"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

AL'PERIN, I.B., inzh.; LUNEV, I.M., inzh.

Concerning the book "Graphite packing materials." Sudostroenie 29 no.6:67 Je '63. (MIRA 16:7)
(Packing (Mechanical engineering))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

BURTSEV, L.I., kand.tekhn.nauk; ZVEKOV, V.A., gornyy inzh.; LUNEV, I.N., gornyy inzh.

Flow sheets for chamber and pillar systems using self-propelled equipment. Gor.zhur. no.10:3-11 O '64. (MIRA 18:1)

1. Institut gornogo dela im. A.A.Skochinskogo (for Zvekov).
2. Kombinat "Achpolimetall" (for Lunev).

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LIVSHITS, N.D.; LIPOVOY, A.I., starshiy inzh. po rationalizatsii; LUNEV, I.N.

Practice of and prospects for using self-propelled equipment. Gor. zhur. no.3:20-23 Mr '62. (MIRA 15:7)
(Mirgalimsay region--Mining machinery)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I. S.

Technology

Atlas of designs of Soviet motor-cycles. Malakhovskiy, ya. ye. Mashgiz, 1950. Red. I.S. Lunev.

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

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S.

Simplified control for automobile steering gear shifts. Avt.trakt.prom. no. 11:28-29 N '53. (MLRA 6:11)

(Automobiles--Steering gear)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S. [reviewer]; RODIONOV, V.F. [author].

"Automobile transmission gear boxes." V.F.Rodionov. Reviewed by I.S.Lunev. Avt. trakt. prom. no.12:29-30 D '53. (MLRA 6:12)

1. Institut mashinovedeniya Akademii nauk SSSR (for Lunev).
(Automobiles--Transmission devices) (Rodionov, V.F.)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

CHUDAKOV, Ye.A. [deceased]; MALAKHOVSKIY, Ya.E.; LUNEV, I.S., inzhener, redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor.

[Atlas of designs of Soviet automobiles] Atlas konstruktsii sovetskikh avtomobilei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. Pt.5[Chassis] Shassi. 1954. 204 p.(MLRA 7:8)
(Automobiles--Design and construction)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S.; SILIN, A.A.; SEMENOV, V.M.

Dynamic load of the power transmission of the "Moskvich" automobile. Avt.trakt.prom. no.4:12-13 Ap '54. (MIRA 8:5)

1. Institut mashinovedeniya Akademii nauk SSSR, Moskovskiy zavod malolitrazhnykh avtomobiley.
(Automobiles--Transmission devices)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S.; SEMENOV, V.M.; KOROSTELEV, S.V.

Multistage transmission gear box with automatic drive for autobuses. Avt.trakt.prom. no.11:27-30 N '54. (MLRA 8:1)
(Automobiles--Transmission devices)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S.

"Distribution of Dynamic Stresses in the Power Transmission of an Automobile During the Sudden Engagement of a Friction Clutch." Cand Tech Sci, Inst of Machine Science, Acad Sci USSR, Moscow, 1955. (KL, No 17, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

VEDENEYEV, N.K.; SHIMANOVSKIY, N.G.; STEFANOVICH, Yu.G., kandidat tekhnicheskikh nauk; LUNEV, I.S., kandidat tekhnicheskikh nauk.

Review of the book by M.I.Lysov and A.I.Korolev "Methods of testing automobiles and automobile mechanisms. Automobile steering mechanisms". Avt. i trakt. prom. no.2:45-46 F '56. (MLRA 9:6)

1.Moskovskiy avtozavod imeni Stalina, Gor'kovskiy avtozavod imeni Molotova i Nauchno-issledovatel'skiy avtomotornyy institut.
(Automobiles--Steering gear) (Lysov, M.I.) (Korolev, A.I.)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I. S

LUNEV, I.S.

Using tensometry in measuring the torque in the power transmission system of automobiles and trolleybuses. Trudy lab.dvig. no.2:108-119 '56. (MIRA 9:9)
(Automobiles--Transmission devices) (Trolley buses--Transmission devices)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S., kandidat tekhnicheskikh nauk; SEMENOV, V.M.; KOROSTELEV, S.V.

Automatic gear shifting with the aid of electromagnetic clutches. Avt. i trakt.prom. o.3:41-44 Mr '56. (MLRA 9:7)
(Automobiles--Clutches)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.S.; LEBEDINSKIY, A.P.; SEMENOV, V.M.

Portable cathode ray oscillograph for the photorecording of deformations and vibrations. Priborostroenie no.10:18-20 O '56. (MLRA 9:12)

(Cathode ray oscillograph) (Strain gauges)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SKOTNIKOV, Viktor Vasil'yevich; VEDENYAPIN, G.A.,red.; LIPGART, A.A., otv. red.; BORISOV, S.G.,red.; BRISKIN, M.I.,red.; DYBOV, O.V.,red.; ZIL'BERG, Ya. G.,red.; KOZLOVSKIY, I.S.,red.; LOZAR', A.S.,red.; LUKEV, I.S., red.; PEVZNER, Ya.M.,red.; PRYADILOV, V.I.,red.; RAMAYYA, K.S.,red.; SAMOL', G.I.,red.; SEDOVA, Ye.V.,red.; KHANIN, N.S.,red.; CHAPAYEV, A.A.red.; CHISTOZVONOV, S.B.,red.; SHKOL'NIKOV, E.M.,red.; YEGORKINA, L.I.,red.izd-va; SMIRNOVA, G.V.,tekhn.red.

[Intermediate transformation and temper brittleness of automobile body steels] Promezhutochnoe prevrashchenie i otpuskaia khrupkost' v konstruktsionnykh avtomobil'nykh staliakh. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry 1958. 74 p. (Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i avtomotornyi institut Trudy, no.85) (MIRA 12:2)
(Steel, Automobile--Metallography)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

PETRUSHOV, V.A., inzh.; PASHIN, M.A., red.; LIPGART, A.A., otv.red.; AL'PEROVICH, A.G., red.; BORISOV, S.G., red.; BRISKIN, M.I., red.; DYBOV, O.V., red.; ZIL'BERBERG, Ya.G., red.; LOZAR', A.S., red; LUNEV, I.S., red.; NAGAYEV, P.V., red.; PEVZNER, Ya.M., red.; PRYADILOV, V.I., red.; RAMAYYA, K.S., red.; SAMOL', G.I., red.; SEDOVA, Ye.V., red.; TAMRUCHI, O.V., red.; KHANIN, N.S., red.; CHAPCHAYEV, A.A., red.; CHISTOZVONOV, S.B., red.; SHKOL'NIKOV, E.M., red.; YEGORKINA, L.I., red.izd-va; GORDEYEVA, L.P., tekhn. red.

[Operational analysis of the multiplate friction transformer] Analiz raboty mnogodiskovykh friktsionnykh transformatorov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1960. 79 p.(Moscow. Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i avtomotornyi institut [Trudy], no.90). (MIRA 13:8)

(Motor vehicles--Transmission devices)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

S/113/60/000/010/003/[illegible]
D270/D301

AUTHORS: Stefanovich, Yu.G., Moskalev, V.N., and Lunev, [illegible]
Candidates of Technical Sciences

TITLE: The determination of torsional oscillations in the transmission of a A -51 (GAZ-51) automobile

PERIODICAL: Avtomobil'naya promyshlennost', no. 10, 1960, 10 - 12

TEXT: Calculations are carried out to determine the resonance speed of an engine at various ratios and to reveal spots in the transmission where maximum amplitudes can be expected. Data obtained experimentally by F.F. Simakov with a GAZ-51 engine and transmission together with information derived from the geometrical dimensions of transmission components can be used as a basis for the calculation. The arrangement of the former is shown, indicating mass distribution and the corresponding lengths of the shafts. The computation provided the necessary data to plot one-, two-, three- and four-node forms of vibrations in the transmission system. In the multimass system of a vehicle resonances of several natural os-

