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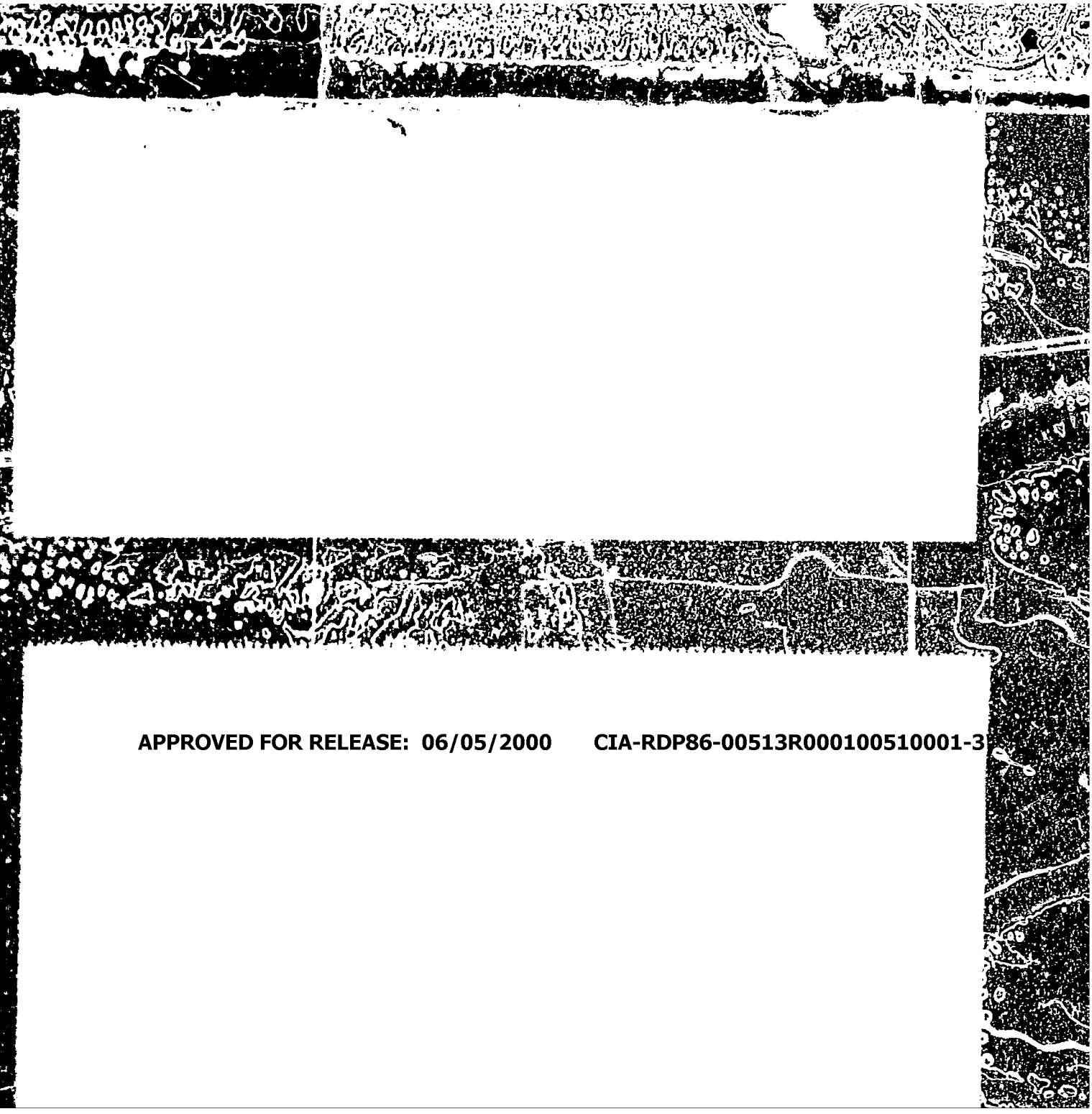

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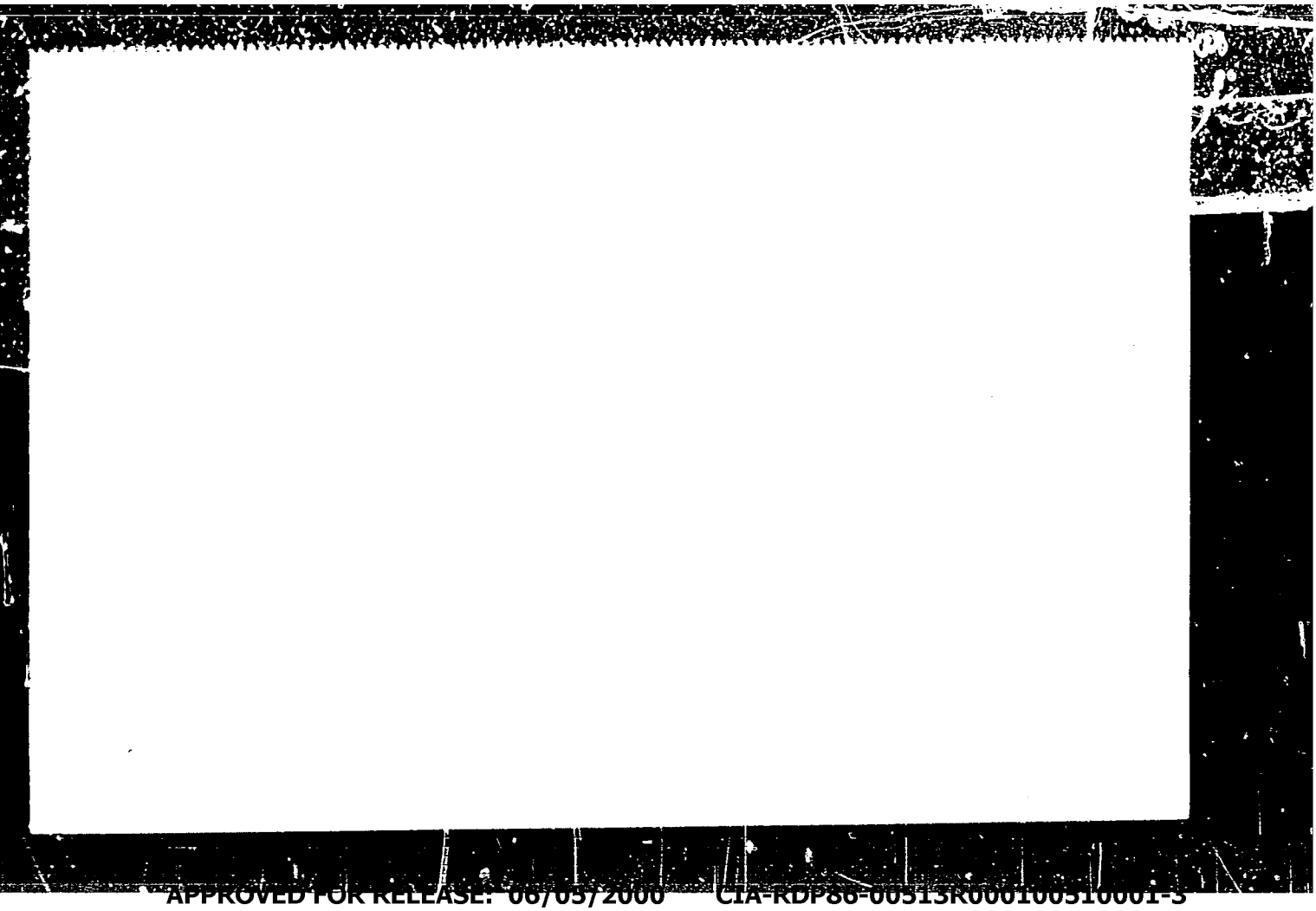

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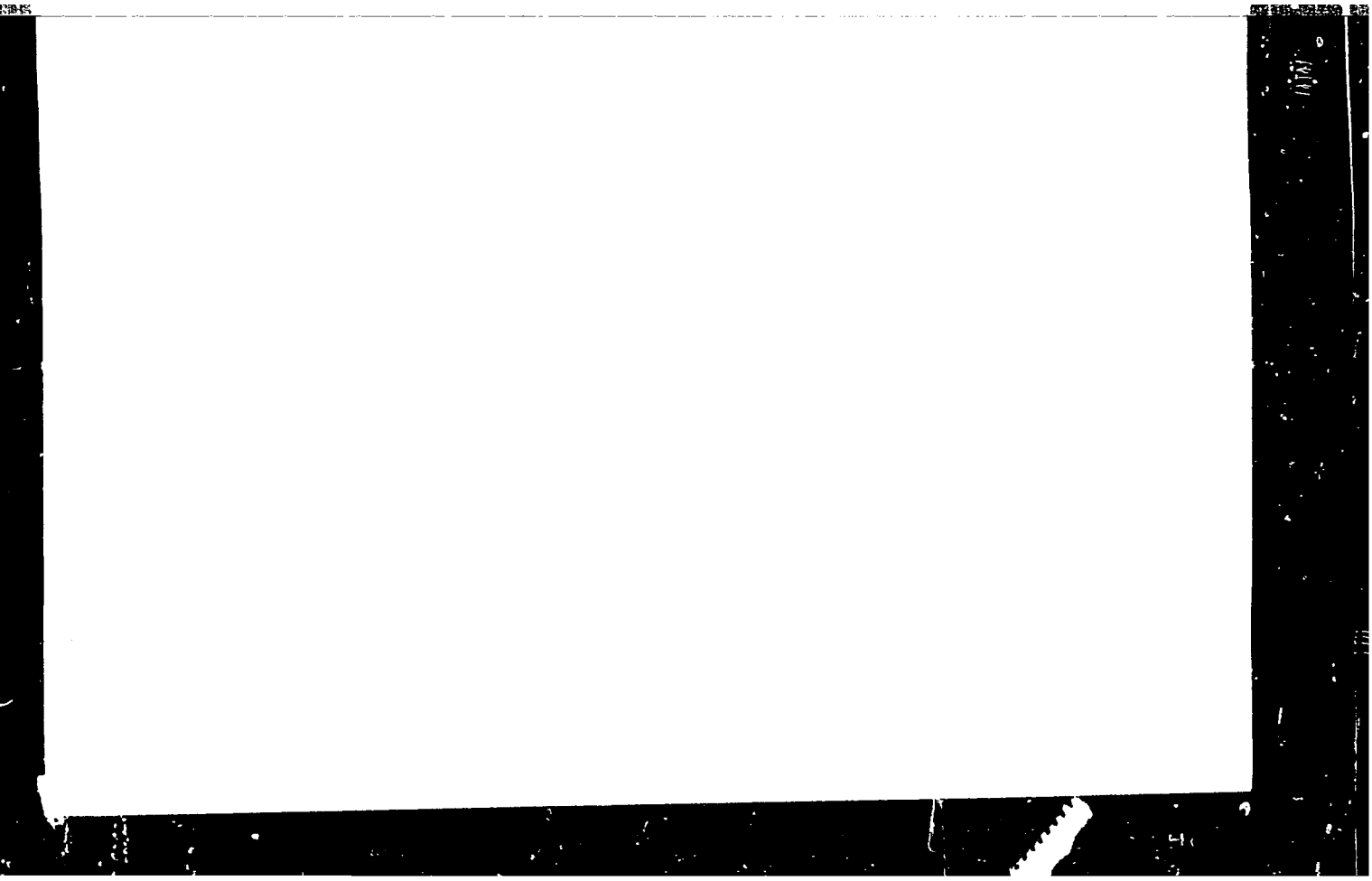

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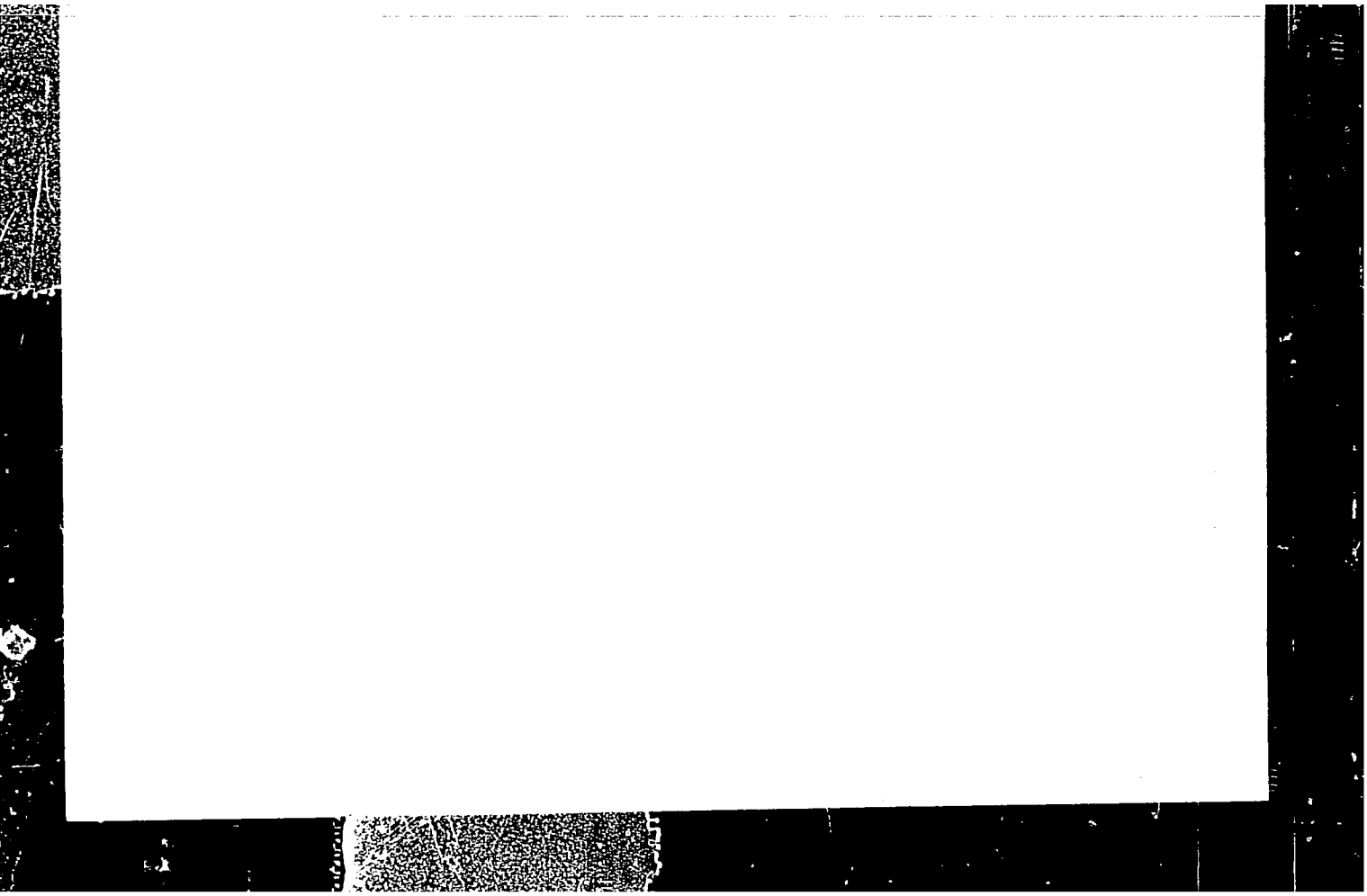

