

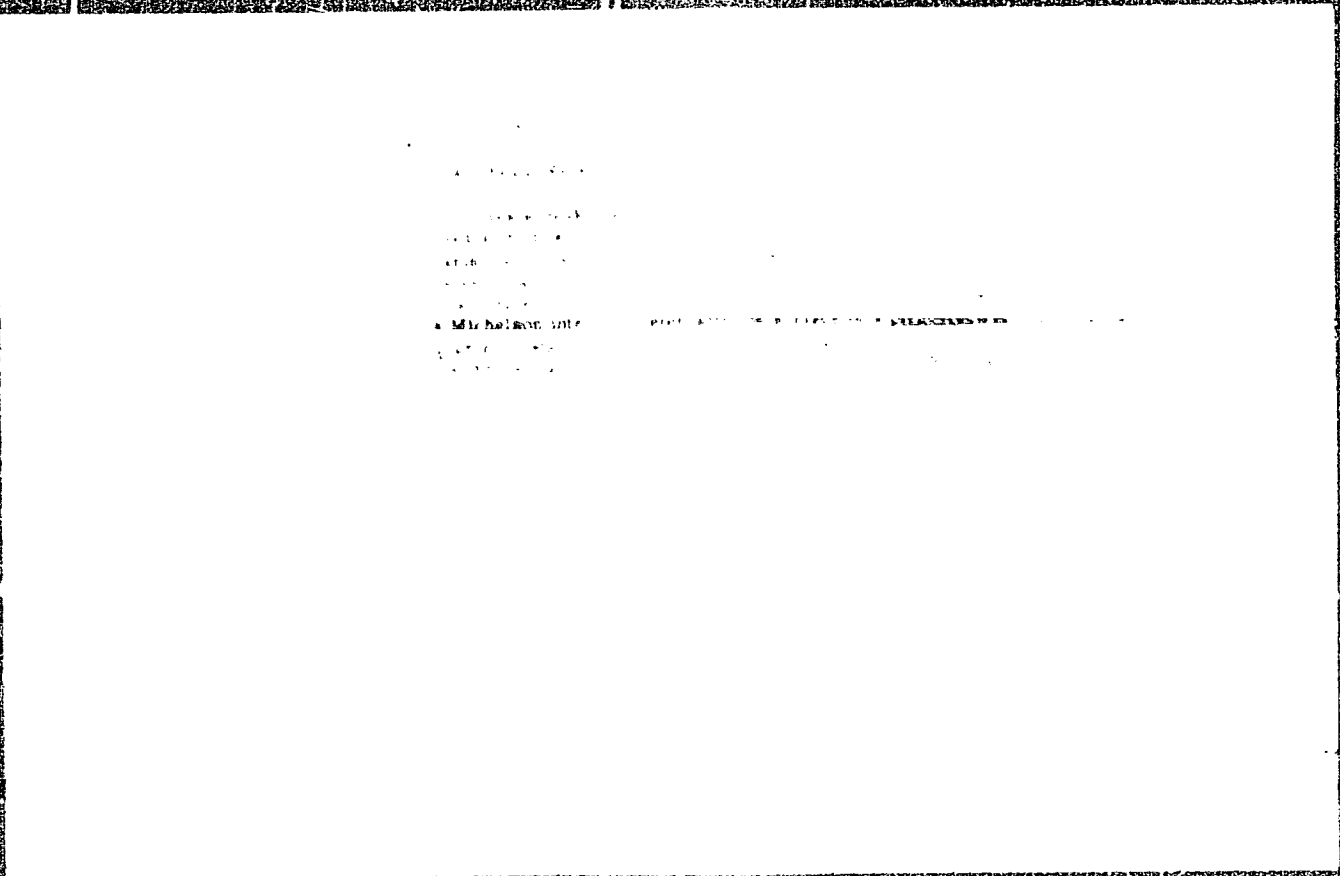
ANDRONNIKOV, K.S.; BALAKOV, Y.Y.; BUZHINSKIY, A.N.; BURAGO, A.N.; VERTMAN, L.A.; VISHNEVSKIY, A.A.; VOLOSOV, D.S.; GASSOVSKIY, L.N., professor; GERSHUN, A.A., professor; YEL'YASHEVICH, M.A.; YEVSTROP'YEV, K.S.; GUREVICH, M.M., professor; KOLYADIN, A.I.; KORYAKIN, B.M.; KURITSKIY, A.L.; PAPIYANTS, K.A.; PROKOP'YEV, V.K., professor; PUTSNIKO, Ye.K.; RYZUNOV, M.A.; RITYN', N.E., SAVOST'YANOVA, M.V., professor; SHVCHENKO, A.N.; SEMNOV, N.I.; STOZHAROV, A.I.; FAYERMAN, G.P., professor; PROFILOV, P.P.; TSARNEVSKIY, Ye.N., professor; CHEKHMATAYEV, D.P.; YUDIN, Ye.F.; KAVRAYSKIY, V.V., professor; VAVILOV, S.I., akademik, redaktor

[Optics in military science] Optika v voennom dele; sbornik statei. Pod red. S.I.Vavilova i M.V.Savost'ianovoi. Izd. 3-e, zanovo perer. i dop. Moskva. Vol.2. 1948. 387 p. (MLRA 9:9)

1. Akademiya nauk SSSR. 2. Sostaviteli - sotrudniki Gosudarstvennogo Opticheskogo instituta (for all except Vavilov and Kavrayskiy)
3. Voenno-morskaya akademiya (for Kavrayskiy)
(Optics)

U S S R

62
 Resistance and photoconductivity of lead sulfide at high frequencies of feed voltage. V. V. Balakov and V. A. Serebzhova. *Zhur. Tekh. Fiz.* 24, 959-962 (1954).—PbS plates 10 mm. wide were investigated by aid of 2 high-frequency generators, one of which could produce frequencies up to 40 megacycles, the other to 180. The distance between the graphite electrodes could be changed from 2 to 0.1 mm. In the region of 100 to 180 megacycles, the photoconductivity of the photocond. did not decrease any gaps between the grains of the sensitive layer, which grains would be responsible for the photocond. and the work-out of the layer. These findings are not changed if measurements are made at -180° , -78° , or $+20^{\circ}$, thus they are in opposition to findings by Chasmar (*C.A.* 47 2589) who found a certain change of the cond. and a disappearance of the photocond. at higher frequencies. The differences must be explained by the different mechanisms of the photocond. process which are produced by different frequencies.



62-4-3-27/30

AUTHORS: Belakov, V.V. and Guratin, V.F.

TITLE: Optical Transmission of Monocrystalline Germanium
(Opticheskoye propuskaniye monokristallicheskogo germaniya.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, No.3,
pp.415-416. (USSR)

ABSTRACT: The authors measured transmission of germanium monocrystals prepared by the State Institute for Rare Metals, which differed in their resistivity and type of conduction. The samples were in the form of plane-parallel plates of 8 mm thickness. Measurements were made using an infrared spectrophotometer IKS-2. The sample with the highest resistivity (No.5) was regarded as a standard and its spectral transmission curve was measured. Transmission of other samples was measured relative to this standard. Type of conduction and resistivity of the samples studied are given in the table on p.416. Fig.1 shows dependence of the coefficient of transmission T on the wavelength in microns. Transmission of the first six samples is given by one curve (curve 1 in Fig.1).

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Optical Transmission of Monocrystalline Germanium

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Curve 2 in Fig.1 represents samples Nos.7 and 8. Curves 3, 4 and 5 represent transmission of samples Nos.9, 10 and 11 respectively. Crystals with the same resistivity show higher transmission if they are of electron conduction type than the crystals with hole conduction. In the hole-type crystals dependence of the optical transmission on resistivity is greater than in the electron-type crystals. Smallness of the transmission coefficient (44-46%) is due to large losses on reflection at the two surfaces of germanium plates (the losses amount to about 36% of the incident light at each surface). Fig.2 shows transmission of a germanium plate, 2.2 mm thick, before (curve 1) and after (curve 2) deposition of a layer of ZnS. At the maximum of the anti-reflection action of the ZnS layer, transmission of germanium increases considerably and reaches 94-95%. By deposition of a layer of ZnS on silicon, the optical transmission of the latter can be also improved and made to reach 90%. There are 2 figures, 1 table and 2 Soviet references.

Card 2/3

Optical Transmission of Monocrystalline Germanium

ASSOCIATION: State Optics Institute named S.I. Vavilov
(Gosudarstvennyy opticheskiy institut im. S.I. Vavilova.)

SUBMITTED: July 13, 1957.

1. Germanium crystals--Optical 2. Transmission 3. Trans-
mission--Measurement 4. Spectrophotometers--Applications

Card 3/3

BALAKCHIN, A. S.

Manual of amplifier systems for the sound picture. Moskva. Gostkinoizdat. 1941.
616 p. (47-44325)

TN897.B34

PALAVKIN, A. S.

Manual of amplifier systems for sound motion picture. Izd. 2., 60kr. 1 perer. Moskva, Gorkinoizdat, 1944. 382 p. (48-15145)

TR857.B34 1944

ПАРАТИН, А. А.

Operation of amplifier system of talking motion pictures. Moscow, Izdatdat, 1945.
157 p. (Biblioteka kinobekhanika) (80-18277)

Ta897.453

BALAKSHIN, A. S.

"Defects in Amplifier Installations, Their Detection and Elimination,"
in two parts - Kinomekhanik, Nos. 2 and 3, 1952

BALAKSHIN, A.

Moving-picture Projectors

Parallel work of stationary amplifying equipment.
Kinomekhanik no. 12, 1952

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

СКОЛОВ, С., РЕЛАБИЛИТАЦИЯ

Electric Lamps, Arc

Supplying two arc lamps from one selenium rectifier. Kinomekhanik No. 1. (1952)

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

BALAKSHIN, A.S.; LAMAGIN, K.A., redaktor.

[Manual on amplifiers for sound motion pictures] Spravochnik po
usilitel'nym ustroistvam zvukovogo kino. Pod obshchei red. K.A.
Lamagina. Izd.3., perer. i dop. Moskva, Goskinoizdat, 1953. 748 p.

(MLRA 7:3)

(Motion pictures, Talking) (Amplifiers, Vacuum-tube)

BALAKSHIN, A. [author]; BENEDIKTOV, A. [reviewer].

"Reference book on amplifier equipment used in sound motion pictures."
A. Balakshin. Reviewed by A. Benediktinov. *Kinomekhanik* no. 9:44-45 S '53.
(MIRA 6:9)
(Amplifiers, Vacuum tube) (Moving-picture projectors)

BALAKSHIN, A.

Troubleshooting amplifier defects. Kinomekhanik no.4:31-38 Ap '53.

(MLRA 6:6)

(Amplifiers, Vacuum-tube)

BALAKSHIN, B. S.

"Milling Instead of Turning," Stanki i Instrument, 10, No.2, 1939

BALAKSHIN, B. S.

"A Shaving Process for Cylindrical, Tapered, and Plain Surfaces," Stanki i Instrument, 10, No.6, 1939.

BALAKSHIN, B. S.

Tekhnologiya stankostroeniia. Dop. v kachestve uchebn. posobiia dlia vtuzov. 2 perer. izd. Moskva, Mashgiz. 1949. 543 p. illus.

Bibliography: p. (537)-538.

DLC: TJ1185.B28

1949

(Technology of Machine-tool construction.)