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cillations of the system with various order harmonics are possible for the same engine speed. The notion of harmonic moments is related to the method of expanding the engine torque in Fourier series. In the case of a four-stroke, straight-line six-cylinder GAZ-51 engine with the cranks of its shaft disposed at 120°, the main harmonics will be of the 3rd, 6th and 9th order, and so on. The resonances of various forms of vibrations with harmonics in a multimass system can be demonstrated by composing a table of the resonant engine revolutions for various speeds of the gear box. Flexible line curves indicate that maximum shaft torque angles and the corresponding maximum torsional moment amplitudes can be expected along the primary shaft and the half-shafts in the case of one- and two-node forms of vibrations in first, second and third gears. The experimental checking was carried out with the use of strain gages and an oscillograph. The arrangement for measuring the torque of the primary gear box shaft is illustrated. The operational conditions included: Intensive acceleration with a fully open throttle in first gear with subsequent change to higher gears; similar acceleration in second gear; gradual acceleration in the same gear order; acceleration with fully open throttle in third gear from a mi-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

nimum stable speed to its maximum; similar acceleration in fourth gear. The oscillograms obtained are also shown. Analysis of the traces at resonance maxima enables the engine revolutions torsional vibration frequencies, maximum and minimum torque and the swing in torque oscillation to be computed. Analysis showed that maximum forced vibrations in third gear occur when the three-node natural oscillations of the system resonate with the third harmonic of the engine. When the two-nodal natural vibrations of the system resonate with the first harmonic of the engine, the swing in forces oscillations is smaller and indicates a flatness in the resonance curve. The curves demonstrate that torsional vibrations in third and fourth gear are quite significant from the point of view of strength and noise. It is therefore necessary to take steps to eliminate them by mounting dry friction dampers, initial friction, inertia dampers, etc. Calculation of the torsional vibrations in a car transmission permits accurate determination of the former's frequency and form to be made. The measurement of torque vibrations on the gear box input shaft enables the maximum torque oscillations at resonant speeds to be determined. There are 4 figures, 2

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S/113/60/000/010/003/014
D270/D301

The determination of torsional ...

tables and 4 Soviet-bloc references.

ASSOCIATION: NAMI

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

VORONTSOV, N.I.; GEL'FGAT, D.B.; LUNEV, I.S.; OSHNOKOV, V.A.; STEFANOVICH, Yu.G.; RAYEVSKIY, N.P., doktor tekhn. nauk, retsenzent; NAKHIMSON, V.A., inzh., red.; EL'KIND, V.D., tekhn. red.; VLADIMIROVA, L.A., tekhn. red.

[Strain measurement in motor vehicle parts] Tenzometrirovanie detalei avtomobilia. [By] N.I.Vorontsova i dr. Pod red. I.S.Luneva. Moskva, Mashgiz, 1962. 230 p. (MIRA 15:4)

1. TSentral'nyy nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut (for Vorontsov, Gel'fgat, Lunev, Oshnokov, Stefanovich).
(Strain gauges) (Motor vehicles—Testing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

KISELEV, B.A., inzh.; LIPGART, A.A., otv.red.; PASHIN, M.A., red.; BORISOV, S.G., red.; BRISKIN, M.I., red.; BRYZGOV, N.N., red.; DYBOV, O.V., red.; ZIL'BERBERG, Ya.G., red.; LOZAR', A.S., red.; LUNEV, I.S., red.; NAGAYEV, P.V., red.; PEVZNER, Ya.M., red.; PRYADILOV, V.I., red.; RAMAYYA, K.S., red.; SAMOL', G.I., red.; SEDOVA, Ye.V., red.; TAMRUCHI, O.V., red.; CHAPKEVICH, V.A., red.; CHISTOZVONOV, S.B., red.; SHKOL'NIKOV, E.M., red.; SMIRNOVA, G.V., tekhn.red.

[Investigation of the operation and gas-exchange of a loop-scavenged two-cycle motor-vehicle diesel engine] Issledovanie rabochego protsessa i gazoobmena dyukhtaktnogo avtomobilnogo dizelia s petlevoi produvkoi. Moskva, Mashgiz, 1961. 193 p. (Moskow. Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i avtomotornyi institut. Trudy, no.30). (MIRA 16:8)
(Motor vehicles--Engines)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, I.Ya., kand.tekhn.nauk

Processing raw flax with the use of its natural moisture.
Tekst.prom. 19 no.2:8-10 F '59. (MIRA 12:5)
(Flax)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LAPITSKIY, V.A.; LUNEV, L.V.; FRIDMAN, O.A.; YEKASEV, B.A.

Slag plastics and products made from them. Stroi. mat. 10 no.1:9-10 Ja'64. (MIRA 17:5)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, N.

For our export. Vnesh.torg. 42 no.7:12-13 '62. (MIRA 15:7)
(Iron industry) (Steel industry)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, N.G.

(3)

Bolder application of clarification sediment as fertilizer. T. T. Kurbatov and N. G. Luney (Sugar Beet Trust, Kursk). *Sakharnaya Prom.* 23, No. 4, 33-8(1949).—A clarification sediment from a sugar plant in the Kursk district had the following compn.: 0.3-0.4% N, 0.2-0.4% H_3PO_4, 0.5-0.7% K oxide, and up to 13% org. matter. Data on application of the sediments as fertilizer and crop yields obtained are tabulated. Gladys S. Macy

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, N.M.

Mechanized removal of old plants. Kons. i ov.prom. 12 no.7:31-32 Jl '57. (MIRA 12:4)

1. Stalingradskaya opytno-selektsionnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta konservnoy promyshlennosti.
(Stalingrad Province--Tomatoes)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, N.M.

Furrower for use in connection with the spot method of planting tomatoes in bands. Kons.i ov.prom. 12 no.8:42-45 Ag '57. (MLRA 10:10)

1. Stalingradskaya opytno-selektsionnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta konservnoy i ovoshchesushil'noy promyshlennosti.

(Agricultural machinery) (Tomatoes)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

1. LUNEV, P.

2. USSR (600)

4. Tools

7. Improving the quality of tools, Sov. sviaz., 3, No. 4, 1953.

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

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, P., (Sevastopol')

USSR/ Electronics - Radiofication Dec 53

"Three Letters on Progress of the Radiofication Plan."

Radio, No 12, pp 8-9

Vesset discusses progress of radiofication in the Oktyabr'skiy and other rayons, and work of Fedulov, remarks that low power radio centers of the Min of Comm, esp the TUB-100, are overloaded and not provide good service. Grachev blames poor planning for slow radification in Novo-Ladozhskiy Rayon. Lunev suggests that publications for radio amateurs lay more stress on radiofication problems.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, P.

Paying more attention to the introduction of radio service by wire. Radio no.12:9 D '53. (MLRA 6:12)

(Radio--Receivers and reception)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

USSR/ Electronics - Electronic service apparatus

Card 1/1 Pub. 89 - 13/31

Authors : Pospelov, V., and Lunev, P.

Title : Letters from correspondents

Periodical : Radio 11, page 22, Nov 1954

Abstract : Under the above general heading, the following two letters are published: 1) "Defects of the Thermoelectric Generator TGK-3", by V. Pospelov, and 2) "A Simple Fault-Detector", by P. Lunev. The first letter points out a number of serious faults found in the newly manufactured thermoelectric generator. The generator's defects make it practically impossible to use it for supplying power to the "Rodina-47" radio set, used almost exclusively in rural districts. The second letter deals with a new, simple-type fault-detector invented by a radio operator of the Sevastopol radio center. The simple method of assembly, the application and the practical advantages of the instrument are explained. Diagram.

Institution : ...

Submitted : ...

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

BORISENKO, P.M., inzhener; LUNEV, P.A.; OLENEV, A.P., BEREGOVSKIY, Ya.I.

Organizing the transmission of holiday telegrams. Vest. sviazi 15 no.10:17-19 O '55. (MLRA 9:2)

1.Otdel elektrosvyazi Stavropol'skogo kraevogo upravleniya svyazi (for Borisenko). 2. Nachal'nik Sevastopol'skogo telegrafa (for Lunev).3.Nachal'nik dispetcherskogo uzla GUMTS pri Alma-Atinskom telegrafe (for Olenev).4.Nachal'nik Chkalovskogo telegrafa i MTS (for Beregovskiy). (Telegraph) (MLRA 9:2)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, P.A.

Let us convert the communication enterprises into enterprises with high labor productivity, outstanding organization, and good maintenance standards. Vest. sviazi 20 no.10:21-22 O '60. (MIRA 13:11)

1. Glavnyy inzhener Ob"yedinennoy Sevastopol'skoy kontory svyazi. (Telecommunication)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, P.A.

Concern for the Soviet people. Vest.sviazi 21 no.10:30 O '61.
(MIRA 14:10)

1. Glavnyy inzh. Sevastopol'skoy kontory svyazi.
(Telecommunication--Employees)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

ACC NR: AP7002840

SOURCE CODE: UR/0233/66/000/004/0091/0095

AUTHOR: Talibi, M. A.; Lunev, P. A.; Kadymov, G. G.

