STEPANOV, Ye.

STEPANOV, Ye., geroy Sovetskogo Soyuza, rukovoditel' sovetskoy komandy sportsmenov-parashyutistov.

Victory of Soviet parachutists. Kryl.rod. 4 no.10:10-12 O '53. (MLRA 6:10)
(Parachutes)

STEPANOV, YE.

AID P - 773

Subject : USSR/Aeronautics

Card 1/1 Pub. 58 - 4/16

Author : Stepanov, Ye., Hero of the Soviet Union, Captain of the Soviet Team

Title : Victory of Soviet Parachutists

Periodical : Kryl. Rod., 10, 6-9, O 1954

Abstract : A detailed report of the Second International Parachute Championship, which took place in France in August 1954, and where the Soviet team of 12 selected parachutists won first place. Data on all achievements are given. Names of Soviet competitors are mentioned. Photos.

Institution : None

Submitted : No date

AID P - 5287

Subject : USSR/Aeronautics - Parachutism

Card 1/1 Pub. 58 - 5/11

Author : Stepanov, Ye., Hero of the Soviet Union, Chief Arbiter at the First RSFSR Competitions in Parachute Sports.

Title : Competitions in parachute sports of the members of the aeroclubs of the RSFSR.

Periodical : Kryl. rod., 9, 11-12, S 1956

Abstract : A technical account of the First RSFSR Competitions in parachute sports, held at Tushino in August 1956. The use by the competitors of new types of slit parachutes, altimeters and radio receivers-transmitters is noted. Suggestions are made as to the improvements in the methods of selecting by aeroclubs, and of training of future competitors. 2 photos.

Institution : None

Submitted : No date

AID P - 5516

Kryl. rod., 2, 13-15, F 1957

Card 2/2 Pub. 58 - 7/17

Institution : None

Submitted : No date

STEPANOV, Ye., Geroy Sovetskogo Soyuza.

For the Adriatic Cup. Kryl.rod.8 no.11:3-5 N '57. (MIRA 10:12)

1. Rukovoditel' komandy Sovetskikh sportsmenov-parashyutistov na Mezhdunarodnykh sorevnovanoyakh parashyutistov v Yugoslavii.
(Parachutists--Competitions)

85-57-12-14/29

AUTHOR: Stepanov, Ye., Hero of the Soviet Union, Chief Judge for Contests

TITLE: All-Union Contests of Sportsmen-Pilots (Vsesoyuznyye sorevnovaniya sportsmenov-letchikov)

PERIODICAL: Krylya rodiny, 1957, Nr 12, pp 15-17 (USSR)

ABSTRACT: The author gives a detailed account of the All-Union contests in piloting, parachute jumping, and model-airplane building held in Stalingrad. Personalities mentioned include: Ya. Yeroshenko, acting chief judge for contests; sportsman F. Beloshkin, pilot of an Mi-1 helicopter; Master of Sports I. Ilyushin, well known parachutist; sportsmen N. Septhulov, N. Zhelnov, A. Maslov (Moscow); N. Grachev (Ul'yanovsk oblast' aeroclub); K. Boykov; Captain Pavel Sizykh (Air Force); K. Polomoshnyy (Frunze); P. Koshelev and I. Kuzayev (Kirgiz-skaya SSR); Major N. Sukhov; Nikolay Anfilatov (Kirov); M. Maksimov; Zuvly Yudin (Tashkent); Captain Anatoliy Noyenko (Air Force); Vasiliy Zalashov (USSR TsK); Pilot V. Fedorov (Kirovograd'skaya oblast' aeroclub); pilot M. Zinevich (Belo-russkaya SSR); sportswoman O. Korolevskaya, engineer of the

Card 1/2

All-Union Contests of Sportsmen-Pilots 85-57-12-14/29

Institute of Mathematics, USSR Academy of Sciences; N. Shantayev, chief of the flying competition; sportsman M. Antiptsev (Stalingrad). There are 21 photographs on 4 pages of inserts, showing pilots-sportsmen Maslov, Zhelnov, Maksimov, Yudin, Noyenko, Anfilatov, Sizykh, Balashov, Smirnov, Fedorov, Grachev, Zinevich and Kovalevskaya.

AVAILABLE: Library of Congress

Card 2/2 1. Parachute jumping 2. Model airplanes-Building

STEPANOV, Ye., geroy Sovetskogo Soyuza

What the championship at Bratislava taught us. Kryl.rod. 9 no.12: 11-13 D '58. (MIRA 12:2)

1. Rukovoditel' komandy sovetskikh parashyutistov na IV mirovom chempionate.

(Parachuting)

STEPANOV, Ye., Geroy Sovetskogo Soyuza

Be prepared for the starting line, flying enthusiasts. Kryl.rod. 10 no.3:5-6 Mr '59. (MIRA 12:4)
(Aeronautics)

STEPANOV, Ye.

Athletes, get set! Kryl.rod. 11 no.4:25 Ap '60. (MIRA 13:6)

1. Predsedatel' Soveta TSentral'nogo aviatsionnogo kluba SSSR im. V.P.Chkalova.
(Aeronautics)

STEPANOV, Ye.

U.S.S.R.--France--Czechoslovakia. Kryl.rod. 11 no.8:12-13 Ag '60. (MIRA 13:8)

1. Zamestitel' nachal'nika TSentral'nogo aerokluba SSSR.
(Aeronautics)

STEPANOV, Ye.

Helicopters are in the sky. Kryl.rod. 11 no.11:12-13 N '60. (MIRA 13:10)

(Helicopters)

STEPANOV, E. A.

STEPANOV, E. A. "Investigation of the Length of the Base and the Position of the Working Parts of Leveling Machinery." Min Agriculture USSR. All-Union Sci Res Inst of Hydraulic Engineering and Soil Improvement. Moscow, 1956. (Dissertation for the Degree of Candidate in Sciences) TECHNICAL

So: Knizhnava Letopis', No. 17, 1956

STEPANOV, Ye.A.

Materials on the ecology and practical importance of the rose-colored starling in Karaganda Province. Ornitologiia no.3:292-297 '60 (MIRA 14:6)

(Karaganda Province--Starlings)
(Locusts--Biological control)

STEPANOV, Ye.A.

"Stimulation of plants. Fiziol. rast. 7 no.2:237-239 '60. (MIRA 14:5)

(Growth promoting substances)

SHIROKOV, A.P., kand. tekhn. nauk; KUZ'MIN, G.P.; STEPANOV, Yo.A.; LIDER, V.A.

Industrial testing of the automatic drive of a coal saw. Ugol' 40 no.1:46-48 Ja '65. (MIRA 18:4)

1. Kuznetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Shirokov, Stepanov, Lider). 2. Trest Kiselevskugol' (for Kuz'min).

STEPANOV, Ye.P., kand. sel'skokhoz. nauk

Put crop rotations in good order. Zemledelie 27 no.10: 8-15 O '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva tsentral'nykh Nechernozemnoy zony.

STEPANOV, YE. G.

1. NAZAROVA, T. N.; STEPANOV, YE. G.; TSYPKINA, YE. D.

2. USSR (600)

4. Cranks and Crankshafts

7. Experience with reinforcing tractor-engine crankshafts by rolling the fillets. Avt. trakt. prom. no.9, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

[illegible], [illegible]; [illegible], Y. [illegible]; SV[illegible], [illegible]

[illegible] [illegible] ...es for [illegible] diesel engines. Trakt. [illegible] (MIRA [illegible])
[illegible] no.7:3-[illegible] Jl '5[illegible].
(Diesel engines)

APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653210018-4"

FOMIN, A.A.;STEPANOV, Ye.G.;SVENTKOVSKIY, E.R.

Modification of SMD diesel engines for tractors. Trakt. i sel'khozmash. no.11:6-9 N '59. (MIRA 13:3)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Diesel engines)

STEPANOV, E.I.

Ob integrirovanii unravnenii laminarnogo pogranichnogo sloia dlia dvizheniia s osevoi simmetriei. (Prikladnaia matematika i mekhanika, 1947, v. 11, no.1, p.203-204)

Summary in French.

Title tr.: Integration of equations of a laminar boundary layer for movement with axial symmetry.

QA801.P7 1947

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

STEPANOV, Ye. I.

Stepanov, Ye. I. - "On the problem of the approximate integration of differential equations of a laminar boundary layer", Trudy Novocherkas. politekhn. in-ta im ordzhonikidze, Vol. XXI, 1949, p. 47-60, -Bibliog: 11 items.

SO: U-4631, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 24, 1949).

STEPANOV, Ye. I.

Stepanov, Ye. I. - "On the problem of streamlining bodies approximating a cylinder and a sphere", Trudy Novocherkas. politekhn. in-ta im. ordzhonikidze, Vol. XXI, 1949, p. 61-67.

SO: U-4631, 16 Sept. 53, (Letopis 'nykh Statey, No. 24, 1949).

