S/147/61/000/001/009/016
E194/E184

Influence of the Radial Gap on ...

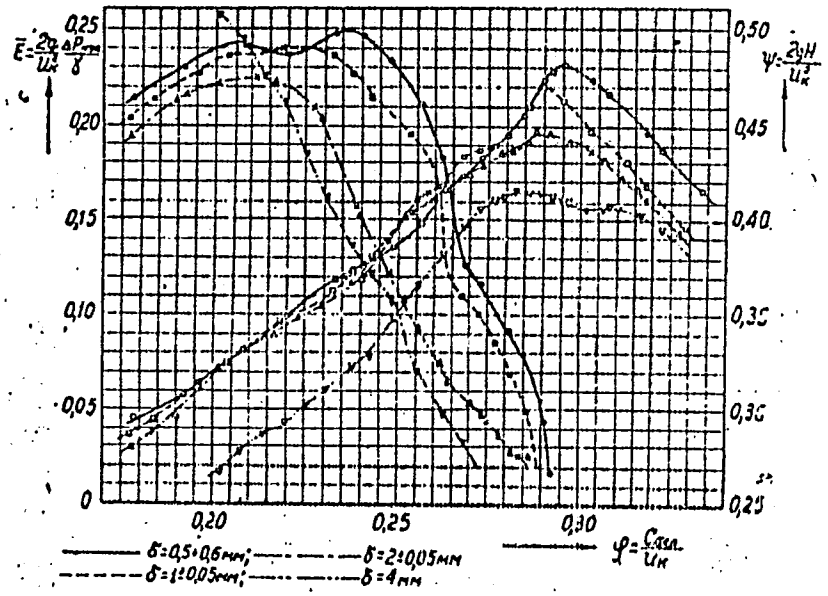

Fig.1

Card 5/7

20600

S/147/61/000/001/009/016
E194/E184

Influence of the Radial Gap on ...

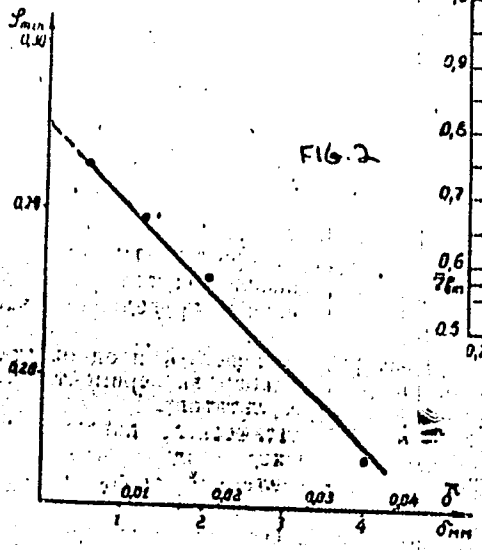

Fig. 2

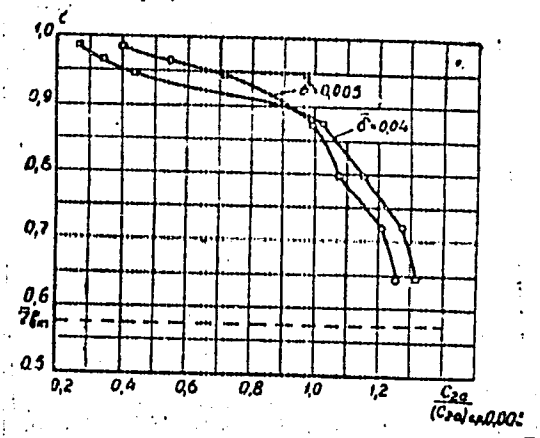

Fig. 3

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20600
S/147/61/000/001/009/016
E194/E184

Influence of the Radial Gap on ...

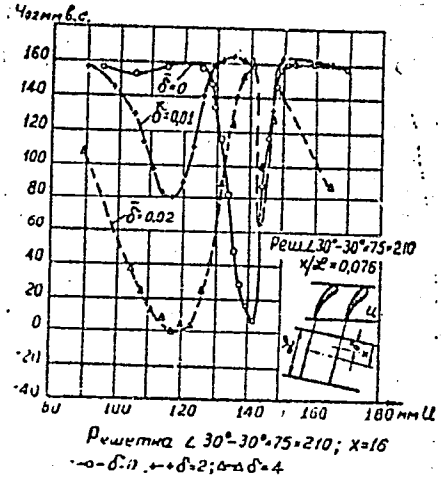
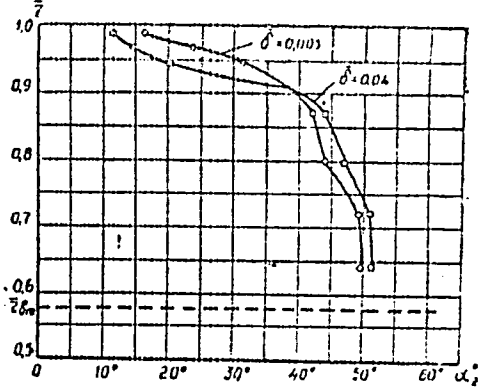


Fig. 4



Фиг. 5. Изменение направления абсолютной скорости на выходе из рабочего колеса компрессора для различных зазоров.

Fig. 5

SUBMITTED: June 1, 1960

Card 7/7

34657

S/096/62/000/002/001/008
E194/E435

26.2120

AUTHORS: Yershov, V.N., Candidate of Technical Sciences, Stepanov, Yu.V., Candidate of Technical Sciences, Pavlenko, G.V., Engineer, Brekhov, A.F., Engineer

TITLE: Extending the region of stable operation of an axial compressor stage

PERIODICAL: Teploenergetika, no.2, 1962, 41-44

TEXT: A typical form of instability in axial compressors operating at low speeds is the formation of rotating zones of breakaway of fluid from the blades. These zones of breakaway usually begin only at the blade roots or tips but increase as the amount of throttling is increased and, at very low rates of flow, may cover the entire blade length. In multi-stage axial compressors running below the rated speed, critical angles of incidence occur mainly on the first stages or on stages immediately beyond air bleeding points. Total breakaway may occur on a few stages but may sometimes occur on all with great loss of efficiency. The trouble can be overcome by increasing the flow through the early stages but this is wasteful. Attention to blade design cannot

Card 1/3

Extending the region of stable ...

give much improvement. Theoretical investigations of the stability of an axially symmetrical flow indicate that when stability is lost, flow may take one of two forms: with the formation of rotating zones of breakaway; or with an axially symmetrical annular zone of breakaway, or annular swirl, associated with the occurrence of a counter flow. The relative stabilities of these two kinds of flow vary according to circumstances but, by promoting annular swirl, it is in principle possible to prevent completely the formation of rotating zones of breakaway. Tests were made with compressor stages in which various measures had been taken to promote annular swirl, namely: cutting annular slots in the casing just ahead of and just beyond the tips of the blades; installing an annular step or ridge in the casing just in front of the ring of blades; also, blowing air into an annular slot located just ahead of the blades. All of these measures were found to extend the zone of stable operation; however, the most convenient and structurally simple is that of blowing air through an annular slot. With this stage, tested when air was blown in at a head two or three times greater than that of the stage, the boundary of stable

operation was displaced by 25 to 30% in the direction of lower outputs and the maximum energy of pulsation in the zone of breakaway was reduced by 40%. The amount of air blown in was about 2.5% of the minimum flow necessary to ensure stable operation. Additional tests have shown that the effect of blowing in air in this way differs for the different stages. There are 6 figures and 3 Soviet-bloc references.

ASSOCIATION: Khar'kovskiy aviatsionnyy institut
(Khar'kov Aviation Institute)

4

S/124/62/000/010/009/015
D234/D308

AUTHOR: Yershov, V. N.

TITLE: Problem of minimum dissipation of mechanical energy in a stream of viscous liquid

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 10, 1962, 82, abstract 10B508 (Tr. Khar'kovsk. aviats. in-ta, 1960, no. 20, 13-18)

TEXT: Helmholtz' theorem on minimum dissipation in a non-inertial laminar flow is extended to a turbulent flow, assuming a linear relation between the tensor of turbulent stresses and that of deformation rates of averaged flow. The proof is given formally for the usual equations of laminar flow in which the viscosity coefficient is variable. It is pointed out that, apart from non-inertial flows, purely solenoidal and potential streams also obey the principle of minimum dissipation. [Abstracter's note: Complete translation.]

