Name: PAVLOV, Vsevolod Aleksandrovich

Dissertation: Aerial gyroscopic instruments

Degree: Doc Tech Sci

Affiliation: Leningrad Inst of Aerial Instrument Building

Defense Date, Place: 29 Jun 55, Council of Leningrad Polytechnic Inst imeni Kalinin

Certification Date: 19 Oct 57

Source: BMVO 23/57

AUTHORS: Pavlov, V. A., Gayduko, M. G., Grin', A. V., Pereturnina, I. A.

TITLE: The Effect of Static Distortions in a Crystal Lattice on Mechanical Properties of an Alpha Solid Solution of Al with Mg (Vliyaniye staticheskikh iskazheniy kristallicheskoy reshetki na mekhanicheskiye svoystva splava a tverdogo rastvora alyuminiya s magniyem)

PERIODICAL: V sb.: Issled. po zharoprochn. splavam. Vol 2, Moscow, AN SSSR, 1957, pp 257-265

ABSTRACT   Alloys containing up to 2% Mg were investigated. Atoms of elements dissolved in these alloys produce significant distortions in the crystal lattice while at the same time the cohesive forces are independent of the concentration of the solid solution. Within a wide range of temperatures the modulus of normal elasticity of an a solid solution of Al and Mg is independent of concentration. Investigations revealed that the maximum value of internal friction which is determined by the diffusion of Mg, is displaced into the range of high temperatures as the concentration of the Mg is increased; this condition is indicative of nonuniform volumetric

Card 1/2

SOV/124 58 10 11894

The Effect of Static Distortions in a Crystal Lattice on Mechanical Properties (cont)

distribution of impurities and also points to the formation of atom complexes. It is concluded that internal friction is connected with the diffusion of clouds of atoms of impurities surrounding the dislocations. Stress-relaxation studies demonstrated that diffusion processes occur during the deformation of alloys. The viewpoint/temperature curve of the alloy possesses several maxima, the magnitude of which depends on the strain rate; a certain anomalousness is observed in this function consisting in a lowering of the yield point with increasing strain rates.

G. A. Tulyako.

Card 2/2

PAVLOV, V.A.; SKIRSTYMONSKAYA-KROLIK, B.O.

Respiratory function of the blood in river lampreys [with summary in English]. Trudy Len. ob-va est. 73 no.4:235-240 '57. (MIRA 11:6)

1.Kafedra biologii Leningradskogo pediatricheskogo meditsinskogo instituta.
       (LAMPREYS) (BLOOD—ANALYSIS AND CHEMISTRY)

Q

USSR/Farm Animals. Cattle.

Abs Jour:Ref Zhur-Biol., No 17, 1958, 78719.

Author : Pavlov, V. A.
Inst   : All-Union Academy of Agricultural Sciences imeni
          V. I. Lenin.
Title   : New Method of Controlling Sterility in Cows.

Orig Pub: Dokl. VASKhNIL, 1957, No 8, 3-7.

Abstract: Delen'kiy's curative serum (DC) prepared from
          posthemorrhagic blood, enriched with hemoactins,
          was intravenously introduced to 122 sterile
          cows. 95% came in heat after the first insemi-
          nation; 52.6% of them became pregnant. With
          subcutaneous use of serum, 83.6% of 97 cows
          came in heat; 69.1% of them were fertilized.
          The method of parenteral introduction of DC is

Card   : 1/2

19

USSR/Farm Animals. Cattle.   Q

Abs Jour: Ref Zhur-Biol., No 17, 1958, 7C719.

      recommended for control of reversible forms of
      sterility. -- V. V. Polovtscva.

Card   : 2/2

R-3

USSR/Diseases of Farm Animals. Pathology of Reproduction

Abs Jour : Ref Zhur - Biol., No 7, 1958, No 31126

Author   : Belen'kiy, N.G., Pavlov V.A.
Inst   : -
Title   : Therapeutic Serum as a Biological Stimulant of the Sexual
            Function in Infertile Cows

Orig Pub : Veterinariya, 1957, No 8, 66-70

Abstract : Experiments conducted on rabbits and cows demonstrated that
           the therapeutic serum of N.G. Belen'kiy (TSB), introduced
           either intravenously or subcutaneously, stimulates sexual
           activity by normalizing and increasing the generative func-
           tion of the ovaries, by accelerating the onset of the over-
           all heat, and by ensuring fertilization. According to the
           author's data, TSB may be used for the control of the rever-
           sible forms of infertility of cows without risking abortions,
           which have been observed in the case of estrogens.

Card   : 1/1

PAVLOV, V. A.; Katsnel'son, B. D.; Ivanov, Yu. V.,

"Aerodynamics of the Vortex Chamber," Aerodynamic and Heat Transfer Problems in Boiler and Furnace Processes; A Collection of Articles, Moscow, Gosenergoizdat, Moscow, 1958. 329 p.

Purpose: The book is intended for engineers and combustion specialists concerned with the design and operation of heating equipment and it is also for scientific workers and students of vtuzes.

PAVLOV, V. A.

Osnovy konstruirovaniia giroskoicheskikh priborov; pod red.
L. A. Riabova. Dopushcheno v kachestve ucheb. posobiia dlia aviatsionnykh
in-tov. Moskva, Oborongiz, 1946. 222 p., diagrs.
Title tr.: Priciples of gyroscopic instrument design. Approved
as a textbook for institutes of aeronautical studies.

TL589.2.C58P3

SC: Aeronautical Sciences and Aviation in the Soviet Union, Library of
Congress, 1955.

PAVLOV, V.A.

Lectures on the Subject of Gyro Instruments.

LIAP (1 47)

PAVLOV, V.A.; KOTLYAR, Ya.M., redaktor; ZUDAKIN, I.M., tekhnicheskiy
redaktor.

[Aeronautical gyroscopic instruments] Aviatsionnye giroskopicheskie
pribory. Moskva, Gos. izd-vo oboronnoi promyshlennosti, 1954. 411 p.
[Microfilm]   (MLRA 9:1)
(Aeronautical instruments) (Gyroscope)

BULOVSKII, P.I.; MES'KIN, V.S., otvetstvennyy redaktor; AKSENOV, D.D., red.;
BLINOV, V.I., red.; VORONOVSKAYA, Ye.V., red.; GOLOVCHANSKIY, P.M.,red.;
ZAVALISHIN, D.A., red.; EPSHTEYN, M.O., red.; BORKHVARDT, G.K., red.;
PAVLOV, V.A., red.; POVALYATEV, A.V., red.; SIVERS, A.P., red.;
FILIPPOV, P.I., red.; MISHIN, V.I., red.; EL'KIN, Ye.G.,tekhn.red.

[Theoretical bases for the technology of assembling aeronautical
instruments] Teoreticheskie osnovy tekhnologii sborki aviatsionnykh
priborov. Leningrad, 1956. 122 p. (Leningrad. Institut aviatsionnogo
priborostroeniia. Trudy no.15)   (MIRA 10:11)
                     (Aeronautical instruments)

ACC NR: AT6034463   (A)   SOURCE CODE: UR/0000/66/000/000/0265/0271

AUTHOR: Surkov, Yu. P.; Sadovskiy, V. D.; Sokolkov, Ye. N.; Pavlov, V. A.; Gaydukov, M. G.

ORG: none

TITLE: Effect of high temperature thermomechanical treatment at a small deformation rate on the heat resistance of Type KhN77YuR alloy

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 265-271

TOPIC TAGS: metal heat treatment, heat resistance, metal deformation, metal recrystallization

ABSTRACT: High temperature thermomechanical treatment, concluding with deformation of the material at increased temperatures, and then cooling, eliminating the development of recrystallization due to the birth and growth of new grains, leads to a considerable improvement in the heat resistance properties of steels and alloys. The present article considers the effect of high temperature thermomechanical treatment at a small deformation rate ($0.003-0.004$ sec^{-1}) on the heat resistance of alloy KhN77TYuR. Samples with a size of $50 \times 50 \times 75$ mm were heated to a temperature of

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ACC NR: AT6034463

1080° with a holding time of 8 hours, after which part of them were cooled in air (control samples), while the other part was subjected at the same temperature to 25-30% deformation. On the basis of the experimental results, the following conclusions were drawn: 1) high temperature thermomechanical treatment of alloy KhN77TYuR with a deformation rate of 0.003-0.005 sec^{-1} assures a recrystallization structure in a cross section of the order of 50 x 50 mm, and leads to an improvement in heat resistance properties; 2) fragmentation of the structure in the alloy assures greater stability, and increases the temperature of articles made from the alloy by the method of high temperature thermomechanical treatment (up to 850°). Orig. art. has: 3 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 10Jun66/ ORIG REF: 005

Card 2/2

L 35899-66   EWT(m)/EWP(w)/T/EWP(t)/ETI   IJP(c)   JD/JG

ACC NR: AP6007357   SOURCE CODE: UR/0126/66/021/002/0286/0288

AUTHOR: Pavlov, V. A.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: Influence of the energy of defect packing on the cold shortness of metals with body-centered cubic lattice

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 2, 1966, 286-288

TOPIC TAGS: flow stress, metal test, metal physics, metal crystal, liquid flow, crystal lattice, mechanical property

ABSTRACT: A short review of the influence of the energy of defect packing on the cold shortness of metals is presented. On the basis of experimental data and theoretical considerations (V. Ye. Panin, Ye. F. Dudarev, T. S. Sidorova, and M. A. Bol'shanina. FMM, 1963, 16, 574) it is concluded that the flow limit of metals depends on the magnitude of the energy of packing defect. The lower the energy of packing defect (see Fig. 1), the lower the flow limit. The energy of packing defect may be lowered by alloying. The cold shortness of Cr may be reduced down to liquid nitrogen temperatures by alloying with 20% Fe (D. V. Lotsko and V. I. Trefilov. FMM,

UDC: 539.292:548.4

Card 1/2

L 35898-66   ENT(m)/EAF(w)/1/ENF(t)/ETI   IJF(C)   JH/JD

ACC NR: AP6007359   SOURCE CODE: UR/0126/66/021/002/0309/0310

AUTHORS: Pavlov, V. A.; Mel'nikova, V. V.; Pecherkina, N. L.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: The appearance of pores during creep

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 2, 1966, 309-310

TOPIC TAGS: creep, creep mechanism, silver, copper, aluminum, metal physical property

ABSTRACT: The increase in pore density during creep as a function of the energy of
packing defect was determined for silver, copper, and aluminum. The investigation
supplements the results of Ya. D. Vishnyakov and Ya. S. Umanskiy (FMM, 1963, 16, 632).
The pore density was determined by means of microscopy and bulk density measurements,
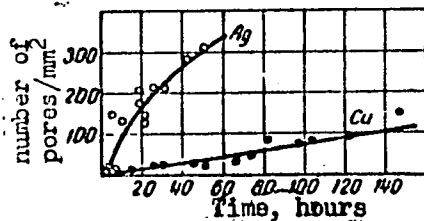and the experimental results are presented graphically (see Fig. 1). The creation of

Fig. 1. Dependence of pore density on
the duration of creep for silver
tested at 500C and copper tested
at 575C.