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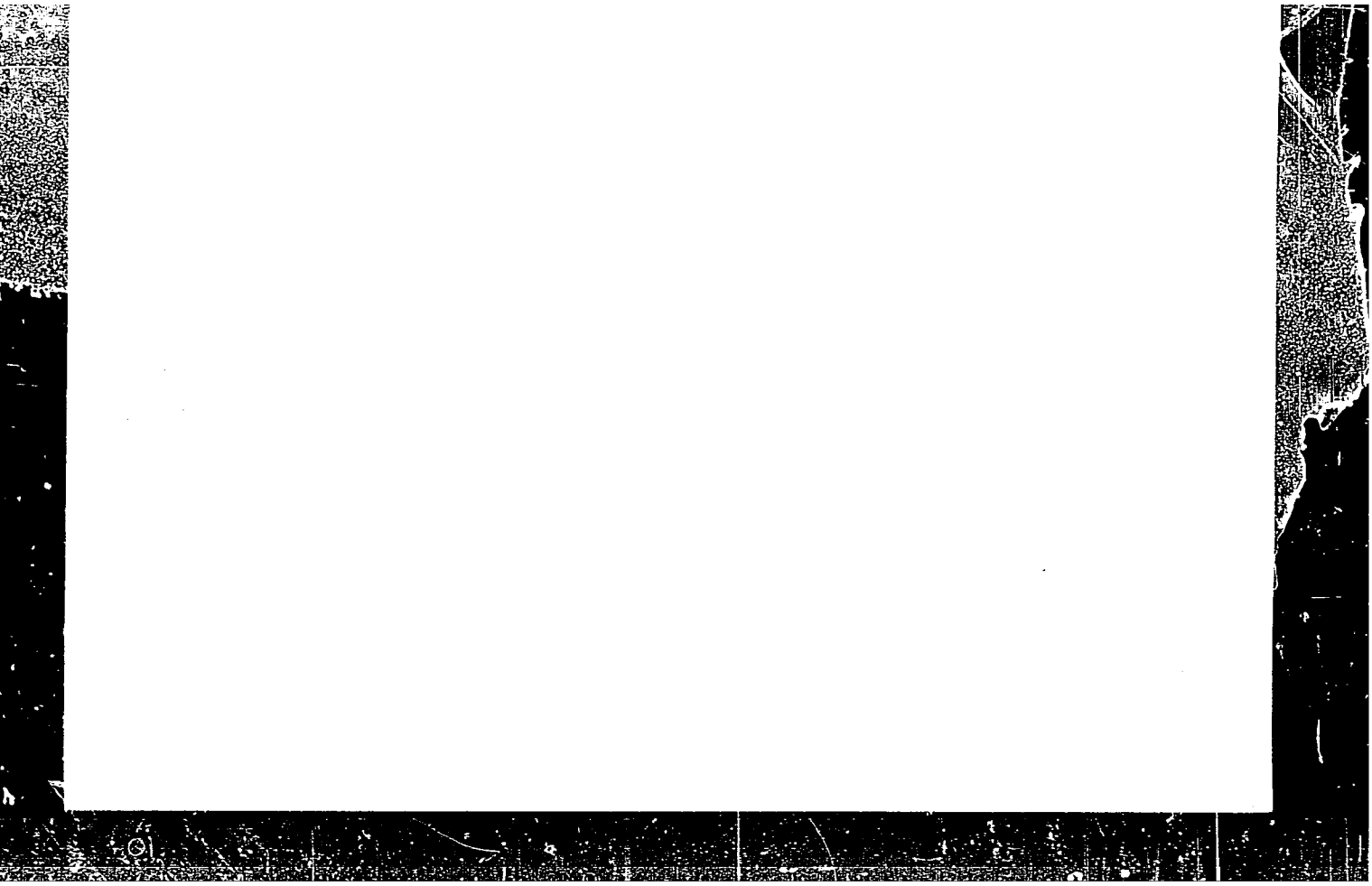

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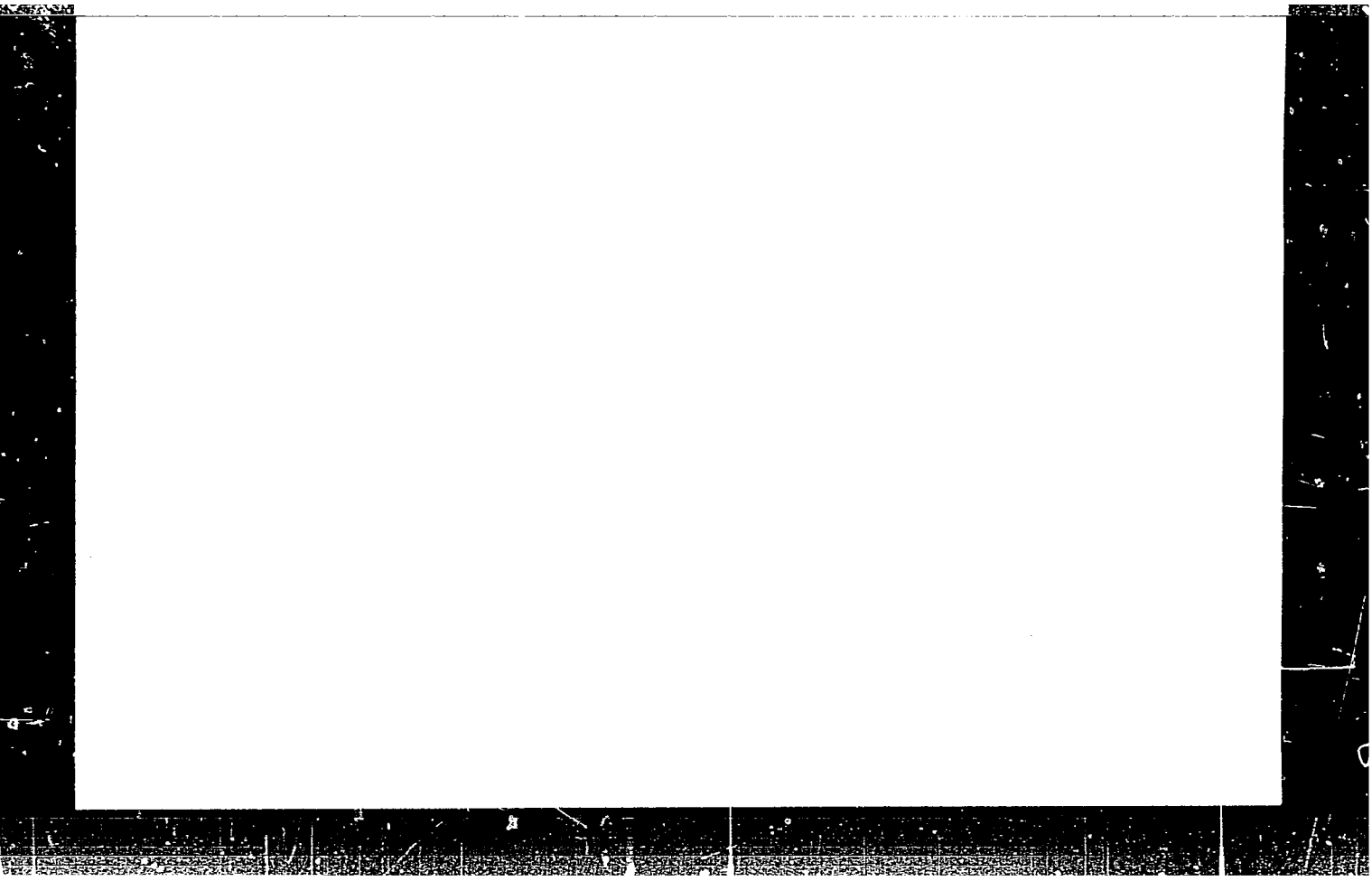

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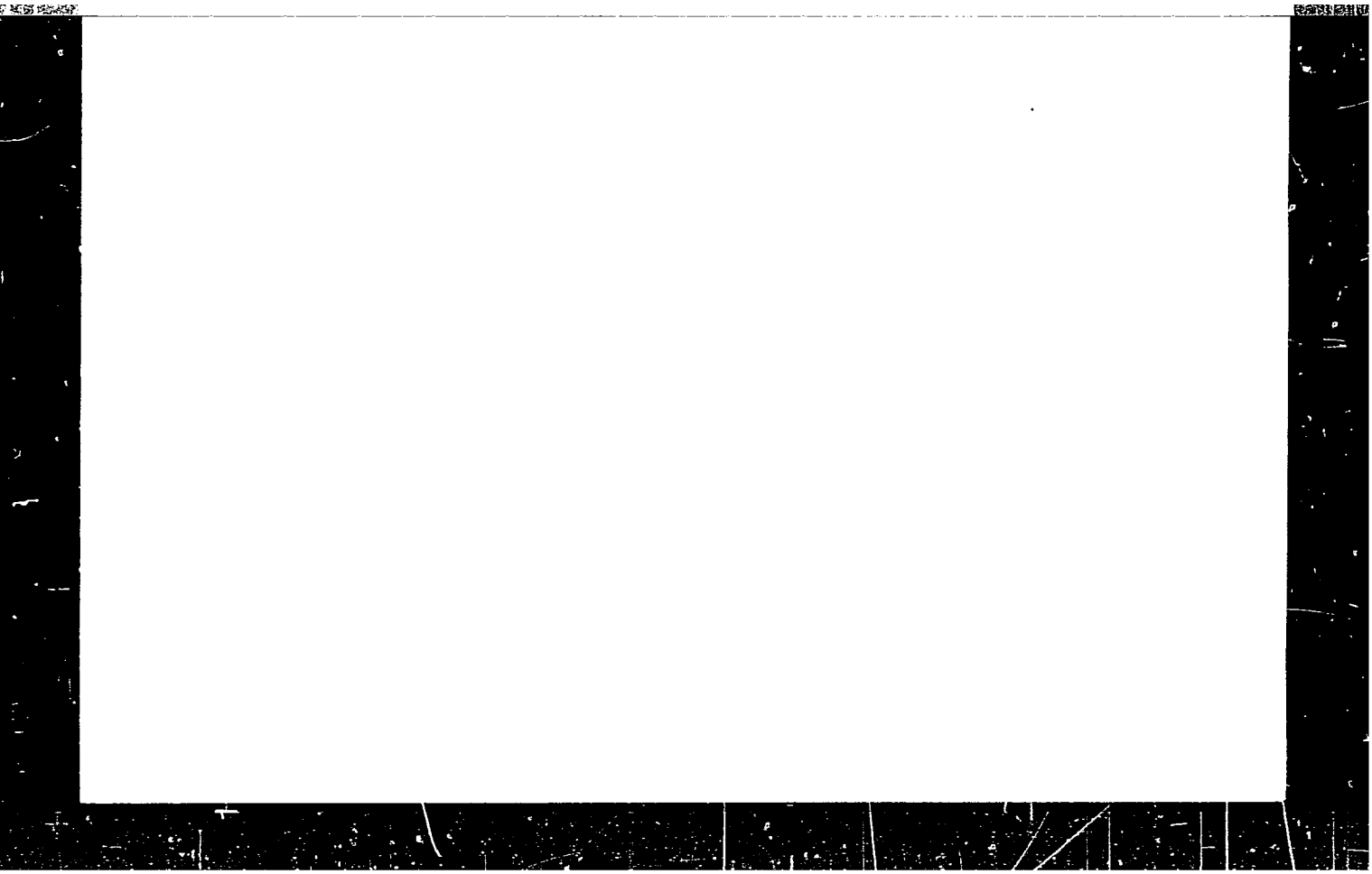