Card 1/1

YERSHOV, V.N., inzh.

Accuracy in the rolling of I-beams and channels on existing rolling mills. Stal' 21 no.12 [illegible]1105 D '61. (MIRA 14:12)

1. Kuznetskiy metallurgicheskiy kombinat.
(Rolling(Metalwork))
(Beams and girders)

YERSHOV, V.N.

Variation in wall thickness of double-T beams and channels during rolling. Izv.vys.ucheb.zav.; chern.met. 5 no.4:54-60 '62.
(MIRA 15:5)

1. Kuznetskiy metallurgicheskiy kombinat.
(Rolling (Metalwork)) (Thickness measurement)

YERSHOV, V.N., kand.tekhn.nauk; YERSHOVA, N.M., kand.tekhn.nauk

Electric thermo-moisture meter. Biul.tekh.-ekon.inform.Gos. nauch.-issl.inst.nauch.i tekh.inform. 16 no.8:39-40 '63. (MIRA 16:10)

L 01807-66 EPA/EWT(1)/EWP(f)/T-2 WW

ACCESSION NR: AP5020638 UR/0147/65/000/003/0071/0075
621.515

AUTHOR: Belan, N. V.; Yershov, V. N.

TITLE: Plotting the left branch of a pressure-head curve of an axial compressor rotor

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 3, 1965, 71-75

TOPIC TAGS: axial compressor, compressor stage, compressor design, compressor rotor, compressor stall

ABSTRACT: The instability of an axial compressor in the form of a rotating stall is determined by the stage characteristics, particularly the dependence of the pressure head on the flow rate. The rotating stall usually occurs at a flow rate below that which corresponds to the maximal pressure head, i.e., under the conditions described by the left branch of the compressor characteristic curve, which is of interest in calculating variable operating conditions of multi-stage compressors. The authors present a method for obtaining the left branch of the curve for a compressor rotor with a relatively large

Card 1/2

L 01807-66

ACCESSION NR: AP5020638

hub diameter. The method is based on measuring the pressure-head variation under rotating stall conditions. It can also be applied to compressor stages with smaller hub diameters under conditions of total stall. Orig. art. has: 7 figures and 6 formulas. [AC]

ASSOCIATON: none

SUBMITTED: 14Dec64 ENCL: 00 SUB CODE: PR, ME

NO REF SOV: 005 OTHER: 000 ATD PRESS: 4085

2/2

L 10268-66 EWT(l)/EWP(m)/FCS(k)/ETC(m) WW

ACC NR: AP6003191 SOURCE CODE: UR/0181/65/000/004/0118/0124

AUTHOR: Yershov, V. N. 55

ORG: none

38
B

TITLE: Vortex theory of rotating stall

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1965, 118-124

TOPIC TAGS: vortex theory, rotating stall, diffusor, blade cascade, flow rate, flow velocity

ABSTRACT: Experiments show that during transition to large angles of attack in an annular vaned diffusor, stall zones may be formed which move with a certain angular velocity relative to the diffusor. There are two types of possible stalls in a single-vane cascade: a weak stall, characterized by the formation of stall zones whose number increases as the flow rate decreases, and a strong stall, characterized by a wide zone with an intense counter-flow inside the zone. Despite the great attention devoted to this problem by investigators, a detailed solution reflecting such aspects as zone displacement velocity, flow parameters inside the zone, and the number of zones is lacking. Therefore, in this article, an attempt is made to analytically determine the form and displacement velocity of the stall zones in a single-profile cascade. The obtained results are shown in Fig. 1, where G is the flow rate; $\bar{u}$, zone displacement velocity; J, mechanical energy of the flow; and Ca is the axial component of the flow velocity within the stall zone. In annular cascades with a

Card 1/2 UDC: 621.515

L 10268-66

ACC NR: AP6003191

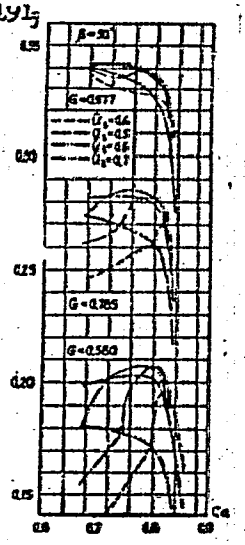


Fig. 1. Cascade flow characteristics.

small relative hub diameter, the formation of a narrow zone of strong stall is found to be unlikely. The narrow zone of a weak stall corresponds to a maximal pressure head regime. Some recommendations for selecting stable operating regimes are given. Orig. art. has: 6 figures and 10 formulas. [AS]

SUB CODE: 20/ SUBM DATE: 28Jan65/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 4176

Card 2/2

L 16119-66 EWT(1)/EWT(m) JD SOURCE CODE: UR/0120/65/000/001/0037/0044

ACC NR: AP6004122

AUTHOR: Yershov, V. N.

ORG: Khar'kovskiy aviatsionnyy institut (Khar'kovskiy aviatsionnyy institut)

TITLE: Conditions of maximum mechanical energy flow and determination of observed flow patterns in axial turbomachinery

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 1, 1965, 37-44

TOPIC TAGS: turbomachinery, flow field, flow separation, axial flow turbine, variational method

ABSTRACT: A qualitative discussion on the use of the variational principle of maximum mechanical energy flow in turbomachinery calculations is presented. The author claims that most of the solutions of two-dimensional flow fields do not consider the uniqueness of the solution. Thus there is no guarantee that the calculated fields will not be different for different initial assumptions or for different methods of numerical integration of the governing equations. The variational relation in the form of the principle of maximum mechanical energy flow at

Card 1/3

the critical section can be used for that purpose (V. N. Yeremov. Variatsionnyy printsip maksimuma potoka mekhanicheskoy energii. Izvestiya vysshikh uchebnykh zavedeniy. Aviatsionnaya tekhnika, No. 1, 1959). The principle requires that the function

$$I = \int \rho H C_x \, df$$

be at a maximum for a given flow

$$G = \int \rho H C_x \, df,$$

(normal nomenclature). The variational principle can also be used to determine the flow field in areas of flow separation, as demonstrated by the author (Neustoychivost' potoka v kompressorakh. Izvestiya vysshikh uchebnykh zavedeniy. Aviatsionnaya tekhnika, No. 1, 1960). A brief discussion of the case shown in Fig. 1 is presented.

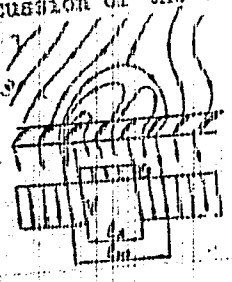


Fig. 1. Flow in flow separation region.

L 16119-66
ACC NR: AP6004122

The variational criterion can also be applied in finding the left branch of axial compressor stage characteristics. A short discussion of the method is presented, and results are compared with some experimental data. The variational criterion is claimed as a powerful tool which should find wider application. Orig. art. has: 9 figures and 4 formulas.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 007

Card 3/3 LC

L 07585-67 EWT(1)/EWP(m) RM

ACC NR: AP6030425 SOURCE CODE: UR/0420/66/000/006/0014/0017

3/

AUTHOR: Yershov, V. N.; Polyakov, A. Ye.

