

Epidemiology

USSR

UDC 616.91

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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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"

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PDPOV, H. V., et al, <u>Voyenno-Meditsinskiy Zhurnal</u>, 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.

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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 1/2

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

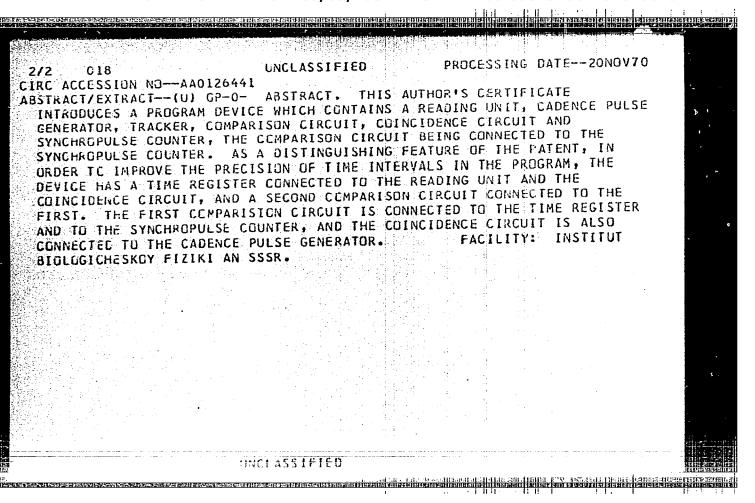
"Specifics of Formation and Development of Cracks During Rupture of Hydrogenated Iron"

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 6·10-4 sec-1. 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 earbrittlement, 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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PROCESSING DATE--20NOV70 UNCLASSIFIED 1/2 018 TITLE--A PRUGRAM DEVICE -U-AUTHOR-(03)-GULYAYEV. A.I., LISITSYN, A.I., POPOV, L.A. CCUNTRY OF INFO--USSR SOURCE-PATENT NO 260284, FILED 15 NOV 68 REFERENCE--NOSCOW, OTKKYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRAZTSY, DATE PUBLISHED ---- 70 SUBJECT AREAS-METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR. TOPIC TAGS-PATENT, PULSE GENERATOR, COMPARATOR GIRCUIT, COINCIDENCE CIRCUIT, TIME INTERVAL COUNTER CONTROL MARKING-NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0482/70/000/000/0000/0000 PROXY REEL/FRAME--3001/0731 CIRC ACCESSION NO--AA0126441 :IMT | ASSIFTED



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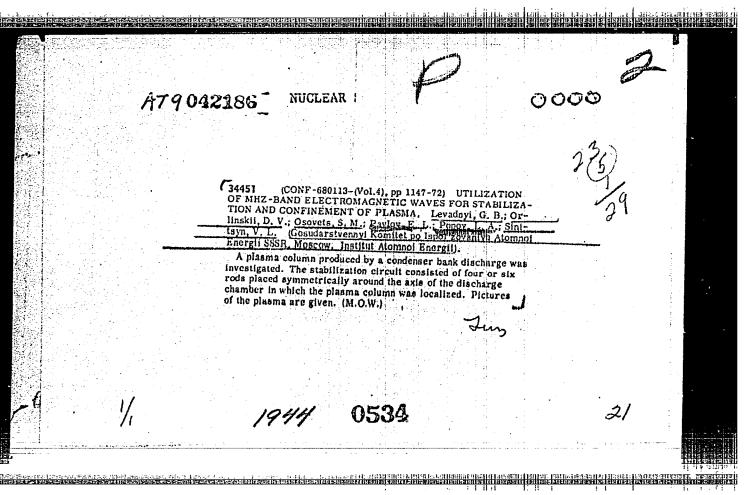
GULYAYEV, A. I., LISITSYN, A. I., POPOUL IT A., Institute of Biological Physics, Academy of Sciences of the USSR

"A Program Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, 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, coincidence circuit and synchropulse counter, the comparison son 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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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 resepct to the opening in the circuit board.

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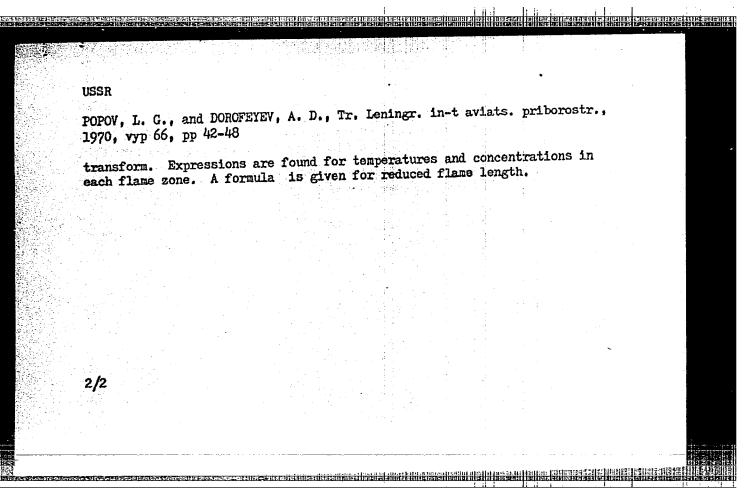
POPOV, L. G., and DOROFEYEV, A. D.

