BOBROVNIKOV, B. N.

Means of automation used in recovering oil and gas. Biul.tekh.-
ekon.inform.Gos.nauch.-issl.inst.nauch. i tekh.inform. no.10:
17-21 '62.   (MIRA 15:10)

(Automation)   (Oil fields--Production methods)

ALEKSANDROV, A.M., inzh.; BAZHENOV, V.S., inzh.; BOBROVNIKOV, B.N.,
        inzh.; VAGANOV, M.P., inzh.; GUREVICH, B.M., inzh.;
        DZHIBELLI, V.S., inzh.; DROBAKH, V.T., inzh.; ISAKOVICH,
        R.Ya., kand. tekhn. nauk; KAPUSTIN, A.G., inzh.; KONENKOV,
        K.S., inzh.; MININ, A.A., kand.tekhn.nauk; PEVZNER, V.B.,
        inzh.; PESKIN, G.L., inzh.; PORTER, L.G., inzh.; PRYADILOV,
        A.N., inzh.; SLUTSKIY, L.B., inzh.; FEDOSOV, I.V., inzh.;
        FRENKEL', B.A., inzh.; TSIMBLER, Yu.A., inzh.; SHUL'GIN,
        V.Kh., inzh.; ESKIN, M.G., kand. tekhn. nauk; VOROB'YEV,
        D.T., inzh. [deceased]; SINEL'NIKOV, A.V., kand. tekhn.
        nauk; SHENDLER, Yu.I., kand. tekhn. nauk, red.; NESMELOV,
        S.V., inzh., zam. glav. red.; NOVIKOVA, M.M., ved. red.;
        RASTOVA, G.V., ved. red.; SOLGANIK, G.Ya., ved. red.;
        VORONOVA, V.V., tekhn. red.

[Automation and apparatus for controlling and regulating produc-
tion processes in the petroleum and petroleum chemical industries]
Avtomatizatsiia, pribory kontrolia i regulirovaniia proizvodstven-
nykh protsessov v neftianoi i neftekhimicheskoi promyshlennosti.
Moskva, Gostoptekhizdat. Book 3. [Control and automation of the
processes of well drilling, recovery, transportation, and storage
of oil and gas] Kontrol' i avtomatizatsiia protsessov bureniia
skvazhin, dobychi, transporta i khraneniia nefti i gaza. 1963.
551 p.   (Automation)   (MIRA 16:7)
        (Petroleum production--Equipment and supplies)

BOBROVNIKOV, B.N.

Automatic control systems for gas and gas condensate fields.
Mash. i neft. obor. no.4:20-24 '64.   (MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-
konstruktorskiy institut kompleksnoy avtomatizatsii neftyanoy
i gazovoy promyshlennosti.

Transformation of austenite into martensite at low temperatures. G. A. Holmberg.— Trudy Novosibirsk Inst. Vodnogo Transporta 1955, No. 1, 191 XXX. Reference ... May 1956, No. ...

... No. 6 is also connected with ... and a ...
... Slow cooling gives ... Isothermal transformation ... is possible only under conditions of ... at high speed of ... the ... on the surface of the section as a result of ... a part of I. Together with formation of separate sections of I group formation of crystals occurs. In transformation II in tin bronze the beginning and direction of growth of needles were observed.

V. N. Bednarski

Metallographic Research of the Conversion of
Austenite Steel into Martensite at Low
Temperatures

are 6 references, of which 5 are Slavic.

ASSOCIATION: Kiev Technological Institute (Kievskiy tekhnologicheskiy institut)

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

BOBROVNIKOV, G.A., kand.tekhn.nauk; BOLILYY, M.M., inzh.

Using sulfidizing for prolonging the life   ~ue machine parts
in light industry. Izv. vys.ucheb.zav.; tek...,eg. prom. no.1:138-143
'58.
(MIRA 11:6)

1.Kiyevskiy tekhnologicheskiy institut legkey promyshlennosti.
(Metals--Hardening)

SOV/137-59-4-8512

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 4, p 168 (USSR)

AUTHOR: Bobrovnikov, G.A.

TITLE: Changes in the Volume and in the Linear Dimensions of Hardened Steel
Work as a Result of $\gamma \to \alpha$ -Transformations

PERIODICAL: Tr. Kiyevsk. tekhnol. in-ta, legkoy prom-sti, 1958, Nr 10, pp 162-179

ABSTRACT: The author uses analyzes of literature and experimental data to derive
the following universal formula:

$$A_{fin} = A \sqrt{1 + a/100 \, (v_\alpha - v_\gamma) \, 1/v}$$

where A_{fin} and A are the final and initial investigated parameters
(height or diameter of the ring, length of the cylinder, etc.); a is
the given amount of γ -phase (in weight %); v_α and v_γ are specific
volumes of the α and γ phases in cm^3/g; v_0 is the specific volume of
Card 1/2   the alloy in cm^3/g. The use of this formula makes it possible to deter-

SOV/137-59-4-8512

Changes in the Volume and in the Linear Dimensions of Hardened Steel Work as a Result of $\gamma \rightarrow \alpha$ -Transformations

mine by analytical means, changes in the linear dimensions of steel workpieces of various shape, resulting from transformations of any amount of γ - and α -phases, and the limits of these changes in a number of heat-treating operations of steel (e.g. artificial aging, cold working, annealing).
There are 10 bibliographical titles.

M.Ch.

Card 2/2.

PHASE I BOOK EXPLOITATION   SOV/3925

Bobrovnikov, Georgiy Andreyevich, Docent, Candidate of Technical Sciences

Sborka v mashinostroyenii s primeniyem glubokogo kholoda (Assembly of Machine
    Parts With the Use of Subzero Temperatures) Moscow, Mashgiz, 1959. 113 p.
    Errata slip inserted. 5,000 copies printed.

Reviewer: P.P. Petrosyan, Doctor of Technical Sciences, Professor; Eds.: K.A.
    Bortnovskiy, Candidate of Technical Sciences, Docent; and M.S. Soroka;
    Chief Ed. (Southern Division, Mashgiz): V.R. Seroyuk, Engineer.

PURPOSE: This book is intended for technical personnel in machine-manufacturing
    plants.

COVERAGE: This publication is said to be the first Soviet attempt to present
    problems of assembling metal parts with the use of low temperatures. The
    theoretical and practical aspects of using expansion-fitting methods in
    assembling of parts are explained. Data are given on the effects of low
    temperatures on metal properties and on the relative strength of press-fitted
    parts. The text contains practical recommendations for determining the

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Assembly of Machine Parts (Cont.)   8OV/3925

necessary temperature conditions for the given task. Information for the selection of proper low-temperature industrial equipment is included. No personalities are mentioned. There are 55 references: 41 Soviet, 12 English, and 2 German.

TABLE OF CONTENTS:

Card 2/3

Assembly of Machine Parts (Cont.)   SOV/3925

AVAILABLE: Library of Congress

Card 3/3   VK/rem/mas
                                                             7-25-60

BOBROVNIKOV, G.A., dotsent, kand.tekhn.nauk

New method of cutting threads on parts made of synthetic
materials. Izv.vys.ucheb.zav.; tekh.leg.prom. no.2:102-104
'59.   (MIRA 12:10)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
   (Synthetic products) (Screw cutting)

BOBROVNIKOV, G.A., dotsent, kand.tekhn.nauk; BULENTSOVA, N.A., inzh.;
BULILYI, M.M., inzh.

