzhener, retsenzent; ZAYTSEVA, K.Ya., inzhener, nauchnyy redaktor; PETROVA, I.A., izdatel'skiy redaktor; CHISTYAKOVA, A.V., tekhnicheskiy redaktor

[Calculating aircraft centering] Raschet tsentrovki samoleta. Moskva, Gos. izd-vo obor.promyshl., 1955. 226 p. (MIRA 9:8)
(Airplanes--Design and construction)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKSIMOV, V., podpolkovnik, kand.voyennykh nauk; ORESHCHENKOV, A., kapitan; MAKAROV, S., starshiy inzhener-leytenant; GOLOVIN, P., inzhener-podpolkovnik

What do you suggest? Av.i kosm. 45 no.8:70-71 '62. (MIRA 15:8)
(Aeronautics, Military)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ANAN'YEV, Ivan Vasil'yevich; TIMOFEYEV, Pavel Grigor'yevich. Prinimala uchastiye UL'YANOVA, Yu.T.; MAKAROV, S.Ya., inzh., retsenzent; ZASLAVSKIY, B.V., kand. tekhn. nauk, red.; BURAKOVA, O.N., red.

[Vibrations of elastic systems in airplane structures and their damping] Kolebaniia uprugikh sistem v aviatsionnykh konstruktsiiakh i ikh dempfirovanie. Moskva, Mashinostroenie, 1965. 525 p. (MIRA 18:4)

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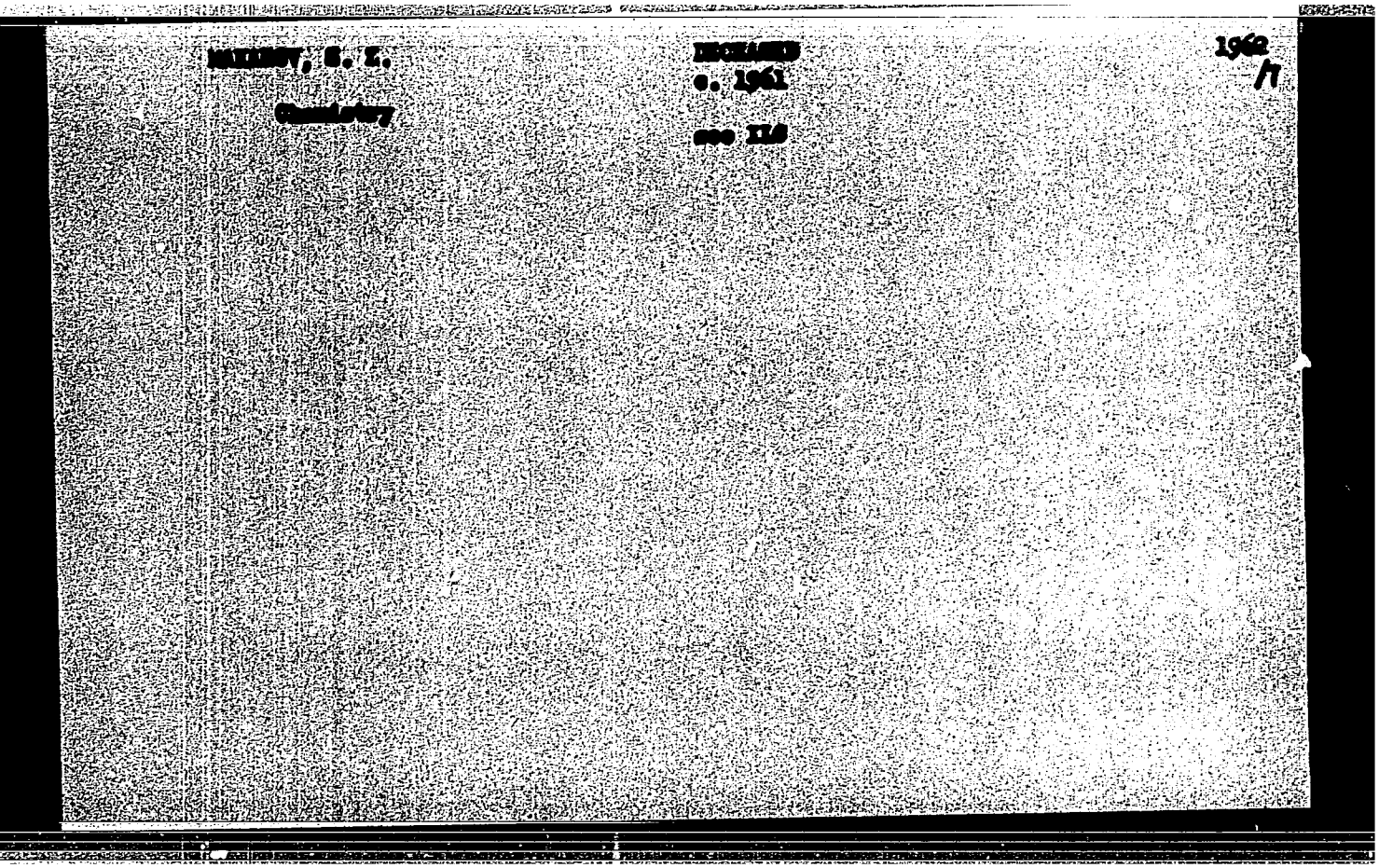

