

POPOV, I. V.

COLEEN

SO: FOREIGN PRESS DIGEST

86

FPD: CYBERNETICS

31 Aug 71

UDC 002.6(47+57)

63. USSR

POPOV, I. V.

"Nation-wide Scientific and Technical Information Network in the Soviet Union"

Moscow, Lecture Course, All-Union Institute of Scientific and Technical Information (VINITI), Moscow, 28 Sep - 23 Dec, 1970, 48 pp (from R-Zh -- Informatika, No 4, Apr 71, Abstract No 71.4.2)

Translation: The objective prerequisites and basic principles of the construction of a state-wide system of scientific and technical information in the USSR, the history of the development of informational activity, and the structure and organization of the system of scientific and technical information at the modern stage are considered.

Epidemiology

UDC 616.91

USSR

POPOV K. V. Candidate of Medical Sciences; MAGAZNOV, A. M.;  
CHURKIN, G. S., Lt Col Med Serv

"Focus of Hemorrhagic Fever With Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 71-72

Abstract: In Tambovskaya Oblast, hemorrhagic fever with a renal syndrome (HFRS) was first recorded in 1965 (two cases). Since the disease reappeared in 1967, epidemiological and epizootiological studies were initiated in that year. The HFRS focus is located between the mixed forest zone and the chernozem steppe with wheat, corn, and sugar beet fields where the groundwater level is high. The forest is a convenient zoological habitat. The village where seven HFRS cases were recorded in 1967 and 1968 is located in a small, neatly kept clearing in the forest. All patients were persons employed on construction work in the forest and working directly with underbrush and building material refuse. The area was highly infested with murine rodents with

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PDPOV, H. V., et al, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71,  
pp: 71-72

the common vole most numerous (about 50% of all murine rodents caught). Serological tests performed on these animals revealed the presence of HFRS antibodies in 59.4% of common voles during outbreak periods, and in 11% of common voles and in 3.7% of field mice during disease-free periods. Morbidity among the workers occurred only during periods when the number of common voles inhabiting that area was high. The data indicate that the disease was transmitted from common voles to men working with refuse material polluted by these rodents. The above-described area seems to be the only focus, and a relatively young one, of HFRS in Tambovskaya Oblast.

2/2

USSR

UDC 669.14:620.178.74

KAZANTSEV, A. P. and POPOV, K. V.

"On the Criteria of Embrittlement of Steels at Low Temperatures"

Moscow, Zavodskaya Laboratoriya, Volume 6, 71, pp 710-713

Abstract: In the usual method of testing steels for tendency to brittleness at low temperatures (dynamic bending for shock ductility) complex indirect methods must be used to divide the total work done into its components, work expended on plastic deformation and the formation of a ductile crack of the critical dimension, and work expended on the propagation of this crack across the rest of the cross section of the sample. Ignoring some small energy losses, the latter can be subdivided into elastic energy accumulated in the sample-machine system and supplementary energy of ductile propagation.

These subdivisions can be determined directly from oscillographic recordings of shock bending. The oscillograms show the disappearance of the supplementary energy factor as temperature is lowered, followed by the disappearance of the plastic deformation work, until the work of fracture is done completely by elastic energy accumulated in the system, represented as a single sharp peak in the oscillogram. Coordination with studies of the fracture cross section show that

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Kazantsev, A. P. et alia, Moscow, Zavodskaya Laboratoriya, Vol 6, 71, pp 710-713

the single peak appears when the fracture is totally brittle. There are three important temperature points: the temperature at which some brittle fracture appears, the temperature at which the crack is generated as a ductile fracture but propagates exclusively as a brittle fracture, the temperature at which the entire fracture is brittle. These points can be determined without an oscillograph by examination of fractures in steels in which brittle fracture has a clearly visible crystalline characteristic. Diagrams in the article relate fracture cross section to oscillograph traces and temperature-work curves.

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USSR

EDC 620.192.47

*P*  
GRIGOR'YEVA, G. M., POPOV, K. V., and NOSYREVA, Ye. S., Institute of Petroleum and Coal Chemical Synthesis, Angarsk

"Specifics of Formation and Development of Cracks During Rupture of Hydrogenated Iron"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Sep 70, pp 637-639

Abstract: Technical iron was studied in the annealed state. Specimens 4 mm in diameter were hydrogenated electrolytically to a content of 3 ml/100 g, then tested at -196 to +20° C at a rate of extension of  $5 \cdot 10^{-4}$  sec<sup>-1</sup>. After rupture, the structure of the metal near the rupture surfaces was studied. The specifics of the structure and location of cracks in the hydrogenated iron indicated that under the temperature-rate conditions of formation of reversible hydrogen embrittlement, the formation of the principal crack occurs by formation of a large number of seed cracks, their development, and subsequent combination upon viscous rupture of the bridges between them. This is confirmed by fractographic analysis.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--A PROGRAM DEVICE -U-

AUTHOR--(03)-GULYAYEV, A.I., LISITSYN, A.I., POPOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 260284, FILED 15 NOV 68  
REFERENCE--MOSCOW, OTKRYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRATSY,  
DATE PUBLISHED--70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, PULSE GENERATOR, COMPARATOR CIRCUIT, COINCIDENCE  
CIRCUIT, TIME INTERVAL COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0731

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126441

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126441  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A PROGRAM DEVICE WHICH CONTAINS A READING UNIT, CADENCE PULSE GENERATOR, TRACKER, COMPARISON CIRCUIT, COINCIDENCE CIRCUIT AND SYNCHROPULSE COUNTER, THE COMPARISON CIRCUIT BEING CONNECTED TO THE SYNCHROPULSE COUNTER. AS A DISTINGUISHING FEATURE OF THE PATENT, IN ORDER TO IMPROVE THE PRECISION OF TIME INTERVALS IN THE PROGRAM, THE DEVICE HAS A TIME REGISTER CONNECTED TO THE READING UNIT AND THE COINCIDENCE CIRCUIT, AND A SECOND COMPARISON CIRCUIT CONNECTED TO THE FIRST. THE FIRST COMPARISON CIRCUIT IS CONNECTED TO THE TIME REGISTER AND TO THE SYNCHROPULSE COUNTER, AND THE COINCIDENCE CIRCUIT IS ALSO CONNECTED TO THE CADENCE PULSE GENERATOR.

FACILITY: INSTITUT

BIOLOGICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED



USSR

*P* UDC 615.475:612-087

GULYAYEV, A. I., LISITSYN, A. I., ~~POPOV, D. A.~~, Institute of Biological Physics, Academy of Sciences of the USSR

"A Program Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 3, 1970, p 128, patent No 260284, filed 15 Nov 68

Abstract: This Author's Certificate introduces a program device which contains a reading unit, cadence pulse generator, tracker, comparison circuit, coincidence circuit and synchropulse counter, the comparison circuit being connected to the synchropulse counter. As a distinguishing feature of the patent, in order to improve the precision of time intervals in the program, the device has a time register connected to the reading unit and the coincidence circuit, and a second comparison circuit connected to the first. The first comparison circuit is connected to the time register and to the synchropulse counter, and the coincidence circuit is also connected to the cadence pulse generator.

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34451 (CONF-680113-(Vol.4), pp 1147-72) UTILIZATION OF MHZ-BAND ELECTROMAGNETIC WAVES FOR STABILIZATION AND CONFINEMENT OF PLASMA. Levadnyi, G. B.; Orhinski, D. V.; Osovets, S. M.; Baylov, E. L.; Poroy, L. A.; Sintsyn, V. L. (Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Moscow, Institut Atomnoi Energii).

A plasma column produced by a condenser bank discharge was investigated. The stabilization circuit consisted of four or six rods placed symmetrically around the axis of the discharge chamber in which the plasma column was localized. Pictures of the plasma are given. (M.O.W.)

July

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1944

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USSR

UDC 621.317.752

DUBIN, V. F., GAMAYUNOV, G. K., POPOV, L. F.

"Contact Device of an Automatic Machine for Sorting Integrated Circuits"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296290, division H, filed 20 Oct 69, published 12 Feb 71, pp 198-199

Translation: This Author's Certificate introduces a contact device of an automatic machine for sorting integrated circuits. The device contains a two-sided printed-circuit board with a central opening and contacts equal in number to the wires, a clip for holding the integrated circuit, and a drive mechanism with cams. As a distinguishing feature of the patent, measurement accuracy and contact reliability are improved and the capacitance between contacts is reduced by radial location of contacts in the form of releasable spring clamps on both sides of the printed-circuit board around the central opening. Contact is made between the leads of the circuit to be tested and the contacts on the circuit board by means of clips made in the form of spring-loaded hooks radially located with respect to the opening in the circuit board.

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USSR

POPOV, L. G., and DOROFEYEV, A. D.

"Determination of Parameters of Annular Jet With Diffusion Combustion Flame Propagating Along a Heat-Insulated Circular Cylinder"

Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp 66, pp 42-48 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B1084, by Yu. F. Dityakin)

Translation: The article solves the problem of diffusion combustion in an annular jet propagating along a heat-insulated circular cylinder. The method of the equivalent problem in heat-conductivity theory is used. Taken as starting point is a system of partial equations for three functions: jet velocity head, excess heat content, and excess concentration. Initial and boundary conditions are formulated for inner and outer flame zones. The dynamic problem is solved independently of the heat and diffusion problem. In solving the dynamic problem, dimensionless velocity head is used as the sought quantity, and solution of the obtained equation is found with the help of a Laplace transform. The heat and diffusion problems are solved separately for inner and outer flame zones with subsequent linkup at the flame boundary. The solution is also obtained with the help of a Laplace  
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USSR

POPOV, L. G., and DOROFEYEV, A. D., Tr. Leningr. in-t aviats. priborostr.,  
1970, vyp 66, pp 42-48

transform. Expressions are found for temperatures and concentrations in  
each flame zone. A formula is given for reduced flame length.

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1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--POLYPHENOLS -U-  
AUTHOR-(02)-POPOV, L.K.; YEGIDIS, F.M. *P*  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 265,117  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--09MAR70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALKYLPHENOL, POLYNUCLEAR HYDROCARBON, PHENOL, CONDENSATION  
REACTION, CHLORINATED AROMATIC COMPOUND, CHEMICAL PATENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1757 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0136997

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136997

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYPHENOLS ARE PREPD. BY  
CONDENSING 3,5,DI,TERT,BUTYL,4, HYDROXYBENZAL CHLORIDE WITH A  
4,ALKYL,SUBSTITUTED PHENOL IN A NEUTRAL SOLVENT.