Card 1/2   UDC: 539.376

Card 2/2

L 17413-66   EWT(m)/T   WW/JW/WE

ACC NR: AP6004169   (N)   SOURCE CODE: UR/0096/66/000/002/0028/0032

AUTHOR: Pavlov, V. A. (Engineer); Storozhuk, Ya. P. (Candidate of technical sciences)

ORG: Central Boiler and Turbine Institute (Tsentral'niy kotloturbinniy institut)

TITLE: Simplified method for determining dispersion of atomized liquid fuel

SOURCE: Teploenergetika, no. 2, 1966, 28-32

TOPIC TAGS: fuel injector, fuel atomization, liquid fuel

ABSTRACT: The selection of the proper method for determining the dispersion of
atomized liquid fuel greatly effects the correct evaluation of the performance of
fuel injectors and combustors. Existing methods involve complex data reduction
processes. The proposed method, based on the determination of the maximal
diameter of an atomized fuel droplet in a sample, is simple and permits the use
of existing sampling methods. The maximal diameter of the droplet can be calculated
or determined graphically from the plot of the following function: $\lg n = f(\delta^2)$,
where n is the number of droplets and δ is the droplet diameter measured experi-
mentally. The use of the proposed method is illustrated with concrete examples.
Orig. art. has: 17 formulas and 4 figures.   [AS]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002/ ATD PRESS: 4206

Card 1/1 ast   UDC: 621.43.037.001.1

PAVLOV, Vladimir Aleksandrovich; KOPTEV-DVORNIKOV, V.S., prof., otv.
red.; ZNAMENSKIY, V.L., red.izd-va; KHENOKH, F.M., tekhn. red.

[Structural characteristics of some Permian granite massifs
in central Kazakhstan] Strukturnye osobennosti nekotorykh per-
mskikh granitnykh massivov. TSentral'nogo Kazakhstana. Mo-
skva, Izd-vo "Nauka," 1964. 126 p.   (MIRA 17:4)

NEGREY, Ye.V.; PAVLOV, V.A.

Vein rocks in the Sary-Tau and Kyzyl-Tau. Biul. MOIP. Otd.
geol. 34 no.6:132-133 N-D '59.   (MIRA 14:3)
          (Sary-Tau—Rocks, Igneous)
          (Kyzyl-Tau—Rocks, Igneous)

PEL'POR, Dmitriy Sergeyevich; RYABOV, B.A., doktor tekhn. nauk,
      prof., retsenzent; PAVLOV, V.A., doktor tekhn. nauk,
      retsenzent; UKHOV, K.S., doktor tekhn. nauk, prof.,
      retsenzent; SUVOROVA, I.A., red.

[Gyroscopic instruments and automatic pilots] Giroskopiche-
skie pribory i avtopiloty. Moskva, Mashinostroenie, 1964.
388 p.   (MIRA 17:4)

SERDYUCHENKO, Dmitriy Petrovich; GLEBOV, Aleksey Vladimirovich; PAVLOV,
    Vladimir Aleksandrovich; LEONT'YEV, L.N., doktor geol.-miner.
    nauk, otv.red.; ZHELEZNAYA, N.7., red.izd-va; TEGOROTA, N.F.,
    tekhn. red.

[Ludwigite mineralization and (Fe-B-TR) paragenesis in ancient
platforms] Liudvigitovaia mineralizatsiia i (Fe-B-TR) paragenez
v drevnikh platformakh. Moskva, Izd-vo AN SSSR, 1963. 133 p.
                                            (MIRA 16:9)

(Ludwigite)   (Ore deposits) (Paragenesis)

PAVLOV, V.A.; GAYDUKOV, M.G.; NOSKOVA, N.I.; MEL'NIKOVA, V.V.

Plastic deformation by shear and diffusion during the creep of
nickel-copper alloys. Issl. po zharopr. splav. 9:23-30 '62.

(MIRA 16:6)

(Creep of metals)

KUSHNIR, Yu.M.; FETISOV, D.V.; RASPLETIN, K.K.; POCHTAREV, B.I.;
SPEKTOR, F.U.; GUROVA, R.P.; TOKAREV, P.D.; OSIPOV, V.N.;
PAVLOV, V.A.

Improving the scanning electron microscope — X-ray local
microanalyzer; some of its applications. Izv.AN SSSR.Ser.fiz.
27 no.3:415-419 Mr '63.   (MIRA 16:2)

(X-ray spectroscopy)

PAVLOV, V.A.

Effect of the torque of a gyromotor on the motion of a gyroscope in gimbals. Izv.vys.ucheb.zav.; prib. 6 no.1:92-102 '63. (MIRA 16:2)

1. Leningradskiy institut aviatsionnogo priborostroyeniya. Rekomendovana kafedroy giroskopicheskikh i stabiliziruyushchikh ustroystv.
(Gyroscope)

S/146/63/006/001/010/014
D201/D308

AUTHOR: Pavlov, V. A.

TITLE: The effect of the gyromotor torque on the motion of a
               gyroscope in a Cardan suspension

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostro-
               yeniye, v. 6, no. 1, 1963, 92-102

TEXT: The author analyses theoretically the motion of a gyroscope
with respect to rectangular coordinate system fixed in space. The
analysis of the expressions derived shows that for a constant an-
gular velocity of the rotor, the required torque must have a pul-
sating character. Further analysis shows the nutational character
of the rotation, resulting in a systematic drift around both the
internal and external axes. There is 1 figure.

ASSOCIATION: Leningradskiy institut aviatsionnogo priborostroye-
               niya (Leningrad Institute of Aviation Instrumentation)

SUBMITTED: April 16, 1962

Card 1/1

NADOL'SKIY, V.I., inzh.; PAVLOV, V.A., inzh.

    Molding elements of industrial buildings on a two-frequency vibro-
    plate. Trudy NIIZHB no.29:92-97 '62.   (MIRA 15:11)
                         (Vibrated concrete)

NEGREY, Ye.V.; PAVLOV, V.A.

"Zonal" structure of Permian intrusives in central Kazakhstan.
Sov.geol. 7 no.2:153-157 F '64.   (MIRA 17:3)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, minera-
logii i geokhimii

SOV/137-59-5-10827

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 196

AUTHOR: Pavlov, V.A

TITLE: Investigation Into Regularities of Plastic Deformations and Breakdowns

PERIODICAL: Tr. In-ta fiz. metallov, Ural'skiy fil., AN USSR, 1958, Nr 20, pp 245 - 263

ABSTRACT: The author analyzes ductile fracture and plastic deformation of pure metals and single-phase solid solutions. It is noted that the deformation seat is located in microcracks, which are present in a great number in the deformed metal arranged perpendicularly to the direction of the action of tensile stresses. In the plastic deformation process numerous microcracks arise in the region of slip bands. The conclusion is drawn that plstic breakdown is a result of the interaction of plastic deformation processes which proceed under the effect of shearing stresses and promote a deformation. Furthermore, plastic deformation is caused by breaks occurring under the effect of normal tensile stresses and consists in the formation and development of cracks. From the physical

Card 1/2

SERDYUCHENKO, D.P.; GLEBOV, A.V.; KADENSKAYA, M.I.; LEONOVA, Ye.P.;
    KADENSKIY, A.A.; PAVLOV, V.A.; PUSTOVALOV, L.V., otv.red.;
    KOTLYAREVSKAYA, P.S., red.izd-va; GUS'KOVA, O.M., tekhn.red.

[Iron ores of southern Yakutia; geology, mineralogy, genesis and
industrial importance] Zheleznye rudy IUzhnoi IAkutii; geologiia,
mineralogiia, genezis i promyshlennoe znachenie. Moskva, Izd-vo
Akad.nauk SSSR, 1960. 519 p.   (MIRA 13:6)

1. Chlen-korrespondent AN SSSR (for Pustovalov).
        (Yakutia--Iron ores)

PAVLOV, V.A.

"Aviatsionnyye Giroskopicheskiye probory," Moscow, Oborongiz, 1954
411 p. diagrs., graphs., tables.
Bibliography: p. 407.

KOPTEV-DVORNIKOV, V.S.; POLKVOY, O.S.; DISTANOVA, A.N.; DMITRIYEV, A.N.;
    YEPREMOVA, S.V.; KOZLOV, A.V.; PAVLOV, V.A.; PLAMENEVSKAYA,
    N.L.; NEGREY, Ie.V.; SHEYNMAN, V.S., red.izd-va; DOROKHINA,
    I.N., tekhn.red.

[Paleozoic intrusive complexes of granitoids in Bet-Pak-Dala]
Paleozoiskie intruzivnye kompleksy granitoidov Betpakdala.
Moskva, Izd-vo Akad.nauk SSSR, 1962. 295 p. (Akademiia nauk
SSSR. Institut geologii rudnykh mestorozhdenii, petrografii,
mineralogii i geokhimii. Trudy, no.54).   (MIRA 15:5)
                    (Bet-Pak-Dala--Rocks, Igneous)

PAVLOV, V.A.