Molybdenum disulfide as a new lubricant for light industry machin-
ery. Izv.vys.ucheb.zav.; tekh.leg.prom. no.2:105-110 '59.
                                        (MIRA 12:10)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
        (Molybdenum sulfide) (Machinery--Lubrication)

BASKO, P.T., kand.tekhn.nauk; BOBROVNIKOV, G.A., dotsent, kand.tekhn.
nauk

Wear resistance and antifriction properties of nylon. Izv.vys.
ucheb.zav.; tekh.leg.prom. no.6:106-113 '59.
(MIRA 13:5)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii metallov.
       (Plastics--Molding) (Nylon--Testing)

BASKO, P.T., kand.tekhn.nauk; BOBROVNIKOV, G.A., kand.tekhn.nauk,
    dotsent

Mechanism of the wear of machine parts caused by nylon
threads. Izv. vyx. ucheb. zav.; tekh. leg. prom. no.2:129-137
'60.   (MIRA 13:11)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii metallov.
            (Textile machinery--Maintenance and repair)
                    (Mechanical wear)

BOBROVNIKOV, G.A., kand.tekhn.nauk, dotsent

New method for manufacturing thermoplastic gears. Izv.vys.ucheb.
zav.; tekh.leg.prom. no.6:130-134 '60.   (MIRA 14:1)

1. Kiyevskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii metallov.
        (Gearing)   (Thermoplastics)

S/122/62/000/003/004/007
D262/D302

AUTHOR: Bobrovnikov, G.A., Candidate of Technical Sciences, Docent

TITLE: Application of deep freezing for making press fits

PERIODICAL: Vestnik mashinostroyeniya, no. 3, 1962, 45 - 48

TEXT: A new method of force fitting by means of deep freezing of assembly details, is described. Basically the method consists in cooling a part in liquid nitrogen before assembling. Several experiments carried out by the author are described in detail. There were fitting of bronze and long steel bushes, and fitting of small and large cast iron pinions. This method considerably reduces the production costs, increases operating efficiency and eliminates hard manual work. Apart from that, strength of coupling is increased, deformation of details reduced, and general quality of assembly improved. There are 7 figures and 1 table.

Card 1/1

S/122/62/000/006/002/003
D262/D308

AUTHOR: Bobrovnikov, G.A., Candidate of Technical Sciences,
              Docent

TITLE: Strength of deep-freeze press fits

PERIODICAL: Vestnik mashinostroyeniya, no. 6, 1962, 31 - 33

TEXT: In order to obtain the comparative values for the strength
of deep-freeze fits a number of tests was made with the experimental
sets each consisting of a plug and a ring: 1) Assembled with the
aid of hydraulic press, lubricated, 2) assembled, without protective
coating, with cooling in liquid nitrogen at - 196°C, 3) assembled
with cooling in liquid nitrogen at - 196°C with protective coating
of the ring fitting surface: a) nickel, b) zinc. The results of the
tests, showing the changes in the pressing-out efforts at various
relative positions of the plug and the ring for different methods of
assembling, were recorded in form of tables and graphs, analyzed and
the following conclusions reached: The strength of the deep-freeze
fits with protective electroplating is much higher than the strength
of ordinary press fits, and the contacting surfaces remain clean and
Card 1/2

Strength of deep-freeze press fits   S/122/62/000/006/002/003
                                        · D262/D308

undamaged. There are 2 tables and 2 figures.

Card 2/2

BOBROVNIKOV, G.A., kand.tekhn.nauk, dotsent

Using deep freezing in press fitting. Vest.mash. 42 no.3:45-48 Mr '62.   (MIRA 15:3)
(Machine-shop practice)
(Refrigeration and refrigerating machinery)

BOBROVNIKOV, Georgiy Andreyevich, kand. tekhn.nauk, dots.; YUDIN,
        A.V., doktor khim. nauk, prof., retsenzent; RIKBERG, D.B.,
        red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

    [Using synthetic materials for the repair and modernization of
    machines] Primenenie sinteticheskikh materialov pri remonte i
    modernizatsii mashin. Moskva, Mashgiz, 1963. 164 p.
                                            (MIRA 16:5)
      (Machinery--Design and construction) (Plastics)

BOBROVNIKOV, G.A., kand. tekhn. nauk, dotsent

Effect of electroplating on the strength of press fits. Vest.
mashinostr. 43 no.12:32-36   D '63.   (MIRA 17:8)

BOBROVNIKOV, G.A., dotsent (Kiyev)

Improving the technology of the forming of the pair of wheels.
Zhel. dor. transp. 45 no.4:48-50 Ap '63.   (MIRA 16:4)

(Car wheels)

ROHROVNIKOV, G.A., kand.tekh.nauk, dotsent; BOLILYY, M.M., inzh.

Using polyamide coatings to increase the wear resistance of machine parts subjected to friction. Izv.vys.ucheb.zav.; tekh.leg.prom. no.1: 183-191 '63.   (MIRA 16:3)

1. Kiyevskiy tekhnologicheskiy intitutu legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii metallov.
   (Protective coatings)   (Shoe machinery)   (Polyamides)

BOBROVNIKOV, G.A., kand. tekhn. nauk; BOLILYY, M.M., inzh.

Applying wear-resistant polyamide coatings on friction surfaces
of machine parts. Mashinostroenie no.1:50-54 Ja-F '63.
(MIRA 16:7)

(Protective coatings)

AM4008916   BOOK EXPLOITATION   S/

Bobrovnikov, Georgiy Andreyevich (Candidate of Technical Sciences)

Use of synthetic materials in machine repair and modernization
(Primeneniye sinteticheskikh materialov pri remonte i modernizatsii
mashin) .Mosci , Mashgiz, 1963. 164 p. illus., biblio. 8500 copies
printed.

TOPIC TAGS: plastics, plastic part, machine part, polycaprolactam,
pressure casting, press form casting, thermoplastic welding, plastic
coating, adhesive, polyamides, phenol formaldehyde resin, machine
repair, shop modernization

PURPOSE AND COVERAGE: This book is intended for engineers and tech-
nicians concerned with plastics. The book discusses the basic
properties of common plastics, methods for using synthetic materials
in machine repair and modernization, and simplified techniques for
the production of plastic parts used in industry. Practical rec-
ommendations are given for selecting temporary equipment and for
organizing workshops using plastics for the production of parts.
The physicomechanical properties of plastics, the preparation of

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AM4008916

parts from polycaprolactams by pressure casting, the formation of
plastic parts by press-form casting, the preparation of hot roll-
in cogged wheels from thermoplastics, thermoplastic welding,
plastic coatings, the use of adhesives in machine repair, and poly-
amides are discussed. Numerous tables containing trade names and.
GOST standards for plastics, adhesives, and equipment are given in
the book. A new molded material "FAK-4," which is a phenol-
formaldehyde resin reinforced with polyamides and rubber, possessing
high durability, elasticity, thermostability, and good electric
insulation properties, is mentioned, and a reference is given.