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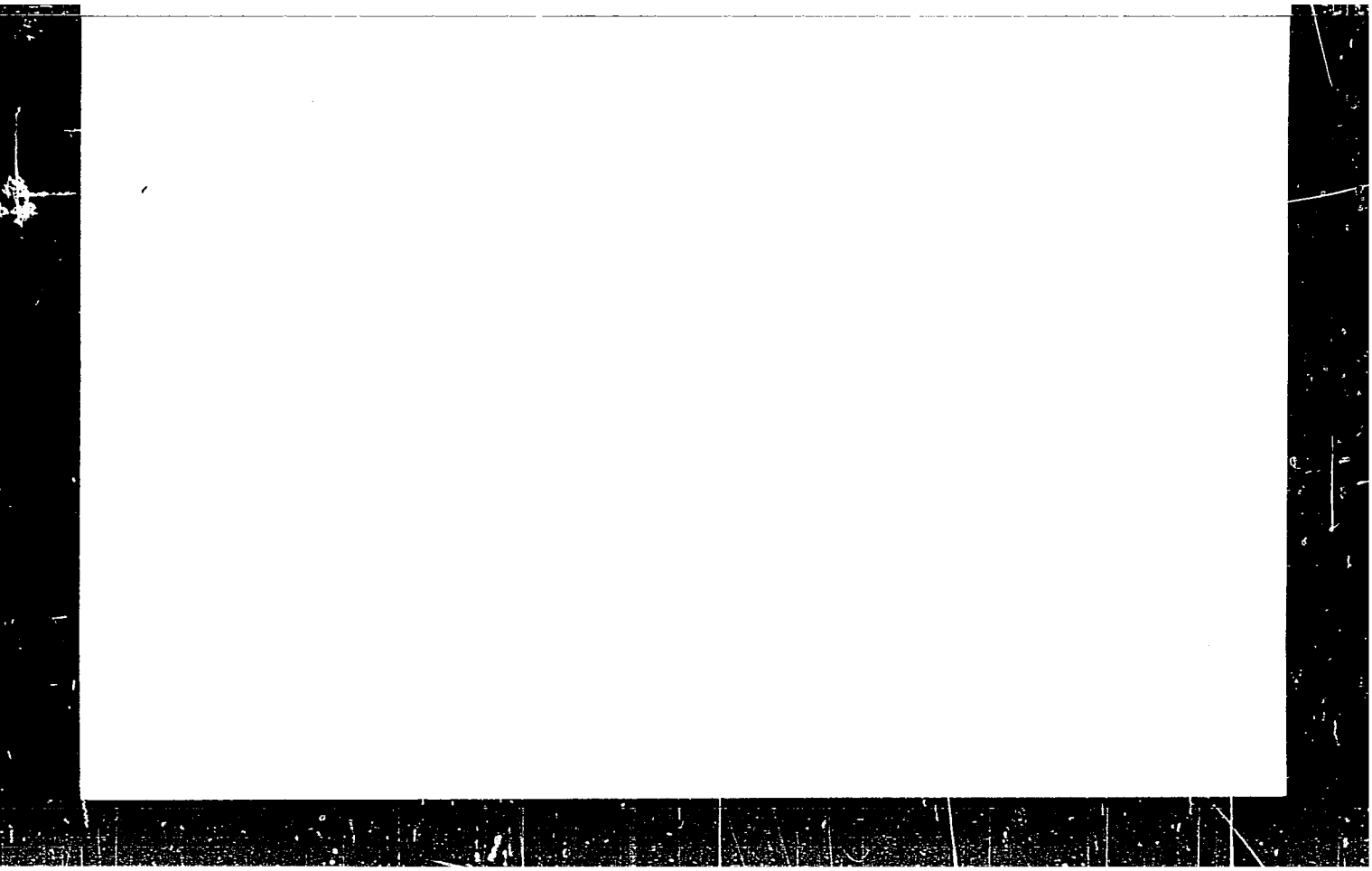

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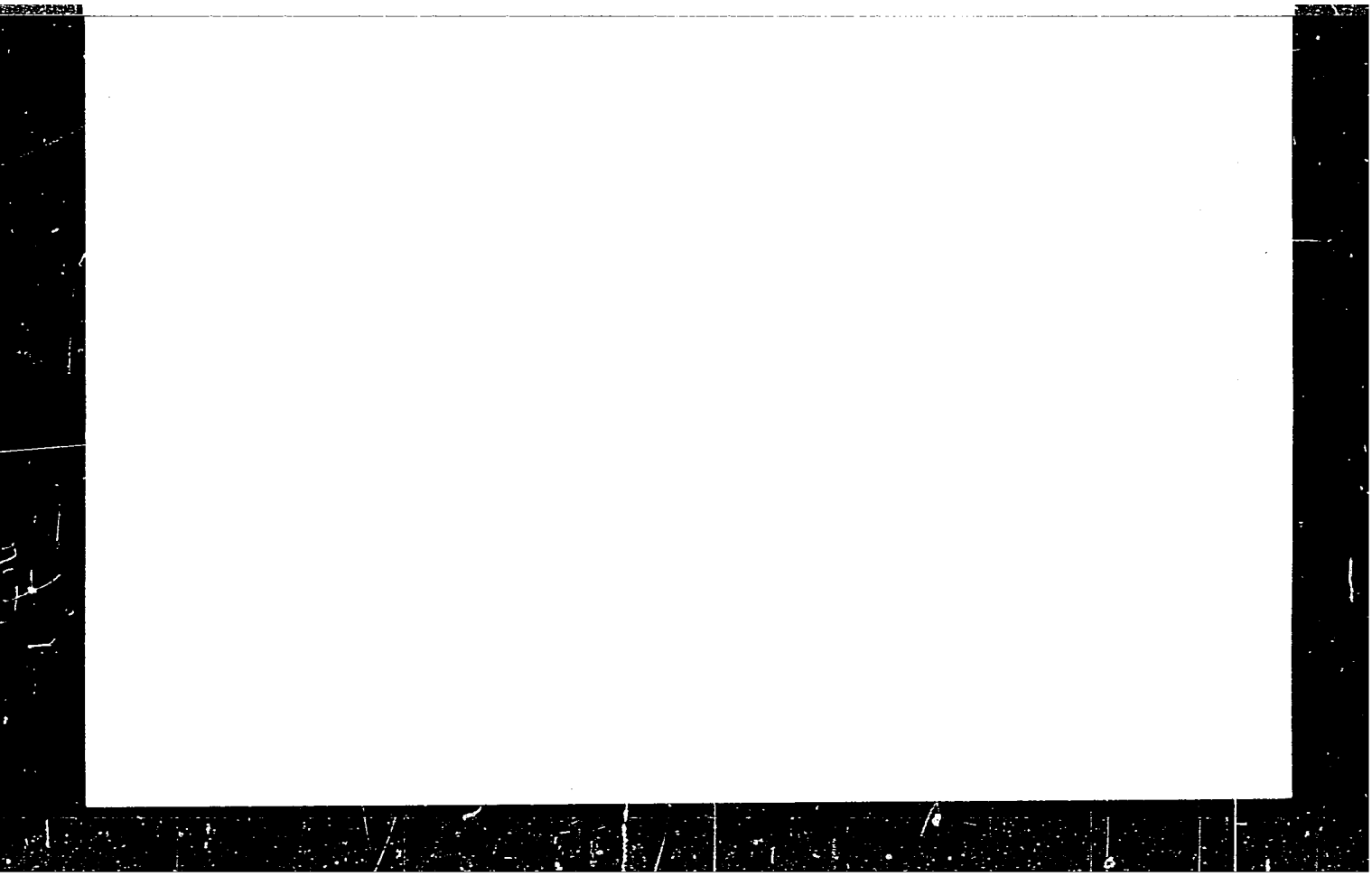

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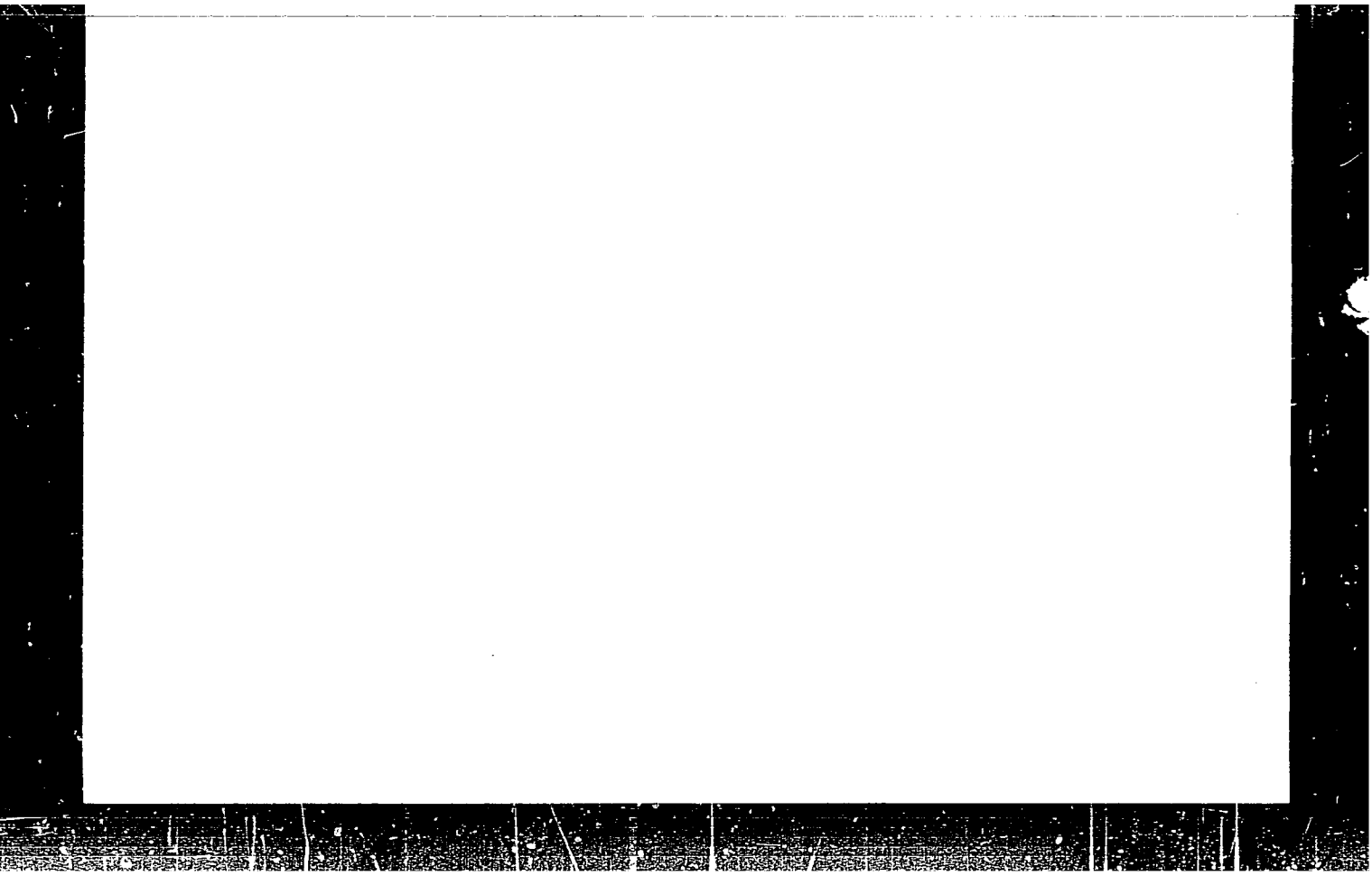

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAGUSEYNOV, Yu.A.; FEYGEL'MAN, M.S.

Oil well derricks. Azerb.neft.khoz.35 no.11:39-42 N '56.
(MLRA 10:4)
(Oil wells--Equipment and supplies)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAGUSEYNOV, Yusif Abas ogly; ZOLIN, Mikhail L'vovich; AMIROV, A.D., redaktor; SHTEYNGEL', A.S., redaktor izdatel'stva

[Lengthening the interval between repairs of wells] Udlinenie mezhremontnogo perioda raboty skvazhin. Baku, Azerbaidzhanskoe gos.izd-vo neft. i nauchno-tekhn.lit-ry, 1957. 39 p. (MLRA 10:9)
(Oil wells--Maintenance and repair)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

KULIYEV, I.P.; ASHRAFOV, M.A.; AGAGUSEYNOV, Yu.A.

Organization of deep drilling operations in offshore prospecting. Azerb. neft. khoz. 41 no.6:40-43 Je '62. (MIRA 16:1)
(Underwater drilling)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

L 56496-65 EWT(1) GW

ACCESSION NR: AP5017795 UR/0286/65/000/011/0011/0011

622.242.3

AUTHOR: Agaguseynov, Yu. A.-ogly; Zhornitskiy, I. D.; Kapustin, K. Ya.; Kuliyev, I. P.-ogly; Yakovlev, B. A.

12 B

TITLE: An installation for drilling oil wells at sea. Class 5, No. 171348

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 11

TOPIC TAGS: oil well drilling, floating oil well, seagoing oil well

ABSTRACT: This Author's Certificate introduces: 1. An installation for drilling oil wells at sea. The unit consists of a ship, a shaft for lowering a water insulating column and a drill fastened by anchors. The installation is designed for automatically orienting the ship during swells and for preventing deflection from the well axis. The hull of the ship is equipped with a horizontal platform with the shaft, and a tension device. These units are displaced in the horizontal plane toward the midship section. 2. A modification of this installation in which maximum tension is maintained on the anchor chains by making the tension device in the form of double action hydraulic cylinders.

