

VERESS, S. ; VEGH, G.

Modern pregnancy care record card or general health record
booklets. Orv. hetil. 105 no.27:1293 5 J1'64

VERESS, S.

Modern drug therapy  obsolete Forint-prices. Orv. hetil 105
no.17:812-813 26 Ap'64

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VERESS, Sander, dr.

Pregnancy tests with vitamin E combined with sex hormones.
Orv. hetil. 105 no. 34 1905-1906 23 Apr '64.

1. Balassagyarmati Városi Tanács Szülőotthona, Bercel.

VERESS, Sandor

Examinations with Richardson's pregnancy test. Magy. noorv. lap. 21 no.
4:240-242 Aug 58.

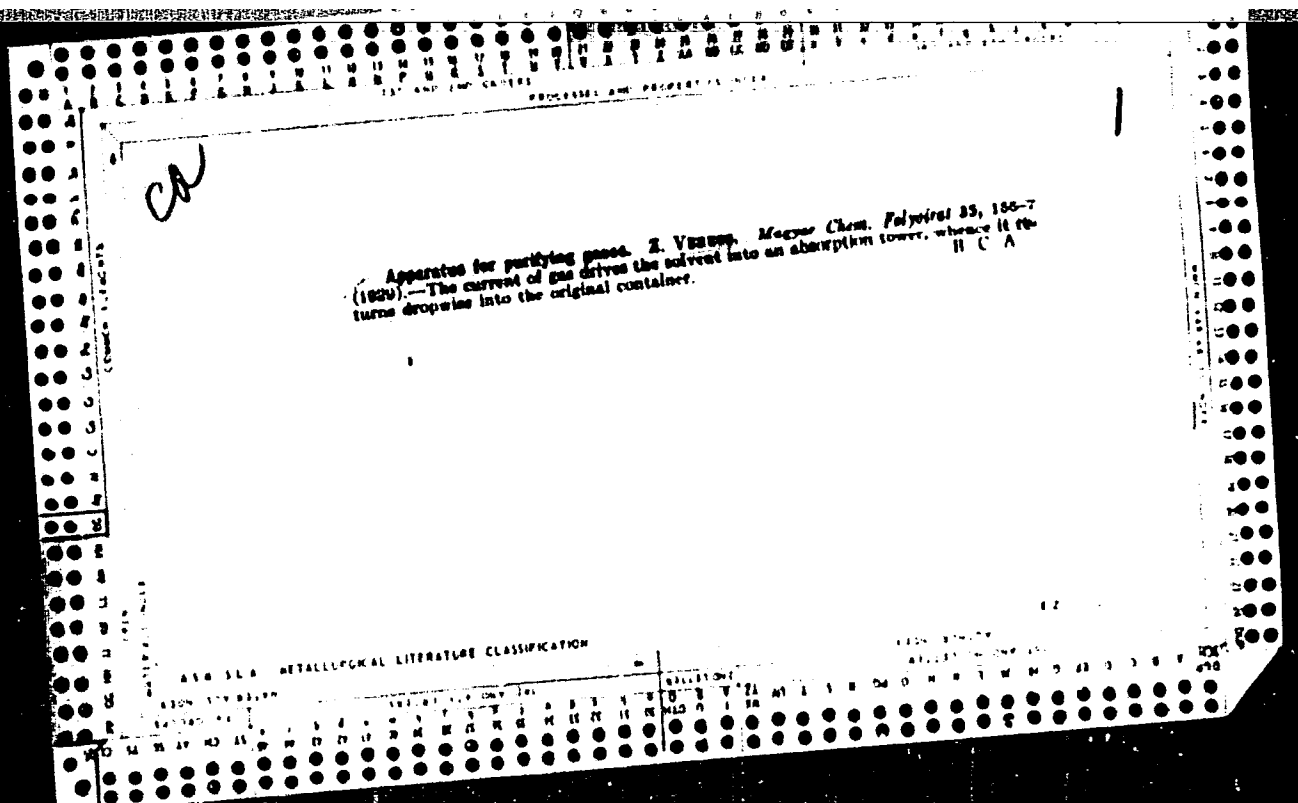
1. A Szegedi Orvostudományi Egyetem Szülészeti és Nőgyógyászati klinika-
jának közleménye (Igazgató: Batizfalvy János dr. egyetemi tanár)

(PREGNANCY TESTS)

Richardson's color reaction for determ. of urinary free
estrogens, evaluation (Hun))

VERESS, S.

On a form for medical records. Grv. Ketil. 105 no. 10:951-
952 My 17 '64.



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Glittering glass objects. p.229.

EPITOANYAG. Budapest, Hungary. Vol. 11, no. 7, July 1959.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

VERESS, Z.

COUNTRY : Hungary

REF. : R7Khim., No. 5 1960, No.

AUTHOR : Veress, Z.

DATE : Not given

PLACE : On the border of Glemsvora

OTHER. PUB. : Spetsial'nyi, 1, 1960, 12-13 (1960)

ABSTRACT : The article reports on the production of glass with
characterized by high laser and contains:
description of the results of the work of optical
I. Veress

1/3

125

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Industrial burners. p. 288.

ENERGETICA. (Asociatia Stiintifica a Inginerilor si Tehnicienilor din
Romania si Ministerul Energiei Electrice si Industrii Electrotehnice)
Bucuresti, Romania
Vol. 7, no. 7, July 1959.

Monthly list of Eastern European Accession Index (LEAI) IC vol. 8, No. 11
November 1959
Encl.

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APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859430009-2"

BRUCHER, Erno; SZALAY, Sander, dr., egyetemi tanar; VERESS Zoltanne,
intezeti onallo laborans

Linkage of quadrivalent uranium U/IV/ on humus substances.
ATOMKI kozl 3 no. 1:11-15 '61.

1. Magyar Tudomanyos Akademia levelezo tagja; Magyar Tudomanyos
Akademia Atommag Kutato Intezete igazgatoja; "ATOMKI Kozle-
menyek" felelos szerkesztoje es felelos kiadoja, Debrecen (for
Szalay).

HUNGARY/General Biology. Genetics.

B-4

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 220 K.

Author : Vereshsh, Chorba.

Inst :

Title : Derivation of Hybrid Seeds in Vegetables.

Orig Pub : Bukarest, Mezogazdasagi es Erdeszeti Allami Konyvkiado,
1955, 65 l., ill.,

Abst : No abstract.

Card 1/1

Electric furnace production of aluminous cement and metallic iron. Zdzien Yarus. Hong 121,60. March 10, 1940. To iron-oxide conc. ores (bauxite) or a mixt. of waste oxide iron ore concentrates with ore concentrates or waste used for the manuf. of Cr are added W and similar alloys and an excess of coke. The charge is heated up in electric furnace, the structural details of which are described. The fused cement is poured off frequently, the melted metals at longer intervals.

