

SERKOVSKIY, V.A., Cand Tech Sci -- (disc) "Study of the effect of
cast vibrations ^{on} pouring and solidification on the properties
of metal." Mos, 1958, 15 pp (Min of Higher Education. Mos
*xxxxxxx Automechanical Inst) 10 copies (KL, 3-58, 107)

S. Serkovskiy, V. A.

AUTHOR: Serkovskiy, V.A., Engineer, 122-56-5-9/16

TITLE: On the Problem of the Vibration Effect on the Properties of Metal (K voprosy vliyaniya kolebaniy na svoystva metallov)

PERIODICAL: Liteynoye Proizvodstvo, 1958, Nr 5, pp 19-21 (USSR)

ABSTRACT: The effect of harmonic horizontal and vertical vibrations, and of shock vibration, on the gas solubility, the speed of rising gas bubbles, the distribution of pressure within molten iron in a container and on the speed of a metal stream is here mathematically studied. The theoretic conclusions were verified in experiments made on aluminum castings in metal molds. Vibrations of any kind improve the surface of castings only up to a certain limit of vibration energy, after which the surface develops cavities and the castings crack. Shockless vibrations of 60 cycles have an insignificant and unstable effect and cannot be recommended for industrial applications except in rimming steel ingots. Jolting during the pouring and solidification period has a beneficial effect on the density, the tensile strength, and on the filling of thin casting sections joined with thick sections. The most effective jolt height is 5-25 mm. The number of jolts per minute must be such that the specific jolt energy

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128-58-5-9/16

On the Problem of the Vibration Effect on the Properties of Metal

(the product of mold rise height in cm by the number of jolts per minute) remains below 30-35 kg · kg/cm · min. A higher rise (to 75 kg · kg/cm · min) is only permissible when the surface smoothness is not important. Horizontal vibration is more effective than vertical, and the kinetic vibration energy must not exceed 3 kg · cm/kg · min. When the surface of aluminum casting or ingot becomes mat, this is a sign that the limit vibration energy has been reached. There are 6 graphs.

AVAILABLE: Library of Congress

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CHERNYSHOV, I.A., dotsent, kand.tekhn.nauk; SERKOVSKIY, V.A., kand.tekhn.
nauk

Some problems in the theory of the vibration of alloys. Izv.vys.
ucheb.zač.; mashinostr. no.4:103-113 '60. (MIRA 14:4)

1. Moskovskiy avtomekhanicheskiy institut.
(Founding)

SERKOVSKIY, V.A., kand. tekhn. nauk

Changes in the pug mill driving power depending on the
properties of the mixture and the batch weight. Lit.
proizv. no.11:26-27 N '65. (MIRA 18:12)

SERKOVSKIY, V.A., kand. tekhn. nauk

Calibrating pneumatic vibrators. Izv. v.ys. ucheb. zav.; mashinostr.
no. 4: 128-136 '60. (MIRA 14:4)

1. Moskovskiy avtomekhanicheskiy institut.
(Vibrators) (Calibration)

SERKOWSKI, KRZYSZTOF

SERKOWSKI, KRZYSZTOF. Observations of Long-Period Variable Stars. Urania,
1949, v. 20, p. 42-46

SERKOWSKI, KRZYSZTOF.

SERKOWSKI, DRZYSZTOF. Minima of the Eclipsing Variable SW Lacertae. Torun. Uniwersytet. Obserwatorium astronomiczne. Bulletin no. 10, 1951, p. 12.

SERKOWSKI, K.

"Stars in the gravitational state of shrinking have been discovered in the constellation of Orion."

p. 20 (Postepy Astronomii) Vol. 6, no. 1, Jan./Mar. 1956
Krakow, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

OPRKOŃSKI, E.

Photographic measurements of the polarization of the association III Cephei; summary of a lecture delivered at the Astronomical Conference in Krakow, November 1957. p.160.

POSTĘPY ASTRONOMII. Krakow, Poland. Vol. 6, no. 4, Oct./Dec. 1958.

Monthly List of East European Accessions Index (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

SERKOWSKI, K.

Statistical analysis of the polarization and reddening of the Double Cluster in Perseus; a lecture based on a thesis. p.162.

PCSTEPY ASTRONOMICII. Krakow, Poland. Vol. 6, no. 4. Oct./Dec. 1958.

Monthly List of East European Accessions Index (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

SERKOWSKI, K.

Statistical analysis of the polarization and reddening of the double cluster in Perseus.
In English. p. 135

ACTA ASTRONOMICA. (Polska Akademia Nauk. Komitet Astronomii)
Warszawa. Vol. 8, no. 3, 1958
Poland/

Monthly List of East European Accessions Index (EEAI), LC, Vol. 8, No. 6, June 1959
Uncl.


P/010/50, 008/005/006/000
E032/E514

AUTHOR: Serkowski, Krzysztof

TITLE: Impressions from the Polarisation Conference at
Tucson (Arizona)

PERIODICAL: Postępy astronomii, 1960, Vol. 8, No. 5,
pp 177 - 180

TEXT: Brief summary of some of the papers read at the above
conference. Very brief accounts are given of the papers read
by L. Davis, J.M. Greenberg, D.G. Wentzel, B. Donn, J.R. Platt,
A. Behr and Th. Gehrels. It is stated that the Tucson
conference was "very interesting and undoubtedly contributed
to progress in polarisation studies".



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P/009/60/010/003/001/001
A076/A126

3.5100

AUTHORS: Serkowski, K., and Stodórkiewicz, J.

TITLE: A study of the micro-climate in the region south and east of
Warsaw

PERIODICAL: Acta Astronomica, v. 10, no. 3, 1960, 189 - 204

TEXT: In order to determine the best location for a future observatory, climatological observations were conducted for two years at four stations in the Warsaw region. The following report is a discussion of climatological data obtained in the period October 2, 1953, to September 12, 1955, at the observation stations Mała Wieś, Ostrowik, Reducin and Wola Rafałowska, situated to the South and East of Warsaw. The observations were made in order to establish the climatic differences between the four sites. The aim of the observers was to choose a site for the future Central Astronomical Observatory of the Polish Academy of Sciences. The station at Ostrowik was set up for comparative purposes, since a branch of the astronomical observatory of the Warsaw university has been in existence there for a number of years. The sites chosen for the other three stations satisfied the fol-

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lowing conditions: 1) The shortest distance from the center of Warsaw was more than 45 km, but the distance by road less than 70 km. 2) The altitude was more than 170 meters. 3) The distance from the nearest wet meadow, fen or river, was more than 1 km and from the nearest village more than 0.5 km. 4) The site was situated near the southern edge of a wood. The observations were carried out by the following eight observers: Z. Gorberg, B. Górska, E. Górski, A. Michałowska, S. Piątkowski, J. Starosielec, E. Synoradzki, and B. Ułasiewicz-Grzędzielska. The program of the observations was outlined by Professor S. L. Piotrowski. In order to facilitate the elimination of systematic differences the observers and the instruments were rotated at intervals of approximately forty days from station to station, with the exception of the refracting telescope during the first year of observations. Further, once a year there were meetings for a few days at Ostrowik, during which the observers made simultaneous and independent observations with the instruments brought along from their stations. The observations at all station were made with instruments of the same type and at the same time. The differences in meteorological conditions, i.e., humidity, cloudiness and wind velocity, are small, which is explained by the