UNCLASSIFIED

POPOV LN

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**TECHNICAL TRANSLATION**

165

AKW / PST:AMT-23-2015-72  
29 Jul 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION  
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,  
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DENYGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY  
INERT T.G. SCHEVCHENKO

Translated for FSTC by ACS1

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- 1st Page -

USSR

UDC: 621.382.2

KOZLOV, N. P., LEVASHOV, I. P., MURYGIN, V. I., POPOV, I. V., SONDAYEVSKIY, I. A. and STAFEYEV, V. I., Moscow Institute of Electronic Technology  
"Some Research in S-Diode Neuristors"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972, pp 1054-1061

Abstract: The neuristors investigated in this article have S-shaped volt-ampere characteristics and are of two types: first, with common anti-cutoff contact and a sectioned p-n junction; second, with common p-n junction and sectioned anti-cutoff contact. The schematics of both types are given. If the diode structures in the circuit are sufficiently far from each other, the switching delay time may be much less than the switching time of an individual element, and the interelement switching time can be neglected. It is shown that when the delay time between the switching of neighboring elements is much greater than the switching time, the dependence of the breakdown voltage on the parameters of the material has only a slight effect on the coupling between the active elements in the neuristor line. The second part of this paper describes experiments performed to verify the theoretical results of the first part. These experiments used neuristors of p-type germanium compensated by gold.

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USSR

UDC 669.24:548.4

POPOV, L. YE., TERESHKO, I. V., GORENKO, L. K., KONEVA, N. A., KOZLOV, E. V.,  
and KOVALEVSKAYA, T. A., Siberian Physicotechnical Institute imeni V. D.  
Kuznetsov and Tomsk Engineering Construction Institute

"Dislocation Structure of  $Ni_3Al$  at Different Stages of Deformation"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 409-  
418

Abstract: This study was conducted to study the change in the nature of dislocation structure in intermetallide  $Ni_3Al$  with increasing degree of deformation. Alloys with nickel and 22.9 and 24.0 at.% Al were investigated to which deformations of 1-12% were applied. At small degrees of deformation (1-2%) interlaces of dislocations were extended along slip traces and the average distance between slip traces was 8300 A. The number of interlaces and dislocation density increased with increased deformation. Plastic deformation of  $Ni_3Al$  results in the generation of three types of dislocations two of which are inherently located in octahedral planes and one -- cubic planes. In the deformed alloy numerous wide stacking faults are observed when alloy composition is close to stoichiometric and the energy of the stacking faults amounts to 29 erg/cm<sup>2</sup> for the alloy with 24.0 at.% Al. At high degrees 1/2

USSR

POPOV, L. YE., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 409-418

of deformation, dislocation interlacings are noted which form a cellular structure. 9 figures, 22 bibliographic references.

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USSR

UDC: 531.862

RUSINOV, M. M., IVANOV, P. D., ~~POPOV, I. Ye.~~, LIVSHITS, E. M., GOL'DBERG, G. R., KUDRYASHOV, A. M., Leningrad Institute of Precision Mechanics and Optics

"A Sighting Tube for Observing Objects in an Aqueous Medium"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328410, Division G, filed 16 Sep 70, published 2 Feb 72, p 143

Translation: This Author's Certificate introduces: 1. A sighting tube for observing objects in an aqueous medium which contains two objective lenses with protective glasses, collective lenses and erecting systems. The tube also contains a commutating flip mirror and an ocular. As a distinguishing feature of the patent, the tube is designed for simultaneous use of the visual optical system and photography of the field of view of the objective lenses. Placed directly in front of the photosensitive film is a three-component system of single positive menisci with concavity facing the object. The three-component system is introduced into the beam path by an auxiliary beam-splitting flip mirror. 2. A

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USSR

RUSINOV, M. M. et al., USSR Author's Certificate No 328410

modification of this tube distinguished by the fact that provision is made for compensating for rotation of the image and correcting for chromatic aberrations. Placed in front of the ocular is a PK-0° prism and a plane-parallel plate with chromatic radius.

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Thermodynamics

USSR

UDC 669.018

KOZHEMYAKIN, N. V. and POPOV, L. YE., Siberian Physico-Technical Institute  
imeni V. D. Kuznetsov at Tomsk State University

"The Isothermal Start of Superdislocations in the B2 Superstructure"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 7, 1971, pp 7-12

Abstract: The purpose of this article is to compute the intensity of the start of superdislocations in the B2 superstructure, which is assumed to be an isothermal process. The author makes extensive use of mathematical formulas to discuss his assumptions and employs figures and tables to illustrate his findings. Both tables are used to predict substitutional probabilities. Figure 1 depicts the intensity of the isothermal and adiabatic start of superdislocations in the B2 superstructure of stoichiometric composition as functions of the temperature. Figure 2 shows the intensity of the start of superdislocations in a solid solution of non-stoichiometric composition as a function of the temperature: both isothermal and adiabatic start. Figure 3 gives the intensity of deceleration of the superdislocation produced by disruption of the short-range order in the melt as a function of the temperature. The author gives 3 figures, 2 tables, and 9 bibliographic entries.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--MECHANICAL PROPERTIES OF ORDERED SOLID SOLUTIONS -U-  
AUTHOR--(02)-POPOV, L.YE., KOZLOV, E.V.  
COUNTRY OF INFO--USSR  
SOURCE--MECHANICAL PROPERTIES OF ORDERED SOLID SOLUTIONS (MEKHANICHESKIYE  
CVOYSTVA UPORYADOCHENNYKH TVERDYKH RASTVOROV) MOSCOW. METALLURGIYA.  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--SOLID SOLUTION, PLASTIC DEFORMATION, ALLOY, ORDERED ALLOY,  
MECHANICAL PROPERTY, CYRSTAL LATTICE STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/1279 STEP NO--UR/0000/70/000/000/0001/0216  
CIRC ACCESSION NO--AM0130263  
UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--04DEC70

272 020

CIRC ACCESSION NO--AM0130263

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, TABLE OF CONTENTS: PREFACE 5.  
CHAPTER I ORDERED SOLID SOLUTIONS 9. II DISLOCATION IN  
SUPERLATTICES 9. III SPECIAL ATOMIC MECHANISMS OF BLOCKING AND  
INHIBITION OF DISLOCATIONS IN ORDERED SOLID SOLUTIONS 54. IV  
CHARACTERISTICS OF THE MECHANISM OF PLASTIC DEFORMATION OF ALLOYS WITH A  
LONG RANGE ORDER 72. V EXPERIMENTAL DATA ON THE MECHANICAL  
PROPERTIES AND DISLOCATION STRUCTURE OF ORDERED ALLOYS 94. VI ON THE  
PHYSICAL THEORY OF PLASTICITY AND DURABILITY OF ORDERED SOLID SOLUTIONS  
170. LITERATURE 206. IN THE MONOGRAPH IS EXAMINED THE NATURE OF  
PLASTICITY AND DURABILITY OF ORDERED ALLOYS AND METAL COMPOUNDS. THE  
DISCUSSION OF THE EXPERIMENTAL DATA IS BASED ON PRESENT DAY DISLOCATION  
THEORIES OF ORDERING OF METALS. THE BOOK IS FOR METAL PHYSICISTS,  
PHYSICAL METALURGISTS AND ALSO FOR ENGINEERS OF FACTORY LABORATORIES.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--INHIBITION OF SUPERDISLOCATIONS BECAUSE OF CORRELATION DESTRUCTION  
IN CLOSE PACKED SOLID SOLUTIONS -U-  
AUTHOR-(03)-KOZLOV, E.V., POPOV, L.YE., GINZBURG, A.YE.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 146-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--SOLID SOLUTION, ORDERED ALLOY, CRYSTAL DISLOCATION PHENOMENON,  
TRANSITION TEMPERATURE, YEILD STRESS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/1340 STEP NO--UR/0185/70/015/001/0146/0149  
CIRC ACCESSION NO--AP0107813  
UNCLASSIFIED

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PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107813

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALUE AND DEPENDENCE OF FORCES THAT INHIBIT DISLOCATIONS ON THE EXTENT OF LONG RANGE ORDER WERE DETD. FOR SOLID SOLNS. HAVING L1 SUB2 STRUCTURE (OF AUCU SUB3 TYPE). THESE DISLOCATIONS FORMED DUE TO DESTRUCTION OF CORRELATION. MAX. INHIBITION OF DISLOCATION EXIST AT THE ORDERING TEMP. (T SUBR). ABOVE T SUBR THE DISLOCATIONS MOVE IN PAIRS. THE BEHAVIOR OF YIELD STRESSES CANNOT BE ATTRIBUTED SOLELY TO THE INHIBITION OF DISLOCATIONS, WHICH OCCUR DUE TO CORRELATION, DESTRUCTION.

UNCLASSIFIED

USSR

UDC 533.6.013.42

LYSENKO, P. Ye., POPOV, M. A.

"On Oscillations of Gates in Pressure Water Conduits"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 117-120 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V410)

Translation: The problem of oscillations of gates caused by oscillations of its support structures is considered. The problem is solved in the linear formulation within the framework of the theory of small oscillations of a viscous incompressible liquid considering the wave character of the propagation of perturbations in walls of the water duct and also considering hydrodynamic pressure at the input to the water duct that arises due to oscillations of the structure of the hydraulic equipment. Simplified formulas are proposed for calculating oscillations of gates that are suitable for engineering calculations. R. A. Shipov.