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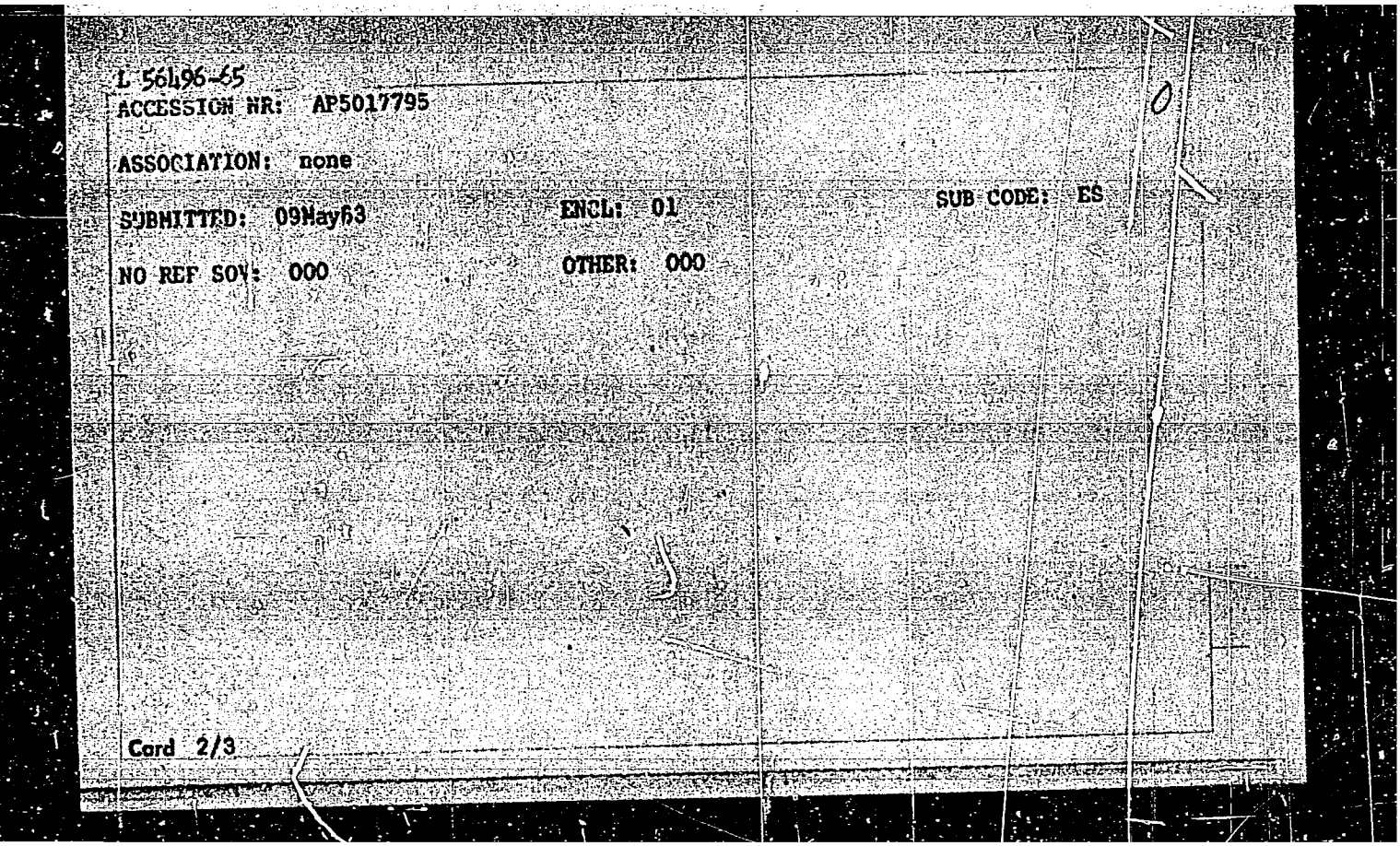

L 56496-65
ACCESSION NR: AP5017795

ASSOCIATION: none

SUBMITTED: 09May63 ENCL: 01 SUB CODE: ES

NO REF SOV: 000 OTHER: 000

Card 2/3

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ACCESSION NR: AP5017795

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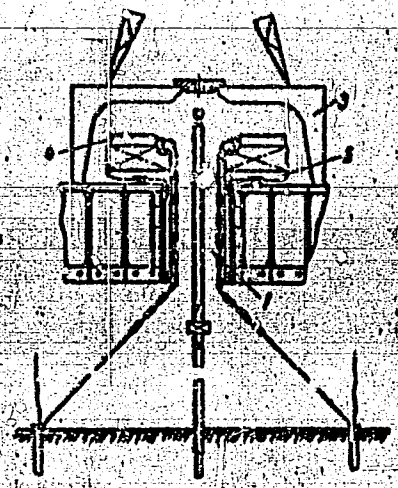

Fig. 1. 1--shaft; 2--rotating platform; 3--gantry which carries the derrick 4--tension device

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AGAIN, Z., POPOVA, Ya. G., BESMKOV, [illegible] (USSR)

"Biosynthesis of Analogs [illegible] Containing 5,6-Dimethylbenzimidazole Substituted on the Second Carbon Atom."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 Aug. 1961.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANOV, S.A.

Approximation of continuous functions of two variables by partial sums of Fourier-Hermite series. Uch. zap. Kaz. un. 124 no.6:3-19 '64. (MIRA 18:9)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANOV, S.A.; NATANSON, G.I.

Approximation of a certain class of continuous functions by partial sums of Fourier-Hermite series. Uch. zap. Kaz. un. 124 no.6:20-30 '64. (MIRA 18:9)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

124-11-13490

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr 11, p 163 (USSR)

AUTHORS: Agaguseynov, Yu. A., Ashurli, S. I.

TITLE: Investigation of the Stress Conditions of Component Parts of Petroleum Refinery Equipment.
(Issledovaniye napryazhennogo sosotyaniya detaley neftepromsylovogo oborudovaniya.)

PERIODICAL: Tr. Azerb. n.-i. in-ta neft. mashinostr., 1956, Nr 1, pp 120-140

ABSTRACT: Utilizing well-known relationships of static similarity in model testing, recommendations are formulated regarding the model-scale selection in relation to the magnitude of permissible errors arising from the use of strain-gauge deformation measurements.

The results of experimental investigation on the stress distribution in hooks are compared with theoretically calculated stresses obtained through the following calculation methods: Grashoff, Belyayev, the graphic-analytical procedure, and numerical integration. It is concluded that the most useful and accurate method is that of Grashoff. Recommendations are offered on the application of alloy steels in hooks in lieu of ordinary carbon steels. Bibliography: 5 references.
(A. M. Sinyukov)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

L 5736-65 EWA(d) IJP(c)

ACCESSION NR: AP5008398 S/0199/65/006/001/0003/0015

AUTHOR: Agakhanov, S. A.

TITLE: On the accuracy of certain quadratures and cubatures

SOURCE: Sibirskiy matematicheskiy zhurnal, v. 6, no. 1, 1965, 3-15

TOPIC TAGS: approximation method, numerical method, error measurement

ABSTRACT: An investigation is made of the least upper bound of the error function arising from the application of an approximate quadrature

$$\int_{x_i}^{x_{i+1}} f(x)dx \approx \sum_{k=1}^{m} c_k^{(i)} f(x_k^{(i)}),$$

where $x_i \leq x_1^{(i)} < \ldots < x_m^{(i)} \leq x_{i+1}$

for the numerical approximation of an integral in a unit interval. The classes of functions to be considered are defined as to the conditions which must be satisfied.

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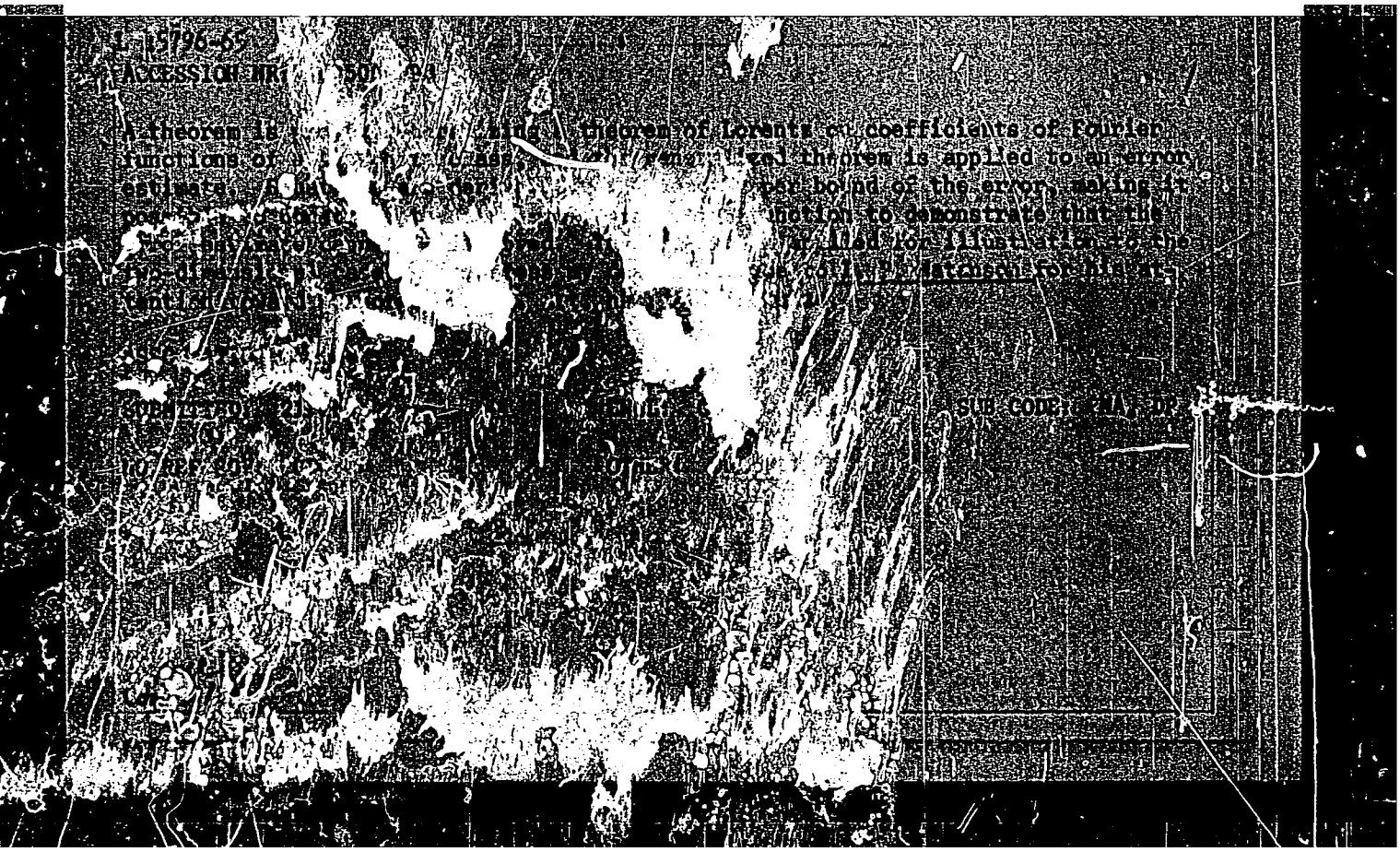

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANOV, S.A.

Method for the derivation of orthogonal polynomials of two variables for a class of weight functions. Vest. LGU 20 no.19:5-10 '65. (MIRA 18:10)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANOV, S.A.; NATANSON, G.I.

The Gibbs phenomenon in certain processes of summation of Fourier series. Dokl. AN SSSR 162 no.6:1215-1218 Je '65. (MIRA 18:7)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut. Submitted December 25, 1964.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANOV, S.A.; NATANSON, G.I.

Approximation of functions by Fourier-Jacobi sums. Dokl. AN SSSR 166 no.1:9-10 Ja '66. (MIRA 19:1)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I.Gertsena. Submitted May 3, 1965.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

124-58-9-9442

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 1 (USSR)

AUTHOR: Agakhanyan, G. A.

TITLE: Brief Summaries of the Scientific Researches Performed by the Armenian Scientific Research Institute for Hydrological Engineering and Reclamation (Kratkiye itogi nauchno-issledovatel'skikh rabot Arm. NIIGiM za 1954 i 1955 gg.)

PERIODICAL: Tr. Arm. n.-i. in-ta gidrotekhn. i melior., 1957, Vol 2, pp 9-23

ABSTRACT: A communication on the subjects of the projects of the institute during 1954 and 1955, which may be grouped according to the following fields of endeavor: irrigation procedures and spraying techniques; anti-seepage provisions in irrigation canals; vertical drainage during the reclamation of salt marshes; mechanization and operational problems of irrigation networks. Condensed notes on completed investigations are given, also indications relative to more detailed publications on these investigations.

1. Scientific research--Armenia 2. Irrigation systems--Armenia 3. Hydrology--Armenia

V. A. Arkhangel'skiy

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

USSR/Soil Science. Cultivation. Melioration. Erosion J

Abs Jour : Ref Zhur-Biol., No 13, 1958, 58353,

Author : [illegible]
Inst : Armenia Scientific-Research Institute of Hydrotechnics and Melioration
Title : A Brief Sketch on the Development of Irrigation on the Territory of Soviet Armenia in the Pre-revolutionary Period.

Orig Pub : Tr. Arm. n.-i in-ta gidrotekhn. i melior., 1957, 2, 209-237

Abstract : No abstract

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

USSR/Soil Science. Cultivation. Melioration. Erosion

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 43865

Author : [illegible]
Inst : The Armenian Scientific Research Institute of Hydrotechnics and Melioration
Title : The Development of Irrigation in Soviet Armenia

Orig Pub : Tr. Arm. n.-i. in-ta gidrotekhn. i melior., 1957, 2, 255-277

Abstract : No abstract

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The Study of Water Resources in the Armenian SSR

was used in the technical plan for the Elarskiy zavod zhelezobetonnykh izdeliy (Elar Reinforced Concrete Products Works) drawn up by the "Armvodproyekt" Institute; the Elar works was put in operation in 1957, and its production is presently being used in construction of the Kotayk irrigation system (Fig 2); on the basis of institute recommendations the "Temporary Instructions on the Preparation and Use of Races and Supports on Canals" was drawn up; an article on this work appeared in "Gidrotekhnika i Melioratsiya" 1958, Nr 6, and materials will soon be published in volume IV of Transaction of the ArmNIIGiM.
4) Development of new types of river bank reinforcement, in particular a type of "spur" employing wire mesh frames, tested on the Araks river and adopted for introduction by the Ministry of Water Resources of the republic; results of this work are published in the Information Letter of the ArmNIIGiM, 1957, Nr 2, in Izvestiya akademii nauk ArmSSR po tekhnicheskim naukam (Izvestiya of the Academy of Sciences of of the ArmSSR on Technical Sciences), 1958, Nr 4, in

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

The Study of Water Resources in the Armenian SSR

volume III of Transactions of the ArmNIIGiM for 1958, and in "Gidrotekhnika i Melioratsiya", 1959, Nr 5. 5) Generalization of the results of recent research on problems of vertical drainage, development of a method for determining the quantity of water to be pumped out and the number of wells, and formulae for determining the depth of incomplete wells and their most effective placement in a drained area; results of this work are published in "Gidrotekhnika i Melioratsiya", 1956, Nr 12, Izvestiya of the Academy of Sciences of the ArmSSR on Technical Sciences, 1956, Nr 10, in the brochure "The Planning and Calculation of Vertical Drainage", Yerevan, 1957, and in volume II of Transactions of the ArmNIIGiM for 1957. 6) Research on conditions and water consumption for harvest corn, development of norms and watering periods for this crop in the Ararat plain; an abstract of this work appears in volume III of Transactions of the ArmNIIGiM for 1958. 7) Field study of the basic types of irrigated soils in the Sevan basin; an abstract of this work will be published in volume IV of Trans-