VERESTETSKIY, V. B.

PA40T83

Jan 1946

USSR/Physics
Particles

"New Neutral Particle," V. B. Berestetskiy, 1 $\frac{1}{2}$ pp

"Priroda" No 1

Author discusses his opinions on data which he found in an article by Groetzinger, Kruger, and Smith, "Physical Review" Vol XVII, No 1/2, 1945, in which they describe their discovery of a hitherto unknown neutral particle. Briefly discusses some of the characteristics of this new particle.

LC

40T83

BC

4-1

X-Ray investigation of heat-treated magnetic iron-nickel-aluminum alloys. In Vannorschlagin and O. Kondrakov (Tech. Phys. USSR, 1935, 3, 431-434). The alloys have a regular arrangement in a cubic body-centered lattice. Reactions in solid solution, which take place before the separation of the γ -phase, govern coercivity changes. C. R. H.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECTION	SUBSECTION	CLASSIFICATION	REMARKS
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VERESKUNOV, N.G.

New equipment for coal mines. Bez.truda v prom. 6 no.1:17-18 va
'62. (MIRA 15:1)

1. Glavnyy inzh.Dongiprouglemasha.
(Donets Basin--Coal mining machinery)

27 1100

39232
S/218/62/027/003/004/005
1018/1218

AUTHOR: Yel'tsina, N. V. and Veresotskaya, N. A.

TITLE: The effect of deoxyglucose on tumor cells

PERIODICAL: Biokhimiya, v. 27, no. 3, 1962, 452-457

TEXT: The product Deoxyglucose + ATP + hexokinase $\pm$ APP + 2-deoxyglucos-6-phosphate does not undergo any further metabolism which may result in a gain of ATP. Thus, glycolytic phosphorylation is arrested. Under these conditions, only oxidative phosphorylation is feasible. However, the ATP formed by mitochondria can also be trapped by the hexokinase which in tumor cells is located on the surface of mitochondria. In the presence of deoxyglucose the two types of phosphorylation may be eliminated. The addition of 2-deoxyglucose to tumor cells of various strains (Saidel hepatoma, cancer of rat ovary, Ehrlich carcinoma) resulted in a disappearance of ATP, decrease in ADP and accumulation of AMP. The sharp decrease in the ATP/ADP ratio was due to a marked decrease in the concentration of inorganic phosphorus in the mitochondria, and depletion in ATP used up in the phosphorylation of 2-deoxyglucose. This led to a complete cessation of oxidative phosphorylation in tumor cells. On the other hand, deoxyglucose was almost without any effect on oxidative phosphorylation in normal liver and kidney sections. It was assumed that the difference in action of deoxyglucose on tumor and normal tissue was due to the different activity and location of hexokinase in both kinds of cells. Treatment of tumors with deoxyglucose could be attempted

Card 1/2

The effects of...

S/218/62/027/003/004/005
1018/1218

only after elimination of the competitive action of glucose. Treatment of tumors with deoxyglucose should be attempted by regional perfusion of the antimetabolite, with the exclusion of glucose from the tumor tissue.

ASSOCIATION: Institut e'ksperimental'noi i klinicheskoi onkologii Akademii meditsinskikh nauk SSSR
(Institute of Experimental and Clinical Cancer Research Academy of Medical Science
USSR, Moscow)

SUBMITTED: October 9, 1961

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Stability of mixed silver halides in solutions. Zhur.neorg.khim.
7 no.2:305-311 F '62. (MIRA 15:3)

1. Akademiya nauk Kirgizskoy SSR.
(Silver halides)

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"The main traits of the formation of teriofauna of Holarctic in Anthropogene."

report submitted for the 7th Intl Cong, Intl Assoc for Quaternary Research,
Boulder & Denver, Colo, 30 Aug-5 Sep 65.

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Treatment of young rabbits infected with infectious stomatitis with biomycin
Veterinariya vol. 38, no. 10, October 1961, pp. 81-89.

VERETE, Arnold Grigoriyevich

[Marine steam and gas turbines] Sudovye parovye i gazovye turbiny. Izd.2., ispr. i dop. Moskva, Transport, 1965. 359 p. (MIRA 18:6)

VEREZA, L. A., SUSHKINA, L. M.

"Transmission of tickborne encephalitis in the natural foci of the Khabarovsk region." p. 61

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Okt'yabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 284 pp.

VERETA, L.A.; KANTER, V.M.

Studies on tick-borne encephalitis of nutritional origin in
Khabarovsk Territory. Vop. virus. 5 no. 2:199-204 My-S '60.
(MIRA 14:4)

1. Khabarovskiy institut epidemiologii i gigiyeny i kafedra nervnykh
bolezney Khabarovskogo meditsinskogo instituta.

(MILK—MICROBIOLOGY)

(Khabarovsk Territory—encephalitis)

VERETA, L.A.; SUSHKINA, L.M.

Some results of a study on the infectivity of ixodid ticks by the encephalitis virus in the southern areas of Khabarovsk Territory.
Vop.virusu. 5 no.3, 297 My-Je '60. (MIRA 13:9)

1. Khabarovsk nauchno-issledovatel'skiy institut epidemiologii i gigiyeny.
(Khabarovsk Territory--ENCEPHALITIS)

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Detection of complement-fixing antigen in hemorrhagic fever with renal syndrome. Vop. virus. 10 no.3:275-280 My-Ko '65. (MIRA 18:7)

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VERETA, L. E. (Veterinary Surgeon, Chadyr-Lugansk Raion, Moldavian SSR).

"Bicillin" against fowl cholera."

Veterinariya, Vol. 37, No. 9, p. 53, 1960.

VERETA, L.Ye., veterinarnyy vrach (Chadyr-Lungskiy rayon, Moldavskoy
SSR)

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(Bicillin) (Chicken cholera) (MIRA 14:11)

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"Simplified method of gastrography," Klinicheskaya Meditsina (Clinical Medicine),
Vol 32, No. 12, December 1954 (Moscow)

Riga.

Comments K-3443, 27 May 55

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"Apparatus for procedures with thin gastric tube," Klinicheskaya Meditsina (Clinical Medicine), Vol 32, No. 12, December 1954 (Moscow)

Riga.

Comments K-3443, 27 May 55

POPKOV, Anatoliy Vasil'yevich; VERETE, A.G., inzh., retsenzent;
RUKAVISHNIKOV, I.V., inzh., retsenzent; SOFRONOV, Ye.P.,
nauchn. red.; VASIL'YEVA, N.N., red.; NIKITINA, R.D.,
red.; ERASTOVA, N.V., tekhn. red.