Physical reasons for the systematic drift of a gyroscope as
a result of its nutation oscillations. Vop. prikl. gir. no.2:
94-103 '60.   (MIRA 15:4)
          (Gyroscopic instruments)

40973

18.8200

AUTHORS   Pavlov, V A., Gaydukov, M G., Noskova, N I , and Mel'nikova

TITLE   The slip and diffusion nature of plastic deformation during creep of nickel-copper alloys

SOURCE   Akademiya nauk SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam
            v 9. 1962. Materialy Nauchnoy sessii po zharoprochym splavam (1961 g). 23-30

TEXT   There are controversial ideas on the mechanism of plastic deformation under conditions of creep
This work shows that the processes of creep and of relaxation are the results of both slip and diffusion The
authors conclude that. 1) At low temperatures and under high stresses, the deformation is due chiefly to slip
2) At high temperatures and under low stresses the diffusion process prevails 3) For an intermediate range
of stresses and temperatures plastic deformation is the result of slip and relaxation is the result of diffusion
The relationship between the rate of creep on the one hand and the temperature and stress on the other. can
in this case be expressed by the equation $E = C(\sigma^a/RT)\exp(-\varphi/RT)$ In his reply, K A Ospiov proclaimed
that no proofs have been given in this work for the existence of a diffusion process during creep In his opinion
the fact that the activation energy is equal to that of self-diffusion as found by the authors is not sufficient
proof that such a process takes place There are 4 figures and 2 tables

Card 1/1

S/124/61/000/010/002/056
D251/D301

13.1520

AUTHOR: Pavlov, V.A.

TITLE: Elements of the synthesis of small-scale gyroscopic
                instruments

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 10, 1961, 11,
                abstract 10 A78 (V sb. 1-ya Mezhvuz. nauchno-tekhn.
                konferentsiya po probl. sovrem. giroskopii, L., 1960,
                26-34)

TEXT: Proceeding from the need to increase the precision
of gyroscopic instruments, the author proposes the question of the
definition of the most rational correlations between the construc-
tion parameters of the apparatus. In particular, the author demon-
strates the most rational form of a rotor, on the basis of the re-
lationship between the mass of the rotor and its axial and equator-
ial moments of inertia. /Abstracter's note: Complete translation_7

Card 1/1

PAVLOV, Vsevolod Aleksandrovich;RIVKIN, S.S., doktor tekhn. nauk,
retsenzent; BUTENIN, N.V., doktor tekhn. nauk, retsenzent;
PONYRKO, S.A., nauchnyy red.; AZAROVA, I.G., red.; TSAL, R.K.,
tekhn. red.

[The gyroscopic effect, its manifestations and applications]
Giroskopicheskii effekt, ego proiavleniia i ispol'zovanie.
Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1961.
163 p.   (MIRA 15:2)
                    (Gyroscope)

S/137/61/000/012/125/149
A006/A101

AUTHOR: Pavlov, V.A.

TITLE: The effect of small admixtures on the mechanism of plastic deforma-
            tion and failure

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 35, abstract
            12Zh256 ("Tr. In-ta fiz. metallov. AN SSSR", 1960, no. 23, 5-47)

TEXT: This is a review. The author discusses peculiarities of the yield
limit of pure metals as a function of temperature; peculiarities of metal struc-
ture in strengthened state; the effect of admixtures on the magnitude and tem-
perature dependence of the yield limit; the nature of slip in alloys; the
effect of admixtures on the mechanism of plastic deformation during creep, and
the mechanism of failure. There are 196 references.

                                                 M. Matveyeva

[Abstracter's note: Complete translation]

Card 1/1

28335S/124/61/000/0C 6/003/027
A005/A130

/3,2520

AUTHOR: Pavlov, V.A.

TITLE: Nutation oscillations in a Cardan-joint gyroscope and their effect on its systematic departure from a prescribed direction

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 6, 1961, 14, abstract 6 A 124. (V sb.: Vopr. prikladn, giroskopii. No. 1. Leningrad, Sudopromgiz, 1958, 56 - 69)

TEXT: The author aims at analytically revealing that nutation oscillations of a balanced gyrocompass in a Cardan joint cause a systematic departure of the gyroscope from the prescribed direction. For this purpose he establishes approximate equations for small perturbations of gyroscope taking into account the earth's rotation and the moments of dry friction forces in the Cardan-joint bearings. He analyzes the solutions of these equations and concludes that the nutation oscillations are extinguished only up to the time that the variation amplitudes of their angular velocities become equal to the corresponding components of the angular velocity Ω_3 of the earth's diurnal rotation. When this condition is reached, the nutation oscillations of the gyroscope cease to be damped, and

Card 1/2

ZHOLDAK, Sergey Afanas'yevich; BULOVSKIY, P.I., retsenzent; PAVLOV, V.A., nauchnyy red.; SHAURAK, Ye.N., red.; TSAL, R.K., tekhn. red.

[Technology of the manufacture of small gyroscopic motors] Tekhnologiia izgotovleniia malogaboritnykh giromotorov. Leningrad, Gos. soiuznoe izd-vo sudostroit-promyshl., 1961. 266 p.   (MIRA 14:7)
    (Gyroscopic instruments)   (Electric motors)

23268

S 123/6: 000 0 - 00 000
A00 - A00

13.2531

AUTHOR   Pavlov, V A

TITLE   On nutation oscillations of gyroscopes in Cardanic suspensions and
            their effect on their systematic deviation from a given direction

PERIODICAL Referativnyy zhurnal, Mashinostroyeniye, no 5, 1961, 18, abstract
            5D160 (V sb "Vopr prikl giroskopii", no 1, Leningrad, Sudprom-
            giz, 1958, 56 - 69)

TEXT   The author analyzes the conditions of the existence of nutation os-
cillations of gyroscopes in the presence of friction in the bearings of Cardanic
suspensions and its effect on the systematic deviation from the given direction
As a result of the solution of the equations of gyroscopes whose external axis
coincides with the vertical, under the assumption of the values of the moment of
friction being constant, the author shows that in the presence of friction, a
damping of nutation oscillations is taking place only as long as the variation
amplitudes of their angular velocities is not equal to the corresponding components
of the angular velocity of the daily Earth rotation, beyond which a damping of
nutation oscillations ceases The further motion is effected by the laws of

Card 1/2

23268

On nutation oscillations

S/123/61/000/00x/x12 0.7
A004/A104

pseudoregular precession. The existence of nutation oscillations leads to a constant deviation round the axis of the outer frame at a speed which is proportional to the amplitude square of the initial velocity imparted to the gyroscope. There are 5 figures and 4 references.

V Monakhov

[Abstracter's note. Complete translation]

Card 2/2

L 27858-65   EWT(d)/TDB(jj)/BXT/EED-2/EWP(1)   Po-4/Pq-4/Pg-4/Pk-4   IJP(c)
                                BB/CG   S/0315/64/000/003/0044/0046

ACCESSION NR: AP5000878

AUTHOR: Marchuk, Yu. N.; Motorin, Yu. A.; Pavlov, V. A.

TITLE: Some questions of syntactic analysis in machine translation

SOURCE: Nauchno-tekhnicheskaya informatsiya, no. 3, 1964, 44-46

TOPIC TAGS: machine translation, syntactic analysis, automatic translation, normative grammar, connecting work, punctuation

ABSTRACT: This article is a discussion of the methods of binary machine translation of English into Russian, and the syntactic analysis of grammar required for automatic translation. Among the sujects discussed are the problems of the simplification of complicated sentences and the principles of arranging the sentence in such a way as to make syntactic analysis possible. The author classifies the schemes for grammatical analysis into three categories: (1) Use of the rules of normative grammar; (2) Formalization of certain rules of normative grammar which are not sufficiently formalized or systematized; (3) An empirical search for new normative rules and the accumulation of pertinent statistics. The author feels that if an algorithm is constructed on the above pattern, the ensuing statistics will be meaningful for a perfect translation. This knowledge makes possible the establishment of rules for the distribution of signs given in the output of

Card 1/2

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ACCESSION NR: AP5000378

the scheme which are necessary for the statistical evaluation of its effect.   A discussion of the problem of establishing a correct meaning for the conjuctions "and", "but" and "or" follows, including a discussion of the correct placement of commas in the translation.

ASSOCIATION: none

SUBMITTED: 01Jul63   ENCL: 00   SUB CODE: DP

NO REF SOV: 003   OTHER: 001

Card 2/2

83864

S/112/59/000/016/005/054
A052/A002

ID.2000

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 12, p. 18,
33494

AUTHORS: Ivanov, Yu.V., Katsnel'son, B.D., Pavlov, V.A.

TITLE: Aerodynamics of the Turbulence Chamber

PERIODICAL: V sb.: Vopr. aerodinamiki i teploperedachi v kotel'no-topochn.
             protsessakh, Moscow-Leningrad, Gosenergoizdat, 1958, pp. 100-114

TEXT: Investigations of the flow aerodynamics have been carried out on
an air model of a turbulence chamber with a diameter D_c = 710 mm and a height of
250 mm at different diameters of the chamber outlet D_0 and at different dimensions
of the inlet slots. It has been established that circumferential velocities in
a turbulence chamber with tangential air feed increase over the entire height
up to a certain maximum as the radius decreases. On the contrary, in the axial
zone of the chamber, the circumferential flow velocity increases from zero on
the axis to the above-mentioned maximum of the circumferential velocity as the
radius increases. The circumferential flow velocity ($W\varphi$) in the turbulence
chamber at a radius r is determined by the relation $W\varphi = r^k$ = C, where C and k

Card 1/2

KOVAL', V.D.; PAVLOV, V.A., red.; VODZINSKIY, V.V., tekhn.red.

[Production of gelatin] Proizvodstvo zhelatiny. Moskva,
Pishchepromizdat, 1951. 78 p.   (MIRA 13:8)
(Gelatin)

PAVLOV, V.A.; GAYDUKOV, M.G.; DATSKO, O.I.; NOSKOVA, N.I.; PERETURINA, I.A.

Effect of structural characteristics on metal behavior at high temperatures. Issl.po zharopr.splav. 4:26-35 '59.

(MIRA 13:5)

(Nickel-copper alloys--Metallography)

13.2000

S/124/59/000/011/001/017
82183
A005/A001

Translation from: Referativnyy zhurnal, Mekhanika, 1959, No. 11, pp. 12 - 13
12959

AUTHOR: Pavlov, V.A.