"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 1/2

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PROCESSING DATE--04DEC70

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TITLE--POLYPHENOLS -U-

AUTHOR-(02)-POPOV, L.K., YEGIDIS, F.M.

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

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		The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of informacion. Approved for public release. Distribution unlimited.	Townsed or Follow Acst	SOURCE KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SCHEVCHENKO	FOREIGN TITLE: PROBLEMY PEREDACHI INFOSMATSII LAZERNYM IZLUCHENIYEM	FIGURE 1968 FIGURE 1968	TECHNICAL TRANSLATION	
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KOZLOV, N. P. LEVASHOV, I. P., MURYGIN, V. I. POPOV II. 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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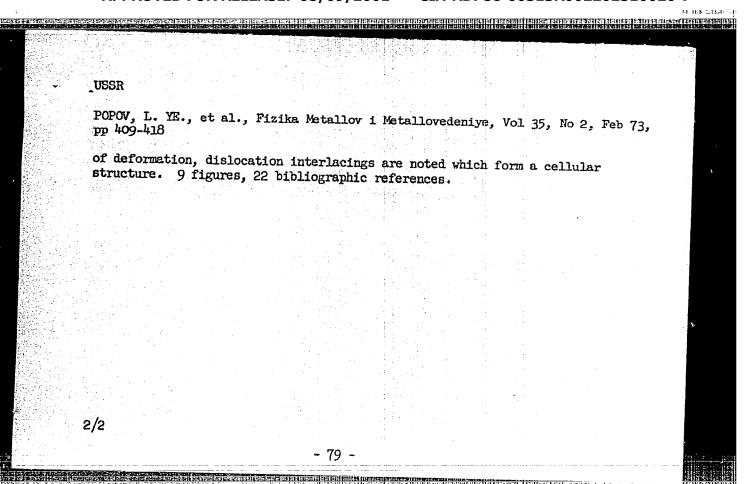
UDC 669.24:548.4

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 Ni3Al 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 Ni₂Al with increasing degree of deformation. Alloys with nickel and 22.9 and 24.0 at. All 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 Ni₂Al 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/cm² for the alloy with 24.0 at. Al. At high degrees 1/2



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UDC: 531.862

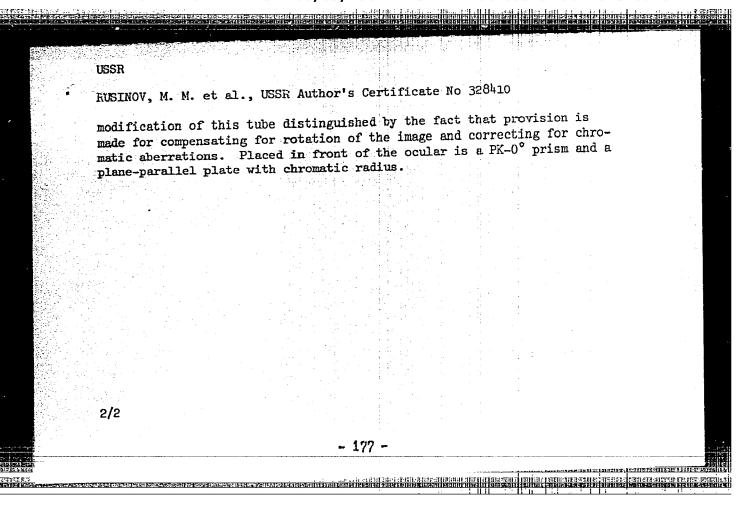
RUSINOV, M. M., IVANOV, P. D., POPOV I ve., LIVSHITS, E. M., GOL'DBERG, G. R., KUDRYASHOV, A. M., Leningrad Institute of Precision Mechanics and

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

Moscow, Otkrytiya, Izobreteniya, 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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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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APPROVED FOR RELEASE: 08/09/2001