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

The Study of Water Resources in the Armenian SSR

actions of the ArmNIIGiM. 8) Research in connection with supply systems in the mountain pastures of Gekham, as well as improvement in utilization of water supply sources, particularly lake Aknalich; instructions for operation of mountain water supply systems and pastures were drawn up and transmitted to the Ministry of Water Resources of the ArmSSR. In addition the following projects are outlined in brief: study of the utilization of water and land resources of the western regions of the republic, including the Araks and Akhuryan rivers; study of resources of the Kazakh river and its control - results of this work to be published in volume IV of Transaction of the ArmNIIGiM; study of cotton irrigation techniques; establishment of the expediency of rolling soil before sowing cotton - results of this work published in the Vestnik sel'skokhozyaystvennoy nauki, 1957, Nr 3, in the Transactions of the ArmNIIGiM, vol II for 1957 and vol III for 1958, and in the journal "Ayastani koltntesakan", 1957, Nr 1; granting of aid to a number of collective farms of Martuni

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

The Study of Water Resources in the Armenian SSR

and Artashat rayon in watering grain crops, and use for the first time in Armenia of watering along "pressed furrows" - some results of this work have been published in vols II and III of Transactions of the ArmNIIGiM for 1957 and 1958, and in agricultural journals; development of the construction of a special race for disposing of deposits entering canals from mountain rivers - such a race has been tested on the Amberd canal; development of 3 new types of water-removal (vodosbros) equipment, a "shaft-siphon" (see "Gidrotekhnika i Melioratsiya" 1958, Nr 9), a "sluice-gate-siphon", and "two-tier siphon" (see vol III of Transactions of the ArmNIIGiM for 1958); research on vacuum spillways; granting of aid to water resource and agricultural organs on automation of control of water flow into the canal imeni Stalin, in the study of the characteristics of concrete of local materials, and in the conduct of flood countermeasures and the irrigation campaign. The author notes that the institute devotes much attention to the preparation

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of scientific cadres through graduate study. The balance of the article is devoted to a review of current institute researches, as follows: 1) The study of dam construction in mountain rivers of Armenia is being continued; construction of a new type of dam with stone filtering dikes on the river Gekharot (Fig 4) in the Aparan rayon has been completed. 2) During 1959-1961 research will be done on development of the technology of constructing pre-fabricated facings for canals; by 1960 the technology of making 5 m long races will be developed and the experimental model of a concrete pouring machine for work on small canals will be produced. 3) Study of the efficiency of farm irrigation systems in the Ararat plain and the Sevan-Razdan foothills is being completed in 1959. 4) The current research on irrigation techniques and conditions for fruit-vine plantations on lands of the foothill areas, where large irrigation canals are under construction in conjuction with other agrotechnical measures worked out by the Nauchno-issledovatel'skiy

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institut vinogradarstva, vinodeliya i plodovodstva MSKh ArmSSR (Scientific-Research Institute of Viticulture, Wine-making and Fruit-growing of the Ministry of Agriculture of the ArmSSR), is expected to be finished in 1962. 5) Studies of the water resources of rivers and streams are being made. 6) In 1959 study of the problems of water supply to summer pastures was started. 7) Studies of the condition of irrigated lands in the Ararat plain, and experience in planning and operation of irrigation systems, started in 1957, are being continued; in addition, by 1961 the moisture balance of the whole Ararat kotlovina will be established. 8) Study and development of methods of building up sections of mountain rivers in order to protect agricultural land from wash-out and inundation is being continued. 9) Study and development of hydrotechnical methods for combatting erosion in conjunction with agrotechnical and forest-reclamation measures worked out by other scientific-research institutions have been started. The ArmNIIGiM co-

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The Study of Water Resources in the Armenian SSR

ordinates its research work with that of a number of other scientific-research organizations, including the Institut energetiki i gidravliki akademii nauk Armyanskoy SSR (Institute of Energetics and Hydraulics of the Academy of Sciences of the Armenian SSR), the Nauchno-issledovatel'skiy institut vinogradarstva, vinodeliya, i plodovodstva (Scientific-Research Institute of Viticulture, Wine-making and Fruit-growing), the Nauchno-issledovatel'skiy institut zhivotnovodstva i veterinarii MSKh ArmSSR (Scientific-Research Institute of Livestock-raising and Veterinary Science of the Ministry of Agriculture of the ArmSSR), the Nauchno-issledovatel'skiy institut ekonomiki i organizatsii sel'skogo khozyaystva (Scientific-Research Institute of the Economics and Organization of Agriculture), the Nauchno-issledovatel'skiy institut pochvovedeniya i agrokhimii MSKh ArmSSR (Scientific-Research Institute of Soil Science and Agricultural Chemistry of the Ministry of Agriculture of the ArmSSR), and the Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii (All-Union Scientific-Re-

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The Study of Water Resources in the Armenian SSR

search Institute of Hydrotechnics and Melioration).
There are 4 photographs.

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TORGOMYAN, M.S., kand. tekhn. nauk; CHILINGARYAN, L.A., kand. tekhn. nauk; SHAKHBAZYAN, Sh.A., kand. tekhn. nauk; AGAKHANYAN, G.A., kand. sel'khoz. nauk; KULOYAN, L.T., kand. tekhn. nauk; ARSHAKYAN, D.T.; BARKHUDARYAN, I.G.; SARKISYAN, S.G., kand. tekhn. nauk; MKHITARYAN, S.A.; OSEPYAN, A.M., doktor ekon. nauk, prof.; BEK-NAZAROV, B.I., kand. geogr. nauk, red.; AYVAZ'YAN, V.G., otv. red.; FEL'DMAN, M.P., otv. red.; AVETISYAN, A.A., tekhn. red.; CHAKHALYAN, TS.P., tekhn. red.

[Results of the combined studies of the Sevan problem]Rezul'taty kompleksnykh issledovanii po Sevanskoi probleme. Erevan, Izd-vo Akad. nauk Armianskoi SSR. Vol.3.[Water resources and power engineering]Vodnoe khoziaistvo i energetika. 1962. 330 p. (MIRA 15:11)

1. Akademiya nauk Armyanskoy SSR, Erivan. Institut vodnykh problem.

(Sevan Lake region--Water resources development)
(Sevan Lake region--Power engineering)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, S.M.; KONONOV, B.N.; STEPANENKO, I.P.

Concerning the terminology in the field of transistor electronics. Izv. vys. ucheb. zav.; radiotekh. 4 no.1:110-114 Ja-F '61. (MIRA 14:4)

1. Kafedra elektroniki Moskovskogo inzhenerno-fizicheskogo instituta.

(Transistors--Terminology)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGARHANYAN, T.M.

Decreasing distortions of the flat top of pulses in amplifiers. Sbor. nauch. rab. MIFI no.9:88-91 '55. (MLRA 10:1)
(Amplifiers, (Electron-tube)) (Pulse techniques(Electronics))

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

Special form pulse generators. Sbor.nauch.rab.MIFI no.9:102-108 '55.
(MIRA 10:1)
(Pulse techniques(Electronics))

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.; STEPANENKO, I.

An electronic encephalograph. Radio no.12:53-56 D '55.(MLRA 9:4)
(Electroencephalography)(Electronic apparatus and appliances)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAHANJAN, T.M.

SUBJECT	USSR / PHYSICS	CARD 1 / 2	PA - 1527
AUTHOR	AGAHANJAN, T.M.		
TITLE	The Reduction of Distortions of the Impulse Fronts on Plane Triodes in Video Amplifiers.		
PERIODICAL	Radiotechnika, 11, fasc.9, 54-58 (1956) Issued: 19.10.1956		

The distortions of impulse fronts on plane triodes in video amplifiers are essentially due to two groups of phenomena. The first is connected with the occurrence of parasitic capacities, the second with processes taking place within the domain of the basis of the plane triode. These processes, diffusion on the one hand and the disturbance of thermodynamic equilibrium between the process of recombination and the process of the thermal generation of current carriers on the other, lead to a temporary shifting of in- and output impulses and to a prolongation of the period of time necessary for the stabilization of the front. The latter (the period of time) can be reduced by selecting the parameters in such a manner that, with amplitudes being equal, the number of

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growing steepness of the impulse front. A decrease of the input resistance thus also causes a decrease of the distortions of the front of the output impulse. Triode schemes are then investigated in which the charge exchange takes place in the course of a considerably shorter period of time than the increase of the impulse front. From the equation obtained in this connection it may be seen that the time of increase may be reduced to an amount that is equal or even

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less than the time of increase in a scheme with an earthed basis. It is true, however, that reduction is brought about at the expense of the decreased amplification of individual cascades. The latter entails the necessity of increasing the number of cascades, because total amplification is generally given. It turns out that even if the number of cascades is increased the total time of increase of the transition characteristic of the amplifier with back-coupling diminishes by nearly a whole order of magnitude (compared with an ordinary amplifier). Another possibility of reducing distortions of impulse fronts is offered by the scheme based on a combination of the current distribution circuit and back-coupling. The simplest form of construction consists of a resistance and an inductivity connected in series. It is a disadvantage connected with these circuits that a noticeable reduction of the time of growth can be attained only if inductivity values are high. The most promising schemes are in any case those with back-coupling, because in their case a qualitative and quantitative improvement of many other properties of amplifying devices can be attained besides the decrease of the time needed for increase. This method for the reduction of distortions can be employed in the case of such impulse amplifiers as are destined for amplification as well as in the case of such as are used for the purpose of forming impulses with steep declines.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

SUBJECT USSR / PHYSICS CARD 1 / 3 PA - 1709
AUTHOR AGAHANJAN,T.M., VOLKOV,JU.A.
TITLE Practical Schemes of Wideo-Amplifiers on Flat Triodes.
PERIODICAL Radiotechnika, 11, fasc. 11, 38-44 (1956)
Issued: 12 / 1956

In the present work practical schemes of wideo-amplifiers in which the new distribution of the current carriers is carried out by means of complete backcoupling, are described. At first schemes for a one-cascade amplifier are shown. The chain of back coupling serving the purpose of diminishing distortions on the impulse fronts in all cases leads to an increase of the temperature stability of the scheme. In those cases in which this becomes necessary an additional temperature compensation may be provided. Backcoupling makes it possible to reduce the time of the increase of the transition characteristic of the cascade considerably. Various oscillograms of the output voltage of the cascade with backcoupling in the critical and in the oscillating state are mentioned. The time of the increase of the cascade with backcoupling can be computed according to the formulae mentioned in the authors'work in Radiotechnika, 11, fasc.9 (1956). By means of the complex backcoupling it is possible to extend the transmission width of the amplifier to the value which exceeds the frequency limit. In an example mentioned here the utmost frequency limit is nearly double the frequency limit of the coefficient of the current amplification of the triode. It is then possible, by means of the complex backcoupling, to improve the impulse front, and besides, backcoupling improves a number of other characteris-

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tics of the amplifier: Increase of input resistance, increase of stability, reduction of nonlinear distortions, and, consequently, also an increase of the permitted value of the output voltage etc. As the amplification coefficient is usually given, the application of the scheme with complex backcoupling entails the necessity of increasing the number of cascades of the amplifier. Some multi-cascade amplifiers are then described. In this connection the number of cascades and their parameters (type of triode, degree of backcoupling, etc.) which warrant the least possible impulse distortion must be selected. A formula is given according to which it is possible to compute the coefficients of amplification according to voltage for average frequencies. The time of the increase of the transition characteristic of the cascades is reduced with a decrease of backcoupling. However, in the case of low backcoupling a large number of cascades is necessary in order to attain the given amplification. In the case of a given amplification and number of cascades the degree of the backcoupling need not necessarily be the same in all cases. It is advisable to apply a lower degree of backcoupling in the case of the first cascade. The scheme of a two-cascade amplifier and its characteristic are described in form of a diagram. Besides, the oscillograms of the output voltage of the amplifier are shown. - Computations and experiments show that a condiserable broadening of the transmission band of the amplifier is possible on crystalline triodes with the help of this scheme.

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Radiotechnika, 11, fasc. 11, 38-44 (1956) CARD 3 / 3 PA - 1709

On flat triodes of home production wideo-amplifiers in which the time needed for the increase of the transition characteristic is from 0,1 to 1 μF, can be constructed with a corresponding amplification coefficient of from 3 to 1000. It may be assumed that in future crystalline triodes in large impulse schemes will become a serious competition of electron tubes.

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AGAKHANYAN, T. M. and PATRIKEYEV, L. N.

"Determination of the Limiting Frequency of the Current Transfer Coefficient of a Junction Transistor,"

report presented at the Session on Semiconductors, All-Union Scientific Session of VNORiE, Moscow, 20-25 May 1957.

the paper showed that the limiting frequency of the transistor can be determined from the frequency characteristics of the current gain in a grounded-emitter circuit by using suitable recalculation.

Electronic Design, 22 January 1958

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T. M. Cand Tech Sci -- (diss) "Pulse Amplifier Performance in the Long-Time Range." Mos, 1957. 7 pp 20 cm. (Min of Higher Education USSR, Mos Engineering Physics Inst), 110 copies (KL, 25-57, 112)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

9(2) SOV/112-59-5-10044

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 5, pp 230-231 (USSR)

AUTHOR: Agakhanyan, T. M.

TITLE: Using Capacitive Correction in Pulse Amplifiers

PERIODICAL: Sb. nauchn. rabot Mosk. inzh.-fiz. in-t, 1957, Vol 12, pp 36-44

ABSTRACT: A theoretical investigation of a pulse-amplifier stage with a correcting capacitor in the screen-grid circuit is presented. With long pulses, connecting a capacitor and a resistor in the screen-grid circuit results in distorting the flat top of the pulse and in changing the DC component of the signal. The capacitor in the screen-grid circuit has the same effect as that in the cathode circuit. Elimination of the capacitor results in setting up a negative current feedback and in reducing the transfer coefficient. Increasing the anode load to preserve gain results in an increase of the pulse leading-edge time. To eliminate this trouble, it is recommended that a corrective capacitor be

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Using Capacitive Correction in Pulse Amplifiers

connected to the screen-grid circuit. With equal anode loads, the gain and leading-edge time are smaller for the capacitive-correction circuit than for a simple resistive stage. If the anode resistance in the capacitive-correction circuit be made higher than R_a of a simple resistive stage, the leading-edge times and gains of both circuits would be equal. The resistive-correction circuit has the advantage that the cathode circuit and the screen-grid circuit have no effect on the pulse flat top. An example of calculating the capacitive-correction scheme is presented. Bibliography: 5 items.