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, T.A., Inzh. (Ust'-Kamenogorsk)

Improvement of boiler [illegible] network. Energetik 13 no.5: 23-24 My '65. (MIRA 18:3)

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33?25
S/141/61/004/006/012/017
E192/E382

9.1300

AUTHORS Kuz'min, N.A. and Makarov, T.V.

TITLE Electromagnetic waves in a cross-shaped waveguide consisting of a number of sectors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 4, no. 6, 1089 - 1098 (1961)

TEXT The system considered is illustrated in Fig. 1a where the relevant geometrical parameters are indicated. Determination of fields and critical frequencies of the electromagnetic waves of E- and H-types in a regular ideally-conducting waveguide (such as shown in Fig. 1) is based on the solution of the scalar equations of the type:

$$\Delta \begin{Bmatrix} \tilde{\psi} \\ \psi \end{Bmatrix} + \begin{Bmatrix} \tilde{\varkappa} \\ \varkappa \end{Bmatrix}^2 \begin{Bmatrix} \tilde{\psi} \\ \psi \end{Bmatrix} = 0 \qquad (1)$$

with the following boundary conditions:

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Electromagnetic waves . . .

a) for magnetic waves -

$$\partial\tilde{\Psi}/\partial n\big|_L = 0 \qquad (2)$$

b) for electric waves -

$$\Psi\big|_L = 0 \qquad (3)$$

These boundary conditions apply on the contour L of the transverse cross-section S_1 of the waveguide. The operator $\hat{\ }$ in Eq (1) is the two-dimensional Laplace operator, $\tilde{\ }$ and $\ $ are eigen values of magnetic and electric waves respectively, $\underline{n}$ is the external normal to the contour the functions $\tilde{\Psi}$ and Ψ are the longitudinal components of the magnetic and electric Hertz vectors, which are related to the longitudinal field components by the following equations

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Electromagnetic waves ....

$$H_z = \tilde{\varkappa}^2 \tilde{\psi} \; ; \qquad E_z = \varkappa^2 \psi$$

and

$$\begin{Bmatrix} \tilde{\varkappa} \\ \varkappa \end{Bmatrix} = k^2 - \begin{Bmatrix} \tilde{\underline{h}} \\ h \end{Bmatrix}^2$$

where $\tilde{\underline{h}}$ and h are propagation constants of the magnetic and electric waves, respectively. It is known that the extremum functionals, whose Euler equations are in the form of Eqs. (1), are in the form:

$$\begin{Bmatrix} \tilde{\varkappa} \\ \varkappa \end{Bmatrix}^2 = \int_{S_\perp} \int \left(\nabla \begin{Bmatrix} \tilde{\psi} \\ \psi \end{Bmatrix} \right)^2 dS_\perp \qquad (4)$$

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Electromagnetic waves ...

under the conditions that:

$$\int\int_{S_\perp} \left\{ \frac{\widetilde{\Psi}}{\Psi} \right\}^2 dS_\perp = 1 \qquad (5)$$

where ∇ is the two-dimensional Hamiltonian operator. The eigen values and the eigen functions can be determined by using the Ritz method, according to which the approximate solutions are in the form of a series:

$$u_n = \sum_{i=1}^{n} a_i \varphi_i \qquad (6)$$

where a_i are unknown coefficients. The functior

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Electromagnetic waves .

φ_i (Ref. 1 S.G. Mikhlin Direct Methods in Mathematical Physics GITTL, M-L, 1950) should satisfy the boundary condition of Eq. (3). A sequence of functions of φ_i should form a complete linearly-independent system. The coefficients a_i are chosen by finding the minimum for Eq. (4) under the condition expressed by Eq. (5). First, the magnetic waves are considered and it is pointed out that the eigen value of Eq. (2) for the condition of Eq. (2) for a cylindrical waveguide is given by the first root of the equation $J_1'(x) = 0$, which is equal to $1.84/a$ where a is the internal radius of the cylinder Two degenerate magnetic waves of the H_{11} type correspond to this eigen value in a circular waveguide. The approximate solution of Eq. (6) for the quasi-H_{11} wave in a cross-shaped waveguide of Fig. 1a is therefore assumed to be in the form