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short distance between the sites, from 29 to 82 km, and by the fact that they are situated on lowland plains. Short description of several kinds of observations made at the stations, and their most important results are given. Twice each night, at 9 pm and at midnight (local time) an estimate of cloudiness C was made on a 10-degree scale. For each 40-day period between successive moves of the observers, the number N of observations showing cloudiness not greater than 2 (or not greater than 4) was found for each observing station. An arithmetical mean \bar{N} of values N for particular stations was computed for each 40-day period. Indices $k = 100 N/\bar{N}$ were found, expressing the number of observations when there was a degree of cloudiness not greater than 2, or not greater than 4, respectively, at a given station in relation to the average number of such observations made at all stations in a given 40-day period. Two observers always remained at each station. Accordingly, the values of systematic deviations from the mean could be computed only for pairs of observers. A weighted mean value of k was computed for every pair of observers without regard to the stations at which the particular pair was at a given time. The quantities N for respective periods were taken as weights. The weighted mean value thus obtained is:

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$$\bar{k} = 100 \frac{\sum_{i=1}^n N_i}{\sum_{i=1}^n \bar{N}_i}, \quad (1)$$

where n is the number of all 40-day periods, in this case n = 17. In order to eliminate the systematic differences between observers, all values N were divided by values \bar{k} relating to particular pairs of observers. Wind velocity was measured twice during the night at the same time with the cloudiness observations, using Robinson anemometers placed at a height of 2.5 meters above ground level. Wind velocity depends greatly on the season. A test of the hypothesis that the mean wind velocity is the same at all sites therefore proved positive. The hypothesis that there is no difference between the sites as to mean values of wind velocity after eliminating the systematic seasonal deviations was therefore also tested. For this purpose, mean values v of wind velocity for respective 40-day periods were computed and the mean value v, for the whole two years of observations; the data from all observing stations were treated as a whole. The differ-

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ence $\bar{v} - v$ between these values was regarded as seasonal correction which had to be added to the mean values of wind velocity for particular observing stations in a given 40-day period. The test results by methods of analysis of variance gave grounds for a rejection of this hypothesis namely the value of Fisher's Z parameter (R. A. Fisher: "Statistical Methods for Research Workers", Edinburgh-London, 1941) computed from the observation data corrected in the way mentioned above, is 0.65, whereas the value of the Z parameter for the corresponding number of degrees of freedom of the level 0.05 is 0.51. This means that there are significant differences in wind velocity between the observing sites: the smallest mean wind velocity being in Mała Wieś and the highest in Reducin. Air temperature and humidity were measured twice during the evening, at the same time as the observation of cloudiness was made. Humidity was measured with an Assman-type psychrometer. There was found to be no difference in humidity and temperature between the different observing sites. The brightness of the glare over the horizon was estimated on a 3-degree scale on each moonless night at 9 pm and at midnight, local time, i.e., in summer at midnight only. On very clear nights with cloudiness not more than 5, the image quality of ten



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stars visible at various heights over the horizon was observed. Refracting telescopes 90 mm in diameter with a magnifying power of about 250 were used. The same stars were observed from all stations. The quality of the stellar diffraction images was estimated according to Pickering's scale. Atmospheric turbulence, defined by Danjon and Couder as the maximum angular deviation of a stellar light-ray from an average direction was deducted from each estimate of image quality. The scale according to which turbulence was deducted from the estimates, had been chosen in such a way that the ratio of turbulence to air mass was independent from the zenith distance. The scale of turbulence was made to agree with the values given by Danjon and Couder. The values of turbulence obtained from the observations were reduced to the zenith by dividing them by the corresponding values of air mass. The air masses expressed in terms of the air mass at the zenith were taken from Bemporad's tables. The altitude of the stars over the horizon was computed, taking into account the time of observation. The results show that there are no real differences between the sites with regard to the oscillation of star images, perhaps with the exception of the Ostrowik station, where the percentage of observations of low oscillation is

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smaller than at the other stations. The systematic differences between the observers were eliminated in the course of a discussion of observations made during observers' meetings held at Ostrowik. Measurements of the visibility of the Milky Way were made from May 1 to December 15 each year on moonless nights, when cloudiness was not greater than 2. A visual photometer was used, similar to that of Yntema. On the basis of the observation data collected, a test was made of the influence of the meteorological conditions on turbulence, extinction and limiting magnitude. Close connections between these factors are not to be expected, because turbulence, extinction, and limiting magnitude are influenced by the conditions in all the layers of the atmosphere, where the meteorological observations show the same conditions as these immediately above the Earth's surface. The increase in wind velocity and cloudiness causes an impairment of the star images. Turbulence at the zenith, t_0 , was written as a linear function of wind velocity v , and cloudiness C :

$$t_0 = a + bv + cC.$$

For each site, ten such equations were set up, which means that 100 to 160 single estimates were used for every equation. The influence of wind on

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the limiting magnitude is explained by the fact that an increase in wind is accompanied by an increase in the amount of dust in the atmosphere. In addition, observations during windy weather are more tiring which can also increase this effect. Since both limiting magnitude m_0 , and extinction E , are measures of the opacity of the Earth's atmosphere, a relation between these magnitudes is to be expected. The regression curve of the formula $m_0 = a + bE$ was found by the method of least squares, where $a = 6.23 \pm 0.09$, $b = -1.53 \pm 0.35$ and m_0 is the mean limiting magnitude for a given interval of E . The relation between limiting magnitude, m_0 and extinction E is to be expected in the form $m_0 = a - E \sec z$, where z is the zenith distance of stars used to determine the limiting magnitude. In this case $z \approx 38^\circ$, hence $\sec z \approx 1.27$; this value agrees, within the limits of error, with the value b obtained above. There is only a slight correlation between extinction and turbulence, the coefficient of correlation being $\rho = 0.11$. It is possible to find a relation between magnitudes of extinction on one night in different localities; in general, the differences in extinction between the sites situated near each other are smaller than those between more distant localities. The coefficients of correlation between the simultaneous values of extinction obtained at each pair of observing sites, were computed

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by means of the equation:

$$\rho = \frac{(E_1 - \bar{E}_1)(E_2 - \bar{E}_2)}{\sqrt{\sigma_{E_1}^2 - \epsilon^2} \sqrt{\sigma_{E_2}^2 - \epsilon^2}} \quad (5)$$

where E_1 and E_2 are simultaneous values of extinction at both sites, σ_{E_1} and σ_{E_2} - the standard deviations of the distributions of extinction at these sites, and ϵ - the error in determining the extinction at each of the sites. The error ϵ was determined on the basis of observations made during a meeting of all observers at the Ostrowik station. The results of simultaneous determinations of an extinction by two observers, placed about twenty meters apart were put into the above equation. Substituting in the left hand side of this equation $\rho = 1$, one could determine the value of errors for each pair of observers. The errors determined this way were approximately ± 0.025 . The value $\omega = 37 \pm 9$ km was obtained. These results show that the correlation between simultaneous determinations of extinction and that between simultaneous determinations of atmospheric turbulence fall to the value $1/e$ when the distance between the observing points is between 35 to 55 km. On behalf of the Komitet Organizacyjny Centralnego Obserwatorium

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Polskiej Akademii Nauk (Organizing Committee of the Central Astronomical Observatory of the Polish Academy of Sciences) and on their own account, the authors wish to express their sincere gratitude to Professor S. L. Piotrowski for his helpful suggestions during the course of the survey. They wish also to thank T. Stodólkiewicz, J. Hanasz, A. Kruszewski and A. Stawikowski, who assisted in the compilation of the observation material. There are 12 tables and 6 figures.