TABLE OF CONTENTS [Abridged]:

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Shop equipment for the production of parts from plastics -- 135

Examples for using synthetic materials in the repair and modernization of machines -- 150

Bibliography -- 164

SUB CODE: MA   SUBMITTED: 21Nov62   NO REF SOV: 048

OTHER: 007   DATE ACQ: 29Aug63

Card 3/3

BOBROVNIKOV, G.A., kand. tekhn. nauk, dotsent

Investigating the strength (carrying capacity) of press fits with protective coatings. Izv.vys.ucheb.zav.;mashinostr. no.5:90-97 '64.
(MIRA 18:1)

1. Moskovskoye vysshee tekhnicheskoye uchilishche imeni N.E.Baumana.

ACCESSION NR: AP4036513   S/0103/64/025/005/0696/0701

AUTHOR: Bobrovnik, G. A. (Moscow); Lazarev, V. M. (Moscow)

TITLE: Synthesizing optimum measuring systems containing digital computers

SOURCE: Avtomatika i telemekhanika, v. 25, no. 5, 1964, 696-701

TOPIC TAGS: automatic control, measuring system, digital measuring system, optimum digital measuring system

ABSTRACT: Stationary measuring servo systems, used for determining coordinates and parameters of moving objects, generate an estimator that approaches the input function. To improve the approaching process, the use of a digital computer in the predictive measuring system is suggested. Synthesizing mean-square-error-optimized predictive measuring systems containing a digital computer is considered. It is found that the inclusion of digital computers may substantially improve the smoothness of the measuring system. As compared to

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ACCESSION NR: AP4036513

the W. Karush system (Trans. IAE, v. EC-4, no. 1, 1955) or to nonpredictive systems, the digital-computer-equipped system's advantage is higher for greater number of input-signal derivatives used in its synthesis. Orig. art. has: 3 figures and 35 formulas.

ASSOCIATION: none

SUBMITTED: 22Feb63   DATE ACQ: 03Jun64   ENCL: 00

SUB CODE: DP, IE   NO REF SOV: 001   OTHER: 001

Card 2/2

BOBROVNIKOV, G.N.; VYSKREBTSOV, V.G.; RODIN, Ye.I.

Rate of pressure drop in displacement flowmeters with oval gear wheels. Priborostroenie no.12:26-28 D '64.

(MIRA 18:3)

30257

S/145/60/000/009/010/017
D221/D304

26.2190

AUTHORS: Bobrovnikov, G.N., and Mus'yakov, M.P., Candidates
              of Technical Sciences

TITLE: The effect of initial pressure on static characteris-
              tics of electro-hydraulic drive

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashino-
              stroyeniye, no. 9, 1960, 95 - 1o3

TEXT: The electro-hydraulic drive is a power amplifier without
feedback. However, the relationship between the input of servome-
chanism and the load forms an equivalence to a negative feedback.
The unit (Fig. 1) consists of a two-chamber gear pump 1, electric
motor 2, control by a polarized relay 3, and valve and working mem-
ber - servomotor 4. The piston of the latter is actuated by the
difference in pressure determined by the position of valve spools
10 and 11, controlled by relay tie rod 15 and the rocker. The pro-
portionality between the input signals of the polarized relay and
the position of its armature is ensured by spring 20. When no con-
trol signal is present, opposite currents flow in the coils of the
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The effect of initial pressure ...

relay, and the armature will occupy a middle position, with spools opening equal orifices, and thus no drop of pressure is produced. The author quotes analytical work for calculating the static characteristics of the drive, where he ties the displacement of spool h, with the speed of its travel. The torque is given by

$$M = 4 p_0 F (1 + \alpha)^2 R_c \cdot \frac{h}{(1 + \alpha - h^2)^2} \cdot \qquad (3)$$

where R_c is the radius of the crank, F is the piston area, and α is a parameter which takes into consideration the load effect on pump delivery. In the case of small displacements h, the torque characteristic is linear, whereas in the working range this is achieved by an increase of the initial pressure, p_0, or the cross section of piston F. The latter arrangement reduces the speed of power of piston. The static speed characteristic is then considered. Its slope is proportional to the output of pump and inversely proportional to the cross section of the piston. An equation is deduced for spool displacement at the start of motion h_s, in rela-

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The effect of initial pressure ...

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D221/D304

tion to the initial and starting pressures. In order to determine the effect of the initial pressure, experiments were carried out whose results are plotted. These allow the following conclusions to be made. The speed of the output shaft ω as a function of the signal current is independent of the initial pressure. The maximum speed corresponds to full closure of valve orifice connected with working chamber of cylinder, and completely open exhaust. The starting current decreases with the rise of p_o. The speed of return stroke drops when initial pressure goes up. The slope of speed characteristic is constant for all load torques. The increase of p_o causes a straightening of the torque characteristic, whose slope is maximum at $p_o = 0$. This curve exhibits saturation for certain values of signal current. There are 8 figures.

ASSOCIATION: MVTU im. N.E. Baumana (MVTU im. N.E. Bauman)

SUBMITTED: May 17, 1960

Card 3/4 3

DOBROVNIKOV, G.N.; BOYTSOV, V.I., inzh.

Designing and testing hydraulic buffers.   Izv.vys.ucheb.zav.; mashinostr.
no.4:61-70 '61.   (MIRA 14:6)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.
                          (Hydraulic brakes)

L 11276-67 EWT(m)   GD

ACC NR: AT6029635   SOURCE CODE: UR/0000/66/000/000/0265/0273

AUTHOR: Koznova, L. B.; Bobrovnikov, I. D.

ORG: none

TITLE: Radiobiological significance of the time factor in a dose curve plateau

SOURCE: Voprosy obshchey radiobiologii (Problems of general radiobiology). Moscow,
Atomizdat, 1966, 265-273

TOPIC TAGS: mouse, ionizing radiation biologic effect, irradiation intensity,
radiation tolerance, radiation sickness

ABSTRACT: Differences in length of survival of animals irradiated with the same dose
but at different dose rates prompted the present study. The effect of a dose rate on
length of survival and the effect of a dose rate on the plateau of a dose-effect curve
were investigated in a series of experiments. White male mice weighing 18 to 24 g were
gamma irradiated in a dose range of 1500 to 72,000 r at dose rates of 1,014, 3.0, 8.7,
252, 1158 and 48,000 r/min. Indices included clinical symptoms of disease, mean
survival periods, and post mortem findings. (See Fig. 1). The figure shows that a
dose-effect plateau takes place with dose rates of 252, 1158 and 48,000 r/min.
Increase of dose rate from 252 to 48,000 r/min contributes to growth of survival
periods. A comparison of clinical disease symptoms for dose rates of 252, 1158 and

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L 11276-67

ACC NR: AT6029635
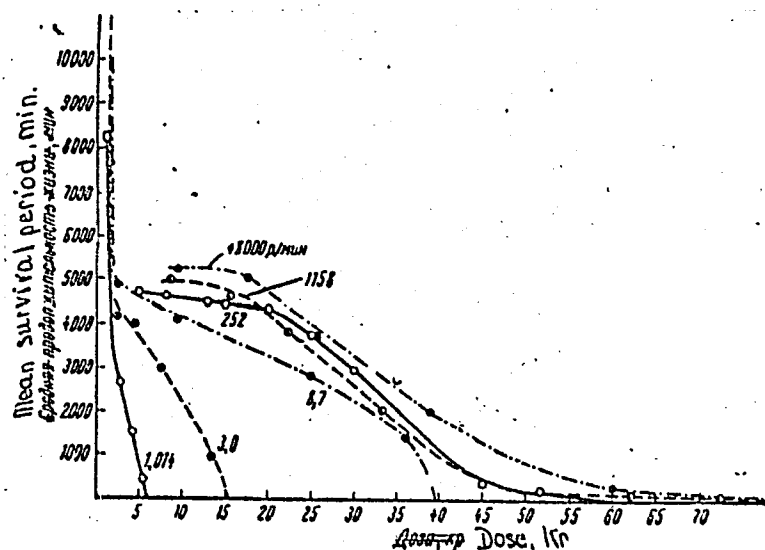
Fig. 1. Mean survival periods of mico irradiated
with dose rates of 3.0 to 48,000 r/min.