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

BABICH, S.I., kandidat tekhnicheskikh nauk; ~~BAKALOV, B.S.~~, professor, doktor tekhnicheskikh nauk; BEYZEL'MAN, R.D., inzhener; BELYAYEV, V.M., kandidat tekhnicheskikh nauk; BIRGEB, I.A., kandidat tekhnicheskikh nauk; BOUSLAVSKIY, P.Ye., kandidat tekhnicheskikh nauk; BUBOVICH, L.S., kandidat tekhnicheskikh nauk; VOL'KIN, A.S., professor, doktor tekhnicheskikh nauk; GONIKBERG, Yu.M., inzhener; GORODETSKIY, I.Ye., professor, doktor tekhnicheskikh nauk; GORDON, V.O., professor; DIMENTBERG, F.M., kandidat tekhnicheskikh nauk; DOSCHATOV, V.V., inzhener, IVANOV, A.O., kandidat tekhnicheskikh nauk; KIMASHVILI, R.S., professor; KODNIP, D.S., kandidat tekhnicheskikh nauk; KOLONITSEV, A.A., kandidat tekhnicheskikh nauk; KRITIKOV, I.P., kandidat tekhnicheskikh nauk; KUSHUL', M.Ya., kandidat tekhnicheskikh nauk; LEVENSON, Ye.M., inzhener; MAZYRIK, I.V., inzhener; MALIBIN, N.N., kandidat tekhnicheskikh nauk; MARTYLOV, A.D., kandidat tekhnicheskikh nauk; MIBERO, H.Ya., kandidat tekhnicheskikh nauk; NIKOLAYEV, G.A., professor, doktor tekhnicheskikh nauk; PTRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAECV, S.N., dotsent; PONOMOREV, S.D., professor, doktor tekhnicheskikh nauk; PRIGOROVSKIY, N.I., professor, doktor tekhnicheskikh nauk; PRONIN, B.A., kandidat tekhnicheskikh nauk; RESHETOV, D.N., professor, doktor tekhnicheskikh nauk; SATEL', E.A., professor, doktor tekhnicheskikh nauk; SERENSEN, S.V.; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., professor, doktor tekhnicheskikh nauk; STOLBIN, G.R., kandidat tekhnicheskikh nauk; TAYTS, B.A., kandidat tekhnicheskikh nauk; TETEL'BAUM, I.M., kandidat tekhnicheskikh nauk; UMANSKIY, A.A., professor, doktor tekhnicheskikh nauk; FEODOS'YEV, V.I., professor, doktor tekhnicheskikh nauk;

(Continued on next card)

BABIN, S.I.--- (continued) Card 2.

KHAYT, D.H., kandidat tekhnicheskikh nauk; NYDINOV, V.Ye., kandidat tekhnicheskikh nauk; SHRAYBAR, M.N., inzhener, nauchnyy redaktor; SHEDROV, V.S., kandidat tekhnicheskikh nauk, nauchnyy redaktor; TSVETKOV, A.P., dozent, nauchnyy redaktor; SLEPNIKOV, P.I., inzhener, nauchnyy redaktor; MARKUS, M.Ye., inzhener, nauchnyy redaktor; KARJANOV, V.G., inzhener, nauchnyy redaktor; SCHERKIN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; SOROLOVA, T.P., tekhnicheskiy redaktor

[Manual of machinery manufacture] Spravochnik mashinostroitel'noy i trekh tozakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.3, 1951-1993 p. (USSR 10:9)

1. Deystvitel'nyy oblon Akademi nauk USSR (for Serenosa)
(Machinery)

BALAKSHIN, B.S.

Precision problems of machines. Trudy S-m.po toch.mash. no.5:3-21 '52.

(MLBA 6:6)

(Mechanical engineering)

Summary of ...

EAIKSHIN, P. S., ed.

Povyshenie proizvoditel'nosti truda i tochnosti obrabotki metallov. Sbornik nauchnoissledovatel'skikh rabot /Increasing labor productivity and precision in metalworking; collection of scientific research works/. Moskva, Mashgiz, 1953.

SO: Monthly List of Russian Accessions, Vol. 7, No. 3, June 1954.

Handwritten: 01/11/1986

ANTIPOV, K.F., inzhener; ~~BAKIN, S.I., doktor tekhnicheskikh nauk,~~
 professor; BARYLOV, G.I., inzhener; BEYZSIL'MAN, R.D., inzhener;
 BERDICHZVSKIY, Ya.O., inzhener; BOBKOV, A.A., inzhener. KALININ,
 M.A., kandidat tekhnicheskikh nauk; KOVAN, V.M., doktor tekhnicheskikh nauk, professor; KORNEEV, V.S., doktor tekhnicheskikh nauk;
 KOSILOVA, A.O., kandidat tekhnicheskikh nauk; KUDRYAVTSEV, N.T.,
 doktor khimicheskikh nauk, professor; KURYSHEVA, Ye.S., inzhener;
 LAHTIK, Yu.M., doktor tekhnicheskikh nauk, professor; MAYERMAN,
 M.S., inzhener; NOVIKOV, M.P., kandidat tekhnicheskikh nauk; PARIY-
 SKIY, M.S., inzhener; PEREPONOV, M.N., inzhener; POPILOV, L.Ye.,
 inzhener; POPOV, V.A., kandidat tekhnicheskikh nauk; SAVSKIN, M.M.,
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 SATAL, M.M., doktor tekhnicheskikh nauk, professor;
 SOKOLOVSKIY, A.P., doktor tekhnicheskikh nauk, professor [deceased];
 STANASVICH, V.G., inzhener; FRUMIN, Yu.I., inzhener; SHEN'KOV, M.Z.,
 inzhener; TSEYTLIN, L.B., inzhener; SHUKHOV, Yu.V., kandidat tekhnicheskikh nauk;
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 VOLGOV, S.I., kandidat tekhnicheskikh nauk; GORONETSKIY, I.Ye.,
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 DOSCHATOV, V.V., kandidat tekhnicheskikh nauk; ZAPALIN, V.S., inzhener;
 ISAYEV, A.I., doktor tekhnicheskikh nauk, professor; KADROV, S.M.,
 kandidat tekhnicheskikh nauk; MALOV, A.M., kandidat tekhnicheskikh nauk;
 MARDANYAN, M.Ye., inzhener; PANCHENKO, K.P., kandidat tekhnicheskikh nauk;
 SEKRETEY, D.F., inzhener; STAYEV, K.P., kandidat tekhnicheskikh nauk;
 SYROVATCHANCO, P.V., inzhener; TAURIN, G.M., inzhener;
 SL'YANINA, M.A., kandidat tekhnicheskikh nauk;

(Continued on next card)

ANTIPOV, K.F. ---(continued) Card 7.

GRANOVSKIY, G.I., redaktor; [unclear], redaktor; CHARNKO, D.V., redaktor; [unclear] [deceased]; SOKOLOVA, T.F., [unclear]

[Machine builder's manual] Spetsial'noye posobie dlya inzhenerov i tekhnicheskikh rabotnikov v dvukh tomakh, red.sovet V.M. Gova. Otdel nauki i tekhnologii Gos. nauchno-issledovatel'skogo tsentra po obrabotke i dr. Moskva, Gos.nauchno-tekhnicheskaya biblioteka, 1958.
Vol. 1. (Pod red. A.G. Kosilova) [unclear] [unclear].
Moskva) 1958. 534 p. (Machinery industry)

BALAKSHIN, D.D.

PHASE I BOOK EXPLOITATION

301

Sovremennyye napravleniya v oblasti tekhnologii mashinostroyeniya; sbornik (Modern Trends in the Field of Machine Building Technology; Collection of Articles) Moscow, Mashgiz, 1957. 363 p. 5,000 copies printed.

Gen. Ed.: Gokuna, B.V.; Tech. Ed.: Sokolova, T.F.; Eds.: Acherkan, N.S., Honored Worker in Science and Technology; Boguslavskiy, B.L., Professor; Glizmanenko, D.L., Candidate of Technical Sciences; Rabinovich, B.V., Candidate of Technical Sciences; Rakshtadt, A.G., Candidate of Technical Sciences; Sasov, V.V., Candidate of Technical Sciences; Storozhev, M.V., Candidate of Technical Sciences.

Managing Ed. for literature on metalworking and machine-tool building, (Mashgiz): Beyzel'man, R.D.

PURPOSE: This book is intended for engineers and technologists in machine building plants and scientific research institutes, as well as for students attending technical vuzes.

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Modern Trends in the Field (Cont.)

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COVERAGE: This collection of articles reflects the present-day status and trends in the development of machine building technology. It includes materials on problems of manufacturing high-quality machines with a minimum expenditure of labor, featuring high technological precision and high labor productivity based on the automation of technological processes. Basic problems encountered in automation processes as well as in the production of machine parts, starting with modern methods of preparing blanks and ending with machine assembling are clarified. The following topics are discussed at length: problems encountered in founding, cold and hot stamping, welding, powder metallurgy, machining and heat treatment, assembling, electric and ultrasonic methods of machining. Problems related to precision as well as dimension- and technological analysis of machine designs, prospects for the development of defect-detecting methods, interchangeability, and adjustment of production. For references, see Table of Contents.

TABLE OF CONTENTS:

Foreword

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Dikushin, V.I., Academician. Problems in the Automation of Machine-building Processes.

7

The article reviews and discusses some of the basic problems encountered in the Soviet machine-building industry as a result of automation or attempts to introduce it. There are no references.

Kovan, V.M., Professor, Doctor of Technical Sciences. Present-day Status and Problems in the Technology of Machining and Assembling.

22

The author stresses the importance of automation and reviews the effect caused by the introduction of progressive automation methods on the labor productivity levels. There are 8 references of which 5 are Soviet and 3 in English.

Balakshin, B.S., Doctor of Technical Sciences, Professor. Use of the "Dimension Chains" Theory in the Development and Completion of Technological and Production Processes.

34

The author shows that proper utilization of basic rules

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underlying the theory of "dimension chains" may allow for a greater efficiency, especially in calculating and planning automatic lines. There are no references.

Gorodetskiy, I.Ye., Professor, Doctor of Technical Sciences (Deceased). New Tasks in the Field of Technical Measurements. 49

The article describes the strides attained in measurement technology and discusses various aspects of active control. There are no references.

Lyandon, Yu.N., Candidate of Technical Sciences. Present-day Status of the Theory of Calculating Tolerances. 58

The article provides information on geometrical allowances, dimensioning, stresses, kinematic precision, principle of inversion, and analyzes the relationships within the system of allowances. There are 5 references of which 4 are Soviet and 1 German.

Dunayev, P.F., Docent, Candidate of Technical Sciences. Methods and Significance of Dimensional- and Technological Analysis of Machine Parts During Their Construction Process. 80

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Modern Trends in the Field (Cont.)

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The author discusses aspects of dimensional and technological analysis of machine piece parts in relation to the machine as a whole and as a part of assemblies and mechanisms and as a part of independent machine elements. There are 9 Soviet references.

Novikov, M.P., Candidate of Technical Sciences. Present-day Status and Problems in Machine Assembling.

99

Some of the more progressive mass-assembly methods employed by certain Soviet machine-building plants are briefly reviewed here.

Bilik, Sh.M., Doctor of Technical Sciences. Present-day Methods of "Liquid Jet" Polishing of Metals.

115

The author presents a detailed description of the equipment designed for surface polishing of metals with abrasive particles in a liquid jet. A discussion is included on the technological parameters of this process. There are 13 references of which 9 are Soviet, 2 English, 1 German, and 1 Hungarian.

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Livshits, A.L., Candidate of Technical Sciences. Present-day Status and Trends in the Development of Electrical Methods of Processing Metals.

136

The article reviews some of the most up-to-date methods employed in the USSR. There are no references.

Barke, V.N., Engineer, and Livshits, A.L., Candidate of Technical Sciences. Present-day Status and Trends in the Development of Ultrasonic Processing of Materials.

152

The authors present a brief outline of the underlying mechanical and hydrodynamic hypothesis of ultrasonics and a description of an ENIMS-built device. There are 3 references of which 2 are Soviet and 1 English.

Mariyenbakh, L., Doctor of Technical Sciences, Professor. Present-day Status and Problems in the Technology of Founding.