STEPANOV, Ye. I.

Stepanov, Ye. I. - "On the minimal properties of certain linear functions", Trudy Novocherkas. politekhn..in-ta im. ordzhonikidze, Vol. XXI, 1949, p. 125-29.

SO: U-4631, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 24,1949).

Stepanov, Ye. I.

Stepanov, Ye. I. - "On the problem of calculating channels with a given line of free surface", Trudy Novocherkas. politekhn. in-ta im. ordzhonikidze, Vol. XXI, 1949, p. 131-36. - Bibliog: 5 items.

SO: U-4631. 16 Sept. 53, (Letopis 'nykh Statey, No. 24, 1949).

Stepanov, Ye. I.

Stepanov, E. I. **Sur la rotation lente des solides dans liquide visqueux.** Appl. Math. Mech. [Akad. Nauk SSSK Prikl. Mat. Mech.] 10, 673-675 (1946). (Russian, French summary)

Cet article est consacré à l'analogie entre le problème mentionné dans le titre et celui du mouvement de translation d'un solide de révolution le long de son axe de symétrie dans un liquide parfait. *Author's summary.*

2.

[illegible] Mathematical Reviews, Vol. No. 7

30882
S/148/61/000/009/011/012
E111/E135

11,7100

AUTHORS: Glinkov, M.A., and Stepanov, Ye.M.

TITLE: Thermal ionization in a flame and intensification of combustion by applying an electric field

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.9, 1961, 143-152.

TEXT: Stable combustion, with branching of chains, begins after the production of a definite concentration of free radicals and ionized particles. The initial energy impulse (whose magnitude depends on the energy barrier of the fuel molecules) leads to ionization and free-radical formation and the branching-chain combustion reaction. In the present work the authors report and discuss their experiments on combustion from the ionization aspect. The main part of the experiments was on pre-mixed air/gas mixtures with an excess-air coefficient of unity, [Abstractor's note: I think this means with the stoichiometric proportion of air for complete combustion,] with gas flows of 0.24, 0.52 and 0.72 nm3/hour and a burner bore of 15 mm. At all the gas flows the ratio of visible-flame length to length of inner

Card 1/4

Thermal ionization in a flame ...

cone was equal to 2.2. To prevent detachment of the flame a little gas was added through an annular gap near the burner mouth. The ionization characteristics were measured every 10 mm along the flame, at 5-6 radial points at each level. Measurements were also made when the gas/air mixture had not been pre-mixed, additional investigation then being made of the effect of preheating of the gas (to 200, 400, 600 and 750 °C) on ionization and temperature in the flame. Ionization was found by measuring flame conductivity using two 2-mm diameter diametrically opposed stainless-steel probes insulated in quartz tubes. The amplified current was measured with a micro-ammeter; the ionic concentration was not calculated. Temperature was measured with a platinum platinum-rhodium thermocouple. The ionization maxima were found to be close to the temperature maxima. From the observed changes of ionization and temperature up the flame it is concluded that in the initial part of the flame rapid ionization is produced due to rapid temperature rise, here there are considerably more ionized than reacting molecules. After reaching a maximum, ionization falls rapidly, while temperature continues to rise until heat

Card 2/4

Thermal ionization in a flame ...

transfer to the surroundings leads to a slow fall. In this region fuel ions are consumed only for maintaining temperature; the number of ions is limited by the arrival of fresh fuel molecules. Temperature-versus-ionization plots show hysteresis loops whose areas represent the amount of heat released in the combustion of a given quantity of fuel ions. Since the calorific value of the gas is virtually constant, the ratio of gas flows shows the relative increase in heat evolution at different flows: the ratios agree fairly closely with the ratio of the corresponding hysteresis-loop areas. Without pre-mixing but with preheating the ionization maximum I_{max} rises gradually with fuel flow V according to

$$I_{max} = I_0 + bV$$

where I_0 is the initial ionization of molecules, depending on pre-heat temperature or other form of ionizing energy, and also on the fuel; b depends on the fuel (0.31 and 0.58 for the fuel used and preheats of under and over 700 °C, respectively). Combustion can be intensified by moving the ionization maximum towards the root of the flame by applying any form of energy at the root. This was observed in experiments in which the heating rates of

metal objects with the same heating area were determined at various levels in the flame with and without the application of an electric field [Abstractor's note: no information on the magnitude of the field or its application is given]. Although the whole flame is affected by the field, the effect is not uniform because temperature is not uniform. The effect of the field increases with increasing fuel flow. Heat transfer from the flame to a heat-flow meter was also increased (by a maximum of 20%). The heating rate of a lead bath was increased 20-25% by applying the field (the gas flow in this experiment was 1.5 n.t.p. m^3/hour). The field is not to be regarded as an additional source of energy but as a means of concentrating the energy evolved on combustion of the fuel.
There are 5 figures.
ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)
SUBMITTED: February 28, 1961

X

STEPANOV, Ye. M. (Lab. on Biological Method, Batumi)

"Octamethyl and Enemies of the Red Citrus Mite" (Oktametil i vragi krasnogo tsitrusovogo kleshchika)

Chemistry and Uses of Organophosphorous Compounds (Khimiya i primeneniye fosforoorganicheskikh soyedneniy), Trudy of First Conference, 8-10 December 1955, Kazan, pp. Published by Kazan Affil. AS USSR, 1957

518-523

P.

USSR/General and Specialized Zoology - Insects.

Abs Jour : Ref Zhur - Biol., No 8, 1958, 35243

Author : Stepanov, E.M.
Inst :
Title : Octamethyl and the Foes of the Red Citrus Mite.

Orig Pub : Khimiya i primeneniye fosphrorgan. soyedineniy. M., AN SSSR, 1957, 518-523.

Abstract : Plants treated with octamethyl were completely rid of the red citrus mites in 5-7 days and were not infested by them for the next three months. Octamethyl on contact had no effect on mites or their enemies. Their enemies feeding on poisoned mites did not perish, probably because their digestion was extraintestinal. Thin ducts ending with apertures passed through the mandibles of the stetorus, oligochaete, chrysope and convention larvae. It was clearly seen that piercing the mite with its mandibles the semitransparent larvae of the oligochaets sucked in

Card 1/2

DUVANBEKOV, B.; YEGOROV, A.; STEPANOV, Ye. M.

Oldest entomologist in Kazakhstan. Zashch. rast. ot vred. i bol. 6 no.3:58 Mr '61. (MIRA 15:6)
(Kozhevnikov, Aleksandr Fedorovich, 1891(?)-)

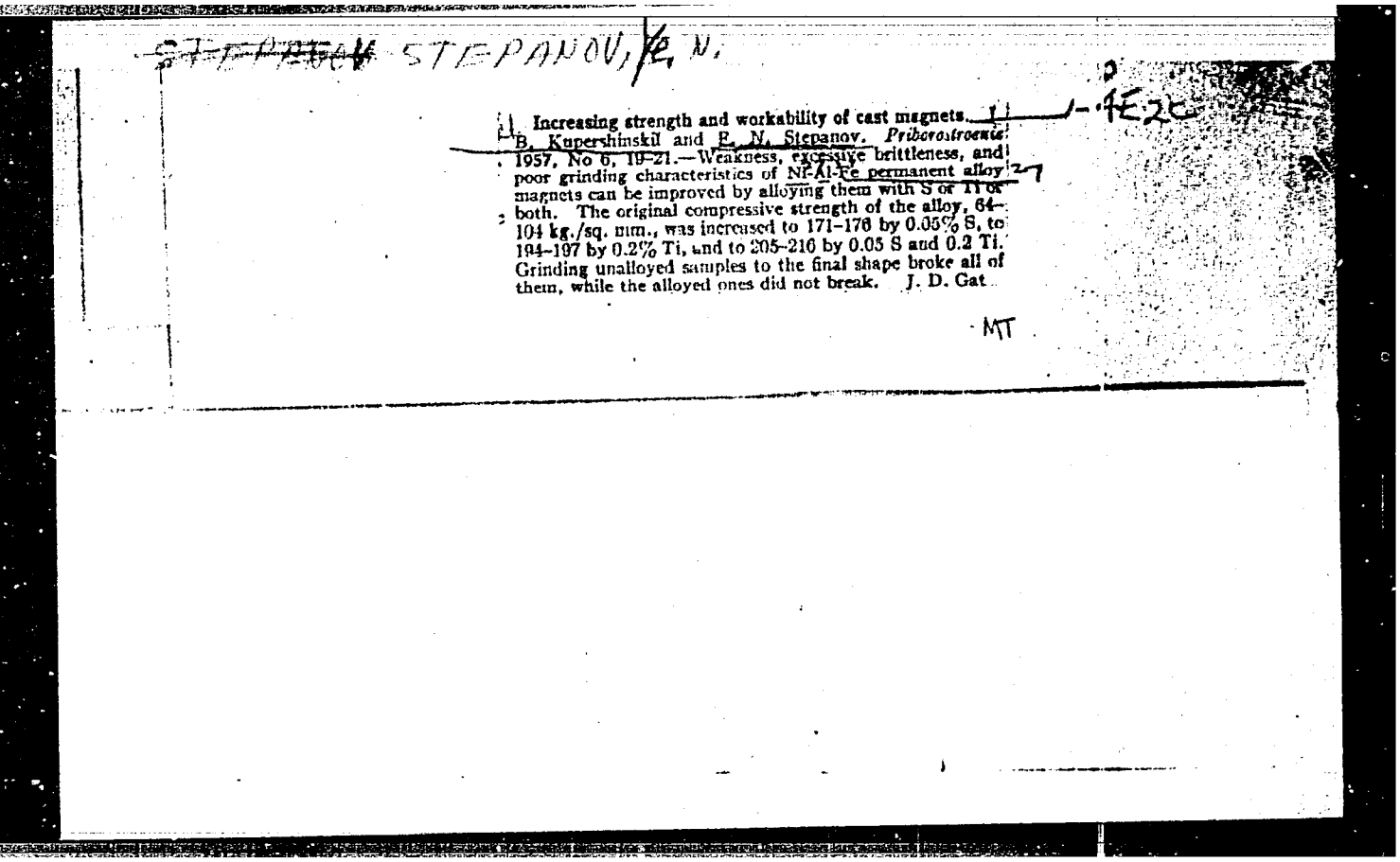
STEPANOV, Ye.M.