ORG: none

TITLE: Selenium avalanche diodes

SOURCE: AN AzerbSSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk, no. 4, 1966, 91-95

TOPIC TAGS: semiconductor diode, selenium rectifier, voltage regulator

ABSTRACT: The voltage-regulating properties of selenium diodes were studied. The diode under study was connected in series with a ballast resistor (R_1) and the input voltage, and in parallel with a load resistor (R_2). The output voltage was measured across R_2. When R_2 = 10 kohm, the voltage-regulating properties of the diode sharply deteriorated for values of R_1 less than 1 kohm. The voltage-regulating properties were basically unchanged for values of R_2 between ~0.6 and 10 kohm if R_1 = 10 kohm. In addition to single diodes, the voltage-regulating properties of 10 series- and 10 parallel-connected diodes in the above circuit were studied. For values of $R_1 = R_2$ = 10 kohm, stabilization of the output voltage began for input voltages of 8 and 5 v for the series and parallel-connected diodes. The quality factor of selenium diodes is

Card 1/2

UDC: none

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

ACC NR: AP7002840

1—2 times worse than that for silicon diodes. The advantages of selenium over silicon diodes are their stability against breakdown and radiation and their ability to repeatedly recover from breakdown. Because of their negative temperature coefficient they can be used for thermal compensation. Orig. art. has: 4 figures.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 003
ATD PRESS: 5112

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, P.Kh., brigadir

Our experience in the assembly of large-panel apartment houses. Transp. stroi. 12 no.9:5-6 S '62. (MIRA 16:2)

1. Kompleksnaya brigada stroitel'no-montazhnogo poyezda No.147 tresta Ufimtransstroy.
(UFA--Apartment houses)
(Precast concrete construction)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SMIRNOV, V.S.; PAVLOV, N.N.; LUNEV, V.A.

Determining pressure on rolls during rolling with the help of dimensional analysis. Trudy LPI no.222:96-101 '63. (MIRA 16:7)
(Rolling (Metalwork)) (Dimensional analysis)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SMIRNOV, Vasiliy Sergeyevich, prof.; LUNEV, V.A., red.

[Theory of elasticity and plasticity; summary of lectures for students of the physical metallurgy faculty majoring in the "Plastic treatment of metals."] Teoriia uprugosti i plastichnosti; konspekt lektsii dlia studentov spetsial'nosti "Plasticheskaia obrabotka metallov" fiziko-metallurgicheskogo fakul'teta. Leningrad, Leningr. politekhn. in-t im. M.I.Kalinina, 1963. 139 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Smirnov).

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SMIRNOV, V.S.; GRIGOR'YEV, A.K.; LUNEV, V.A.

Analyzing increase in width formulas and methods of the experimental investigation of transverse deformation in rolling. Trudy LPI no.243:69-78 '65. (MIRA 18:6)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SHKVARKINA, T.I.; IVANOVA, Ye.A.; LUNEV, V.A.

Electron microscope testing of wheat flour gluten. Biokhim. zer. i khlebopech. no.7:271-274 '64. (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti.

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.A.

Analytic determination of slip line equations. Trudy LPI no.238: 41-46 '64.

Spreading of plastic deformation during transverse rolling. Ibid.: 47-55 (MIRA 17:11)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 00868-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) HJW/JD/HW

ACCESSION NR: AT5013066 UR/2563/65/000/243/0138/0140

AUTHOR: Lunev, V. A. 33 27 B+1

TITLE: Plasticity of KhDN steel

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 243, 1965. Obrabotka metallov davleniyem (Metalworking by pressure), 138-140

TOPIC TAGS: steel rolling, steel plasticity, KhDN steel

ABSTRACT: The behavior of KhDN steel (composition 0.1% C, 4.0% Ni, 4% Cu, up to 22% Cr, bal. Fe) was studied during one-pass and multi-pass taper rolling at 800, 900, 1000, and 1200C with reductions per pass of 5, 10, 15, 20, 25, and 30%. The steel was found to have an interesting property: at 800 and 1200C, very large reductions can be achieved by lowering the individual reduction in several passes, while the maximum reduction per pass does not exceed 50%. At 1000C, however, the plasticity of the metal is at its minimum; no appreciable drawing is obtained by lowering the reduction in each pass. At this temperature, the critical reduction obtained by taper rolling is nearly equal to the total reduction which can be obtained in several passes. It is postulated that alloys of low plasticity break down at a given reduction independent of the number of passes; they most probably

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L 00868-66

ACCESSION NR: AT5013066

break down in microvolumes during the very first passes, and the microcracks develop into macrocracks almost for the same reduction. In more plastic alloys, even if microcracks are formed their growth is restricted: the metal is able to flow within certain limits, partly eliminating areas of high stress concentration and thus slowing down the development of cracks. Orig. art. has: 3 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM,IE

NO REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V. D.

Oystrakh, D. G. and Lunev, V. D. - "On the problem of salvarsan jaundice", Trudy Astrakh. gos. med. in-ta, Vol. IX, 1948, p. 207-10.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949).

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.D. (Astrakhan')

Gastric secretion in colitis [with summary in English]. Klin.med. 37 no.2:102-105 F '59. (MIRA 12:3)

1. Iz kliniki propedevtiki vnutrennikh bolezney (zav. - dots. V.D. Lunev) Astrakhanskogo meditsinskogo instituta.
(GASTRIC JUICE,
secretion in colitis (Rus))
(COLITIS, physiol.
gastric secretion (Rus))

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.I.

AID 598 - I

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT

Call No.: AF646722

BOOK
Author: LUNEV, V. I., Eng.
Full Title: TECHNICAL MECHANICS. Part II: STRENGTH OF MATERIALS
Transliterated Title: Tekhnicheskaya mekhanika. Chast' 2: Soprotivleniye materialov

PUBLISHING DATE
Originating Agency: None
Publishing House: State Publishing House for Literature on Construction and Architecture
Date: 1954 No. pp.: 227 No. of copies: 30,000
Editorial Staff
Editor: Bychkov, D. V., Dr. of Tech. Sci., Prof.

PURPOSE: Approved by the Ministry of Construction as a textbook for technicums.

TEXT DATA
Coverage: This is a general study of deformation and elasticity, discussing briefly Poisson's ratio and Hooke's Law, stresses and strain, moments of inertia of plane areas, Zhuravskiy's theorem, torsion, combined stresses, combined bending and twist, and Euler's formula for determination of a critical strain. Diagrams, formulae and problems on strength of materials and their solutions are provided.
No. of References: None
Facilities: None

1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

Lunev, Vasiliy Ivanovich

BYCHKOV, D.V., doktor tekhn.nauk, prof.; MIROV, M.O.; LUNEV, Vasiliy Ivanovich, kand.tekhn.nauk, dots.; IVANOV, Grigoriy Mikhaylovich, kand.tekhn.nauk.; PAVLOV, B.P., prof., doktor tekhn.nauk, retsenzent; KOBETS, L.G., kand.tekhn.nauk, retsenzent; UDOVENKO, S.A., inzh., retsenzent; BOGOMOLOV, G.I., inzh., retsenzent; BORODINA, I.S., red. izd-va; KAPLAN, M.Ya., red.izd-va; PERSON, M.N., tekhn. red.; UL'KINA, Ye.A., tekhn.red.

[Engineering mechanics] Tekhnicheskaia mekhanika. Pod obshchei red. D.V.Bychkova. Moskva, Gos.izd-vo lit-ry po stroit. i arkhit. Pt.1. Bychkov, D.V., and M.O.Mirov [Theoretical mechanics] Teoreticheskaia mekhanika. Izd. 2-oe. 1957. 282 p. Pt.2. Lunev, V.I. [Resistance of materials] Soprotivlenie materialov. Izd. 2-oe, perer. 1957. 255 p. Pt.3. Ivanov, G.M. [Statics of structures] Statika sooruzhenii. 1957. 226 p. (MIRA 11:2)

(Mechanics, Applied) (Strength of materials)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V. I.

"Variational and Graphical Methods of Designing Thin-Wall, Open Section Cores." Cand Tech Sci, Moscow Inst of Engineers of Municipal Construction, Moscow City Executive Committee, Moscow, 1954. (RZhMekh, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions (14)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 21540-66 EWT(1)/EWT(m)/EWP(j)/T/ETC(m)-6 DS/WW/JK/RM

ACC NR: AP6009544 SOURCE CODE: UR/0413/66/000/005/0077/0077

INVENTOR: Kogan, Ya. I.; Lunev, V. I.; Vvedenskiy, A. A.