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--CATALYTIC ALKYLATION OF ANILINE BY 2,METHYL,2,PROPANOL -U-

AUTHOR--(02)-LOBANOVA, N.S., POPOV, M.A. P

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. 1970, 43(4), 938-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, ANILINE, PROPANOL, ALUMINUM SILICATE, CATALYST  
ACTIVITY, ALUMINUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1383

STEP NO--UR/0080/70/043/004/0938/0939

CIRC ACCESSION NO--AP0128783

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 015

CIRC ACCESSION NO--AP0128783

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VAPOR PHASE ALKYLATION OF PHNH  
 SUB2 (I) TO ME STZ3 CNHPH (II) BY 2-METHYL-2-PROPANOL (III) CATALYZED BY  
 AL SILICATE, AL SILICATE PLUS 5PERCENT AL SUB2 O SUB3, AND AL SUB2 O  
 SUB3 AT 270-360DEGREES WAS STUDIED. A MIXT. OF 19.7 G I AND 33.0 G III  
 (1:2.1 MOLAR RATIO) WAS FED WITHIN 5 HR INTO A TUBE (15 MM DIAM.) FILLED  
 WITH 80 ML CATALYST I, AT 0.15 HR PRIME NEGATIVE 1 VOL. RATE AND THE MIXT.  
 DRIED AND DISTD TO GIVE LARGER THAN 73PERCENT RECOVERY OF I AND GOOD  
 YIELDS OF II. AL SILICATE WAS THE MOST ACTIVE CATALYST AND GAVE, AT  
 300DEGREES, 73.6PERCENT RECOVERY OF I AND 55.3PERCENT II, 8 SUB752  
 232DEGREES, N PRIME 20 SUB3 1.5380, D PRIME 20 0.9490. SOMEWHAT LESS  
 ACTIVE WAS AL SILICATE PLUS 5PERCENT AL SUB2 O SUB3, WHICH, AT  
 330DEGREES, GAVE 78.8PERCENT RECOVERY OF I AND 53.1PERCENT II. AT THE  
 SAME TEMP., AL SUB2 O SUB3 GAVE ONLY 39.1PERCENT II. (ME SUB3 C) SUB2  
 NPH WAS NOT AMONG THE PRODUCTS.

UNCLASSIFIED

USSR

UDC: 8.74

ISAYEV, V. P., ~~POPOV, M. E.~~, and POPOV, R. A.

"The Problem of Evaluating the Functioning of the 'Operator-Control Desk' Link Through Modeling on A Digital Computer"

Moscow, V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Techniques and Programming--collection of works) "Sov. Radio," 1972, pp 133-139 (from RZh--Matematika, No 8, 1972, Abstract No 8V647)

Translation: Problems of the functioning of the "operator-control desk" link are considered. To evaluate the quality of the link functioning, a model realized on a digital computer is proposed. A block diagram is given, along with the results of the modeling, to permit evaluation of the functioning of the link by an integral computation of the time spent in the collection, control, and transmission of commands. Authors' abstract

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USSR

UDC: 8.74

ISAYEV, V. P., POPOV, M. F., POPOV, R. A.

"On the Problem of Evaluating Functioning of the 'Operator - Control Panel' Link by Digital Computer Modeling"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 133-139 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V647)

Translation: The paper deals with questions of functioning of the "operator-control panel" link. It is proposed that a model realized on a digital computer be used for evaluating the quality of operation of the link. A flowchart is given as well as the results of modeling, which enable evaluation of the operating quality of the "operator-control panel" link by integral estimation of the time expended in preselecting, checking and transmitting a command. Authors' abstract.

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USSR

UDC 532.57+532.137+536.51+532.14.08+531.787

POPOV, M. V.

"New Methods of Constructing Sonic Gas Velocity Converters"

V sb. Metody i pribory dlya izmereniya paskhoda i kolichestva zhidkosti, gaza i para (Methods and Instruments for Measuring the Flow Rate and Quantity of Liquid, Gas and Vapor--collection of works), Moscow, 1973, pp 98-102 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B1153)

Translation: An autooscillatory frequency method is described for measuring the flow velocity excluding a number of essential deficiencies of acoustic anemometers. A characteristic feature of the method is the application of the autooscillatory system including an amplifier with acoustic delaying feedback which permits direct conversion of the flow velocity variation into frequency variation of the harmonic oscillations of the system. A description is given of the block diagram of the acoustic gas velocity converter and a functional schematic is presented for the autooscillatory converter. The ultrasonic vibrations are propagated in the flow and received by a receiver. The propagation time of the emitted wave front from the radiator to the receiver depends on the flow velocity. From the receiver output, the voltage goes to the input of a demodulator in which detection of the high frequency oscillations and separation of the modulating low-frequency voltage take place. From the exit of the

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USSR

POPOV, M. V., *Metody i pribory dlya izmereniya paskhoda i kolichestva zhidkosti, gaza i para*, Moscow, 1973, pp 98-102

demodulator, the latter is fed to an amplifier. The amplified modulating voltage goes to the modulator input. Thus, the system is closed with respect to low frequency. It is demonstrated that the output frequency of the converter depends linearly on the flow velocity. The error estimate made demonstrated that at a flow velocity of 60 m/sec, the absolute error in measuring the velocity is 0.32 m/sec.

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Acc. Nr.: ARO105440

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Ref. Code: UR0000

JPRS 49937

Electroacoustic System for Measuring Wind and Temperature

(Abstract: "A Method for Constructing an Electroacoustic System for Measuring Wind and Temperature Parameters," by S. M. Persin, E. L. Persina and M. V. Popov; Leningrad, Trudy Glavnyy Geofizicheskoy Observatorii, No 40, 1969, pp 65-67)

/From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970, 18587

A phase-frequency method for constructing an electroacoustic system for measuring wind velocity and temperature is described. The authors give a block diagram of an acoustic anemometer based on the phase-frequency method. This method makes it possible to eliminate a number of shortcomings characteristic of the phase and frequency measurement methods. The phase-frequency method can be used for measuring both the mean wind velocities and temperature, as well as their fluctuations. Bibliography of 6 items.

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1/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT7

TITLE--TOLERABLE DEVIATIONS IN QUANTITY OF SEMIFINISHED PIECES SUPPLIED

-U-

AUTHOR--POPOV, M.YE.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1070, NR 5, PP 50-53

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL FORGING, METAL CASTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/1570

STEP NO--UR/0422/70/000/005/0050/0053

CIRC ACCESSION NO--AP0120349

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120349

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE ANALYSES THE CAUSES ( DEVIATIONS IN THE QUANTITY OF SEMIFINISHED PIECES SUPPLIED. THEORETIC/ FUNCTIONS FOR VALUES OF THE DEVIATION ARE DEDUCED. ON THE BASIS OF THE RESULTS OBTAINED, THE AUTHOR HAS PREPARED TABLES FOR TOLERABLE DEVIATIONS IN THE QUANTITIES SUPPLIED OF FORGED AND CAST PIECES. TABLES 2, FIGS. 4.

UNCLASSIFIED

UDC 632.95

USSR

BADULIN, A. V., Chief of the Division of Plant Protection, Volga Scientific Research Institute of Irrigation Agriculture; BURDALAYEVA, T. S., All-Union Scientific Research Institute of Reclamative Afforestation; POPOV, N. A., Chief of the Laboratory of Chemico-Biological Control, Volgograd Disinfection Station; and PONOMARENKO, V. F.

"Studies on Applications of Dibrom"

Moscow, Zashchita Rasteniy, Vol 17, No 6, 1972, pp 32-33

Abstract: Organophosphorus compounds, although highly toxic with respect to their action as insecticides and acaricides, are relatively safe as far as contamination of the environment and accumulation in food products are concerned. The applications of dibrom, which decomposes rapidly and hence does not present any serious danger to the health of human beings, were studied for these reasons. Dibrom is available in the form of a 50% emulsion containing OP-10 as the emulsifier. To test the effectiveness of dibrom against household insects (the common cockroach, bedbugs, and various species of flies including the house, bluebottle, greenbottle, blow, and flesh flies), the insects were placed in contact with a plywood sheet treated with a dibrom emulsion in the amount of 100 g/m<sup>2</sup>. After a 15 min contact with the plywood sheet, the still living insects were removed and observed.

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USSR

BADULIN, A. V., et al., Zashchita Rasteniy, Vol 17, No 6, 1972, pp 32-33

Dibrom in a concentration of 0.5-1% killed cockroaches in 3-72 hrs, producing an irreversible paralysis in 1 hr. In a concentration of 0.25-0.5% dibrom killed bedbugs in 3-24 hrs and produced paralysis in 10-15 min. In a concentration of 0.5-0.1% / 0.5-1% / it killed all flies in 3-5 min. The surface treated with dibrom remained effective against cockroaches and bedbugs for a period up to 24 hrs and against flies for a period up to 3-4 days. Bait poisoned with 0.25-0.5% dibrom was effective against cockroaches. On being sprayed on plants infested with the insect pests, an 0.15% emulsion of dibrom killed all pea and rose aphids and an 0.1% emulsion all larvae of the fig cicada and of the rose sawfly within 4-5 hrs. An irreversible paralysis was produced within the first few minutes of contact of these insects with dibrom. Larvae of the elm leaf beetle were resistant to dibrom. Dibrom in a concentration of 0.2% was effective against larvae of the fox-colored sawfly. The dibrom emulsions did not burn the plants and preserved their toxicity for 35 days (the time during which observations were carried out) on being kept at 20-23° after preparation.

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USSR

UDC 632.954

POPOV, N. D., Dryazginsk Experimental Station, VITIM

"The Effect of TKhA and Dalapon on the Weeds of the Tobacco Plantations and on the Seed Reserve of Annual Grasses in the Soil"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 7 (105), 1972, pp 56-58

Abstract: A study was carried out on the utilization of sodium trichloroacetate (TKhA) and dalapon for the control of the annual grassy weeds -- green foxtail and prickly grass -- on the tobacco plantations. The weeds could be controlled to a considerable degree by the use of 8 kg/hectare doses of TKhA or dalapon in conjunction with a double manual weeding. These herbicides, however, did not prevent the surviving weeds from seeding the fields. This effect was not problematic with the monoculture tobacco, but complicated succeeding harvests in case of rotational planting.