Parasite of the citrus whitefly. Zashch. rast. ot vred. i bol. 8 no.6:20-23 Je '63. (MIRA 16:8)

1. Gruzinskaya biologicheskaya laboratoriya, Batumi.
(Adzharistan--Citrus fruits--Deseases and pests)
(Adzharistan--Whiteflies--Biological control)

YEMENKO, G.M., inzh.; STEPANOV, Ye.M., kand. tekhn. nauk; FILIMONOV, Yu.F., kand. tekhn. nauk; [illegible]OV, M.A., kand. tekhn. nauk, retsenzent; [illegible], G.M., inzh., red.

[Industrial furnaces] Promyshlennye pechi. Moskva, Mashinostroenie, 1964. 359 p. (MIRA 18:1)



STEPANOV, R. N.

Increasing strength and workability of cast magnets. B. Kupershtinskii and R. N. Stepanov. *Priborostroenie* 1957, No 6, 19–21.—Weakness, excessive brittleness, and poor grinding characteristics of Ni-Al-Fe permanent alloy magnets can be improved by alloying them with S or Ti or both. The original compressive strength of the alloy, 64–104 kg./sq. mm., was increased to 171–176 by 0.05% S, to 194–197 by 0.2% Ti, and to 205–216 by 0.05 S and 0.2 Ti. Grinding unalloyed samples to the final shape broke all of them, while the alloyed ones did not break. J. D. Gat

MT

STEPANOV, Ye N.

AID P - 4583

Subject : USSR/Aeronautics - bibliography

Card 1/1 Pub. 135 - 18/23

Author : Stepanov, Ye. N., Col., Hero of the Soviet Union

Title : Story about a remarkable pilot

Periodical : Vest. vozd. flota, 2, 84-86, F 1956

Abstract : Critical review of the book: Letchik Serov (Pilot Serov) by Chalaya, Z., Moskva, 1955, 216 pages.

Institution : None

Submitted : No date

STEPANOV, Ye.N., polkovnik, Geroy Sovetskogo Soyuza; KUDRYAVTSEV, S.S., mayor, sud'ya respublikanskoy kategorii

Striving for new flying records. Vest.Vozd.Fl. no.9:78-81 S'60.

1. Vitse-prezident Mezhdunarodnoy aviatsionnoy federatsii (for Stepanov).
(Aeronautics)

BABIN, Boris Nikolayevich; STEPANOV, Ye.P., red.; KLIMOVA, Z.I., tekhn.red.

[From the history of the collectivization of fishing farms in Astrakhan Province] Iz istorii kollektivizatsii rybolovetskikh khoziaistv Astrakhanskogo kraia. Astrakhan', Izd-vo gazety "Volga," 1958. 75 p. (MIRA 13:3)
(Astrakhan Province--Fisheries--Economic aspects)
(Collective farms)

L 16552-65 EWT(1)/EEC(t) Peb ESD(t)/ESD(gs)/AEDC(a)/SSD/AFWL/AS(mp)-2/
EJP(c)
ACCESSION NR: AP4044667 S/0120/64/000/004/0043/0049

AUTHOR: Aleshin, K. P.; Lukashevich, I. I.; Samoylov, B. N.; Sklyarevskiy, V. V.; Stepanov, Ye. P.; Filippov, N. I.

TITLE: System for investigating the Mossbauer effect

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 43-49

TOPIC TAGS: Mossbauer effect, Mossbauer effect investigation, vibrator, aerodynamic vibrator, Mossbauer spectrum, gamma ray, gamma ray source

ABSTRACT: The proposed system, in which motion is produced by a special electrodynamic vibrator at a constant velocity of up to ~ 8 cm/sec, was designed for investigating the Mossbauer effect. The low amplitude of source motion (1—2 mm) makes it possible to conduct both the absorption and the dispersion measurements of the Mossbauer spectra. The electrodynamic vibrator, which is described in detail, provides for a constant velocity within ± 1%. The vibrator makes it possible to conduct measurements at frequencies of up to 20 cps. The maximum velocity of 8 cm/sec is achieved at 16 cps. The electronic part of the system provides for registration by means of a NaI (Tl) crystal and a photomultiplier of γ-quanta passing through a resonant absorber. From the photomultiplier the pulses are applied to a single-channel analyzer whose window is directed toward the photopeak of the

Card 1/2

L 16552-65
ACCESSION NR: AP4044667

γ-rays investigated. The equipment is designed so as to make it possible to change the measurement time easily and to pass from one operating frequency to another. The resolution time of the registration channel is ~ 1 μsec. The characteristics and velocity calibration of the system were studied by measuring the absorption spectrum of Fe^{57} γ-rays with an energy of 14.4 kev. The source was Co^{57}, and the absorber was $Fe_2^{57}O_3$. Measurements of the line drift have shown that after heating the system for 2 hr, the drift in velocity does not exceed ± 0.5% for 8 hr of operation. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 23Jul63 ENCL: 00 SUB CODE: EM, EC, NP

NO REF SOV: 003 OTHER: 003

Card 2/2

AUTHOR SKLYAREVSKIY,V.V., FOMENKO, D.E., STEPANOV,E.P. PA - 2669

TITLE Investigation of U^{235} Fission γRays in the Energy Range up to 250 keV
(Izlucheniye γ-luchey deleniya U^{235} v oblasti energiy do 250 keV-Russian)

PERIODICAL Zhurmal Eksperim. i Teoret. Fiziki,1957, Vol,32, No.2, pp 256-262
U.S.S.R.

Received 5/1957 Reviewed 6/1957

ABSTRACT The process described in the paper under review uses the method of geometrical fission, in which the γ-rays that are emitted from the fission product are measured separately. With the aid of this method it was possible to determine that the main part of the γ-rays(at fissions in the energy range up to 250 keV) is emitted by the fission products. The experimental arrangement is demonstrated in a sketch. An ionization chamber with a layer of U^{235} was placed into a bundle of thermal neutrons of a reactor. The spectrum of the γ-rays was measured by means of a scintillation spectrometer with NaJ(Tl) crystal.
The results and their discussion: Several diagrams show the spectra of the true and of the accidental coincidences. The peaks of these spectra are probably caused by secondary effects. The peak at 60 keV is created by nonelastic scattering of the fission neutrons by the iodine nuclei in the NaJ(Tl) crystals. The peak at 75 keV characterizes the Roentgen-K-radiation of lead which is caused in the protective layer (surrounding the crystal) by γ-rays

Card 1/2

Investigation of U^{235} Fission γ-Rays in the Energy Range up to 250 keV. PA - 2669

and fission neutrons. The spectra were recorded in different positions of the crystal and they have almost identical shapes but different intensities. The spectrum of the γ-rays which are created at fission in the energy range from 100 to 250 keV consists of many lines. These lines correspond to the γ-rays which are emitted by different fission products in excited states. These states are created after the emission of neutrons and hard γ-rays by the fission fragments. The life span of these states ($\sim 10^{-9}$ sec) obviously indicates a dipole-like character of the transitions. To the quadrupole transition with the life span of 10^{-9} sec there corresponds a quadrupole moment of the nucleus of $\sim 2.5 \cdot 10^{-24}$ cm^2. (6 reproductions and 1 chart).