ORG: none

TITLE: Apparatus for investigating and regulating aerosol parameters. Class 42, No. 179493

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 77

TOPIC TAGS: aerosol nephelometer

ABSTRACT: An Author Certificate was issued for an apparatus, such as a nephelometer, for example, for studying and regulating the aerosol parameters and capable of photoelectric registration. This apparatus is provided with a cartridge containing a filter disk with a capillary

Card 1/2 UDC: 535.43.07

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 21540-66

ACC NR: AP6009544

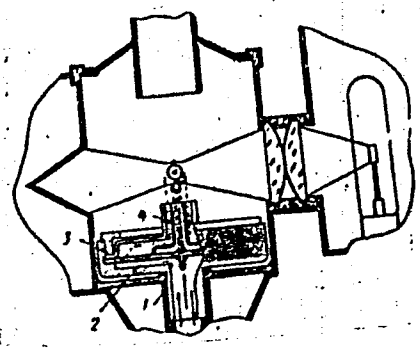

Fig. 1.

1 - Nephelometer central tube; 2 - cartridge; 3 - filter disc; 4 - capillary tube

tube and a lens in order to perform nephelometric and ultramicroscopic measurements. Orig. art. has: 1 figure. [AB]

SUB CODE: 13/ SUBM DATE: 15Mar63/ ATD PRESS: 4218

Card 2/2 BLG

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

STUKALIN, V.D., inzh.; LUNEV, V.M., mekhanik-naladchik defektoskopov; PASHUTIN, S.B.; BODROV, V.V.

Letters to the editor. Put' i put.khoz. 5 no.6:41 Je '61. (MIRA 14:8)

1. Astrakhanskaya distantsiya puti Privolzhskoy dorogi (for Stukalin). 2. Stantsiya Astrakhan', Privolzhskoy dorogi (for Lunev). 3. Nachal'nik posta 230-go kilometra Odesskoy dorogi, g. Nikolayev (for Pashutin). 4. Starshiy dorozhnyy master, st. Tikhvin, Oktyabr'skoy dorogi (for Bodrov).

(Railroads)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 41693-65 EWT(m)/T

ACCESSION NR: AP5008908 S/0076/65/039/003/0597/0601

14
13
B

AUTHOR: Lunev, V. M. (Khar'kov)

TITLE: Adsorption isotherms of nitrogen, argon and hydrogen on synthetic zeolites in the pressure range from 0.0001 mm Hg to 50 mm at -195.5C

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 3, 1965, 597-601

TOPIC TAGS: adsorption isotherm, synthetic zeolite, nitrogen adsorption, argon adsorption, hydrogen adsorption, silica gel, adsorption pump

ABSTRACT: The adsorption isotherms of nitrogen, argon, and hydrogen were measured on the zeolites CaA, NaX, CaX, NaA1, and NaA2 and on silica gel by the exchange method in order to select the most suitable brands of zeolites and to determine the possibility of their use in adsorption pumps. It was found that the adsorption of nitrogen and argon decreases in the sequence CaA > NaX > CaX > NaA as a function of pressure. The poor hydrogen-adsorbing capacity of the zeolites is due to the fact that the molecules of hydrogen cannot be effectively adsorbed at an experimental temperature above the critical temperature. The best zeolite for the adsorption of all three gases is CaA, which will successfully replace carbon BAU. "In conclusion, the author thanks M. B. Zelikin for the zeolite samples which he kindly supplied". Orig. art. has: 4 figures.

Card 1/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 41696-65

ACCESSION NR: AP5008908

ASSOCIATION: Fiziko-tekhnicheskiy institut, Akademiya nauk UkrSSR (Institute of physics and technology, Academy of Sciences of the Ukrainian SSSR)

SUBMITTED: 25Jul63 ENCL: 00 SUB CODE: GC

NO REF SOV: 006 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 3597-66 EWT(m)/T

ACCESSION NR: AP5024048 JR/0057/65/035/009/1666/1671

AUTHOR: Lunev, V.M.; Romanov, A. A. 44,55 44,55

40
37
B

TITLE: Adsorption properties of type-A zeolites at liquid nitrogen temperature

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1666-1671

TOPIC TAGS: gas adsorption, adsorption pump, high vacuum pump, zeolite

7,44,55

ABSTRACT: In order to assess the possibilities of employing cation-substituted type-A synthetic zeolites in adsorption vacuum pumps, the authors have measured the adsorption capacities and rates of such materials for Ar, N_2, and H_2 at liquid nitrogen temperature and at pressures from 10^{-5} to 10^2 mm Hg. The measurements were undertaken because the data in the literature are mainly for high pressures and for temperatures above the optimum temperature for operation of adsorption pumps. The specimens were obtained by replacing Na^+ ions in synthetic type-A zeolites with Ca^{++} ions or Mg^{++} ions. It was possible to replace up to 89 % of the Na^+ ions with Ca^{++} ions and up to 48 % of the Na^+ ions with Mg^{++} ions. The material was tested in the form of 2 mm diameter pellets from 3 to 13 mm long, bonded with bentonite. Adsorption isotherms were measured by the volume method, and the

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L 3597-66
ACCESSION NR: AP5024048

3

specimens were regenerated by heating under vacuum at 350-400°C and subsequently holding for 2 hours at liquid nitrogen temperature at a pressure of 10^{-7} mm Hg. The experimental technique is described in more detail elsewhere (ZhFKh, 39, 597, 1965). It was found that replacing the Na^{+} ions with Ca^{++} or Mg^{++} ions considerably increased both the adsorption capacity and the adsorption rate. The adsorption rates were greater at high pressures than at low and for molecules of small diameter (H_2) than for molecules of large diameter (Ar). The kinetics of the adsorption process is discussed, and it is concluded that the rate-limiting factor is internal diffusion. Cation substituted type-A zeolites are suitable for reaching pressures below 10^{-7} mm Hg in closed systems, but their low adsorption rates make them less suitable for continuously pumped systems. The fact that the adsorption rate increases with increasing pressure suggests the possibility of using zeolite sorption pumps in the roughing region. "In conclusion, the authors consider it their duty to thank M.F.Fedorova, who participated in discussions of the results obtained." Orig. art. has: 3 formulas, 3 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 26Oct64 ENCL: 00 SUB CODE: MT, GC, IE

NR REF SOV: 007 OTHER: 003

Card 2/2 mlr

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

ACC NR: AP6036040 SOURCE CODE: UR/0057/66/036/011/2075/2079

AUTHOR: Kushnir,N.A.; Lunev,V.M.; Romanov,A.A.

ORG: none

TITLE: Kinetics of the absorption of nitrogen, argon and hydrogen on granules of different absorbers cooled to liquid nitrogen temperature

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 2075-2079

TOPIC TAGS: gas absorption, silica gel, zeolite, activated carbon, nitrogen, argon,, hydrogen, absorption pump

ABSTRACT: The authors have measured the absorption of N_2, Ar, and H_2 on granules of "BAU" carbon and "KSK" silica gel cooled to liquid nitrogen temperature and have compared the results with those of similar measurements by two of them (ZhTF, 35, 1666, 1965) of absorption on CaA zeolite. The measurements were made by admitting successive portions of the gas to the absorption chamber and recording the decrease of pressure with time. From the curves thus obtained, curves were calculated giving the total volume Q_0 of gas absorbed after infinite time as a function of the pressure p, the ratio Q_t/Q_0 as a function of $t^{1/2}$ for constant p, where Q_t is the quantity of gas absorbed after time t, and the time T for which $Q_T = 1/2$ as a function of p. The curves of Q_t/Q_0 against $t^{1/2}$ were nearly straight lines, bending considerably only near both ends. From this it is concluded that most of the absorption volume is

UDC: 537.525;541.183

Card 1/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

ACC NR: AP6036040

filled by diffusion. From the intercept of the straight portion of these curves on the Q_t/Q_o axis, conclusions were drawn concerning the free surface (including the surface of large pores) of the absorbent. With increasing thickness of the layer of absorbent granules, the specific surface of the absorbent decreased and the half-time T increased. From the long half-times and the slow diffusion rates, it is concluded that only the outer layer of absorbent grains is effective in the low pressure operation of practical absorption pumps, and the inner layers are superfluous. The full thickness of the absorbent is effective at higher pressures, however. Orig. art. has: 4 figures.

SUB CODE: 20 SUBM DATE: 20Dec65 ORIG. REF: 003 OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.V.