L.I.G.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

AGAKHANYAN, T.M.

Effect of negative feedback on maximum output voltage in pulse amplifiers. Zbor. nauch. rab. MIFI no.12:45-76 '57. (MLRA 10:11)
(Electronic circuits) (Pulse techniques (Electronics))

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AUTHOR AGAKHANYAN T.M. XXXXXXXXX

TITLE The Application of a Scheme with a Correction in the Cathode Circuit of the Initial Cascade of a Video Amplifier. 108-6-9/11
(Primeneniye skhemy s korrektsiyey v tsepi katoda v vykhodnom kaskade videousilitelya -Russian)

PERIODICAL Radiotekhnika, 1957, Vol 12, Nr 6, pp 69 - 78 (U.S.S.R.)

ABSTRACT In the introduction it is pointed out that the statement made in a publication (Tube-Amplifiers, vol 1, "Sovetskoye radio",1950) that a scheme with a correction in the cathode circuit offers no advantages compared with a simple reostat cascade is not correct, because this conclusion is based upon the assumption that a voltage-jump is added to the input of the scheme. In real schemata the latter can, however, not be the case; Here the maximum output voltage of a scheme with a correction in the cathode circuit is investigated and, above all, also the case in which the cascade with the correction in the cathode circuit is preceded by a rheostat cascade with the time constant of the anode circuit τ_1. The curves obtained here show that this method is able to increase the maximum output voltage considerably (in comparison to the simple rheostat cascade). If the cascade of input amplification has an inductive correction, the increase of the signal amplitude takes place at the input of the output cascade according to a complicated law. Here the case is investigated in which all (n-1) cascades of the input amplifier are simple rheostat cascades, but where in the

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The Application of a Scheme with a Correction in the Cathode Circuit of the Initial Cascade of a Video Amplifier.

output cascade a scheme with a correction in the cathode circuit is used. It is shown that the application of the correction in the cathode circuit brings about an increase of the maximum output voltage in a two-cascade amplifier by the two-fold, in a three-cascade amplifier by the three-fold, etc.- Formulae for the computation of the output voltage and the current impulse amplitude are given and the parameters of the correcting circuit are determined.
(6 illustrations and 3 Slavic references).

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AGAKHANYAN, T. M.

T. M. AGAKHANAYN "Transient characteristic of the current transmission coefficient of a drift triode." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

The influence is analyzed of the distribution of impurities in the base of the transient characteristic of the current transmission coefficient of a drift triode. A nonuniform impurity distribution in the base of the triode affords the possibility of a substantial decrease in the delay and rise times of the pulse front of the collector current.

An approximate expression of the transient function of the transfer coefficient is presented which can be used also to compute the frequency and phase characteristic.

Analytic expressions have been obtained for the front build-up time and the limiting frequency of the current transfer coefficient which are valid both for drift triodes and for triodes with a uniform impurity distribution.

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AGAKHANYAN, T. M.

L. A. Serkin, I. P. Stepanenko, B. N. Koncnov, T. M. AGAKHANYAN, A. G. Filippov, L. N. Patrikeyev: "Elements of semiconducting digital machines." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

Results are presented of the development of systems of fundamental logical elements using semiconducting instruments for a digital computer. Fundamental computational relations and experimental characteristics of the elements are presented. Among the system elements are: a trigger, a conincidence circuit and an amplifier-limiter. The elements guarantee reliable operation of the fundamental components of a computer at a 500 kc frequency of the main (cyclic) pulses in an -60° C---+ 50° temperature range with the relative humidity 98%.

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AGAKHANYAN, T.M.

Transient characteristics of the current-transmission factor in drift triodes. Nauch.dokl.vys.shkoly; radiotekh. i elektron. no.1:207-210 ' 58. (MIRA 12:1)

1. Kafedra elektroniki Moskovskogo inzhenerno-fizicheskogo instituta.

(Transistors)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

Transient characteristics of semiconductor triodes. Izv. vys. ucheb. zav.; radiotekh. no.2:194-201 Mr-Ap '58. (MIRA 11:5)

1. Rekomendovana kafedroy elektroniki Moskovskogo inzhenerno-fizicheskogo instituta.

(Transistors)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M., asst.

Using output transformers for recording slow-variable signals by magneto-electric oscillators. Izv.vys.ucheb.zav.;prib. no.3:36-42 '58. (MIRA 12:2)

1. Moskovskiy inzh.-fiz.institut.
(Oscillograph)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

SOV/142-58-4-16/30

AUTHOR: Agakhanyan T.M., Kononov, B.N., Stepanenko, I.P.

TITLE: On the Terminology of Transistor Electronics (O terminologii v oblasti tranzistornoy elektroniki)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Radiotekhnika, 1958, Nr 4, pp 496-500 (USSR)

ABSTRACT: The paper summarizes the most important questions pertaining to Soviet terminology in the field of transistor electronics. The section "General Questions" deals with definitions for the concepts Semi-Conductor; Transistor; "Transistron"; and "Stereotron". Finally hole and electron transistors are defined. The second section deals with questions of junctions (plane and point change-over) as well as drawn and diffused junctions. Then the author deals with diodes and their functions and with triodes. A special section deals with the parameters of the triodes. Finally the paper deals with circuit diagrams. The editorial staff request the readers to contribute further to the field

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

On the Terminology of Transistor Electronics SOV/142-58-4-16/30

of defining scientific terminology.

ASSOCIATION: Kafedra elektroniki Moskovskogo inzhenerno-fizicheskogo instituta (Chair of Electronics, Moscow Institute of Engineering Physics)

SUBMITTED: April 21, 1958

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

SOV/ 108-13-2-1/15

AUTHOR: Agakhanyan, T. M.

TITLE: Approximate Transfer and Frequency-Phase-Characteristics of the Current Amplification Factor of a Junction-type Triode Transistor (Priblizhënnyye perekhodnyye i chastotno-fazovyye kharakteristiki sobstvennogo koeffitsiyenta usileniya po toku poluprovodnikovogo ploskostnogo trioda)

PERIODICAL: Radiotekhnika , 1958, Vol. 13, Nr 2, pp. 3 - 13 (USSR)
Received: April 25, 1958

ABSTRACT: This is a report on the meeting of the Section for Semiconductor Apparatus and Small Parts of Radios in the NTORiE im. A. S. Popova (Scientific Technical Society for Radio-Engineering and Electric Communication Services imeni A. S. Popov), held on January 18, 1957. Here an approximated equation (11) is deduced for the intrinsic current amplification factor $\alpha(t)$ of the triode. In this equation the transfer function $\alpha(t)$ is not only represented by a single expression, but here, too, a much higher accuracy is guaranteed than in the formula (1) used in reference 8. Formula (11) also offers the possibility to approximate the frequency-

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Approximate Transfer [illegible] and Frequency-Phase-Characteristics of the Current Amplification of a Junction-type Triode Transistor [illegible]

and the phase-characteristic $\alpha(i\omega)$ within a large frequency range. The approximation introduced here is obtained from the exact formula for the transfer function $\alpha(t)$, which is an infinite series of exponential functions. The transfer and the frequency-phase-characteristics of the current amplification factor of a triode connnected to a scheme with a common emitter as well as a triode connected to a scheme with common collector are investigated. Formula (27) for the frequency-phase-characteristic is deduced. It is applicable for a large frequency range. The approximated relations here obtained can be applied for any triode connection, as they are general. For a number of problems they can be simplified even more by expressing the transfer function by formula (22) and the frequency-phase-characteristic by formula (33) in the scheme with common emitter, and by expressing the frequency-phase-characteristic by formula (35) in the scheme with common collector. In order to be able to use the expression introduced here in the analysis and calculation of the transition processes or of the high frequency properties of the scheme of surface triodes, the values of α_o and τ_D (time of diffusion) must be known. In order to obtain a

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higher accuracy of measurement normally α_{ebO} or α_{cbO} is measured instead of α_o, that is the value inversely proportional to the difference $1 - \alpha_o$. The time of diffusion τ_D can be determined from the frequency- or the phase-characteristic. τ_D in addition is expressed by the cutoff frequency ω_α. It has to be taken into consideration here that the frequency-phase-characteristics of the current amplification factor in a scheme of common basis only coincide with the $\alpha(i\omega)$-characteristics in the case of triodes for relatively low frequencies. (Reference 13). In a scheme of high-frequency surface triodes the influence of the capacity of the collector transition must not be neglected in the analysis or in the determination of τ_D. This does not mean that the notion of the intrinsic current amplification factor α is only applicable for low-frequency triodes. The factor (coefficient) α determines the share of unreal carriers (from the total number of the carriers changed over into the range of the basis by the emitter transition) which

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

Approximate Transfer and Frequency-Phase-Characteristics of the Current Amplification Factor of a Junction-type Triode Transistor

reach the collector transition. Therefore the α-function permits to characterize quantitatively the processes happening within the range of the basis for low-frequency as well as for the high-frequency triodes.

α_{cb0} is the steady value of the transition function, in the scheme with common emitter.

α_{eb0} is the steady value of the transition function in the scheme with common collector (?). There are 7 figures, 1 table, and 13 references, 5 of which are Soviet.

SUBMITTED: January 21, 1957

Card 4/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AUTHORS: Agakhanyan, T.M., Member of the Society 108-13-4-6/12
Patrikeyev, L.N., Member of the Society

TITLE: The Determination of the Limiting Frequency of the Current-Transmission Factor of a Plane Semiconductor Triode (Opredeleniye granichnoy chastoty koeffitsiyenta peredachi toka ploskostnogo poluprovodnikovogo trioda)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 4, pp 45-52 (USSR)

ABSTRACT: Measuring the limiting frequency of the own current transmission factor of the triode α_k immediately on the basis of the frequency characteristic of the amplification factor of the triode (connected in accordance with the wiring scheme with common basis) is complicated and practically inacceptable in the case of high frequency triodes. Therefore, indirect methods of measuring limiting frequency, which make it possible to carry out measurements at considerably lower frequencies, are of great interest. Experimental data are given, which confirm the possibility of using theoretical deviations for the determination of the limiting frequency of the current transmission factor in the case of triodes of the P 6-type as well as in the case of high frequency drift

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

The Determination of the Limiting Frequency of the Current-Transmission Factor of a Plane Semiconductor Triode

108-13-4-6/12

triodes according to the frequency-phase characteristics of the current amplification factor of a scheme with a common emitter. Two methods of measuring the limiting frequency ω_k are studied. The experimental re-checking of one of these methods for the determination of ω_α from the frequency characteristic of the current amplification factor of a triode connected to the wiring scheme with common emitter gave satisfactory results. The method is simple and promising, especially in connection with the development of high-frequency triodes. There are 8 figures and 5 references, 3 of which are Soviet.

SUBMITTED: June 3, 1957

AVAILABLE: Library of Congress

1. Triodes--Frequency 2. Triodes--Transmission 3. Triodes --Theory

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AGARHANYAN, I. M.

Б. В. Сестрорецкий,
А. А. Романов

Исследование диапазонных свойств III волновода

11 июня

(с 18 до 22 часов)

Н. А. Кузьмин

Скалярные потенциальные функции уравнений электродинамики в неортогональной криволинейной системе координат, метрика которых не зависит от одной координаты

Г. П. Керженцева

Оптимальная форма изгиба волновода в условиях многоволновости

Ю. М. Исаенко

Теоретическое исследование плавного возбуждения волны H_{11} в волноводе круглого сечения

Р. Б. Вагонов

Экспериментальный анализ электромагнитного поля после волноводных переходов, содержащих критическое сечение.

В. П. Шестопалов

Дисперсионные свойства и пространственный резонанс спирального волновода, помещенного в магнитодиэлектрическую среду.

12

А. СЕКЦИЯ ПОЛУПРОВОДНИКОВЫХ ПРИБОРОВ

Руководитель Е. И. Гальперин

9 июня

(с 10 до 16 часов)

А. А. Маслов

Новые полупроводниковые приборы для радиоэлектронной аппаратуры.

Р. Е. Смолянский,
М. И. Лукачевич

Новый полупроводниковый прибор на базе кремния — аналог тиратрона.

Т. М. Агаханян,
Л. И. Патрикеев

Работа дрейфового транзистора при большом сигнале

Ю. К. Борсунов

Переходный процесс запирания германиевых плоскостных диодов при больших токах.