ASSOCIATION Institute of Atomic Energy, Academy of Sciences of the USSR.
PRESENTED BY
SUBMITTED 24.9.1956
AVAILABLE Library of Congress
Card 2/2

AUTHORS: Sklyarevskiy,V.V., Stepanov,Ye.P., Obinyakov,B.A. 89-1-2/29

TITLE: The Measuring of Gamma Quanta Produced by the Capture of Thermal Neutrons in Some Rare Earth Nuclei (Issledovaniye γ-luchey, voznikayushchikh pri zakhvate teplovykh neytronov yadrami nekotorykh redkozemel'nykh elementov)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 22-25 (USSR)

ABSTRACT: By means of a scintillation spectrometer the energies of the γ quanta, their intensities, and the conversion coefficients were measured as follows:

γ radiating nucleus	E_γ in KeV	intensity (number of quanta per neutron capture	multipole order	α_K	α_L
Er^{168}	82	0.18	E 2	1.6	2.1
	185	0.64	E 2	0.20	0.084
Hf^{178}	92	0.19	E 2	1.0	1.7
	213	0.55	E 2	0.13	0.07
Gd^{158}	79	0.104	E 2	2.0	2.05
	183	0.22	E 2	0.22	0.09

Card 1/2

The Measuring of Gamma Quanta Produced by the Capture of Thermal Neutrons in Some Rare Earth Nuclei

89-1-2/29

Gd^{156}	87	0.137	E 2	1.37	1.25
	196	0.277	E 2	0.17	0.054
Dy^{165}	78	0.028	M 1	4.1	0.68
	104	0.018	E 3	3.4	22.6
	180	0.16	E 2	0.22	0.1
Eu^{152}	72	0.044			
	90	0.20			
Ho^{168}	121	0.20			
	142	0.31			
Ta^{182}	107	0.152			
	133	0.30			
	170	0.22			
	272	0.7			
Tu^{170}	150	0.073			

There are 5 figures, 1 table, and 12 references, 6 of which are Slavic.

SUBMITTED: August 8, 1957

AVAILABLE: Library of Congress

Card 2/2

SOV/89-5-4-8/24

AUTHORS: Sklyarevskiy, V. V., Stepanov, Ye. P., Obinyakov, B. A.

TITLE: The Spectrum of Soft γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115} (Spektry myagkikh γ-luchey, voznikayushchikh pri zakhvate teplovykh neytronov yadrami Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109} i In^{115})

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 4, pp 454-456 (USSR)

ABSTRACT: The soft γ-rays were measured by means of a scintillation spectrometer with a NaJ(TI)-crystal. The experimental arrangement and the measuring method are precisely described (Ref 1). The following γ-quanta were measured:

γ-emitting isotope	E_γ in keV	Intensity (Number of the quanta per captured neutron)
Cu^{64}	155 ± 5	0,23 ± 0,04
	205 ± 10	0,05 ± 0,02
	276 ± 10	0,25 ± 0,05

Card 1/3

The Spectrum of Soft γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115}

Cu^{66}	92 ± 5	0,13 ± 0,03
	180 ± 10	0,34 ± 0,10
Ag^{108}	82 ± 2	0,20 ± 0,04
	117 ± 2	0,11 ± 0,02
	199 ± 3	0,34 ± 0,06
Ag^{110}	78 ± 3	0,09 ± 0,03
	116 ± 2	0,21 ± 0,04
	196 ± 3	0,32 ± 0,06
	232 ± 10	0,07 ± 0,02
In^{116}	70 ± 5	0,05 ± 0,02
	102 ± 3	0,18 ± 0,04
	175 ± 5	0,31 ± 0,06
	285 ± 10	0,42 ± 0,08

The results obtained agree well with previously obtained results.

V. S. Zolotarev placed a sufficiently large amount of enriched

The Spectrum of Soft γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115}

isotopes at the authors' disposal. L. V. Groshev and D. P. Grechukhin took part in discussions on this paper.
There are 2 figures, 1 table, and 5 references, 4 of which are Soviet.

SUBMITTED: May 10, 1958

Card 3/3

STEPANOV, YE. P.

18(4) PHASE I BOOK EXPLOITATION SOV/2686

Moscow. Aviatsionnyy tekhnologicheskiy institut

Voprosy soprotivleniya materialov; prochnost' alyuminiyevykh splavov (Problems of the Strength of Materials; Strength of Aluminum Alloys) Moscow, Oborongiz, 1959. 417 p. (Series: Its: Trudy, vyp. 37) 3,600 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Ed. (Title page): S.V. Serensen; Ed. (Inside book): B.V. Zaslavskiy; Ed. of Publishing House: L.I. Sheynfayn; Tech. Ed.: L.A. Garnukhina; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This collection of articles is intended for workers of engineering design offices, industrial laboratories and scientific institutes of the machine-building industry and for research fellows and students of advanced courses in schools of higher technical education.

COVERAGE: This collection consists of 8 articles in which mechanical properties of deformed aluminum alloys are described. The load-carrying capacity of parts made of these alloys is considered and some results of the investigation of the distribution of stresses and strains in parts and joints are given.

4. Stepanov, Ye.P. Investigation of Stresses in a Wedge Under a Triangular Load (Applied to Cutters) 52
The author uses the optic method of investigating stresses which makes possible an analysis of the applicability of corresponding theoretical solutions to the determination of a plane stressed state in cutters.

5. Kogayev, V. P. Basis for the Choice of an Equal Strength Beam for Calibrating Wire Tensometers in the Presence of Transversal Vibrations 62
In connection with the elaboration of equipment for the calibration of transmitters, calculation of an equal strength beam with transversal vibrations present is given.

6. Serensen, S.V., M.N. Stepnov, V.P. Kogayev, and Ye. V. Giatsintov. Stability of the Function of Distribution of Durability in Testing the Stability of Aviation Alloys 69
Problems of the stability of aviation structural alloys are considered in the static aspect in order to obtain a stable distribution of durability at various levels of stress.

7. Vorontsov, S.N. [Deceased], and M.N. Stepnov. Fatigue Limit of Aluminum Alloy AK5 With a Slatelike Structure of Fractures 85
The relation of fatigue to slatelike structure of fractures is analyzed in studying the stability of aviation structural alloys.

8. Stepnov, M.N. Surface Strengthing of Aluminum Alloys AK4-1 and D16T by Hammer Hardening 96
Fatigue resistance of cold-hammered samples with changing parameters of the strengthened layer and the mechanical properties of the layer are described. The dependence of the value of final stresses on the hammering technology is shown and the strengthened layer are determined.

AVAILABLE: Library of Congress

Card 1/1 IS/gmp 12-9-59

5

21(8)

AUTHORS: Sklyarevskiy, V. V., Stepanov, Ye. P., Medvedev, B. A.

SOV/56-36-1-52/62

TITLE: The X-Ray K-Radiation of the Fragments of Fission and the Charge Distribution of Fragments (Rentgenovskoye K-izlucheniye oskolkov deleniya i raspredeleniye oskolkov po zaryadam)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 326-328 (USSR)

ABSTRACT: The present paper deals with new measurements of the spectrum of the soft γ-rays produced in the fission of U^{235}. On the basis of the results obtained by these measurements, the widths of the distribution of heavy and light fragments over the charges were then estimated. The experimental system consisted of an ionization chamber with a layer of U^{235} (which was subjected to the action of a beam of thermal neutrons of the RFT reactor of the AS USSR) and of a xenon-proportional counter for recording γ-rays. A diagram shows the spectrum of the γ-rays in the fission of U^{235} within the energy range of 10-50 kev. The spectrum contains two intense non-monochromatic lines, the maxima of

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which correspond to the energies (16 ± 1) and (31 ± 1.5) kev; the half-widths amount to 35 and 22% respectively. These lines undoubtedly belong to the X-ray K-radiation of the fragments of the light and heavy groups. The energy distribution W(E) of the X-ray K-radiation of the fragments is apparently connected with the charge distribution W(Z) of the fragments. On the basis of the results obtained it is therefore possible to estimate the widths of W(Z). In this connection it may be assumed that the distributions W(E) and W(Z) are Gaussian curves with the total widths δ_E and δ_Z at half the height of the line. The values of δ_Z/Z_o are (14.5 ± 3)% and (8.5 ± 1.5)% for the light and for the heavy group of fragments respectively. Here $\delta_Z/Z_o = \delta_E/2E_o$ holds, and the energies E_o correspond to the positions of distribution maxima with respect to E. The values obtained here for the width of the distribution of fragments over the charges are only approximated values. The intensity of the line with the energy of 16 kev amounted to 0.10 ± 0.03 quanta per fission. The authors thank

V. M. Strutinskiy for some valuable advice. There are 1 figure and 4 Soviet references.

SUBMITTED: September 13, 1958

21(8) SOV/56-36-2-59/63

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

TITLE: The Polarization of the Au^{198} Nuclei in a Solution of Gold in Iron (Polyarizatsiya yader Au^{198} v rastvore zolota v zhelezе)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 644-645 (USSR)

ABSTRACT: G. R. Khutsishvili (Ref 1) suggested a method for the polarization of the nuclei of ferromagnetic elements. The authors tried to generalize this method to nuclei of non-ferromagnetic elements introduced into a ferromagnetic. The present paper discusses the results of the investigation of the polarization specified in the title. The sample of the Au-Fe-alloy (0.3 weight percent) - a disk of 0.3 cm diameter and 0.01 cm thickness) was irradiated by thermal neutrons in a reactor. After irradiation, the sample was tempered in vacuum and it was fastened to the end of a copper "cold conductor". Au^{198} is desintegrated by β-decay (transition $2^- \rightarrow 2^+$) and then a γ-radiation of 411 kev (transition $2^+ \rightarrow 0^+$) is emitted. At a temperature of $\sim 0.015^{\circ}K$, the value of anisotropy is equal to 3.3%. The degree of magnetization of the sample in a constant magnetic field amounted to ~ 0.6 of the saturation value.