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Electromagnetic waves ....

$$\psi_1 = \sum_n a_n J_n(1.84\ r/a)\left[\cos(n\varphi) - \sin(n\varphi)\right] \quad (n = 1\ 2\ 3\ \ldots)$$

On the basis of this equation, a set of graphs is constructed for the eigen value $b\varkappa_1$ of the quasi-H_{11} wave as a function of Θ or $\mu = b/a$ (for various values of μ or Θ). This is shown in Fig. 2. Similar solutions are determined for the quasi-H_{21} and H_{01} waves With regard to the critical frequency of the principal electric wave (quasi-E_{01}) this is determined by calculating the minimum non-zero eigen value of Eq. (1), subject to the conditions of Eq. (3). It is shown that the coordinate functions in this case are composed of a system of functions consisting of a product of function $\omega(r\ \varphi)$ and various combinations of trigonometric and Bessel functions

Card 6/

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E192/E382

Electromagnetic waves

$$\Psi_1 = \omega(r, \varphi)\left\{a_o + \sum_n a_{n+1} J_n(2.405r/a)\left[\cos(n\varphi) - \sin(n\varphi)\right]\right\}$$

$$(n = 0, 1, 2, 3, \ldots)$$

where $\omega(r, \varphi)$ is a continuous function having finite and continuous derivatives inside the region S_1. The coordinate functions φ_i are also determined for the quasi-E_{11} waves. The results are illustrated in some graphs and tables from which it is seen that no degeneration takes place between H_{01} and E_{11} waves in a cross-shaped waveguide. It is therefore possible to use such a waveguide for transmitting H_{01} waves in waveguide bends. There are 6 figures, 5 tables and 3 Soviet-bloc references

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E192/E382

Electromagnetic waves . . .

ASSOCIATION Tsentral nyy nauchno-issledovatel'skiy institut svyazi, Moskva (Central Scientific Research Institute of Communications, Moscow)

SUBMITTED April 15 1961

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D200/D305

9,1300

AUTHORS: Kuz'min, N.A., and Makarov, T.V.

TITLE: Electromagnetic waves in rectangular cross-shaped waveguides

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 12, 1961, 1989 - 1997

TEXT: The authors' purpose is to determine the electric and magnetic field configuration for a number of modes in the cross-shaped waveguide. The partial differential equation

$$\Delta\begin{Bmatrix}\tilde{\Psi}\\ \Psi\end{Bmatrix}+\begin{Bmatrix}\tilde{\varkappa}\\ \varkappa\end{Bmatrix}^2\begin{Bmatrix}\tilde{\Psi}\\ \Psi\end{Bmatrix}=0 \qquad (1)$$

is solved approximately with the aid of the Raleigh-Ritz method, i.e. the integral

$$\begin{Bmatrix}\tilde{\varkappa}\\ \varkappa\end{Bmatrix}^2=\iint_{S_\perp}\left(\nabla\begin{Bmatrix}\tilde{\Psi}\\ \Psi\end{Bmatrix}\right)^2 dS_\perp \qquad (4)$$

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Electromagnetic waves in ...

is minimized. In (1) and (4) $\tilde{\psi}$ and ψ stand for the transverse wave functions of the H and E modes respectively, $\tilde{\varkappa}$ and $\varkappa$ are the respective eigenvalues (cut-off wave numbers) of the above modes. The nth approximation of the wave function is written in the following form:

$$u_n = \sum_{i=1}^{n} a_i \varphi_i \qquad (6)$$

4

where the φ_i functions satisfy the boundary conditions and the a_i coefficients are chosen to satisfy the equation system

$$\sum_{i=1}^{n} a_i \left[(\nabla\varphi_i, \nabla\varphi_j) - \left\{ \begin{matrix} \tilde{\varkappa} \\ \varkappa \end{matrix} \right\}^2 (\varphi_i, \varphi_j) \right] = 0; \quad j = 1, 2, 3, \ldots, n. \qquad (7)$$

where the brackets denote scalar multiplication. For the first H mode the trial function is assumed as follows:

$$\tilde{\psi}_1 = a_1 \sin\frac{\pi x}{2a} - a_2 \sin\frac{\pi y}{2a} + a_3 \sin\frac{3\pi x}{2a} - a_4 \sin\frac{3\pi y}{2a}.$$

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Electromagnetic waves in ...