ORG: None

TITLE: Effect which nonuniformity in the oncoming flow has on losses in cascades with blades which have a low aspect ratio

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 6, 1966, 14-17

TOPIC TAGS: turbine cascade, compressor blade, secondary flow, nonuniform flow

ABSTRACT: Experimental data are given on compressor cascades with various degrees of nonuniformity in the oncoming flow. Three cascades were tested in all: two modifications (λ=0.5 and λ=1) with a chord b=50 mm and one modification (λ=0.5) with a chord of 100 mm. The leading edges of the blades were rounded and the trailing edges were beveled. The curvature of the profile was 45° and all cascades were made with the blades set at an angle of 52°30' and a relative spacing b/t=2. Flat cut-off plates were used for changing the aspect ratio and for eliminating the boundary layer on the walls of the casing. Nonuniformity in the field at the input resulted in thin strands close to the leading edges of the cut-off plates in a direction normal to the velocity of the oncoming flow. Variation in the number of strands and the distance between them was determined by the shape of the velocity profile. The results show

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L 07585-67

ACC NR: AP6030425

an increase in losses with nonuniformity in the oncoming flow. The region of propagation of secondary flows is practically independent of the degree of nonuniformity in the oncoming flow although the intensity of secondary flows increases with nonuniformity resulting in higher losses. The experimental data indicate that ordinary theoretical methods should not be used for determining the characteristics of blades with a low aspect ratio. Orig. art. has: 5 figures.

SUB CODE: 13/ SUBM DATE: None

Card 2/2

L 08969-67

ACC NR: AP6029789 (A) SOURCE CODE: UR/0119/66/000/008/0010/0011

AUTHOR: Yershov, V. N. (Candidate of technical sciences, Docent); Yershova, N. M. (Candidate of technical sciences, Docent) 38

ORG: none

TITLE: Hygrometers for disperse materials based on the Peltier effect 10

SOURCE: Priborostroyeniye, no. 8, 1966, 10-11

TOPIC TAGS: hygrometer, moisture measurement, thermocouple, direct current, emf.

ABSTRACT: Conventional instruments for measuring moisture content in capillary-porous materials are often inapplicable because of the effect of the electrolyte involved on their readings. Hence, a new hygrometer is proposed which consists of a number (20—100 or more) of thermocouples connected in series through which a direct current is passed; the time rate of rise (or fall) of

Card 1/2 UDC: 621.317.39:533.275

thermo-emf is measured. As the thermocouples are brought in contact with the test material, the thermo-emf rise (or fall) rate will represent moisture content in the material if the thermocouples were previously calibrated with the same material. The thermocouples are connected to a d-c source for 5—10 sec by a relay and then are switched over to an emf-measuring instrument; the emf rise (or fall) curve is assumed to be linear. Two sets of thermocouples connected in a differential circuit permit determining both the value and direction of deviation of the moisture content from a set value. Orig. art. has: 3 figures.

SUB CODE: 13, 09 / SUBM DATE: none / ORIG REF: 003

ACC NR: AP6031065 SOURCE CODE: UR/0143/66/000/008/0117/0120

AUTHOR: Anyutin, A. N. (Engineer); Griga, A. D. (Engineer); Kovalevskiy, V. V. (Engineer); Yershov, V. N. (Docent)

ORG: Kharkov Aviation Institute (Khar'kovskiy aviatsionnyy institut)

TITLE: The effect of a decrease in axial velocity in a compressor stage on its efficiency

SOURCE: IVUZ. Energetika, no. 8, 1966, 117-120

TOPIC TAGS: axial compressor, compressor efficiency, compressor stage, compressor stage model, axial flow compressor, flow velocity

ABSTRACT: Due to the lack of data on the subject, an experimental investigation was made of the effect of a reduction of the axial velocity in the flow passage of an axial-flow compressor on its efficiency. The basic tests were performed on a K-50-1 stage model at the TsKTI. The axial-flow velocity was changed by varying the shape of the flow-passage cross section so that its ratios of inlet-to-outlet cross-section areas were $F_2/F_1 = 0.92$, in 1.00, and 1.10. The angles of the rotor-blade setting (at the middle of their heights) were 27°40', 32°40', and 37°40'; this permitted the testing of nine versions of the model stage. The angles of the inlet and intermediate guide vanes were 15°30' and 32°30' and were not changed during the investigation. The circumferential velocity of the blade tips was u = 200 m/sec at a Reynolds number

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Card 1/3

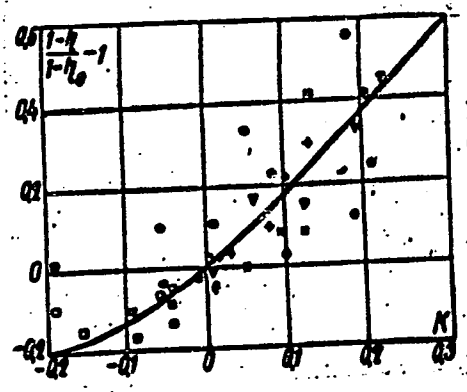

Fig. 1. The dependence of the efficiency on K. $\sqrt{\delta}$ for u = 270 m/sec

Re $\approx$ 3.7 x 10^5. For most of the stage versions the tests were repeated at u = 270 m/sec. The temperatures were measured at the inlet and outlet of the stage and the static pressures, at the hub and the casing. The velocity distribution in the radial direction of the flow passage in front of and behind the rotor was also determined. For the each version of the stage the characteristics were plotted and the regime of the maximum efficiency η was determined. For this regime the diffusivity factor $\Phi = (W_{max} - W_2)/W_1$ was determined; here, $W_1(W_2)$ are the relative velocities at the inlet (outlet) of the rotor cascade. An approximate formula for determining the efficiency of a stage of an axial-flow compressor with a rough approximation of the air compressibility is proposed: $(1-\eta)/(1-\eta_0) = 1 + K$, where η_0 is the efficiency

ACC NR: AP6031065

of the stage when $\Delta\phi = \phi_1 - \phi_2 = 0$ and K is a parameter depending on the blade geometry and flow characteristics. The test results (with added characteristics of six other compressor stages) are plotted in a diagram in which the solid curve corresponds to the equation $(1-\eta)/1-\eta_0) = 1 + 1.45K + 2.16K^2$ (see Fig. 1). This equation is recommended for estimating the effect of a decrease in the axial flow velocity on the efficiency of an axial compressor. Orig. art. has: 3 figures and 1 formula. [WA-76]

SUB CODE: 13,20/ SUBM DATE: 23Jul65/ ORIG REF: 003/

Card 3/3

ACC NR: AP6031065 SOURCE CODE: UR/0143/66/000/008/0117/0120

AUTHOR: Anyutin, A. N. (Engineer); Griga, A. D. (Engineer); Kovalevskiy, V. V. (Engineer); Yershov, V. N. (Docent)

ORG: Kharkov Aviation Institute (Khar'kovskiy aviatsionnyy institut)

TITLE: The effect of a decrease in axial velocity in a compressor stage on its efficiency

SOURCE: IVUZ. Energetika, no. 8, 1966, 117-120

TOPIC TAGS: axial compressor, compressor efficiency, compressor stage, compressor stage model, axial flow compressor, flow velocity

ABSTRACT: Due to the lack of data on the subject, an experimental investigation was made of the effect of a reduction of the axial velocity in the flow passage of an axial-flow compressor on its efficiency. The basic tests were performed on a K-50-1 stage model at the TsKTI. The axial-flow velocity was changed by varying the shape of the flow-passage cross section so that its ratios of inlet-to-outlet cross-section areas were F_2/F_1 = 0.92, in 1.00, and 1.10. The angles of the rotor-blade setting (at the middle of their heights) were 27°40', 32°40', and 37°40'; this permitted the testing of nine versions of the model stage. The angles of the inlet and intermediate guide vanes were 15°30' and 52°30' and were not changed during the investigation. The circumferential velocity of the blade tips was u = 200 m/sec at a Reynolds number