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The Polarization of the Au^{198} Nuclei in a Solution of Gold in Iron

The true value of the anisotropy (which corresponds to a 100% magnetization of the sample), therefore is equal to $\epsilon = 3.3/0.6 = 5.5\%$. According to these results, the value of $\beta = \mu H/kTI$ is within the interval 0.3 - 0.4, and the polarization f_1 of the nuclei Au^{198} - within the interval 0.25 - 0.35. (μ denotes the magnetic moment of Au^{198}, I - the spin of Au^{198}, and H - the magnetic field on the nucleus Au^{198}). At $T = 0.015^{\circ}K$, from the measured value $\beta = 0.3 - 0.4$ $H = (0.5 - 0.7).10^6$ Oe. can be deduced. Such a high field strength can be explained only by the existence of a magnetic moment in the electron shell of the Au atoms contained in the Au-Fe alloy. The formation of such a magnetic moment can be caused by the exchange interaction between the electron shells of the Au and Fe atoms in the Au-Fe alloy. It is not impossible, however, that the Au atoms in the Au-Fe alloy are paramagnetic ions which have no exchange bonds with the Fe atoms. It is hoped that the method of introducing nuclei into ferromagnetic alloys considerably increases the number of the elements which are subjected to polarization. Moreover, the investigation of the polarization of nuclei in various alloys may supply data concerning the magnetic properties of the atoms in these alloys.

24(3), 21(0)

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

SOV/56-36-5-7/76

TITLE: Polarization of Cobalt- and Iron Nuclei in Ferromagnetics (Polyarizatsiya yader kobal'ta i zheleza v ferromagnetikakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1366-1367 (USSR)

ABSTRACT: Several years ago Khutsishvili suggested a method for the polarization of the nuclei of ferromagnetic substances, which was verified experimentally at 0.05 - 0.08°K by N. Ye. Alekseyevskiy, I. F. Shchegolev and N. V. Zavaritskiy. Similar experiments were successfully carried out also at Oxford. The authors of the present report describe the results obtained by polarization investigations on Co^{60}- and Fe^{59}-nuclei. They worked with the polycrystalline ferromagnetic alloy "Permendure" (Co:Fe=50:50); the sample had a thickness of 0.2 mm and a diameter of 3mm. It was irradiated in a reactor with thermal neutrons, after which it was tempered in a vacuum, following which it was subjected to cold- and magnetic treatment (1000 oe). The

occurring γ-radiation was recorded by means of two scintillation counters with CsJ-crystals. The activity of the samples amounted to 3 - 4 μC. Several series of measurements were carried out on two samples. The results are shown by a figure, a diagram which represents $\sqrt{\varepsilon}(1/T)$. It holds that $\varepsilon = 1 - N(0)/N(\pi/2)$. $N(0)$ is the number of counts along the field, $N(\pi/2)$ is the number of counts transverse to the field. The measuring results are scattered about a straight line which may be represented by $\varepsilon = 1.2.10^{-4}T^{-2}$. At very low temperatures a deviation from this law occurs. For $H = 2.5.10^5$G the authors obtained a value of the constant of hyperfine splitting $A = 2.4.10^{-2}$ °K, which is in good agreement with the values obtained in reference 4. Experiments carried out with respect to the polarization of iron nuclei in Armco iron samples (3 mm diameter, 0.1 mm thickness, activity 2-3μC) showed that within the range of from 0.01 - 0.03 to 1 °K no anisotropy

Polarization of Cobalt- and Iron Nuclei in Ferromagnetics

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of γ-radiation could be observed. At $H = 2.5 \cdot 10^5$ G and $\varepsilon \gtrsim 0.5\%$, μ was determined as amounting to $\mu \leq 1.5$ nuclear magnetons. The authors finally thank Ye. K. Zavoyskiy for his interest and advice, and L. V. Groshev for discussing the results. There are 1 figure and 5 references, 2 of which are Soviet.

SUBMITTED: November 25, 1958

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24(3)

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

SOV/56-36-6-56/66

TITLE: Nuclear Polarization of Weakly Magnetic Elements, Introduced Into Ferromagnetics (Polyarizatsiya yader slabomagnitnykh elementov, vvedennykh v ferromagnetik)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1944-1946 (USSR)

ABSTRACT: Following an earlier paper (Ref 1) on the polarization of Au^{198}-nuclei in Au-Fe-alloys, the authors in the present "Letter to the Editor" publish results obtained by polarisation measurements of Sb^{122}-nuclei in weak Sb-solutions in iron and of In^{114m}-nuclei in such In-solutions in Fe. An Sb-Fe-alloy (0.6 weight% Sb) was irradiated in a reactor with thermal neutrons; the activity of the Sb^{122} amounted to about 4 μC. The results obtained by one of each of the measurements of the anisotropy of γ-radiation carried out are given by a figure (E_γ = 566 kev (transition $2^+ \rightarrow 0^+$), γ-emission after

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β-decay of Sb^{122} (transition $2^- \rightarrow 2^+$)). The experimental points show the dependence of the intensity of the γ-rays counted by means of a detector at angles of $\theta = 0^\circ$ and 90° to the field direction upon time after demagnetization of the salt. Between 5 to 50 min the temperature changed from 0.025 to 0.035° K. 10 minutes after demagnetization a γ-anisotropy of $\varepsilon = 2.5$ % was measured at a temperature of 0.03° K. ($\varepsilon = 1-N(0^\circ)/N(90^\circ) - N$ denotes the number of counts at an angle (θ)). For In-Fe (0.5 weight% In) the following results are obtained: In^{114m}: $E_\gamma = 192$ kev ($5^+ \rightarrow 1^+$), T (5 min after demagnetization) 0.035° K; $\varepsilon \approx 8$ % at T = 0.04° K. Further, Cr^{51} was investigated in Cr-Fe. Results: $E_\gamma = 320$ kev ($5/2^- \rightarrow 7/2^-$), γ-emission after K-capture of the Cr^{51} ($7/2^- \rightarrow 5/2^-$) within the temperature interval of from 0.03 to 1° K. There follows a short discussion of measurement accuracy and of the results obtained. It may be concluded from these results that the method of the nuclear polarization of weakly magnetic atoms by introducing them into a ferromagnetic has universal character and

renders it possible to attain relatively high degrees of polarization. The authors finally thank Ye. K. Zavoyskiy for his valuable advice, L. D. Puzikov for his assistance in calculating the angular distribution of γ-radiation, and L. V. Groshev, V. M. Galitskiy, and D. P. Grechukhin for discussions. There are 1 figure and 4 references, 1 of which is Soviet.

SUBMITTED: March 10, 1959

STEPANOV, Ye. P., SAMOYLOV, B. N., and SKLYAREVSKIY, V. V.

"Polarization of Nuclei of Weakly Magnetic Elements Introduced in Ferromagnets."

report submitted for the Intl. Conference on Low Temperature Physics, IUPAP, Toronto, 29 Aug - 3 Sep 60.

SAMOYLOV, B.N.; SKLYAREVSKIY, V.V.; STEPANOV, Ye.P.

Polarization of the nuclei of diamagnetic elements dissolved in iron. Zhur.eksp.i teor.fiz. 38 no.2:359-371 F '60. (MIRA 14:5)
(Diamagnetism) (Nuclei, Atomic)

SAMOYLOV, B.N.; SKLYAREVSKIY, V.V.; GORODCHENKO, V.D.; [redacted]
STEPANOV, Ye.P.

Asymmetry of the beta radiation from Co 60 nuclei polarized in a cobalt-iron alloy. Zhur. eksp. i teor. fiz. 40 no.6:1871-1874 Je '61. (MIRA 14:8)

(Beta rays)
(Cobalt—Isotopes)
(Cobalt—Iron alloys)

SKLYAREVSKIY, V.V.; SAMOYLOV, B.N.; STEPANOV, Ye.P.