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L/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CATALYTIC AND ADSORPTION PROPERTIES OF MIXED CATALYSTS BASED ON  
NICKEL -U-  
AUTHOR--(05)--KASIMOVA, G.I., BIZHANOV, F.B., SOKOLHSKIY, D.V., POPOV, N.I.,  
KHISANETDINOV, Z.M.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 20-4  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CATALYST ACTIVITY, NICKEL, MAGNESIUM OXIDE, HYDROGENATION,  
ORGANIC NITRO COMPOUND, PHENOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2029 STEP NO--UR/0360/70/020/002/0020/0024  
CIRC ACCESSION NO--AP0125617  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF MGO ADDNS. ON THE ACTIVITY OF A NI CATALYST. THE CARRIER:NI RATIO WAS CONST., 4:1. THE ACTIVITY OF THE NI CATALYSTS FOR THE HYDROGENATION OF O-NITROPHENOL INCREASED 2.5 TIMES UPON USING A CARRIER AND FOR THE ADDN. OF MGO; THE OPTIMUM ADDN. BEING NI:MGO EQUALS 1:0.2. A COMPARISON OF THE CATALYTIC AND ADSORPTION PROPERTIES SHOWED THAT THEIR CHANGES ARE SYMBATIC. THE MAX. ACTIVITY WAS OBTAINED FOR SAMPLES REDUCED AT 250DEGREES FOR NI, AT 400-50DEGREES FOR THE NI:CLAY EQUALS 1:4 CATALYST, AND AT 350-400DEGREES FOR THE NI:MGO CATALYST. FOR THE PROMOTED CATALYST THE REACTION IS LIMITED BY THE ACTIVATION OF THE UNSATD. COMPD. FACILITY: KAZ. KHIM.-TEKHNOL. INST., CHIMKENT, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--STUDY OF HEAT FLUXES IN A PULSED PLASMA ACCELERATOR -U-

AUTHOR--(04)--RUSANOV, V.P., SAFRONOV, B.G., VERESHCHAGIN, V.L., POPOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--INZH. FIZ. ZH.; 18: 534-7 (MAR 1970)

DATE PUBLISHED---MAR 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA ACCELERATOR, PLASMA JET, ELECTRODE PROPERTY, ENERGY SPECTRUM, TEMPERATURE MEASUREMENT, PLASMA MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1200

STEP NO--UR/0170/70/018/000/0534/0537

CIRC ACCESSION NO--AP0124854

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PULSED OPERATION OF AN EROSION TYPE PLASMA ACCELERATOR, THE THERMAL STATE OF STRUCTURE ELEMENTS IS DETERMINED AND THE PARAMETERS OF THE PLASMA JET ARE MEASURED. THE INNER ELECTRODE IS SHOWN TO HAVE THE HIGHEST TEMPERATURE. WITHIN THE OPERATION OF THE ACCELERATOR, AN INTENSIVE RISE IN DIELECTRIC TEMPERATURE TAKES PLACE RESULTING IN CHANGES IN THE PLASMA JET PARAMETERS. ESTIMATION OF THE ENERGY DISTRIBUTION IN A DISCHARGE WAS CARRIED OUT FROM THE MEASUREMENT RESULTS.

UNCLASSIFIED

USSR

UDC 531.717.2.087.92:62-531.6.088.6

LUTOVINOV, B. V., PAYKIN, I. M., POPOV, N. R.

"Compensation for Axial Beating of Bearings with Rolling Friction"

Vestn. Khar'kov. Politekhn. In-ta [Herald of Khar'kov Polytechnical Institute], 1972, No 66, pp 31-34; (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.164, from the Resume).

Translation: A device for compensation of axial beating of a bearing with rolling friction with reciprocating and rotary motion of the shaft is studied. Compensation is achieved by introducing a signal from an axial shaft bearing sensor as a correcting component to the regulation of drive speed of the reciprocating motion. The device developed, in combination with design changes of the bearing unit, allows axial beating to be compensated with an accuracy of at least  $0.2 \mu$  which, in turn, allows the accuracy of maintenance of the rate of motion to be increased. 2 Figures; 2 Biblio. Refs.

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USSR

UDC 621.315.592(088.8)

VERZIN, I. I., PAYKIN, I. M., POPOV, N. R., SUYETIN, O. N., FURMAN, B. A.

"Device for Compensation of Axial Play of the Priming Rod of Furnaces for Growing Single Crystals"

USSR Author's Certificate No 275412, Filed 1 Dec 67, Published 14 Oct 70  
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 46479P)

Translation: A device for compensation for axial play of the priming rod of furnaces for growing single crystals contains a system for regulating the speed of the drive which displaces the priming rod. To decrease the axial play in the translational motion of the priming rod occurring during its rotation, an inductive displacement transducer is introduced, the moving part of which is rigidly connected to the priming rod. The stationary part is connected to the carriage on which the inoculation rod is mounted, and the output of which is connected to the input of the speed regulator of the drive for displacing the priming rod.

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USSR

UDC 616.61-002.26:616.92/.93

CHURKIN, G. S., Lt Col Med Serv; POPOV, N. V., Lt Col Med Serv,  
Candidate of Medical Sciences; MAGAZNOV, A. M.

"Using the Complement-Fixation Reaction to Detect Antigen of the  
Agent of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 7, 1971, p 81

Abstract: The complement-fixation test, with serum from con-  
valescent animals as immune serum and a chloroform extract from  
the kidneys, lungs, spleen, and liver as antigen, was performed  
in foci of hemorrhagic fever with a renal syndrome as a means  
of early detection of the disease among rodents and other small  
animals. Examination of the organs of 552 animals (493 caught  
in foci of the infection and 59 in places free of the disease)  
revealed C.F.T.-positives only in the organs of animals caught  
in foci of the infection. Antigen was found in almost 40% of  
animals.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--X RAY DETERMINATION OF IRON IN ROCKS -U-  
AUTHOR--(03)-GURVICH, YU.M., PLOTNIKOV, R.I., POPOV, N.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB., 1970, 36, (3), 294-295  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--CHEMICAL ANALYSIS, ROCK, GEOCHEMISTRY, IRON, X RAY ANALYSIS,  
SPECTROGRAPHIC ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0906 STEP NO--UR/0032/70/036/003/0294/0295  
CIRC ACCESSION NO--AP0131492  
UNCLASSIFIED



PROCESSING DATE--04DEC70

UNCLASSIFIED

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CIRC ACCESSION NO--AP0131492  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN X RAY RADIOMETRIC METHOD OF  
DETERMINING FE IN POWDER SAMPLES OBTAINED FROM ROCKS IS PROPOSED.  
WITHOUT ALLOWING FOR LOCAL VARIATIONS IN MACROSCOPIC ROCK COMPOSITION  
THE ERROR IS SIMILAR TO 10PERCENT. IF A CALIBRATION CURVE IS FIRST  
PLOTTED FOR EACH GEOLOGICAL SITE OR TYPE OF MATERIAL, THIS ERROR IS  
REDUCED BY A FACTOR OF 2. THE ERROR IS NO HIGHER THAN THAT ENCOUNTERED  
IN CONVENTIONAL X RAY METHODS BASED ON ABS. INTENSITIES.

UNCLASSIFIED

Acc. Nr.: AP0046778

Ref. Code: UR0125

UDC 621.791.03.96

USSR

SKACHKO, YU. N., MOSHKIN, V. F., GARKALYUK, R. I., POPOV, N. V., MEDVEDEV, A. N., SKORUPSKIY, B. P., KORSHUNOV, V. A.

"High-Frequency Welding of Spiral-Seam Pipe with Butt Seam Joining"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 63-65  
(from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: This article contains a study of the characteristic features of strip formation and upsetting during high-frequency welding of spiral-seam pipe with butt seam joining. New forming schemes and new designs of the mechanical units of tube welding mills are proposed. The peculiarities of welding pipe are investigated in the case of disturbance of the geometry of the initial tape. There are 4 illustrations and a 6-entry bibliography.

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Reel/Frame  
19790082

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EMISSIVITY OF LOWER LEVEL CLGUDS IN THE TRANSPARENCY WINDOW 8-12  
MICRONS -U-  
AUTHOR--(02)-KESHETNIKOVA, I.S., POPOV, O.I. *P*  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,  
VOL VI, NO 6, 1970, PP 639-640  
DATE PUBLISHED-----70  
SUBJECT AREAS--ATMOSPHERIC SCIENCES  
TOPIC TAGS--ATMOSPHERIC CLOUD, SPECTROMETER, EMISSIVITY, AIRCRAFT  
MEASUREMENT, VERTICAL SOUNDING OPTIC DENSITY/(U)SP123 SPECTROMETER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/0516 STEP NO--UR/0362/70/006/006/0639/0640  
CIRC ACCESSION NO--AP0132715  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132715

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF MEASUREMENTS OF THE SPECTRAL EMISSIVITY OF DENSE LOWER LEVEL CLOUDS. THE MEASUREMENTS WERE MADE WITH A SPECIAL SP-123 AIRBORNE DIFFRACTION SPECTROMETER (GRATING 75 RULINGS-MM). THE SPECTRAL WIDTH OF THE SLIT WAS 0.2 MICRON; THE ANGLE OF THE FIELD OF VIEW WAS 2DEGREES BY 4DEGREES; THE EMISSION DETECTOR WAS AN OAP-4 OPTICAL ACQU TICAL CHAMBER. THE INSTRUMENT WAS CARRIED ABOARD AN AIRCRAFT LABORATORY OF THE MAIN GEOPHYSICAL OBSERVATORY DESIGNED FOR MEASURING CLOUD SPECTRA IN THE ATMOSPHERE IN THE REGION 6.5-13 MICRONS. THE SPECTROMETER HAD A SPECIAL OPTICAL ROTATING HEAD WHICH REPLACED AN AIRCRAFT WINDOW. ROTATION OF THE SIGHTING MIRROR MAKES IT POSSIBLE TO MEASURE THE CLOUD SPECTRA DURING OBSERVATION IN THE NADIR AND SKY SPECTRA IN THE CASE OF OBSERVATIONS IN THE ZENITH. THE INSTRUMENT WAS CALIBRATED IN ABSOLUTE UNITS BY PERIODIC REGISTRY OF THE EMISSION SPECTRA FOR A BLACK BODY WITH A KNOWN TEMPERATURE. THE SPECTRA WERE REGISTERED DURING AIRCRAFT FLIGHT NEAR THE UPPER CLOUD BOUNDARY. THE CLOUDS WERE FIRST VERTICALLY SOUNDED FOR DETERMINING THEIR THICKNESS, OPTICAL DENSITY AND TEMPERATURE CROSS SECTION. EXTENSIVE FIELDS OF DENSE OPAQUE CLOUDS WERE SELECTED. FIG. 1 IN THE TEXT SHOWS THE MEAN SPECTRA OF CLOUDS AND THE SKY SPECTRA FOR TWO FLIGHTS. FIG. 2 IN THE TEXT SHOWS CLOUD EMISSIVITY CURVES COMPUTED ON THE BASIS OF MEASUREMENT DATA. THE EXPERIMENTAL DATA AGREE WELL WITH EARLIER COMPUTATIONS.