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ACC NR: AT6029635

48,000 r/min did not disclose any significant differences. Marked symptoms of intestinal death were found with doses up to 19,000 r, and deaths due to central nervous system damage were found with higher doses. Duration of irradiation, the time factor, rather than the dose rate basically determines radiation damage within a dose rate range of 1,014 to 8.7 r/min. A mathematical analysis of the experimental data is given. Orig. art. has: 4 figures, 2 tables and 5 formulas.

SUB CODE: 06/ SUBM DATE: 23Apr66/ ORIG REF: 004/ OTH REF: 008

Card 3/3 jb

BOBROVNIK, L.D.; LITVAK, I.M.

Relative speed of the removal of nonsugar ions during electodialysis by means of ion exchange resin memb~~~~.
Trudy KTIPP no.27:31-35 '63.

Studying the causes of pH changes in sugar-containing solutions during electrodialysis by means of ion exchange resin membranes.
Ibid.:35-42   (MIRA 17:5)

LIKHITSKIY, M.Kh.; BOBROVNIK, L.D.; BARABANOV, M.I.

Testing the method of the sedimentation of the first carbonation
juice by the addition of diffusion juice. Trudy KTIPP no.27:
46-51 '63.
(MIRA 17:5)

BOBROVNIK, L.D.; LITVAK, I.M.

Colorimetric method for determining small amounts of saccharose.
Sakh.prom. 38 no.2:43-45 F '64.   (MIRA 17:3)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti
imeni Mikoyana.

Bobrovnikov, L. Z.

AUTHOR: Bobrovnikov, L. Z.   108-12-10/10

TITLE: Broad-Band Amplifiers With Distributed Amplification
               (Shirokopolosnyye polosovyye usiliteli s raspredelënnym
               usileniyem).

PERIODICAL: Radiotekhnika, 1957, Vol. 12, Nr 12, pp. 73-80 (USSR)

ABSTRACT: The character of the frequency characteristics of amplifiers
               with distributed amplification (ADA) are essentially determined
               by the type of artificial lines used. It is therefore possible,
               if the artificial lines are composed of band filters, to
               obtain an ADA. The amplification coefficient of the ADA
               cascade can be determined as the product of the number of tubes,
               the slope of characteristics, and the input voltage of the
               anode line $C = n S Z_{input}$. It is shown that the frequency
               characteristic is a curve with 2 humps. In principle it is
               possible to produce band ADA by means of artificial lines
               from any band filters which are connected with one another
               according to the adaptation principle. From the point of view
               of construction the artificial lines must be extremely
               simple. The best success will be obtained with artificial
Card 1/2   lines on the basis of band filters with from 3 to 4 elements,

Broad-Band Amplifiers With Distributed Amplification   108-12-10/10

which are special cases of a band filter of the type M
with 6 elements and 2 coefficients. The method of
calculating such amplifiers is described. Next, schemes of
ADA with triodes are shown. The scheme with "Cascade with
cathode load - cascade with earthed grid" is very stable in
operation as the anode- and the cathode circuits are nearly
perfectly separated from each other. It is very useful to use
double triodes. At the end, experimental results are dealt
with. An experimentally recorded frequency characteristic is
shown. A phase characteristic was not recorded.
There are 14 figures, 1 table, and 2 references, 1 of which is
Slavic.

SUBMITTED: June 27, 1956 (initially) and March 18, 1957 (after revision)

AVAILABLE: Library of Congress

1. Amplifiers-Mathematical analysis

Card 2/2   USCOMM-DC-54802

9.3240 (2301, 2901, 2902, 2104, 1067)

21530
S/552/60/000/026/001/003

AUTHOR: Bobrovnikov, L. Z.

TITLE: On the Theory of Direct Current Amplifiers With an Electromechanical
Transducer

SERIAL: Vsesóyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov
razvedki. Prikladnaya geofizika. Sbornik statey, no. 26, Moscow, 1960.
78-89

TEXT: A wide-band direct current amplifier of high sensitivity has been devised in
order to conduct geophysical exploration work by the magnetic stabilization method.
The EDA-57 amplifier, in standard production, developed by the Institut mashinoveden-
iya i avtomatiki Akademii nauk UkrSSR (Institute of the Science of Machines and Au-
tomation of the Academy of Sciences UkrSSR) for use in the telluric current method
fails to give the described effect, because the passband for the higher frequencies
is limited to fractions of a cycle and the instrument is insufficiently sensitive.
A circuit for an improved amplifier was developed in 1958 as a result of research con-
ducted by the Electrical Geophysical Exploration Laboratory of the Scientific Research
Institute of Geophysics. The principle of operation of the amplifier is that of

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On the Theory of Direct Current Amplifiers With an
Electromechanical Transducer

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electromechanical conversion of the low input voltage of the single E (ω) into high
voltage whose amplitude is proportional to the input voltage, with subsequent regu-
lated amplification and synchronous detection. The difference between this ampli-
fier and those now in general use is the utilization of the storage principle in the
input circuit, thus causing a sharp increase in resistance to high-frequency inter-
ference. The equivalent circuit of the amplifier can be in the form of two separate
integrating circuits -- input and output, having practically identical time con-
stants. Fig. 2 is a circuit diagram of an amplifier employing the storage effect in
the input circuit. The process of signal conversion is treated mathematically in con-
siderable detail; an expression is derived for use in determining the width of the
passband for such an amplifier. There are 5 figures.

Card 2/2

VAN'YAN, L.L.; BOBROVNIKOV, L.Z.; BOGDANOV, A.Sh., red.;
    BORUSHKO, T.I., red.izd-va; BYKOVA, V.V., tekhn. red.;
    IVANOVA, A.G., tekhn. red.

[Electric prospecting in the method of inducing a magnetic
field] Elektrorazvedka po metodu stanovleniia magnitnogo po-
lia. Moskva, Gosgeoltekhizdat, 1963. 183 p. (MIRA 16:6)
                    (Magnetic prospecting)

BOBROVNIKOV, M.

Temporary regulations for the desgin of a gas system in a rural locality.
Zhil.-kom. khoz. 13 no.1:25 '63.   (MIRA 16:3)

1. Starshiy insh.-inspektor Upravleniya posharnoy okhrany
Ministerstva okhrany obshchestvennogo poryadka RSFSR.
                    (Gas distribution)

BOBROVNIKOV, M., inzh.

Fire prevention requirements in the design and construction of 10-story or more apartment houses. Zhil. stroi. no.8:26-27 '65.
(MIRA 18:8)

BOBROVNIKOV, M. I.

More attention to fire prevention. Prom. koop. no.12:37 D '57.

(MIRA 10:12)

1. Starshiy inzhener Upravleniya pozharnoy okhrany RSFSR.
(Fire prevention)

BOBROZNIKOV, M.

Observe strictly fire safety rules in enterprises producing cellu-
loid articles. Pozh. delo 3 no.7:11 Jl '57.   (MLRA 10:8)
(Celluloid)   (Fire prevention)

BOBROVNIKOV, M.I.