ASSOCIATION: Instytut Astronomiczny Polskiej Akademii Nauk (Astronomical Institute of the Polish Academy of Sciences) and Obserwatorium Uniwersytetu Warszawskiego (Observatory of the Warsaw University)

SUBMITTED: July, 1959

Card 10/10

SERKOWSKI, K.

Photoelectric measurements of the polarisation of open clusters.
Postepy astronom 10 no.1:83 Ja-M '62.

SERKOWSKI, K.

Photometric observations of Uranus, Neptune, and standard stars carried out in order to test the variations of the Sun's brightness. Postepy astronom 10 no.1:83-84 Ja-M '62.

SERKOWSKI, K.

Electronic optical converter tubes more and more applied in
astronomy. Postepy astronom 10 no.2:171-173 '62.

SERKOWSKI, Krzysztof

Methods of photoelectric stellar observations and the problem
of the variability of the brightness of the sun. Postepy
astronom 10 no.3:197-217 '62.

S/269/63/000/002/007/037
A001/A101

AUTHOR: Serkowski, K.

TITLE: Photoelectric measurements of polarization of open stellar clusters

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 2, 1963, 41, abstract 2.51.342 ("Postępy astron.", 1962, v. 10, no. 1, 83, Polish)

TEXT: See abstract 28. The polarization of light was measured from 350 stars of open stellar clusters. Photometric observations were carried out in the U, B, V system for stars of the Stok cluster in Perseus. The aim of measurements was the investigation of the microstructure of the magnetic field in the Galaxy and the explanation of a relation between polarization and interstellar reddening.

W. Wiśniewski

[Abstracter's note: Complete translation]

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S/269/63/000/003/029/036
A001/A101

AUTHOR:

Serkowski, K.

TITLE:

Photometric observations of Uranus, Neptune and standard stars, aimed at detection of variability in the Sun's luminosity

PERIODICAL:

Referativnyy zhurnal, Astronomiya, no. 3, 1963, 50; abstract 3.51.371 ("Postępy astron.", 1962, v. 10, no. 1, 83 - 84, Polish)

TEXT:

A repeated analysis of photoelectric observations of Uranus and Neptune, conducted at the Lowell Observatory since 1953 with the aim of detecting the Sun's variability, led to luminosity values of these planets differing from those obtained by H. L. Johnson and B. Iriarte. New, corrected stellar magnitudes are given, as well as color indices of first-class standards of the U, B, V photometric system.

W. Wiśniewski

[Abstracter's note: Complete translation]

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SERKOWSKI, Krzysztof

Modern methods of determining the orbits of eclipsing binaries
from photometric observations. Postepy astronomii no.4:241-253
'63.

SERKOWSKI, K.

Reddening lines and specific color indexes of stars of the early type. Postepy astronom 12 no.1:17 '64.

Three-colored photographic photometry of clusters of galaxies. Ibid.:17

SERKOWSKI, Krzysztof

Slit spectrographs for medium-sized telescopes. Postepy
astronom 13 no.2:85-104 '65.

R.Ampel's paper on Associations in the Cassiopeia. Ibid.:
115-120

Response to R.Ampel's remarks. Ibid.:124

VITKAUSKAS, J., red.; BARANAUSKAS, B., red.; SERKSNYS, J., red.;
ZVIRENAS, A., red.; PETRUSEVICIUS, V., red.; ADOMAVICIUS, B.,
red.; KILAS, M., red.; SARKA, S., tekhn. red.

[Scientific and technical information] Mokslinė - techninė
informacija. Vilnius, Valstybinė politinės ir mokslinės
literatūros leidykla, 1961. 40 p. (MIRA 16:5)

1. Lietuvos žemės ūkio mechanizacijos ir elektrifikacijos
mokslinio tyrimo institutas.
(Lithuania--Agricultural machinery)

VITKAUSKAS, J., red.; ZVIRENAS, A., red.; SERKSNYS, J., red.;
ADOMAVICIUS, B., red.; BARANAUSKAS, B., red.; PETRUSEVICIUS, V.,
red.; GLEVAVICIENE, S., red.

[Problems of the mechanization of agricultural production]
Zemes uo gamybos mechanizavimo klausimai. Vilnius, Leidykla
"Mintis," 1964. 118 p. [In Lithuanian] (MIRA 18:2)

1. Lietuvos zemes ukio mechanizacijos ir elektrifikacijos
mokslinio tyrimo institutas.

SERLAPOV, S.T.

Characteristics of synoptic processes during the work of the High-
Latitude Aerial Expedition of 1956. Probl.Arkt. no.3:47-51 '58.

(Arctic Ocean--Atmospheric pressure)

(MIRA 12:1)

SERLAPOV, S.T.

Work under ice during explorations in the central Arctic. Probl.
Arkt. i Antarkt. no.8:90-91 '61. (MIRA 15:3)
(Arctic regions--Diving, Submarine) (Arctic regions--Sea ice)

3.5140 (104)

34114
S/169/62/000/001/054/083
D228/D302

AUTHOR: Serlapov, S. T.

TITLE: Arctic anticyclones and their relation to high-altitude polar-front zones and jet streams

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1962, 51, abstract 1B327 (Tr. Arkt. i antarkt. n.-i. in-ta, 235, 1961, 5-35)

TEXT: Anticyclones are most often encountered in the American sector of the Arctic basin (154 days a year) and also near Greenland's east coast (122 days) and in the vicinity of the Taymyr Peninsula (126 days). In the eastern half of the Arctic basin the minimum of days with anticyclonal weather falls in April and August, the maximum being March and October; in the western half an unclearly expressed maximum occurs in March, the minimum falling in October and January. In summer the frequency of anticyclones in the Arctic's western half is higher than in the eastern. The main forms of anticyclonal formations in the Arctic are the central
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Arctic anticyclone, separate anticyclonal nuclei over the most cooled sections of the basin; nuclei detached from continental anticyclones, and mobile anticyclonic formations connected with cyclonic activity. 50% of the Arctic anticyclones reach the 500 mb isobaric-surface altitude, while 30% reach the 300 mb surface. Uncloudy frosty weather with good visibility and weak winds is observed in winter and spring in Arctic anticyclones; in summer there is fog and low cloud. The formation and development of Arctic anticyclones is related to the development of the basic forms of atmospheric circulation. The formation of a low anticyclone is mostly observed under conditions of an eroded baric relief over the basin's supercooled surface at the time of the westerly form of circulation. The subsequent development of the anticyclone mostly starts after the transition of this form of circulation to meridional and easterly forms and the associated evacuation of heat to high latitudes. The position of the high-altitude frontal zone and jet stream corresponds to each form of circulation. When there are meridional and easterly forms of circulation the jet

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streams have large meridional displacements to the North Pole and towards the subtropics. In the central Arctic jet streams are mostly observed near the periphery of high-altitude oceanic ridges. This causes the localization of near surface anticyclones in the North American sector of the Arctic and in the Greenland area. In the central Arctic a wind speed of above 150 km/hr is noted in 22% of the jet streams observed at the time of a westerly form of circulation, in 31% of the jet streams observed during a meridional circulation, and in 47% of the jet streams observed when there is an easterly circulation. 26 references. [Abstractor's note: Complete translation.]