where a is the width of the waveguide (see Fig. 1). The eigenvalues resulting from the first and fourth approximations can be seen in Table 1 as a function of $\sigma = b/2a$. If $\sigma \longrightarrow 1$ this mode agrees with the sum of the H_{01} and H_{10} modes in the square waveguide. For this reason the author calls this mode a quasi-$(H_{10} + H_{01})$ mode (Fig.1a) In a similar manner the properties of a number of other modes are calculated namely quasi-H_{11} (Fig. 1b), quasi-$(H_{20} + H_{02})$ (Fig. 1c), quasi-$(H_{12} + H_{21})$ (Fig. 1d), quasi-H_{22} (Fig. 1e), quasi-$(H_{30} + H_{03})$ (Fig. 1f), quasi-$(H_{40} - H_{04})$ (Fig. 1g), quasi-E_{11} (Fig. 1h), quasi-$(E_{12} + E_{21})$ (Fig. 1i). It is shown that the eigenvalues of the H_{01} and E_{11} modes are different which suggests the possibility of using a cross-shaped waveguide for the bends of an H_{01} transmission system. There are 2 figures, 9 tables and 5 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: April 15, 1961

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34033
S/109/62/007/001/011/027
D266/D301

9.1300

AUTHOR: Makarov, T.V.

TITLE: Attenuation of electromagnetic waves due to losses in the walls of cross-shaped waveguides

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 1, 1962, 99 - 104

TEXT: The purpose of the paper is to calculate the attenuation of certain transverse electric waves in cross-shaped waveguides (both for rectangular and sectoral cross-section). The author starts the analysis by writing up the general formula (derived with the aid of Leontovich boundary conditions) for attenuating H waves in a waveguide of arbitrary cross-section

$$\beta = \frac{w}{2\tilde{h}} \frac{\tilde{h}^2 \oint_L \left| \frac{\partial \tilde{\psi}}{\partial l} \right|^2 dl + \tilde{\varkappa}^2 \oint_L |\tilde{\psi}|^2 dl}{k\tilde{\varkappa} \iint_{S_\perp} |\tilde{\psi}|^2 dS_\perp}, \qquad (1)$$

where w - wave impedance of the metal, $\tilde{h}$ - propagation coefficient,

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Attenuation of electromagnetic ...

$\varkappa$ - transverse wave number, k - wave number in free space, $S_\perp$ - cross-section of the waveguide, L - boundary of $S_\perp$, $\tilde{\Psi}$ - eigenfunction. Here $\tilde{h}$, $\tilde{\varkappa}$ and $\tilde{\Psi}$ are unperturbed quantities. The eigenfunctions and eigenvalues of a number of H modes in a rectangular cross shaped waveguide are determined by N.A. Kuz'min and T.V. Makarov (Ref. 2: Radiotekhnika i elektronika, 1961, 6, 12, 1989). The author takes the previously derived eigenfunctions, substitutes them into (1), performs the integration and gives numerical results for the quasi-$(H_{01} + H_{10})$ and quasi-$(H_{02} + H_{20})$ modes. The eigenfunctions for a sectoral cross-shaped waveguide are also determined by Kuz'min and Makarov (Ref. 3: Izv. vuzov MVO SSSR (Radiofizika), 1961 6). Substituting again into (1) the author calculates the attenuation for a quasi-H_{01} wave and concludes that the attenuation of this mode in the cross-shaped waveguide is always larger than that of the H_{01} mode in a circular waveguide. There are 3 figures and 3 Soviet-bloc references.

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ACCESSION NR: AP3004844 S/0141/63/006/003/0581/0584

45

AUTHOR: Kus'min, N. A.; Makarov, T. V.

TITLE: Propagation of quasi-H_{01} mode in a cross-shaped waveguide

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 581-584

TOPIC TAGS: cross-shaped waveguide, waveguide, H_{01} mode

ABSTRACT: This is a continuation of the authors' work (Izv. vy*ssh. uch. zav.-Radiofizika, 4, 1089, 1961). The Ritz method is again used to find a second approximation to the eigenvalue and eigen function of a quasi-H_{01} mode in a sector-cross waveguide. This data permits determining geometrical parameters of the waveguide which would ensure passing H_{01} mode with a minimum disturbance. Calculated curves serve to determine the optimum, insofar as the "purity" of the H_{01}-mode field is concerned, cross-section of the waveguide. Orig. art. has: 3 figures and 2 formulas.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

KUZ'MIN, N.A.; MAKAROV, T.V.