UNCLASSIFIED

USER

UDC 666.1.031.29

POPOV, O. N., Engineer. GALDINA, N. M., MANEVICH, V. Ye. Candidates of Technical Sciences. (State Scientific Research Institute of Glass)

"Investigating the Stability of Bakor-33 at Molten Glass Temperatures Under Industrial Conditions by the Method of Regression Analysis"

Moscow, Steklo i Keramka, No 8, Aug 71, pp 7-10

Abstract: Mathematical models of corrosion process of electro fusion-cast refractory slabs (250x400x600 m) made of Bakor-33 in the upper part of glass-melting furnaces were constructed using the method of regression analysis, on the basis of results of a study of refractory laying of 12 glass-melting furnaces for sheet glass, after their shutdown for overhaul. The depth of corrosion at the level of the molten glass surface served as dependent variable in the model, while the duration of furnace operation, the specific yield of glass mass, and melting temperatures (1400-1540°C), given in a table, were used as independent variables. The mathematical model of the corrosion process was represented by a Taylor series, with coefficient evaluated by the method of least squares. An analysis of equations obtained showed the unsuitability of Bakor-33 for high temperature (up to 1600°C) glass melting. The

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USSR

POPOV, O. N., et al., Steklo i Keramka, No 8, Aug 71, pp 7-10

corrosion process of this refractory material is fully determined by the maximum melting temperature. The specific yield and temperature in the zone of slab location affect the rate of corrosion to a significantly lesser degree.

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USSR

UDC 621.35:66.094.173

BOBROVA, A. N. and POPOV, O. S.

"Using the Reactor Body Made of Stainless Steel Kh18N10T as Sensor of the Catalyst Potential During Electrochemical Studies of Liquid-Phase Hydrogenation"

Tr. Kalinin. politekhn. in-ta (Collection of Works of Kalinin Polytechnical Institute), Vyp 13, 1972, pp 147-150 (from Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21 I275 by E. Z. Napukh)

Translation: The obtained experimental results made it possible to establish that the steel electrode is neutral and reversible with respect to  $H^+$ . Identity in the potential changes of steel and Pt electrodes occurring with the use of powdered catalyst (skeletal Ni) makes it feasible to use steel Kh18N10T as a potential sensor of a catalyst during the electrochemical studies of catalytic hydrogenation reactions in the liquid phase which is indifferent to the reactor material.

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USSR

UDC 577.4

POPOV, O. V.

"Error Correction by Wolf-Alspas Codes"

V sb. Peredacha diskret. soobshch. po kanalam s gruppiruyushchimisya oshibkami  
(Transmission of Digital Messages over Channels with Group Errors -- collection of works), Moscow, Nauka Press, 1972, pp 18-23 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V453)

Translation: A version of the codes proposed by Wolf and Alspas for error localization is described which as a result of an increase in redundancy provides for error correction in all cases where the Wolf-Alspas code localizes them without correction. It is demonstrated that under defined conditions the described codes have less redundancy than the iterated and cascade codes with error localization and the Reed-Solomon codes in the binary representation with the same correcting capacity.

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USSR

UDC 577.4

ZHUGULIN, L. F., POPOV, O. V., AFANAS'YEV, V. B.

"Increasing Transmission Reliability in a System with Interrogation without Increasing the Permanent redundancy"

V sb. Peredacha diskret. soobshch. po kanalam s gruppiruyushchimisya oshibkami (Transmission of Digital Messages over Channels with Group Errors -- collection of works), Moscow, Nauka Press, 1972, pp 56-58 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V457).

Translation: A version of a system for two-way transmission of digital data with interrogation is described according to which the necessary condition of decoding the combination is the absence of the detected errors not only in it but also in a number of subsequent combinations. It is demonstrated that for the given code the described version permits a significant reduction of the probability of the undetected error in a number of cases at the price of an insignificant increase in the variable redundancy.

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- 40 -

USSR

UDC: 51:621.391

POPOV, O. V., TURIN, V. Ya.

"Estimate of the Distribution of Probabilities of the Numbers of Sub-Blocks With Errors in a Block of Given Length"

V sb. Feredacha diskretn. soobshch. po kanalam s gruppiruyushchimisya oshibkami (Transmission of Discrete Messages Over Channels With Grouped Errors--- collection of works), Moscow, "Nauka", 1972, pp 104-113 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V340)

Translation: An estimate is made of the distribution of probabilities  $P(T)$  that  $T$  sub-blocks of length  $n_1 = n/N$  in a block of length  $n$  will contain at least one error on the basis of a model which reflects the statistical principles governing the appearance of errors in transmission of binary symbols through standard telephone channels.

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USSR

LDC 621.391

HAZAROV, M. V., KUVSHINOV, B. I., POPOV, O. V.

"Theory of Signal Transmission. Textbook for Electrical Engineering Institutes of Communication"

Teoriya peredachi signalov. Uchebnik dlya elektrotekhn. in-tov svyazi (cf. English above), Moscow, "Svyaz", 1970, 367 pp, ill., 96 kop. (from RZh--Elekrosvyaz', No 6, June 1970, Abstract No 6.64.4K)

Translation: The basic statements are discussed of the theory of transmission of continuous and discrete information on communication channels. The properties of information, signals, and noise, and the characteristics of the channels are considered. Problems of information theory, the theory of potential freedom from noise, and the theory of encoding are considered; the basic statements of the theory of signal separation are formed; and the basic directions for realization of the theoretical possibilities during information transmission are discussed. The book is intended for students of electrical engineering institutes of communication and can be used by specialists in the field of radio engineering and electrical communication. 50 ill. 10 tab. 161 ref. Summary.

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1/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THE THEORY OF SIGNAL TRANSMISSION -U-  
AUTHOR--(03)-NAZAROV, M.V., KUVSHINOV, B.I., POPOV, O.V.  
COUNTRY OF INFO--USSR  
SOURCE--THE THEORY OF SIGNAL TRANSMISSION (TEORIYA PEREDACHI SIGNALOV)  
MOSCOW. SVYAZ'. 1970. 367 PP.  
DATE PUBLISHED-----70  
SUBJECT AREAS--NAVIGATION  
TOPIC TAGS--SIGNAL TRANSMISSION, MATHEMATIC ANALYSIS, SIGNAL CODING,  
HANDBOOK  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/1277 STEP NO--UR/0000/70/000/000/0001/0367  
CIRC ACCESSION NO--AM0130262  
UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AM0130262  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 10.  
INTRODUCTION 11. CHAPTER I MATHEMATICAL REPRESENTATION OF MESSAGES,  
SIGNALS AND INTERFERENCES 15. II CONVERSION OF COMMUNICATIONS AND  
SIGNALS 81. III MODULATED SIGNALS 112. IV CHANNELS OF INFORMATION  
TRANSMITTERS 148. V FUNDAMENTALS OF THE THEORY OF INFORMATION  
TRANSMISSION 174. VI TRANSMISSION OF DISCRETE COMMUNICATIONS 219.  
VII CORRECTION CODES 269. VIII TRANSMISSION OF CONTINUOUS  
COMMUNICATIONS 294. IX TRANSMISSION OF COMMUNICATIONS BY MULTICHANNEL  
SYSTEMS 323. CONCLUSION 366. LITERATURE 367. THIS IS A TEXT BOOK  
APPROVED BY THE MINISTRY OF COMMUNICATION OF THE USSR FOR STUDENTS AT  
ELECTROTECHNICAL INSTITUTES OF COMMUNICATION. DISCUSSED ARE THE BASIC  
POSITIONS OF THE THEORY OF TRANSMISSION OF CONTINUOUS AND DISCRETE  
COMMUNICATIONS ALONG COMMUNICATION CHANNELS. EXAMINED ARE QUESTIONS ON  
THE THEORY OF INFORMATION, THEORY OF POTENTIAL RESISTANCE TO  
INTERFERENCE AND THE THEORY OF CODING.

UNCLASSIFIED

USSR:

UDC: 621.375

DOROFYEV, V. V., POPOV, P. A.

"Use of Directional Graphs for Calculating a Transistorized Amplifier With Feedback"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology--collection of works), vyp. 7, Moscow, "Svyaz", 1971, pp 206-209 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D102)

Translation: A procedure is outlined for determining the G parameters of a two-stage transistorized amplifier with both negative parallel input feedback and negative series output feedback. The method is based on using directional signal graphs. Four illustrations, bibliography of one title. Resumé.

1/1

USSR

UDC 632.951

POPOV, P. F., Azerbaydzhan Scientific Research Institute of Plant Protection

"Effectiveness of Various Preparations Against the Larvae of Fig Glyphipterygidae"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 8 (118), 1973, pp 35-36

Abstract: The most effective agent against fig glyphipterygidae larvae under conditions prevailing in Azerbaydzhan were the phtalophos (30%) DDVF and tsidiol (50%). Bi-58 and antio burned the leaves of the figs, so their use at fig plantations could not be recommended. In the fig fruit the residue of tsidiol was 0.054 mg/kg and of phtalophos it was 0.050 mg/kg. The acceptable levels of these preparations are 0.10 and 0.25 mg/kg respectively.