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ACC NR: AP6031065

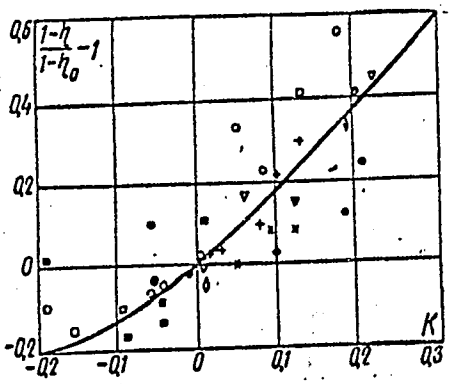

Fig. 1. The dependence of the efficiency on K. ∇Δ for u = 270 m/sec

Re ≈ 3.7 x 10^5. For most of the stage versions the tests were repeated at u = 270 m/sec. The temperatures were measured at the inlet and outlet of the stage and the static pressures, at the hub and the casing. The velocity distribution in the radial direction of the flow passage in front of and behind the rotor was also determined. For the each version of the stage the characteristics were plotted and the regime of the maximum efficiency n was determined. For this regime the diffusivity factor $\Phi = (W_{max}-W_2)/W_1$ was determined; here, $W_1(W_2)$ are the relative velocities at the inlet (outlet) of the rotor cascade. An approximate formula for determining the efficiency of a stage of an axial-flow compressor with a rough approximation of the air compressibility is proposed: $(1-\eta)/(1-\eta_0) = 1 + K$, where η_0 is the efficiency

Card 2/3

ACC NR: AP6031065

of the stage when $\Delta\phi = \phi_1 - \phi_2 = 0$ and K is a parameter depending on the blade geometry and flow characteristics. The test results (with added characteristics of six other compressor stages) are plotted in a diagram in which the solid curve corresponds to the equation $(1-\eta)/1-\eta_0) = 1 + 1.45K + 2.16\ K^2$ (see Fig. 1). This equation is recommended for estimating the effect of a decrease in the axial flow velocity on the efficiency of an axial compressor. Orig. art. has: 3 figures and 1 formula. [WA-76]

SUB CODE: 13,20/ SUBM DATE: 23Jul65/ ORIG REF: 003/

Card 3/3

L 30955-66 EWT(d)/EWT(1)/EWT(m)/T-2/EWP(f) WW/JD

ACC NR: AP6013391 SOURCE CODE: UR/0096/66/000/005/0089/0090

AUTHOR: Yershov, V. N. (Candidate of technical sciences); Pavlenko, G. V. (Candidate of technical sciences); Nikolayenko, Yu. G. (Engineer)

ORG: Khar'kov Aviation Institute (Khar'kovskiy aviatsionnyy institut)

TITLE: Determining the discharge coefficient when calculating anti-surge bleed ports in axial compressors

SOURCE: Teploenergetika, no. 5, 1966, 89-90

TOPIC TAGS: compressor, compressor surge, compressor operation stability

ABSTRACT: Air bleeding from a compressor stage into the atmosphere is considered to be one of the simplest and most effective methods of expanding the range of stable operation of a multistage axial compressor. The discharge coefficient μ of a bleed port is usually determined from detailed experimental data for the general discharge of a fluid through an opening, without taking into account the special flow characteristics in a compressor stage before the bleed port. To investigate the accuracy of this method, experiments were conducted to determine the bleed port discharge coefficient under various bleed conditions. Tests were conducted with a ten-stage axial compressor in the range of bleed flow Re numbers of $0.3 \cdot 10^5 - 1.2 \cdot 10^5$ and M numbers of 0.1 - 0.4 with various locations for the bleed ports. The obtained results are shown in Fig. 1. Based on the experimental data, it is concluded that

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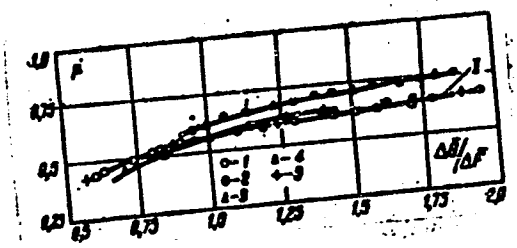


Fig. 1. Relationship between discharge coefficient μ and parameter $\overline{\Delta G}/\Delta F$ for various locations of the bleed ports. ($\overline{\Delta G} = \Delta G/G$ - relative air bleed; ΔG - mass flow rate through bleed port; ΔF - ratio of the bleed port area and the area of the ring corresponding to the blade height) Fifth stage (1—4) bleed port locations:

1 - Above guide vanes; 2 - above rotor; 3 - above guide vanes and rotor; 4 - axial clearance before rotor; 5 - eighth stage.

the discharge coefficient is dependent on the location of the bleed ports, and is highest for the bleed ports above the rotor blades and in the axial clearances before the rotor. The obtained values of μ shown in Fig. 1 can be used directly in calculating anti-surge bleed ports in axial compressors. However, for ports having shapes and Re and M numbers different from those investigated, μ should be corrected using the following expression:

$$\mu' = \mu \cdot k_1 \cdot k_2 \cdot k_3$$

where, μ' is the corrected value; μ, value from Fig. 1; and k_1, k_2 and k_3, the correction factors. The results also showed that air bleeding from a compressor has a strong effect on the flow characteristics in the stages adjacent to the bleeding stage. Orig. art has: 2 figures. [AS]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 4241

Card 2/2

YERSHOV, V. N.

Reduction of carbon dioxide by coke. V. N. Ershov and V. V. Pomerantsev (Leningrad Politekh. Inst.). *Zhur. Fiziki.* Khim. 24, 520–6; *J. Gen. Chem.* 21, 569-76(1951) (Engl. translation).—Various cokes prepd. from coals were tested for their reaction capacities with CO_2. The app. for carrying out the exptl. work consisted chiefly of 2 silit furnaces the first of which was used for preheating the reacting gas. The 2nd furnace held the sample to be tested. The temp. of the gas at the surface of the C was measured by a platino-platino-rhodium thermocouple of d = 0.1 mm. The cokes were prepd. in the following way: From a natural coal, coke was obtained by calcination of it at 850° in a stream of N until cessation of the sepn. of volatiles. Then the coke was ground to particles of 70–80 μ. The powder obtained was pressed into the boat and again placed in a current of N at 900° until it reached const. wt. For the expt., the C was heated over a period of 1.5–2 hrs. to the desired temp. in a current of N, at which temp. the current of N was replaced by a stream of CO_2. Cooling of the C also proceeded in a current of N for 1.5–2 hrs., after which the reaction tube was dismantled, and the C was weighed. In the expts. the following were measured: (1) the discharge of gas up to and after the reaction; (2) temp. of the gas and the surface of the C; and (3) the amt. of C reacted. Expts. were made in a temp. range of 600–1000°. Consumption of CO_2 amounted to 1.2 cc./sec. The cross section of the reaction fissures was 0.15 sq. cm. The method used permitted the detn. of the kinetic characteristics of the reaction $C + CO_2 = 2\ CO$ for different coals at temps. below 950°. The method can be recommended for detn. of the reaction capacity of cokes from natural coals. The exptl. data are well tabulated, and a diagram of the exptl. app. is provided.

Gladys S. Macy

YERSHOV, V. N. FD-572

USSR/Physics - Moisture of dispersives

Card 1/1 Pub. 153-12/28

Author : Yershov, V. N., AND Yershova, N. M.

Title : An express method for determining the moisture of capillary-porous dispersive materials.

Periodical : Zhur. tekh. fiz. 24, 854-858, May 1954

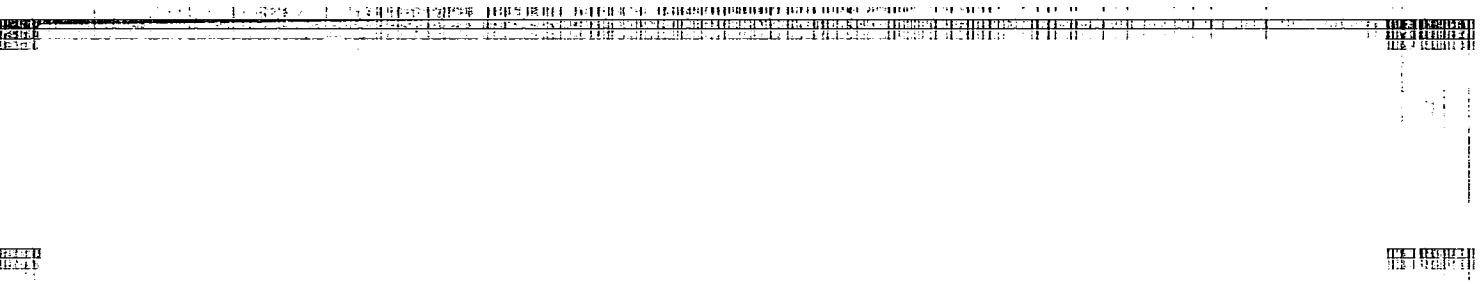
Abstract : Find a new criterion for the moisture content of capillary-porous dispersive materials, that permits one to reduce this quantity to an electrical parameter. Describe a practical device for such a study. Refer to related works of A. F. Chudhovskiy (ZhTF, 8, No 11, 1938; Sbornik Trudov AFI, No 5, 1952, and No 6, 1953).