Propagation of a quasi-H_{01} wave in an H-shaped wave guide. Izv. vys. ucheb.zav.; radiofiz. 6 no.3:581-584 '63. (MIRA 16:9)
(Electromagnetic waves) (Wave guides)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

LYUBIMOVA, V.V., doktor ekon. nauk; NOVIKOVA, O.G., kand. ekon. nauk; SERGEYEVA, A.G., kand. ekon. nauk; IVANOV, N.P., kand. istor. nauk; OBORINA, G.A., kand. ekon. nauk; KHLYNOV, V.N., kand. ekon. nauk; DANILEVICH, M.V., doktor ekon. nauk; POKATAYEVA, T.S., kand. ekon. nauk; USOV, G.A., kand. ist. nauk; SAL'KOVSKIY, O.V., kand. geogr. nauk. Prinimali uchastiye: PESCHANSKIY, V V., kand. ist. nauk; PIROGOVA, I.M.; PRONIN, S.V.; USVYATSOV, A.Ye.; MAKAROV, V., red.; DARONYAN, M., mladshiy red.; ULANOVA, L., tekhn. red.

[Real wages during the period of the general crisis of capitalism]Real'naia zarabotnaia plata v period obshchego krizisa kapitalizma. Moskva, Sotsekgiz, 1962. 558 p. (MIRA 16:3)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy.
(Wages)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

FAYERSHTEYN, V., inzh.; MAKAROV, V., inzh.

Unit for probing soils. Na stroi.Ros. 4 no.5:12-13 Je '63. (MIRA 16:6)

(Soils—Testing)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.

Automatic control of the pumping station of the Kirovsk-Omsk Grain Elevator. Muk.-elev. prom. 27 no.7:16-17 Jl '61. (MIRA 14:7)

1. Glavnyy energetik Kirovsk-Omskogo elevatora.
(Pumping stations)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ZHDANOV, S., kand.tekhn.nauk; MAKAROV, V., inzh.; KROTOVA, O., inzh.

Device capable of seeing the invisible. Pozh.delo 9 no.7:22-23 Jl '63. (MIRA 16:10)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

PROKHOROVA, A., kand. tekhn. nauk; MAKAROV, V., kand. tekhn. nauk; GRUVICH, B., kand. tekhn. nauk; PINENOV, A., agro-khimik

Effect of the composition of coal on the quality of dried wheat. Muk.-elev. prom. 25 no.8:18 Ag '59. (MIRA 13:1)
(Wheat--Drying) (Coal)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.; PROKHOROVA, A.; PIMANOV, A.

Increasing the volume weight of grain by drying. Muk.-elev. prom. 26 no.9:12-13 S '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki (for Makarov, Prokhorova). 2. Proizvodstevenno-tekhnicheskoye upravleniye Goskhlebkomiteta (for Pimanov).
(Grain-- Drying)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V., kand.tekhn.nauk; PROKHOROVA, A., nauk.tekhn.nauk

Characteristics of the storage of pulse crop seeds. Muk.-elev. prom. 28 no.9:5-7 S '62. (MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki.
(Seeds—Storage) (Legumes)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V., inzhener-podpolkovnik; ALEKSEYENKO, V., inzhener-kapitan

Checking thermostats. Tekh. i vooruzh. no.4:34 Ap '[illegible].
(MIRA [illegible])

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V., polkovnik

The strength of the press is in party leadership. Komm. Vooruzh. Sil 46 no.6:88-92 Mr '65. (MIRA 18:11)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

VINOGRADOV, K.; MAKAROV, V.

Public inspection is mobilizing. Na stroi.Ros. 6 no.2: 19 F '65. (MIRA 19:1)

1. Zamestitel' nachal'nika tekhnicheskogo upravleniya Glavnogo upravleniya po stroitel'stvu v Moskovskom ekonomicheskom rayone Ministerstva stroitel'stva RSFSR (for Vinogradov). 2. Nachal'nik laboratorii kontrolya kachestva Glavnogo upravleniya po stroitel'stvu v Moskovskom ekonomicheskom rayone Ministerstva stroitel'stva RSFSR (for Makarov).

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.

25790 Makarov, V.A. O Nekotorykh Voprosakh Organizatsii Meditsinskoy Pomoshchi Invalidam Otechestvennoy Voyny. V Sb: Problemy Vosstanovit. Lecheniya Invalidov Otechestv. Voiny. Astrakhan', 1948, S. 5-11.

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

[illegible]

"Application of Certain [illegible] of [illegible] Clinical Practice [illegible] of Physicians, 1[illegible] Dissertation [illegible]

[illegible] 1[illegible], 19 Aug [illegible]

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MAKAROV, V.A., kandidat meditsinskikh nauk

Effect of physical stress on arterial tonus in athletes. Sov.med 19 no.6:44-49 Je '55. (MLRA 8:9)

1. Iz kafedry lechebnoy fizkul'tury i vrachebnogo kontrolya (zav.-prof. V.N. Moshkov) Tsentral'nogo instituta usovershenstvovaniya vrachey (dir. V.P. Lebedeva)

(ATHLETES, physiology,
eff. of effort on arterial tonus in athletes)
(EXERCISE, effects,
on arterial tonus in athletes)
(ARTERIES, physiology,
eff. of effort on tonus in athletes)

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MAKAROV, V.A.