Temperature dependence of the magnitude of the hyperfine splitting of Dy^{161} levels in paramagnetic dysprosium oxide. Zhur. eksp i teor. fiz. 40 no.6:1874-1876 Je '61. (MIRA 14:8)

(Dyprosium--Isotopes)
(Dyprosium oxide--Magnetic properties)

STEPANOV, Ye.P., kand.tekhn.nauk, dotsent

More exact representation of design equations in the case of bending and eccentric action of forces beyond the elastic limit of elasticity. Trudy MIIT no.174:80-90 '63.

(MIRA 18:1)

STEPANOV, Yevgeniy Petrovich; PAVLOVSKIY, A.Ya., red.; KLIMOVA, Z.I., tekhn. red.

[In the Volga Delta]V del'te Volgi. Astrakhan', Izd-vo gazety "Volga," 1961. 68 p. (MIRA 16:2)
(Volga Delta--Description and travel)

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S/180/60/000/03/013/030

E193/E383

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AUTHORS: Savitskiy, Ye.M., Stepanov, Ye.S. and Terekhova, V.F. (Moscow)

TITLE: Neodymium and Its Alloys with Aluminium

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 3, pp 73 - 78 (USSR)

ABSTRACT: The object of the present investigation was to determine the physical and mechanical properties of pure (99.5%) neodymium and neodymium-aluminium alloys. The following properties were determined for cast neodymium: Brinell hardness 46 kg/mm^2; ultimate compressive strength - 25 kg/mm^2; ductility (in compression) - 36%. It has been found that neodymium is characterised by good, both hot and cold, workability, it being possible to produce neodymium strip, 0.5 mm thick, by cold-rolling with intermediate annealings at 500 - 600 °C. Neodymium, cold-rolled to 70% reduction in thickness, had the UTS equal to 13 kg/mm^2 and ductility (in tension) equal 1-2%. The constitution diagram of the aluminium-neodymium system, constructed on the basis of metallographic and thermal analysis, is shown in Figure 3. It has been found that

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Neodymium and Its Alloys with Aluminium

solid solubility of neodymium in aluminium does not exceed 0.2%. A eutectic, containing approximately 13 wt.% neodymium, is formed at about 640 °C. In the investigated concentration range, the existence of two intermetallic compounds, $NdAl_4$ and $NdAl_2$, has been observed. The former is formed as a result of a peritectic reaction at 1 250 °C; the latter crystallizes out from the liquid phase at 1 450 °C. Owing to the formation of the intermetallic compounds, addition of neodymium to aluminium increases the strength of the latter metal. Hardness of an aluminium-base alloy containing 30 wt.% neodymium is 155 kg/mm^2, as compared with 25 kg/mm^2 for pure aluminium; addition of 5% neodymium increases the UTS of aluminium from 5 to 10 kg/mm^2 and lowers its ductility by 5-10%. Hardness of the intermetallic compounds $NdAl_4$ and $NdAl_2$ is 350 and 600 kg/mm^2, respectively.

Card2/3 The electrical restivity of aluminium is not significantly affected by addition of neodymium; resistivity of the

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S/180/60/000/03/013/030
E193/E383

Neodymium and Its Alloys with Aluminium

5% Nd-Al alloy is practically equal to that of pure aluminium. The effect of temperature up to 300 °C on the mechanical properties of the Al-Nd alloys with up to 5% Nd has been also investigated. Figure 1 shows the microstructure of neodymium (a) cast, (b) after 70% cold deformation and (c) after cold deformation to 70% and annealing at 500 °C. Figure 2 shows the microstructure of the aluminium-neodymium alloys (cold-worked and annealed), containing 0, 0.74, 1.05, 9.24, 24.21, 47.47 and 66% neodymium. There are 3 figures, 2 tables and 9 references, 7 of which are Soviet and 2 English.

SUBMITTED: March 2, 1960

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4

KAZANTSEV, Yevgeniy Ivanovich. Prinimali uchastiye: ZEMLYANYY, N.G., inzh.; KATSEN, L.G., kand. tekhn. nauk; SEMIKIN, I.D., prof., retsenzent; STEPANOV, Ye.S., red.; SHKLOVSKAYA, I.Yu., red.izd-va; KOROVINA, N.A., tekhn.red.

[Industrial furnaces; handbook for their calculation and design] Promyshlennye pechi; spravochnoe rukovodstvo dlia raschetov i proektirovaniia. Moskva, Izd-vo "Metallurgiia," 1964. 451 p. (MIRA 17:4)

1. Dnepropetrovskiy metallurgicheskiy institut (for Semikin).

L [illegible] EWT(m)/EWT(j) RM

ACC NR: AP6023066 (A) SOURCE CODE: UR/0191/66/000/004/0041/0043

AUTHOR: Gal'perin, D. I.; Khamzin, S. I.; Stepanov, Ye. S. 27

ORG: none

TITLE: Mechanical properties of ethylcellulose plastics

SOURCE: Plasticheskiye massy, no. 4, 1966, 41-43

TOPIC TAGS: solid mechanical property, cellulose plastic, plasticizer

ABSTRACT: The authors studied the effect of the degree of substitution (ethylation) of ethylcellulose and of the concentration of different plasticizers on the mechanical properties of plasticized ethylcelluloses. The experiments were carried out with ethylcellulose samples containing 25% plasticizer (dibutyl phthalate, dioctyl phthalate, or tricresyl phosphate) and 1% diphenylamine antioxidant. Within the degree of substitution of 2.3-2.5, the glass transition temperature, tensile strength, and range of elasticity decreased regularly and the elongation at break and cold resistance increased. Experiments on the dependence of the temperature of the glass (T_g) on the concentration of plasticizer showed an equivolumetric relationship between the plasticizer concentration and T_g. This relationship is expressed by the empirical equation $T_g = 182 - 3.64c_{vol}$, where c_{vol} is the concentration of a plasticizer in volume %. Orig. art. has: 5 fig. and 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002

Card 1/1 UDC: 678.546.2.01 : 539.3

STEPANOV, Ye.V., inzh.

Reorganization of the equipment of classification yards and improvement of the technology of their operations. Zhel.dor. transp. 43 no.12:78-83 D '61. (MIRA 15:1)

1. Nachal'nik otdela dvizheniya Kuybyshevskogo otdeleniya Kuybyshevskoy magistrali, stantsiya Kinel'.
(Railroads--Hump yards)

KIZEL'SHTEYN, Vladimir Yakovlevich; KOSMACHEV, I.G., retsenzent; SVERDIOL M.B., retsenzent; STEPANOV, Ye.V., nauchn. red.; SMIRNOV, Yu.I., red.

[Chemical and mechanical methods of metal treatment] Khimiko-mekhanicheskaia obrabotka metallov. Leningrad, "Sudostroenie," 1964. 139 p. (MIRA 17:4)

ROZHNOV, S.; LEVSHOV, V.; LEVCHENKO, A.; STROKANTSEVA, T.; STEPANOV, Yu.

A vacant seat. Grazhd. av. 21 no.7:15 Jl '64. (MIRA 18:4)

1. Sekretar' partiynogo byuro Yaltinskogo agentstva Aeroflota (for Rozhnov). 2. Chlen byuro ekonomicheskogo analiza Yaltinskogo agentstva Aeroflota (for Strokantseva).

STEPANOV, YU. A

VIKHERT, Mikhail Mikhaylovich; DOBROGAYEV, Rostislav Pavlovich; LYAKHOV, Mikhail Ivanovich; PAVLOV, Aleksey Vasil'yevich; SOLOV'YEV, Mikhail Petrovich, professor; STEPANOV, Yuriy Aleksandrovich; SUVOROV, Viktor Grigor'yevich; KHANIN, N.S., kandidat tekhnicheskikh nauk, retsenzent; CHISTOZVONOV, S.B., retsenzent; NECHAYEV, B.K., doktor tekhnicheskikh nauk, retsenzent; SHUBOVICH, S.I., kandidat tekhnicheskikh nauk, retsenzent; YEGORKINA, L.I., inzhener, redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Construction and design of truck and tractor engines] Konstruktsiia i raschet avtotraktornykh dvigatelei. Pod red. IU.A.Stepanova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 604 p. (MIRA 10:10)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotornyy institut (for Khanin, Chistozvonov). 2. Kafedra dvigateley vnytrennego sgoraniya Tomskogo politekhnicheskogo instituta (for Nechayev, Shubovich)
(Motortrucks--Engines) (Tractors--Engines)

STEPANOV, Yu.A., prof., otv.red.; TERPIGOREV, A.M., akademik, obshchiy red.