Greater attention to the prevention of fires. Tekst. prom. 17 no.1:
52 Ap '57.   (MIRA 10:4)
        (Textile factories--Fires and fire prevention)

BoBRovniKov, M. I.

BOBROVNIKOV, M. (Moskva); RAKOV, V. (Murmansk); KILEYEV, A. (Astrakhan').

Closer cooperation with councils of the National Economy. Pozh.
delo 4 no.2:3-5 F '58.   (MIRA 11:1)
                              (Fire prevention)

BOBROVNIKOV, I.

At the fighting post. Posh. delo 4 no. 7:22 Jl '58.   (MIRA 11:8)
(Fire prevention)

BOBROVNIKOV, M.

Improve the organization of rural fire brigades. Pozh.delo 4
no.10:14-16 O '58.
(MIRA 11:11)
(Fire departments)

BOBROVNIKOV, M.

Standard plans for water reservoirs and fire stations. Sel'. stroi.
13 no. 7:26-28 Jl '58.   (MIRA 11:8)

1. Starshiy inzhener Upravleniya pozharnoy okhrany Ministerstva
vnutrennikh del RSFSR.
                        (Reservoirs)
            (Fire departments--Equipment and supplies)

BOBROVNIKOV, M.I.

Fire safety in enterprises. Leg. prom. 18 no.1:15 Ja '58.
(MIRA 11:2)

1. Starshiy inzhener Upravleniya pozharnoy komandy Ministerstva
vmutrennikh del RSFSR.
(Factories--Fires and fire prevention)

BOBROVNIKOV, M.I.

Ensure fire protection in livestock buildings. Zhivotnovodstvo 20 no.3:75-76 Mr '58.   (MIRA 11:2)

1. Starshiy inzhener Upravleniya pozharnoy okhrany Ministerstva vnutrennikh del RSFSR.
(Farm buildings--Fires and fire prevention)
(Stock and stockbreeding)

BOBROVNIKOV, M.S.

Asymmetric waves in a wire of cylindrical cross section covered by dielectric. Izv. vys. ucheb. zav.; Fiz. no.1:168-170 '58.

(MIRA 11:6)

1.Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva.

(Electric wire)

9.1000

SOV/112-59-23-48568

Translation from: Referativnyy zhurnal Elektrotekhnika, 1959, Nr 23, p 183, (USSR)

AUTHORS: Bobrovnikov, M.S., Sazonov, A.I., Starovoytova, R.P.

TITLE: Excitation of Oscillations With a Fringe Radiation in Infinitely Long Wire and Plane

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta, 1958, Nr 36, pp 381 - 388

ABSTRACT: A diffractional method of studying antennas is proposed on a model consisting of an infinitely long hollow conductor excited by two ringshaped slots fed from inside. At a distance between the slots equal to

$$\frac{2\pi l}{\lambda} = (2n + 1)\frac{\pi}{2},$$

where l is the half-distance between the slots, a fringe radiation only with a lobe diagram will be observed. A formula for the magnetic component of the field is derived. Also in this case there is a lobe radiation diagram. Methods of measurement

Card 1/2

80433
SOV/112-59-23-48568

Excitation of Oscillations With a Fringe Radiation in Infinitely Long Wire and Plane

and the equipment are described. The diagrams obtained for current density and radiation field agree fairly well with the theory.

Ye.I.S.

Card 2/2

9.1400

AUTHORS: Bobrovnikov, M.S., Grozin, G.V., and Red'kin, B.A.

TITLE: The power carried by the surface wave along a metallic cylinder with dielectric coating

TEXT: The authors investigate the transmission of microwave energy by the surface wave along an infinite metallic cylinder covered with a layer of dielectric. They consider the case where the radius of the cylinder is of the same order as the wavelength or rather less. They calculate the power transmitted inside and outside of the dielectric layer. The conditions are found for the minimum transmitted power at which breakdown takes place. They calculate the temperature to which the dielectric is heated. Experimental figures are quoted from the testing of a single-wire line for electric strength when carrying high-power pulses at λ = 10 cm. [Abstracter's note: Complete translation.]
Card 1/1

9.1300

.38767

S/194/62/000/005/100/157
D230/D308

AUTHORS: Bobrovnikov, M.S., and Starovoytova, R.P.

TITLE: Excitation of a metal cylinder coated with dielectric

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
             no. 5, 1962, 15, abstract 5zh106 (Tr. Sibirsk. fiz.-
             tekhn. in-ta pri Tomskom un-te, 1960, no. 39, 46-57)

TEXT: Considers the problem of symmetric concentrated excitation,
by a magnetic current ring, of a metal cylinder of infinite length
coated with a dielectric layer. It is shown that this gives rise
to a surface plane wave propagated along the cylinder, and to a
spherical radiation wave. The excitation efficiency of a plane wave
is determined (energy ratio between surface and space waves). The
radiation resistance of the system is deduced. This problem is
closely connected with papers on excitation of a metal cylinder and
dielectric rod (RZhFiz, 1958, no. 4, 8898; 1959, no. 7, 16108; 1960
no. 5, 12080). [Abstractor's note: Complete translation].

Card 1/1

BOBROVNIKOV, M.S.; STAROVOYTOVA, R.P.

Concentrated excitation of a metallic cylinder with a dielectric
coating. Izv. vys. ucheb. zav.; radiotekh. 4 no. 2:140-147
Mr-Ap '61.
(MIRA 14:5)

1. Rekomendovana kafedroy radiofiziki Tomskogo gosudarstvennogo
universiteta imeni V.V. Kuybysheva.
(Radio lines)

$9,9700$ (1327)

31985
S/142/61/004/004/006/018
E192/E382

AUTHORS: Bobrovnikov, M.S., Starovoytova, R.P. and Smirnov, V.P.

TITLE: The efficiency of excitation of surface waves by a lumped source on an impedance plane

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 4, 1961, 432 - 438

TEXT: The problem of lumped excitation of an infinite impedance plane by a magnetic current filament is considered. The plane has an isotropic impedance and represents the simplest delay system. The impedance plane, whose surface coincides with the coordinate plane y, z (see Fig. 1), is excited by an infinitely long magnetic current filament j^m, which is parallel to the axis y, which is situated at a distance x_o from the impedance plane; thus:

$$j^m = I^m \delta(x - x_o)\delta(z)$$

Card 1/65

The efficiency of ....

S/142/61/004/004/006/018
E192/E382
31985

where $x = x_0$ and $z = 0$ are the coordinates of the source, and I_m is the amplitude of the source. Under these excitation conditions only the three field components are produced, namely - E_x, E_z and H_y. The component H_y can be found by solving the Maxwell equations, while the other field components can be expressed in terms of H_y. The boundary condition at the impedance surface is:

$$E_z = Z H_{y/x=0}$$

where Z is the surface impedance. It is shown that the surface-wave component of the magnetic field is given by:

Card 2/6

The efficiency of ....