[Fundamentals of hydrodynamics] Osnovy termodinamiki. Le-
ningrad, "Sudostroenie," 1964. 181 p. (MIRA 17:3)

25(2)

PHASE I BOOK EXPLOITATION

SOV/2722

Verete, Arnol'd Grigor'yevich

Sudovyye parovyye turbiny (Marine Steam Turbines) Leningrad, Izd-vo Morskoy transport, 1959. 406 p. Errata slip inserted. 5,000 copies printed.

Specialist Ed.: V.T. Laptev; Ed. of Publishing House: Z.S. Frishman;
Tech. Ed.: I.P. Kotlyakova.

PURPOSE: This textbook is intended for students of marine mechanics. It may also be useful to students of institutions of higher education and to marine mechanics taking courses to improve their skill.

COVERAGE: This textbook for the course: Marine Steam Turbines, deals with constructions of modern marine turbine plants and the fundamentals of thermal processes in steam turbines. Thermal and constructional design, basic information on the operation of marine steam turbines, and the working principles of marine gas turbines are discussed. The author thanks V. I. Zaytsev, V. T. Laptev, and L.F. Pershikov, for their assistance in describing the automatic control of turbine units and in the formulation of design examples. There are 24 references: 23 Soviet and 1 English.

Card 1/12

Marine Steam Turbines

SOV/2722

TABLE OF CONTENTS:

Preface

3

PART ONE. WORKING PRINCIPLE AND CONSTRUCTION OF MARINE TURBINE UNITS

Ch. I. Working Principles and Layouts of Steam Turbines	5
1. Impulse and reactive principles of active forces	5
2. Characteristics of steam turbines as heat engines	7
3. Single-stage impulse and reaction turbines	7
4. Working principles of steam in single-stage impulse turbines	9
5. Impulse turbines with pressure stages	10
6. Impulse turbines with velocity stages	11
7. Compound impulse turbines	14
8. Multistage reaction turbines	15
9. Combination impulse-reaction turbines	17
10. Classification of marine steam turbines	18
11. Brief history of the development of the steam turbine and its use on ships	19
12. Characteristics of steam turbines	24
Review questions	26

Card 2/12

Marine Steam Turbines

SOV/2722

Ch. II. Constructions of Basic Parts of Marine Turbines	27
1. Concept of marine turbine gear units and basic parts	27
2. Basic parts of marine steam turbines	29
3. Turbine housing	30
4. First-stage nozzles	42
5. Nozzle chambers	46
6. Diaphragms and intermediate nozzles	48
7. Rotor-blades and guide (stator) blades	53
8. Rotors	65
9. Packing	77
10. Journal bearings	82
11. Thrust bearings	94
Review questions	104
Ch. III. Operating and Regulating Marine Steam Turbines	105
1. Stop valves and speed governors	105
2. Devices for regulating constant operating conditions	122
3. Regulation of marine turbine power	125
4. Steam valves	127
Review questions	131
Ch. IV. Transmissions for Marine Turbines	133
1. Designations and basic types of transmissions	133
2. Basic parts of gear trains	136
Card 3/12	

Marine Steam Turbines

SOV/2722

3. General layout of marine transmissions	141
4. Couplings	147
Review questions	152
Ch. V. Condensing Arrangements	153
1. Purpose and functioning of condensing installations	153
2. Distribution of tubes in tube sheets	155
3. Constructions of basic parts of condensers	160
4. General arrangement of marine condensers	167
Review questions	171
Ch. VI. Auxiliary Systems for Marine Steam Turbines	172
1. Lubricating system	172
2. Sealing system and system for pumping steam from outer packing rings	182
3. Preheating and blowdown systems	187
Review questions	188
Ch. VII. TZA Control and Measuring Devices	189
1. Instruments for measuring temperature, pressure, and liquid level	189
2. Tachometers	190
3. Instruments for measuring power	191
4. Instruments for measuring axial and radial clearances	192

Card 4/12

Marine Steam Turbines

80V/2722

Review questions	197
Ch. VIII. General Arrangement of Marine Turbines and Turbine Gear Units	198
1. Main turbines	198
2. Auxiliary turbines	211
3. Exhaust-steam turbines	215
Review questions	219
Ch. IX. Hoisting Devices and Shaft-turning Devices	220
1. Hoisting devices	220
2. Shaft-turning devices	222
Review questions	223
PART TWO. FUNDAMENTALS OF THE STEAM TURBINE THEORY	
Ch. X. Conversion of Steam Energy in the Nozzles of an Individual Stage	224
1. Determining steam velocity in adiabatic expansion without friction	224
2. Change in cross section along the length of the nozzle	228
3. Critical pressure and critical velocity of steam	229
Card 5/12	

Marine Steam Turbines

BOV/2722

4. Designing nozzle cross sections without consideration of losses	231
5. Process of steam expansion in nozzles with consideration of losses	234
6. Designing nozzle cross sections with consideration of losses	235
7. Expansion of steam in the diverging part of the nozzle	236
8. Determining nozzle dimensions	239
Review questions	240
Ch. XI. Conversion of Steam Energy on the Rotor Blades of an Individual Stage	241
1. Constructing velocity diagram	241
2. Energy losses in the passages of turbine grids	244
3. Selecting velocity coefficients	248
4. Calculating losses on rotor blades of an individual stage and constructing their enthalpy-entropy diagrams	249
5. Discharge velocity losses	252
6. Blading work. Euler equation	252
7. Blading efficiency of an individual stage	254
8. Determining rotor blade height	259
Review questions	260

Card 6/12

Marine Steam Turbines

BOV/2722

Ch. XII. Internal and Mechanical Losses in Marine Turbines. Efficiency of a Turbine Unit. Steam Discharge

1. Classification of losses	261
2. Losses caused by insufficient height of nozzles	261
3. Losses from wet steam	262
4. Losses from friction and ventilation	263
5. Losses from partial steam inlet	265
6. Losses from leakage in packing diaphragms	266
7. Losses from leakage through radial blade clearances	267
8. Internal efficiency of an impulse stage	268
9. Mechanical losses in turbines	269
10. Mechanical and actual efficiency of turbine units	271
11. Efficiency of turbine installations	271
12. Determining steam consumption in turbines	272
Review questions	273