TITLE: On the Influence of Nutation Oscillations of a Gyro on Its Systematic
             Drift From the Prescribed Direction

PERIODICAL: Tr. Leningr. in-t aviats. priborostr., 1958, No. 19, pp. 159 - 166

TEXT: An equilibrated gyro is considered having three degrees of freedom
and Cardan joint. The author obtains, applying formally the method of successive
approximations to the motion equation system, a formula in the second approximation,
which expresses the gyro systematic deviation in the ψ-coordinate. The angular
velocity of this systematic deviation is expressed by the formula:

$$\dot{\psi} = \frac{I_H + I_{Bx}}{I_c} \frac{I\Omega}{2\,I_c\,n^2} \dot{\theta}_0^2 \sin \vartheta_0 \quad \left(n = \frac{I\Omega \cos \vartheta_0}{\sqrt{I_B\,I_c}} \right)$$

The author refers to the work of Magnus (Magnus, K., Z. angew. Math. und Mech.,
1955, Vol. 35, No. 1/2, pp. 23 - 34 - RZhMekh, 1956, No. 2, 656) Plymale and

Card 1/2

Pavlov, V A

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S/124/60/000/01/03/011
A005/A001   82174

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 1, p. 23, # 202

AUTHOR: Pavlov, V. A.

TITLE: Effective Rotor Shape Conditioned by the Requirements for High Precision of Gyroscopic Devices

PERIODICAL: Tr. Leningr. in-t aviats. priborostr., 1958, No. 19, pp. 3-7

TEXT: The author considers such a rational choice of rotor shape that yields a minimum effect of friction-forces moment, the friction moment is assumed to be

$$M = M_0 \pm \lambda f G, \qquad M = n \lambda f G^\circ,$$

where M_0 is the moment caused by friction between the parts of the current-supply mechanism, f is the weight proportionality coefficient, λ is the friction-force moment coefficient, G is the gyroscope weight, G° is the spherical rotor weight, and n is a certain numerical coefficient. A gyroscope, which is formed out of the spheric gyroscope by cutting off the lateral parts and making a central axial cut, is compared with the spheric gyroscope. The dimensions of such a gyroscope (for n = 1) are found, which lead to the minimum of the angular velocity of precession caused by friction.

D. R. Merkin

Card 1/1

Pavlov, U.A.

PHASE I BOOK EXPLOITATION   SOV/3847
SOV/26-58-20

Akademiya nauk SSSR. Ural'skiy filial. Institut fiziki metallov

Trudy, vyp. 20 (Transactions of the Institute of the Physics of Metals, Ural Branch, Academy of Sciences USSR, No. 20) Sverdlovsk, 1958. 402 p. Errata slip inserted. 1,000 copies printed.

Resp. Eds.: S.V. Vonsovskiy, Corresponding Member, Academy of Sciences USSR, and V.I. Arkharov, Doctor of Technical Sciences.

PURPOSE: This book is intended for scientists working in the field of physical metallurgy.

COVERAGE: This is a collection of 28 articles written by members of the Institute of the Physics of Metals, Ural Branch of the Academy of Sciences USSR, on problems investigated at the Institute. Studies at the Institute have concentrated on two basic problems: 1) developing a theory of metals and alloys and finding ways to improve the properties of engineering materials; and 2) developing new physical methods for investigating and controlling the quality of materials and metal articles. In connection with these basic problems the articles in the collection treat the following subjects: problems of the multielectron quantum-mechanical theory of solids; the laws of distribution and diffusion of admixtures in various metallic alloys (internal adsorption in relation to internal and plasticity of polycrystalline materials; crystal lattice; structural theory of diffusion reaction, i.e. diffusion due to chemical reactions in solid phases; theory of the magnetic structure of ferromagnetic substances; theory of the heat treatment of magnetic steel; and the physical theory of magnetic measurements (magnetic flaw detection and structural analysis). The first article gives a description of the work being done by the Institute and a list of departments and laboratories along with their chief personnel. Several persons are cited for their work at the Institute. References accompany each article.

PAVLov, V.A.

18(7)   PHASE I BOOK EXPLOITATION   SOV/3355

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po
    problene zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. IV (Studies on Heat-re-
    sistant Alloys, vol. 4), Moscow, Izd-vo AN SSSR, 1959. 400 p.
    Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. P. Guseva;
    Editorial Board: I. P. Bardin, Academician; O. V. Kurdyumov,
    Academician; N. V. Ageyev; Corresponding Member, USSR Academy of
    Sciences; I. A. Oding, I. M. Pavlov, and I. P. Zudin, Candidate
    of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with
    the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various
    problems in the structural metallurgy of heat-resistant alloys.
    Some are concerned with theoretical principles, some with des-
    criptions of new equipment and methods, others with properties
    of specific materials. Various phenomena occurring under
    specified conditions are studied and reported on. For details,
    see Table of Contents. The articles are accompanied by a num-
    ber of references, both Soviet and non-Soviet.

TABLE OF CONTENTS:

Card 2/12

BC

B-I-6

Effect of annealing on recrystallization of de-formed aluminium wire. M. O. KORNFELD and V. PAVLOV (Physikal. Z. Sovietunion, 1934, 6, 537—548).— Hard-drawn, polycryst. Al wire after tensile deform-ation, was annealed at < 370° and recryst. at 450—500°. The linear crystallization velocity at 450° was 0·6 mm./min. in both annealed and unannealed specimens. The incubation period (zero velocity) was much greater in the annealed wire.   CH. ABS. (e)

*Influence of Deformation on the Diffusion of Mercury into Zinc. N. \
Bobshanina and V. A. Pavlov (Zhur. Eksper. Teoret. Fiziki (J. Exper. Theoret.
Physics), 1937, 7, (2), 318–323).—[In Russian.] A drop of mercury was placed
on the basal plane of a deformed zinc single crystal, and its diffusion was ob-
served at 14°, 30°, 61°, 65°, and 90° C. after periods of 6, 8, and 10 hrs. The rate
of penetration was found to be a function of the temperature for several degrees
of deformation. On plotting log against 1/T, straight lines were obtained,
which permitted the calculation of the energy, U, in the equation D = D₀ e^(...)
The values of U were: polycrystal 4600, undeformed single crystal 5400,
elastically-deformed single crystal 8500 × 10⁻¹⁶ ergs. The log 1/T curves
for all the deformed single crystals had a break at 41° C. U was 1500 × 10⁻¹⁶
ergs below 41°, and above 41° assumed the value for the non-deformed crystal;
the plastic deformation disappeared at 40°. U for a twinned crystal was
700 × 10⁻¹⁶ ergs, and even at 90° C. it was still 2300 × 10⁻¹⁶ ergs. —N. A.

METALLURGICAL LITERATURE CLASSIFICATION

*The Formation of Nuclei Associated with Recrystallization. VI.—The Dependence on Temperature of the Rate of Crystal Nuclei Formation. M. Kornfeld and V. Pavlov (Zhur. Eksper. Teoret. Fiziki (J. Expr. Theoret. Physics), 1937, 7, (9/10), 1177–1179).—[In Russian.] See abstract from German source, Met. Abs., this vol., p. 8.—N. A.
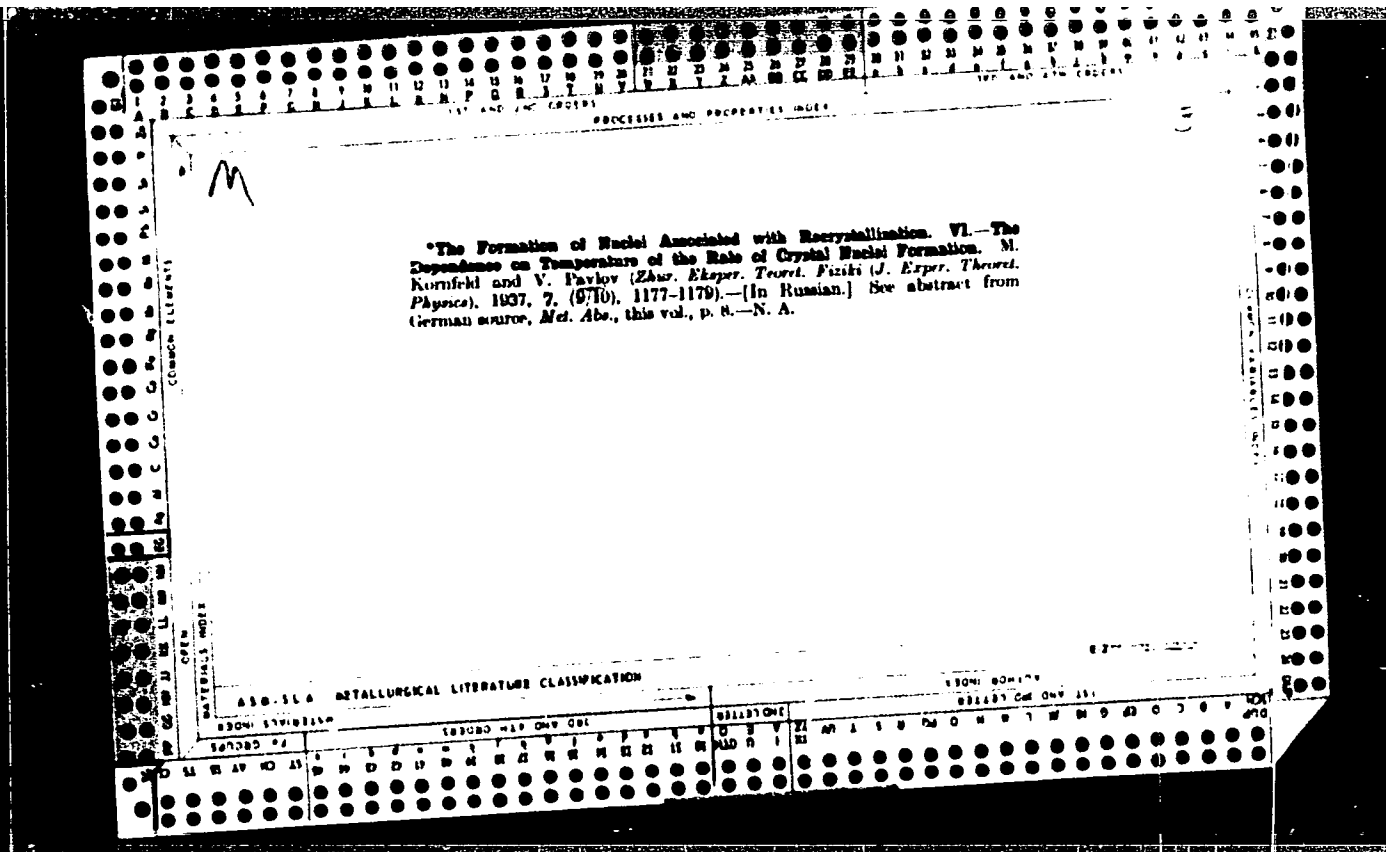
PAVLOV V.A.