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S/169/62/000/004/045/103
D228/D302

AUTHOR: Serlapov, S. T.

TITLE: Trial work under the ice during Central Arctic investigations

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1962, 4, abstract 4V19 (V sb. Probl. Arktiki i Antarktiki, no. 8, L., Morsk. transport, 1961, 90-91)

TEXT: Under the direction of A. G. Kolesnikov work was carried out on the drift station "Severnnyy polyus-6" ("North Pole-6") by the Moskovskiy gosudarstvennyy universitet (Moscow State University) in collaboration with the Arkticheskiy i antarkticheskiy institut (Arctic and Antarctic Institute). The task of the observation beneath the ice was to study the water temperature distribution and the current velocity in the upper 15 m layer, and to investigate the vertical velocity components and the tangential stresses in the layer of water adjoining the ice. The placing of special apparatus beneath the ice required the execution of diving operations. It is
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Trial work under ...

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the first time that such work has been carried out in the waters of the polar region during the polar night. The submersions were made from heated tents in two hydrologic holes with dimensions of 1.5 x 1.5 m and 1.5 x 1.0 m. The ice was from 3.8 to 4.0 m thick, the maximum submergence depth being 18 m. A TY-1 (TU-1) hydrocos-tume and a "Podvodnik-1" aqualung were used; a TCB (TSLV) light diver's telephone station was attached to the aqualung. Two power-ful electric lamps were employed for underwater illumination. The visual observations and photography allowed new data to be ob-tained about the structure of the lower ice surface. The author reckons that under the conditions of the systematic execution of observations beneath the ice interesting and important material can be obtained about the growth mechanism of sea ice from below. [Ab-stracter's note: Complete translation.] ✓

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SERLAPOV, S.T.

Arctic anticyclones and their relation to the upper planetary front
zone and jet streams. Trudy AANII 235:5-36 '61. (MIRA 15:3)
(Arctic regions—Cyclones)(Arctic regions—Jet stream)

SERLAPOV, S.T., kand. geograf. nauk

Meridional circulation over Antarctica and its connection
with planetary circulation. Inform. biul. Sov. antark.
eksp. no.35:23-25 '62. (MIRA 16:11)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy
institut.

SERLAPOV, S.T., starshiy nauchnyy sotrudnik

Features of the synoptic processes during the sixth trip of the
diesel-electric ship "Ob." Inform. biul. Sov. antark. eksp.
no.38:12-15 '63. (MIRA 16:7)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.
(Antarctic regions--Meteorology, Maritime)

I 33160-66 EWT(1) GW
ACC NR: AT6013377

SOURCE CODE: UR/3174/65/000/053/0005/0008

AUTHOR: Serlapov, S.T. (Candidate of Geographical Sciences)

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B+1

ORG: Arctic and Antarctica Scientific Research Institute (Arkticheskiy i antarkti-
cheskiy nauchno-issledovatel'skiy institut)

TITLE: Jet streams at high latitudes of Antarctica 12

SOURCE: Sovetskaya antar ticheskaya ekspeditsiya, 1955-. Informatsionnyy byulleten',
no. 53, 1965, 5-8

TOPIC TAGS: ~~meteorology, meteorological phenomena~~, jet stream, Antarctic CLIMATE,
ATMOSPHERIC CIRCULATION, WIND VELOCITY

ABSTRACT: This paper discusses the character, distribution, frequency and intensity of jet streams over continental, high latitudes regions of Eastern Antarctica. On the Antarctica continent, very high velocities of jet streams (500 - 600 km/h) are rarely observed, and only in some coastal regions, which they reach from their stable zone of occurrence between 50 and 65° southern latitude. Their intensity and frequency of occurrence decreases toward the center of the continent. Over the high latitudes, specifically over the Eastern Antarctica, during the winter, at the tropopause level, jet streams with an average velocity of 125 km/h can be observed; their maximum velocity is about 180 km/h. Jet streams over the continental regions of the Antarctica are observed only in cases of a well developed meridional form of atmospheric circulation, at the arrival of cyclones at the cupola and during development of the near-polar depressions. A 500 mb average monthly map for July, 1963, contributed by the synopti-

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DocId: 301474/05/000/004/001/004

Author: Shchegolev, V. P. (Candidate of Geographical Sciences)

Organization: Arctic and Antarctic Scientific Research Institute (Arkticheskoy i antarkticheskoy nauchno-issledovatel'skiy institut)

Subject: Relationship between some geophysical processes in the central Antarctic area and weather changes

Source: Novaya Zemlya antarkticheskaya ekspeditsiya, 1955-. Informatsionnyy byulleten', no. 34, 1965, 12-14

KEY WORDS: magnetic storm, geomagnetic field, wind velocity, jet stream

ABSTRACT: A relationship between geophysical phenomena in the middle and high layers of the atmosphere and weather changes in the lower layers has been noted. Observational data for Mirnyy station (Antarctica) for 1963 show that in the central regions of the continent these relationships are quite clearly expressed and can be used as prognostic criteria. Particular attention is given to the relationship between the magnetic field and weather changes. Analysis of the mean monthly characteristics of the meteorological elements reveals that in September, when there was a strong magnetic storm and several brief magnetic field disturbances, there were maximum values of a number of meteorological elements. The magnetic storm was observed a day prior to the onset of total radio wave absorption and the occurrence of maximum wind velocity, making it possible to postulate a direct

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0195 2050

ACC NR: AT7003099

prognostic dependence between atmospheric processes and geophysical phenomena, especially on the state of the geomagnetic field. Against the general background of high geomagnetic field disturbance there is an increase of wind velocity in the upper troposphere and formation of stratospheric jet streams. Therefore, such relationships should be explored further so that the one can be used in forecasting the other. Orig. art. has 1 figure and 1 table. [JPRS: 37,397]

SUB CODE: 03, 04 / SUBM DATE: 12Oct64 / ORIG REF: 002

Card 2/2

SERLIN, G.M., arkhitektor; CHESKIS, I.S., inzh.

Remarks on D.V.Artem'ev's article "Three-layer panels for walls
of industrial buildings. From. stroi. 38 no.9:62-63 '60.

(MIRA 13:9)

(Concrete slabs)

(Artem'ev, D.V.).

SERLIN, M.; TUR, S.; STASYUKEVICH, Ye.

Record tests in gymnastics. Prof.-tekh.obr. no.10:30 0 '55.
(MLRA 9:1)

- 1.Rukovoditel' seksii fizicheskogo vospitaniya (for Serlin).
- 2.Instruktor fizicheskogo vospitaniya remeslennogo uchilishcha no.11 (for Tur).
- 3.Instruktor fizicheskogo vospitaniya spetsial'nogo remeslennogo uchilishcha no.9 (for Stasyukevich).
(Gymnastics)

SERLINA, F.L., Cand Med Sci -- (diss) "Significance of
the peculiarities of neurodynamics in neuroses in the
clinic of internal diseases." Gor'kiy, 1958, 14 pp
Gor'kiy State Med Inst im S.M. Kirov) 200 copies
(KL, 28-58, 111)

- 102 -

HUNGARY/Chemical Technology - Chemical
Application, Part 2. - Ce
Concrete. - Ceramics.