Ch. XIII. Fundamentals of the Theory of a Turbine With Velocity Stages

1. Constructing velocity diagrams	275
2. Blading efficiency of a turbine with velocity stages	277

Card 7/12

Marine Steam Turbines

80V/2722

3. Presenting the process on enthalpy-entropy diagrams.	279
Determination of efficiency	280
4. Multiple-row velocity-stage wheels with a low degree of reaction	282
5. Determining height of nozzles and blades	282
Ch. XIV. Fundamentals of the Theory of a Turbine With Pressure Stages	283
1. The process of steam expansion in a turbine	283
2. Utilization of discharge. Blade efficiency	284
3. Recovered heat	286
4. Characteristics of multistage turbines	288
PART THREE. THERMAL DESIGN OF STEAM TURBINES	
Ch. XV. Design of Single-stage Impulse Turbines	291
1. Design order for single-stage turbines	291
2. Design example for single-stage impulse turbines	292
Ch. XVI. Designing Turbines With Velocity Stages	298
1. Design order for turbines with velocity stages	298
2. Design example for velocity-stage turbines	300

Card 8/12

Impulse Steam Turbines

SOV/2722

Ch. XVII. Designing Multistage Impulse Turbines With Pressure Stages	306
1. Design order for turbines with pressure stages	306
2. Design example of an impulse turbine with pressure stages	308
Ch. XVIII. Design of Reaction Turbines	319
1. Design order for reaction turbines	319
2. Design example for reaction turbines	325

PART FOUR. STRUCTURAL DESIGN OF BASIC TURBINE ELEMENTS

Ch. XIX. Blade Design	337
1. Design of blades for bending	337
2. Design of blades for tensile strength	339
3. Design of disk rims	355
Ch. XX. Shaft Design	342
1. Preliminary design of rotors	342
2. Checking shaft dimensions	343
3. Critical r.p.m. of a shaft with one disk	345
4. Determining critical r.p.m. of a multistage rotor	346
5. Example of designing a rotor for a critical r.p.m.	347

Card 9/12

Marine Steam Turbines

SOV/2722

6. Approximate method of determining critical r.p.m. of a turbine shaft	351
Ch. XXI. Disk Design	357
1. Deriving the basic equation	352
2. Design of disks for constant thickness	353
Ch. XXII. Diaphragm Design	358
PART FIVE. MAINTAINANCE AND OPERATION OF TURBINE INSTALLATIONS	
Ch. XXIII. Basic Operating Principles for Main Marine Turbines	361
1. Preparing turbine installations for operation	361
2. Starting turbines	362
3. Maintenance of turbines during operation	365
4. Switching and shutting down turbines	368
5. Keeping turbine installations ready for operation	374
6. Preparing turbine installations for shutdown	375
7. Maintenance of turbine installations during shutdown	376
8. Inspection of turbines	377
Ch. XXIV. Fundamentals of Operation of Back-pressure Turbines in Combined Turbine and Piston-engine Installations	379
Card 10/12	

Marine Steam Turbines

SCN/2722

Ch. XXV. Fundamentals of Operating Auxiliary Turbines	383
Review questions	385

PART SIX. BASIC CONCEPTS OF ARRANGEMENT AND
OPERATION OF GAS TURBINE INSTALLATIONS

Ch. XXVI. Cycles of Gas Turbine Installations	387
1. General information	387
2. Cycle with combustion at constant pressure	387
3. Methods of increasing thermal efficiency	388
4. Closed-cycle gas turbine installations	392
Ch. XXVII. Constructional Schemes of Gas Turbine Installations	394
1. Marine gas turbine installation of the Kirov Plant	394
2. Gas turbine installation of the "Auris" tanker	395
3. Gas turbine installations of Liberty-type ships	399
4. Gas turbine installation with free-piston gasifier	401
Review questions	402
Bibliography	403
Card 11/12	

Marine Steam Turbines

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AVAILABLE: Library of Congress

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nauchnyy red.; NIKITINA, R.D., red.; KONTOROVICH, A.I., tekhn.red.

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[Repair of ships' shaft lines] Remont sudovykh valoprovodov. Lenin-
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VM731.V46

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239 p. illus., diagrs., tables.

VERETE, A.G.; VERZHBINSKIY, M.A., redaktor; VOLCHOK, K.M., tekhnicheskii
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2-e, perer. izd. Leningrad, Gos. izd-vo vodnogo transporta, Lenin-
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(Steam turbines—Repairing)

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Verete, Arnold' Grigor'yevich

Marine steam and gas turbines (Sudovyye parovyye i gazovyye turbiny)
2d ed., rev. and enl. Moscow, Izd-vo "Transport," 1961. 359 p.
illus., biblio., fold. charts (in pocket). Errata slip inserted.
5000 copies printed.

TOPIC TAGS: steam turbine, gas turbine, turbine design, engine turbine system, marine engine, marine turbine

PURPOSE AND COVERAGE: This textbook is intended for the marine-mechanical departments of maritime schools and corresponds to the program of a course on: "Marine, steam, and gas turbines." It may also be used by ship's mechanics taking qualification-improvement courses and by students of schools of higher education. The book describes in detail the design of modern marine turbines and presents the fundamentals of the theory and of the thermal calculations of steam turbines. Some information on the design calculations of certain turbine parts and basic information on marine-

Card 1 / 3

L 1578-66
AM5024287

2

steam turbines is also presented. The basic working processes, construction, and operation of marine gas-turbines are briefly reviewed. This second, revised edition contains new chapters on equipment for constructing and servicing gas turbines.

TABLE OF CONTENTS:

PART I. Principle of Operation and Construction of Marine Turbine-Units -- 3

Ch. I. Principles of operation and construction of steam turbines -- 3

Ch. II. Design of the basic parts of marine turbines -- 22

Ch. III. Toothed gearing and couplings -- 85

Ch. IV. Control and safety systems of marine turbines -- 101

Ch. V. Auxiliary devices and systems for marine turbine units -- 122

Card 2/5

L 1578-66
AM5024287

Ch. VI. General arrangement of marine turbines and geared-turbine units -- 149

PART II. Basic Steam-Turbine Theory

Ch. VII. Steam-energy conversion in nozzles of single stage -- 172

Ch. VIII. Steam-energy conversion to the rotor blades²⁶ of a turbine stage -- 189

Ch. IX. Internal losses and the relative internal efficiency of a turbine stage -- 217

Ch. X. Basic theories of multistage turbines -- 225

PART III. Fundamentals of Steam-Turbine Calculations

Ch. XI. Thermal calculations of steam turbines -- 247

Ch. XII. Concept of the design calculation of turbine parts -- 258

Card 3/5

L 1578-66

AM5024287

PART IV. Maintenance and Servicing of Turbine Units 3

Ch. XIII. Fundamentals of operating the main marine-turbines -- 269

Ch. XIV. Operation of auxiliary turbines and exhaust-steam turbines -- 284

PART V. Basic Concepts of the Construction and Operation of Marine Gas-Turbine Units