9 июня

(с 18 до 22 часов)

13

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

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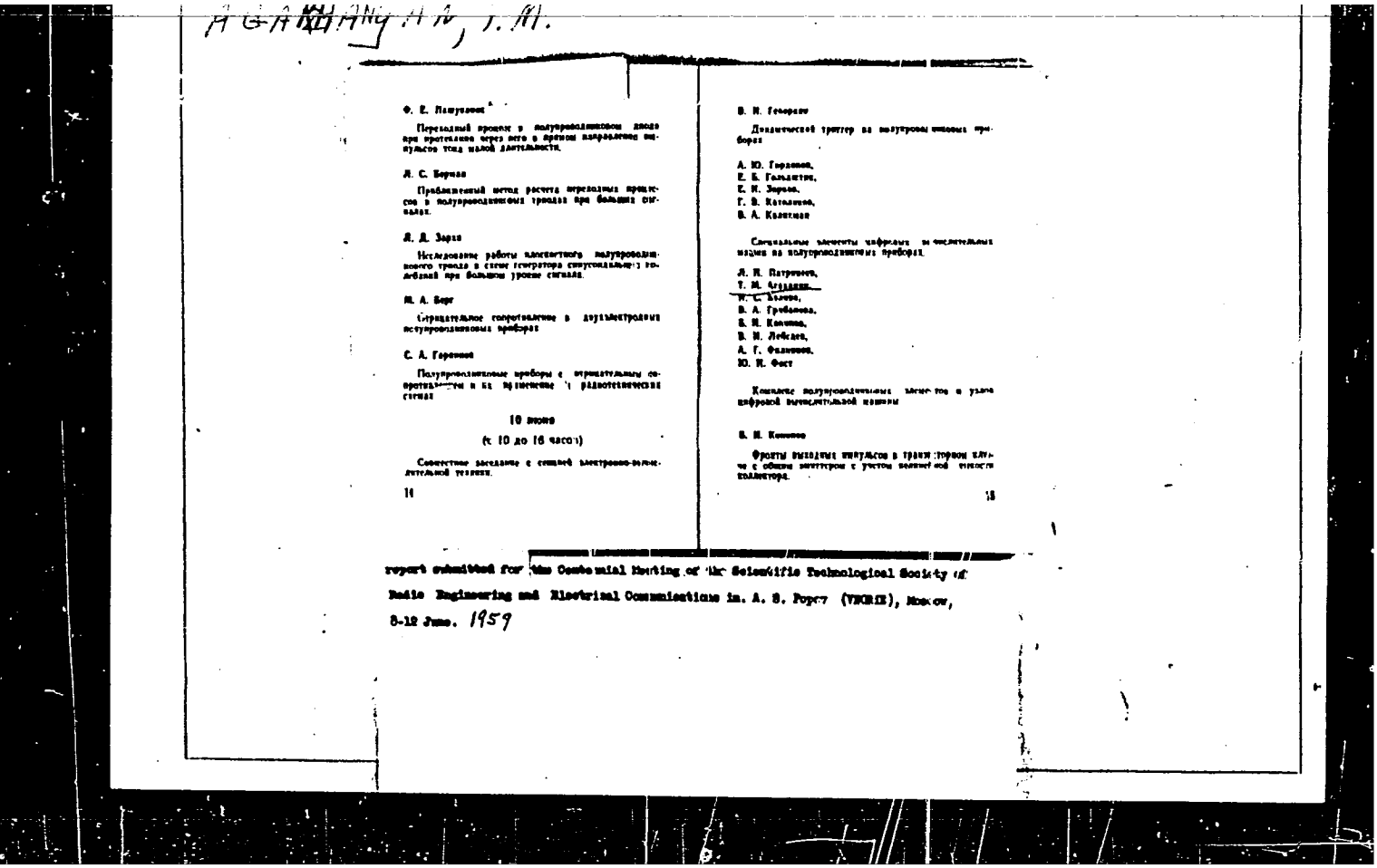

AGABEKYAN, I. M.

Ф. Е. Пашуканов

Переходный процесс в полупроводниковом диоде при протекании через него в прямом направлении импульсов тока малой длительности.

Л. С. Берман

Приближенный метод расчета переходных процессов в полупроводниковых триодах при больших сигналах.

Л. Д. Зарха

Исследование работы плоскостного полупроводникового триода в схеме генератора синусоидальных колебаний при большом уровне сигнала.

М. А. Берг

Отрицательное сопротивление в двухэлектродных полупроводниковых приборах.

С. А. Горяинов

Полупроводниковые приборы с отрицательным сопротивлением и их применение в радиотехнических схемах.

10 июня

(с 10 до 16 часов)

Совместное заседание с секцией электронно-вычислительной техники.

14

В. И. Геворкян

Динамический триггер на полупроводниковых приборах.

А. Ю. Гордонов,
Е. Б. Гольдштейн,
Е. И. Зорков,
Г. В. Каталинов,
В. А. Калинман

Специальные элементы цифровых вычислительных машин на полупроводниковых приборах.

Л. Н. Патрикеев,
Т. М. Агаханян,
И. С. Кулиев,
В. А. Грибанова,
Б. И. Копылов,
В. И. Лебедев,
А. Г. Филиппов,
Ю. И. Фост

Комплекс полупроводниковых элементов и узлов цифровой вычислительной машины.

В. И. Копылов

Фронты выходных импульсов в транзисторном ключе с общим эмиттером с учетом нелинейной емкости коллектора.

15

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

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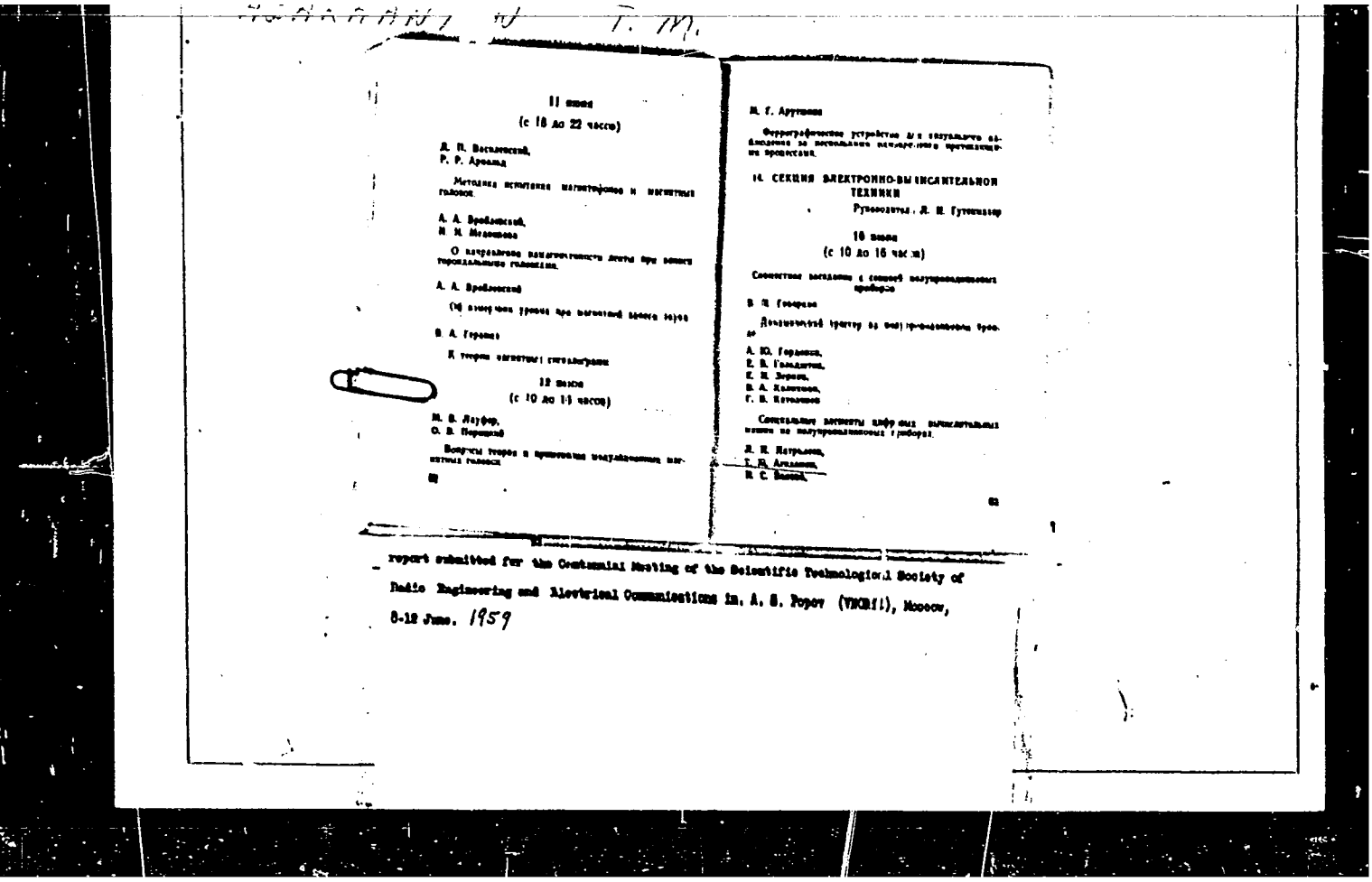

11 июня
(с 18 до 22 часов)

Л. П. Василевский,
Р. Р. Арнольд

Методика испытания магнитофонов и магнитных головок.

А. А. Вроблевский,
Н. Н. Медвешова

О направлении намагничиваемости ленты при записи тороидальными головками.

А. А. Вроблевский

Об измерении уровня при магнитной записи звука

В. А. Герасимов

К теории магнитных сигнализаторов

12 июня
(с 10 до 14 часов)

М. В. Лауфер,
О. В. Перицкий

Вопросы теории и применения модулированных магнитных головок

М. Г. Арутюнян

Феррографическое устройство для визуального наблюдения за несколькими одновременно протекающими процессами.

14. СЕКЦИЯ ЭЛЕКТРОННО-ВЫЧИСЛИТЕЛЬНОЙ ТЕХНИКИ

Руководитель Л. Н. Гутенмахер

16 июня
(с 10 до 16 часов)

Совместное заседание с секцией полупроводниковых приборов

В. М. Говорков

Динамический трактор на полупроводниковом бронзе

А. Ю. Гордонов,
Е. В. Гольдштейн,
Е. Н. Зернов,
В. А. Калинкин,
Г. В. Котельников

Специальные элементы цифровых вычислительных машин на полупроводниковых приборах.

Л. Н. Натрылов,
Т. Н. Агеланов,
Н. С. Волков,

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

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FILLIPOV, A.G.

9(4) 24(6) p 4

PHASE I BOOK EXPLOITATION SOV/1765

Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi

Poluprovodnikovaya elektronika (Semiconductor Electronics) Moscow, Gosenergoizdat, 1959. 222 p. 13,950 copies printed.

Ed.: V.I. Shamshur; Tech. Ed.: K.P. Voronin.

PURPOSE: The book is intended for engineering and technical personnel working with semiconductor devices.

COVERAGE: The book is a collection of lectures delivered at the All-Union Seminar on Semiconductor Electronics in March 1957. The seminar was organized by the Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov. The authors of the lectures have attempted to systematize the basic information on the operation of semiconductor devices. The articles describe the operation and characteristics of crystal diodes and transistors and discuss their application in various low-frequency, high-frequency and pulse circuits. No personalities are mentioned. References appear at the end of each article.

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A.A. Kulikovskiy. High-frequency Transistor Amplifiers 151

The author discusses equivalent circuits of high-frequency transistor amplifiers and describes methods of calculating their parameters. He describes the operation of interstage resonant circuits and examines the effect of feedback in transistor circuits. He also discusses transistor stability, stabilizing networks for the internal feedback in transistor circuits and the noise factor. There are 15 references of which 3 are Soviet, 1 German and 11 English.

T.M. Agakhanyan. Transient and Frequency-Phase Characteristics of a Junction-type Triode Transistor 173

The author discusses transient, frequency and phase characteristics of junction-type triode transistors. He also derives expressions for transfer functions for various types of transistor connections and describes the equivalent circuit for high

Card 5/7

frequencies for a junction-type triode transistor. There are 8 references of which 2 are Soviet (including 1 translation), and 6 English.

T.M. Agakhanyan. Triode Transistor Video Amplifiers 187

The author discusses linear and nonlinear distortions in transistor video amplifiers and describes circuits with complex feedback and current distributing networks. A brief discussion of multistage amplifiers is also presented. There are 2 references, both Soviet.

B.N. Kononov. Trigger and Relaxation Circuits Using Junction-type Triode Transistors 197

The author describes the operation and characteristics of symmetrical triggers and multivibrators using junction-type transistors. He also discusses their stability and derives expressions for calculating transistor circuit performance. There are 4 references of which 3 are Soviet and 1 English.

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9(4) p.5 PHASE I BOOK EXPLOITATION SOV/1778

Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Moskovskoye pravleniye

Tranzistornaya elektronika v priborostroyenii; sbornik trudov konferentsii (Transistor Electronics in the Instrument-making Industry; Collection of Conference Transactions) Moscow, Oborongiz, 1959. 289 p. 1,400 copies printed.

Ed.: N.I. Chistyakov, Doctor of Technical Sciences, Professor; Ed. of Publishing House: S.D. Khametova; Tech Ed.: V.P. Rozhin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: The book is intended for scientific and engineering personnel of the instrument-making and radio industries engaged in the development of electronic and radio equipment.

COVERAGE: The authors of this collection of articles discuss the theory, principle of operation, calculation and application of electronic circuits using transistors. They also describe transistor application in measuring circuits, computers, radio and automatic and remote control circuits. The book is based on transactions of the Scientific and Engineering Conference organized by NTO in Moscow in December 1956. The conference discussed 54 papers on

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of a capacitive load and temperature on transistor response. There are 3 references of which 2 are Soviet (including 1 translation), and 1 English.

V.T. Dimitriyev, Candidate of Technical Sciences. Transistor Summing Amplifier 95

The author analyzes single - and multistage feedback transistor amplifier circuits and discusses their frequency and phase characteristics. He also describes the methods and circuits used in stabilizing transistor operation and discusses circuits for measuring transistor gain. There are 9 Soviet references (including 6 translations).

T.M. Agakhanyan, Engineer. Approximate Determination of the Transfer Function and Transistor Response to an Abritrary Pulse 114

The author determines the transfer function for

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a transistor circuit by means of the Maclaurin series and presents a theoretical analysis of transistor response to an applied current and voltage pulse of an arbitrary shape. There are 14 references of which 10 are Soviet (including 1 translation), and 4 English.

V.P. Nechayev, Engineer. Thermal Stabilization of Pulse Circuits Using Junction-type Transistors 127
The author describes the operating principle of monostable multivibrators using junction-type transistors and discusses the factors causing instability. He also discusses the effect of temperature on pulse width and describes temperature stabilization by means of diodes and thermistors. There are 3 references of which 2 are Soviet and 1 English.

G.G. Fridolin, Engineer. Transistor Oscillators and Their Application 135
The author briefly describes the operation and application of the following transistor circuits:

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S/142/60/000/01/009/022
E140/E463

9.4310

AUTHOR: Agakhanyan, T.M.

TITLE: Large-Signal Transistor Operation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, Nr 1, pp 87-93 (USSR)

ABSTRACT: Previous analysis of large-signal transistor operation considered diffusion transistors in which electric field is practically absent from the base region. The present analysis concerns drift transistors in which an electric field exists in the base region because of the presence of an impurity concentration gradient. The analysis is based on the dependence between the minority carrier charge density and the currents flowing in the emitter and collector junctions. For the present case, it is necessary to take into account the coordinates of the points. In addition to the well-known three operating regions for a transistor - cutoff, active and saturated - the author distinguished a fourth region - the inverse active region characterized by reverse potential on the emitter junction and forward potential on the collector junction. This is one of the

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Large-Signal Transistor Operation

characteristic regions for drift transistor pulse circuits. The calculations are carried out for the plan-parallel approximation. Due to the dependence on geometry of the effective lifetime and carrier acceleration, the equation of continuity is non-linear with coefficients which are functions of coordinate. In carrying out the solution, the further approximation is made that these coefficients are constant quantities. Experimentally, it is found that if the storage constant, mean diffusion time and drift time are measured experimentally (hence average values), the agreement between calculated and experimental transistor characteristics is satisfactory. The equation of continuity is solved using Fourier transforms to obtain the transfer factors, for an ideal current drop. Then using the Duhamel integral, the transistor operation is determined for arbitrary junction currents. The common base, common emitter and common collector cases are analysed and an equivalent transistor circuit is given.