Abs Jour : Ref Zhur - Khimiya, No 7,
Author : Gusztav Serly
Inst :
Title : Study of Influence
Drying of Cer
Orig Pub : Epotoanya
Abstract : No abs

SERLY, GUSZTAV

HUNGARY/Chemical Technology - Chemical Products and Their H-12b
Application, Part 2. - Ceramics, Glass, Binders,
Concrete. - Ceramics.

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 22114
Author : Gusztav Serly
Inst : -
Title : Study of Influence of Charge Method and Recirculation on
Drying of Ceramic Products in Drying Compartment Kilns.
Orig Pub : Epotoanyag, 1957, 9, No 4, 169-184
Abstract : No abstract.

Card 1/1

L 10890-67
ACC. NO. AP6009037

(A)

SOURCE CODE: UR/0018/65/000/011/0028/0031

AUTHOR: Serov, A. (Colonel)

ORG: None

TITLE: Motorized rifle company operations in desert terrain

SOURCE: Voyenny vestnik, no. 11, 1965, 28-31

TOPIC TAGS: military training, military operation, military tank, desert warfare, desert vehicle, ~~navigation training~~, desert maintenance, ~~fresh water~~

ABSTRACT: Important characteristics of small-unit desert operations are presented by describing a particular tactical exercise which was to seize and hold a junction of caravan roads and a well about 125 km away until the main body arrived. Orientation in the desert is difficult so correct march direction is obtained by following pre-planned azimuths from one local key terrain feature, such as a high sand hill, to another. Vehicles were equipped with digging tools, tow cables, mats, and a 3-meter long log for self-winchng out when bogged down. A two-day water reserve for men and vehicles was carried. The battery fluid level was checked at each halt, air filters were cleaned periodically, and moving external parts of vehicles and weapons were covered and wiped dry. Night and early morning are the best times for desert moves. The unit moved in column formation at a high speed, the vehicles far enough apart to avoid each other's dust clouds. Sand hills were crossed in low gear, while

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ACC NR: AP6009037

sandy depressions were crossed rapidly, in high gear. Forewarned of an enemy column by its reconnaissance element, which was about 40 km in the van, the company organized a successful ambush near the objective. One platoon and an artillery battery engaged the enemy, moving in a sandy area, with frontal fire. The other two platoons, and a tank platoon, hit the enemy flank by surprise. Important features of desert training are driver training, maintenance of equipment and weapons, and systematic physical training of personnel to prevent heatstroke and to instill drinking water discipline. Orig. art. has: 2 figures.

SUB CODE: 15

/SUBM DATE: None

Card 2/2 *q/b*

POPOV, L.V., inzh.; SEROV, A.A. inzh.

Experience in using cables at 110 kv. potentials. Energetik
ll no.10:30-34 0 '63. (MIRA 16:11)

KAMBAROV, Yu.G.; MEKHTIYEV, S.D.; Primali uchastiye: SEROV, A.A.;
NAMESTNIKOVA, V.M.; DZHAZALIYEVA, R.D.; NAUMETS, A.M.

High-speed pyrolysis of the gasoline fraction in a pilot
plant. Khim. prom. no.5:346-348 My '63. (MIRA 16:8)

179000

XXXXXXXX 808011
000/169-59-5-5389

Translation from: Referativnyi Zhurnal, Geofizika, 1999, No 5, p 139 (USSR)

AUTHORS: GALKIN, A.M., GORIN, O.N., KROVA, A.N., KRYVA, E.I., PAVLOV, A.V., SEROV, A.G., GIBNOV, M.N., LAVROV, V.V.

TITLE: Investigation of the Vital Activity of Animals from Flying in Hermetically Sealed Cabins of Rockets up to a Height of 212 km

PERIODICAL: V sb. Prosvetiti. Ispol'zovaniye, Issled. i sozhdaniye "biopereklyucheniya" (Soviet Academy, Spetsialnyy Zhurnal 1 Paket, Moscow, AS USSR, 1999), pp 112 - 129 (Eng. Sum.)

ABSTRACT: Since 1949 systematic medical-biological investigations have been carried out in the Soviet Union during flights in rockets into upper layers of the atmosphere. An experimental animals dogs of a weight of 5 - 7 kg were chosen. During the flights, pulse, blood pressure, and respiration were registered, moreover, electrocardiograms were taken. During the entire flight, dogs were continuously filmed. The results of investigations allow the following conclusions: the condition in flying with rockets X

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Investigation of the Vital Activity of Animals from Flying in Hermetically Sealed Cabins of Rockets up to a Height of 212 km
up to a height of 100 - 212 km do not cause sudden disturbances in the physiological functions of animals. Alterations in behavior of animals and in the health condition were not observed. During the active section of the flight, the frequency of pulse and respiration and also the value of blood pressure of the animals were not increasing. In the period of action of dynamic weightlessness, the regular physiological parameters remained at high level during the first 2 - 3 min in a trend to decreasing. The restoration of the initial level of the physiological parameters occurred when the dynamic weightlessness lasted 5 - 6 min. The particular concern of the animals was: giddiness lasted 5 - 6 min. The particular concern of the animals when flying with rockets up to a height of 100 - 212 km. The rescue system ensures the preservation of life of the animals during landing.

L.V. Terent'yeva

Card 2/2

GINDIN, Ye.Z.; LEYKIN, G.A.; LOZINSKIY, A.M.; MASEVICH, A.G.; AL'PERT, Ya.L.;
CHUDESENKO, E.F.; SHAPIRO, B.S.; GALKIN, A.M.; GORLOV, O.G.; KOTOVA,
A.P.; KOSOV, I.I.; PETROV, A.V.; SEROV, A.D.; CHERNOV, V.N.;
YAKOVLEV, V.I.; MIKHAYLOV, A.A., otvetstvennyy red.; BBN'KOVA, N.P.,
doktor fiz.-mat. nauk, otvetstvennyy red.; SILKIN, B.I., red.;
PODOL'SKIY, A.D., red.; PRUSAKOVA, T.A., tekhn. red.

[Preliminary results of the scientific research on the first
Soviet artificial earth satellites and rockets; collection of
articles in the 11th section of the IGY program (rockets and
satellites)] Predvaritel'nye itogi nauchnykh issledovaniy s
pomoshch'iu pervykh sovetskikh iskusstvennykh sputnikov zemli
i raket; sbornik statei (XI razdel programmy MGG - rakety i
sputniki). Moskva, Izd-vo Akad. nauk SSSR, No.1. 1958. 148 p.
(MIRA 11:10)

1. Russia (1923- U.S.S.R.) Mezhdruvedomstvennyy komitet po
provedeniyu Mezhdunarodnogo geofizicheskogo goda. 2. Chlen-kor-
respondent AN SSSR (for Mikhaylov).

(Atmosphere, Upper-Rocket observations)

(Artificial satellites)

81467

SOV/35-59-8-6608

3.2100

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959,
Nr 8, pp 71 - 72

AUTHORS: Bugrov, B.G., Gorlov, O.G., Petrov, A.V., Serov, A.D., Yugov,
Ye.M., Yakovlev, V.I.

TITLE: Investigations of the Vital Activity of Animals During Flights
in Rocket Non-hermetic Cabin up to 110 km

PERIODICAL: V sb.: Predvarit. itogi nauchn. issled. s pomoshch'yu pervykh
sov. iskusstv. sputnikov Zemli i raket. Moscow, AS USSR, 1958,
pp 130 - 149 (Engl. sum.)