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

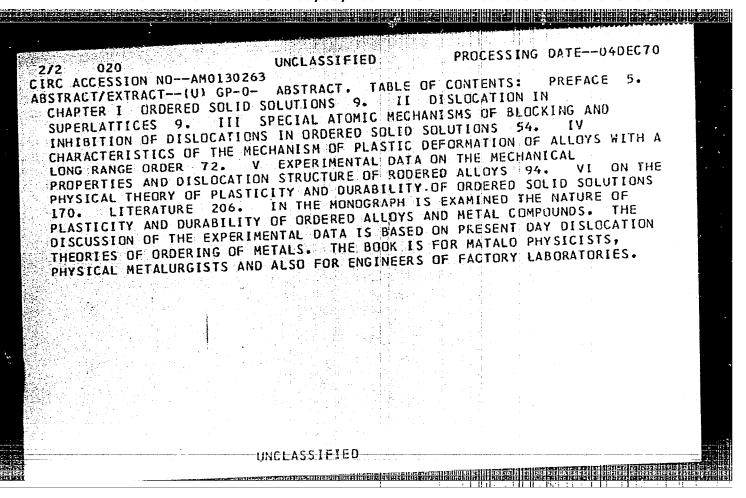
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STEP NO--UR/0000/70/000/000/0001/0216

CIRC ACCESSION NO--AM0130263

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"



UNCLASSIFIED PROCESSING DATE--020C170
TITLE--INHIBITION OF SUPERDISLOCATIONS BECAUSE OF CORRELATION DESTRUCTION
IN CLOSE PACKED SOLID SOLUTIONS -UAUTHOR-(03)-KOZLOV, E.V., POPOV-L.YE., SINZBURG, 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-SULID SOLUTION, ORDERED ALLOY, CRYSTAL DISLOCATION PHENOMENON, TRANSITION TEMPERATURE, YELLD STRESS

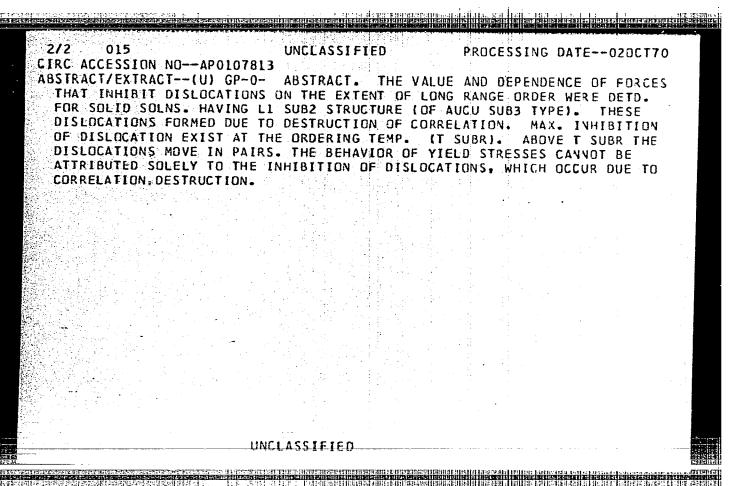
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DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/1340

STEP NO--UR/0185/70/015/001/0146/0149

CIRC ACCESSION NO--APO107813

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 hydrotions 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.

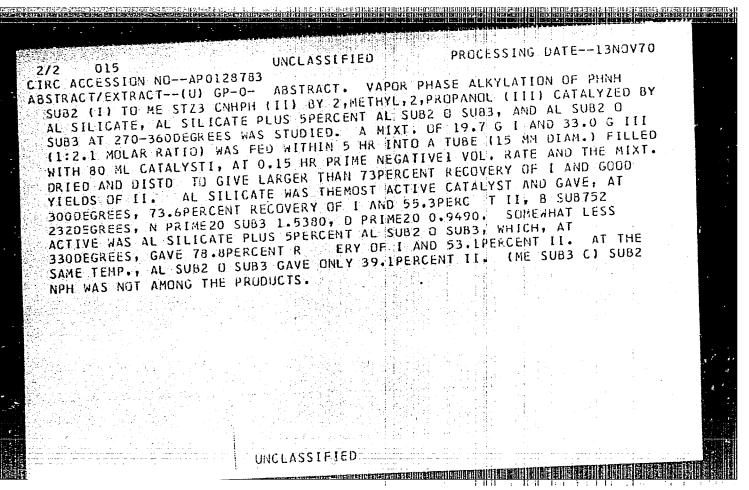
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UNCLASSIFIED PROCESSING DATE--13NOV70 TITLE--CATALYTIC ALKYLATION OF ANILINE BY 2, METHYL, 2, PROPANOL -U-AUTHOR-(02)-LOBANOVA, N.S., POPOV, M.A. COUNTRY OF INFO--USSR SOURCE-ZH. PRIKL. KHIM. 1970, 43(4), 938-9 DATE PUBLISHED-----70 SUBJECT AREAS -- CHEMISTRY TOPIC TAGS--ALKYLATION, ANILINE, PROPANOL, ALUMINUM SILICATE, CATALYST ACTIVITY, ALUMINUM OXIDE CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0080/70/043/004/0938/0939 PROXY REEL/FRAME--3002/1383 CIRC ACCESSION NO--APO128783 unciassiffic