Lunev, V. V. Laminar boundary layer of compressible gas on a plate in the case of large temperature changes. Prikl. Mat. Meh. 20 (1956), 395–401. (Russian)

The equations of compressible boundary layer flow are expressed as a system of two non-linear partial differential equations for the specific enthalpy i and the shear stress $\tau=\mu\partial u/\partial y$ as functions of the coordinates x and u, the x-component of velocity, parallel to the plate. If $\rho\mu/\rho_\infty\mu_\infty=f(i)$, then by separation of variables particular solutions $i=i(u)$, $\tau=X(x)g(u)$ can be found. In fact (1) $gg''=-f(i)u$, and (2) $(i'\sigma)'-(g'g)(1-1/\sigma)i'+c=0$, where c is a constant, and the Prandtl number σ is constant or slowly varying. The author writes

$$g=(f_{cp})^{1/2}(g_0+g_1+g_2+\cdots),$$

where f_{cp} is a mean value of f, and g_0 is a solution of (1) for constant f. Then $g_1, g_2, \cdots$ can be found successively, if at the same time successive approximations to solutions i of (2) are calculated. By perturbing (1) and by taking advantage of the fact that $f(i)$ is slowly varying the author finds that the error $(\delta g)/g_0=\frac{1}{2}m(f(i_0), u)$, where m is a mean value of the error $(\delta f(i))/f_0$, and g_0 and i_0 are exact solutions of (1) and (2). From this he shows that the errors in the nth approximations to g_0 and i_0 decrease exponentially. It is said that for most computations it will suffice to determine g_1 or at most g_2. *J. H. Giese*

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SOV/124-58-5-5468 D

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 76 (USSR)

AUTHOR: Lunev, V.V.

TITLE: Applying the Method of Small Perturbations to Problems of the Laminar Boundary Layer (Metod malykh vozmushcheniy v zadachakh laminarnogo pogranichnogo sloya)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Physical-Mathematical Sciences, presented to the MGU (Moscow State University), Moscow, 1957

ASSOCIATION: MGU (Moscow State University), Moscow

1. Laminar boundary layer--Theory

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.V.

40-5-2/20

AUTHOR: LUNEV, V.V. (Moscow)

TITLE: The Application of the Perturbation Calculation to Problems of the Laminar Boundary Layer (Primeneniye metoda malykh vozmushcheniy k zadacham laminarnogo pogranichnogo sloya).

PERIODICAL: Prikladnaya Mat.i Mekh.,1957,Vol 21,Nr 5,pp.606-614 (USSR)

ABSTRACT: Starting from the equations (1.1) set up by Crocco the author solves the equations for the laminar boundary layer of a compressible gas for the case of a small pressure gradient under constant Prandtl-number. Further solutions are given for arbitrary dependence of the viscosity on the temperature and for flows with variable Prandtl-number. The author shows that a consideration of the dissociation of the air requires no variations of the method applied for the investigations. The results are applied to laminar supersonic boundary layers as they occur on thin bodies or on such bodies which differ few from a cone or a wedge gib.
In the last chapter of the paper the author calculates the temperature distribution along the wall flown around.
There are 2 figures, 2 tables, and 6 references, 1 of which is Slavic.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SOV/179-59-4-17/40

24(6)

AUTHOR: Lunev, V. V. (Moscow)

TITLE: On the Motion of a Thin Truncated Body at High Supersonic Speeds in the Atmosphere

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 131-133 (USSR)

ABSTRACT: This investigation concerns the influence of a high increase in the gas entropy in the shock wave, which has moved away from the truncated spot, upon the pressure distribution along a thin truncated body (i.e. a body the longitudinal dimension of which amounts to a multiple of the dimension of the truncated part). The papers by G. G. Chernyy (Refs 1,2) are mentioned. It is shown that a reduction of the adiabatic exponent $\varkappa_0$ the major part of the work performed in the motion of the truncated nose will more and more remain in the layer of high entropy in the form of an irreversible heat energy, and one of the kinetic energy of progressive gas motion in the direction of flight of the body. From the principles put forward in the paper (Refs 1,2,4) it follows that the dissociation of air in the layer of high entropy reduces the effect caused

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SOV/179-59-4-17/40

On the Motion of a Thin Truncated Body at High Supersonic Speeds in the Atmosphere

by truncating upon the pressure distribution along the lateral body surface.- Axially symmetric bodies are investigated in the second part of the paper. The results obtained show that at high flying velocities of thin truncated bodies ($M > 20$, at $\alpha = 10^{\circ}$, as shown in calculations) in the atmosphere, an increase in the entropy in the shock wave, which has moved away from the truncated spot, has a considerable downward influence on the pressure distribution over a long distance along the current.- T. G. Korchikova and A. G. Kuz'mina helped with the calculations. There are 1 figure and 6 references, 3 of which are Soviet.

SUBMITTED: February 4, 1959

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.V. (Moskva)

Similitude in a viscous-gas flow around thin bodies at high supersonic velocities. Prikl. mat. i mekh. 23 no.1:193-197 Ja-F '59. (MIRA 12:2)

(Aerodynamics, Supersonic)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.V. (Moskva)

Hypersonic flow of a radiative gas around a wedge. PMTF no.2: 40-46 Jl-Ag 60. (MIRA 14:6)

(Aerodynamics, Hypersonic)
(Gas flow)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

S/179/60/000/03/018/039
E031/E413

10,2000

AUTHORS: Lunev, V.V., Murzinov, I.N. and Ostapovich, O.I.
(Moscow)

TITLE: The Motion of a Thin Blunt Cone at a Small Angle of Incidence at Large Supersonic Velocity

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3, pp 121-125 (USSR)

ABSTRACT: The effect of bluntness on the pressure distribution along the generators is considered. A qualitative picture of the flow is constructed. The results of experimental investigations are given and an approximate law of similarity is constructed. A cylindrical coordinate system is introduced, the x-axis lying along the axis of the cone. The equations expressing the conservation of mass, impulse and energy in a volume bounded by the surfaces of the shock wave, the body and two neighbouring meridional planes are written in integral form. Two types of bluntness are considered, one being in the form of part of a sphere and the other being in the form of a plane face. In the first case,

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The Motion of a Thin Blunt Cone at a Small Angle of Incidence at Large Supersonic Velocity

it is assumed that the pressure is distributed over the sphere according to Newtonian theory. Neglecting terms of the order of the square of the angle of incidence, suitable forms for the unknown quantities are substituted in the equations. The sum of terms of the order of the angle of incidence are equated to zero and integrals involving a term in the density are excluded. Then two equations are obtained for the pressure $p_1(x)$ and $R_1(x)$ (the pressure is sought in the form $p_0(x) + \alpha \cos \varphi p_1(x)$, α being the angle of incidence and φ the azimuthal angle), R the distance from the axis of the body to the shock wave is sought in the same form. In order to solve the equations, it is necessary to know the values of $p_0(0)$ and $R_1(0)$, which requires an additional condition for x approximately zero. On the other hand, for x greater than or equal to approximately 2, the solution virtually does not depend on $p_1(0)$ or $R_1(0)$. The pressure distributions are

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The Motion of a Thin Blunt Cone at a Small Angle of Incidence at Large Supersonic Velocity

given in the form of graphs. New coordinates $Y = p/\beta^2$, $\zeta = (2/C_x)^{1/2} x\beta^2$ ($\beta = \theta_0 + \alpha \cos\varphi$, θ_0 being the semi-apex angle of the cone), used in these graphs are generalized for $M\theta_0$ very much greater than unity. The following approximate similarity law is formulated: for flow at hypersonic velocities round thin blunt cones at small angles of incidence the pressure distribution along the generators is determined from the local angle of attack and is subject to a similarity law of the form $Y = f(\zeta)$. This generalizes Chernyi's law for cones at zero angle of incidence. There are 3 figures and 6 references, 3 of which are Soviet and 3 English.

SUBMITTED: February 4, 1960

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LUNEV, V.V. (Moskva)

Self-similating case of hypersonic flow of a viscous heat conducting gas around an axially-symmetric body. Prikl.mat.i mekh. 24 no.3:548-550 My-Je'60. (MIRA 13:10)
(Aerodynamics, Supersonic)

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31632
S/207/61/000/006/007/025
A001/A101

10.3300

AUTHORS: Lunev, V.V., Rumynskiy, A.N. (Moscow)

TITLE: Interaction of the boundary layer with an external flow, caused by radiative heat transfer

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1961, 44 - 53

TEXT: The authors consider the laminar boundary layer on the surface of a wedge streamlined by a hypersonic flow of a radiative gas on the assumption that the effect of radiation on the gas flow is insignificant in the disturbed region. It is assumed, moreover, that radiation of gas does not affect its motion before the pressure jump, radiation pressure and density of radiative energy can be neglected, and the radiation field in the boundary layer is assumed to be axial-symmetrical. In this case the effect of radiation on the gas motion takes place on account of the heat inflow due to emission and absorption of radiation energy by the moving gas particles. In order to separate the effect of interaction between the boundary and shock wave layers, due to radiative heat transfer, the boundary layer is assumed to be thin; the temperature of the wedge surface, Prandtl number

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Interaction of the boundary layer ...

and product of gas viscosity by its density are assumed to be constant. The authors derive the equation of energy balance in the laminar boundary layer on the wedge, which is represented by a second-order differential equation, in partial derivatives, of independent variable i, being the enthalpy divided by U^2 (U is velocity of incident flow). In solution of this equation the scheme of asymptotic boundary layer is employed, which was used by one of the authors in his previous work (Ref. 1: PMTF, 1960, no. 2). The analysis of the solution found shows that it is valid at any optical thickness of the shock layer. The authors illustrate the effect of radiation on thermal flows and temperature profiles by several examples from which it follows that convective streams can not be calculated by the usual formulae for the boundary layer, if radiation is present, and the method of local similarity is inapplicable for this case. There are 3 figures and 10 Soviet-bloc references.