165

The article presents information on the present status and objectives of Soviet founding, the availability of raw materials, equipment employed in Soviet foundries, and describes the techniques employed in making castings of iron, steel, and nonferrous metals. There are 84 Soviet references.

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Modern Trends in the Field (Cont.)

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Storozhev, M.V., Candidate of Technical Sciences. Present-day Status and Problems in the Technology of Forging and Stamping. 189

The author reviews in detail some of the more urgent problems encountered in forging and stamping operations. He stresses the fact that only some of the stamping operations are automated. There are 24 Soviet references.

Meshcherin, V.T., Professor, Doctor of Technical Sciences. Present-day Status and Problems in the Technology of Sheet Stamping

214

The author outlines and discusses the following factors effecting labor productivity: 1) technological features of piece parts stamped out of sheet metal 2) quality of sheet metal 3) technological processes 4) full utilization of the productive capacity of the press 5) deformation rates, and 6) perfection of equipment. Working conditions, precision of stamped piece parts, cost of dies, etc., are also discussed. There are no references.

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Rakovskiy, V.S., Candidate of Technical Sciences. Present-day Status and Problems in Powder Metallurgy. 246

The author reviews some of the theoretical problems confronting powder metallurgy and describes briefly some of the modern methods of making metal powders. There are no references.

Lyubavskiy, K.V., Professor, Doctor of Technical Sciences, and Yarovinskiy, L.M., Candidate of Technical Sciences. Present-day Status and Some Problems in the Technology of Arc Welding. 258

The article contains data on Soviet practices involving welding with high-grade electrodes, automatic and semi-automatic fusion welding, shielded arc welding, and submerged melt welding. There are 75 Soviet references.

Gulyayev, A.P., Professor, Doctor of Technical Sciences. Problems in Present-day Metallography. 281

The article describes some of the problems encountered in refining metals, and discusses the physical and mechanical properties of pure and alloyed metals. There are no references.

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Minksvich, A.N., Candidate of Technical Sciences. Present-day Status and Objectives in Chemical-and Heat Treatment [of Metals]. 290

The author reviews existing Soviet practices of normalizing, annealing, hardening, tempering, and casehardening of metals and metal alloys in general, and nitriding of steels in particular. Data are included on new steel cementation processes and equipment, aluminum coating of steel and cast iron, chrome-plating of steel, and surface treatment of piece parts with boron. There are 24 references, of which 17 are Soviet, 1 Polish, and 6 English or translated from English.

Yeremin, N.I., Candidate of Physical and Mathematical Sciences. Physical Methods Used in the Quality Control of Metals. 313

The article presents a brief discussion of some of the latest methods of detecting structural defects in metals. The use of X-ray and gamma-rays, ultrasonics, and magnetic and luminescent methods is described. There are no references.

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Gokun, V.B., Candidate of Technical Sciences. Basic Methods
of Testing Machine Design During the Production Process. 333

The author presents an outline of appropriate tests extending from the design of an experimental prototype to the completion of a series of test models.

AVAILABLE: Library of Congress

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JG/ad
9-18-58

122-1-13/34

AUTHOR: Balakshin, B.S., Doctor of Technical Sciences, Professor.

TITLE: New principles of setting-up and re-setting of machining operations (Novyye printsipy naladki i podnaladki tekhnologicheskikh protsessov)

PERIODICAL: "Vestnik Mashinostroyeniya" (Engineering Journal), 1957, No.1, pp. 44 - 49 (U.S.S.R.)

ABSTRACT: Investigations carried out under the author's guidance at the Moscow Machine Tool and Tool Institute (Moskovskiy Stankoinstrumental'niy Institut) are reported. In setting-up for machining each dimension of a component its mean value is the closing link of the dimensional chain consisting of: 1) the pre-set dimension without load, 2) the clamping reference dimension, and 3) the setting dimension under cutting conditions. The tolerance of link 3) is known only by trial and error. Much time could be saved in setting up by direct measurement. Two methods of indirect measurement are considered: a) measurement of the deformation in a special link inserted in the system consisting of the machine tool, the fixture, the tool and the machined component and b) displacement or force measurement between a chosen pair of links in this system. Method b) is illustrated in a set-up on a horizontal milling machine. Displacement pick-ups at two points permit the meas-

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New principles of setting-up and re-setting of machining operations. (Cont.) 122-1-13/34

urement of the relative shift between the milling cutter and the clamping fixtures. Method a) is illustrated in a cylindrical grinding machine set-up, where an elastic link is introduced in the grinding wheel spindle stock motion. A sample nomogram connecting the various cutting process magnitudes with the accuracy of the machined size and the properties of the machined material is reproduced for grinding. It is possible to perform grinding ensuring both the required precision and the greatest attainable output. The nomogram can be extended by further families of curves showing the surface finish and certain geometric tolerances. It is claimed that the addition of instrumentation can increase the output in batch production by up to 50%. Moreover, some factors in cutting hitherto considered random, become systematic by the addition of measuring links. This permits the tightening of tolerances without extra cost. Another suitable magnitude for measurement is the temperature of one of the material links in the dimensional chain from which re-setting information can be continuously derived. For re-setting in automatic production lines, the instrumentation method permits the signalling to the preceding machine a demand to compensate for the dimensional wear of its

Card 2/3 tool and to the subsequent machine a demand for re-setting to

New principles of setting-up and re-setting of machining operations. (Cont.)

improve the resulting accuracy.

122-1-13/34

Card 3/3 There are 7 figures, including 2 graphs.

AVAILABLE: Library of Congress

~~B. I. S. K. O. S.~~

SOV/122-58-5-25/26

AUTHOR: Podurayev, V.N., Candidate of Technical Sciences, Dotsent

TITLE: Inter-Vuz Conference on Technology
(Mezhvuzovskaya tekhnologicheskaya konferentsiya)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 5,
p 84 (USSR)

ABSTRACT: An inter-vuz conference took place in January, 1958 at the MVTU (Moscow Technical University) imeni Bauman, devoted to manufacturing problems in the engineering and instrument industries. 22 universities and representatives of research institutes in the main engineering and instrument branches took part. Over 50 papers were read. The following papers were devoted to the state of knowledge of the theoretical foundations of production engineering. "The Basic Trends of Development in Engineering Manufacture" by Satel Ye.A., "The Fundamental Theoretical Problems in the Development of Casting", by Rubtsov, M.N., "Current Problems of Metallurgy and Heat Treatment of Metals" by Sidorin, I.I., Professor, "Accuracy and Interchangeability in Engineering" by Prof. ~~B.S. Balakshin~~ and "Present State of the Theory of Plastic Deformation in Press-forming Manufacture" by Ye.A. Popov, Doctor of Technical Sciences. In these papers, the main attention was devoted to

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Inter-Vuz Conference on Technology

SOV/122-58-5-25/26

manufacturing methods which could be performed by small, light, universal and economic plants. new production methods capable of improving the life of machine components are needed. The trends of increasing power of machine tools, greater expansion of high-speed manufacturing processes and the need to ensure the greatest precision in manufacture were emphasized. The theory of interchangeability of machine components requires further development primarily in its application to pneumatic, hydraulic and electrical elements. In several papers, the inadequate use made in the theory of manufacturing methods of modern achievements in science was deprecated. Further developments in the several branches of engineering science needed in connection with topical manufacturing problems were indicated. Widespread automation and overall mechanisation of manufacture were discussed in the following papers: "Trends of Development in Automatic Welding" by Nikolayev, G.A., Professor, Corresponding Member of the Academy of Architecture and Building
"The Automation of Manufacturing Processes in Engineering" by Prof. G.A. Shaumyan, "The Part Played by Electronics in the Solution of Automation Problems" by Kugushev, A.M., Professor,
"The Configuration and Classification of Automatic Production

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Machines and Their Basic Elements" by Prof. S.I. Artobolevskiy, "The Basic Trends of Development in the Theory of Automatic Regulating and Control" by Solodvnikov, A.V. Professor, "The Application of Electronic Devices to the Programme Control of Metal Cutting Machine Tools" by B.V. Anisimov. In the present state of its development, automation must ensure not only an increased productivity of labour but also a high accuracy in the performance of its individual operation and the constancy of its properties in time. Problems of the evaluation of the economic effectiveness of introducing any form of automation under given manufacturing conditions must be further elucidated. The flexibility of automated production should be given attention. The problems set by these developments must be solved to an increasing degree by the methods of automatic electronic regulating and control and by programme control systems.

Card 3/3 1. Industrial Production--USSR 2. Engineering--USSR 3. Instruments
--Production

ANTIPOV, K.P., inzh.; BALAKSHIN, B.S., prof., doktor tekhn.nauk; BARYLOV,
 G.I., inzh.; BEYZEL'MAN, R.D., inzh.; BERDICHVSKIY, Ya.G., inzh.;
 BOBKOV, A.A., inzh.; KALININ, M.A., kand.tekhn.nauk; KOVAN, V.M.,
 prof., doktor tekhn.nauk; KORSAKOV, V.S., doktor tekhn.nauk;
 KOSILOVA, A.G., kand.tekhn.nauk; KUDRYAVTSEV, N.T., prof., doktor
 khim.nauk; KURYSEVA, Ye.S., inzh.; LAKHTIN, Yu.M., prof., doktor
 tekhn.nauk; NAYERMAN, M.S., inzh.; NOVIKOV, M.P., kand.tekhn.nauk;
 PARIYSKIY, M.S., inzh.; PEREPONOV, M.N., inzh.; POPILOV, L.Ya.,
 inzh.; POPOV, V.A., kand.tekhn.nauk; SAVERIN, M.M., prof., doktor
 tekhn.nauk; SASOV, V.V., kand.tekhn.nauk; SATHL', E.A., prof.,
 doktor tekhn.nauk; SOKOLOVSKIY, A.P., prof., doktor tekhn.nauk
 [deceased]; STANKEVICH, V.G., inzh.; FRUMIN, Yu.L., inzh.; KHRAMOY,
 M.I., inzh.; TSETLIN, L.B., inzh.; SHUKHOV, Yu.V., kand.tekhn.nauk;
 MARKUS, M.Ye., inzh., red. [deceased]; GRANOVSKIY, G.I., red.;
 DEM'YANYUK, F.S., red.; ZUBOK, V.N., red.; MALOV, A.N., red.; NOVI-
 KOV, M.P., red.; CHARNO, D.V., red.; KARGANOV, V.G., inzh., red.
 graficheskikh rabot; SOKOLOVA, T.F., tekhn.red.

[Manual of a machinery designer and constructor; in two volumes]
 Spravochnik tekhnologa-mashinostroitelia; v dvukh tomakh. Glav.
 red. V.M.Kovan. Chleny red.soveta B.S.Balakshin i dr. Moskva,
 Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry. Vol.1. Pod red.
 A.G.Kosilovoi. 1958. 660 p. (MIRA 13:1)
 (Mechanical engineering--Handbooks, manuals, etc.)

BALAKSHIN, B.S., prof., doktor tekhn.nauk, red.; MOROZOVA, M.N., red.isd-va;
GORDNYEVA, L.P., tekhn.red.

[Precision in the technology of machine manufacture] Voprosy
tochnosti v tekhnologii mashinostroeniia. Pod red. B.S.Balakshina.
Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1959. 90 p.
(MIRA 12:5)

1. Moscow. Stankoinstrumental'nyy institut.
(Machinery industry)

25(0)

PHASE I BOOK EXPLOITATION

80V/2870

Balakshin, Boris Sergeyevich, Professor, Doctor of Technical Sciences,
Honored Worker in Science and Technology of the USSR

Osnovy tekhnologii mashinostroyeniya (Fundamentals in Machine-building
Technology) Moscow, Mashgiz, 1959. 485 p. 45,000 copies printed.