S/142/61/004/004/006/018
E192/E382

31985

$$H_{\text{упов}} = \frac{4\pi i k}{c} I^m \frac{v_o}{h_o} e^{-x_o v_o} e^{-x v_o} e^{i h_o z} \qquad (9)$$

$$0 \leqslant x \leqslant \infty$$

where:

$$v_o = \sqrt{h_o^2 - k^2} \quad .$$

In the above $k = 2\pi/\lambda$ and $v = \sqrt{k^2 - h^2}$. The power carried by the surface wave is expressed by:

$$P_{\text{пов}} = \frac{\pi}{c} I^{m2} k \frac{v_o}{h_o} e^{-2x_o v_o} \qquad (10) .$$

The radiation field components are also determined and it is shown that the radiated power can be expressed by:

Card 3/6

The efficiency of ....

$$P_{\text{изл}} = \frac{I^{m2}\,k}{c}\left\{\frac{\pi}{4} + \sum_{n=1}^{\infty} \frac{\Gamma\left(\frac{1}{2}\right)\Gamma\left(n - \frac{1}{2}\right)}{(1 - Q^2)^n\,(kx_0)^{n-1}} \times \right.$$

$$\left. \times\left[\frac{1}{4}(1 - Q^2)I_{n-1}(2kx_0) - I_n(2kx_0)\left(n - \frac{1}{2}\right)\left(\frac{1}{4\,kx_0} + \frac{Q}{2n - 1}\right)\right]\right\} \tag{12}$$

where $Z = -iQ$. By analyzing the above formulae (and
comparing the results with some experimental data) it is
concluded that a plane electromagnetic wave impinging on an
infinite uniform impedance plane does not excite surface wave.
On the other hand, when the surface waves are excited by a
lumped source, the efficiency of excitation depends on the
delay coefficient $\beta = h_0/k$ and the distance of the source
from the impedance plane. An optimum height for the source
above the impedance plane can be determined for every given
value of β. Thus, for example, for $\beta = 1.25$ the highest

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The efficiency of ....

S/142/61/004/004/006/018
31985
E192/E382

efficiency of $\eta = 0.981$ is reached for $x_0/\lambda = 0.16$. The excitation efficiency near to unity can be achieved for comparatively low values of the delay coefficient ($\beta = 1.05 -$ 1.2).

There are 5 figures and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The four English-language references mentioned are: Ref. 1 - A.L. Cullen - PIEE, 1957, C 104, no. 6, 237; Ref. 2 - G.I. Rich, PIEE, 1955, B 102, no. 2, 237; Ref. 3 - A.L. Cullen, PIEE, August, 1955, 101, 4, 225 and Ref. 4 - I.W. Duncan, IRE Trans., 1959, MTT-7, no. 2, 257

ASSOCIATION: Kafedra radiofiziki Tomskogo gos. universiteta im. V.V. Kuybysheva (Department of Radio Physics of Tomsk State University im. V.V. Kuybyshev)

SUBMITTED: August 28, 1960 (initially)
November 3, 1960 (after revision)

Card 5/6

S/139/62/000/004/011/018
E140/E335

AUTHORS: Starovoytova, R.P. and Bobrovnikov, M.S.

TITLE: Excitation of an impedance wedge by a filiform
              magnetic source at the apex

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniye,
              Fizika, no. 4, 1962, 130 - 139

TEXT: The presence of an impedance wedge makes the usual
solution by separation of variables impossible.   Several
attempts have been made at the solution of special cases;   in
other attempts, complicated methods were used (W.E. Williams,
Proc. Cambr. Philosoph Soc., 57, 2, April, 1961).   The basis of
the present solution is an integral expansion with kernels
representing plane waves.   Analysis of the solution indicates that
at small aperture angles the amplitudes of the surface waves
obtained are greater than on a plane with the same impedance
values.   If the angle is taken too small, the surface waves and
radiation waves become confused in space. There are 5 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri
                Tomskom gosuniversitete imeni V.V. Kuybysheva

Card 1/2

40550

S/142/62/005/003/001/009
E192/E382

$q.3700$

AUTHORS: Bobrovnikov, M.S. and Smirnov, V.F.

TITLE: Field in the near zone of the source for the case of
             lumped excitation of an impedance plane

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
             Radiotekhnika, v. 5, no. 3, 1962, 321 - 325

TEXT: The general expression for the magnetic-field
component H_y for the case of an infinite impedance plane whose
surface coincides with the coordinate system yz (see Fig. 1)
and is excited by a magnetic-current thread j^m, situated at
a distance x_0 from the impedance plane and parallel to the
axis y is in the form (Ref. 1. The authors and R.P.Starovoytova,
Izv. vuzov SSSR - Radiotekhnika, 1961, v.3, no. 4, 432):

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Field in the near zone S/142/62/005/003/001/009
E192/E382

$$H_y = - \frac{2KI^m}{c} \int_{-\infty}^{\infty} \frac{\left(\cos x_0 v - \frac{iKZ}{v} \sin x_0 v\right)}{v + KZ} \cdot e^{ivx} \cdot e^{ihz} dh \quad (1)$$

$$\text{for } x_0 \leqslant x \leqslant \infty$$

$$H_y = -\frac{2KI^m}{c} \int_{-\infty}^{\infty} \frac{\left(\cos xv - \frac{iKZ}{v} \sin xv\right)}{v + KZ} \cdot e^{ivx_0} \cdot e^{ihz} \cdot dh \quad (2)$$

$$\text{for } 0 \leqslant x \leqslant x_0$$

Card 2/4

Field in the near zone ....

S/142/62/005/003/001/009
E192/E382

where I^m is the amplitude of the magnetic current.

$Z = iQ$ is the reactive impedance and $v = \sqrt{\kappa^2 - h^2}$.
The radiation field and the surface wave for the far zone in such a system was determined in Ref. 1. However, Eqs. (1) and (2) can be also used to determine the field in the near zone. The field is given by the general expression:

$$H_y = H_y^\Pi + A \int_L \frac{e^{ihZ}}{v + KZ}\, dh \qquad (6)$$

where the first component represents the surface wave, whilst the second component gives the non-surface wave. The integral can be evaluated comparatively easily and it is shown that the non-surface wave is approximately given by:

Card 3/4

Field in the near zone S/142/62/005/003/001/009
E192/E382

$$H_y^{Hn} \simeq H_o \cdot e^{iKZ+i\frac{\pi}{4}} \cdot \frac{1}{Q^2} \cdot \sqrt{\frac{1}{2\pi KZ}} \cdot \frac{1}{KZ} \qquad (14) .$$

This shows that in the case of lumped excitation, the non-surface wave decreases as $1/(KZ)^{3/2}$, i.e. faster than for the case of an ideally conducting plane. The non-surface wave for the near zone was calculated by a digital computer and the results are given in a figure. There are 4 figures.

ASSOCIATION: Laboratoriya radiofiziki SFTI pri Tomskom
               gos. universitete im. V.V. Kuybysheva
               (Radiophysics Laboratory, SFTI, of Tomsk State
               University im. V.V. Kuybyshov)

SUBMITTED: June 5, 1961

                              Fig. 1:

Card 4/4
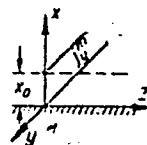
9,9821

AUTHORS: Starovoytova, R.P., Bobrovnikov, M.S., and Kislitsina, V.N.

TITLE: Scattering of surface waves by a discontinuity in an impedance sheet

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 2, 1962, 250 - 259

TEXT: The purpose of the paper is to study the effect of a wedge-like discontinuity on the propagation of surface waves. The dimensions perpendicular to the paper are assumed to be infinite and a surface wave of the form

$$U_o = e^{-\alpha+x}\, e^{-ik\beta+y} \tag{1}$$

is assumed to propagate on the upper sheet (α_+ – attenuation coefficient, $k = 2\pi/\lambda$, λ – free space wavelength, β_+ – retardation coefficient). The angle between the sheets is 2Φ and their impedances (assumed purely reactive) are Z_+ and Z_- respectively. The mathema-

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Scattering of surface waves by a ...