Ch. XV. Gas-turbine-unit cycles -- 289

CX. XVI. Means of increasing the inlet temperature of working gases -- 299

Ch. XVII. Design and operating features of gas-turbine components -- 304

Ch. XVIII. Auxiliary systems of gas-turbine units -- 324

Card 4/5

L 1578-66

AM5024287

Ch. XIX. Flow diagrams, layouts, and arrangement of marine gas turbine units -- 329

Ch. XX. Basic concepts of gas-turbine units with free-piston gas generators -- 347

Ch. XXI. Basic aspects of marine gas-turbine unit operation -- 351

Bibliography -- 355

SUB CODE: FR

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NO REF SCV: 011

OTHER: 000

Card 5/5

ONISHCHENKO, Mikhail Kirillovich, stalevar; POMETUN, Grigoriy Konstantinovich, stalevar; STEPANENKO, Nikolay Aleksandrovich, stalevar; VERETEL'NIK, I.V., inzhener, redaktor; ISLANKINA, T.F., redaktor izdatel'stva; ISLENT'YEVA, P.G., tekhnicheskij redaktor

[Our experience with a rapid oxygen steel making process] Nash opyt skorostnogo stalevarenia s primeneniem kisloroda. Moskva, Izd-vo "Znanie," 1953. 23 p. (Vsesoiuznoe obshchestvo po rasprostraneniю politicheskikh i nauchnykh znaniy. Ser. 4 no.6) (MIRA 9:7)
[Microfilm]

1. Ordена Lenina zavod "Zaporozhstal'" (for Onishchenko, Pometun, Stepanenko)
(Steel--Metallurgy)

BC		62-4	
Survival of mice of different strains and ages after a single, total irradiation by X-rays. N. Dobrovol'skaya-Zavadskaya, S. Virotennikov, and M. Rodnitskii (<i>Compt. rend.</i>, 1941, 82B, 704-708).—Male animals are less resistant than females and the time of survival is not proportional to the dose, a time-lag occurring before the fatal effects are observed. Age and strain have a considerable influence, females of middle age exhibiting the longest survival. H. G. K.			
ASO-SLA METALLURGICAL LITERATURE CLASSIFICATION			
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13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

VERETEL'NIKOV, P.U., brigadir

Device for filling slotted storage batteries with the battery solution.
Elek. i tepl.tiaga no.7:12-13 J1 '63. (MIRA 16:9)

1. Akkumulyatornoye otdeleniye depo Irkutsk II Vostochno-Sibirskoy
dorogi.

(Electric locomotives—Batteries)

VERETEL'NIKOV, P.U., akkumulyatorshchik

Charging station for storage batteries. Elek.i tepl.tiaga 5 no.4:
14-15 Ap '61. (MIRA 14:6)

1. Depo Irkutsk II Vostochno-Sibirskoy dorogi.
(Storage batteries)
(Railroads—Repair shops—Electric equipment)

VERETENICHEV, A.

Establish a unified order for the preparation, preservation,
and correction of navigation aids. Mor. flot 22 no.10:19-20
0 '62. (MIRA 15:10)

1. Kapitan tankera "Dzershinsk" Chernomorskogo parokhodstva.

(Nautical charts)

VERETENNIKOV, A.

Everybody fulfills the norm. Prom.koop. 14 no.6:27
Je '60. (MIRA 13:7)

1. Instruktor otдела orgmassovoy raboty i kadrov promsoвета
Mordovskoy ASSR, g. Saransk.
(Saransk--Manufactures)

VERETENNIKOV, A. I.

"The Problems of the Measurement of the Transient Characteristics of Photo-Multipliers,"

A conference on Electron and Photo-Electron Multiplier; Radiotekhnika i Elektronika, 1957, Vol. II, No. 12, pp. 1552-1557 (USSR)

Abst: A conference took place in Moscow during February 28 and March 6, 1957 and was attended by scientists and engineers from Moscow, Leningrad, Kiev and other centres of the Soviet Union. Altogether, 28 papers were read and discussed.

SOV-120-58-3-10/33

AUTHORS: Veretennikov, A. I. and Averchenkov, V. Ya.

TITLE: A 20-Channel Time Analyser for the Selection of Neutrons by the Time of Flight Method (20-kanal'nyy vremennoy analizator dlya selektsii bystrykh neytronov po vremeni proleta)

PERIODICAL: Priory i Tekhnika Eksperimenta, 1958, Nr 3, pp 48-53 (USSR)

ABSTRACT: The multichannel time analysers now available may be divided into two groups. In the first group are the so-called "chronotrons" (Refs.1-6). The analysers in this group have a practical resolving time of 10^{-9} sec and they will measure time intervals with an accuracy of 0.25 ± 10^{-9} sec. The second group of analysers involves circuits which transform time intervals into pulse amplitudes (Refs. 7-12). The second group has the advantages that (1) the circuits are relatively simple, (2) a large number of channels is possible, (3) it is possible to study in detail parts of the neutron spectrum by operating with the amplitude analyser only and without changing the time characteristics of the scheme. A 20-channel time analyser is described in

Card 1/3

SOV-120-58-3-10/33

A 20-Channel Time Analyser for the Selection of Neutrons by the Time of Flight Method

the present paper which is based on the basic circuit given by Neilson and James (Ref.10). The analyser as described by Neilson and James has the disadvantage of being "two-sided", i.e. it works independently of the sequence of the input pulses. This disadvantage is now removed by the introduction of additional circuit elements. The complete circuit of the analyser including the values of the components employed is shown in Fig.3. The practical resolving time of the analyser is $(1.5-3) \times 10^{-9}$ sec and the stability of channel edges is 0.5×10^{-9} sec. The calibration curve of the analyser is shown in Fig.4. The curve is a plot of the amplitude vs delay between pulses. The calibration curve is linear in the range $(2-30) \times 10^{-9}$. As an example, the time distribution obtained with neutrons of a Po-Be source is shown in Fig.6. Yu. S. Zamyatnin and Yu. I. Il'in are thanked for advice and assistance respectively. S. G. Basistov and N. V. Cherepnin supplied specimens of new

Card 2/3

SOV-120-58-3-10/33

A 20-Channel Time Analyser for the Selection of Neutrons by the
Time of Flight Method

valves, L. G. Ioyteyzen, A. G. Berkovskiy and N. S. Khlebnikov
supplied specimens of new photomultipliers and I. M. Belyayev
and G. F. Dobrzhanskiy supplied specimens of large crystals.
There are 6 figures and 14 references, of which 2 are Soviet,
1 Italian and the rest English.