Reviewer: A.A. Zykov, Doctor of Technical Sciences, Professor; Ed.:
P.A. Kunin, Engineer; Ed. of Publishing House: V.V. Rzhavinskiy,
Engineer; Tech. Ed.: B.I. Medel'; Managing Ed. for Literature on
Metal Working and Tool Making (Mashgiz): R.D. Beyzel'man, Engineer.

PURPOSE: This book is approved by the Ministry of Higher Education of the
USSR as a textbook for courses in machine-building technology in schools
of higher education.

COVERAGE: The book presents the fundamentals of engineering of machine
manufacture and reviews techniques of manufacturing and mounting different
parts of such machines as lathes, millers, cutters, etc. The author
deals in detail with the most efficient machine-manufacturing methods,
production cycles, manufacturing costs, and maintenance and depreciation

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Fundamentals in Machine-building Technology

80V/2870

of machines, and analyzes designs of various machine parts and methods of ensuring their precision and interchangeability. He suggests methods of reducing manufacturing costs, assuring precision of parts by fitting, adjustment and other means, and eliminating gaging errors. The standardization of manufacturing methods is discussed, as well as the automation of production processes, the organizational setup recommended for different manufacturing and assembling operations, and possibilities for increasing labor productivity and decreasing overhead expenditures and other outlays. The author thanks Professor A.A. Zykov, Doctor of Technical Sciences, of the Leningrad Polytechnical Institute imeni M.I. Kalinin, for his valuable comments in reviewing the book. There are 51 references, all Soviet.

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SKRAGAN, Vasily Aleksandrovich; AMOSOV, Ivan Sergeyeovich; SMIRNOV, Aleksandr Alekseyevich; BALAKSHIN, B.S., prof., doktor tekhn. nauk, retsentsent; RYTSOVA, V.S., dotsent, kand.tekhn.nauk, red.; CHFAS, M.A., red.isd-vs; SHCHETININA, L.V., tekhn.red.

[Mechanical engineering laboratory; methods manual for laboratory work in the mechanical engineering course] Laboratoriia tekhnologii mashinostroeniia; metodicheskoe posobie k laboratornym zaniatiiam po kursu tekhnologii mashinostroeniia. Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1960. 129 p.
(MIRA 14:1)

(Mechanical engineering)

BALAKSHIN, B.S.

It is necessary to build-in control instruments in machine tools.
Stan.1 instr. 32 no.11:6-8 N '61. (MIRA 14:10)
(Machine tools--Numerical control)

BALAKSHIN, B. S., doktor tekhn. nauk, prof.

Some theoretical problems in the automation of assembling
processes of machinery. Vest. mashinostr. 42 no.12:39-44
D '62. (MIRA 16:1)

(Assembly line methods) (Automation)

BALAKSHIN, B.S., asst. deputy dir. of technical USSR, doc. of
techn. nauk, prof., red.; SKHAGAN, V.A., kand. techn.
nauk, retsuzent

[Self-adjusting machine tools; control of flexible dis-
placements on machine tools] Samopodnastavitel'skiye
stanki; upravlenie uprugimi peremeshcheniyami na stankakh.
Moskva, Mashinostroenie, 1965. 285 p. (MIRA 18:3)

BALAKSHIN, G.D.

Development of an effective complex of geophysical prospecting
for diamond deposits. Trudy IAFAN AN SSSR Ser. geol. no.9:
172-177 '63. (MIRA 16:12)

BALAKSHIN, G.D.

Prospecting for diamond deposits by geophysical methods. Geol.
i geofis. no.6:142-145 '64. (MIRA 18:11)

1. Amakinskaya ekspeditsiya Yakutskogo geologicheskogo
upravleniya, poselok Nyurba.

~~BALAKSHIN, I. I.~~

High-latitude oceanographic expedition on the diesel electric
ship "Ob'." Probl.Arkt. no.3:124-127 ' 58. (MIRA 12:1)
(Greenland Sea--Oceanographic research)

PAIAROVICH, L. L.

"The Water Circulation and Bottom Contour of the Northern Part of Greenland."
report to be submitted for the Intl. Oceanographic Cong. New York City.
31 Aug - 11 Sep 1959.

Arctic and Antarctic Res. Inst., Leningrad.)

BALAKSHIN, L.L.; DOLOIN, I.M.

Reception of observation material of the Third Marine Expedition.
Inform. biul. Sov. antark. eksp. no.5:51-52 '59.

(MIRA 12:10)

(Antarctic regions)

GUDKOVICH, Z.M. (Leningrad); BALAKSHIN, L.L. (Leningrad)

Fate of a drifting station. Priroda 51 no.6:66-69 Je '62.

(MIRA 15:6)

(Arctic regions--Drifting ice stations)

PAKHOMOV, N.; BALAKSHIN, N.

First Russian expedition by G.I.A. Sedov to the North Pole.

Mor. flot 22 no. 8:40-41 Ag '62.

(MIRA 1517)

(Arctic regions—Russian exploration)

(Sedov, Georgii Iakovlevich)

112-57-7-14906

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 7, p 157 (USSR)

AUTHOR: Balakshin, O. B.

TITLE: A Method of Static Design of Pneumatic Measuring Devices Allowing for Friction Losses (Ob odnom metode staticheskogo rascheta pnevmaticheskikh izmeritel'nykh ustroystv s uchedom poter' na treniye)

PERIODICAL: V sb.: Tochnost' izgotovleniya sharikovykh i rolikovykh podshipnikov na avtomat. liniyakh, AN SSSR, Moscow, 1955, pp 198-205

ABSTRACT: The design is based on experimentally determined characteristics of an inlet nozzle $Q(h)$ and a measuring nozzle $Q(S)$, where Q is the flow, h and S the measuring pressure and gap. Instead of determining graphically the relation $h(S)$, it is suggested that all friction corrections $\Delta h(S)$ be introduced into the characteristics $Q(h)$, resulting in a "deformed" curve $Q(S)_{tr}$, from which the curves $h(S)_{tr}$ can be determined graphically; they present measured pressure and flow for each value of gap S . Formulas are deduced for calculating friction corrections Δh . An inference is made that lower pressure should be used for higher operating precision of pneumatic devices.

V. F. R.

Card 1/1

BALAKSHIN, O.R.

Using the method of nondimensional characteristics in designing
pneumatic measuring units. Trudy Inst. mash. Sem. po toch. v
mash. i prib. no.10:53-65 '57. (MIRA 11:1)
(Pneumatic machinery) (Measuring instruments)

02.12.1959, 2.0.

25(2)

PHASE I BOOK EXPLOITATION

SOV/2565

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyeni i priborostroyeni

Trudy, vyp. 12 (Transactions of the Institute of Mechanical Engineering, USSR Academy of Sciences. Seminar on Accuracy in Machine and Instrument Building, Nr 12) Moscow, Izd-vo AN SSSR, 1959. 70 p. Errata slip inserted. 2,500 copies printed.

Ed. of Publishing House: M.D. Dobshits; Tech. Ed.: N.F. Yegorova; Editorial Board: N.G. Bruyevich, Academician (Resp. Ed.); G.G. Baranov, Doctor of Technical Sciences; M.L. Bykhovskiy, Doctor of Technical Sciences; A.P. Vladziyevskiy, Doctor of Technical Sciences; and A.S. Shatalov, Doctor of Technical Sciences.

PURPOSE: This book is intended for engineers concerned with accuracy in machines and instruments.

COVERAGE: This is a collection of scientific papers dealing with the
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accuracy and adjustment of various devices. The subjects discussed include calculating the accuracy of bearing subassemblies in precision mechanisms constructed in the form of shafts assembled on two radial bearings, calculating accuracy in computing devices with two degrees of freedom, design and adjustment of pneumatic gages, synchronizing the rotation of driving and driven shafts in universal joint drives, analysis of the process of forming parts by centerless grinding, and the effect of self-oscillations on the accuracy of computing devices such as resistance bridge-circuits with automatic drive for multiplying two scalar quantities.

TABLE OF CONTENTS:

Sergeyev, V.I. On Calculating the Accuracy of Bearing Subassemblies in Mechanisms Constructed in the Form of Shafts Mounted on Two Rolling-Contact Radial Bearings 3
The author investigates errors resulting from the total axial displacement of rotating shafts of mechanisms used in precision

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instruments and discusses methods of adjustment for improving the accuracy of mechanisms. There are no references.

Lyubator, Yu.V. On Calculating the Accuracy of Computing Mechanisms With Two Degrees of Freedom 13

The author discusses some problems concerning the effect of adjustment of computing mechanisms with two degrees of freedom on the accuracy of a computing device. He describes methods of establishing the origin of coordinate systems for driving links of such mechanisms and gives mathematical expressions for the errors of the output of a mechanism. There are 3 references, all Soviet.

Balakshin, O.B. On the Problem of Calculating the Range of Linearity and Sensitivity in Pneumatic Gages 24

The author discusses the design and adjustment of pneumatic gages which work on the principle of measuring the clearance between the gaging head and the surface of the measured part. Using a specific example, he demonstrates a graphical method of

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calculating various parameters of a gage. There are 2 references, both Soviet.

Matevosyan, P.A. On a Method of Reducing the Error in Movement of the Driven Link of a Universal Joint Drive

29

The author discusses causes of asynchronous rotation of the driving and driven shafts in universal joint drives. He describes methods for reducing error in transmitting the rotation from the driving to the driven shaft due to errors in manufacture of the drive parts and due to nonparallelism between the driving and driven shafts. There are 5 references, all Soviet.

Fil'kin, V.P. Analyzing the Forming Process of Parts by Centerless Grinding

36

The author presents an analytical investigation of the process of forming parts by centerless grinding. He derives formulas for calculating errors in the part shape and formulas for calculating the parameters of the grinder setup. There are 7 references: 4 Soviet, 2 German, and 1 English.

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Transactions (Cont.)

SOV/2565

Sergeyev, V.I. Effect of Self-Oscillations on the Accuracy of
Bridge-type Computing Devices

58

The author presents a method for calculating the amplitude of self-oscillations taking place in a computing device having an automatic drive with nonlinear elements, such as a resistance bridge-circuit with an automatic drive for multiplying two scalar values.

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11-30-59

BALAKSHIN, O.B.

Evaluating the range of linearity and sensitivity of pneumatic measuring equipment. Trudy Inst. mash. Sem. po toch. v mash. i prib. no.12:24-28 '59. (MIRA 12:6)
(Measuring instruments) (Pneumatics)

BALAKSHIN, O. B., Cand Tech Sci -- (diss) "Investigation and calculation of the working parameters of pneumatic devices for the automatic control of dimensions." Moscow, 1960. 12 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin and Order of Labor Red Banner Technical College im N. E. Bauman); 200 copies; price not given; (KL, 51-60, 117)

PHASE I BOOK EXPLOITATION SOV/5617

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyenii i priborostroyenii.

Trudy. vyp. 15 (Transactions of the USSR Academy of Sciences. Institute of Machine Science. Seminar on Accuracy in Machine and Instrument Manufacture. no. 15) Moscow, Izd-vo AN SSSR, 1961. 93 p. Errata printed on the inside of back cover. 2,300 copies printed.

Editorial Board: Resp. Ed.: N. G. Bruyevich, Academician, G. G. Baranov, Doctor of Technical Sciences, M. L. Bykhovskiy, Doctor of Technical Sciences, A. P. Vladziyevskiy, Doctor of Technical Sciences, B. G. Dostupov, Doctor of Technical Sciences, M. I. Kochenov, Candidate of Technical Sciences, Yu. V. Lyubotov, Candidate of Technical Sciences, D. N. Reshetov, Doctor of Technical Sciences, V. I. Sergeyev, Candidate of Technical Sciences, and A. S. Shatalov, Doctor of Technical Sciences; Ed. of Publishing House: Yu. G. Drobyshev; Tech. Ed.: Yu. V. Rylina.