ABSTRACT: The results are described of Soviet studies on the efficiency
of using diving suits for maintaining the life of experimental
dogs when the cabin is de-hermetized and the dogs stay sub-
sequently at high altitudes for a long time (up to 1 hour). The
possibility of leaving the cabin by the catapulting method at
an altitude of 80 - 90 km and high flight velocity was also in-
vestigated. It was established that the use of a ventilation
diving suit, conventional in flight practice, with an oxygen

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Investigations of the Vital Activity of Animals During Flights in Rocket
Non-hermetic Cabin up to 110 km

protecting mask for maintaining the life of an experimental animal is inconvenient in many respects and even dangerous for the animal. Therefore, a special ventilation diving suit with a spherical voluminous helmet made of transparent plexiglas, a system of oxygen supply and an extension-type tray were developed. A constant working pressure of 440 mm Hg was maintained in the diving suit during flights at altitudes above 4,350 m by means of a special valve. The diving suit was fastened on the extension-type tray and inserted into a catapult carriage which was similar to catapult devices of modern aircraft. The equipment consisted of a special amplifier, called the aircraft medical set and devised for recording the frequency of breathing and pulse, the values of maximum and minimum arterial pressure, body temperature and the internal temperature in the diving suit. Usually, two quite similar carriages with dogs were accommodated in the rocket head section. The rocket took off 3 - 5 min prior to sunrise and flew up to an altitude of 110 km. The flight along the ascending branch of the trajectory was in the main stabilized. At an altitude of 100 - 109 km, 188 sec after the take-off, the rocket head section was separated and started non-

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SOV/35-59-8-6608 ..

Investigations of the Vital Activity of Animals During Flights in Rocket
Non-hermetic Cabin up to 110 km

stabilized free falling. At an altitude of 75 - 90 km, corresponding to 247 - 250 sec of flight, the animal placed in the right carriage was catapulted at a velocity of 560 - 730 m/sec. The carriage with the animal fell freely during 3 sec, after which a parachute device was opened. The dynamic load during the opening of the parachute amounted to 500 kg, and the overloading to 7 g. At the 297 - 300 sec of the flight, when the rocket head section reached, in its falling, the 39 - 46 km altitude, the animal in the left carriage was catapulted at a velocity of over 1,100 m/sec. The left catapult carriage with the animal fell down to the 3.8-km altitude, when its parachute device was put into operation. The main factors affecting physiological functions during the first stage of the flight were engine noise, vibrations and increasing acceleration; during the second stage - weightlessness, and during the third stage, upon entering the dense atmospheric layers, gravity and acceleration. The results of measurements showed that moderate changes in the values of arterial pressure, pulse frequency and breathing occurred in the animals during the flight in rockets. The data obtained warrant a conclusion that differences in the changes of pulse frequency

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X

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Investigations of the Vital Activity of Animals During Flights in Rocket
Non-hermetic Cabin up to 110 km

were determined by the type of the animal's nervous system. Under conditions of partial and full weightlessness, pulse frequency decreased insignificantly. A moderate reduction of breathing frequency during the period of weightlessness was observed in all dogs. On the whole, the investigations performed showed that maskless diving suits preserved the life of animals during the flight in a rocket non-hermetical cabin up to 110 km, catapulting and descending with a parachute from 75 - 85 km, while the total time of staying in the upper atmospheric layers amounted to 50 - 60 minutes. There are 18 references.

T.S. Kirillova

Card 4/4

X

SEROV, A. F. (Asst. Prof.)

"To determine antagonistic and ninantagonistic Conflicts."

report presented at the 13th Scientific Technical Conference of the Kuybyshev
Aviation Institute, March 1959.

SEROV, A.F.; YUDIN, L.I.

Pulse duration stability in a generator with a secondary
emission tube. Prib. i tekhn. eksp. 10 no. 5: 129-132 S-0 '65.
(MIRA 19:1)

1. Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk. Submitted Feb. 17, 1964.

L 20715-66 EWA(h)/EWT(1)

ACC NR: AP6007825

SOURCE CODE: UR/0120/66/000/001/0136/0139

AUTHOR: Gel'tsel', M. Yu.; Panasyuk, V. S.; Serov, A. F.; Yudin, L. I.

ORG: Institute of Nuclear Physics, SO AN SSSR (Institut yadernoy fiziki, SO AN SSSR)

TITLE: Feasibility of operating electronic multipliers as r-f amplifiers

25 34
B

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 136-139

TOPIC TAGS: photomultiplier, electronic amplifier, rf amplifier

ABSTRACT: An attempt is described of using a photomultiplier for broadband power amplification needed in electron and proton accelerators (ironless proton-synchrotron). Preliminary experiments with standard FEU-12 and FEU-14 multipliers revealed that after 300 hrs of (1-msec) pulse operation, the secondary-emission factor of the multiplier did not change; the amplifier output was 50--70 w. The same photomultipliers were also tested as self-excited oscillators. The above encouraging results permitted constructing a new hot-cathode multiplier by remodeling FEU-12 and providing it with a grid and seven dynodes; the overall transconductance was 0.05 amp/v. The new amplifier developed a pulse of 1 amp at a grid voltage of 1 v (pulse transconductance, 1 amp/v). The above photomultiplier-type amplifier was suggested by A. A. Naumov. "The authors wish to thank B.M. Stepanov for building the experimental model of the hot-cathode multiplier." Orig. art. has: 2 figures. [03]

SUB CODE: 09 / SUBM DATE: 23Jan65 / ORIG REF: 005 / OTH REF: 002 / ATD PRESS: 4223

Card 1/1

UDC: 621.385.15

25(5)

PHASE I BOOK EXPLOITATION

SOV/2166

Opyt ratsionalizatsii kuznechnogo proizvodstva; k 250-letiyu Leningrada
(Experience in Improving Forge Work; On the 250th Anniversary of Leningrad)
[Leningrad] Lenizdat, 1957. 194 p. 3,000 copies printed.

Ed. (Title page): P.V. Kamnev; Ed. (Inside book): Ye. V. Yemel'yanova;
Tech. Ed.: N.I. Rodchenko

PURPOSE: The collection of articles is intended for workers and engineers in
forge shops and also for designers of machinery in related branches of machine
manufacturing.

COVERAGE: The book describes the experience gained at several Leningrad plants
in the rationalization of manufacturing processes, modernization of equipment,
and improvement in the economics and planning of forging production. Tables
and drawings accompany every article. No personalities are mentioned. There
are no references.

TABLE OF CONTENTS:

Foreword

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Experience in Improving Forge Work

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Kamnev, P.V. [Candidate of Technical Sciences, Docent, Voenno-mekhanicheskiy institut] Main Work Trends of Leningrad Forgers To Achieve Technical Progress	5
Zarkhin, S.M. (Dputy Chief of the Forge Shop), A.I. Turovskiy [Senior Engineer, Leningradskiy metallicheskiy zavod] Experience in the Rationalization of Heating Flame Furnaces	15
Serov, A.M. [Chief of the Technological Bureau, Leningrad Kirov Plant] Combination Forging and Hot Forging On a Steam Hydraulic Press	32
Logutov, P.V. [Forging Technologist] Rationalization Of Hot Forging Processes	43
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Vasil'yev, G.T. [Chief of No. 2 Forge Shop, Leningrad Kirov Plant] Rationalization of Hot Drop Forging on Steam Hammers	73
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Card 2/3

SRNO. A. N.