SUBMITTED: August 9, 1957.

1. Time-interval counters--Design
2. Time-interval
counters--Applications
3. Timing circuits--Applications
4. Neutron spectra---Analysis

Card 3/3

S/089/60/008/04/06/009
B113/B017

AUTHORS: Veretennikov, A. I., Averchenkov, V. Ya., Savin, M. V.,
Spekhov, Yu. A.

TITLE: Gamma Radiation Occurring in U^{238} Under the Action of
Neutrons of the Energy 14 Mev 19

PERIODICAL: 4 Atomnaya energiya, 1960, Vol. 8, No. 4, pp. 361-363

TEXT: In the neutron interaction with U^{238} the spectrum of gamma radiation was measured in the range of from 0.4 to 2.8 Mev and the gamma quantum yield per interaction event in three samples. The measuring apparatus (Fig. 1) and the measurement process are described. The mean gamma radiation energy is 0.98 Mev. The energy resolution in measuring the gamma-spectrum was $\approx 30\%$ with $E_\gamma = 662$ kev and $\approx 15\%$ with $E_\gamma = 2.62$ Mev.

The mean number of gamma quanta per interaction event $\bar{n}$ for $\sigma = 2.85$ barns is 6 ± 1.2 . The authors thank Yu. S. Zamyatnin for discussion and V. G. Kokoulin for the preparation of the stilbene crystal. There are 3 figures and 4 references: 3 Soviet and 1 English.

✓B

~~089/60/008/04/06/009~~

VERETENNIKOV, A.I.; AVERCHENKOV, V.Ya.; YEGOROV, A.G.; SPEKHOV, Yu.A.

Amplifying units for recording short pulses with an oscillograph.
Prib. i tekhn. eksp. 6 no.2:104-109 Mr-Ap '61. (MIRA 14:9)
(Amplifiers (Electronics)) (Oscillograph)

VERETENNIKOV, A.I.; AVERCHENKOV, V.Ya.; SAVIN, M.V.; SPEKHOV, Yu.A.

Gamma spectrometer with an organic scintillator and a time
selection of gamma rays. Prib. i tekhn. eksp. 6 no.2:42-46
Mr-Apr '61. (MIRA 14:9)

(Spectrometer)

32992
S/641/61/000/000/019/033
B108/B102

26.2245
AUTHORS: Averchenkov, V. Ya., Veretennikov, A. I.
TITLE: Integral cross sections of U^{235} and Th^{232} interaction with neutrons having energies of 2 - 8 Mev
SOURCE: Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik stat. Moscow, 1961, 258 - 262

TEXT: The neutron cross sections of U^{235} and Th^{232} specimens were determined by measuring the time passing until the neutrons reach the detector. The latter was connected to a 50-channel time analyzer with the new 6X22Π (6Zh22P) thermionic tubes. A steady-flow neutron source of Po-Be was used. Measurements were made with and without specimen between source and detector. Moreover, the random coincidences were measured with an additional delay of 75 millimicroseconds in the detector channel. The integral neutron cross sections were calculated with the formula
$$\sigma_t = \frac{1}{nx} \ln[(N_0 - N_{b0}) / (N_x - N_{bx})]$$
 where n denotes the number of nuclei per cm^3 of the specimen, x - thickness of specimen (cm), N_0 , N_{b0} , N_x , N_{bx} .
Card 1/12

32992

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B108/B102

Integral cross sections of...

counting rates of neutrons and coincidence background with and without specimen. The results for Th^{232} and U^{235} are shown in Fig. 2. Corrections for elastic scattering have been introduced. Yu. S. Zamyatin is thanked for discussions. There are 2 figures and 6 references: 1 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Bloom S. D. Phys. Rev., 28, 233 (1955); Progress in Nuclear Energy, ser. I, v. I, London, Pergamon Press, 1956; O'Neill G. K. Phys. Rev., 25 (1954), Rev. Sci. Instr., 26, 285 (1955); Ref. 6: Hughes D., Schwartz. Neutron Cross Sections, BNZ, N. Y., 1956.

Card 2/2 2

S/089/61/011/002/007/015
B102/B201

AUTHORS: Veretennikov, A. I., Averchenkov, V. Ya., Savin, M. V.
TITLE: Measurement of the time distribution of gamma radiation in wood by the method of delayed coincidences
PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 177-180

TEXT: This paper presents results of measurements of the time distribution and the energy spectrum of gamma quanta from a point source, which were scattered in wood. Little has been published on this subject so far. The time distribution was determined at distances of 200 cm from the point source. A Co^{60} source ($0.12 \mu\text{C}$) emitting pairs of gamma quanta was fastened to wood; the scintillation detector 1 which recorded the instants of emission of quanta was placed close to the source, and its pulses were fed to a time analyzer. The second scintillation detector 2 was 200 cm away from the source, and likewise transmitted its pulses to the time analyzer. The distribution of time intervals between the two pulses was recorded. The solving time of the time analyzer was $2\tau = 2.3 \mu\text{sec}$, and the mean quantum energy was about 1.25 Mev. The time distribution of gamma radiation in wood

Card 1/6

Measurement of the time distribution ...

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B102/B201

is a function of the cross sections of Compton scattering, of the photo-electric effect, and of pair production. The time distributions in materials with similar atomic numbers may be assumed to differ only by a scale factor; this fact makes it possible to estimate the distribution in similar light materials from that in wood. The geometrical experimental setup is shown in Fig. 1; it was so chosen because it imitated an infinite medium best. Scintillation plastics and photomultipliers of the type $\Phi 3Y-33$ (FEU-33) were used for gamma recording. The block diagram of the measuring arrangement was as follows:

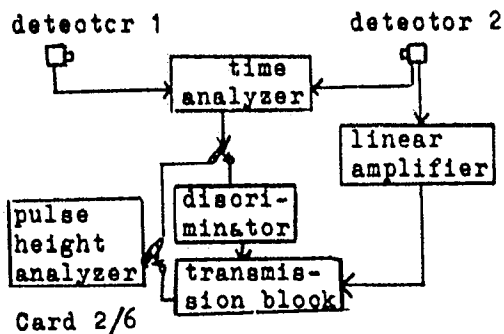


Fig. 2. shows the time distribution of gamma radiation, as recorded by detector 2 (Curve 1); curve 3 shows the background of random coincidences. The zero point of the analyzer time scale was determined according to the middle of curve 2 of γ - γ coincidences without wood but under otherwise equal conditions. As may be seen, the time distribution of gamma

S/089/61/011/002/007/015
B102/B201

Measurement of the time distribution ...