Institution :

Submitted : June 16, 1953

YERSHOV, V.N.; YERSHOV, N.M.

Thermal method for determining the moisture of fine-grained capillary and porous substances. Zhur.tekh.fiz.26 no.6:1306-1308 Je '56. (Moisture--Measurement) (MLRA 9:9)



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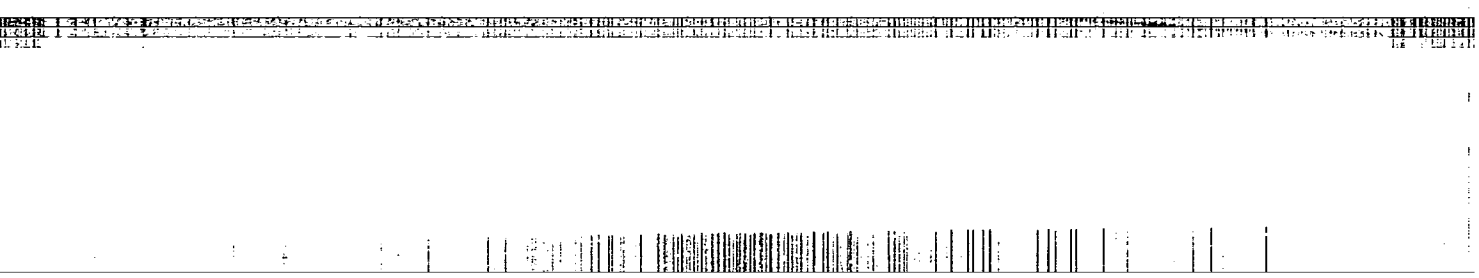

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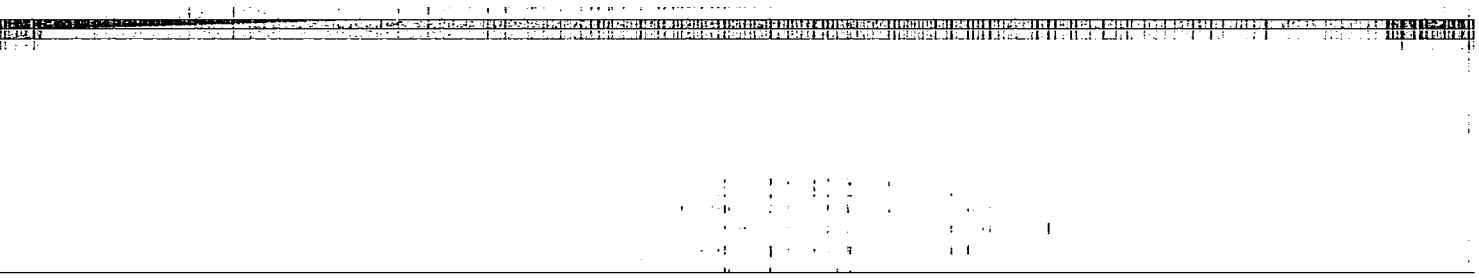
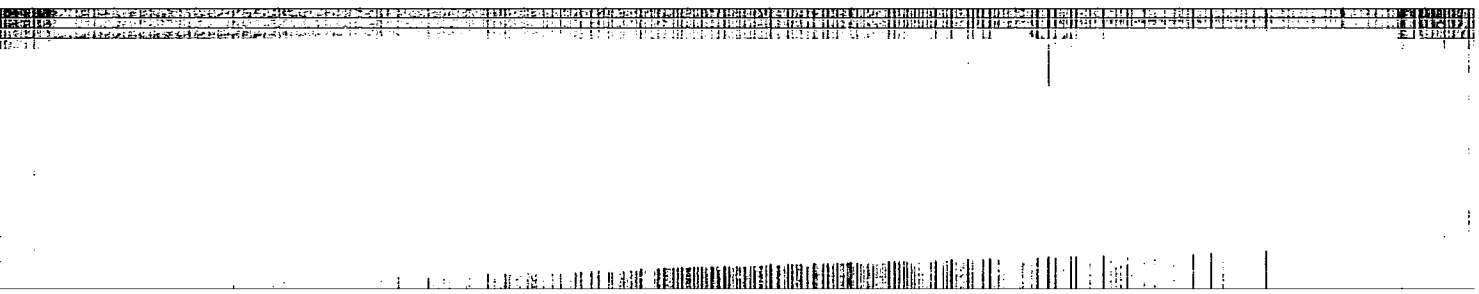


APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001962910010-2"



APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001962910010-2"

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Device for rapid determination of moisture content in dispersed and fibrous materials. Biul.tekh.-ekon.inform. no.8:33-34 '60. (MIRA 13:9)

(Moisture--Measurement)

YERSHOV, V.N.

Thermoelectric moisture indicator. Zav.lab. 27 no.2:212-213 '61. (MIRA 14:3)

1. Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina.
(Moisture)

YERSHOV, V.N., kand.tekhn.nauk

Contactless radiation moisture gauge for continuous moisture control of the paper sheet. Bum.prom. 37 no.10:29-30 O '62. (MIRA 15:11)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina.
(Moisture--Measurement)
(Woodpulp industry--Equipment and supplies)

YERSHOV, V.N., kand.tekhn.nauk

Contactless radiation moisture gauge for continuous moisture control of the paper sheet. Bum.prom. 37 no.10:29-30 O '62. (MIRA 15:11)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina.
(Moisture--Measurement)
(Woodpulp industry--Equipment and supplies)

KOBYZEV, V.K.; YERSHOV, V.N.; KUZNETSOV, A.F.; MAZURIK, P.N.; RYAZANOV, D.G.; FISKES, E.Ya.

Mastering the rolling of two-layer sheets with a basic layer of low-alloy steel. Stal' 24 no.1:50-52 Ja '64. (MIRA 17:2)

1. Kuznetskiy metallurgicheskiy kombinat.

YERSHOV, V.P.

Grinding flanked gear wheels on MAAG gear-grinding machines.
Stan.i instr. 29 no.1:7-9 Ja '58. (MIRA 11:1)
(Gear cutting)

SOV/121-58-8-2/29

AUTHOR: Yershov, V.P.

TITLE: Production Procedures Capable of Increasing the Productivity of Gear Grinding Machines (Tekhnologicheskiye vozmozhnosti uvelicheniya proizvoditel'nosti zuboshlifoval'nykh stankov)

PERIODICAL: Stanki i Instrument, 1958, 29, Nr 8, pp 7-9 (USSR)

ABSTRACT: Discussing the possibilities for increasing the output of Maag and similar gear grinders, the view is taken that neither the advance per cycle nor the number of passes nor the basic grinding scheme (whether single or two-sided) can be changed without reducing the quality. The only factor affecting the output which can be varied is the number of wheel carriage strokes per minute. It is shown that this cycle speed can be increased without increasing the inertia forces by varying the setting angle of the grinding wheels. Increasing the setting angle from its customary value of 15° reduces the length of the stroke corresponding to the upper part of the tooth and increases the length corresponding to the lower part of the tooth. The larger of the two values

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Production Procedures Capable of Increasing the Productivity of Gear Grinding Machines

determines the actual stroke required. In one method of grinding the two wheels grind two flanks of the same gap between the teeth; in another method, two flanks of neighbouring gaps. In the first method, the setting angle corresponding to a minimum stroke is 21°, in the second method, 30°. By using the optimum angle, instead of 15°, machining times can be reduced by a factor which increases with the number of teeth. At 30 teeth, the factor is about 1.1 for both grinding methods. At 80 teeth, the factor increases to 1.45 for the first method, and to 1.65 for the second method. The change of setting angle requires a small modification of the grinding machine. Practical results have confirmed the analysis of the present paper.