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Nitridation of tool steel. A. N. Scrov.⁹ *Stanki i Instru-*
ment 24, No. 9, 18-20(1953). ~~Three~~ tool steels were
nitrided at 550° for 4.5-5.5 hrs. and then hardened and
annealed. Cutting tools thus prepd. were tested at 100-
550°. Nitrided cutters not only were more wear-resistant
but could be operated at higher speeds. The duration of
nitridation should be detd. by the nature of the cutting tool
and its prepn. (shaping, sharpening, etc.) for use.

M. Hosh

USSR/Physics - Graphitization of nitrided layer

FD-1071

Card 1/1 Pub. 153 - 7/24

Author : Serov, A. N.

Title : Graphitization of the epsilon-phase of the nitrided layer of high-carbon steel

Periodical : Zhur. tekhn. fiz., 24, No 10, 1798-1801, Oct 1954

Abstract : The author finds that one of main causes of the decrease in hardness of the surface is graphitization in the epsilon-phase. Nitriding was carried out at 650°C, 20 hours holding time, 45-50% ammonia dissociation of steels of various compositions with 0.95 to 1.14% carbon.

Institution : -

Submitted : November 21, 1953

SEaGV, A. P. and KHARLUKOV, N. A.

Organizatsiia dispetcherskoi sistemy rukovodstva pogruzochno-razgruzochnymi rabotami v rechnykh portakh i pristaniakh. (Creation of a dispatching managing system for freight handling operations in river ports and on piers). (Vodnyi transport, 1939, no. 8, p. 3-5).
LC: HE561.R8

SC: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

SEHOV, A.P., inzh.

Method of determining the optimum speed of river ships. Rech.
transp. 18 no.5:20-23 My '59. (MIRA 12:9)
(Ships--Speed) (Inland water transportation)

SEROV, A., polkovnik

Treating problems in defense against atomic and chemical weapons.
Voen.vest. 39 no.8:32-37 Ag '60. (MIRA 14:2)
(Atomic warfare) (Chemical warfare)

SEROV, A., polkovnik

Training with a tank battalion. Voen. vest. 42 no.5:56-61 My
'63. (MIRA 16:5)

(Tank warfare--Study and teaching)

KEDROV, M.; SEROV, A.

How to organize a cross-country motorcycle race. Voen. znan. 25
no.4:19-20 Ap '49. (MIRA 12:12)
(Motorcycle racing)

SEROV, A.

Motorcycle racing. Voen. znan. 25 no.5:18 iy '49.

(MIRA 12:12)

(Motorcycle racing)

БЕЛОВ, . В.

"Using a Test Stand for Adjusting Automobiles for Economical Fuel Consumption",
p 53, in the Monograph "Investigation and Use of Petroleum Products", edited by
N. G. Iuchkov Mostonoptekhnizdat, Moscow-Leningrad, 1950.

SEROV, A. V.

"Investigation of Stands for the Individual Tuning of Automobiles and Motorcycles for Fuel Economy." Sub 26 Mar 51, All-Union Correspondence Polytechnic Inst, Ministry of Higher Education USSR.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

LOW, L. V.

Usloviya stroitelstva [Motorcycle design]. Moskva, Fizkul'tura i sport,
1955. 32 p.

NO: Monthly List of Russian Accessions, Vol 7 No 5 May 1954.

1. SEROV A.
2. USSR (600)
4. Transportation, Automotive
7. Economizing fuel in automobile transportation. Za ekon.mat. no.1, 1953.

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

SEROV, A., inshener.

Winter operation of motorcycles. Voen.znan. 29 no.12:22 D '53.
(MLBA 7:1)
(Motorcycles)

SEROV, Aleksandr Ivanovich, polkovnik; IONOV, Gleb Aleksandrovich,
podpolkovnik; DUKACHEV, M.P., polkovnik, red.; BUKOVSKAYA,
N.A., tekhn.red.

[Teaching defense operations] Obuchenie deistviyam v oboro-
nitel'nom boiu. Moskva, Voen.izd-vo M-va obor.SSSR, 1960.
76 p. (MIRA 14:4)
(Attack and defense (Military science))

SEROV, A. V.

Mototsikly (Motorcycles, By) A. V. Serov i V. V. Shvaykovskiy. Izd. 3.,
150r. i dop. Moskva, Dosaaf, 1954.

254 p. illus., diags., tables.

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.S5
1954

SEROV, A., inzhener, kandidat tekhnicheskikh nauk.

New automobiles. Voenn.znan.31 no.7:21 J1'55. (MLRA 8:12)
(Automobiles)

Серов А. В.

AID P - 2101

Subject : USSR/Chemistry

Card 1/1 Pub. 78 - 14/24

Authors : Vinogradov, V. K. and Serov, A. V.

Title : Appeal to standardize motor-testing methods for auto
and tractor lubricants

Periodical: Neft. khoz., v.33, no.4, 61-66, Ap 1955

Abstract : The author compares existing methods of testing motor lubricants as worked out by TsiATIM (Central Scientific Research Institute of Aviation Fuels and Oils), VNIITneft'yu (All-Union Scientific Research Institute for the Transport, Storage and Use of Oil Products), VNIAT (All-Union Scientific Research Institute of Automobile Transport) and suggests the adoption of a unified standardized method of testing.

Institution: None

Submitted : No date

SEROV, Aleksandr Vladimirovich; BAS, Lev Ruvimovich; YERMOLIN, Aleksey
Ivanovich; PRIGOZHIN, Vladimir Borisovich; IVANITSKIY, S.Yu.,
redaktor; PAPMEL', S.V., redaktor; MANDHA, M.P., tekhnicheskiy re-
daktor

[Working principle of a motorcycle] Ustroistvo mototsikla. Izd.
2-oe, ispr. Moskva, Gos.izd-vo "Fizkul'tura i sport," 1956. 350 p.
(Motorcycles) (MIRA 9:3)

KASHIRKIN, Yu.; KUCHIN, A.; ~~SEROV, A.~~

Stand for testing ignition devices. Avt.transp.34 no.11:32-33 N
'56. (MLBA 9:12)

(Automobiles--Ignition)

СЕРОВ, Александр Владимирович / БЕРБЕРСЯН, А.С.
SEROV, Aleksandr Vladimirovich, kand.tekhn.nauk; BABERTSYAN, A.S., red.;
SUKHAREVA, R.A., tekhn.red.

[Operational qualities of oils used in automobiles and tractor engines]
Ob ekspluatatsionnykh kachestvakh masel dlia avtotraktornykh dvigatelei.
Moskva, Mosk. dom nauchno-tekhn.propagandy im.F.E.Dzerzhinskogo, 1957.
26 p. (MIRA 10:12)

(Lubrication and lubricants)

SFRV, AV

PHASE I BOOK EXPLOITATION 917

Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefiti i gaza i polucheniyyu iskusstvennogo zhidkogo topliva

Issledovaniye i primeneniye nefteproduktov (Study and Use of Petroleum Products) Moscow, Gostoptekhizdat, 1957. 213 p. (Series: Its: Trudy vyp. 6) 1,000 copies printed.

Eds.: Puchkov, N.G., Zaslavskiy, Yu. S.; Executive Ed.: Kleymenova, K.F., Engineer; Tech. Ed.: Mukhina, E.L.

PURPOSE: This book is intended for engineering and scientific personnel concerned with the production, study and use of petroleum products.