SADOVSKIY, V. D.; PAVLOV, V. A. ;RODIGIN, N. M.

Temperature Measurements in Rapid Heating

Zav. Labor. 4, 430, 1941

Phase transitions in electrically heated steel A A
Malyshev and A. A. Paylov. *Trudy Inst Fiz Metal*,
1949 *Nauk SSSR*, *Ural Filial* No 9, 11 (1948)
Heating steel at a rate of 200-400° sec by passing a current
through it did not affect the Ac₁ point materially. The rate
of pearlite transformation on electric heating is very rapid and

determined by the rate of heating. At a heating rate of 200
per sec the transformation was accomplished within frac-
tions of a sec. Sorbitic and small-lamellar pearlite changed to
austenite faster than granular pearlite. At a very rapid rate
of heating but insufficiently high temps a no of structures
appeared in the hardened steel, the hardness was high but
the structure was not homogeneous.   M Hosch

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CA

Effect of electric heating for hardening on the structure and mechanical properties of steels 48Kh and 45KbN3M K. A. Malyshev and A. A. Pavlov. Trudy Inst Fi Metal, Ural Nauk S S S R 1757 Final No 9, 20 pp 1946. The advantages are discussed of elec heating for hardening. The primary purpose is the possibility of preserving a small-grain austenite structure.   M. Hoseh

PAVLOV, V. A.

"Plastic deformation and decay of polycrystalliae metals with extension. I. Instrument for Extension of wires within a wide temperature and deformation velocity range," Zhur. Tekh. Fiz., 16, No. 11, 1946; Mbr. Lab for the study of the Mechanical Properties of Metals, Ural Affiliate, Acad. Sci. SSSᴿ, Sverdlovsk, -1946-. Mbr., Inst. Physics of Metals, -c1948-c49-.

4A-42. Plastic Deformation and Fracture of Polycrystalline Metals Under Tensile Stress. II. Forms of Stress Diagrams of Pure Metals. (In Russian) G. N. Kolesnikov, V. A. Pavlov, E. S. Yakovleva, and M. V. Yakutovich. Zhurnal Tekhnicheskoi Fiziki (Journal of Technical Physics), v. 19, Jan. 1949, p. 62-73.

For eight pure metals (β-Sn, Cd, Zn, Mg, Pb, Al, Cu, and α-Fe) at different temperatures (78° K-0.8° C) below the melting point or temperature of phase transformation. Stress diagrams of pure metals may be divided into two basic types: "high-temperature" and "low-temperature".

Formation and Expansion of Cracks in Hardened Steel Having a Heterophase Structure. (In Russian) V A Pavlov and M. V. Yakutovich. Zhurnal Tekhnicheskoi Fiziki (Journal of Technical Physics), v. 19, Apr. 1949, p. 465-470.

The origin and propagation of cracks during bending of specimens having the following structures were investigated: martensite with a ferrite lattice along boundaries of former austenite grains; martensite with bainite; martensite with globular inclusions of ferrite, and an annealed martensite with cementite lattice. Causes of decrease of strength upon incomplete hardening of steel are indicated.

UFAN SSSR, Inst. Phys. of Metals, -c1949-.

Evaluation B-60430

USSR/Physics
Steel - Torsion Tests
Metallography

Apr 49

"Influence of Tempering Micro-Cracks Upon the Mechanical Properties of Steel in Torsion," V. A. Pavlov, N. V. Yakutovich, Inst Phys of Metals, Ukrainian Affiliate, Acad Sci USSR, 10 pp

"Zhur Tekh Fiz" Vol XIX, No 4

Prepared two types of specimens of type 60C2 steel: (1) quenching-cracks, 120 - 130 micro-cracks per sq mm of slide surface and (2) without micro-cracks, with same metallographic

48/49T103

USSR/Physics (Contd)   Apr 49

structure and micro-hardness. Studies mechanical properties of both types of specimen in torsion after tempering at 200, 300, 400, 500, 600 and 700° C. Showed that presence of micro-cracks decreases maximum relative shear by 90% after tempering at 200° and by 25 - 30% after tempering at 400 - 600° range. Reduction of stresses (by 15 - 20%) was noticed only after tempering at 200°. After tempering above 650°, properties of both groups of specimens are identical. Submitted 1 Dec 48.

PAVLOV, V. A.

PA 48/49T103

48/49T103

C. A.

The nature of "viscous" fracture \ A Pavlov and M
\ Yakutovich Doklady Akad Nauk S.S.S.R 77, 49 50
(1951) An exptl study was made of the formation and de-
velopment of microcracks in sheets of Plexiglas 2 x 8 X 80
mm tested in tension Regions of nonuniform stress were
produced in the sheet by circular holes or by protuberances
In these regions microcracks occurred where the shear stress
was a max and they were perpendicular to the direction of
the normal stress. Microcracks formed in regions of elastic
deformation and then closed up when the specimen was un-
loaded. Plastic deformation increased the probability of
forming microcracks. Microcracks formed only at the sur-
face of the specimen. Thus, fracture occurs only by tensile
failures, not by shearing   A G Guy

PAVLOV, V.

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USSR :

Experiments for the determination of the mean range of recoil nuclei in heavy halides of lead. A. Murin, R. Lur'e, and V. Pavlov. Doklady Akad. Nauk S.S.S.R. 77, 245-7 (1951). Recoil nuclei, which result from the α-decay of RaTh and Th C', are collected on the surfaces of cylinders made of PbCl₂ and PbI₃. A thin surface layer (~10⁻³ cm.) is then cut off, and its activity is measured. The mean range of the recoil nuclei in PbCl₂ and in PbI₃ is deduced from the results obtained and compared with the theoretical formulas for collision loss. The agreement between theory and exptl. results is satisfactory for PbCl₂ but somewhat less so for PbI₃.   B. Gora

PAVLOV, V. A.

USSR/Metals - Aluminum, Testing   1 Jun 51

"Formation of Microscopic Cracks in Aluminum During Plastic Deformation," V. A. Pavlov

"Dok Ak Nauk SSSR" Vol LXXVIII, No 4, pp 677-679

Observed formation and development of microscopic cracks on surface of specimens under tension using metallurgical microscope. Concludes "viscous" fail-ure is result of close interaction of 2 processes: plastic deformation process, which develops under action of shear stresses and causes distortions of crystal lattice, and destruction process proceeding under action of normal stresses and consisting of

184T42

USSR/Metals - Aluminum, Testing (Contd)   1 Jun 51

formation and development of cracks. Submitted by Acad I. P. Bardin 9 Apr 51.

184T42

PAVLOV, V. A.

Metallurgical Abst.
Vol. 21 May 1954
Properties of Metals

B.T-R.

Vol. 3, No. 3

Mar 1954

/ *On the Nature of Viscous Destruction of Metals. V. A. Pavlov (Doklady Akad. Nauk S.S.S.R., 1953, 91, (2), 253-255).—[In Russian]. In order to study the occurrence in viscous fracture of regions of loosened crystal lattices and of cracks, the impact strength of a number of steels was plotted as a function of preliminary deformation in tension. The fractures were all ductile, and the general trend was for a fall to occur in impact strength with prior deformation with a region of unstable strength in the curve, which is interpreted as corresponding to the formation of highly distorted regions in which crack formation is facilitated. 4 ref. (Translated by the U.S. National Science Foundation (NSF-tr-100)).
—D. M. T.

PAVLOV, V. A.

Konstruktion und Berechnung von Lokomotiven; Handbuch, von L. B. Yanush, V. M.
Panskiy, V. A. Pavlov. Leipzig, Fachbuchverlag, 1954. 412 p. diagrs., tables.
Translation from the Russian Konstruktsii i Raschet Parovozov, Moscow, 1952.
"Literaturnachweis": p. 402-403.

SO: N/5
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PAVLOV, V.A.

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INFLUENCE OF THE DECOMPOSITION OF THE SUPER-
SATURATED SOLID SOLUTION, CAUSED BY PLASTIC
DEFORMATION, ON THE MECHANICAL PROPERTIES
OF THE ALLOY ALUMINUM-COPPER. V. A. Pavlov.
Doklady Akad. Nauk S.S.S.R. 95, 1201-3(1954) Apr. 21.
    The dependence of the mechanical properties of Al and
Al-1.5% Cu alloy on the deformation temperature was
studied. The effect of temperature on the deformation
resistance, thermal expansion, and work deformation is
graphed in the temperature range from ~ 80 to ~ 690°K.
(J.B.R.)

M

PAVLOV, V. A.

G E R M .

*Influence of the Decomposition of a Supersaturated Solid Solution, Induced by Plastic Deformation, on the Mechanical Properties of an Aluminium-Copper Alloy. V. A. Pavlov. (Doklady Akad. Nauk S.S.S.R., 1954, 95, (6), 1201-1203).—[In Russian]. The influence of temp. on the mech. properties of 99.97% Al and Al-13% Cu alloy wires subjected to plastic deformation was studied at 80°-670° K. The appearance of "serrations" in the stress/strain diagrams of the alloy between 20° and 200° C. indicated that decomposition of the solid soln. was taking place. Further evidence of the solid-soln. decomposition was provided by the appearance of a max. on the uniform deformation/temp. and the work-of-deformation/temp. curves at 100° C. The "serrated" character of the stress/strain diagram was attributed to the relaxation of minor stresses at the moment of formation of crystn. nuclei of a new phase and was connected with the localized progress of deformation.—S. K. L.

Evaluation B-81524

PAVLOV, V.A.; VSHIVTSEVA, K.A.

Patterns of plastic deformation and failure of metals subjected
to tensile forces. Fiz.met. i metalloved. 1 no.2:261-268 '55.