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determines the actual stroke required. In one method of grinding the two wheels grind two flanks of the same gap between the teeth; in another method, two flanks of neighbouring gaps. In the first method, the setting angle corresponding to a minimum stroke is 21°, in the second method, 30°. By using the optimum angle, instead of 15°, machining times can be reduced by a factor which increases with the number of teeth. At 30 teeth, the factor is about 1.1 for both grinding methods. At 80 teeth, the factor increases to 1.45 for the first method, and to 1.65 for the second method. The change of setting angle requires a small modification of the grinding machine. Practical results have confirmed the analysis of the present paper. The

Production Procedures Capable of Increasing the Productivity of Gear Grinding Machines

accuracy of the gears does not suffer and no surface burns or grinding cracks have been observed. However, the machines must be in excellent condition.

There are 5 figures and 1 table

YERSHOV, V.P.

Technological processes of preparing gear wheels for lapping. Stan. i instr. 30 no.2:15-18 F '59. (MIRA 12:3)
(Gear cutting)

YERSHOV, V.P.; MARTYNOVA, A.P. (Moskva)

Work schedule in modern forging and stamping production (practice in the Likhachev Factory). Gig. truda i prof. zab. 4 no. 7:23-29 Jl '60. (MIRA 13:8)

1. Institut gigiyeny truda i profzabolevaniy AMN SSSR.
(FORGING--HYGIENIC ASPECTS)

S/121/60/000/010/006/015
A004/A001

AUTHOR: Yershov, V. P.

TITLE: Increasing the Efficiency of Heavily Loaded High-Speed Geared Transmissions

PERIODICAL: Stanki i Instrument, 1960, No. 10, pp. 21- 22

TEXT: The author suggests to improve the efficiency of heavily loaded gears by lapping. He points out that the teeth of these gears during operation often break off, which he ascribes partly to power and speed factors and partly to the grinding process itself. One of the main defects in this respect is the origination on the surface of the ground tooth of a more or less deep defective boundary layer. It contains metal zones subjected to tempering, which are originating owing to transformations under the effect of high temperatures in the grinding zone. At normal grinding conditions the tempering depth generally does not exceed 30μ, while the damaging effects of tempering show only up to 10μ. The presence of such sections on the tooth profile surface causes the formation of fatigue microcracks which, in the course of time, under the effects of high hydrodynamic pressures quickly spread out into the depth. Teeth impacts connected with errors of the

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S/121/60/000/010/006/015
A004/A001

Increasing the Efficiency of Heavily Loaded High-Speed Geared Transmissions

principal pitches of conjugate elements do not only cause the noise of geared transmissions but lead also to the destruction of the working surface of the teeth. The most efficient way of eliminating these above-mentioned defects is, according to the author, lapping of the teeth profile. In order to warrant the elimination of the harmful defective zone, a layer of not less than 15μ has to be removed. However, it is not expedient to leave so big an allowance for lapping, since the efficiency of the process and the precision of the toothing elements depend on the magnitude of allowance; this refers in the first place to the tooth profile error Δf, the play of the indexing circumference e_o and deviation of the tooth direction ΔB_o. Therefore, the right lapping allowance is of utmost importance, and should be in the range of 15 - 30μ. Also the "difference in pitch" and the principal pitch can be corrected by lapping. The table presents some data on the accuracy and surface finish of ground gears before and after the lapping process. Lapping was effected with a paste of 100 grain size - the author recommends an abrasive grain of 100 - 150 grain size - made of white electrocorundum, while the lap was made of gray pearlitic cast iron of HB 180 - 210. With small allowances a paste of 220 - 240 grain size is recommended. The author recommends to carry out the lapping operation of ground gears on machine tools operating according to

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Increasing the Efficiency of Heavily Loaded High-Speed Geared Transmissions

the principle of internal gearing, because of their more balanced specific pressures.

Toothing Characteristics	Tooth Machining Finish H_{sk} in Microinches		Maximum Difference in Adjacent Principal Pitches in μ	
	After Grinding	After Lapping	After Grinding	After Lapping
$z = 130$, $m = 7$ mm, $= 20^{\circ}$	42 - 53	28 - 35	32 - 45	11 - 14
$z = 39$, $m = 6$ mm, $= 20^{\circ}$	41 - 46	26 - 32	23 - 31	10 - 12

There is one table and 2 Soviet references.

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YERSHOV, V.P.

Dynamic factors occurring in lapping gear wheels. Stan.i instr. 32 no.3:13-16 Mr '61. (MIRA 14:3)
(Gear cutting)

YERSHOV, V. P. (Moskva)

Problems of industrial hygiene in the production of alloyed steels in electrometallurgical plants. Gig. truda i prof. zab. no.2:3-10 '62. (MIRA 15:2)

1. Institut gigiyeny truda i profzabolevaniy AMN SSSR.

(ELECTROMETALLURGY—HYGIENIC ASPECTS)

YERSHOV, V.F.; FEDOROVA, V.A.

Comparative evaluation of the aerosol of chromium oxide condensation and its mixture with chromium anhydride. Toks. nov. prom. khim. veshch. no.7:162-180 '65.

(MIRA 18:9)

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YERSHOV, V.S.

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"Helminthisms of Horses," Moscow-Leningrad, Sel'khozgiz, 1933.

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YERSHOV, V.S.

YERSHOV, V.S., Prof., Chief, Adm. of Vet. and Zootechnical Colleges Ministry of Higher Education, USSR

"Veterinary colleges in the new academic year."

SO: Vet. 24 (8) 1947, p. 4

YERSHOV, V. S.

Antipin, D. N. and Yershov, V. S. "Academician Konstantin Ivanovich Skryabin", (The helminthologist, on the 40th anniversary of his scientific activity), Sbornik rabot po gel'mintologii (Vsesoyuz. in-t gel'mintologii im. akad. Skryabina), Moscow, 1948, p. 5-13, with portrait.

SO: U-3042, 11 March 53, (Letopis'nykh Statey, No. 10, 1949).

YERSHOV, V. S. Prof

PA31/49T93

USSR/Medicine - Carbon Tetrachlorides, Aug 49
Administration and Dosage
Medicine - Helminthology

"Administration of Carbon Tetrachloride to Horses During Ascariasis and Strongyloidiasis," Prof V. S. Yershov, N. V. Demidov, Head Sci Collaborator, D. I. Panasyuk, All-Union Inst of Helminthol imeni Acad K. I. Skryabin, 4½ pp

"Veterinariya" No 8

Discusses subject in detail. Concludes that carbon tetrachloride is very effective helminthic against subject diseases. When used correctly, it has no toxic effect on horse.

31/49T93

YERSHOV, V. S.

25897. YERSHOV, V. S. Tsikl razvitiya Delafondia vulgaris Zooss 1909 v organizme loshadi. Avtoreferat. Veterinariya. 1949, No. 8, S. 26-28.

So. Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

YERSHOV, [V.S.]

In "A Brief Course of Parasitology of Domestic Animals",1950, the authors allud to the data of Ershov (on page 327 in the section on the development of Delafondia in the organism of the horse).

SO: Veterinariya; Vol. 27; No. 11;61-63; November 1950 uncl de g

Trans. # 26h by L. Lulich

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Liver Fluke

Use of carbon tetrachloride in cases of facsioliasis in sheep. Veterinariia 29, No. 2, 1952.

All-Union Inst. Helminthology im. K.I. Skryabin

U-5638, 10 Nov 53

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PLAKHOTNYA, R. A., KRIKUNOV, M.S., YERSHOV, V. S., and GOREEETS, A. D.

Novyy metod diagnostiki askaridoza svineY, "Works on Helminthology" on the 75th Birthday of K. I. Skryabin Izdat. Akad. Nauk, SSSR, Moskva, 1953, page 240

All-Union Inst. Halminthology in Acad. K. I. Skryabin and Chair of Parasitology Belaya Tserkov, Agricultural Institute

YERSHOV, V. S.