SUBMITTED: August 3, 1961

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21342
S/040/61/025/006/008/021
D299/D305

AUTHOR: Lunev, V.V. (Moscow)

TITLE: Similitude of hypersonic viscous flow past slender, blunt bodies

PERIODICAL: Prikladnaya matematika i mekhanika, v. 25, no. 6, 1961, 1050 - 1059

TEXT: The general law of similitude is derived for laminar flow past slender flat ($\nu = 0$) and axisymmetric ($\nu = 1$) blunt bodies. The similitude conditions are derived for a nonviscous high-entropy layer and for the boundary layer and for the boundary layer with variable entropy at the external boundary. Let x' and r' be a coordinate system with center at the body nose and one axis parallel to the body axis, uU and vU - the velocity components along the coordinate axes, $\rho_\infty U^2 p$ and $U^2 i$ - pressure and specific enthalpy, α - the order of magnitude of the angle of inclination of the shock wave, β - the relative thickness of the body. It is noted that $(1 - u) \sim u$ in the high-entropy layer at high temperature, and that

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$u \sim 1$ does not hold in the following. The equation of state of the gas in the high-entropy layer and the change in viscosity μ and Prandtl number σ are

$$\frac{p}{p_0} = \frac{\rho}{\rho_0} f_1(i), \quad \frac{\mu}{\mu_0} = C f_2(i), \quad \sigma = \sigma(i) \quad \left(C = \text{const} \sim 1,\ f_1 \sim \frac{i}{i_0},\ i_0 \approx \frac{1}{2}\right) \tag{1.1}$$

The thickness of the high-entropy layer is denoted by δ. The main portion of the disturbed gas is found outside the high-entropy layer. The thickness of the completely-viscous high-entropy layer has maximal order if $\alpha \sim \delta/l$. In this case

$$\frac{\delta}{l} \sim \frac{1}{\alpha}\left(\frac{\mu_0}{\rho_0 R_l}\right)^{1/2} \sim \left(\frac{\mu_0}{\rho_0 R_l}\right)^{1/4} \tag{1.4}$$

With small M^{-1} and β, the quantity α will be small if

$$\left(\frac{\mu_0}{\rho_0 R_l}\right)^{\frac{1}{4}} \ll 1, \quad \left(\frac{d}{l}\right)^{m_s(1+\nu)} \ll 1 \tag{1.6}$$

It is assumed that the gas has the same constant adiabatic index γ.

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in the shock layer as in the oncoming stream. The boundary-layer equations are set up. On the body surface, the following conditions have to be satisfied

$$u = V = 0, \quad i = i_w(x) \text{ or } \frac{\partial i}{\partial y} = q(x). \tag{2.4}$$

In the case of a completely-viscous high-entropy layer, its boundary with the shock layer is fairly sharply defined, whereas in the nonviscous case, this boundary is more conventional. With simplifying assumptions, the equations for the parameters of the initial values are (for the high-entropy layer):

$$\delta_1^{**} = \frac{1}{2} K_\alpha + \int_{y_w}^{y_\delta} P y^\nu dy - \int_0^x P\,(y_\delta^\nu y_\delta' - y_w\, y_w')\, dx + \frac{N}{k}\int_0^x \left(y^\nu f_2 \frac{\partial u}{\partial y}\right)_{y=y_w} dx$$

$$\vartheta_1 = L_\alpha + \frac{N}{k}\int_0^x \left(y^\nu \frac{f_2}{\sigma}\frac{\partial i}{\partial y}\right)_{y=y_w} dx \tag{3.1}$$

$$\delta_1^{**} = \frac{(\delta^{**})^{1+\nu}}{\alpha^{3+\nu}}, \quad \vartheta_1 = \frac{\vartheta^{1+\nu}}{\alpha^{3+\nu}}, \quad y_w = \frac{\beta}{\alpha} r_w, \quad i_* = i + \frac{u^2}{2} + \frac{v^2}{2} \tag{3.1}$$

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$$(\delta^{**})^{1+\nu} = \int_{r_w}^{r_\delta} \rho u r^\nu (1-u)\, dr, \qquad \vartheta^{1+\nu} = \int_{r_w}^{r_\delta} \rho u r^\nu (i_0 - i_*)\, dr \tag{3.1}$$

the constants K and L are determined from the laws of conservation of energy and momentum for the region D, bounded by the section x $\approx$ 0 and the leading part of the shock wave. It is noted that taking into account the effect of viscosity is not related to the appearance of new parameters (as compared to the nonviscous case) due to bluntness. The obtained equations and boundary conditions contain the parameters

$$\gamma,\ \theta_\alpha,\ \chi,\ k,\ K_\alpha,\ L_\alpha,\ J_\alpha \tag{4.1}$$

which reduce to

$$\gamma,\ \theta,\ \chi,\ k,\ K,\ L,\ J \tag{4.2}$$

$$\left(\theta = M\beta,\ K = \frac{1}{2^\nu}\frac{C_x}{\beta^{3+\nu}}\left(\frac{d}{2l}\right)^{1+\nu},\ L_\alpha = \frac{1}{2^\nu}\frac{C_q}{\beta^{3+\nu}}\left(\frac{d}{2l}\right)^{1+\nu},\ J = \frac{I}{\beta^{2+\nu}}\left(\frac{d}{2l}\right)^{1+\nu}\right) \tag{4.2}$$

Parameters (4.2) are a complete system of similitude parameters for hypersonic flow of a viscous heatconducting gas past various blunt

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Similitude of hypersonic vis... D199/D305

bodies with same shape of the surface $r_w(x)$ and same enthalpy conditions (2.4). For bodies of negligible bluntness, the parameters K, L and J are dropped from system (4.2). For a viscous high-entropy layer, the integral method of satisfying the conditions in the neighborhood of the nose, is justified by the influence of viscosity and heatconduction which smoothes out the differences in the initial distribution of parameters in the high-entropy layer, so that the integral characteristics of the initial conditions are decisive at some distance from the nose. With large Reynolds numbers, when the high-entropy layer is partly nonviscous, the difference in the distribution of the entropy is preserved outside the boundary layer. In this connection, the similitude conditions of parameter distribution in a partly- or fully nonviscous high-entropy layer are considered in more detail. In conclusion, it is found that the obtained law of similitude applies to the entire region of disturbed flow (with the possible exception of a region intermediate to the high-entropy and shock layers), provided $\gamma_0 - 1 \ll 1$, whereby the entropy-distribution function $s(\varphi)$ is the same. It can be assumed that the accuracy of the law of similitude is higher in

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Similitude of hypersonic viscous . . .

the case of a viscous high-entropy layer. In a note (added as proof), the author criticizes the assumption [illegible], adopted in a recent work by H. Cheng et al. There are 2 figures and 9 references: 3 Soviet bloc and 6 non-Soviet bloc. The 4 most recent references to the English-language publications read as follows: H. Cheng. Similitude of Hypersonic Real Gas Flows Over Slender Bodies with Blunted Noses, JAS, 1959, no. 9. W. Hayes, R. Probstein, Viscous Hypersonic Similitude, JAS, 1959, no. 12; H. Serbin, The Speed Flow of Gas Around Blunt Bodies. The Aeronautical Quarterly, 1958, v. 9, no. 4. H. Cheng, T. Hall, T. Golian, A. Hertzberg, Boundary-Layer Displacement and Leading-Edge Bluntness Effects in High-Temperature Hypersonic Flow, JAS, 1961, no. [illegible].