1/1

UNCLASSIFIED

PROCESSING DATE--20NOV70

1/2 OIL  
TITLE--STREAMS OF FAILURES OF TECHNICAL SYSTEMS WITH TAKING INTO ACCOUNT  
PROPHYLAXIES -U-

AUTHOR--(G2)--POPOV, P.I., CHERENKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--AVTCMATIKA I TELEMEKHANIKA, 1970, NR 6, PP 144-148

DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PROPHYLAXIS, SYSTEM RELIABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/1468

STEP NO--UR/0103/70/000/006/0144/0148

CIRC ACCESSION NO--AP0130400

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--20NOV79

2/2 011

CIRC ACCESSION NO--AP0130400

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE INFLUENCE OF PROPHYLAXIES  
CONDUCTED REGULARLY OR IN RANDOM CHOSEN TIME MOMENTS ON THE RELIABILITY  
OF THE FUNCTIONING OF TECHNICAL SYSTEMS IS CONSIDERED. THE RESULTS  
OBTAINED BY BE USED FOR THE ESTIMATION OF THE EFFICIENCY OF CONDUCTING  
PROPHYLAXIES.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--INDUCED ENZYMES AND IONIZING RADIATION. I. CHANGE IN THE ACTIVITY  
OF TRYPTOPHAN PYRROLASE IN RATS AFTER IRRADIATION -U-  
AUTHOR-(02)-POPOV, P.G., ANKOV, V.K.  
COUNTRY OF INFO--USSR *P*  
SOURCE--RADIOBIOLOGIYA 1970, 10(1), 32-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--X RAY RADIATION BIOLOGIC EFFECT, LIVER, ENZYME ACTIVITY,  
RADIATION DOSAGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1998/0449 STEP NO--UR/0205/70/010/001/0032/0036  
CIRC ACCESSION NO--AP0121123  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121123

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRYPTOPHAN PYRROLASE ACTIVITY HAS BEEN DETD. IN THE LIVER OF 87 RATS 4, 27, 48, AND 72 HR AFTER WHOLE BODY X IRRADN. WITH DOSES OF 0.9, 1.8, AND 5 KR (180 KV, 15 MA, FILTER 3 MM AL, FOCUS DISTRANCE 50 CM, DOSE RATE 72 R-MIN). PEAKS OF TRYPTOPHAN PYRROLASE ACTIVITY WERE OBSD. 4 AND 72 HR AFTER THE IRRADN. THE ACTIVITY INCREASE OBSD. WAS MAINLY DUE TO AN INCREASE IN THE AMT. OF APOENZYME. THE SYNTHESIS OF NEW APOENZYME 4 HR AFTER IRRADN. WAS NOT DISTURBED BY UP TO 1.8 KR IRRADN.; IT WAS INHIBITED BY APPROX. 10-25PERCENT AT 5 KR IN COMPARISON WITH VALUES OBSD. AT 1.8 KR. NO SUBSTANTIAL CHANGES IN THE ACTIVATING PROPERTIES OF MICROSOMES WERE NOTED. FACILITY: VYSSH. VODENNO-MED. INST., SOFIA, BULG.

UNCLASSIFIED

USSR

UDC 621.317.75.001.24

NIKULIN, V. B. and POPOV, P. S.

"Selecting the Parameters and Circuit of an Automatic Master Oscillator for Strobe-Oscillographs"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems in Microelectronics. Moscow Institute of Electronic Technology), 1972, vyp. 10, pp 27-32 (from RZh-Radiotekhnika. No 11, Nov 72, Abstract No 11 A262)

Translation: The authors propose the structure (circuit diagram) for a generator of test pulses of given shape and parameters of the formed signal. An analysis is given for the formation of the fronts of test pulses and synchropulses. Methods for measuring the basic parameters of the digital, integral microcircuits are considered. Resume.

USSR

UDC 621.396.6-181.48

NIKULIN, V. B. and POPOV, P. S.

"Stroboscopic Principle for Constructing Semi-Automatic Units for Controlling the Dynamic Parameters of Integrated Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collection of Scientific Works on Problems in Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp. 10, pp 20-26 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V221)

Translation: A structural synthesis is given of a semi-automaton for controlling the dynamic parameters of digital integrated circuits. The units and assemblies of the semi-automaton are described. Technical data are presented which were obtained from studying the working conditions of the unit in industrial production. Resume.

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USSR

UDC 621.396.6-181.48

NIKULIN, V. B. and POPOV, P. S.

"Test-Pulse Shaper Circuit for Controlling the Dynamic Parameters of Integrated Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp. 10, pp 33-39 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V226)

Translation: An analysis is given of the shaper for the pulses entering into the structure of a semi-automaton used for controlling the dynamic parameters of standard and large-scale integrated circuits. A detailed discription of advantages is given together with a digital illustration of the developed variant of the pulse shaper designed for the ELEKON-D semi-automaton. Resume.

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USSR

UDC 681.332.35

POPOV, P. S., Engineer, Moscow

"Stroboscopic Principle of Constructing a Semiautomatic Device to Monitor the Dynamic Parameters of Integrated Circuits"

Moscow, Elektrichestvo, No 11, 1971, pp 77-79

Abstract: The schematics and operating principle are presented for the Elektron-D semiautomatic device for measuring the parameters of digital integrated circuits (the signal delay time in the circuit switched from the one logical state to the zero logical state, the signal delay time in the circuit switched from the zero logical state to the one logical state, the transition time of the output signal of the digital integrated circuit from the one logical state to the zero logical state, and the transition time of the output signal from the zero logical state to the one logical state) on the production line. The operating principle is based on using the method of series gating. The test pulse generator shapes a periodic train of square test pulses and synchronizing pulses for starting the scanning of the stroboscopic oscillograph. The functions of the various units

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USSR

POPOV, P. S., Elektrichestvo, No 11, 1971, pp 77-79

of the device are described in detail. The following measures were taken to eliminate the deficiencies inherent in stroboscopic meters and improve the measurement accuracy: 1) in order to generate the voltage of the reading level relative to the zero voltage and to exclude the error as a result of distortions of the transfer coefficient in the meter channel when setting the reading levels, a calibration pulse is sent to the input of the meter-divider, the base of the pulse is the zero voltage (the provisional zero line is selected on the oscillographic screen), and the pulse peak is the reading level voltage (at the meter output with a given voltage, the comparison circuit is tuned to respond with a sensitivity of  $\pm 10$  millivolts); 2) control tests are introduced to exclude errors as a result of drift of the transfer coefficient in the Y-channel and the reading step of the meter; 3) in order to increase the stability of the transfer coefficient of the input mixer and to insure matching with the output characteristics of the integrated circuits, a high frequency divider and active probe are introduced; 4) to eliminate the nonlinearity of the X-channel it is possible to select the linear operating segment on the scan by varying the test pulse delay.

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USSR

UDC 621.374.4(088.5)

POPOV, P. S., NIKOLAYEV, A. A., BOBRIN, V. Ye., VASIL'YEV, V. M.

"A Pulse Frequency Divider"

USSR Author's Certificate No 255344, Filed 16 Nov 67, Published 12 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abst. act No 10G200 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a transistorized relaxation oscillator circuit which contains a delay line in the feedback circuit. To improve the conversion phase stability, the oscillator also contains a transistorized key which is connected through an emitter follower in the feedback circuit between the delay line and the oscillator transistor base.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF HERBICIDES ON THE YIELD OF SUNFLOWER AND ON THE QUALITY  
OF THE OIL -U-  
AUTHOR--(03)-BEBEKH, N.D., POPOV, P.S., VASILYEVA, D.S.  
COUNTRY OF INFO--USSR P  
SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 129-30  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, VEGETABLE OIL/(U)ALIPUR HERBICIDE, (U)AVADIX  
HERBICIDE, (U)IFK HERBICIDE, (U)PROMETRYNE HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1368

STEP NO--UR/0394/70/008/002/0129/0130

CIRC ACCESSION NO--AP0125016

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS WERE MADE IN 1964-6 IN REGIONS WITH VARIOUS SOIL AND CLIMATIC CONDITIONS. THE FOLLOWING HERBICIDES WERE APPLIED: ALIPUR (4 KG), AVADIX (2 KG), IFK (IPC) (12 KG), PROMETRYNE (2 KG-HA). PROMETRYNE DID NOT INHIBIT MICROFLORA, COULD BE DECOMPD. DURING 3-4 MONTHS, AND IT DID NOT ACCUMULATE IN SUNFLOWER SEEDS. HERBICIDES WERE APPLIED BEFORE PRESOWING CULTIVATION. ANNUAL WEEDS WERE MAINLY ENCOUNTERED ON SOWN AREAS. AVADIX AND IPC DESTROYED CHIEFLY MONOCOT WEEDS, WHILE PROMETRYNE AND ALIPUR AFFECTED MAINLY DICOTS AND HERBACEOUS PLANTS. INCREASES IN SEEDS YIELD OF 1.5-2 AND EVEN 3 QUINTALS-HA WERE OBTAINED. NO CHANGE IN THE OIL YIELD OR ITS QUALITY WAS FOUND. FACILITY: VSES. NAUCH.-ISSLED. INST. MASLICH. KULTUR, KRASNODAR, USSR.

UNCLASSIFIED

USSR

UDC 632.951

GOLUBEVA, Z. Z. SHAPOVALOVA, G. K., and POPOV, P. V., All-Union Scientific Research Institute of Chemical Means for Plant Protection

"Combined Use of Acaricides and Insecticides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 12, 1972, pp 33-34

Abstract: Some mixtures of an insecticide with an acaricide were found to exert a greater effect on pests than that corresponding to addition of the two activities. Furthermore, development of resistance of the pests to the chemical agents may be slowed down if mixtures of this type are used. To study the combined toxic action on pests of binary mixtures of insecticides with acaricides, acrex (I), amiphos (II), anthio (III), benzophosphate (IV), galekron (V), kelthane (VI), milbex (VII), neuron (VIII), sevin (IX), phthalophos (X), and chlorophos (XI) were used. I, V, VI, VII, and VIII were selectively acting acaricides that were practically devoid of insecticidal activity. 1:1 mixtures of the pesticides were used in tests. The insecticidal activity was determined in experiments with gypsy moth (*Porthetria dispar* L.) larvae of the second instar and adult house flies and the acaricidal activity in experiments with adult *Tetranychus urticae* Koch mites. The values of LD<sub>50</sub> of individual pesticides and the coefficients of combined action (CCA) of the binary mixtures towards the three pests were determined (cf. Popov, *Khimiya v Sel'skom Khozyaystve*, No 8, 73, 1965). Potentiation was indicated by CCA values  $> 1$  and  $\frac{1}{2}$

USSR

GOLUBEVA, Z. Z., et al., Khimiya v Sel'skom Khozyaystve, Vol 10, No 12, 1972, pp 33-34

antagonism of the two ingredients of mixtures by CCA values  $< 1$ . In the first approximation, almost all of the mixtures produced an effect that was at least additive. The highest levels of potentiation were exhibited by X + V (CCA 3.6), XI + V (CCA 3.3) and XI + VIII (CCA 2.6) in experiments with gypsy moth larvae and by XI + V (CCA 4.4) and XI + XII (CCA 2.3) in experiments with *T. urticae* mites. IX + I, IX + VI, and IX + VII, and CCA values of which were in the 0.5-0.7 range for both insecticidal and acaricidal activity, should not be used unless these values can be revised in the future on the basis of more precise LD<sub>50</sub> indices (determinations in the CCA range of 0.5-2.0 were somewhat uncertain because of fluctuations in the LD<sub>50</sub> values).