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(Nematoda) (Parasites--Horses)

ANTIPIN, D.N., doktor veterinarnykh nauk, professor; YEMSHOV, V.S., doktor veterinarnykh nauk, professor; ZOLOTAREV, N.A., doktor veterinarnykh nauk, professor; SALYAYEV, V.A., doktor veterinarnykh nauk, professor; SOLOVEY, A.S., redaktor; VESKOVA, Ye.I., tekhnicheskiy redaktor

[Parasitology and festations of farm animals] Parazitologiia i invazionnye bolezni sel'skokhoziaistvennykh zhivotnykh. Pod red. V.S.Ershova. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 478 p. (MLRA 9:11)
(Parasites--Domestic animals)

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Professional veterinary training in the Chinese People's Republic. Veterinariia 35 no.12:71-73 D '58. (MIRA 11:12)
(China--Veterinary medicine--Study and teaching)

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[Papers on helminthology; on the occasion of Academician K.I. Skriabin's 80th birthday] Raboty po gel'mintologii; k 80-letiiu akademika K.I.Skriabina. Moskva, Izd-vo M-va sel'.khoz.SSSR, 1959. 1 v. (MIRA 13:6)

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[Works on helminthology; on Academician K.I.Skriabin's 80th birthday] Raboty po gel'mintologii; k 80-letiiu akademika K.I.Skriabina. Moskva, Izd-vo M-va sel'.khoz.SSR. No.1. 1959. 217 p. (MIRA 13:4)

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(Worms, Intestinal and parasitic)

YERSHOV, V.S., doktor vet. nauk, prof.; DEMIDOV, N.V., kand.veterinar.nauk; SEMENOV, S.V., zootekhnik

Prevention of helminthiasis in cattle with phenothiazine. Veterinariia (MIRA 12:11) 36 no.8:25-27 Ag '59.

1. Vsesoyuznyy institut gel'mintologii im. akademika K.I. Skryabina. (Phenothiazine) (Worms, Intestinal and parasitic)

YERSHOV, V.S. [Prof]

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YERSHOV, V.S., prof., doktor veter.nauk; ZHURAVEL', A.A., prof., doktor veter.nauk; PREOBRAZHENSKIY, N.M., dotsent, kand.veter.nauk; YEL'TSOV, S.G., prof., doktor veter.nauk; ITKIN, B.Z., dotsent; NOSKOV, N.M., dotsent, kand.veter.nauk; YEMEL'YANOVA, N.I., red.; BALLOD, A.I., tekhn.red.

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"Echinococcus and coenurosis"

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YERSHOV, V.S., prof.; NAUMYCHEVA, M.I., kand. veter. nauk; MALAKHOVA, [illegible], kand. veter. nauk

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PA 48/49T56

USSR/Medicine - Hygiene and Sanitation, Teaching   Mar/Apr 49
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"Some Real Problems of Sanitation," V. S. Yershov, Chief, Section on Sanitation, Min of Health USSR, 5 pp

"Sov Zdravookhran" No 2

Discusses Third Plenum of the Soviets for Sanitation Education, Ministries of Health USSR and RSFSR, held at the end of 1948. Comments on character and value of reports submitted by delegates. Speeches revealed the great organizational work in sanitation education.

[redacted]   48/49T56

USSR/Medicine - Hygiene and Sanitation, Teaching (Contd)   Mar/Apr 49

Stresses importance of urging all physicians and medical workers to participate in planned sanitation education in accordance with Decree No 109.

[redacted]   48/49T56

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25949. Yershov, V. C. Dolg chesti kazhdogo meditsinskogo rabotnika. (Metodika organizatsii san. prosveshcheniya v SSSR). Fel'dsher i akusherka, 1949, No 7, s. 39-43

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YERSHOV, V.S., prof.; NAUMYCHEVA, M.I., kand. vet. nauk; POLETAYEVA, O.G., mladshiy nauchnyy sotrudnik

Manifestation of allergy in experimental multiple infection of piglets with ascariasis. Trudy VIGIS 11:54-58 '64. (MIRA 18:12)

AKOL'ZIN, L.Ye.; BOROZDOV, I.A.; BEDILO, V.Ye.; TERESHKIN, F.N. Prinimali uchastiye: BELYAYEV, F.R.; BEREZHNOY, N.V.; BUBYR', V.A.; VARSHAVSKIY, I.N.; DUDKO, V.P.; YERSHOV, V.S.; DUGIN, Ye.V.; DUKALOV, M.F.; IVANOV, P.S.; KONAREVA, V.F.; MONIN, M.I.; MOGILKO, A.P.; PANCHENKO, A.I.; POKALYUKOV, S.N.; PRIKHOD'KO, N.D.; RUBIN, I.A.; SIDORENKO, P.A.; TYUTYUNIK, Ya.I.; KHMEL'NITSKIY, L.Ya.; BONDAR', V.I.; KRIVTSOV, A.T.; LOKSHIN, V.D.; SOFIYENKO, N.P. RABINKOVA, L.K., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

[Types of mine cross section] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.4. [Cross section of mines supported by a sectional reinforced-concrete lining of URP-11 panels for 1-, 2- and 3-ton railroad cars] Secheniia vyrabotok, zakreplennykh sbornoi zhelezobetonnoi krep'iu iz plit URP-II, dlia 1-, 2- i 3-tonnykh vagonetok. 1960. 278 p. (MIRA 13:12)

1. Khar'kov. Gosudarstvennyy proyektnyy institut Yuzhgiproshakht. (Mine timbering)

YERSHOV, V.S., st. prepod.; KOP'YEV, S.I., otv. za vypusk

[Design of a polyspast] Raschet polispasta; uchebnoe posobie k raschetno-graficheskoi rabote po kursu "Detali mashin." Gor'kii, Gor'kovskii inzhenerno-stroit. in-t im.V.P.Chkalova, 1962. 26 p. (MIRA 16:8)
(Pulleys)

BEDILO, V.Ye.; BOROZDOV, I.A.; YERSHOV, V.S.; MOGILKO, A.P.; NIKOLAYEV, G.P.; DUGIN, Ye.V., otv.red.; DUKALOV, M.F., red.; BUBYR', V.A., red.; VARSHAVSKIY, I.N., red.; TYUTYUNIK, Ya.I., red.; MOHIN, M.I., red.; PANCHENKO, A.I., red.; BELYAYEV, F.R., red.; RABINKOVA, L.K., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