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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. <u>Tsifr. vychisl. tekhnike i programmir.</u> (Digital Computer Techniques and Frogramming--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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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"

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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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 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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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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UNCLASSIFIED PROCESSING DATE--230CT7

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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

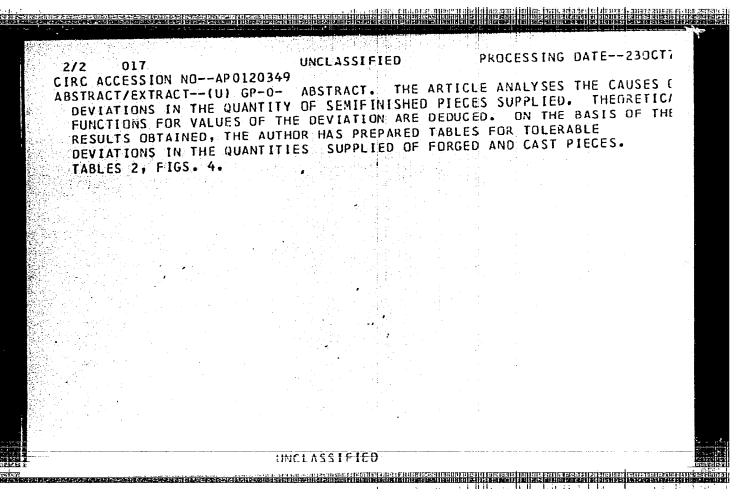
CONTROL MARKING--NO RESTRICTIONS

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

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

CIRC ACCESSION NO--APO120349

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 Dibron"

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/m². After a 15 min contact with the plywood sheet, the still living insects were removed and observed.

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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 conkreaches 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 saufly 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 20-230 after preparation.

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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 trichloroace-tate (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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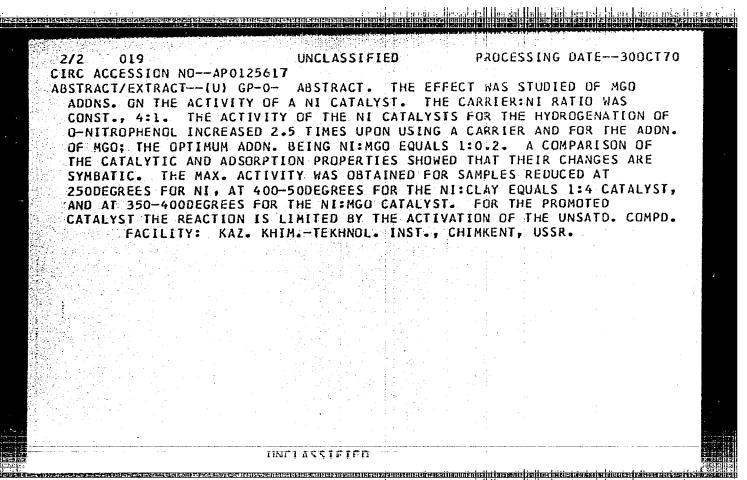
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UNCLASSIFIED PROCESSING DATE--300CT7 TITLE-CATALYTIC AND ADSORPTION PROPERTIES OF MIXED CATALYSTS BASED ON NICKEL -U-AUTHOR-(05)-KASIMOVA, G.I., BIZHANOV, F.B., SOKOLHSKIY, D.V., POPOV, N.I., KHI SAMETDINOV. Z.M. COUNTRY OF INFO-USSR SOURCE-IZV. AKAD. NAUK KAZ. SSR. SER. KHÍM. 1970, 2012), 20-4 DATE PUBLISHED----70 SUBJECT AREAS-CHEMISTRY TOPIC TAGS-CATALYST ACTIVITY, NICKEL, MAGNESIUM DXIDE, HYDROGENATION, ORGANIC NITRO COMPOUND, PHENOL CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS-UNCLASSIFIED PROXY REEL/FRAME--2000/2029 STEP NO--UR/0360/70/020/002/0020/0024

UNCLASSIFIED

CIRC ACCESSION NO--APO125617



L/2 030 UNCLASSIFTED TITLE--STUDY OF HEAT FLUXES IN A PULSED PLASMA ACCELERATOR -U-

AUTHOR-(04)-RUSANGV, V.P., SAFRONGV, 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