1.Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.
(Deformations (Mechanics)) (Metals--Testing)

V. A. PAVLOV

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Certain uniformities in plastic deformation and fracture of metals in tension V. A. Pavlov and K. A. Vahivtseva. *Fiz. Metal. i Metalloved.* 8 (1955).—Wires of Cd, Mg, Sn, and Armco iron, having the same grain size, were tensile tested at −192 to 275° either at different or same rates of load application. At low temps. total elongation decreased faster than uniform elongation. The difference between them decreased until total deformation before fracturing consisted of uniform deformation alone. This changed the character of fracture: necking fracture gradually passed to fracturing where no necking was observed. It occurred when uniform deformation capacity is used up, which depended, under given exptl. conditions, on temp. At this point cracking occurred which led either directly to fracturing or to neck formation. — J. D. Cat.

PAVLOV, V. A.

Internal Friction in Deformed Alpha-Aluminium-Magnes-
ium Alloys. A. V. Grin' and V. A. Pavlov (Fizika Metallov i
Metallovedenie, 1958, 5, (1) 176-180.—In Russian]. A
letter. Measurement of the damping of oscillations in Al
alloys contg. 0-1·0 wt.% Mg as a function of temp. shows
max., one of which is associated with the movement of atoms
of Mg. G. and P. plot the temp. at which this max. occurs
as a function of compn.—the temp. rises rapidly in the range
0-0·2% Mg then flattens out, becoming completely level by
0·5% Mg. This can be interpreted on a model in which the
activation energy for diffusion of Mg is raised by trapping of
Mg on dislocation lines (Cottrell atmospheres). Alternatively,
a diffusion mechanism due to Arkharov (Zhur. Tekh. Fiziki,
1954, 24, 370) will explain the results—in this theory account
is taken of the possibility that diffusion in solids may involve
the movement of complexes of atoms and not only of single
atoms as in gaseous or liq. diffusion. There is nothing in the
experimental results to choose between the theories, and
both mechanisms may play a part.—A. F. B.

Inst. Physics of Metals,
Ural Affil, AS USSR

PAVLOV, V.A.; VSHIVTSEVA, K.A.

Development of cracks in magnesium subjected to tension-induced plastic deformation. Fiz.met. i metalloved. 1 no.3:538-540 '55.

(MLRA 9:6)

1.Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.

(Magnesium--Testing) (Deformation (Mechanics)

PAVLOV, V. A.

The Temperature Dependence of the Modulus of Elasticity of Alpha Solid Solution of Magnesium in Aluminium. V. A. Pavlov, N. F. Kryushkov, and I. D. Fedotov (Fizika Metallov i Metallovedenie, 1956, 3, (3), 555-557)—[in Russian]. A letter. A dynamic method is described for measuring Young's modulus (E) in the temp. range 77°-680° K. Experiments on pure Al and on Al + 0.12, 1.11, and 2.2% Mg show that E falls linearly with increasing temp. and that E(T) is independent of the compn. of the alloy.—A. F. B.

Inst. Physics of Metals, Ural Affil, AS USSR

PAVLOV V. A.

X-ray investigation of the distortion and binding forces in the crystal lattice of the solid solution alloy of aluminum

Mg. The results are given for (1) change in the size of the blocks in the α-solid soln. of Al with Mg in dependence on the concn. of Mg after deformation in liquid N_2; (2) dependence of the 2nd-order-strain on concn. of Mg after deformation in liquid N_2; (3 and 4) plots of Σh^2 vs. ln (a_{nd}/a_{pure}) and vs. ln (a_n/a_d), where σ is the value of the 2nd-order strain, in solid soln., n = not deformed, d = deformed, and h Σh^2 is the sum of the squares of the indexes. (The α's are related to the line intensities by: $a_n = I_{n_1 n_1}/I_{n_0 n_0}$, and $a_d = I_{n_1 n_1'}/I_{n_0' n_0'}$, and an analogous relation for a_n and a_{pure}). (5) Plot of static distortion of the lattice after deformation in liquid N vs. percentage of Mg. The exptl. results show that 2nd-order strains and the static distortion of the lattice due to the presence of Mg atoms increase with increasing Mg concn. in the solid soln. No 2nd-order strains are observed for pure Al. At the same time the dimensions of the blocks of the mosaic structure remain unchanged.

V. H. Gottschalk

Inst. Physics of Metals
Ural affil AS USSR

GRIN', A. V., and PAVLOV, V. A.

"Internal Friction in Deformed Aluminum-Magnesium Alloys" p. 184-192, in the book Research in the physics Solids, Moscow, Izd-vo AN SSSR, 1957. 277 p. Ed. Bol'shanina, M. A.; Tomsk Universitet, Siberskiy fiziko-tekhnicheskiy institut.

Personalities: Veynberg, B. P.; Kuznetsov, V. D., and Ioffe, A. F., Mateirals used: Alloy prepared from aluminum AVOOO and electrolytic magnesium. There are 6 figures and 18 references, 9 of which are Soviet.

This collection of articles is meant for metallurgical physicists and for engineers of the metal-working industry. This book contains results of research in the field of failure and plastic deoformation of materials, mainly of metals. Problems of cutting, abrasion, friction, and wear of solid materials1 (metals) are discussed.

SOV 137 58 8 17716

Translation from: Referativnyy zhurnal, Metallurgiya 1958 Nr 8 p 217 (USSR)

AUTHORS: Pavlov V. A., Gavduko M G   Gr.n A V   Pere'.., .a J A

TITLE: The Effect of Static Distortions of the Crystal Lattice on the
           Mechanical Properties of Alloys of   Solid Solutions of Alum
           :num With Magnesium (VI yar:ve sta' chesk kh skazher:iv
           kristallicheskoy reshetki na mekhar.chesk:ye s oy-t a spia o
           a :tverdogo rastvora alyum n.ya s magn vem)

PERIODICAL: V sb. Issled po zharoprochr splavam Vo Moscow
           AN SSSR 1957 pp 257 265

ABSTRACT: Investigations performed dealt with the effect of sta c dis
           tortions of the crystal lattice on the mechanical propert es of
           an   a solid solution of Al Mg (0 01 2% Mg) the cohes e
           forces in which are independent of the concentrat o of the
           solid solution. In studying the relationsh p betwee E a d the
           temperature it was established that E a d G do not depend of
           the concentration with:n a relatively wide range of temperatures
           20 700°C. The structure of alloys which had been deformed
           as well as the processes occurring dur.ng deformat:on were
           studied by means of investigat on of the internal fr ct:cn ('F)

Card 1/3

SOV/137-58-8-17716

The Effect of Static Distortions of the Crystal Lattice (cont.)

within plastically deformed alloys   The 'F was determined at torsional vibrations with a frequency of 1 cps. The IF graph for pure Al exhibits one maximum at approximately 250°, whereas the IF graphs of alloys show two maxima at 130° and at 250°. In the recrystallized state, the alloys exhibit one maximum at 300° a condition indicative of relaxation along the grain boundaries. The maximum IF point, corresponding to 250° and situated in the region of recrystallization (R) temperatures is governed by the viscous behavior of the slip lines. In the light of dislocation theory this maximum is attributable to the dispersion of energy connected with the motion of dis locations (D) under the influence of external stresses The IF maximum at 130° is attributable to the diffusion of Mg in alloys which have been deformed As the concentration of Mg in the solid solution is increased this maximum is displaced toward higher temperatures (up to 200°) The energy of activa tion of the diffusion of Mg throughout deformed alloys increases with increas ing concentrations of Mg. In alloys which have been deformed and which exhibit static distortions, the additives are unevenly distributed throughout the volume a condition which, as shown by experiments significantly affects the kinetics of plastic deformation recovery and recrystallization In the light of the dislocation theory, the increase in R temperature is explained by the formation of clouds of Mg atoms around the D's with resulting reduction Card 2/3

SOV 137 58 8 1771b

The Effect of Static Distortions of the Crystal Lattice (cont.)

in the mobility of the latter   Bibliography 18 references   See also RZhMet
1958; Nr 3 abstract 5868

L. G.

1. Aluminum-magnesium alloys--Mechanical properties
2. Crystals--Distortion 3. Crystals--Lattices

Card 3/3

PA, C..., B., ...

PAVLOV, V.A.; GAYDUKOV, M.G.; GRIN', A.V.; PERETURINA, I.A.

Effect of static distortions in crystal lattices on the
mechanical properties of alloys of alpha solid solutions
of aluminum and magnesium. Issl. po zharopr. splav. 2:257-265
'57.
                                                        (MIRA 11:2)

          (Crystal lattices)
          (Solutions, Solid)
          (Aluminum-magnesium alloys)

$P_A \ell \omega , V . A$

AUTHOR: Grin', A.V. and Pavlov, V.A.   115

TITLE: Internal friction of deformed alloys of aluminium with
             magnesium. (Vnutrenneye treniye deformirovannykh
             splavov alyuminiya s magniem.)

ABSTRACT: The temperature dependence of the internal friction of
             deformed alloys of aluminium with magnesium was investi-
             gated. A new maximum was detected, which is attributed to
             the diffusion of magnesium, and it is shown that this maxi-
             mum is displaced to higher temperatures and that the acti-
             vation energy of magnesium diffusion increases with
             increasing concentration of magnesium in solid solution.
             The displacement of the maximum of internal friction is
             explained by the complication of the elementary act of di-
             ffusion as a result of the non-uniform distribution of
             magnesium in the deformed solid solution and formation of
             magnesium atom clouds around non-uniformities of the crystal
             lattice. The authors considered the study of the diffusion
             in deformed aluminium-magnesium alloys of interest since,
             with increasing magnesium concentration, the inter-atomic
             bond forces do not change but considerable distortions occur
             in the crystal lattice which are caused by the magnesium
             atoms. The specimens used were 0.9 mm dia. and 300 mm long

Internal friction of deformed alloys of aluminium with 115
magnesium. (Cont.)

wire deformed at room temperature by drawing with a reduction
of 90%. The internal friction was measured in the case of
slow furnace heating at a rate of about 50 °C/hr. The
measured temperature dependence of the internal friction is
plotted in the graphs, Figs. 1 - 5; Fig. 6 gives the depend-
ence of the position of the maximum of internal friction as a
function of the magnesium content; Fig. 7 gives the depend-
ence of the recrystallisation temperature on the magnesium
concentration. The graph, Fig. 8, shows the dependence of the
activation energy of diffusion of magnesium as a function of
the magnesium concentration in the solid solution. The
temperature dependence of internal friction due to distortions
in the crystal lattice, which are caused by the plastic
deformation, do not suffer appreciable changes during trans-
ition through the recrystallisation temperature, and this
indicates that the maximum of internal friction is caused by
such distortions in the crystal lattice which do not cease
during recrystallisation. It was found that an increased
concentration of magnesium also changes the curve of internal
friction and this leads to the assumption that the quantity of
the most mobile distortions decreases with increasing magnesium
content. 8 graphs, 18 references, 10 of which are Russian.
Institute of Metal Physics, Ural Branch, Ac.Sc. Recd. Jul. 9, 1956.