S/109/62/007/002/009/024
D266/D303

tical solution of the problem is obtained by following the method of G.D. Malyuzhinets (Ref. 2: Dokl. AN SSSR, 1958, 121, 3, 436) and (Ref. 3: Nekotoroye obobscheniye metoda otrazheniy v teorii difraktsii sinusoidal'nykh voln (Generalization of the Reflection Method in the Theory of the Diffraction of Sinusoidal Waves) Doctoral thesis, Izd. AN SSSR, 1950), who studied the problem of diffraction on similar structures and tabulated some of the special functions involved. The reflection coefficient in this case can be expressed in the form of trigonometric functions as follows

$$/R/ = \left| \frac{\tan h \frac{\pi \varkappa}{2\Phi} [1 - \tan \frac{\pi^2}{2\Phi} \tan h \frac{(\varkappa_+ - \varkappa_-)}{4\Phi}]}{\tan \frac{\pi^2}{4\Phi} - j \tan h \frac{\pi \varkappa_+}{2\Phi}} \right| \qquad (9)$$

where $\varkappa_\pm = j\theta_\pm$, $\sin \theta_- = Z_c/Z_\pm$

and Z_c is the impedance of free space. The reflection coefficient is zero if the conditions

Card 2/4

Scattering of surface waves by a ...

$$\varkappa_+ = \varkappa_- \quad \text{and} \quad 2 \Phi = \frac{\pi}{2n + 1}, \quad n = 0, 1, 2, \ldots \qquad (10)$$

are satisfied. If $\varkappa_+ \neq \varkappa_-$ the reflection coefficient has a non-zero minimum. If $\Phi = \pi$ (half-infinite plane) and the impedances are equal on both sides of the sheet, the reflection and transmission coefficients are given by the same expression and both tend to the limit of $1/\sqrt{2}$ in the case of an infinitely slow wave. These results agree with those of N.G. Trenev (Ref. 5: Radiotekhnika i elektronika, 1958, 3, 1, 27), who used a different approach. The radiation coefficient is defined as

$$/D/^2 = 1 - (/R/^2 + /T/^2)$$

$/D/$ can vary between zero and unity depending on β. If $\beta = 1$ all the power goes into radiation whilst for $\beta = \infty$ all the power is contained in the surface waves. For values of β near to unity the maximum of the radiation pattern is in the y direction, but as β increases the main lobe of radiation tends to occupy a symmetric position in respect to the wedge. Nearly all the calculated radia-

Card 3/4

Scattering of surface waves by a ...   S/109/62/007/002/009/024
                                        D266 ,D303

tion patterns are free of side lobes but this seems to be a conse-
quence of the two dimensional arrangement. There are 13 figures and
8 references: 7 Soviet-bloc and 1 non-Soviet-bloc. The reference to
the English-language publication reads as follows: A.F. Kay, IRE,
Trans., 1959, AP-7, 1, 22.

SUBMITTED: June 23, 1961

Card 4/4

42726

S/109/62/007/011/003/012
D266/D308

9.3700

AUTHORS: Bobrovnikov, M.S. and Starovoytova, R.P.

TITLE: Excitation of rectangular impedance sheets

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 11,
                1962, 1910 - 1915

TEXT: The purpose of the paper is to determine
theoretically the radiation field and the excited surface waves.
The impedance sheets coincide with the $x = 0$ and $z = 0$ planes
and a magnetic current line source is located along the y axis
in the point x_0, z_0. The surface impedance of the sheets are
Z_1 and Z_2 respectively. The solution

$$U(x,z) = \frac{ik4\pi}{c} \int j^m (x_0, z_0) \, G(x, z, x_0, z_0) \, ds_0 \qquad (2)$$

where U satisfies the inhomogeneous wave equation with the
respective boundary conditions on the impedance sheets and G

Card 1/3

Excitation ...

S/109/62/007/011/003/012
D266/D308

is Green's function obtained by known methods. Expressing the magnetic current density with the aid of δ functions and assuming purely inductive surface impedances

$$z_1 = - iQ_1, \qquad z_2 = - iQ_2$$

(Q_1 and Q_2 positive) the integrand of (2) contains two poles and a branch point leading to surface waves and radiation fields respectively. If $Q_2 = 0$ ($z = 0$ sheet ideally conducting)

$$z_0 = \frac{\Lambda_1}{4} (2n + 1), \qquad n = 0, 1, 2, \ldots \qquad (13)$$

for $Q_2 = \infty$

$$z_0 = \frac{\Lambda_1}{2} n$$

where Λ_1 = wavelength of the surface wave. It is further shown that the position of maximum excitation is half way between the

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Excitation ...   8/109/62/007/011/003/012
D266/D308

minima. The relative proportion of power in the surface waves in the Z and x directions respectively is given by

$$\frac{P_z}{P_x} = \frac{Q_1 \sqrt{1 + Q_1^2}}{Q_2 \sqrt{1 + Q_2^2}} \tag{15}$$

The radiation field is also expressed in a closed form and radiation patterns are given for certain values of the para- meters. There are 4 figures.

SUBMITTED: October 17, 1961

Card 3/3

LEVSHIN, L.V.; BOCHAROV, V.G.

Study of the concentration effects in solutions of certain organic compounds. Opt.i spektr. 10 no.5:627-633 My '61.
(MIRA 14:8)

(Organic compounds—Spectra)   (Luminescence)

BOBROVNIKOV, M.S.; STAROVOYTOVA, R.P.

Diffraction of cylindrical waves on an impedance wedge. Izv. vys.
ucheb. zav.; fiz. no.6:168-176 '63.   (MIRA 17:2)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstven-
nom universitete imeni Kuybysheva.

ACCESSION NR: AP4040750   8/0142/64/007/002/0171/0179

AUTHOR: Bobrovnikov, M. S.; Mironov, V. L.; Smirnov, V. P.

TITLE: Excitation of surface waves by a discretely-distributed non-projecting source

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 2, 1964, 171-179

TOPIC TAGS: surface wave, directional pattern, antenna configuration, antenna directivity

ABSTRACT: An analysis is made of surface-wave launchers consisting of several arbitrarily spaced parallel unphased magnetic-current filaments imbedded in an impedance plane. The efficiency of surface-wave excitation of such a source is compared with that of a concentrated source. The amplitude ratios and phase relations at which no surface waves are excited, or at which the launched surface waves propagate in one direction only, are determined analytically. It is

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ACCESSION NR: AP4040750

shown in particular that in the case when there are only two current filaments, the surface-wave launching efficiency exceeds that of a concentrated source, and that directional launching of the surface waves is possible if the currents are properly phased. Orig. art. has: 10 figures and 16 formulas.

ASSOCIATION: None

SUBMITTED: 06Dec62   DATE ACQ: ENCL: 00

SUB CODE: EC   NR REF SOV: 001   OTHER: 001

Card 2/2

L 25751-65

ACCESSION NR: AP5002039   S/0142/64/007/005/0589/0596

AUTHOR: Bobrovnikov, M. S.; Mironov, V. L.; Smirnov, V. P.