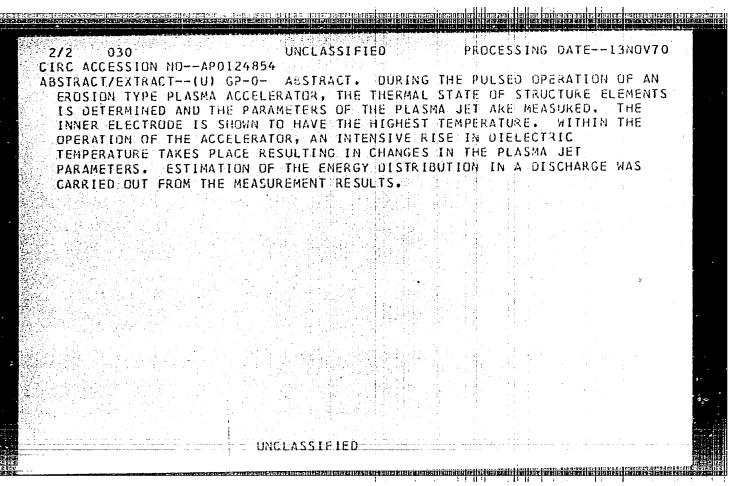
TOPIC TAGS-PLASMA ACCELERATOR, PLASMA JET, ELECTRODE PROPERTY, ENERGY SPECTRUM, TEMPERATURE MEASUREMENT, PLASMA MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

OGCUMENT CLASS--UNCLASSIFIED | STEP NO--UR/0170/70/018/000/0534/0537 | PROXY REEL/FRAME--2000/1200 | STEP NO--UR/0170/70/018/000/0534/0537

CIRC ACCESSION NO--AP0124854

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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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UDC 621.315.592(088.8)

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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 4G479P)

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 convalescent 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

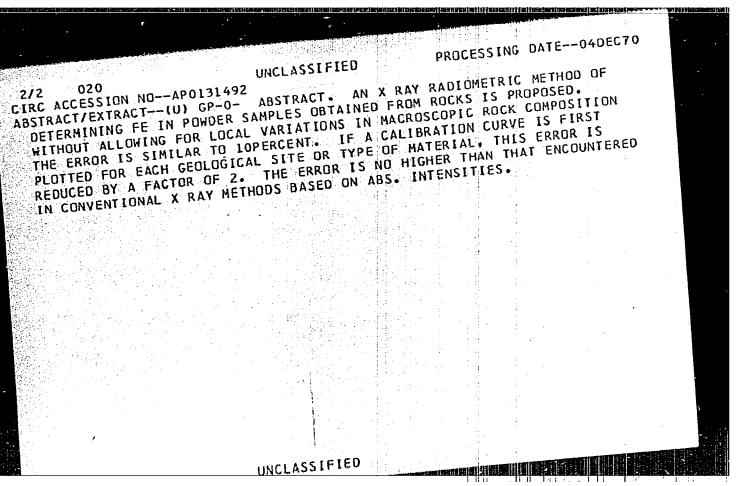
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3004/0906

STEP NO--UR/0032/70/036/003/0294/0295

CIRC ACCESSION NO--APO131492

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Acc. Nr.:		Ref. Code: <u>UR0125</u>	
	•	UDC 621.791.03.96	
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"High-Frequency Welding	of Spiral-Seam Pipe with B	No 1, 1970, pp 63-65	
Kiev, Avtomaticheskaya	Svarka (Automatic Welding), Svarka, No 1, 1970, p 80)		
whie arti	cle contains a study of the	characteristic features uency welding of spiral-	•
of strip tormation and	m joining. New forming sch	nemes and mer peculiari-	
	of tube welding mills are re investigated in the case tape. There are 4 illust		
bibliography.		. 18	
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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

AUTHOR-(02)-RESEETNIKOVA, I.S., POPCV, O.I.

CCUNTRY 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

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PROXY REEL/FRAME--3005/0516

STEP NO--UR/0362/70/006/006/0639/0640

CIRC ACCESSION NO--APO132715

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UNCLASSIFIED PROCESSING DATE--20NOV70 CIRC ACCESSION NO-APO132715 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 SPECTRUMETER (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 DETACTOR WAS AN DAP-4 OPTICAL ACOUNTICAL CHAMBER. THE INSTRUMENT WAS CARRIED ABOARD AN AIRCRAFT LABORATORY OF THE MAIN GEOPHYSICAL COSERVATORY DESIGNED FOR MEASURING CLOUD SPECTRA IN THE ATMUSPHERE IN THE REGION 6.5-13 MICRONS. THE SPECTRUMETER HAD A SPECIAL OPTICAL ROTATING HEAD WHICH REPLACED AN AIRCRAFT WINDOW. ROTATION OF THE SIGHTING MIRROW 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.