radiation in wood covers a period of 20 μ sec at a distance of 200 cm from the point source. The maximum is shifted by about 1.6 μ sec toward the zero point, which corresponds to a prolongation of the quantum path by about 1.5 mean free paths. The mean time of delay of quanta is about 6 μ sec, and the half-width of the distribution peak is about 7 μ sec. Curve 4 (Fig. 3) was obtained on the assumption that the mean gamma energy is ~ 100 kev in case of great delays, and 0.8 Mev in case of the most probable delay time. The true time distribution is likely to be found between curves 1 and 4. Fig. 4 shows the energy spectrum of gamma radiation at a distance of 200 cm from the source. Ya. B. Zel'dovich, Yu. S. Zamyatin, and V. G. Morozov are thanked for discussions. There are 4 figures and 12 references: 6 Soviet-bloc and 6 non-Soviet-bloc. The two most important references to English-language publications read as follows: L. Spenser, U. Fano. J. Res. Nat. Bur. Standards, 46, 446 (1951); G. Whyte. Canad. J. Phys. 33, 96 (1955).

SUBMITTED: December 29, 1960

Card 3/6

21395

S/120/61/000/002/005/042
E032/E114

26.2246

AUTHORS:

Veretennikov, A.I., Averchenkov, V.Ya., Savin, M.V.,
and Spekhov, Yu.A.

TITLE:

Gamma-spectrometer using an organic scintillator and
time selection of gamma rays

PERIODICAL: Priory i tekhnika eksperimenta, 1961, No.2, pp. 42-46

TEXT:

A description is given of a gamma-spectrometer which
can be used to select gamma-rays with a time resolution of about
1 nanosec. The spectrometer incorporates a plastic scintillator,
and the energy resolution for Cs^{137} gamma rays is about 25%.
With a sodium iodide crystal the time resolution is about
4 nanosec and the coincidence counting efficiency for Co^{60} gamma
rays is 90%. The use of ordinary scintillation gamma-ray
spectrometers in the study of gamma-rays produced under the action
of fast neutrons is complicated by interference from the primary
and secondary neutrons. However, if the primary neutrons are
accompanied by, say, alpha or gamma rays, the gamma radiation
under investigation can be separated from the interfering
radiation by the time-of-flight method. Suppose that the
Card 1/ 6

28395

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

recording apparatus and the specimen under investigation are located relative to the neutron source, as shown in Fig.1. In this figure, C_1 is the detector which records the accompanying alpha, gamma etc. emission and C_2 is the detector designed for measuring the gamma-rays from the specimen. The distribution of time intervals between pulses from C_1 and C_2 reaching the time analyser is shown in Fig.2. Fig.2a shows the time distribution of primary neutrons and gamma rays arriving at the specimen, Fig.2b shows the primary neutrons and gamma-rays from the specimen and Fig.2c shows the secondary neutrons and gamma-rays from the specimen. As can be seen from Fig.2, even with a continuous primary neutron energy spectrum, it is possible to separate out the gamma-rays produced in the specimen by the primary neutrons by a suitable choice of t_1 and t_2 . In the present paper this type of gamma-spectrometer is discussed in terms of an example in which the gamma-rays produced in various specimens by 14 Mev neutrons are investigated. A block diagram of the spectrometer is Card 2/6

21395

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

shown in Fig.3. The neutrons were obtained from the $d(T, n)He^4$ reaction. The instant at which the neutrons leave the target is recorded by counting alpha particles with a plastic scintillator, as described by the present authors (Ref.2: Atomnaya energiya, 1960, No.4, 361). The gamma-rays are detected by a stilbene crystal mounted on a ФЭУ-33 (FEU-33) photomultiplier. Pulses from the 12th dynode of this photomultiplier are amplified by the amplifier Y6. With the key Π_2 in the closed position, these pulses reach the 50-channel kicksorter through the linear gate $\delta\Pi_2$. With the key Π_1 in position 2, the gate $\delta\Pi_2$ is controlled by pulses arriving from the output of the time analyzer. By introducing a delay t_1 into the gamma channel, the working conditions of the time-amplitude converter can be chosen so that pulses due to gamma-rays and neutrons from the specimen are delayed relative to pulses due to the alpha particles. As a result, the alpha-gamma coincidences at the output of the time analyzer have a greater amplitude than the alpha-n coincidences.

Card 3/6

21395

S/120/61/000/002/005/042
E032/E114

Gamma-spectrometer using an organic scintillator and time selection of gamma rays

The integral amplitude discriminator A_5 transmits only the alpha-gamma coincidence pulses to the gate $5\Omega_2$ and this ensures the separation of effects due to neutrons from those due to gamma-rays. The time distribution of the coincidence is recorded by the same amplitude analyzer with the key Π_1 in position 1. The time analyzer has been described in detail by the present authors (Ref.3: PTE, 1958, No.3, 48). The remaining designations in Fig.3 are said to be "self-evident". The gamma-spectrometer can be used to measure gamma-spectra appearing in a given time interval, e.g. in the study of time correlated processes such as the emission of gamma-rays in fast-neutron induced reactions. There are 6 figures and 7 references: 4 Soviet and 3 non-Soviet.

SUBMITTED: May 6 1960

Card 4/6

Gamma-spectrometer using an

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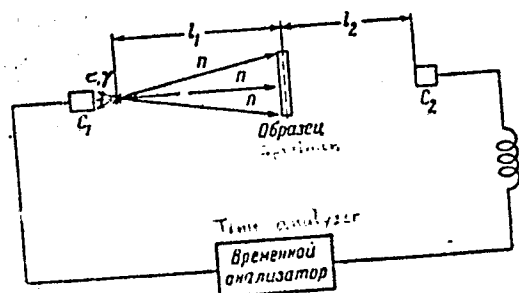


Fig. 1

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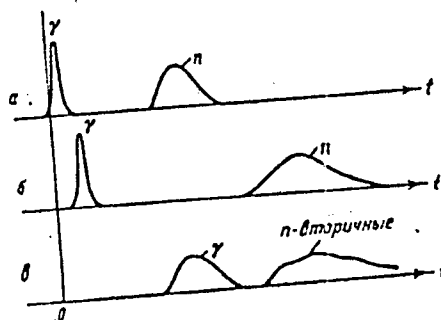