[Piston-type internal combustion engines; defects in engine operation] Porshnevye dvigateli vnutrennego sgoraniia; defekty raboty dvigatelei. Pod obshchei red. A.M.Terpigoreva. Moskva, 1959. 13 p. (Sborniki rekomenduemykh terminov, no.50) (MIRA 12:11)

1. Akademiya nauk SSSR. Komitet tekhnicheskoy terminologii.
(Gas and oil engines)

MORDUKHOVICH, Meyer Matveyevich; KONEV, Boris Fedorovich; STEPANOV, Yu.A., doktor tekhn.nauk, retsenzent; LYAKHOV, M.I., kand.tekhn.nauk, retsenzent; ARKHANGEL'SKIY, V.M., kand.tekhn.nauk, red.; NAKHIMSON, V.A., red.izd-va; EL'KIND, V.D., tekhn.red.

[Fuel equipment of motor vehicles] Toplivnaia apparatura avtomobil'nykh dvigatelei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 254 p. (MIRA 13:12)
(Motor vehicles--Fuel systems)

MAZIN, Yu.A.; STEPANOV, Yu.A.

Device for determining the fire resistance and noninflammability characteristics of plane materials. Kauch.i rez. 22 no.4:49-52 Ap '63. (MIRA 16:6)

(Rubber goods) (Fire-testing)

ANDREYEV, B.V.; ARTEM'YEV, S.P.; ARKHANGEL'SKIY, V.M; AFANAS'YEV, L.L.; BABKOV, V.F.; BRONSHTEYN, L.A.; BURKOV, M.S.; BURYANOV, V.A..; VARSHAVSKIY, I.L.; VELIKANOV, D.P.; VOINOV, A.N.; VYRUBOV, D.N.; DORMIDONTOV, A.V.; D'YACHKOV, A.K.; YEFREMOV, V.V.; ZHABIN, V.M.; ZELENKOV, G.I.; KALABUKHOV, F.V.; KALISH, G.G.; KRAMARENKO, G.V.; KRASIKOV, S.M.; LAKHTIN, Yu.M.; MIKULIN, A.A.; ORLIN, A.S.; OSTROVSKIY, N.B.; OSTROVTSOV, A.N.; RUBETS, D.A.; STEPANOV, Yu.A.; STECHKIN, B.S.; KHACHATUROV, A.A.; KHOVAKH, M.S.; CHAROMSKIY, A.D.; SHARAPOV, K.A.

Nikolai Romanovich Briling; obituary. Avt.transp. 39 no.4:57 Ap '61. (MIRA 14:5)

(Briling, Nikolai Romanovich, 1876-1961)

ORLIN, A.S., prof.; VYRUBOV, D.N.; ALEKSEYEV, V.P.; KALISH, G.G.; KOSTYGOV, N.I.; KRUGLOV, M.G.; KRUTOV, V.I.; MIZERNYUK, G.N.; ROGANOV, S.G.; STEPANOV, Yu.A., prof., retsenzent; YEGORKINA, L.I., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Internal combustion engines]Dvigateli vnutrennego sgoraniia. Pod red.A.S.Orlina. Moskva, Mashgiz. Vol.3. [Systems, regulation, automatic control]Sistemy. Regulirovanie. Avtomatizatsiia. 1962. 307 p. (MIRA 16:1)
(Gas and oil engines) (Automatic control)

VIKHERT, M.M.; DOBROGAYEV, R.P.; LYAKHOV, [illegible] PAVLOV, A.V.; SOLOV'YEV, M.P.; STEPANOV, Yu.A.[deceased]; SUVOROV, V.G.; STEPANOV, G.Yu., prof., red.

[Design and construction of motor-vehicle and tractor engines] Konstruktsiia i raschet avtotraktornykh dvigatelei. Izd. 2., perer. i dop. Moskva, Mashinostroenie, 1964. 552 p. (MIRA 18:4)

L 55253-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/
ACCESSION NR: AP5010372 EWA(h) Pf-4/Peb MJW/ UR/0145/65/000/003/C045/0052
JD/WW/EM 621.74

AUTHORS: Gini, E. Ch. (Candidate of technical sciences); Stepanov, Yu. A. (Candidate of technical sciences)

TITLE: Technological questions on casting of thin-walled large area panels

SOURCE: IVUZ. Mashinostroyeniye, no. 3, 1965, 45-52

TOPIC TAGS: cast structure, pressure casting, liquid metal

ABSTRACT: Methods and possibilities of casting thin-walled, large area panels are discussed. The two major difficulties in casting of panels are thermal cracking and incomplete filling of the mold. Methods of reducing thermal cracking, i.e., proper choice of alloy composition, low frequency, and ultrasonic vibration of the metal and choice of proper mold elasticity are briefly mentioned, but discussion is concentrated on pouring methods. These include casting in moving molds which converge and extrude the excess metal. This method has been used successfully with alloys Al-4, Al2, ML5, and AL9 and panel sizes of up to 2000 x 800 mm by 2.5-3.0 mm thickness. For casting of large-area shells (4 mm by 3 meter high) from aluminum, a new method has been developed in which a mold (with pouring

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ACCESSION NR: AP5010372

channels and holes distributed around the perimeter) is lowered into the metal at a rate equal to or higher than the crystallization rate. This method is patented (No. 2839802) in the U.S.A. Low pressure casting in which metal is forced into the mold under a pressure of 300-500 mm Hg can be used for shells of limited diameter and thicknesses above 2-3 mm. High pressure casting and liquid metal stamping (Morris Beam Co., U.S.A.) are particularly suited for panel manufacture. Normal casting methods under static metal head have also been applied successfully (Osbrink Mfg. Co.) for panels of minimum thickness of 1.27 mm and areas of 1100 x 570 mm. This method can be improved significantly by coating the mold with materials which improve metal flow. Panel manufacture by casting provides considerable labor savings over methods using welding, bonding, and other assembly techniques. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: MVTU im. N. E. Baumana (MVTU)

SUBMITTED: 28Oct64 ENCL: 00 SUB CODE: IE

NO REF SOV: 016 OTHER: 008

Card 2/2

OBOLONNYY, V.K.; PLYUTOVICH, V.N.; STEPANOV, Yu.A.

Neutralizing the destructive action of chromium in wrought iron by using ferrotitanium and aluminum as modifying agents. Trudy SNTO MVTU no.3:67-75 '57. (MLRA 10:9)
(Iron-chromium-ferrotitanium-aluminum alloys)
(Iron alloys--Metallurgy)

SOV/12?-59-7-7/25

18(5,7)

AUTHOR: Rubtsov, N.N., Doctor of Technical Sciences, Savkin, G.Ya. and Stepanov, Yu.A., Engineers, and Balandin, G.F., Candidate of Technical Sciences

TITLE: Producing Steel Castings by the Squeezing-Out Method

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 7, pp 17-18 (USSR)

ABSTRACT: According to the method developed by F.S. Stebakov (Liteynoye Proizvodstvo, Nr 12, 1956) many large casting shapes, with thin walls, for aircraft manufacture can be produced from aluminum alloys. The laboratory of the foundry at MVTU "Imeni Baumann" has carried out similar experiments for work pieces of 500 by 900 cm with wall thickness of 4 to 5 mm made from steel. The experiments with steel have been executed in the manner as the above-mentioned experiments made with aluminum (L.P. 12/1956). One drawing explains only the special method of pouring the metal into the molds. There follows a description and explanation of how

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Producing Steel Castings by the Squeezing-Out Method

important it is to have a quick flow and a fast cooling-off for the metal. In case the flow of the metal was slower than 2 m per second, thin-walled castings could not be produced during the experiments. The accomplishment of the required velocity of flow can only be achieved by means of automatically controlled mechanical installations. There are 1 diagram and 1 microphotograph

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STEPANOV, Yu.A., aspirant

Role of the friction of castings on the wall of molds in the formation of hot cracks. Izv.vys.ucheb.zav.; mashinostr. no.4: 86-94 '60. (MIRA 14:4)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche im. N.E.Baumana. (Founding)

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AUTHORS: Balandin, G.F., Gini, E.Ch., Stepanov, Yu.A. and Yakovlev, Yu.P.