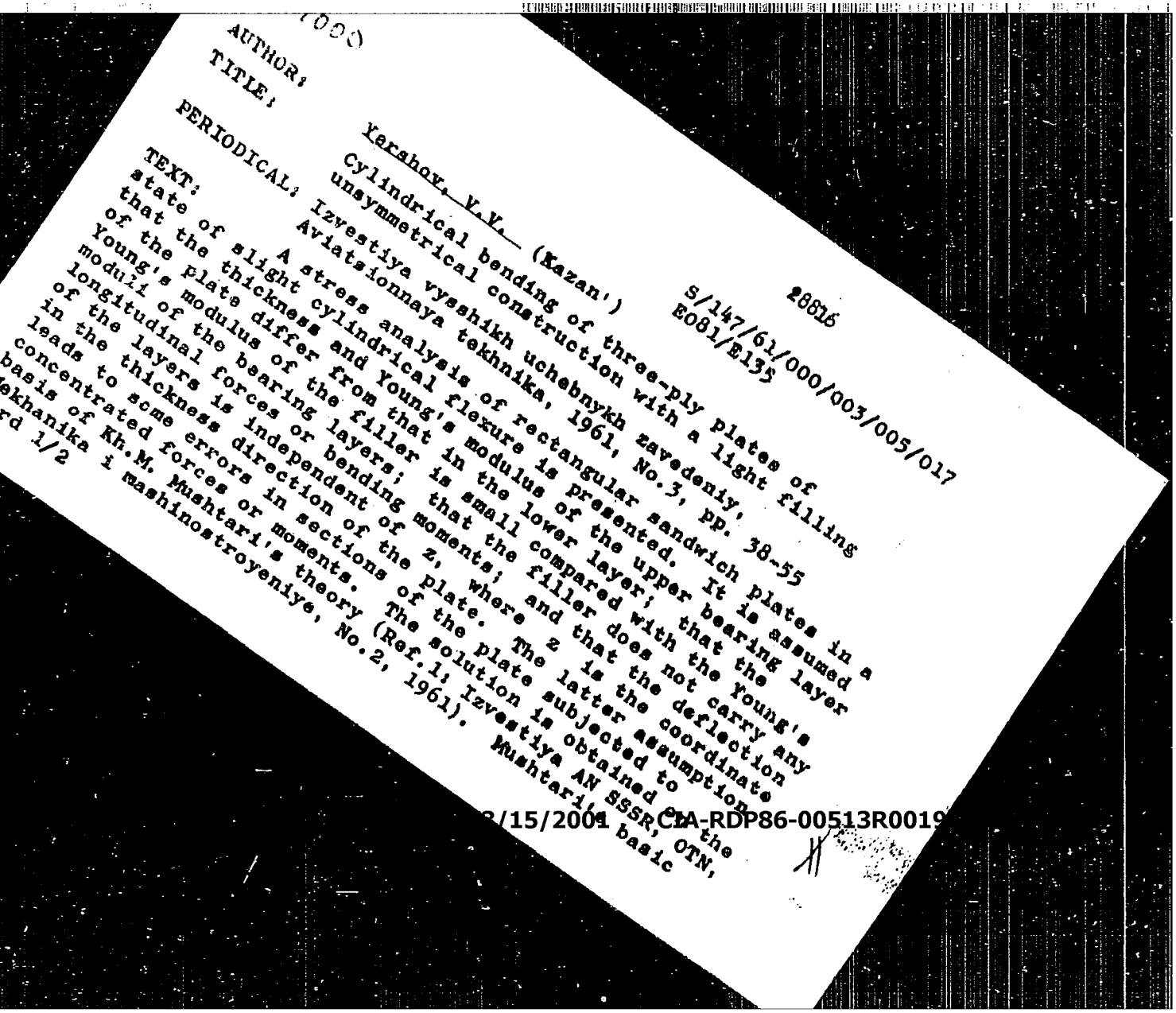
[Standard cross sections of mine workings] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.2. [Cross section of workings lined with concrete and artificial stone, for 1-ton cars] Secheniia vyrabotok, zakreplennykh betonom i iskusstvennym kamnem, dlia 1-tonnykh vagonetok. 1960. 459 p. (MIRA 13:11)

1. Moscow. Gosudarstvennyy proyektnyy institut Yuzhgiproshakht. (Mining engineering)

RAYKOV, I.Ya., kand. tekhn. nauk; YERSHOV, V.V.

Film formation in carburetor engines. Avt. prom. 30 no.11:2 (MIRA 18:2)
6-10 N '64

1. Moskovskiy avtomekhanicheskiy institut.



(1000)

AUTHOR: Yershov, V.V. (Kazan')

TITLE: Cylindrical bending of three-ply plates of unsymmetrical construction with a light filling

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1961, No.3, pp. 38-55

TEXT: A stress analysis of rectangular sandwich plates in a state of slight cylindrical flexure is presented. It is assumed that the thickness and Young's modulus of the upper layer differ from that in the lower layer; that the Young's modulus of the bearing layers is small compared with that the Young's moduli of the filler in the layers; that the filler does not carry any longitudinal forces or bending moments; that the deflection of the layers is independent of z, where z is the coordinate in the thickness direction of the plate. The latter assumption leads to some errors in sections of the plate subjected to concentrated forces or moments. The solution is obtained on the basis of Kh.M. Mushtari's theory (Ref.1: Izvestiya AN SSSR, OTN, Mekhanika i mashinostroyeniye, No.2, 1961). Mushtari's basic

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Cylindrical bending of three-ply S/147/61/000/003/005/017
E081/E135

equations are quoted and reduced to a sixth order differential equation which is solved for the deflection in terms of mixed polynomial and hyperbolic functions. Similar formulae are also derived for the axial displacement and stress. The boundary conditions appropriate to freely supported, clamped, hinged supported and free edges are stated, and an extensive table of formulae is derived for stresses and deflections in plates subjected to distributed or concentrated loading and to various combinations of clamped and supported edge conditions (20 cases), assuming vanishingly small flexural rigidities of the outer layers.
Thanks are expressed to Doctor of Physical and Mathematical Sciences Professor Kh.M. Mushtari for directing the investigation.
A.L. Rabinovich and L.E. Bryukker are mentioned for their contribution in the field.
There are 23 figures, 3 tables and 4 Soviet references.

SUBMITTED: December 10, 1960

Card 2/2

S/147/62/000/001/014/015
E200/E435

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AUTHOR: Yershov, V.V. (Kazan')

TITLE: Stability of asymmetrical sandwich plates

PERIODICAL: Izvestiya vysshikh uchebnykh zavedoniy. Aviatsionnaya tekhnika, no.1, 1962, 120-124

TEXT: Using an equation derived from the equations of Professor Kh. M. Mushtari, in his previous paper (Ref.3: ibid, no.3, 1961), the author obtains an equation for longitudinal axial force N acting per unit width of the upper and lower layers of rectangular sandwich plate supported along two opposite edges

$$N_{crit} = \frac{B'(z'-z'')^2\pi^2}{l_0^2\left(1+\frac{2hB'}{G_3}\frac{\pi^2}{l_0^2}\right)}, \qquad (2.19)$$

where 2h - thickness of the core, 2h' of upper layer, 2h" of lower layer; $z' = h + h'$, $z'' = -h - h''$,

$B' = \frac{2E'h'}{1-\nu'_{12}\nu'_{21}}$ - rigidity of upper layer,

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Stability of asymmetrical ...

B" - rigidity of lower layer, $\mathfrak{G} = B'B''/(B' + B'')$,
G_3 - transverse shear modulus of core,
l_o - l/λ, l - length between supports and λ - support function.
Both edges simply supported or one edge clamped the other restrained against rotation only $\lambda = 1$. Both edges clamped $\lambda = 2$.
One edge clamped the other simply supported $\lambda = 0.7$.
One edge clamped the other free $\lambda = 0.5$. If $B' = B''$ and $2h' = 2h''$, Eq.(2.19) reduces to that given by A.P.Prusakov for symmetrical plates. There are 5 figures.

SUBMITTED: April 13, 1961

Card 2/2

POPOVA, G.B.; YERSHOV, V.V.; KUZNETSOV, V.A.

Experimental study of melting and crystallization processes in pentlandite. Dokl. AN SSSR 156 no. 3:575-578 '64. (MIRA 17:5)

1. Predstavleno akademikom V.I.Smirnovym.

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ACC NR: AP6022849 (A) SOURCE CODE: UR/0113/66/000/004/0001/0003

AUTHOR: Kostrov, A. V. (Candidate of technical sciences); Kunyavskiy, B. M.; Tershov, V. V.

ORG: Moscow Automechanical Institute (Moskovskiy avtomekhanicheskiy institut)

TITLE: Transfer of heat to the lubricating oil in engines

SOURCE: Avtomobil'naya promyshlennost', no. 4, 1966, 1-3

TOPIC TAGS: heat transfer, vehicle engine, lubricating oil, vehicle engine cooling system

ABSTRACT: The authors consider transfer of heat to the lubricating oil in automotive engines under various operating conditions since the lubrication system has become an important factor in lengthening the service life of engines in view of the recent tendency toward increased engine power by raising the efficiency of the combustion cycle and increasing the rpm. Heat is transferred to the oil from components heated by friction and gases and from gases which leak into the crankcase through imperfections in the piston rings. The third factor (leakage of hot gases into the crankcase) was not taken into consideration in analyzing the components of heat transfer as it was assumed that the same quantity of heat is dissipated into the ambient atmosphere from the lower walls of the crankcase during stand testing. Heat transfer to the crankcase oil in the MZMA-408 and ZIL-130 engines was experimentally studied in the Automobile and Tractor Engine Laboratory of the Moscow Automechanical Institute. The two engines were stand tested for approximately the same number of hours corresponding to an automobile trip

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