PAVLOV, V.A

AUTHOR: Gaydukov, M.G. and Pavlov, V.A.   118

TITLE: Stress relaxation in alloys of aluminium with magnesium.
            (Relaksatsiya napryazheniy v splavakh alyuminiya s
            magniem.)

PERIODICAL: "Fizika Metallov i Metallovedenie," (Physics of Metals and
            Metallurgy), 1957, Vol.IV, No.1 (10), pp. 123-130 (U.S.S.R.)

ABSTRACT: The stress relaxation in alloys of aluminium with magnesium
            was studied in the temperature range 100 to 300 °C for an
            initial stress of 300 g/mm². The chemical compositions of the
            alloys investigated and the respective annealing temperatures
            are given in a table, p. 123. The graphs, Figs. 2 to 9 give
            the relaxation curves at various temperatures under a great
            variety of conditions for pure aluminium and for alloys of
            aluminium with 0.12, 1.04 and 1.85% magnesium for relaxation
            times of up to 90 000 sec. Alloys of aluminium with magnesium
            have a higher relaxation stability than pure aluminium and this
            is attributed to a greater efficiency in the utilisation of
            the bond forces and not to an increase of the inter-atomic
            bond forces. The increased efficiency of utilisation of the
            bond forces is due to the fact that with increasing number of
            distortions the internal stresses are more uniformly distri-
            buted along the volume of the crystal and that during diff-
            usion processes a stress relaxation takes place around the
            non-uniformities of the crystal lattice and also a decrease

AUTHOR: Pavlov, V. A.   126-3-6/34

TITLE: Influence of the static distortions of the crystal lattice
         on the mechanical properties of alloys. (Vliyaniye
         staticheskikh iskazheniy kristallicheskoy reshetki na
         mekhanicheskiye svoystva splavov).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals
         and Metallurgy), 1957, Vol.IV, No.3, pp. 432-438 (U.S.S.R.)

ABSTRACT: In the Mechanical Properties Laboratory of the Institute
         of Metal Physics, Ural Branch of the Ac.Sc. (Institut Fiziki
         Metallov Ural'skogo Filiala AN) detailed investigations were
         made of the influence on the plastic deformation of static
         distortions caused by atoms of the admixtures which are
         dissolved in the metal. All the investigations were carried
         out on Al-Mg alloys. The authors considered it advisable
         to begin with studying Al-Mg alloys since in these the
         inter-atomic bonds do not change with changes in the
         composition of the alloy within the limits of the a-solid
         solutions and they also contain considerable static
         distortions of the crystal lattice caused by magnesium atoms.
         This permitted study in the pure form of the influence of
Card 1/3 static distortions of the crystal lattice and it was possible
         to simplify to a certain extent the interpretation of the
         obtained results. The distortion in the crystal lattice was

126-3-6/34

Influence of the static distortions of the crystal lattice
on the mechanical properties of alloys. (Cont.)

studied by X-ray methods by studying the temperature
dependence of the modulus of elasticity, the internal
friction, the stress relaxation and the mechanical propert-
ies within a wide range of temperatures and deformation
speeds. The mechanism of plastic deformation was also
studied by X-ray and optical methods. The obtained informa-
tion characterizes the great variety of properties of the
alloys and the phenomena taking place in these and this
permits making certain reliable conclusions. It was found
that the modulus of elasticity of α-solid solutions of
aluminium with Mg does not depend on the concentration of
the solid solution within the entire investigated temperature
range between 77 and 700 K. These results are in agreement
with earlier conclusions of the author (19) and of
Koster, W. (16). X-ray results lead to similar conclusions.
The author concludes that static distortions of the crystal
lattice hinders the development of plastic deformation by
displacement, increasing thereby the yield point and the
shear strength; various diffusion processes provide a
possibility for developing diffusion plasticity but the fact
that the elementary act of diffusion becomes more difficult,

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126-3-6/34

Influence of the static distortions of the crystal lattice
on the mechanical properties of alloys. (Cont.)

due to the non-uniform distribution of the admixtures and
increased recrystallisation temperatures, brings about a
hardening of the grain boundaries and a braking of the
development of diffusion-plastic deformation. The behaviour
of an alloy under load depends on the combined effect of all
factors involved and will show a complicated dependence on
the composition of the alloy and on the deformation
conditions.
There are 29 references, 21 of which are Slavic.

Card3/3

SUBMITTED: August 20, 1956.

ASSOCIATION: Institute of Metal Physics, Ural Branch of the Ac.Sc.,
U.S.S.R. (Institut Fiziki Metallov Ural'skogo Filiala AN SSSR)

AVAILABLE: Library of Congress

126-2-27/35

AUTHORS: Pavlov, V. A., and Kryuchkov, N. F., and Fedotov, I. D.

TITLE: New peaks of internal friction at low temperatures.
          (Novye piki vnutrennego treniya pri nizkikh temperaturakh).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2,
          pp.371-372 (USSR)

ABSTRACT: The internal friction was measured at low temperatures
          for pure aluminum and an aluminum alloy with 3% magnesium.
          The internal friction was measured for transverse
          oscillations with frequencies of the order of 1200 to
          1300 c.p.s. using a test set-up described in an earlier
          paper (Ref.1). The specimens were made in the form of
          circular rods 200 mm long and 11 mm dia. The measurements
          have shown that in the temperature range from room
          temperature down to that of liquid nitrogen two maxima of
          internal friction exist in the temperature ranges -50 to
          -90°C and -170 to -180°C respectively. On approaching
          the temperature of liquid nitrogen, the internal friction
          increases which indicates the possibility of existence of
          an internal friction peak at temperatures below -196°C,
          see Fig.1. The peak of internal friction in the range
          -170 to -180°C was earlier observed on a number of metals
Card 1/3 and was attributed to the movement of dislocations under

New peaks of internal friction at low temperatures.   126-2-27/35

the effect of stresses (Ref.2). The peak of internal friction at -50 to -80°C and the increased internal friction at -196°C have been observed for the first time. The obtained internal friction peaks cannot be explained easily by the movement of dislocations since a sufficiently strong dependence is observed of the amplitude of the peaks on the preceding heating temperature. From the obtained data the activation energies were determined of the processes which correspond to the internal friction peaks. For the internal friction peaks at -50 to -80°C the activation energy equals 0.5 eV, for the peak at -170 to -180°C it equals 0.14 eV and for the internal friction in the range of -196°C it equals about 0.05 eV. In accordance with the classification of defects of the crystal lattice according to their mobility (Ref.3), the most likely assumption is that the internal friction peak at -50 to -80°C corresponds to diffusion of individual vacancies, the peak at -170 to -180°C corresponds to the diffusion of groups of vacancies and the increased internal friction at -196°C corresponds to the diffusion of more mobile defects,which may possibly have penetrated into the inter-nodes of the atoms.

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New peaks of internal friction at low temperatures.   12⁶-2-27/35

       Attention is drawn to the fact that the total quantity
of defects of a crystal lattice in aluminum alloys
with magnesium is larger than in pure aluminum. Further
investigations will permit obtaining more accurate
conceptions on the nature of the peaks of internal
friction.   The internal friction as a function of the
temperature is graphed in Fig.1 for pure aluminum and
for an alloy of aluminum with 3% magnesium.
There are 1 figure and 3 references, 2 of which are Slavic.

       (Note: This is a complete translation).

SUBMITTED: July 22, 1957.

ASSOCIATION: Institute of Physics of Metals, Ural Branch of the
       Ac.Sc. USSR (Institut Fiziki Metallov Ural'skogo Filiala
       AN SSSR).

AVAILABLE: Library of Congress.

Card 3/3

126-2-29/35

AUTHORS: Pavlov, V.A., Kryuchkov, N. F., and Fedotov, I. D.

TITLE: Temperature dependence of the modulus of elasticity of alloys of nickel with copper. (Temperaturnaya zavisimost' modulya uprugosti splavov nikelya s med'yu).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 374-376 (USSR)

ABSTRACT: The temperature dependence of the modulus of elasticity of alloys of nickel with copper was investigated for the purpose of studying the character of the changes of the inter-atomic bond forces on changing the concentration of a solid solution. The modulus of elasticity was measured during transverse vibrations of the specimen with a frequency of about 700 c.p.s. on a test rig described in an earlier paper (Ref.1) in the temperature range -196 to +700°C. The measurements at low temperatures were effected inside a specially designed cryostat made of a 600 mm long, 35 mm dia. thick walled copper tube with a 5 mm wide slot at one side of the bottom of the tube. From the outside a copper coil was soldered on for feeding in liquid nitrogen. The tube and the coil were fitted inside a housing filled with thermal insulation. The
Card 1/4 specimen was suspended in the cryostat on two thin wires

126-2-29/35

Temperature dependence of the modulus of elasticity of alloys of
nickel with copper.

curves 2, 3 and 4 give the same dependence for nickel
alloys containing 10, 20 and 40% Cu.   The modulus of
elasticity was measured without applying a magnetic field
and, therefore, the defect of the modulus caused by
magnetostriction phenomena is clearly pronounced. The
temperature dependence of the modulus of elasticity for
pure nickel is in good agreement with the results of
measurements published by Köster, W. (Ref.2). It can be
seen from the graph that the modulus of elasticity falls
monotonously with increasing concentration of the copper
in the solid solution throughout the investigated
temperature range. This is in agreement with the results
of X-ray investigations of the characteristic temperature
carried out on the same alloy by Noskova, N. I., and Pavlov,
V. A., (to be published in the same journal). Fukuroi, T.,
and Shibya, J., (Ref.4) observed a non-monotonous change of
the modulus of elasticity as a function of the copper
concentration, namely, that the modulus
increased somewhat in the range of concentrations of 30 to
40% Cu. In alloys of nickel with copper, a nonuniform

Card 3/4 distribution of the copper atoms in the volume of the solid

126-2-29/35

Temperature dependence of the modulus of elasticity of alloys of
nickel with copper.