Card 2/3 The results may be also employed for diffusion transistors

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E140/E463

Large-Signal Transistor Operation

considered as a particular case of a drift transistor when the electric field in the base vanishes. There are 2 figures and 8 references, 5 of which are Soviet, 2 English and 1 German.

SUBMITTED: July 15, 1959

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S/142/60/003/002/016/022
E192/E382

AUTHOR: Agakhanyan, T.M.

TITLE: Use of the Transistor Saturation for Clamping the Signal Level

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, Vol. 3, No. 2, pp 283 - 284

TEXT: When transmitting a train of rectangular pulses the signal level can be conveniently clamped by employing a transistor amplifier operating under saturation conditions. The diagram of such a device is shown in Fig. 1 and the oscillograms illustrating its operation are given in Fig. 2. The amplifier is normally cut off and the pulses applied to its input should have an amplitude sufficient to produce the saturation conditions. However, in order to avoid the lengthening of the output pulses due to saturation, the emitter circuit contains an RC element. When the pulses are applied, the amplifier is opened and the collector potential is increased. When the transistor is saturated, the potential is stabilised at a level defined by the base potential and the potential of the collector relative to the base. In this manner, the signal level at the collector is

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E192/E382

Use of the Transistor Saturation for Clamping the Signal Level

fixed. The same is true of the signals obtained at the output winding of the transform[illegible]. There are 2 figures and 2 Soviet references.

ASSOCIATION: Kafedra elektroniki Moskovskogo inzhenerno-fizicheskogo instituta (Chair of Electronics of Moscow Engineering-Physics Institute)

SUBMITTED: July 15, 1959

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

Behavior of a transistor at large signals. Izv.vys.ucheb.zav.; radiotekh. 3 no.1:87-93 Ja-F '60. (MIRA 13:8)

1. Rekomendovana kafedroy elektroniki Moskovskogo inzhenerno-fizicheskogo instituta.
(Transistors)

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S/109/60/005/009/028/030/XX
E192/E382

AUTHOR: Agakhanyan, T.M.

TITLE: Transient Characteristics of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol. 5, No. 9, pp. 1531 - 1538

ABSTRACT: It is assumed that the transistor can be regarded as a plane parallel system so that the concentration of the nonequilibrium carriers m can be expressed by:

$$\frac{\partial m}{\partial t} = -\frac{m}{\tau_H} - \frac{1}{\tau_E}\frac{\partial m}{\partial \xi} + \frac{1}{2\tau_D}\frac{\partial^2 m}{\partial \xi^2} \qquad (1)$$

and the current density is given by:

$$I = wq\left[\frac{m}{\tau_E} - \frac{1}{2\tau_D}\frac{\partial m}{\partial \xi}\right] \qquad (2)$$

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Transient Characteristics of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

In these equations $\xi = x/w$ where w is the base width and x is the coordinate along the base; τ_H, τ_D and τ_E are the storage time constant, the average diffusion time and the drift time of the transistor, respectively. The transistor can be represented by a type-T equivalent circuit. This is shown in Fig. 1a, where r_b is the ohmic resistance of the base, C_{je} is the emitter junction capacitance, C_{jc} is the collector junction capacitance, while the remaining elements (α, Z_e, Z_c and μ_{ec}) represent the characteristic parameters of the transistor proper. The transient characteristics of the emitter current transfer function α and the input impedance Z_e of the transistor can be determined by assuming that the transistor is short-circuited at the output and that a current step is applied to its input. On the other hand, the

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Transient Characteristics of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

transients of the collector impedance Z_K and the diffusion feedback coefficient μ_{3K} can be determined by considering the operation of the transistor when a unit voltage step is applied to the collector, while the emitter is open-circuited. The transients of the circuit elements of Fig. 1 were obtained by solving Eq. (1) under the assumption that the coefficients of this equation are constant quantities. Thus, it was assumed that τ_H, τ_E and τ_D were constants (average quantities). The emitter current transfer function $\alpha(t)$ is expressed by Eq. (4), where α is the magnitude of the transfer function at low frequencies, γ is the injection coefficient for the emitter and $\eta = \tau_D/\tau_E$. The transient characteristics evaluated from this equation for various values of η are shown in Fig. 2 ($\eta = 0$ represents the characteristic of a diffusion transistor). The transient characteristic $\alpha(t)$ can be approximated by Eqs. (5), where

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Transient Characteristics of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

τ_α is defined by Eq. (6). On the basis of Eq. (5) the frequency-phase characteristic of α can be approximately expressed by Eq. (7), where ω_α is the cut-off frequency for α. The transient function for the input impedance is expressed by Eq. (8), where r_j is the input resistance of the transistor. Fig. 3 shows the transients of the input impedance for various values of η. In practice, this transient impedance can be approximated by the simple function expressed by Eq. (9). The transient function of the collector impedance is given by Eq. (11), where r_K is defined by Eq. (12). Eq. (11) can be approximated fairly accurately by the simplified formula given by Eq. (13). The transistor can be represented by another type-T equivalent circuit (see the second circuit in Fig. 1), which sometimes permits simplification of the calculations. In this case, the internal feedback is represented by the internal impedance Z_f.

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Transient Characteristic of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

of the base. The transient function of the base impedance is expressed by Eq. (17), while the transient function of the emitter impedance is given by Eq. (18). In practice, the diffusion base impedance can be approximated by Eq. (21). Two common-emitter circuits of the transistor are also considered. These are illustrated in Fig. 4. The main parameter in these circuits is the base current transfer function β, which is defined by Eq. (24). The transient of the base current transfer function is expressed by Eq. (27), where β is the magnitude of the current transfer coefficient at low frequencies. On the basis of the analysis it is concluded that the high-frequency characterisitcs of a drift transistor are primarily determined by τ_D, τ_E and τ_H. The first two of these quantities characterise the motion of the carriers along the base, while the third one represents the storage of the charges in the base. While employing the equivalent circuits of a transistor, it is

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Transient Characteristic of the Elements of the Type-T Equivalent Circuit of a Drift Transistor

convenient to employ a time constant τ_α or the cut-off frequency ω_α and the phase shift coefficient $\varkappa$ instead of τ_D and τ_E. The quantities ω_α and $\varkappa$ characterise the motion of the carrier along the base and can be determined from the frequency-phase characteristic $\alpha(j\omega)$. As regards τ_H, its average value can be determined from the amplitude-frequency or transient characteristic of the base current transfer function β. There are 4 figures and 8 references: 3 English, 1 German and 4 Soviet.

SUBMITTED: November 18, 1959

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

S/106/62/017/004/006/010
D288/D301

AUTHOR: Agakhanyan, T.M., Member of the Society (see Association)

TITLE: Temperature stabilization of transistor amplifiers

PERIODICAL: Radiotekhnika, v. 17, no. 4, 1962, 38 - 43

TEXT: Three causes of temperature effects on transistor parameters are described: Leakage currents due to surface effects and not changing drastically with t, saturation currents of junctions, rising by 10 % for Ge and 12 - 14 % for Si @ 1°C change, and potential displacement in the emitter diode, which is proportional to kT/q and to saturation current I_{eo}. For 1°C rise it usually amounts to 1.7 - 2 mV. Resulting from these variables, current gain $\beta = \frac{I_c - I_{co}}{I_b + I_{co}}$ also changes with t. Stabilization methods by means of negative feedback are treated next, formulas relating gain and stability factor being quoted for currents, voltage- and combined feedback arrangements. Good experimental agreement with measurements on

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Temperature stabilization of ...

Ge and Si transistors is claimed. Conclusions drawn are: 1) The generally superior combined feedback can create problems of stability margins and poor transient response due to increase of input impedance. 2) Decreasing resistance values for the base bias potentiometer can lead to potential changes in the emitter junction, particularly with transformer inputs. 3) With low current (≤ 3 mA) of Ge transistors main changes are caused by I_{CO}, β having more importance for I = 3 ... 5 mA. 4) In Si transistors over the whole temperature range changes are due mostly to β and U_e (emitter junction potential shift). 5) Hence, where β and U_e change in a given temperature range, the generally assumed stability superiority of Si over Ge can be of less than one order. There are 5 figures. The English-language publication reads as follows: J.H. Early, Proc. IRE., v. 40, no. 11, 1952.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi imeni A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications, imeni A.S. Popov) [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: May 23, 1961

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AGAKHANYAN, T.M.

Increase in the Q-factor of a transistor pulse amplifier stage. Radiotekhnika 17 no.6:32-37 Je '62. (MIRA 15:5)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi.

(Transistor amplifiers)

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L 12468-63 BDS ESD-3 S/108/63/018/004/007/008

51

AUTHORS: Agakhanyan, T.M., Fishman, L.L., Active Members of the Society

TITLE: Investigation of a transistor blocking oscillator

PERIODICAL: Radiotekhnika, v. 18, no. 4, 1963, 50-62

TEXT: From past work it is known that there are a series of gaps in the theory of the blocking oscillator. This investigation was made to consider the lacking factors. Selection of the optimum value for the transformation ratio is examined because an earlier published formula for its determination was obtained without calculation of a series of important factors. These are considered. Experimental and calculated values correlate very well. The deviation between them did not exceed ± 25%. The influence of the modulation of volume resistance and the variation of the temperature (-50 to + 60°) were studied. Experimental and calculated value are compared. Methods for measuring the average parameters of the transistor are shown. A series of calculations are presented for the blocking oscillator. The analysis of the work for the blocking oscillator is made on the basis of presenting the transitor as a linear element with parameters which are averaged in the range of the examined region.

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AGAKHANYAN, T.M.

[Abstract of lectures on the section "Electronic switches"] Konspekt lektsii po razdelu "Elektronnye kliuchi." Moskva, Mosk. inzhenerno-fizicheskii in-t, 1964. 66 p.
(MIRA 18:7)

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ACCESSION NR: AP4009989 S/0109/64/009/001/0155/0162

AUTHOR: Agakhanyan, T. M.

TITLE: Analysis of a drift transistor with an allowance for variation in the mobility and life of carriers

SOURCE: Radiotekhnika i elektronika, v. 9, no. 1, 1964, 155-162

TOPIC TAGS: transistor, drift transistor, drift transistor theory, drift transistor carrier mobility, drift transistor carrier life, transistor charge method

ABSTRACT: A theoretical investigation of a planar model of a single-variate transistor at a low injection level is presented. The effect of an impurity concentration on the transistor parameters is considered; approximate formulas are developed. Three time constants τ, $\tau_{\beta\alpha}$, and $\tau_{\beta 1}$ characterize recombination in a drift transistor and represent the average values of life in the base

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ACCESSION NR: AP4009989

region. The first τ refers to the process of accumulation or depletion of minor carriers due to their recombination in a state of dynamic equilibrium; $\tau_{\beta r}$ and $\tau_{\beta i}$ refer to the time of building the charge of minor carriers traveling from the emitter to the collector and backward, respectively. It is found that $\tau_{\beta r} < \tau < \tau_{\beta i}$; life in the drift-transistor base is highest at the collector junction where the impurity concentration is the lowest; the time constant τ in a drift transistor is of the same order as that in a diffusion transistor. It is also found that the conventional "charge method" of analysis is inapplicable to the case of recombination processes in transistors with an inhomogeneous base. Orig. art. has: 2 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 17Nov62 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: GE NO REF SOV: 003 OTHER: 005

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AGAKHANYAN, T.M.

Design of a microelement with distributed RC links. Radiotekhnika 18 no.10:67-72 O '63. (MIRA 16:12)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi im. A.S.Popova.

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ACCESSION NR: AT4040784 S/2657/64/000/011/0214/0229

AUTHOR: Agakhanyan, T. M.

TITLE: Measuring the static parameters of a semiconductor triode

SOURCE: Poluprovodnikovy*ye pribory* i ikh primeneniye; sbornik statey, no. 11, 1964, 214-229

TOPIC TAGS: semiconductor device, triode, semiconductor triode, heat current, leak current, temperature potential, volume resistivity

ABSTRACT: The author notes that the work of a semiconductor triode in the static mode is characterized by the following parameters: 1. the heat currents of the collector I_{tc} and emitter I_{te} junctions; 2. the leak currents of the collector I_{lc} and emitter I_{le} junction; 3. the temperature potential $T = \frac{kT}{q}$ and the correction factor m which makes allowance for the effect of carrier recombination in the region of the p - n junction on the magnitude of the current; 4. the volume resistivity of the base r'_b, the collector r'_c and the emitter r'_e; 5. the current transmission factors from the base to the collector B_N and to the emitter B_I, or the current transmission factor of the emitter α_N and the

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ACCESSION NR: AT4040784

collector α_1. The present article deals with methods of measuring the first four parameter groups. The results of measurements of these parameters for a number of Soviet-produced triodes are presented and discussed. The author concludes that the ohmic resistance of the collector and emitter is low (voltage drop of 10-70 mv); the scatter of resistance values is much larger in drifting than in driftless triodes; and the emitter resistance is 1.5-3 times the collector resistance. Orig. art. has: 5 figures, 10 formulas and 17 tables.

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: EC

NO REF SOV: 002

ENCL: 00

OTHER: 004

Card 2/2

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

Characteristics of a p-n step junction at direct bias. Radiotekh. i elektron. 10 no.12:2212-2220 D '65.

1. Submitted April 6, 1964. (MIRA 19:1)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100510001-3

AGAKHANYAN, T.M.

Dependence of the current of recombination-generation and the injection factor of the p-n junction on the direct bias potential. Radiotekh. i elektron. 11 no. 2:291-297 F '66
(MIRA 19:2)

1. Submitted October 5, 1964.

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