Card 1/4

Transactions of the USSR (Cont.)

SOV/5617

PURPOSE : This collection of articles is intended for engineers, designers, and research workers interested in the improvement of accuracy in machine and instrument manufacturing.

COVERAGE: The dynamic properties of centrifugal drum- and cone-type governors for electric motors are discussed. Problems are reviewed concerning accuracy in automatic dimensional control, computer adjustment, parts machining, and the distribution of dimensional errors along turbine blades. The practicability of automating computer adjustments and certain problems in constructing electronic-computer adjusting elements are considered. Conclusions concerning the results of the investigations are presented in some of the articles. No personalities are mentioned. References accompany each article. There are 42 references: 41 Soviet and 1 English.

TABLE OF CONTENTS:

Sergeyev, V. I. The Dynamics of a Centrifugal Drum-Type Governor
[Reported Feb. 24, 1958]
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3

Transactions of the USSR (Cont.)

SOV/5617

- Balakshin, O. B. The Development and Investigation of Methods for Increasing the Accuracy of Pneumatic Devices for Automatic Dimensional Control [Reported March 3, 1959] 13
- Matevosyan, P. A. Certain Problems in the Construction of Electronic-Computer Devices for Algebraic Equations [Reported April 14, 1959] 34
- Pinsker, I. Sh., and A. Ye. Dorogov. Proper Selection of the Adjusting Element and the Effect of Measurement Errors on Adjustment Accuracy [Reported April 5, 1960] 45
- Dorogov, A. Ye. On Possibilities for the Improvement and Automation of Computer Adjustment Processes [Reported April 5, 1960] 56
- Fridlender, I. G. Criteria and Methods for Evaluating the Accuracy of Parts Machining [Reported April 26, 1960] 68
- Fridlender, I. G. Laws of Distribution of Dimensional Errors for Gas-Turbine Blades [Reported April 26, 1960] 76
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Transactions of the USSR (Cont.)

SOV/5617

Sergeyev, V. I. The Dynamics of a Centrifugal Cone-Type
Governor [Reported May 19, 1960]

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AVAILABLE: Library of Congress

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S/194/61/000/012/042/097

D256/D303

AUTHOR: Balakshin, O. B.

TITLE: Increasing accuracy of pneumatic arrangements for automatic gauge control

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 26, abstract 12V222 (Tr. In-ta mashinoved. AN SSSR. Seminar po tochnosti v mashinostr. i proborostr. 1961, no. 15, 13-33)

TEXT: The means were considered of reducing the intrinsic errors of pneumatic instruments in connection with the non-linear relation of the pressure at the output of the measuring nozzle upon the size of the gap between the nozzle and the surface of the machined part. The mathematical analysis of errors was performed using as an example a curvature measuring device with a "floating" contact, and the derived conclusions were generalized upon a wide range of different instruments. 6 methods of increasing the accuracy are mentioned:
1) Increasing the pressure at the output of the stabilizer and re-

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Increasing accuracy of ...

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ducing the ratios of the cross-sections of the measuring nozzles to the cross-section of the output nozzle for a given gap and sensitivity; 2) reducing the ratio of the measuring nozzle cross-section to the cross-section of the output nozzle without increasing the pressure within the limits of the recommended pneumatic sensitivity for a given gap; 3) recovering the reduced pneumatic sensitivity by means of additional amplifier stages of standard type; 4) correct choice of the gap for given parameters of the instrument; 5) increasing the stabilizer output pressure and at the same time keeping variable the upper limit of the sensitivity; 6) increasing the working pressure and the gap and adjusting the contacts of the instrument with a standard gauge at two nozzles working in parallel. There are 16 figures and 7 references. [Abstractor's note: Complete translation.]

Card 2/2

BALAKSHIN, O.B.

Investigating the measuring force of noncontact pneumatic
measuring devices. Trudy Inst.mash.Sem.po toch.v mash.i prib.
no.16:3-10 '61. (MIRA 15:2)

(Pneumatic gauges—Testing)

BALAKSHIN, O.B.

Experimental investigation of the thermodynamic process in
pneumatic measuring devices. Trudy Ins.t mash.Sem.po toch.v
mash.i prib. no.16:11-13 '61. (MIRA 15:2)
(Pneumatic gauges--Testing)

BALAKSHIN, O.B., kand. tekhn. nauk; BYKHOVSKIY, M.L., prof., doktor tekhn. nauk; VOLODIN, Ye.I., kand. tekhn. nauk; GRIGOR'YEV, I.A., kand. tekhn.nauk; DRAUDIN-KRYLENKO, A.T., inzh.; IVANOV, A.G., kand. tekhn.nauk; KOZLOV, M.P., kand. tekhn. nauk; KOROTKOV, V.P., prof.; KOCHENOV, M.I., kand. tekhn.nauk; KUTAY, A.K., kand. tekhn. nauk; MARKOV N.N.,kand. tekhn. nauk; PALEY, M.A., inzh.; RAYEMAN, N.S., kand. tekhn.nauk; ROSTOVYKH, A.Ya., kand. tekhn. nauk; RUMYANTSEV, A.V., kand. tekhn.nauk; SARKIN, I.G., prof.; SMIRNOV, A.S., inzh.; TAYTS, B.A., prof., doktor tekhn. nauk; YAKUSHEV, A.I., prof., doktor tekhn. nauk; NESTEROV, V.D., inzh., nauchnyy red.; CHUDOV, V.A., inzh., nauchnyy red.; GAVPILOV, A.N., doktor tekhn.nauk, prof., red.; BLAGOSKLONOVA, N.Yu., inzh., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manufacture of instruments and means of automatic control: a manual in five volumes] Priborostroenie i sredstva avtomatiki; spravochnik v piati tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.1.[Interchangeability and engineering measurements] Vsaivosameniaemost' i tekhnicheskie izmerezheniia. 1963. 568 p. (MIRA 16:8)
(Electronic measurements) (Automatic control)

BALAKSHIN, O.B.

Using functions of optimum approximation in designing
pneumatic measuring devices. Trudy Inst. mash. Sem. po toch.
v mash. i prib. no.17:12-21 '63. (MIRA 1619)

(Pneumatic gauges)

BALAKSHIN, O.B.

Dynamic precision of pneumatic measuring devices with floating pickups. Trudy Inst. mash., STMP no. 19:22-29 '65
(MIRA 19:1)

Investigating the effect of the instability of air inlet pressure on the precision of pneumatic measurements of dimensions. Ibid.:30-40.

ACCESSION NR: AT3002153

S/2916/63/000/017/0022/0042.

AUTHOR: Balakshin, O. B.

TITLE: Analysis of the accuracy of possible pressure regulator configurations

SOURCE: AN SSSR. Institut mashinovedeniya. Trudy. Seminar po tochnosti v mashinostroyeni i priborostroyeni, no. 17, 1963, 22-42

TOPIC TAGS: pressure regulator, pressure stabilizer, reverse-acting pressure regulator, straight-acting pressure regulator, pressure regulator accuracy, pressure feed-back

ABSTRACT: Equations were derived for calculating the parameters and accuracy of existing pressure regulator configurations and for some new configurations. Based upon these equations, recommendations can be made for improving the accuracy of these devices. The effects of pressure oscillations on the accuracy of the regulator are considered. In this report only "static" regulators (regulators with only one relationship between the regulated pressure and the position of the valve spool) of two general types are considered: straight-acting (higher pressure opens valve) and reverse-acting (low pressure side tends to open valve) (see

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ACCESSION NR: AT3002153

Fig. 1 on the Enclosure). The equations for the output pressure H as a function of input pressure P_c for the reverse-acting and straight-acting regulators are derived and are respectively:

$$H = \frac{N_1 - N_2}{F_0 - l_0} - \frac{l_0 + l_{sh}}{F_0 - l_0} p_c - \frac{k_1 + k_2}{F_0 - l_0} \frac{G}{A d_{dr} p_c}$$

(where N₁ = force of spring 5, N₂ = force of spring 10, f = cross section area between plunger and seat 2, F₀ = effective area of membrane, f_{sh} = area of seat, k₁ and k₂ = spring constants, G = flow rate, A = constant in flow rate equation, d_{dr} = area of circular opening). Based upon these equations, an evaluation was made of the effects of the different parameters, p, G, etc., on the accuracy of H or effect on the error ΔH. The error equations for reverse-acting and straight-acting regulators are given by

$$\Delta H = \frac{l_0 + l_{sh}}{F_0 - l_0} (p_c - p_w) - \frac{k_1 + k_2}{F_0 - l_0} \cdot \frac{G_0}{A d_{dr} p_{c0}} (p_c - p_w) + \frac{k_1 + k_2}{F_0 - l_0} \cdot \frac{1}{A d_{dr} p_{c0}} (G - G_w)$$

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ACCESSION NR: ATJ002153

and

$$\Delta H = \frac{F_0 - l_0}{l_0 + l_m} (p_c - p_w) - \frac{k}{l_0 + l_m} \frac{Q}{Ad_m p_c} (p_c - p_w) + \frac{k}{l_0 + l_m} \frac{1}{Ad_m p_c} (Q - Q_0)$$

Based upon these equations, values for F, N, and k can be chosen to provide a given accuracy. Methods are discussed for improving the accuracy of the regulator by: unloading the valve (i.e., equalizing pressure forces), using pneumatic amplifiers for moving valve stem, and using feed-back devices to change the relationship between valve movement and controlled pressure. A configuration using pressure feedback is shown in Fig. 2 on the Enclosure. Orig. art. has: *lll* formulas and 7 figures.

ASSOCIATION: AN SSSR. Institut mashinovedeniya (Institute of Machine Design)

SUBMITTED: 00

DATE ACQ: 10May63

ENCL: 02

SUB CODE: CO, SD

NO REF SOV: 007

OTHER: 000

Card 3/3

BALAKSHIN, O.B.

Investigating the relationship between metrological indices
and parameters of measuring instruments with acoustic
pickups. Trudy Inst. mash. Sem. po tozh. v mash. i prib.
no.17:43-50 '63. (MIRA 164)