TITLE: Exciting surface waves by continuously distributed nonsalient sources

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 5, 1964, 589-596

TOPIC TAGS: surface wave, surface wave excitation

ABSTRACT: Two types are considered of continuously distributed nonsalient surface-wave exciters having spatial AM and FM of currents in the aperture of the source; these modulations permit attaining a high efficiency of excitation. One type permits obtaining a symmetrical excitation while the other, a directional excitation. Powers of two symmetrical surface waves, propagating to the right and to the left from the source, are given by formulas 17 and 18; the power of a directional surface wave is given by the integral formula 27. A practical realization of the surface-wave excitation is believed possible by using distributed-

Card 1/2

L 25751-65

ACCESSION NR: AP5002039

coupling systems (IRE Trans., 1961, MTT, v. 9, no. 6, 573). Orig. art. has:
8 figures and 34 formulas.

ASSOCIATION: none

SUBMITTED: 18Mar63   ENCL: 00

SUB CODE EC   NO REF SOV: 003   OTHER: 002

Card 2/2

L 9948-65   ASD(a)-5/ESD(t)/RAEM(t)

ACCESSION NR: AP4045495   5/0109/64/009/009/1696/1700

AUTHOR: Bobrovnikov, M. S.; Kislitsyna, V. N.

TITLE: Diffraction of a plane homogeneous electromagnetic wave by an *B*
impedance step [Report at the "Day of Radio Conference," Tomsk, 7May62]

SOURCE: Radiotekhnika i elektronika, v. 9, no. 9, 1964, 1696-1700

TOPIC TAGS: diffraction, electromagnetic wave diffraction

ABSTRACT: Based on the general solution of an electromagnetic-wave
diffraction by an impedance wedge given by G. D. Malyuzhinets (Dokl. AN SSSR,
1958, 121, 3, 436), an analysis of the fields of surface waves is offered, which
reveals some behavior peculiarities of these waves. The redistribution of the
incident-wave energy between the surface waves propagating from the impedance
inhomogeneity, down the impedance surfaces, is analyzed mathematically. It is
found that, for a given impedance-wedge angle, when one of the impedance-step

Cord 1/2

L 9248-65

ACCESSION NR: AP4045495

delays has a certain value, the amplitude of the surface wave propagating over the semiplane that has this delay value will always be higher than the amplitude of the other semiplane wave, whatever the latter's delay might be. Orig. art. has: 5 figures and 14 formulas.

ASSOCIATION: none

SUBMITTED: 02Oct63   ENCL: 00

SUB CODE: EC   NO REF SOV: 005   OTHER: 001

Card 2/3

SMIRNOV, V.P.; BOBROVNIKOV, M.S.; GOSHIN, G.G.

Excitation of a system consisting of an impedance cylinder in an
impedance plane by a magnetic current loop coaxial to the impe-
dance cylinder. Radiotekh. i elektron. 9 no.10:1812-1820 O '64.
(MIRA 17:11)

ACCESSION NR: AP5018343   UR/0139/64/000/005/0115/0118   4/4

AUTHOR: Bobrovnikov, M. S.; Kialiteyn, V. M.   B

TITLE: Diffraction of electromagnetic waves at the surface impedance step within a circular wave guide

SOURCE: IVUZ, Fizika, no. 5, 1964, 115-118

TOPIC TAGS: electromagnetic wave diffraction, circular waveguide, electromagnetic wave reflection

ABSTRACT: Using the Wiener-Hopf method, the authors solve a problem concerning the diffraction of electromagnetic waves on the surface impedance step within a circular wave guide. They present expressions for the reflection factor and energy transformation ratio. Orig. art. has 13 formulas and 1 graph.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete (Siberian Physical-Technical Institute at the Tomsk State University)

SUBMITTED: 30Dec63   ENCL: 00   SUB CODE: EM, EC

NO REF SOV: 002   OTHER: 000   JPRS

Card 1/1

BOBROVNIKOV, M.S.; MIRONOV, V.L.; SMIRNOV, V.P.

Excitation of surface waves by continuously distributed nonpro-
truding sources. Izv.vys.ucheb.zav.; radiotekh. 7 no.5:589-596
S-O '64.   (MIRA 18:4)

BOBROVNIKOV, M.S.; GOSHIN, G.G.; SMIRNOV, V.P.

Effective excitation of radial cylindrical surface waves.
Radiotekh. i elektron. 10 no.6:1023-1028 Je '65.

(MIRA 18:6)

BOBROVNIKOV, M.S.; PONOMAREVA, V.N.; MYSHKIN, V.G.; STAROVOYTOVA, R.P.

Diffraction of a surface wave incident at an arbitrary angle
on the bend of an impedance strip. Izv. vys. ucheb. zav.; fiz.
8 no.1:162-169 '65.   (MIRA 18:3)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom
gosudarstvennom universitete imeni Kuybysheva.

L-34489-66   EWT(1)   GG

ACC NR: AP6013456   SOURCE CODE: UR/0139/66/000/002/0011/0015

AUTHOR: Bobrovnikov, M. S.

ORG: Siberian Physicotechnical Institute im. V. D. Kuznetsov (Sibirskiy fiziko-tekhnicheskiy institut)

TITLE: Diffraction of electromagnetic waves by a surface-impedance discontinuity in a coaxial waveguide

SOURCE: IVUZ. Fizika, no. 2, 1966, 11-15

TOPIC TAGS: coaxial cable, waveguide diffraction, phase shifter, electric impedance, waveguide propagation, ELECTROMAGNETIC WAVE DIFFRACTION

ABSTRACT: The article deals with the case when the internal core of a coaxial wave-guide is an impedance cylinder on which there is a surface-impedance step. Such a situation arises in coaxial phase shifters for the decimeter band and similar devices in which ridged or helical slow-wave cylindrical systems in coaxial lines are used. The author calculates the response of such a system to an incident axially-symmetrical electrical-coaxial waveguide mode expressed in terms of Bessel and Hankel functions, the field diffracted by a step being represented in the form of a Fourier integral. Generalized expressions are presented for the transmission and reflection coefficients in a form that is common to all closed systems to this type. When the outer conductor of the coaxial waveguide becomes infinite, the problem reduces to the diffraction of

Card 1/2

L 34489-66

ACC NR: AP6013456

a symmetrical axial surface wave by a discontinuity of surface impedance of a round cylinder, and the results go over into the rigorous solution. Orig. art. has: 1 figure and 20 formulas.

SUB CODE: 20, 09/. SUBM DATE: 31Dec64/ ORIG REF: 005/

Card 2/2

BOBROVNIKOV, M.S.; MYSHKIN, V.G.; STAROVOYTOVA, R.P.

Problem concerning the excitation of a dihedral right angel with impedance edges. Radiotekh. i elektron. 8 no.10:1791-1793 O '63.   (MIRA 16:10)

BOBROVNIKOV, M.S.; STAROVOYTOVA, R.P.

Excitation of a dihedral right angle wedge with impedance
planes. Radiotekh. i elektron. 7 no.11:1910-1915 N '62.
                                         (MIRA 15:11)
              (Microwaves)

BOBROVNIKOV, N.I.

Dwellings

Better operation and preparation of residential buildings for and during the winter
Gor. khoz. Mosk. 26 no. 8, 1952

BOBROVNIKOV, N.I.

For the introduction of advanced technology in Moscow's muni-
cipal economy. Gor. khoz. Mosk. 29 no.8:1-4 Ag '55.

(MLRA 8:9)

1.Zamestitel' predsedatelya Ispolkoma Moskovskogo Soveta
(Moscow--Municipal services)