Asymmetry in the function of the visual analyser during muscular work [with summary in English]. Zhur.vys.nerv.deiat. 7 no.3:359-362 My-Je '57. (MIRA 10:10)

1. Kafedra lechebnoy fizkul'tury u vrachebnogo kontrolya TSentral'nogo instituta usovershenstvovaniya vrachey.

(EXERCISE, effects,
on visual analyser electrical sensitivity threshold in cerebral cortex (Rus))
(CEREBRAL CORTEX, physiology,
visual analyser electrical sensitivity threshold in exercise (Rus))

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T-4

USSR / Human and Animal Physiology. Blood Circulation.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3422

Author : Makarov, V. A.
Inst : Not given
Title : Variations of the Blood Circulation in Small Arteries and Capillaries During Sport Exercises

Orig Pub : Teoriya i prktika fiz. kultury, 1957, 20, No 4, 281-285

Abstract : Twenty boxers, 20 wrestlers, and 20 swimmers, ranging in age from 18 - 35 years, were the subject of a study. At rest, arterial pressure readings of the finger, taken by Gaertner's tonometer in combination with the oscillograph of Serkin, were in the average 86.1 mm Hg in trained and 77.3 mm Hg in untrained persons; the capillaroscopic picture of the unguinal skin fold was normal in both groups; the number of capillaries in the linear field of vision amounted to 16 in the average.

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T-4

USSR / Human and Animal Physiology. Blood Circulation.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3422

After a dosaged exercise (stationary running), the arterial pressure of the fingers rose to an average of 98.4 mm Hg in the trained and to 84.8 mm Hg in the untrained, the capillary blood circulation became more intensive (especially in the trained atheletes). Following a training-exercise, the arterial pressure of the finger rose in the boxers and wrestlers (to an average of 106 - 107 mm Hg in the trained and up to 90 - 91 mm Hg in the untrained) and the number of capillaries in the field of vision increased; in the swimmers, a sinking of the arterial pressure of the finger (down to 65.8 mm Hg in the trained and to 61.1 mm Hg in the untrained) and a spasm of the capillaries was noted, which may be explained by the reflectory effect of the cold water (15 - 23°). The author relates the higher values of the arterial pressure of the finger in the trained at rest, and its

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Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3422

considerably greater elevation in them after a workload, to a greater build-up of the systolic volume of the heart and a lesser tonus of the small arteries. -- V. V. Rozenblat

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, Vladimir Aleksandrovich

[Arterial oscillography in medical supervision of sports]
Arterial'naia ostsillografiia vo vrachebno-sportivnoi praktike.
Moskva, Medgiz, 1958. 66 p. (MIRA 12:2)
(BLOOD PRESSURE)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

ASKEROV, Ali Aslanovich, kand. med. nauk; KOVALEV, Yefim Ivanovich, kand. med. nauk; MAKAROV, V.A., red.; BASHMAKOV, G.M., tekhn. red.

[Medical control of physical exercises for elderly subjects] Vrachebnyi kontrol' pri zaniatiiakh fizicheskimi uprazhneniiami v starshem vozraste. Moskva, Medgiz, 1962. 180 p. (MIRA 15:12)

(EXERCISE THERAPY)
(AGED—CARE AND HYGIENE)

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MAKAROV, V.A., kand.med.nauk

Evaluation of the arterial vascular tonus by the magnitude of the oscillographic index. Klin. med. 40 no.11:157 N'62
(MIRA 16:12)

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L 23871-66 EWT(m)/EWA(d)/EWP(t)/EWP(k) IJP(c) JD/WB

ACC NR: AP6008623 SOURCE CODE: UR/0365/65/001/006/0662/0669

52
AUTHORS: Makarov, V. A.; Kolotyrkin, Ya. M.; Knyasheva, V. M.; Mamin, Ye. B. 51
B

ORG: Scientific Research Physico-Chemical Institute im. L. Ya. Karpov (Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)

TITLE: The extent of anode protection of metals from corrosion in corrosive media 18

SOURCE: Zashchita metallov, v. 1, no. 6, 1965, 662-669

TOPIC TAGS: pipeline, steel, electrochemistry, corrosion, corrosion protection, corrosion resistant steel/ 18-8 steel

ABSTRACT: A theoretical derivation for the depth of anodic protection offered to a metal pipe surface exposed to corrosive media is presented. The derivation is based on the assumption that the anodic polarization curve in the region of the "active loop" may be divided into a finite number of regions, for each of which the current-potential relationship may be expressed by an equation similar in form to Tafel's equation. It is also assumed that, in passive region, the current density is independent of the potential. The differential equation

$$\left[\frac{\partial^2\varphi}{\partial x^2} - \frac{1}{r}f(\varphi) = 0\right]$$

is derived, where $f(\beta) = i$, i is the current, β the potential on the outer surface of the pipe, r is the radius of the pipe, and l the depth of anodic protection. This

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equation is solved for various initial and boundary conditions. The calculated results are compared with experimental results of C. Edeleanu and I. Gibson (Chem. Ind., 1961, N. 10, 301) (see Fig. 1).