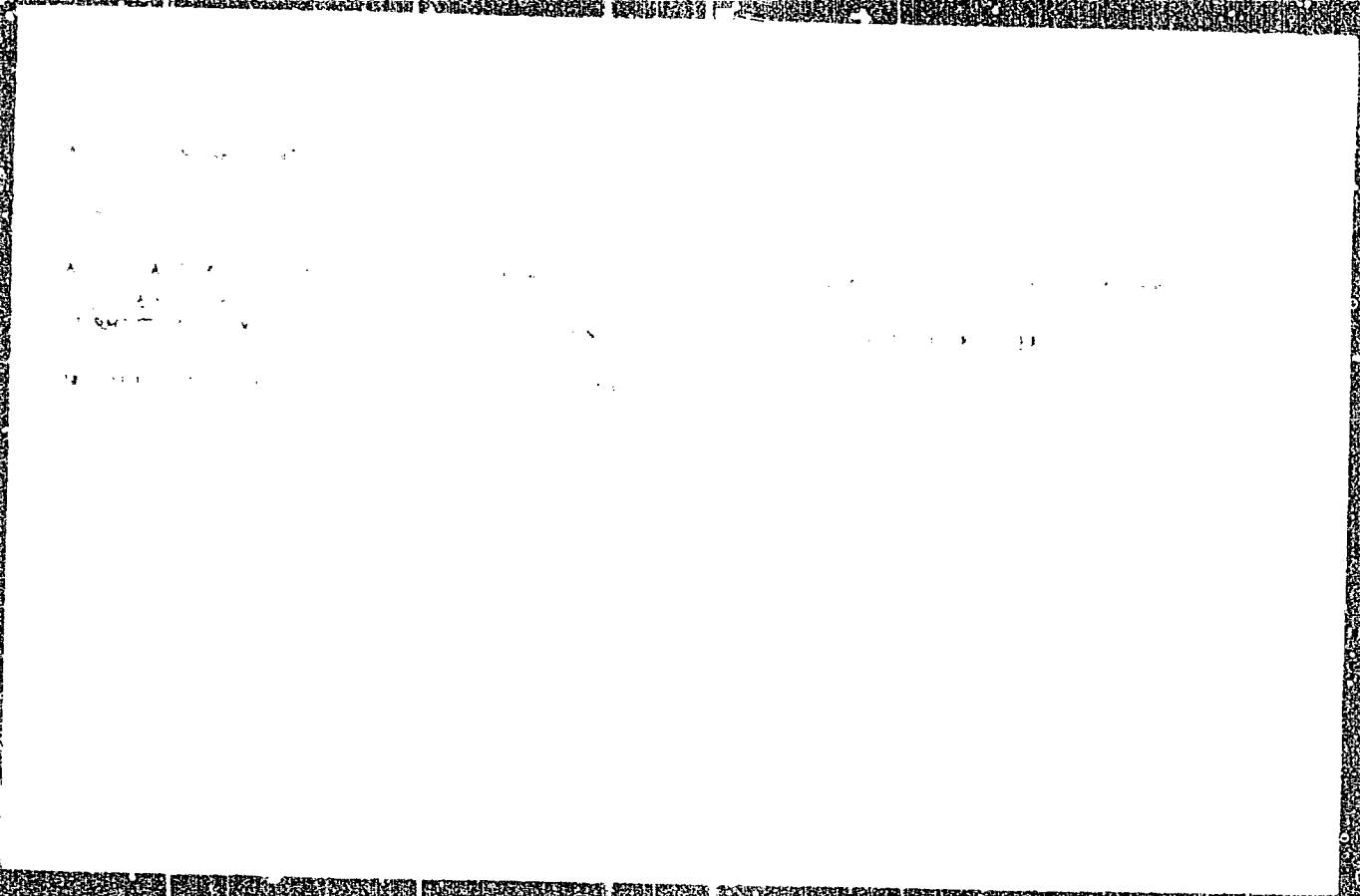
(Electronic instruments)

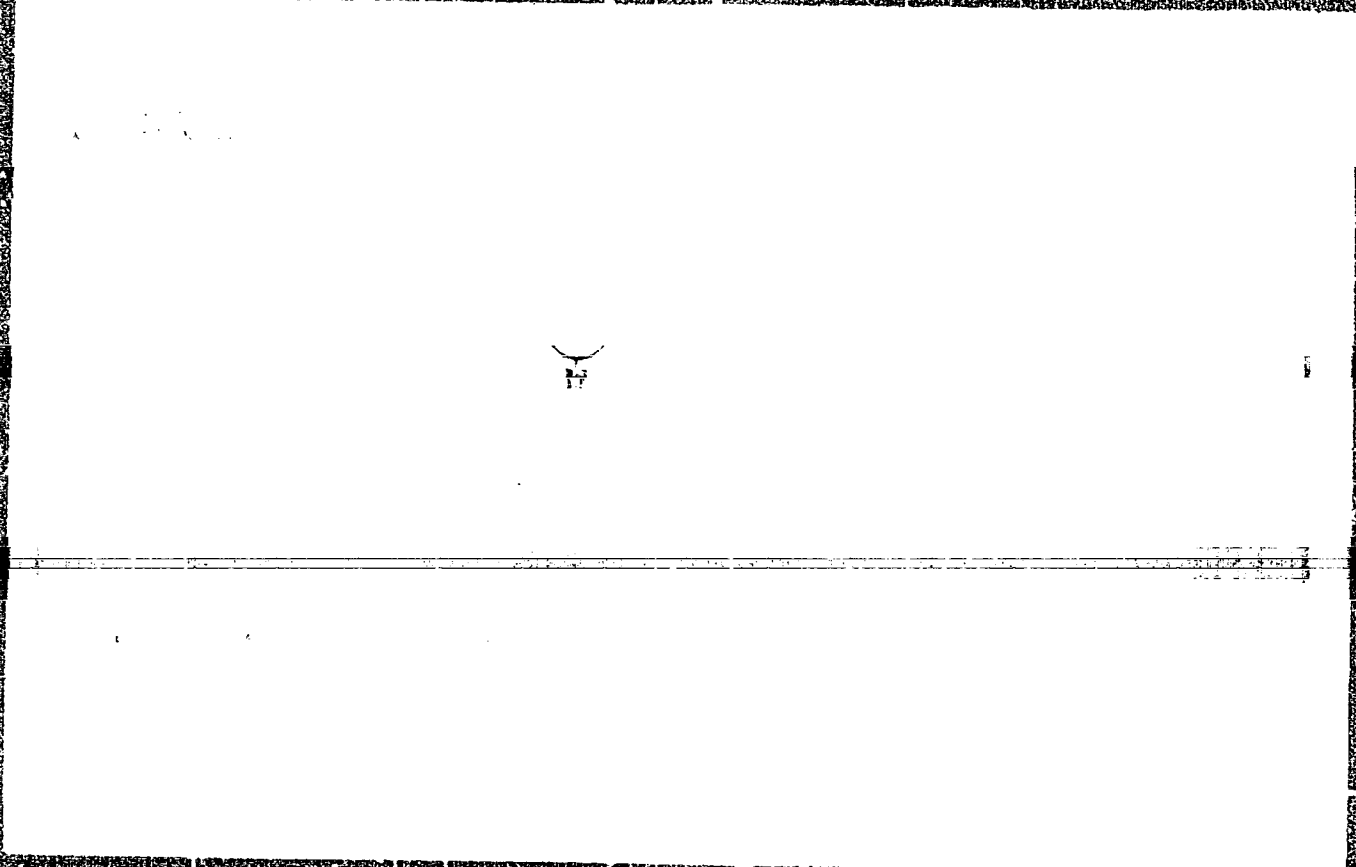
ACCESSION NR: AT4049527

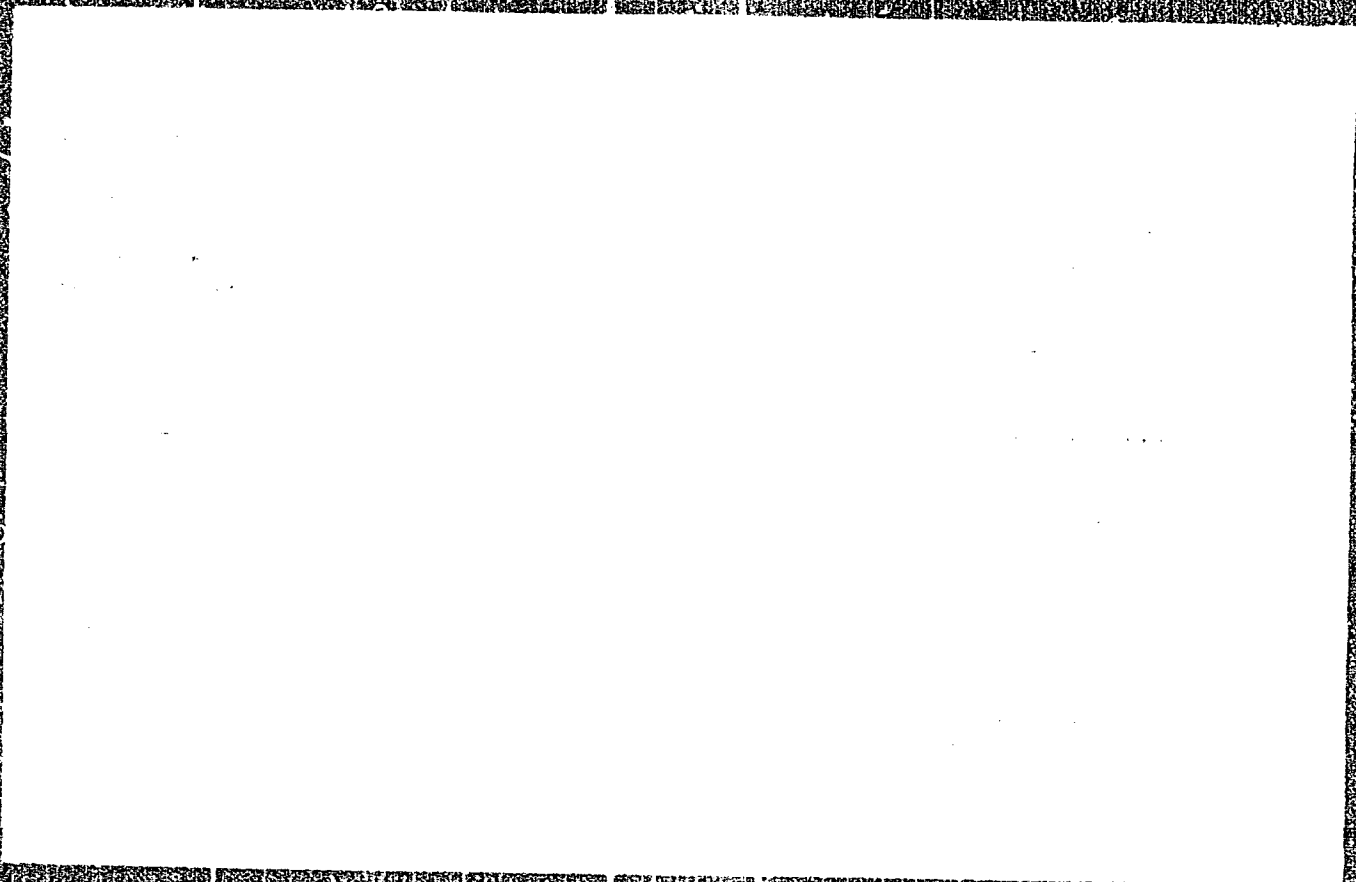
7-17-77 10/16/77 10/16/77

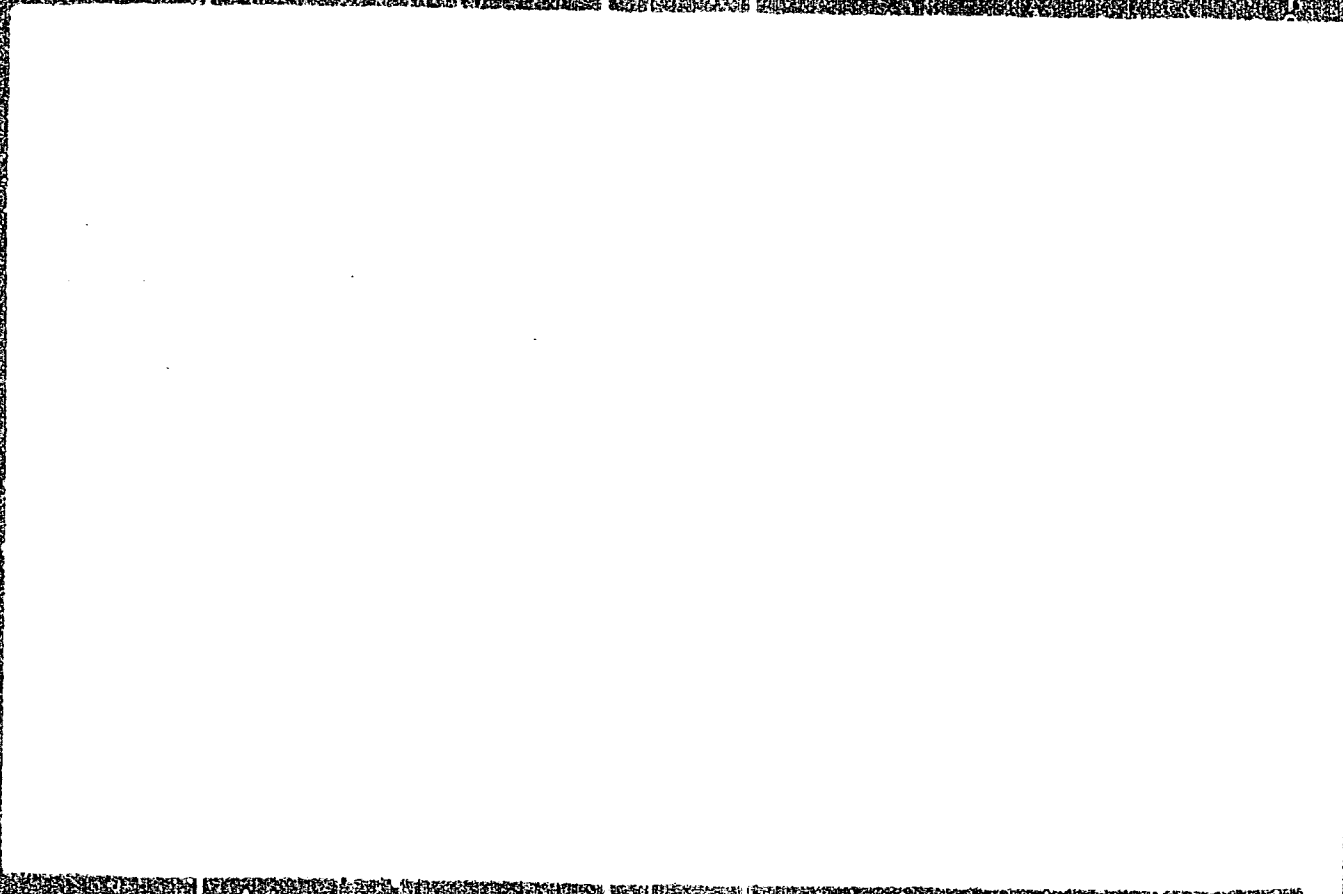
... friction value. This value is given in the certificate supplied with the de-
vice. If required, the relationship of the viscous friction on the pressure and