SUBMITTED: August 3, 1961

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E031/E435

10.1200

AUTHOR: Lunev, V.V. (Moscow)

TITLE: On the similarity conditions for the hypersonic turbulent boundary layer on slender bodies

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.4, 1962, 13-17

TEXT: Both plane and axisymmetric blunt-nosed bodies are considered assuming a variable entropy of the boundary layer along the exterior boundary. The case of a laminar boundary layer was considered in earlier work of the author (PMM, v.25, no.6, 1961) and by H.Cheng, F.Hall, F.Colian and A.Hertzberg (JAS, no.5, 1961). Due to the high temperature and low density of the gas, the pressure across the high entropy layer formed by the gas which has passed through the shock wave can be considered constant. In the shock layer the gas is assumed to be perfect with a constant adiabatic index. For similarity of flows, including flow in the high entropy layer, when the flow round the body is inviscid it is required that the parameters

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$$\Theta = M\beta, \quad K = \frac{1}{2^{\nu}} c_x \beta^{-3-\nu} \left(\frac{d}{2\ell}\right)^{1+\nu}, \quad \gamma, \quad k \quad \text{for } d \ll \alpha\ell;\ \alpha, \beta \ll 1 \tag{3}$$

and in the high entropy layer the function

$$s = s(\varphi) \qquad \left(s = \sin^2\varepsilon,\ \varphi = \frac{\psi}{c_x},\ \psi^{(1)} = \pi^{\nu}\left(\frac{1}{2}d\right)^{1+\nu} \rho_\infty U \psi\right) \tag{4}$$

be alike. Similarity in the high entropy layer can occur when, for constant entropy, the relation between the enthalpy and the pressure can be ignored. In considering the turbulent boundary layer it is assumed that τ_w and q_w depend on the local boundary parameters as in the case of a boundary layer on a plate, while their dependence on the enthalpy and pressure is governed by coefficients which are functionals of the pressure and enthalpy. Starting from the equations for momentum and energy, for the flow across a section of the boundary layer and for the relative thickness of the layer, a system of equations is derived from which, in conjunction with Eq.(3) and (4), the following

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similarity law can be deduced. Flows are similar if the values of the parameters θ, $k = p_o/\rho_o$ (subscript 'o' refers to the critical point of the flow), $K, \Omega = (c\mu_o/R_\infty)^{0.2}\beta^{-1.4}$, $r_w(x)$ (the form of the body), $s(\varphi)$, $i_w(x)$ (i is the enthalpy). In addition the functions $P(x,y/\beta)$, $(P = p/\beta^2)$, $V(x,y/\beta)$, $(V = v/\beta)$, $\rho(x,y/\beta)$ will be similar in similar conditions in the shock layer, and likewise for $P(x,y/\beta)$, $u(x,y/\beta)$ and $i(x,y/\beta)$ in the inviscid high entropy and boundary layers. On the surface of the bodies the distribution of the quantities P, c_f/β^3 and c_q/β^3 will be similar.

SUBMITTED: February 22, 1962

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

LUNEV, V.V. (Moskva)

Using the method of a shock layer in problems of hypersonic flow about thin blunt bodies. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6:146-147 N-D '62. (MIRA 15:12)
(Aerodynamics, Hypersonic)

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D299/D301

10.1230

AUTHOR: Luney, V.V. (Moscow)

TITLE: Hypersonic flow past slender blunt bodies, described by a power law

PERIODICAL: Prikladnaya matematika i mekhanika, v. 26, no. 2, 1962, 389 - 390

TEXT: The similitude laws, set up for slender blunt cones and wedges, are extended to slender bodies, described by a power law; these bodies may be flat ($\nu = 0$) or axisymmetric. Assume the surface is described by the formula

$$r = \alpha L X^n, \qquad (\alpha \ll 1,\ r \gg r_0,\ n = \text{const})$$

where L is a linear dimension, and $x = LX$ - the length coordinate. Simplifying assumptions are made in the calculation of the energy and momentum. Thereby the pertinent equations assume the form

$$\left(\frac{2}{\gamma+1}\right)^2 R'^2 R^{1+\nu} + \frac{p}{\gamma-1}\left(\frac{2}{\gamma+1} R^{1+\nu} - X^{n(1+\nu)}\right) = 1 + 2^\nu n \int_0^X p X^{n(1+\nu)-1} dX \qquad (1)$$

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$$\frac{2}{\gamma + 1} R^{1+\nu} R' = 2^{\nu} \int_0^x pR^{\nu} dX. \qquad (1)$$

It is shown that Eqs. (1) have an accuracy, sufficient for the obtaining of qualitative results. A comparison of accurate- and approximate results shows that (in the case of calculations of pressure) the approximate values differ by 5 to 20 % from the accurate values. A figure shows the curves p/p_0, obtained by numerical integration of system (1), for $\nu = 1$ and various n (for $\gamma = 1.4$ and $\gamma = 1.2$). It was found that a decrease in γ leads to a decrease in the effective zone of bluntness. The resistance of a blunt body, described by a power law, is (for $n \leqslant 1$) smaller than the resistance of a sharp body, for any relative body-length x/r_0. With $n = 1.1$, the ratio C_x/C_{x0} (C_x and C_{x0} being the coefficients of resistance of the blunt- and sharp bodies, respectively), has a minimum, for $X = 1.5$; this minimum equals 0.9 approximately. There is 1 figure and 5 Soviet-bloc references.

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LUNEV, V.V., inzh.; BERKUN, M.N., inzh.; VOLCHOK, I.P., inzh.; UMANSKIY, M.A., inzh.

Effect of heat treatment on the cold strength of cast medium-carbon steel. Mashinostroenie no.6:71-72 N-D '64 (MIRA 18:2)

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L 22212-65 EWT(1)/EWP(e)/EWP(m)/EWT(m)/EPF(c)/FCS/EWG(v)/EPR/EWP(j)/FCS(k)/
EWP(b)/EWA(1) AFWL/SSD/BSD/AEDC(a)/ASDF-3/ASDP-3/AFTC(a) Pc-4/Pd-1/Pe-5/
Pi-4/Pr-4/Ps-4/ RWH/WW/JW/JD/RM
ACESSION NR: AP5002878 S/0207/64/000/005/0145/0148

AUTHOR: Lunev, V. V. (Moscow)

TITLE: Hypersonic flow over slender, blunt-nosed bodies with physicochemical transformation in the high-entropy layer

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1964, 145-148

TOPIC TAGS: hypersonic flow, high entropy layer, equilibrium flow, nonequilibrium flow, dissociating air, effective drag coefficient, similitude law

ABSTRACT: Hypersonic flows over slender, blunt-nosed bodies in the presence of physicochemical transformations in the high-entropy layer are investigated. Two-dimensional and axially symmetric flows are considered and the law of similitude based on the introduction of the effective drag coefficient c_n of the nose is established in order to take account of the effect of physicochemical reactions in the high-entropy layer on flow over bodies. The integral relations of energy and momentum are used to describe flows over slender, blunt-nosed bodies for dissociating air and nonequilibrium flow. The

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ACCESSION NR: AP5002878

pressure distribution on the body surface, the shapes of shock waves and the distribution of gas parameters outside the high-entropy layer present a general-purpose form, which is independent of equilibrium and nonequilibrium processes taking place in the high-entropy layer. The effective drag coefficients for a sphere and the pressure distributions for a spherically blunted cylinder and a cone in perfect gas flow and in equilibrium dissociating air at $M = 30$ and ∞ are plotted in graphs. The extension of the law of similitude to a blast wave in the atmosphere is discussed. Orig. art. has: 2 figures and 8 formulas. [AB]

ASSOCIATION: none

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L 25379-65 EWT(d)/EWT(1)/EWP(m)/EWG(v)/FCS(k) Pd-1/Pe-5 IJP(c) WW

ACCESSION NR: AP5005181 S/0179/64/000/006/0138/0140

AUTHOR: Lunev, V. V. (Moscow) B

TITLE: On the form of a bow shock wave in hypersonic flow over blunt bodies

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 6, 1964, 138-140

TOPIC TAGS: hypersonic flow, shock wave, bow shock wave, similitude law, similarity, condition, hypersonic similarity, high entropy layer, free layer, nonequilibrium flow, relaxation time

ABSTRACT: The author, who established in a previous article on the similitude law (Prikladnaya matematika i mekhanika, no. 6, 1961) that under similar flow conditions the functions $s(\varphi)$ for various bodies (where s is the entropy for a given streamline) are close to each other, presents an explanation of this regularity. Two basic regions of a shock wave generating a high-entropy layer and having dimensions of the order of r_0 are considered. These are the region closely adjacent to the front of the body and the region downstream where the shock wave visibly breaks away from the body surface. It is shown that the form of the shock wave in the region of a free layer is determined by the parameter I_0 and that for bodies with equal values of I_0, the functions $s(\varphi)$ are quite close under similar flow conditions.