Fig. 2

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Gamma-spectrometer using an

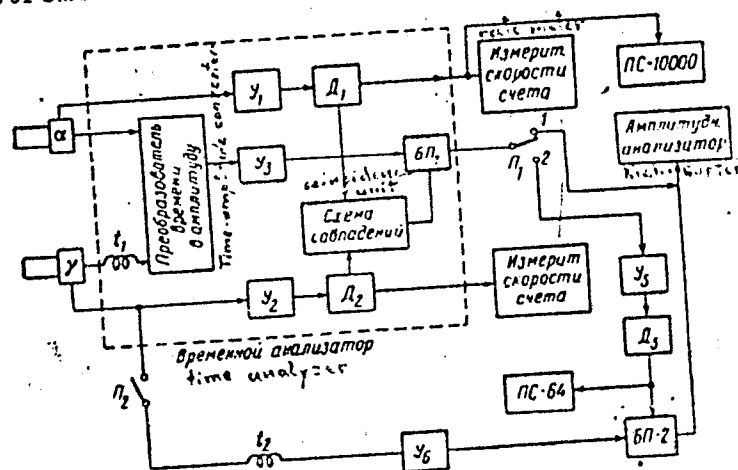


Fig. 3

Card 6/6

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AUTHORS: Veretennikov, A.I., Averchenkov, V.Ya.,
Yegorov, A.G. and Spekhov, Yu.A.

TITLE: Amplifying Units for the Oscillographic Display
of Short Pulses

PERIODICAL: Priory i tekhnika eksperimenta, 1961, No. 2,
pp. 104 - 109

TEXT: Two single-tube amplifiers suitable for high-speed pulse oscillographs are described. The first amplifier is based on a tube with a cathode grid (sometimes referred to as a "space-charge tube" or a "tube with a virtual cathode") which is capable of producing high anode currents when its auxiliary (cathode) grid is pulsed with a comparatively high voltage amplitude (up to 100 V). The circuit diagram of the amplifier (with some auxiliary circuits) is given in Fig. 1. The space-charge tube is 6Ж20П2 (6Zh20P2) (this is an experimental tube). The amplifier is designed for the pulse repetition rate not exceeding 10 p.p.s. The operation is as follows. When the amplitude of the input pulse is about 1 V,
Card 1/6

Amplifying Units

21/08

S/120/61/000/002/019/042

E192/E382

the thyatron (shaded tube) is ignited and a pulse is applied to the cathode grid of the space-charge tube (the righthand-side tube in the circuit). This pulse has an amplitude of about 150 V and its flat top has a duration of about 0.5 μ s. The investigated pulse is applied to the control grid of the tube 50 nanosecs after the appearance of the voltage at the cathode grid. The voltage appearing across the anode load of the space-charge tube is taken by means of a cable (type PK-50 (RK-50)) having a length of 1 m and is applied to the deflection plates of the cathode-ray tube. The anode-grid characteristic of the space-charge tube is linear over a comparatively large range of currents so that at the supply voltage of about 800 V a current in excess of 1 A can be obtained over the linear region; the slope is about 33 mA/V. The gain of the amplifier is 10 and its bandwidth is 90 Mc/s, which corresponds to the rise time of about 4.3 nanosecs. A high-speed amplifier can also be based on a secondary emission tube. A circuit of this type is shown in Fig. 5. The secondary emission tube Л (= L) in the

Card 2/6

21408

Amplifying Units

S/120/61/000/002/019/042
E192/E382

figure is normally cut off by a negative-grid voltage of about 10 - 20 V since its anode dissipation is only 2 W. The reflection plates of the cathode-ray tube are connected to the anode and the dynode of the tube by coaxial lines (type PK-3 (PK-3)), which also act as the delay lines for the signal. The difference in the electric lengths of these lines corresponds to the transit time of an electron from the dynode to the anode; in practice, this amounts to about 10 cm (this is chosen experimentally). The triggering circuit of the oscillograph is usually connected to the input to one of these lines through a resistance. The secondary emission tube can give a pulse current of up to 7 A with a slope of 100 mA/V at the anode supply voltage of 1 000 V and dynode voltage of 3 00 V. The deflecting voltages of about 700 V can be obtained from this amplifier. The bandwidth of the amplifier is about 200 Mc/s, which corresponds to the rise time of 2 nanosecs. The gain of the system is 12 - 16, depending on the anode voltage. The circuit of Fig.5 is designed for the oscillographic display of the pulses derived from scintillation transducers

Card 3/6

22408

Amplifying Units

S/120/61/000/002/019/042
E192/E382

(counters). In this the pedestal of the pulse is applied to the lefthand-side portion of the circuit, which is in the form of a two-stage amplifier. This provides the necessary lengthening and then limiting of the output voltage. The pedestal is formed from the pulses derived from one of the dynodes of the photomultiplier. The amplitude of the pedestal applied to the control grid is about 3 V. The line having a delay of about 60 - 70 nanoseconds is included in the investigated signal circuit which delays the signal for the duration of the pedestal-forming. The authors make acknowledgment to S.G. Basistov and G.V. Lukoshkova for supplying the samples of new tubes. There are 8 figures.

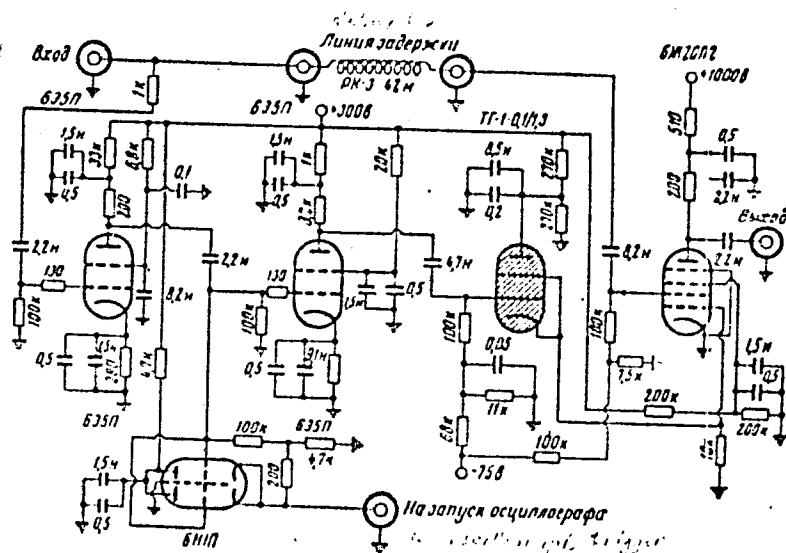
SUBMITTED: May 27, 1960

Card 4/6

Amplifying Units

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E192/E382

Fig. 1:



Card 5/6

V E R E T E N N I K O V , A . I .
VERETENNIKOV, A.I.; ANISIMOV, S.M.

~~Improve land records.~~ Zemledelie 6 no.1:83-84 Ja '58. (MIRA 11:1)
(Omsk Province--Farm management)

End

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