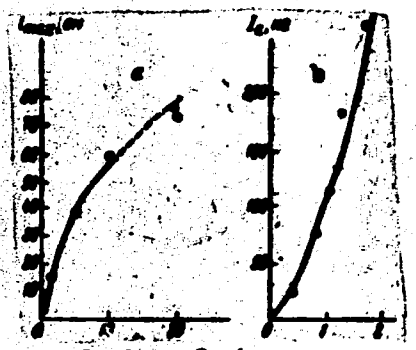

Fig. 1. Comparison of calculated and experimental data for steel 18-8 in 30% sulfuric acid. a - extent of passive region for the case of partially passivated construction; b - current from the active region of the pipe. Open circles: experimental data taken from references cited.

It is suggested that the derived expression for the depth of anodic protection should prove useful in the development of methods for the protection of pipelines exposed to the action of corrosive media. Orig. art. has: 5 graphs and 19 equations.

SUB CODE: 07, 13/ SUBM DATE: 19Apr65/ ORIG REF: 007/ OTH REF: 009

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

KURANCHEV, M.I., starshiy nauchnyy sotrudnik; MOISEYEV, I.F.; MAKAROV, V.A.

Forcing cement mixes behind the lining of railroad tunnels without stopping the traffic. Transp.stroi. 10 no.8: 19-22 Ag '60. (MIRA 13:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut transportnogo stroitel'stva (for Kuranchev). 2. Nachal'nik tonnel'nomostovogo otryada No.1 (for Moiseyev). 3. Nachal'nik mostopoyezda No.57 (for Makarov).
(Tunnels—Maintenance and repair)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

LITVINENKO, O.K.; MAKAROV, V.A.

Using electronic machines to solve a direct problem of gravity prospecting for three-dimensional convex bodies (seismic structures). Prikl. geofiz. no.33:155-160 '62. (MIRA 15:10)
(Gravity prospecting) (Electronic calculating machines)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

TUROVSKIY, S.D.; MAKAROV, V.A.; MOSYREV, I.V.

Find of ore pebbles in Lower Carboniferous conglomerates of the Boordu region (northern Tien Shan). Dokl. AN SSSR 147 no.1:210-211 N '62. (MIRA 15:11)

1. Institut geologii AN Kirgizskoy SSR. Predstavleno akademikom D.S. Korzhinskim.
(Boordu region—Ore deposits)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

YANCHUK, E.A.; MAKAROV, V.A.

Method of making a photometric wedge for measuring the reflective power of minerals. Min. sbor. no.17:207-210 '63. (MIRA 17:11)

1. Gosudarstvennyy universitet imeni Franko, L'vov.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.

Division of tuffaceous formation in the Tunguska syneclise.
Izv.vys.ucheb.zav.; geol. i razv. 7 no.3:134-137 Mr '64.
(MIRA 18:3)

1. Leningradskiy gornyy institut im. G.V.Plekhanova.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.; KO[illegible]TURK[illegible]N, Ya.M.; KNYAZHEVA, [illegible]M.; MAMIN, Ye.[illegible]

Range of ac[illegible]on of the anod[illegible] [illegible] of metals [illegible]ive media. Zashch.met. [illegible] [illegible]

[illegible]

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni L.Ya.Karpova, Moskva.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V. A.

Calculation of aerostatic guider. Stan. i instr. 30 no. [illegible]
My '64.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.

Experimental investigation of dynamic characteristics of pneumatic guides. Stan.i instr. 35 no.9:10-13 S '64. (MIRA 17:10)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

SHAPOSHNIKOV, N.F., insh.; MAKAROV, V.A., insh.

Automation of the continuous flow-line concreting of the Krasnoyarsk Hydroelectric Power Station. Mekh.stroi. 17 no.8:10-14 Ag '60. (MIRA 13:8)
(Krasnoyarsk Hydroelectric Power Station)
(Automatic control)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.; MYACHIN, V.F.