> solution can take place (Ref.5). Certain changes in the
> modulus of elasticity, which depend on the preliminary
> thermo-mechanical treatment of the alloys, may be due to
> this phenomenon. In the here described case all the alloys
> were annealed at a sufficiently high temperature and the
> non-uniform distribution of the atoms in the solid solution
> was apparently little pronounced. For such alloys it is of
> interest to investigate the dependence of the modulus of
> elasticity on the thermomechanical treatment.
> There are 1 figure and 5 references, 2 of which are Slavic.
>
> (Note: This is a complete translation).

SUBMITTED: July 25, 1957.

ASSOCIATION: Institute of Physics of Metals, Ural Branch of the
Ac.Sc. USSR. (Institut Fiziki Metallov Ural'skogo Filiala
AN SSSR).

AVAILABLE: Library of Congress.

Card 4/4

126-5-3-14/31

AUTHORS: Grin', A.V., Pavlov, V. A. and Pereturina, I. A.

TITLE: Influence of Static Distortions of the Crystal Lattice on the Mechanical Properties of Aluminium-Magnesium Alloys (Vliyaniye staticheskikh iskazheniy kristallicheskoy reshetki na mekhanicheskiye svoystva splavov alyuminiya s magniyem) I. Dependence of the Yield Point and the Ultimate Strength on the Temperature and the Speed of Deformation (Zavisimost' predela tekuchesti i vremennogo soprotivleniya ot temperatury i skorosti deformirovaniya)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol 5, Nr 3, pp 493-500 (USSR)

ABSTRACT: The aim of the work described in this paper was to study the influence on the mechanical properties of the static distortions of the crystal lattice which are caused by atoms of the dissolved elements and the diffusion processes taking place as a result of stresses occurring during plastic deformation. Aluminium-magnesium alloys were used in the experiments. Earlier investigations of one of the authors and his team (Refs.10, 11) have shown that considerable static distortions of the crystal lattice take place, which are brought about by magnesium atoms but

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126-5-3-14/31

Influence of Static Distortions of the Crystal Lattice on the
Mechanical Properties of Aluminium-Magnesium Alloys.
I. Dependence of the Yield Point and the Ultimate Strength on the
Temperature and the Speed of Deformation

> the bond forces do not change the composition of the alloy.
> Such a combination of properties permits studying in the
> pure form the influence of   crystal lattice distortions
> on the mechanical properties. The authors investigated
> the temperature dependence of the yield point and the
> ultimate strength of pure aluminium (containing about
> 0.01% Mg, 0.0017% Fe, 0.0014% Si, 0.0011% Cu) and its
> magnesium alloys (0.05, 0.1, 0.3, 0.5 and 1% Mg) in the
> temperature range between 80 and 700°K for widely differing
> deformation speeds ($6.4 \cdot 10^{-3}$, $2 \cdot 10^{-1}$, $2 \cdot 10^{-4}$). It was
> established that for pure aluminium the temperature
> dependence of the yield point in the temperature range up
> to 500°K is determined fundamentally by a change in the
> interatomic bond forces. At elevated temperatures a more
> pronounced dependence was detected of the yield point on
> the temperature, which is apparently due to deformations

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> along the grain boundaries. Hardening of the aluminium
> alloys with magnesium is caused by static distortions of

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Influence of Static Distortions of the Crystal Lattice on the
Mechanical Properties of Aluminium-Magnesium Alloys.
I. Dependence of the Yield Point and the Ultimate Strength on the
Temperature and the Speed of Deformation

the crystal lattice which are brought about by magnesium
atoms. The diffusion processes lead to a non-monotonous
dependence of the yield point on the temperature, an
anomalous dependence on the speed of deformation and a
complication of the dependence of the mechanical properties
on the composition of the alloy and on the conditions of
deformation. Maxima were observed of the yield point in
the temperature range of about $500^{\circ}K$ and increased values
at $80^{\circ}K$ which are attributed to various types of diffusion
processes taking place in the case of deformation under
the effect of stresses.   Thus, it was found that static
distortions of the crystal lattice, brought about by the
magnesium atoms, cause an increase in the yield point and
the ultimate strength.   In the second part of this paper
(1958, Vol VI, Nr 1, pp.110-115), the authors investigate
the total and the uniform deformation of alloys of aluminium
with magnesium in the temperature range of 80 to $700^{\circ}K$ for
the same range of speeds of deformation. They found that

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126-5-3-14/31
Influence of Static Distortions of the Crystal Lattice on the
Mechanical Properties of Aluminium-Magnesium Alloys.
I. Dependence of the Yield Point and the Ultimate Strength on the
Temperature and the Speed of Deformation

the static distortions of the crystal lattice caused by
magnesium atoms reduces the plasticity and that the
diffusion processes taking place as a result of the
stresses during deformation of alloys bring about an
increase in the plasticity and complicate the temperature
dependence of the total and the uniform elongations.
In alloys of aluminium with magnesium, the crystal
structure of which has suffered static distortions, a
complicated dependence is observed of the total and the
uniform elongations on the temperature and the speed of
deformations. The plastic properties of such alloys is
apparently determined by several factors which act
simultaneously, namely: a more uniform distribution of
the plastic deformation along the volume of the crystal
and an increase of the effective volume which participates
in the deformation, brings about an increase in the
Card 4/5 plasticity of the alloys; a diffusion of the atoms of the
alloying elements under the effect of stresses taking

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Influence of Static Distortions of the Crystal Lattice on the
Mechanical Properties of Aluminium-Magnesium Alloys.
I. Dependence of the Yield Point and the Ultimate Strength on the
Temperature and the Speed of Deformation

place during deformation and causing a reduction of the
peaks of over-stresses in the neighbourhood of non-
uniformities of the crystal lattice and in the neighbour-
hood of microscopic cracks bring about an increase of the
plasticity; an increase of the types II and III distortions
during plastic deformation and an increase of the
resistance to deformation in the alloys bring about a
reduction in the plasticity. Obviously, the interaction
of these factors will cause a sufficiently complicated
dependence of the uniform and the total elongations on
the composition of the alloy and the conditions of
deformation.

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There are 8 figures and 23 references, 15 of which are
Soviet, 7 English, 1 German.

ASSOCIATION: Institut fiziki metallov Ural'skogo filiala AN SSSR
(Institute of Metal Physics, Ural Branch, Ac.Sc., USSR)

SUBMITTED: August 11, 1956.
1. Alloys--Mechanical properties   2. Alloys--Temperature factors
3. Crystals--Lattices   4. Crystals--Distortion

TROFIMOV, I.D.; PAVLOV, V.A.

Equipment for manufacturing pitch anchor and supporting chains.
Stan i instr. 28 no.10:29-32 O '57.   (MLRA 10:11)
                              (Chains)

P_{AVLOV}, V. H

3(8) p ᵞ   PHASE I BOOK EXPLOITATION   SOV/1575

Akademiya nauk SSSR.   Sovet po izucheniyu proizvoditel'nykh sil

Ocherki osadochnykh mestorozhdeniy poleznykh iskopayemykh (Description
     of Sedimentary Mineral Deposits) Moscow, Izd-vo AN SSSR, 1958.
     84 p. 5,000 copies printed.

Resp. Ed.:   L.V. Pustovalov, Corresponding Member, USSR Academy of
     Sciences; Ed. of Publishing House: G. I. Nosov; Tech. Ed.:
     S. G. Markovich

PURPOSE: This publication is intended for mining geologists,
     stratigraphers, petrographers, and mineralogists.

COVERAGE: This collection of articles is devoted to a description
     of several minerals found in Eastern Siberia, and a discussion of
     the conditions of their deposition by regions.   Individual
     articles report on the Berezovskoye iron ore deposits, the
     titaniferous minerals of the Bakal'skoe deposit, the iron ore
     deposits of the Angaro-Pitskiy basin and the Khoperskiy region.
     The articles are accompanied by diagrams, tables, and biblio-
     graphic references.

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Description of Sedimentary Mineral Deposits (Cont.)   SOV/1575

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PAVLOV, V. A.

with E. S. YAKOVLEVA, and M. V. YAKUTOVICH
"Effect of Small Amounts of Addition Agents on Creep of Solid Solutions"
p. 48

with M. G. GAYDUKOV
"Investigation of Stress Relaxation in Iron-Chrome-Nickel Austenitic
Alloys with Additions of Titanium and Niobium" p. 133

"Investigation of Creep in Iron-Chrome-Nickel Austenitic Alloys with
Additions of Titanium, Niobium and Tungsten" p. 140

Problems in the Theory of Heat Resistance of Metal Alloys, Moscow, Izd-v
AN SSSR, 1956, 150 pp. (Trudy, Inst. Fiz. metal, Ural filial, AN SSSR

The articles in this book constitute reports on extensive studies,
conducted between 1949 and 1954 by the Inst. Physical Metallurgy Urals
Branch AS USSR, and devoted to the development of a general theory of
heat resistance.

PAVLOV, V.A.; YAKOVLEVA, E.S.; YAKUTOVICH, M.V.

Effect of small additions on creep in solid solutions. Trudy
Inst.fiz.met.UFAN SSSR no.19:48-57 '58.   (MIRA 12:2)
(Solutions, Solid)   (Creep of metals)   (Alloys--Testing)

GAYDUKOV, M.G.; PAVLOV, V.A.

Investigation of stress relaxation in iron-chromium-nickel
austenitic alloys with titanium and niobium additions. Trudy
Inst.fiz.met.UFAN SSSR   no.19:133-139 '58.   (MIRA 12:2)
   (Iron-chromium-nickel alloys--Testing) (Deformations (Mechanics))

GAYDUKOV, M.G.; PAVLOV, V.A.

Investigating creep in iron-chromium-nickel austenitic alloys
with additions of titanium, niobium and tungsten. Trudy Inst.
fiz.met.UFAN SSSR no.19:140-148 ,'58.   (MIRA 12:2)
   (Iron-chromium-nickel alloys---Testing) (Creep of metals)