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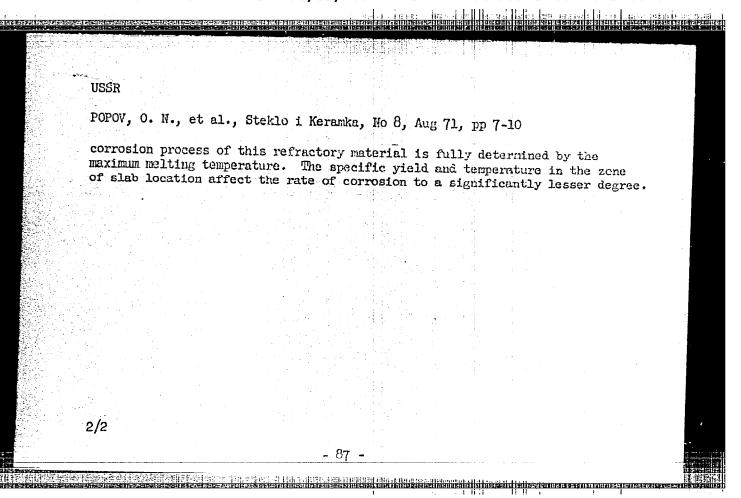
POPOV. O. N., Engineer. GALDINA, N. M., MANEVICH, V. Ye. Candidates of Technical Sciences. (State Scientific Research Institute of Glass)

"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: Nathematical 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 (1480-1540°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 Fakor-33 for high temperature (up to 1600°C) glass melting. The

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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 Khl8N1OT 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 1275 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 Khl8NIOT 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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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"

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UDC 577.4

POPOV, O. V.

"Error Correction by Wolf-Alspas Codes"

V sb. Peredacha diskret. soobshch. po kanalan s gruppiruyushchimisya oshibkami (Transmission of Digital Messages over Channels with Group Errors — collection of works), Moscow, Nauka Press, 1972, pp 18-23 (from RZh-Ribernetika, 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., AFAHAS 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 Hessages 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 -

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"

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. Peredacha 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)

<u>Translation</u>: 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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LJC 621.391

USSR

HAZAROV, M. V., KUYSHINOV, B. I., POPGY 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-Flektrosvyaz'. 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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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)

DATE PUBLISHED————7.0

SUBJECT AREAS -- NAVIGATION

TOPIC TAGS--SIGNAL TRANSMISSION, MATHEMATIC ANALYSIS, SIGNAL CODING,

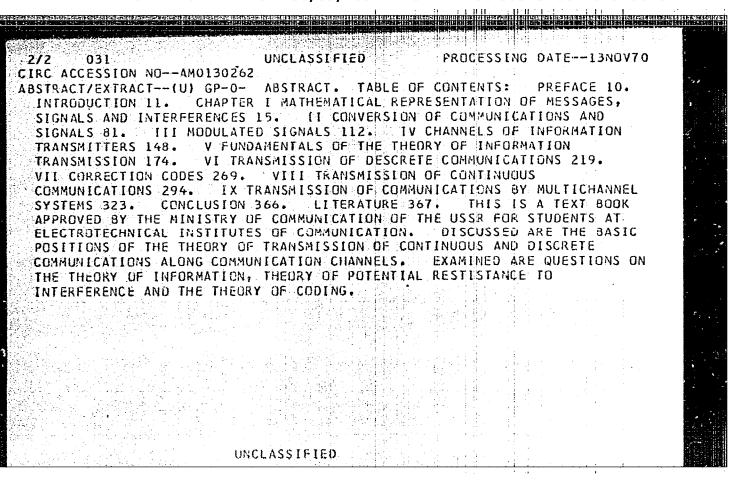
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3003/1277

STEP NO--UR/0000/70/000/000/0001/0367

CIRC ACCESSION NO--AMO130262

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USSR:

UDC: 621.375

DOROFEYEV, 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, "Svyazi", 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.

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USSR UDC 632.951

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

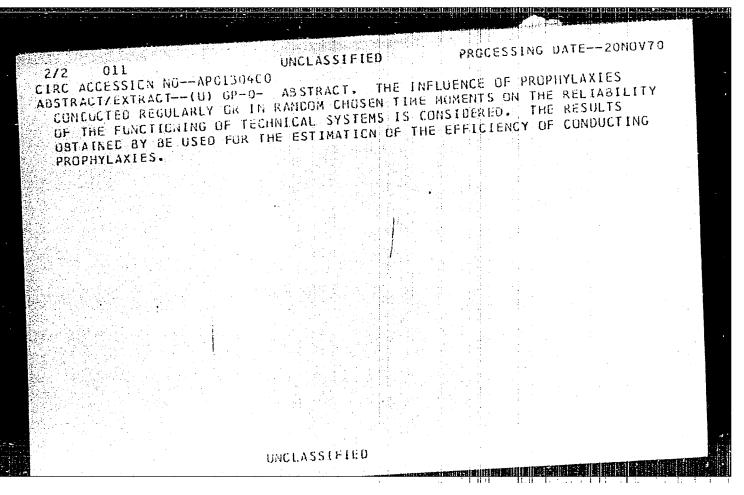
"Effectiveness of Various Preparations Against the Larvae of Fig Glyphip-terygidae"

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.