Transistorized measuring equipment for marine automatic control systems of the electrochemical protection against corrosion. Inform. sbor. TSNIIMF no.64. Tekh. ekspl. mor. flota no.9:54-63 '61. (MIRA 16:6)

(Hulls (Naval architecture)--Corrosion)
(Cathodic protection)
(Automatic control)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

SHVERNIK, Aleksandr Mikhaylovich; SOKOLOV, Anatoliy Valentinovich; POLUBELOV, Aleksey Sergeyevich; KISELEV, Georgiy Ivanovich; BERNSHTEYN, Rafail Lazarevich; SLAVUTSKIY, Samuil Oskarovich; NEVEL'SHTEYN, Yuriy Grigor'yevich; KONDRATENKO, Leonid Fedorovich; LASKIN, Anatoliy Aronovich; LUR'YE, Zakhar Solomonovich; MAKAROV, Vladimir Aleksandrovich; NOVOZHILOV, M.G., retsenzent; BILLICHENKO, N.Ya., retsenzent; VARSHAVSKIY, A.M., retsenzent; TARTAKOVSKIY, B.N., retsenzent. Prinimali uchastiye: ANTONOV, V.A., inzh.; VERBLYUNSKIY, Yu.I., inzh.; ZEMSKOV, P.F., otv. red.

[Overall mechanization and automatic control in strip mines] Kompleksnaia mekhanizatsiia i avtomatizatsiia na kar'erakh. Moskva, Nedra, 1964. 582 p. (MIRA 18:4)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

MAKAROV, V.A.

Our friends speak. Veterinariia 38 no.1:13-14 Ja '61. (MIRA 15:4)

(Russia--Relations (General) with Bulgaria)
(Bulgaria--Relations (General) with Russia)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

IPATENKO, N.G.; NESTEROV, T.S., dotsent; KUTILOV, I.N., dotsent; AKOPYAN, Ye.Sh., kand.veterin.nauk; KARAVAYEV, V.M.; PENIONZHKO, A.M.; MAKAROV, V.A., assistent.

Veterinary sanitation expertise. Veterinariia 41 no.3:83-93 Mr '64. (MIRA 18:1)

1. Upravleniye tsentra Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov RSFSR (for Ipatenko). 2. Vitebskiy veterinarnyy institut (for Nesterov, Kutilov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii (for Akopyan). 4. Moskovskaya veterinarnaya akademiya (for Makarov).

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031510010-9

SHTEYNBERG, D.S.; FOMINYKH, V.G.; MAKAROV, V.A.

Composition of pyroxenes in the Kachkanar intrusive complex. Trudy Inst. geol. UFAN SSSR no.70:[redacted]7 '65. (MIRA 18:12)

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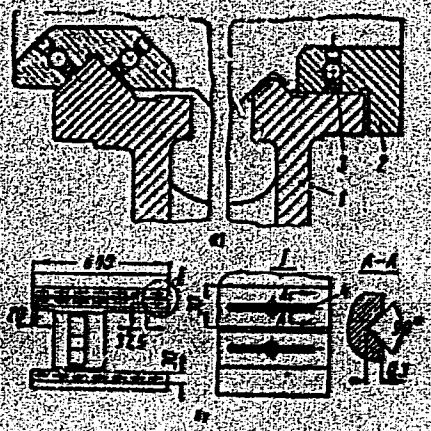
L 18595-65

ACCESSION NR: AP5003105

carriage was SCh 15-32 cast iron, for the bed--NSCh 28-48 cast iron. The design of the aerostatic guides is shown schematically in the drawing below.



Design of aerostatic guides: from the side of the guides a) section through the nozzles; b) carriage

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L 18595-65
ACCESSION NR: AP5005105 0

Drilled through the body of the carriage 2 are air channels through which air is fed to nozzles 3. From the aperture of the nozzles, the air goes into pocket 4 which is made in the form of a groove along the axis of the guide. This type of pocket forms a plane-parallel stream of air which flows from the pocket into the gap between carriage 2 and bed 1. The LA67-2.5 brass nozzle is pressed into the aperture in the carriage and scraped flush with the surface of the guide. The height of buoyancy was measured at six points (three on prismatic and three on flat guides). The arithmetical average of measurements at three points for each guide is taken as the height of buoyancy. The carriage was loaded by two tuning fork dynamometers (directly over the guides) until the gap for both guides was less than 3 microns. At this point the loading (taking the weight of the carriage into account) was: 1) for a nozzle diameter of 0.2 mm at a pressure in the collector of 4 atmospheres, 282 kg, at 3 atmospheres, 237 kg; 2) for a nozzle diameter of 0.5 mm at a collector pressure of 4 atmospheres, 311 kg, at 3 atmospheres, 270 kg. The average value of the rigidity for both guides with a gap of 4 microns and a pressure of 4 atmospheres was: 12 kg/micron when the nozzle diameter was 0.2 mm; 9 kg/micron when the nozzle diameter was 0.5 mm. It should be noted that the rigidity of even such narrow guides as those on the stand may be raised still more by more ration-

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