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Flows over spherical and cylindrical segments with aperture half-angles from 0 to 90 degrees are considered as an illustrative example. The same considerations may be extended to the case of gas flows with nonequilibrium physicochemical transformations over bodies, with only one difference—that the form of the shock waves (or functions $s(\varphi)$) will still depend on the parameter $\omega = \tau U/r_0$ where τ is the characteristic relaxation time. Orig. art. has: 5 figures and 4 formulas. [AB]

ASSOCIATION: none

SUBMITTED: 20Jun64 ENCL: 00 SUB CODE: ME, AS

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

L 58935-65 EWT(1)/EWP(m)/EWP(w) EM

ACCESSION NR: AP5016227 UR/0373/65/000/003/0009/0016

AUTHOR: Lunev, V. V. (Moscow)

TITLE: Hypersonic flow past a triangular plate with blunted leading edges

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 3, 1965, 9-16

TOPIC TAGS: hypersonic gas flow, triangular plate, blunted edge effect

ABSTRACT: A hypersonic flow of a perfect gas with a constant adiabatic exponent past a triangular plate with a 20° apex angle and blunted leading edges at zero angle of attack is discussed. The Mach number of the oncoming flow is $M = \infty$, and the drag $C_x \cdot d$ along the edge is constant (C_x is the drag coefficient, and d is the plate thickness). The simplest two-layer flow pattern is used in analysis to obtain qualitative results, giving a clear picture of interrelations among the flow parameters. The pressure distribution over the plate, the thickness of the high-entropy layer, and the profile of the mean velocity in it are determined in a region (A) not too close to the leading edges of the plate; the gas-flow parameters in the region (B) adjoining the plane of symmetry of the plate are also discussed, and the equation of the characteristic limit surface dividing these regions from each other and passing in the vicinity of the plate apex is given; the lateral pres-

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ACCESSION NR: AP5016227

sure gradient in the gas flow is neglected because of the low density of the gas. The equations describing the gas motion in the high-entropy layer are given, and the variation of gas parameters in regions A and B, and in high- and low-entropy layers is discussed: the curves illustrating the relationships between these parameters are presented in diagrams. Orig. art. has: 6 figures and 28 formulas. [VK]

ASSOCIATION: none

SUBMITTED: 16Apr64 ENCL: 00 SUB CODE: ME

NO REF SOV: 004 OTHER: 001 ATD PRESS: 4048

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SHUL'TE, Yu.A.; LUNEV, V.V.; BERKUN, M.N.; VOLCHOK, I.P.; GLADKIY, S.I.

Effect of structural dispersity on the properties of medium carbon cast steel. Fiz.-khim. mekh. mat. 1 no.2:218-220 '65. (MIRA 18:6)

1. Mashinostroitel'nyy institut im. V.Ya. Chubarya, Zaporozh'ye.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SHUL'TE, Yu.A.; VOLCHOK, I.P.; LUNEV, V.V.; RUDENKO, V.P.

Effect of complex deoxidation on the physicomechanical properties of medium-carbon steel. Fiz.-khim. mekh. mat. 1 no.5:563-566 '65. (MIRA 19:1)

1. Mashinostroitel'nyy institut imeni Chubarya, Zaporozh'ye i Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov. Submitted Feb. 25, 1965.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SHUL'TE, Yu.A.; GLADKIY, S.I.; BARYSHEVSKIY, L.M.; BERKUN, M.N.; LUNEV, V.V.; SAPELKIN, A.I.; VOLCHOK, I.P.; SHEVCHUK, P.T.; KURBATOV, M.I.

Heat treatment of medium-carbon steel castings. Lit. proizv. no.4:9-10 Ap '64. (MIRA 18:7)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

SHUL'TE, Yu.A., doktor tekhn. nauk; LUNEV, V.V., inzh.

Effect of complex reduction on the cold resistance of medium carbon cast steel. Mashinostroenie no.3:18-20 My-Je '65. (MIRA 18:6)

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L 14557-66 EWT(d)/EWT(1)/EWP(m)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/FCS(k)/EWA(h)/ETC(m)-6

ACC NR: AP6005011 EWA(1) IJP(c) SOURCE CODE: UR/0208/66/006/001/0121/0129

WW/EM/RM

AUTHOR: Lunev, V. V. (Moscow); Pavlov, V. G. (Moscow); Sinchenko, S. G. (Moscow) 90 B

ORG: none

TITLE: Hypersonic, equilibrium dissociating air flow past a sphere 24

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 6, no. 1, 1966, 121-129

TOPIC TAGS: aerodynamics, hypersonic flow, equilibrium flow, dissociated gas, difference method, shock wave, sonic line

1,55

ABSTRACT: A method is described for calculating a hypersonic flow of equilibrium dissociating air past a sphere which includes separate analysis of different flow regions. A numerical difference method for obtaining the solution to the inverse problem used by Vaglio-Laurin and Ferri is applied to the analysis of the subsonic and transonic portions of the flow field. This method consists in solving an arbitrary equation of state with given parameters with a given shock wave, axis of symmetry, and sonic line. The supersonic region of the flow was calculated by the method of characteristics with variables taken from [7], developed for the case of a flow with arbitrary equation of state. Calculations of the hypersonic flow of equilibrium dissociating air past a sphere in the range of velocities V_∞ from 3000 to 7500 m/sec and density ρ_∞ from 4×10^{-4} to 3×10^{-7} gr/cm^3 (which corresponds to altitudes from 10 to

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L 14557-66

ACC NR: AP6005011

60 km) with T_∞ about 230°K. The results presented in graphs and in simple and sufficiently precise formulas are compared with existing approximate hypersonic theories and found to be in good agreement. Orig. art. has: 9 figures and 13 formulas. [AB]

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L 42390-66 EWT(1)/EWP(m) WW

ACC NR: AP6030107 SOURCE CODE: UR/0421/66/000/004/0037/0042

63
B

AUTHOR: Lunev, V. V. (Moscow); Pavlov, V. G. (Moscow)

ORG: none

TITLE: Hypersonic similarity for slender blunt-nosed bodies of complex shape in non-perfect gas flows

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 4, 1966, 37-42

TOPIC TAGS: hypersonic aerodynamics, hypersonic flow, perfect gas, real gas, similarity theory, enthalpy

ABSTRACT: A theoretical analysis of the similarity of hypersonic flows past slender, blunt-nosed bodies is extended to obtain generalized similarity laws for real gas flows with no flow separation past bodies with surface discontinuities. Similarity conditions are established for bodies of various shapes (double cones and cones with spherical bluntness and sharp concave corners). Shapes of shock waves and pressure and enthalpy distributions for various relative body thicknesses are presented in graphs, in the cases of perfect and real gas flows. Observations regarding similitude criteria for a perfect gas flow are also included. Orig. art. has: 5 figures and 6 formulas. [AB]

SUB CODE: 20/ SUBM DATE: 30Dec65/ ORIG REF: 007/ OTH REF: 002/ATD PRESS: 5068

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001030830004-2

ACC NR: AP6034535 SOURCE CODE: UR/0421/66/000/005/0030/0035

AUTHOR: Lunev, V. V. (Moscow); Rumynskiy, A. N. (Moscow)

ORG: None

TITLE: Development of the boundary layer in a gas flow with the stagnation enthalpy distributed along the stream lines

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 5, 1966, 30-35

TOPIC TAGS: gas flow, boundary layer problem, enthalpy, streamline flow, incompressible fluid

ABSTRACT: A laminar boundary layer is considered in which the distribution of the stagnation enthalpy in the initial cross section varies with height. Exact solutions of compressible boundary layer equations are found and studied for the power relationship of the stream function of the initial stagnation enthalpy profile at a constant initial velocity. It is shown that the effect of the boundary conditions at the wall is actually localized in the wall boundary layer which is close in size to the conventional velocity or thermal boundary layer. In the region which is external to this layer, the solution coincides with that of the Cauchy problem for the thermal conductivity equation which describes the development of the initial temperature profile in an unbounded steady-state flow with a constant velocity. It is shown that the external flow for the fairly even initial profiles of greatest practical interest

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is practically unaltered until the inner boundary layer is encountered, and may be analyzed by the laws for an ideal gas. The authors take this occasion to thank L. D. Perekhodova for numerical integration of the equations and for derivation of all the numerical results given in this paper. Orig. art. has: 2 figures, 2 tables, 25 formulas.

SUB CODE: 20/ SUBM DATE: 08Dec65/ ORIG REF: 001/ OTH REF: 003

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