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PROCESSING DATE--20NOV70 UNCLASSIFIED 1/2 011 TITLE-STREAMS OF FAILURES OF TECHNICAL SYSTEMS WITH TAKING INTO ACCOUNT PROPHYLAXIES -U-AUTHUR-(02)-PUPOV, P.I., CHERENKOV, A.P. COUNTRY OF INFO--USSR SOURCE-AVICMATIKA 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 STEP NO--UR/0103/70/000/006/0144/0148 PROXY REEL/FRAME--3003/1468 CIRC ACCESSION NO-~APOLIBACO HMCLASS LFIED



PROCESSING DATE--230CT70 UNCLASSIFIED 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

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

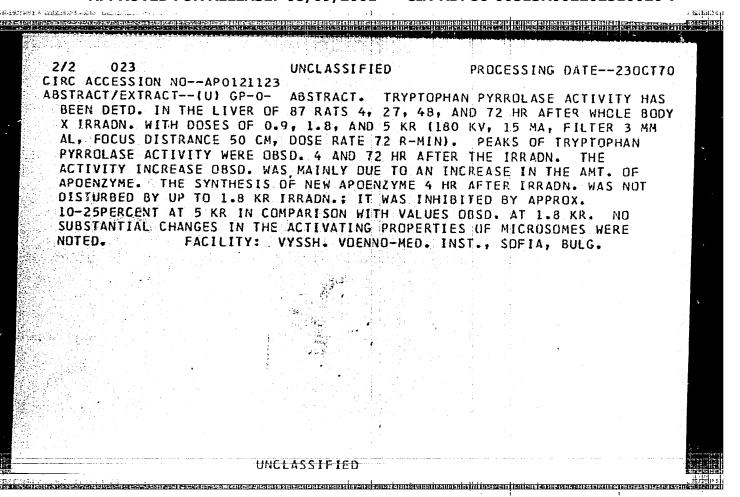
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1998/0449

STEP NO--UR/0205/70/010/001/0032/0036

CIRC ACCESSION NO--APO121123

UNCLASSIFIED



USSR

UDC 621.317.75.001.24

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

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

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

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 for measuring the basic parameters of the digital, integral microcircuits are

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

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

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

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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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 meterdivider, 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 + 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-channelit is possible to select the linear operating segment on the scan by varying the test pulse 2/2

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USSR UDC 621.371.4(088.5)

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

"A Pulse Frequency Divider"

USSR Author's Certificate No 2553LL, Filed 16 Nov 67, Published 12 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract 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 UNC	CLASSIFIED PROCESSING DATE300C170 THE YIELD OF SUNFLOWER AND ON THE QUALITY	
TITLE-EFFECT OF HERBICIDES ON OF THE OIL -U-AUTHOR-(03)-BEBEKH, N.D., POPOV		
COUNTRY OF INFO-USSR		
SOURCE-KHIM. SEL. KHOZ. 1970,	8(2), 129-30	
DATE PUBLISHED70		
SUBJECT AREAS—BIOLOGICAL AND M		
TOPIC TAGS-HERBICIDE, VEGETABL HERBICIDE, (U) IFK HERBICIDE,	E OIL/(U)ALIPUR HERBICIDE, (U)AVADEX (U) PROMETRYNE HERBICIDE	
CONTROL MARKING-NO RESTRICTION		
DUCUMENT CLASSUNCLASSIFIED PROXY REEL/FRAME2000/1368	STEP NOUR/0394/70/008/002/0129/0130	
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UNCLASSIFIED PROCESSING DATE-300CT70 CIRC ACCESSION NO--APO125016 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS WERE MADE IN 1964-6 IN REGIONS WITH VARIOUS SOIL AND CLIMATIC CONDITIONS. THE FULLOWING HERBICIDES WERE APPLIED: ALIPUR (4 KG), AVADEX (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. WEEDS WERE MAINLY ENCOUNTERED ON SOWN AREAS. AVADEX AND IPC DESTROYED CHIEFLY MGNOCOT WEEDS, WHILE PROMETRYENE 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. NAUGH .- ISSLED. INST. MASLICH. KUL'TUR, KRASNODAR, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202510020-7"

USSR

UDC 632.951

GOLUBEVA, Z. Z. SHAPOVALOVA, G. K., and POPOV, P. V., All-Union Scientific Research Institute of Chemical Means for Flant 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), neoron (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 LD50 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 Khozvay-stve, No 8, 73, 1965). Potentiation was indicated by CCA values > I and

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GOLUPEVA, 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), and YI + V (CCA 3.3) and XI + VIII (CCA 2.6) in experiments with gypsy moth larvee mites. IX + V (CCA 4.4) and XI + XII (CCA 2.3) in experiments with T. urticae o.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 because of fluctuations in the LD50 values).