2/2

USSR

UDC 632.951:632.734.1

POPOV, P. V., ABELENTSEVA, G. M., SEDYKH, A. S., Candidates of Agricultural Sciences, All Union Scientific Research Institute of Chemical Means of Plant Protection

"Contact Toxicity of Insecticides for Eurygaster"

Moscow, Khimiya v sel'skom khozyaystve, No 11, 1972, pp 34-37

Abstract: In order to discover some contact insecticides having advantages over methylnitrophos, propoksur, phention, morestane, trichlorometaphos-3, sevin, phthalophos, cydial, methylacetophos and ethoxyphos, a study was made of the compounds used in the Soviet Union and abroad against other pests and also some experimental compounds not used in practice for plant protection. The graphosoma of the species *Graphosoma italicum* Muell. and *G. Semipunctatum* F. is recognized and proved as the biological model of *Eurygaster integriceps* Put. suitable for toxicologic studies in the laboratory. Both species yielded 10-15 generations per year under laboratory conditions. Out of the 35 investigated insecticides, methaphos, phenitrothion, phention, carbofurane and sandos 52139 exhibited greater contact insecticide capacity than chlorophos; dichlorophos was equivalent to chlorophos, and dioxacarb, valexon, dilor and dursbane were only half as effective as chlorophos.

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USSR

POPOV, P. V., et al., Khimiya v sel'skom khozyaystve, No 11, 1972, pp 34-37

The remaining 24 compounds, including phosalone, phthalophos, lindane and gardone were only half as effective as chlorophos. Considering such indexes of the compounds as their insecticidal nature, toxicity for mammals, stability of residues, duration of retaining the insecticidal qualities and the possibility of industrial production, it is necessary to consider phenitrothion, dilor and phenthion as most prospective for further study as means of controlling eurygaster.

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USSR

UDC 632.951

POPOV, P. V., SEDYKH, A. S., ABELENTSEVA, G. M., All-Union Scientific  
Research Institute of Chemical Agents for Plant Protection

"Determination of Phthalophos Residues in Apples"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 9, (83), Sep 70,  
pp 39-40

Abstract: The authors determined residues of the DDT substitute phthalophos (0,0-dimethyl-S-phthalimidomethyl dithiophosphate) on apples under laboratory and field conditions. In laboratory tests, the apples were immersed in a 0.1% emulsion of phthalophos for a few seconds and stored in the suspended state. After four days, the residue of phthalophos was washed from the fruit by immersion for 2-3 seconds in acetone. The apples were then peeled with removal of a small amount of flesh, and the phthalos residue was extracted by acetone from the peeling and the remaining flesh. The results of analysis showed that nearly all the phthalophos residue was on the surface and in the skin of the apples with only 0.06 mg/kg or 2% of the total in the fleshy part of the fruit. Under field conditions  
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USSR

POPOV, P. V., et al., Khimiya v Sel'skom Khozyaystve, Vol 8, No 9, (83), Sep 70, pp 39-40

it was found that after spraying, residues amount to 7.5% mg/kg, which decreases after 17 days to 1.96 mg/kg. About 20% of the total residue is found in the stem depression and the sepal. These residues were not washed from the fruit even though there was some rainfall over the 17-day period. On the other hand, the residues on the surface of the fruit (80% of the initial total) were reduced by 90% over the 17-day period (from 6.1 mg/kg to 0.4-0.5 mg/kg).

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USSR

P  
UDC 632.654

ABELENTSEVA, G. A., and POPOV, P. V., All-Union Scientific Research Institute for Chemicals Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Study of the Fertility of the Female Spider Mite Population Resistant to Acaricides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 78, pp 35-36

Abstract: Studies were conducted of the fertility of a female spider mite population resistant to acaricides. For the experiment, the resistant R<sub>gen</sub> population of the red spider mite (*Tetranychus urticae* Koch.) was taken from a greenhouse in which for many years methylethylthiophos was used intensively against the mites. Laboratory tests indicated that the evolved population was 93 times more resistant to methylethylthiophos than the standard sensitive population S. In application of methylethylthiophos, the cross-resistance of mature mites of the R<sub>gen</sub> population to rogor (dimethoate), phoxime, gardon, amiphos and methylmercaptophos rose 57, 24, 12, and 7 and 6 times, respectively. The R<sub>gen</sub> and S populations were used to determine fertility of the mites and viability of the eggs with and without 1/2

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USSR

ABESENTSEVA, G. A., et al., Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 35-36

influence on them of methylmercaptophos, methylnitrophos, methyl-ethylthiophos, phytios, phozalon and binapacryl.

Results of the experiments indicated that red spider mite females, the resistance of which to methylethylthiophos, rogor and phoxime rose 93, 57 and 24 times, respectively, laid demonstrably less eggs than females of the population sensitive to these acaricides. The dynamics of larva hatching from eggs of both mite populations were approximately identical. The eggs of females in the resistant population were distinguished by high resistance to rogor.

2/2

USSR

UDC: 8.74

ISAYEV, V. P., POPOV, M. F., and ~~POPOV, R. A.~~

"The Problem of Evaluating the Functioning of the 'Operator-Control Desk' Link Through Modeling on A Digital Computer"

Moscow, V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Techniques and Programming--collection of works) "Sov. Radio," 1972, pp 133-139 (from RZh--Matematika, No 8, 1972, Abstract No 8V647)

Translation: Problems of the functioning of the "operator-control desk" link are considered. To evaluate the quality of the link functioning, a model realized on a digital computer is proposed. A block diagram is given, along with the results of the modeling, to permit evaluation of the functioning of the link by an integral computation of the time spent in the collection, control, and transmission of commands. Authors' abstract

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USSR

UDC: 8.74

ISAYEV, V. P., POPOV, M. F., POPOV, R. A.

"On the Problem of Evaluating Functioning of the 'Operator - Control Panel' Link by Digital Computer Modeling"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 133-139 (from RZh-Kiber-netika, No 8, Aug 72, Abstract No 8V647)

Translation: The paper deals with questions of functioning of the "operator-control panel" link. It is proposed that a model realized on a digital computer be used for evaluating the quality of operation of the link. A flowchart is given as well as the results of modeling, which enable evaluation of the operating quality of the "operator-control panel" link by integral estimation of the time expended in preselecting, checking and transmitting a command. Authors' abstract.

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1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STATE OF THE SURFACE LAYER OF QUARTZ PLATES DURING DIAMOND GRINDING

-U-

AUTHOR--(02)-POPOV, S.A., BALYKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 73-76

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND  
OCEANOGRAPHY, MATERIALS

TOPIC TAGS--QUARTZ, DIAMOND, ABRASIVE, MATERIAL GRINDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1872

STEP NO--UR/0122/70/000/002/0073/0076

CIRC ACCESSION NO--AP0130699

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130699

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE USE OF DIAMOND GRINDING DECREASES THE THICKNESS OF THE DAMAGED PLATE LAYER BY SEVERAL TIMES IN COMPARISON WITH THE USE OF PRELIMINARY GRINDING WITH FREE ABRASIVES USED BY ENTERPRISES IN THE MANUFACTURE OF QUARTZ RESONATOR PLATES. USE OF THE NEW TECHNOLOGICAL PROCESS MAKES IT POSSIBLE TO DECREASE ALLOWANCE AND RAISE THE PRODUCTIVITY AND QUALITY OF PRODUCTS.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ON EXTRAHEPATIC LOCALIZATION OF BILIARY PASSAGES -U-  
AUTHOR--(02)-POPOV, S.D., MAYEVSKIY, V.A.  
COUNTRY OF INFO--USSR P  
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA 1970, VOL 104, NR 4, PP  
40-42  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BILE, LIVER, ANATOMY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/1256 STEP NO--UR/0589/70/104/004/0040/0042  
CIRC ACCESSION NO--AP0106037  
UNCLASSIFIED



2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106037

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDYING THE TOPOGRAPHIC DETAILS OF INTRAHEPATIC BILIARY PASSAGES ON HUMAN CADAVERS BY MEANS OF INFUSING VARICUS- SUBSTANCES VIA THE COMMON BILE DUCT INTO INTRAHEPATIC DUCTS IT WAS FOUND THAT BILIARY PASSAGES LOCATED BEYOND THE LIVER BOUNDARIES (FOR INSTANCE IN THE LEFT TRIANGLE LIGAMENT OF THE LIVER AND OTHER LIGAMENTS) AND COMMUNICATING WITH INTRAHEPATIC BILIARY PASSAGES WERE FILLED AND MARKEDLY DETECTED IN A CONSIDERABLE PER CENT OF CASES.

UNCLASSIFIED

USSR

UDC 632.982.4

POPOV, S. D., VNIISKHSPGA [expansion of abbreviation unknown]

"Apparatus for Aerial Spraying of Plants"

Moscow, Zashchita Rasteniy, No 7, 1971, pp 29-32

Translation: Sprayers and dusters are installed on our AN-2, AN-2M, YaK-12 planes and KA-15, MI-1, MI-2, and KA-26 helicopters. Spraying is now the most common method in use. More than 90% of all the work is done with the AN-2. We therefore suggest a look at the working principle, regulation, and technical specifications of the sprayers used on this plane.

Inside the fuselage is a 1400-liter tank to hold the chemicals (it is used for both liquid and dry substances). When liquid preparations are to be used, a pump unit is attached to the outlet of the tank. This unit consists of a centrifugal pump, vane with a brake, escape valve, suction pipe, 2 delivery pipes, and pneumatic cylinders that control the brake and escape valves of the sprayer. To the delivery pipes of the pump are attached hollow rods which are mounted under the lower wing of the plane and on which the sprayers are set. They produce a flat film that is broken up by air currents during flight.

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USSR

POPOV, S. D., Zashchita Rasteniy, No 7, 1971, pp 29-32

The flow rate of the liquid varies with the number of sprayers on the rods and the size of the outlets. There are 6 sets of sprayers with openings 1X1 mm, 1X5, 2X5, 3X5, 4X5, and 5X5 in diameter and a set of sprayers without openings.