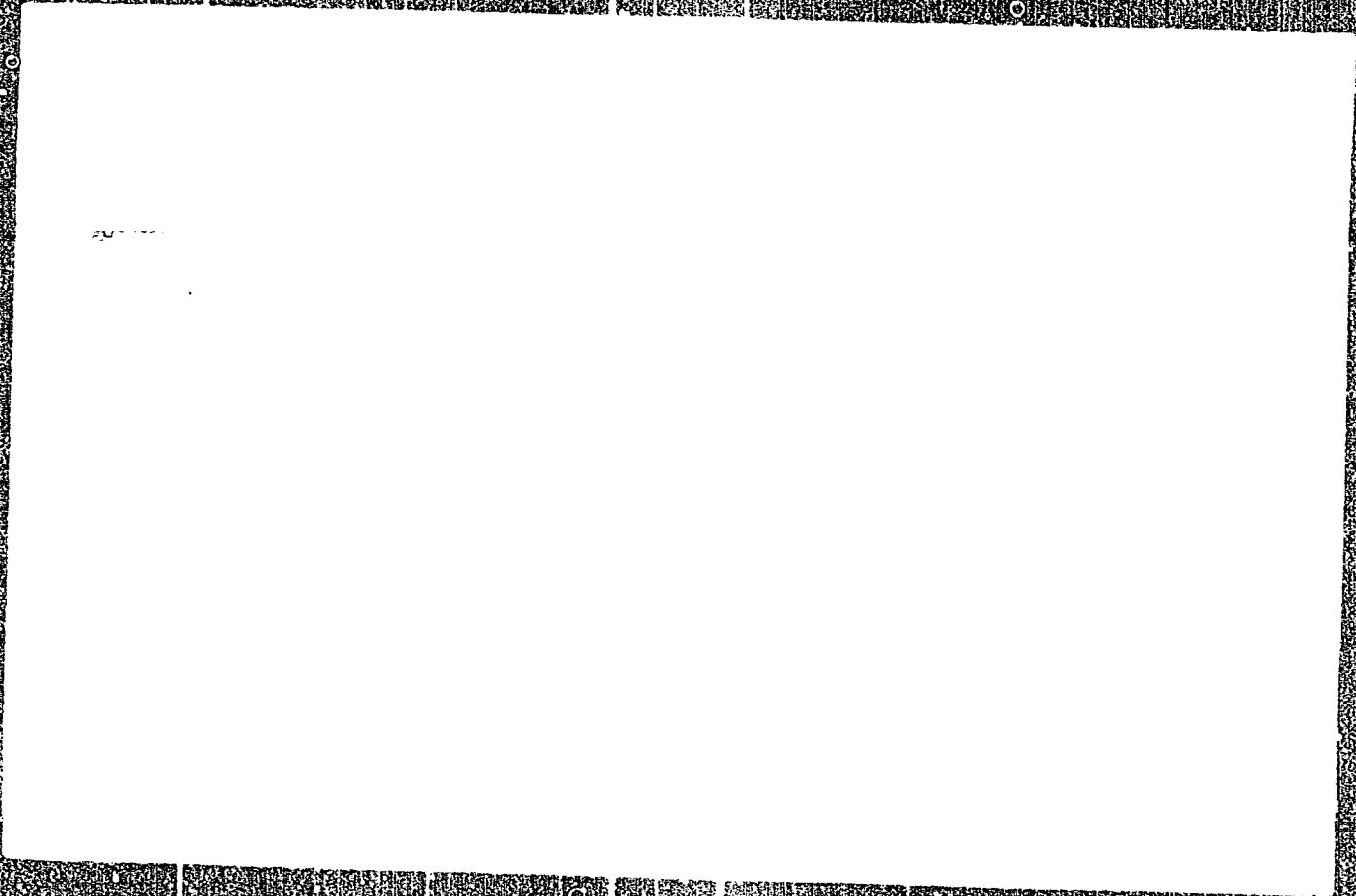
smallness. Thus, the errors of a certain set of devices may be found by determi-