TITLE: Casting With a Vibration Pouring Device

PERIODICAL: Liteynoye proizvodstvo, 1960, No. 7, pp. 34-36

TEXT: The authors mention the effect of vibration on metal crystallization and describe tests performed with a vibration pouring device (Fig.1), designed by the members of the Institut metallurgii imeni A.A. [illegible], AN SSSR (Institute of Metallurgy imeni A.A. Baykov of the AS USSR), G.F. Balandin and V.A. Petrunichev. Fig.2 shows macrosections of A2 aluminum ingots. The ingot shown in Fig.2a was poured with the aid of a non-vibrating device, ingot shown in Fig.2b through a vibrating funnel with a frequency of 230 oscillations/sec., an amplitude of 0.1 mm, power 1 kw, temperature of liquid aluminum 720°C, ingot weight 2 kg and pouring time 4 seconds. The ingot obtained with the vibration pouring device was finer grained and its plasticity increased by 20% (see Table). Tests showed that casting through a vibrating pouring device produces the same effect as pouring into vibrating molds. A

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Casting With a Vibration Pouring Device

considerable crushing of grains in the ingots indicates an increase of the crystallization centers in the liquid metal during vibration. Fig.3 shows specimens on which the tendency of aluminum alloys to hot cracks was tested. The specimen of AD1 aluminum (Fig.3a) was poured through a non-vibrating funnel; the one shown in Fig.3b was poured through a vibrating funnel at 720°C and showed no hot cracks. As the metal is poured through the vibrating funnel the walls become coated with a hard layer of metal. This layer is broken by the vibration of overheated liquid metal and solid metal pieces are carried into the mold together with liquid metal, where they melt partly or completely. If no complete melting is reached by the time the metal begins to solidify, these solid phases become centers of crystallization. Fig.4 shows a macrophotograph of the longitudinal section of the coating removed from the funnel walls after pouring of aluminum under vibration while Fig.5 shows the longitudinal section of an ingot completely solidified in a vibrating funnel. A distinct boundary can be observed between the acicular crystal zone and the central crushed grains zone. The grain size depends on the temperature of the metal during pouring. Higher temperatures ensure complete melting of the solid phase by the time crystallization of the metal begins. Higher resistance to hot cracks is attributed to an increase in plasticity

Casting With a Vibration Pouring Device

of fine-grained alloys. This method improves the mechanical properties of alloys and increases their resistance to hot cracks. It can be applied to every type of mold and to a great number of alloys without changing the vibrating conditions. A satisfactory vibration effect was obtained with AL-4, AL-2, "avial"-type alloys and 15L steel. There are 6 figures, 1 table and 13 references: 11 Soviet and 2 non-Soviet.

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[redacted], [redacted], [redacted]

"Mutual Interaction Between the Casting and the Mould in the Process of Heat Exchange Between Them"

report presented at the 7th Conference on the Interaction of the Casting Mould and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. [redacted], 7-8 January 1961.

[redacted]

"[illegible] of Evaluating the Properties of the Mould and the Metal in the Temperature Interval of the Formation of Hot Cracks in Castings"

report presented at the 7th Conference on the Interaction of the Casting Mould and the Casting, sponsored by the Inst. of Mechanical Engineering, Acad. Sci. [illegible], [illegible] February 1971.

BALANDIN, G.F., kand.tekhn.nauk, dotsent; STEPANOV, Yu.A., aspirant

Interaction of stresses in molds and solidifying castings. Izv. vys.ucheb.zav.; mashinostr. no.1:139-149 '61. (MIRA 14:4)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana.
(Molding (Founding))

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AUTHORS: Balandin, G. F., Gini, E. Ch., Sokolov, Ye. A., Stepanov, Yu. A. Yakovlev, Yu. P.

TITLE: Casting thin-walled, large-sized panel compounds in green sand-clay molds

PERIODICAL: Liteynoye proizvodstvo, no. 8, 1961, 38 - 39

TEXT: The casting of thin-walled, large-size panel parts of aluminum and magnesium alloys ensures a considerable saving in the weight of these components and in time. On the other hand some difficulties must be overcome, in the first place those encountered in filling the mold with the liquid metal. In the Soviet Union thin-walled panels are cast by successive crystallization or extrusion. The latter method is applied for АЛ4 (AL4) aluminum alloy sheets 800 x 1,500 x 2 - - 5 mm in size, moreover for AL2 and МЛ5 (ML5) alloy panels. However, when applying the method for heat-resistant and high-strength AL8, AL19, В15 (V15) alloys, hot cracks are forming. In order to establish the cause of this defect tests were carried out at the Liteynaya Laboratoriya MVTU im. Baumana (Foundry Laboratory MVTU im. Bauman) and it was found that panel elements 500 x 800 x 3 - 4 mm

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Casting thin-walled, large-sized ....

in size could be cast from AL19 and V15 alloys by applying the conventional casting and using green sand-clay molds. Test panels, 250 x 300 x 2 mm in size were cast using a channel (12 x 12 mm) around the panel which considerably facilitated the filling of the mold. The removal of air and gases from the mold cavities is also important in this process. When applying 0.3 - 0.4 mm thick inserts on the parting surface of the mold during the assembly, the filling of the mold improved, the ventilation through the narrow aperture at the parting surface of the mold became more intensive. The circumferential channel, the slot-type feeding system operating over the entire periphery of the casting, a high-capacity slag-chamber and a riser with a considerable cross section ensure a great intake of the liquid metal and an instantaneous filling of the mold. Moreover, ribs formed on the casting also promote a rapid filling of the narrow spaces. The gate and the ventilation system based on the above principles for casting 500 x 800 x 3 - 4 mm panels are shown. The molding mixture used consists of 55 - 60 % 101 (P01) type Tambovsk sand, 45 - 50 % quartz sand and chalk, having a humidity of 6 %, a gas permeability of 54 units and a compresssion strength of 0.24 - 0.27 kg/cm^2. The binder contained 10 % Tambovsk sand and 90 % burnt sand and had a humidity of 4.5 % and a compression strength of 0.35 kg/cm^2. It was found that the applica-

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tion of inserts at the parting surface of the mold had an adverse effect on the accuracy of the panel dimensions. Therefore, to promote ventilation, instead of using inserts, 1.0 - 1,5 mm wide grooves were cut in the parting surface along the periphery of the casting. This arrangement required a high casting temperature, (for the AL 4 alloys: 820 - 830°C, for the AL 19 and V15 alloys: 850 - 860° C). On the other hand the high temperature promoted the formation of cavities (in some cases the casting split into two parts). This could be eliminated by controlling the density of the mixture in the upper part of the mold by changing its composition and the intensity of ramming. In this way panels can be cast also from X18H9T (Kh18N9T) steel in dry sand molds. The mechanical properties of AL4, V15 and Kh18N9T steel panels meet the standards set. A deterioration of the mechanical characteristics could only be observed in AL 19 panels. This was caused by a lack of heat resistance in the metal. When coating the casting surface with hexachlorethane, however, the casting temperature of the AL19 alloy sheets could be reduced from 850 to 730°C. The dimensional accuracy of the castings depended on the assembling accuracy of the mold and on the stability of the bottom plate. During assembling the mold showed a deformation of 0.1 - 0.25 mm, while during transportation (shocks) the deformation of the thickness of the casting attained 0.4 - 0.5 mm (20 - 30 %). For this reason the application of dry sand core or

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shell molds is indicated. There are 1 figure and 9 references: 7 Soviet-bloc, 2 non-Soviet-bloc. The references to English-language publications read as follows R. H. Osbrink, "Modern Castings", October 1958; N. C. Flemings et. al., Transactions A.F.S.," 1959.

BALANDIN, G.F.; STEPANOV, Yu.A.

Force interaction between a casting in process of solidification and the mold. Lit. proizv. no.4:37-41 Ap '62. (MIRA 15:4)
(Molding (Founding))

ACCESSION NR: AT4016073 S/2698/63/000/000/0275/0280

AUTHOR: Balandin, G. F.; Bini, E. Ch.; Sokolov, Ye. A.; Stepanov, Yu. A.; Yakovlev, Yu. P.

TITLE: Influence of technological factors on the mechanical properties of thin-walled castings

SOURCE: Soveshchaniye po teorii liteyny*kh protsessov. 8th, 1962. Mekhanicheskiye svoystva litogo metalla (Mechanical properties of cast metal). Trudy* soveshchaniya. Moscow, Izd-vo AN SSSR, 1963, 275-280

TOPIC TAGS: casting, casting technology, squeeze casting, thin walled casting, aircraft part, casting mechanical property, aluminum alloy, magnesium alloy, crack formation

ABSTRACT: Many aircraft parts, especially remote-controlled guidance structures, are made of large thin-walled pieces which are difficult to fabricate by rolling or pressing. These structures are now often cast, but this becomes difficult if areas of 1 x 2 m and thicknesses of only 2-2.5 mm are to be produced. The new technique of squeeze casting has proven satisfactory for thin castings and large sizes. The disadvantage of this method, however, is the formation of hot cracks while casting high-strength or high-temperature aluminum and magnesium alloys. In the casting laborary of the MVTU im.

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Baumana, parts with thicknesses below 2 mm were found to have low strength although most specimens conformed to the specifications of GOST 2685-55. In analyzing some of the reasons for the difficulties, particular attention is paid to casting temperature and the thickness of the cast (see the Enclosure). The temperature gradients arising in the alloy during and after squeeze casting are also considered and held to be responsible for variations in mechanical properties. The authors did not come to any final conclusions but suggest that further tests under actual working conditions should be performed in order to find out whether these castings can be used and are actually stronger than riveted or welded structures. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: MVTU im. Baumana

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