In setting a particular flow rate for the sprayers, one can use a specially prepared table which shows the flow rate of clean water when the plane is traveling at 160 km an hour. After trial flights the number of sprayers is precisely determined. The flow rate is decreased 15 to 20% if cut-off valves of the nipple type are put in front of the sprayers.

A table prepared for a 20% solution of polychlorophene in diesel oil gives some idea of the particle size of the spray produced by various sprayers.

When sprayers with a small opening (1X1 mm in diameter) are to be used for small-drop, small-scale spraying, special care must be taken in preparing the solution and seeing to it that it is clear because the nozzles are easily clogged, thus interfering with the flow rate.

The working widths are determined for each kind of operation. They can be found in the Ukazaniya po tekhnologii provedeniya aviakhimrabort (Instructions on the Technology of Aerial Spraying). For example, the working width is 30 m when spraying grain crops against weeds and 60 m when spraying sugar beets

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against the beet pest. If only the sleeves (under the fuselage) of the rod of the sprayer are left connected, the working width will not exceed 15 m.

A liquid chemical is mixed with the liquid circulating from the tank through the pump and back into the tank. For this purpose a sleeve is connected by a hose to a mixing tube inside the tank and inserted into one of the delivery pipes. The liquid from the pump is directed through this tube into the upper part of the tank. The pump is turned on to mix the chemical before the plane takes off.

The sprayer is controlled pneumatically. It involves opening and closing the cut-off valve of the sprayer and stopping or starting the vane. The control system is powered by compressed air from the plane's own pneumatic system.

In the cockpit is a manometer to regulate the pressure in the control system and a pneumatic cock to switch on and off the flow of liquid and to disconnect the control system of the sprayer from the plane's pneumatic system during prolonged interruptions of the work.

The liquid is loaded into the tank either through a refueling pipe with an ejector, check valve, filter, and sleeve to connect the pressure hose of the

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refueling pump or through the top loading hatches of the tank with filters mounted in them (in which case the liquid is generally poured into the tank through a special device).

Separate supply of highly toxic chemicals to the pump of the sprayer. Highly toxic chemicals should not be poured directly into the tank of the sprayer because of the danger of creating inside the fuselage a concentration of fumes dangerous to human health. In such cases the planes are equipped with an outside tank. The chemical from this tank enters the sprayer pump directly where it is mixed with water coming from the main tank. The supply of pesticide to the pump is controlled by an instrument that can measure the size of the opening that permits the chemical to enter. The necessary size of the opening is recorded on the scale on the knob. An auxiliary tank with a water gage makes it possible to control the actual amount of the preparation to be used in each flight. Since the viscosity of pesticides varies with the temperature, the position of the regulator of the flow of liquid must be accurately determined if the air temperature fluctuates considerably while the plane is in operation.

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Changes in the flow rate of the chemical in relation to the position of the liquid flow regulator are illustrated by spindle oil at 15° (the figures are close to those for methylmercaptophos [an insecticide]): with a distance of 2 mm between the needle of the measuring device and the aperture, the oil is expended at the rate of 77 g/sec; 5 mm, 227 g/sec; 10 mm, 347 g/sec; 22 mm, 395 g/sec.

Throttle devices. Chemical weeding requires large-drop spraying. Hence sprayers with a large opening are used (5x5 mm). It is possible to work with low flow rates (25 L/ha) using 24 or more sprayers (for satisfactory distribution of the liquid over the working width) by reducing the pressure of the liquid. Throttles (plates with different openings according to the flow rate desired) are placed in the rod.

The flow rate of water with 24 sprayers having an opening 5x5 mm changes as follows according to the diameter of the aperture of the throttle; 5 mm - 0.75 L/sec, 8 mm - 2.0 L/sec, and 10 mm - 3.0 L/sec.

Cut-off devices. Sprayers are equipped with a variety of cut-off devices to prevent the liquid from flowing from the rod after the escape valve is closed. Cut-off (check) valves of the nipple type can be placed in the sleeves

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of the sprayers. Under pressure of the liquid the rubber nipple is squeezed out, allowing the liquid to pass through the opening in the cup of the valve to the sprayers. When the escape valve is closed, pressure in the rod drops, the nipple is pressed to the opening in the cup of the valve and it holds the liquid in the rod. These valves are used in working with sprayers to break up the solution into fine drops or when the working liquid cannot be allowed to be sucked back into the tank in the case of a valveless cut-off.

If a fine spray is not needed, e.g., in chemical weeding, external nipple valves can be mounted on the rod instead of the sprayers. The liquid is ejected directly from these valves. It is much easier to operate a sprayer with them than with internal nipple valves because the external valves do not have to be removed with the rod for cleaning.

Clean, filtered liquid is needed to ensure the reliable operation of the check (cut-off) valves.

It will be noted that aerial spraying of cotton with systemic chemicals found prompt application owing to the use of external nipple valves.

A pump unit has now been marketed in which the ejector provides an instantaneous cut-off and then suction of the liquid from the rod back into the tank due to negative pressure imparted to the rod. The escape valve of the

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sprayer is two-way which makes it possible to direct the liquid from the pump either to the rod alone for spraying or to the ejector alone to cut off the liquid.

The application of negative pressure (by the ejector) of the pump unit to the check valves prevents leaking from the rod even when the valves are clogged. If the liquid is supplied to the sprayers above the rod, as in the sprayers used on the AN-2M plane or Mi-2 helicopter, leaking after the escape valve is closed is prevented even without check (cut-off) valves.

Since the ejector operates from the sprayer pump, it is important that about 30 liters of the liquid be left in the tank after the last run. Otherwise after the last run it might leak from the rod after the escape valve of the sprayer is closed.

The described type of cut-off device can be used in cases where suction of the chemical from the rod is permissible.

When water and a highly toxic chemical are fed to the pump separately, it is impossible to draw the preparation from the rod back into the tank of the sprayer. In this case use is made of a device (OZh-2) with an ejector mounted in the rod of the sprayer. The successful functioning of this device in spraying cotton with highly toxic chemicals led to its widespread use in spraying

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plants with herbicides. In neither case is a fine spray called for. The solution emerges in a stream from tubes suspended from the sleeves of the rod.

Studies conducted by the All-Union Institute of Plant Protection demonstrated the desirability of using the OZh-2 in combination with commercial sprayers to spray chlorophos on wheat crops in order to control the bug Eurygaster integriceps. For example, with an OZh-2 mounted on the rod of sprayers having 1x5 mm openings, it is possible to obtain a grid with a density of 30 to 40 drops per  $cm^2$  at a flow rate of 25 L/ha. This method of using an AN-2 plane to spray wheat is specified in the Ukazaniya MSKh SSSR po organizatsii i tekhnologii bor'by s vrednoy cherepashkoy (Instructions of the USSR Ministry of Agriculture on the Organization and Technology of Efforts to Control Eurygaster integriceps), 1970.

Let us discuss the OZh-2. The removable nozzles of the ejector are inserted in the rod behind the escape valve of the sprayer. The suction pipe of the ejector drops into the tank suspended under the rod. The tank is equipped with a vent valve whose stem is attached to a float. When the stream of liquid is ejected from the nozzle, the valve is drawn to the drain hole and negative pressure is created in the tank which cuts off the liquid as soon as

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the escape valve of the sprayer closes. After the cut-off, the solution runs into the tank, the vent valve floats up and opens the drain hole. The next time that the sprayer pump is switched on over the area being treated, the liquid from the tank is again drawn by the ejector nozzle into the rod after the escape valve opens. The negative pressure needed for the next cut-off of the liquid over the output signal is created in the tank.

When herbicides and highly toxic chemicals are used, the rods are adjusted upward with the sleeves in order to prevent any of the liquid from leading out after the cut-off. Curved pipes are attached to the sleeves to prevent the plane wing from being splashed.

As mentioned above, the OZh-2 can be used with commercial under-wing rods and commercial sprayers (1X5 mm) when a finer spray is required, e.g., in spraying chlorophos.

When the OZh-2 cut-off device is used, the flow rate of the liquid is regulated by removable ejector nozzles. The diameter of the nozzle is chosen in accordance with the prescribed flow rate per second as follows:

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Diameter of the opening of the nozzle (mm)	6	8	9	10	11	12	13	14	16	18
Flow rate of liquid (L/sec)	2.1	3.4	4.7	5.2	6.4	7.1	8.3	9.3	11.2	13.1

For example, with a working width of 30 m, flow rate of 25 L/ha, and AN-2 speed of 44.5 m/sec, the necessary flow rate of liquid will be:

$$P = \frac{25 \cdot 30 \cdot 44.5}{10,000} = 3.34 \text{ L/sec.}$$

This flow rate is virtually assured if nozzles with openings 8 mm in diameter are inserted in the rod.

Within broad limits changes in the number of sprayers mounted on the rod have no effect on the flow rate of the liquid. It is recommended that all the sprayers, except the end ones, be engaged. A large number of sprayers improves the distribution of the liquid and facilitates the operation of the ejector of the cut-off device. All the sprayers on the rod under the fuselage must be engaged and at least 40 on the rods under the wing.

Here are some figures of the All-Union Institute of Plant Protection on the size and number of drops sprayed from an AN-2 plane equipped with an OZh-2 and sprayers with opening 1X5 and 3X5 mm

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Flow rate of liquid (L/ha)	Openings of Sprayers (mm)	Nozzle diameter (mm)	Number of drops per cm <sup>2</sup>	Arithmetic mean diameter of drops ( $\mu$ )
25	1X5	8	39.2	145.2
25	3X5	8	8.6	194.1

The productivity of an AN-2 in spraying varies with the flow rate of the liquid, working width, size of the plot, and its distance from the airport. For example, in controlling the beet pest the average productivity of an AN-2 with a flow rate of the liquid of 50 L/ha is 106 ha per hour in the summer; at 25 L/ha, 157 ha.

To improve the quality of spraying and make it easier to operate the plane, VNIISKhSPGA [expansion of abbreviation is unknown] is conducting research aimed at eliminating undesirable fine or large drops according to conditions of use, simplifying the regulation of the release of liquid, creating new methods of spraying and cutting off the liquid, and so forth.

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