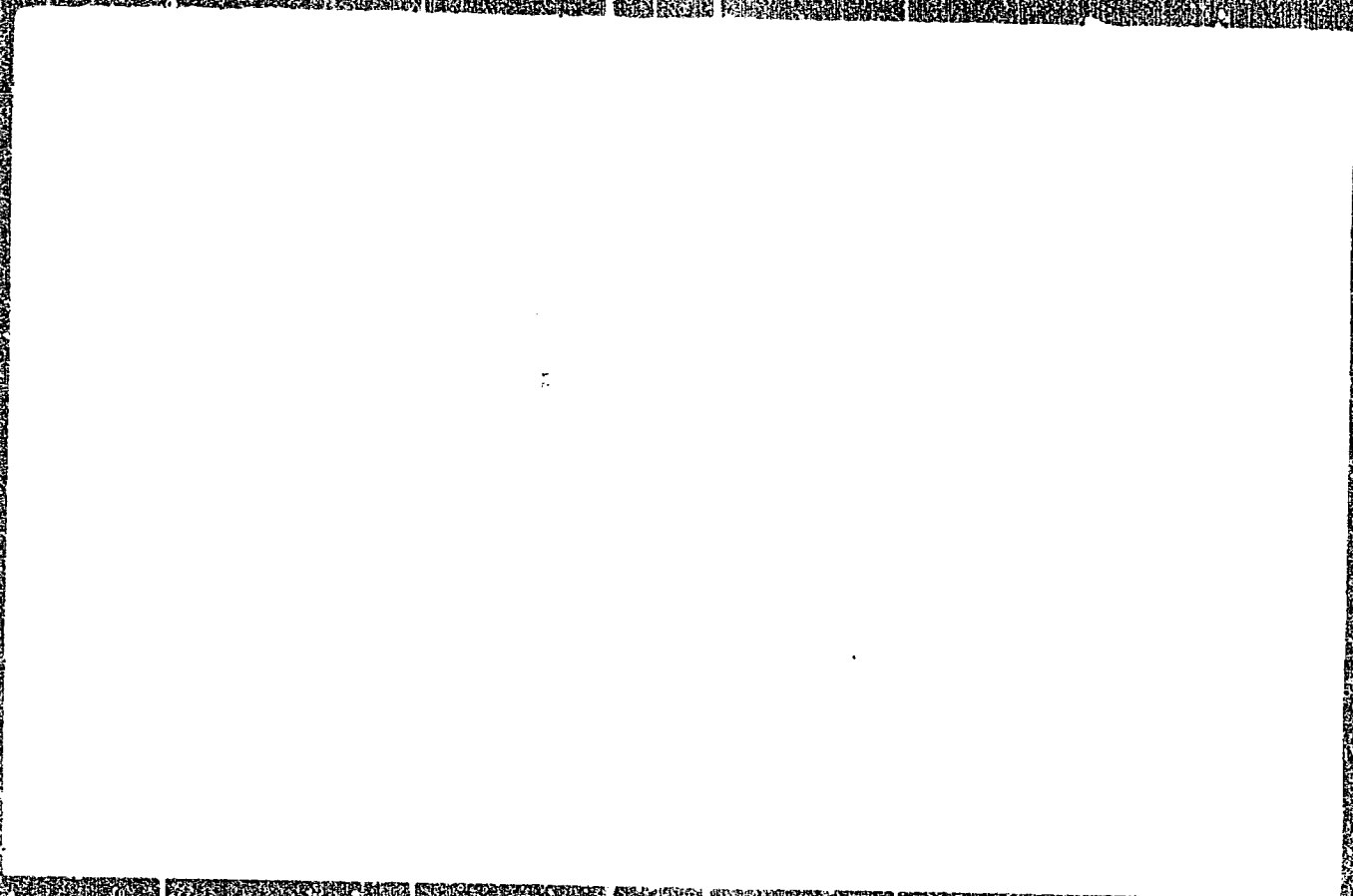


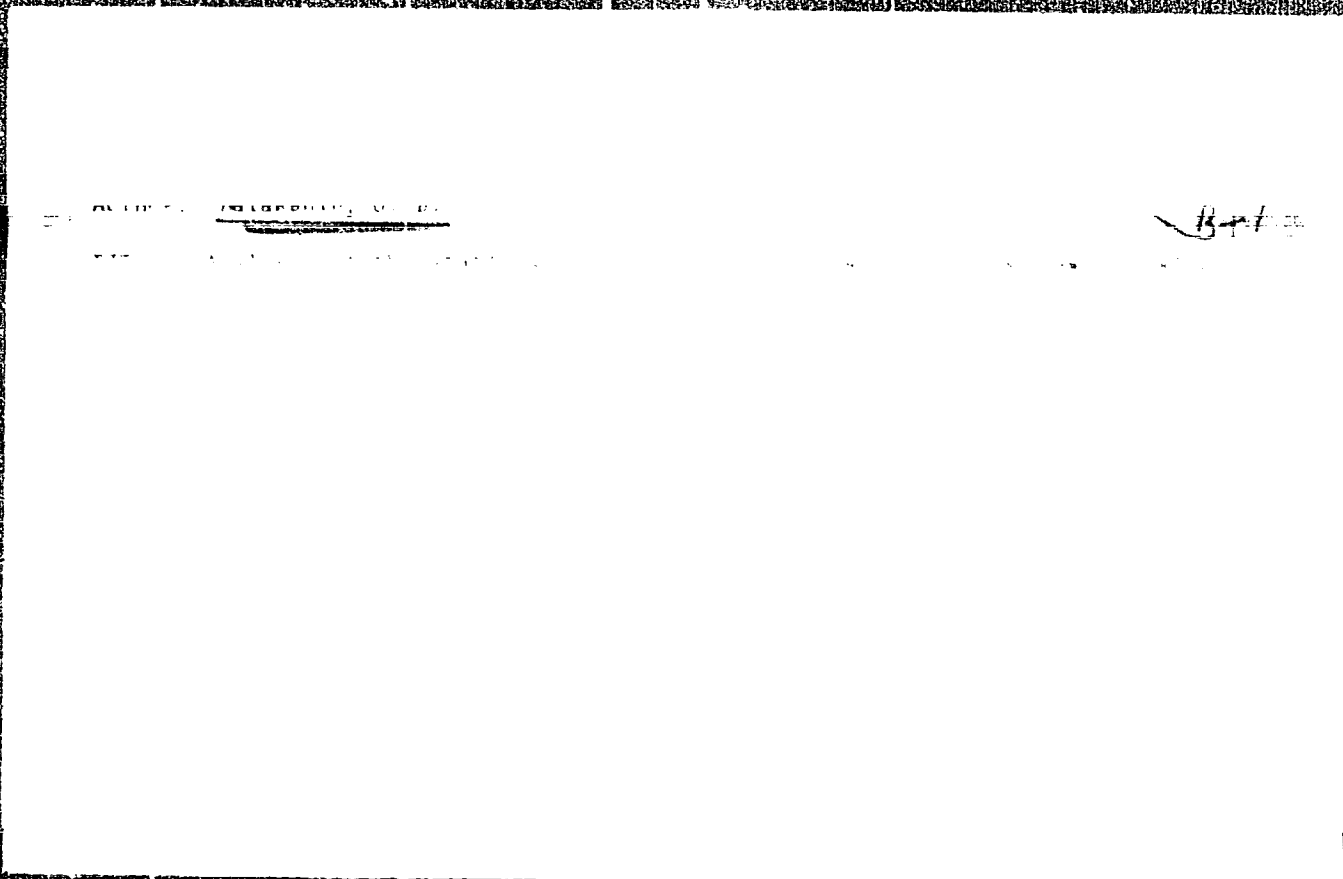




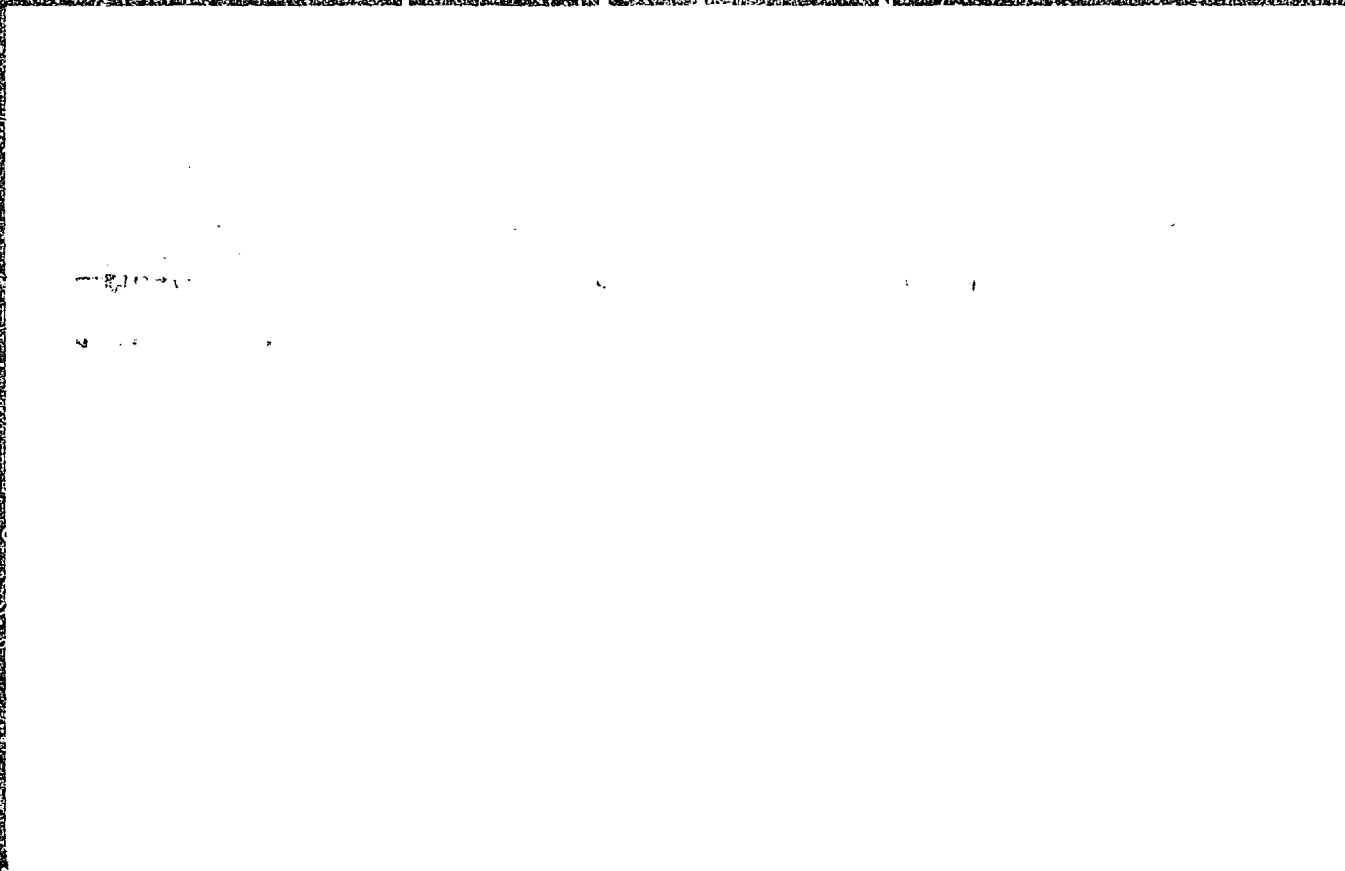


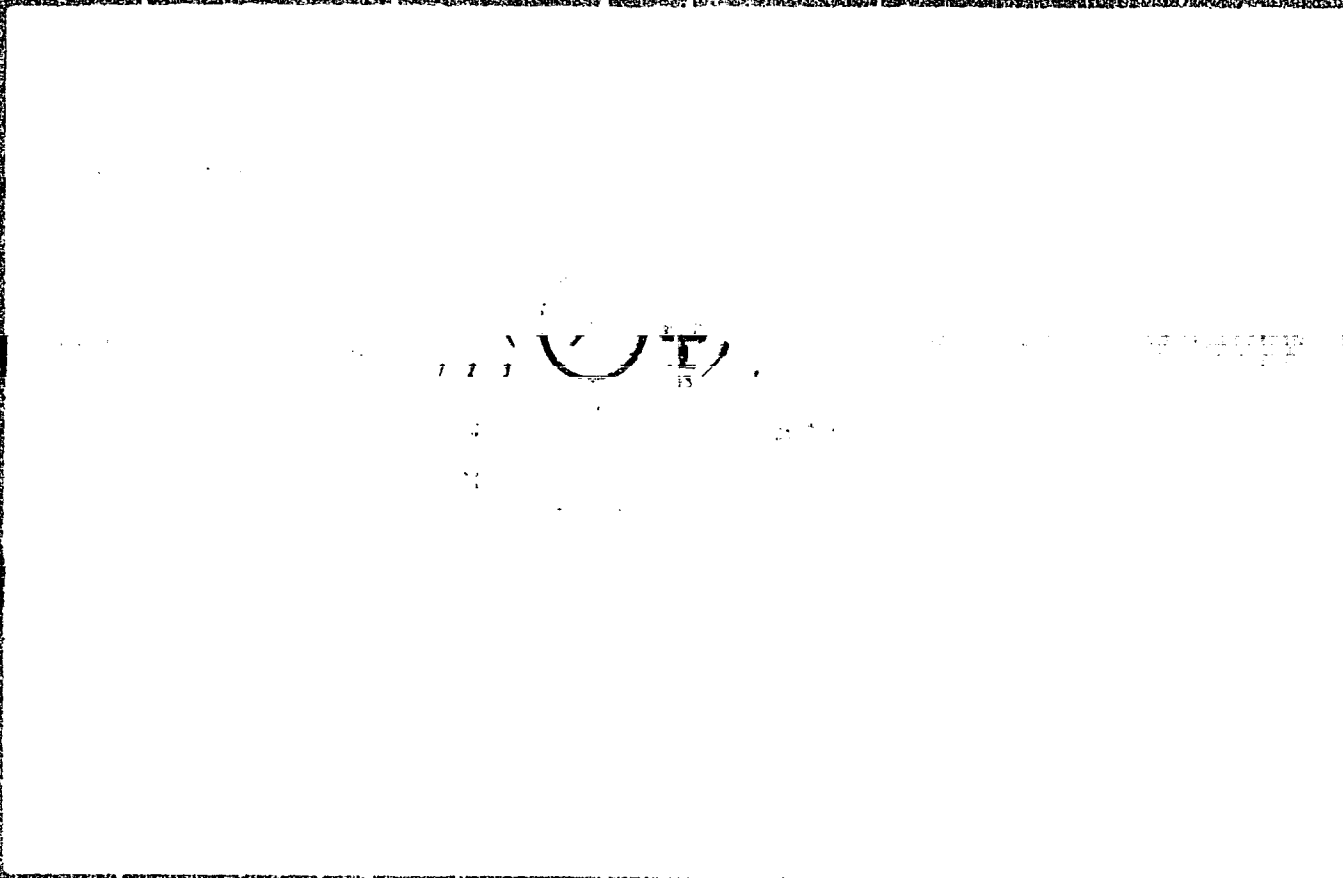






er value. The air pressure in the measuring chamber rises. This causes the needle





BALAKSHIN, O.B.; VIKHMAN, V.S., doktor tekhn. nauk, retsenzent;
KURATTSEV, L.Ye., inzh., red.

[Automation of pneumatic control of dimensions in the
manufacture of machinery] Avtomatizatsiia pnevmaticheskogo
kontrolya razmerov v mashinostroenii. Moskva, Mashino-
stroenie, 1964. 363 p. (MIRA 17:10)

L 35891-66

ACC NR: AP6010867

SOURCE CODE: UR/0115/66/000/002/0022/0025

AUTHOR: Balakshin, O. B.

32
3

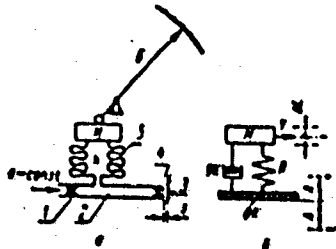
ORG: none

TITLE: Effect of vibration on the accuracy of pneumatic size gages 10

SOURCE: Izmeritel'naya tekhnika, no. 2, 1966, 22-25

TOPIC TAGS: gage, size control, vibration effect, pneumatic device

ABSTRACT: As pneumatic size-control devices are usually mounted on metal-working machines, they may introduce vibration-caused dynamic errors into size measurements. Purified constant-pressure (H) air enters tube 2 via inlet 1 (see figure) and is released into the atmosphere through circular gap s between the end of measuring nozzle 4 and surface 3 of the piece being machined. A manometer M with sylvon 5 and pointer 6 serves as an indicating instrument. A differential equation is set up and solved which describes the effect of



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UDC: 531.71.088:621.542

L 35891-66

ACC NR: AP6010867

gage-housing vibration on the gage accuracy. It is found that the vibration-caused error in "Kalibr" type sylphon equipment is negligible as the natural frequency of these sylphons is much higher than that of usual machine vibrations. For other types, higher response speed (reduced gage size, larger inlet and outlet diameters) is recommended as a means of reducing error. Orig. art. has: 5 figures and 16 formulas.

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 002

Cord 2/2 *llr*

BALAKSHINA, M., kand. med. nauk

Aid is given to children. Voen. znan. 41 no.1:23 Ja '65.

(MIRA 18:2)

BALAKSHINA, M., kand. med. nauk; SHAPOVALOVA, A., glavnyy vrach roditel'nogo doma

A medical establishment is evacuated. Voen. znan. 41 no.8:26-27 Ag '65.
(MIRA 18:7)