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WC 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"

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

Abstract: In order to discover some contact insecticides having advantages over methylnitrophos, propoksur, phenthion, 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 modle of Eurygaster integricepts Put, sutibale 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, phenthion, 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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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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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-phthalimidomethyldithiophosphate) 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 1/2

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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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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, Knimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, 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_{gen} 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_{gen} population to rogor (dimethoate), phoxime, gardon, amiphos and methylmercaptophos rose 57, 24, 12, and 7 and 6 times, respectively. The Rgen and S populations were used to determine fertility of themites and viability of the eggs with and without 1/2

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ABELENTSEVA, 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, methylethylthiophos, 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.

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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. <u>Tsifr. vychisl. tekhnike i programmir.</u> (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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ISAYEV, V. P., POPOV, M. F., POPOV R

"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 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 GRINOING
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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

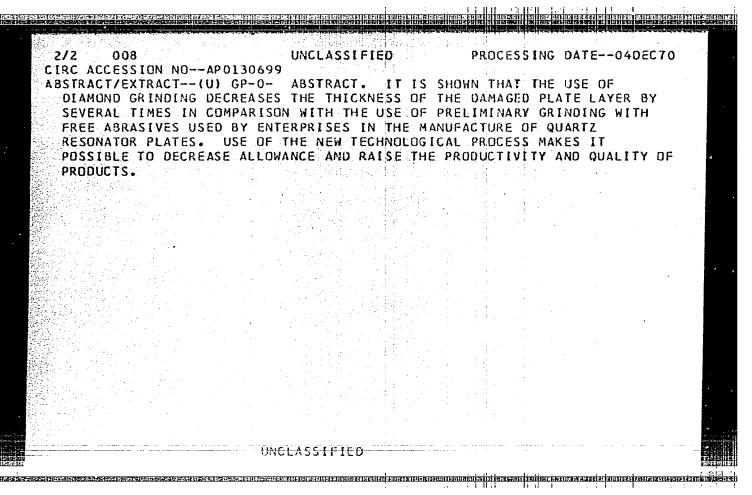
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3003/1872

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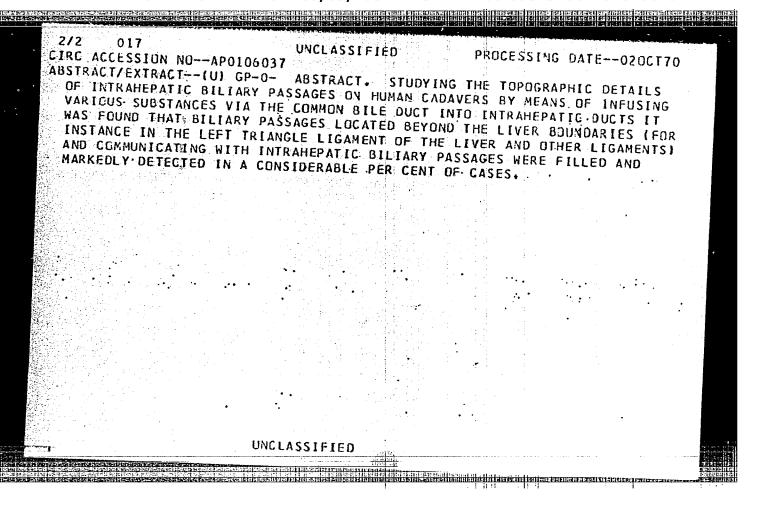
CIRC ACCESSION NO--APO130699

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AUTHOR-(02)-POPOV,	S.D. MAYEVSK	IY. V.A.		44 *1. ***		
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SUBJECT AREAS-BIOL	OGICAL AND MED	ICAL SCIENCES		,		•
TOPIC TAGSBILE, L	IVER, ANATOMY					
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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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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 polychlorpinene 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 <u>Ukazaniya po tekhnologii provedeniya aviakhimrabot</u> (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 2/12

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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 (5%5 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 5/12

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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 b/12

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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 Mf-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 7/12

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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 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

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 13 14 16 18 of the nozzle (mm)

2.1 3.4 4.7 5.2 6.4 Flow rate of liquid 7.1 8.3 9.3 11.2 13.1 (L/sec)

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: $P = \frac{25 \cdot 30 \cdot 44 \cdot 5}{10,000} = 3.34 \text{ L/sec.}$ 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 Sprayers		Number of per cm ²	drops	Arithmetic mean diametee
25 25	1X5 3X5	8 8	39•2 8•6		of drops (11) 145.2 194.1

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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