COVERAGE: This collection of articles gives the results of the scientific research work of the Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefiti i gaza i polucheniyyu iskusstvennogo zhidkogo topliva (All-Union Scientific Research Institute for the Processing of Petroleum and Gas for the Production of Synthetic Liquid Fuel) on the operational properties
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Study and Use of Petroleum Products 917

oil from Baku deposits. There are 8 tables and 1 Soviet reference.

Puchkov, N.G., and Belyanchikov, G.P. Fuel for High-speed Diesels 13

The present article gives comparative test data on standard fuel (according to GOST 4749-49 DL), fuel from the heavier fractions of petroleum, and compound fuel (a mixture of gas oil fuel and fuel from heavier fractions in a ratio of 30:70), on the basis of their performance in a two-cycle YaAZ-204 engine. It is concluded that fuel from the heavier fraction of petroleum may be utilized with a slight increase in viscosity (12 cst or $\eta_{20} \cong 2$) and the absence of heavy tarry residues (95 percent vaporizes at 400°). Fuels from catalytic cracking with a cetane number of 40, in the pure state and mixed with fuels of direct distillation may be widely used in modern tractor engines. There are 4 tables, 6 figures and 6 Soviet references.

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Study and Use of Petroleum Products 917

Serov, A.V. The Basis for Methods of Short-term Tests for Evaluating the Wear-resistant Properties of Diesel Oils 46

In this article the author cites methods of evaluating wear-resistant properties of diesel oils on the basis of several considerations which are discussed at length. It is stated that determination of motor wear according to the amount of iron dissolved in the lubricating oil is quite possible. It is concluded that the basic factors determining the rate of motor wear are the rotational speed of the crankshaft, motor load, and temperature, although the influence of the latter is apparently less noticeable in diesels than in carburetor motors. There are 7 figures, 4 tables and 7 Soviet references.

II. INVESTIGATION OF PETROLEUM PRODUCTS

Zaslavskiy, Yu. S.; Shor, G.I.; Kirillov, I.G.; Lebedeva, F.B.; Yevstigneyev, Ye. V.; and Zlobin, O.A. The Application of

Card 5/17

Study and Use of Petroleum Products 917

Radioactive Indicators (Tagged Atoms) in the Investigation of
Wear-resistant Properties of Lubricating Oils 58

The purpose of this investigation was to establish a rapid method of evaluating wear-resistant properties of lubricating oils by the use of radioactive isotopes. A motor part was exposed to an isotope, e.g., Co. ⁶⁰, and wear was measured by measuring the radiation intensity of the lubricating oil with a counter tube. A structural scheme is given for an automatic apparatus which will continuously record the radioactivity of circulating oil (thereby making "visible" the wear on components as it fluctuates with changing test conditions). There are 17 figures, 6 tables and 32 references, of which 11 are Soviet and 21 English.

Zaslavskiy, Yu. S.; Kreyn, S.E.; Shneyerova, R.N.; and Shor,
G.I.. Radiochemical Investigation of the Action of Oil
Additives 85

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This investigation concerned the capacity of additives to demonstrate an inhibiting action on oil during the operative process (i.e., to ensure an antioxidizing effect), or the capacity to prevent the catalytic influence of surface metal on the oxidation of oil. It was found that the protective coating, once having formed, later begins to decompose and erode, and is eventually washed off the metal surface completely; retardation of corrosion, therefore, is most effective during the formation of the protective coating. Engineers A.I. Kuznetsova, I.A. Morozova; Technicians M.B. Koziyenko, N.M. Avdeyeva,; and laboratory assistants P.I. Shishova and N.V. Dmitriyeva participated in the work. There are 16 figures, 1 table, and 14 references, of which 12 are Soviet and 2 English.

Zaslavskiy, Yu. S.; Shneyerova, R.N.; Shor, G.I.; and Kuznetsova, A.I. Radiochemical Investigation of the Stability of Solutions of Additives in Oils 107

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On the basis of this law, and by accurate determination of crystallization temperature, the author determines, and gives methods and equations for determining, a) the purity of individual admixtures (hydrocarbons), b) the quantity of individual admixtures, and c) the concentration of sulfuric acid. S.A. Yuganova participated in b), and V.P. Peshkov, Doctor of Physical and Mathematical Sciences, acted as consultant.

Tilicheyev, M.D.; Okishevich, N.A.; Borovaya, M.S.; and Goysa, Ye. I. Cryoscopic Methods of Analyzing the Hydrocarbon Content of Petroleum Products II. Cryoscopic Methods of Analysis Using Solvents 130

This article reviews the above-mentioned method in which the authors determine the amount of admixture by taking a solvent with a sufficiently high value and adding 1 percent mol of a substance. By observing the change in crystallization temperature of cyclohexane, it was possible to determine

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the method were used, which include (Variant I) treatment with sulfuric acid and rinsing with water and (Variant II) titration with a 0.1 n solution of KOH. The accuracy of this method was determined with synthetic mixtures of alkanes and cyclanes (naphthenes) of gasoline B-70 and 2,2,4 - trimethyl pentane (iso-octane). Variant I, with a degree of error of plus or minus .5 percent, is recommended, whereas Variant II had a degree of error of plus or minus .8 percent. There are 7 tables and 1 Soviet reference.

Tilicheyev, M.D. Basing the Boiling Point of Petroleum Products on Atmospheric Pressure

156

Boiling points are "brought to normal" according to the pressure of saturated vapors of individual hydrocarbons, on the basis of n-alkanes. The author states that this method and others lead to serious errors, and gives methods for

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Ptashinskiy, I.A. and Frolova, M.K. Polarographic Method of
Determining Tetraethyl Lead in Gasolines 181

The authors offer a simpler and more reliable method of determining the concentration of tetraethyl lead in aviation and automobile gasolines. The quantity is computed according to the formula $TL (Pb(C_2H_5)_4) = \frac{323.22 C \cdot 75}{10e}$, where TL is the quantity of tetraethyl lead per g/kg. of gasoline; C the concentration of lead chloride, determined according to a calibrated graph based on the polarographing of the tested solution; and e the density of gasoline at 20° C. The quantity of ethyl liquid product P-9 per ml. in 1 kg. of gasoline is: $X = 1.213 TL$. It is stated that this method requires 1/3 to 1/4th as much time as standard methods. There is 1 figure, 1 table and 3 references, of which 2 are Soviet.

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Osher, R.N.; Zaytseva, L.D. Determination of the Saponification Number of Petroleum Products and the Content of Free Fats in Consistent Lubricants 185

This article first reviews in detail various methods for making the determination mentioned in the title. However, a unified method based on ordinary titration procedures is offered as being quicker and more accurate and has been accepted as standard method GOST 6764-53. There are 3 tables.

Bagryantseva, P.P.; Badayeva, M.K.; and Kaygorodtseva, R.A. The Protection of Hydraulic Gas Containers from Corrosion 189

A review is given of efforts that have been made to produce a suitable liquid to inhibit the corrosion of hydraulic valves of gas containers. Investigation showed that carbon black increased the viscosity of the oil base, while sudan apparently had no influence. Synthetic rubbers and polyisobutylenes were used successfully as components of the protective liquid. The simultaneous introduction of a passivator and a protective liquid into the water which

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flows through the shutoff valve of the gas container increases the effectiveness of corrosion protection. The acidity of this liquid does not have a negative effect on its protective properties. There are 7 tables and 1 figure.

Kaulina, M.M. and Luneva, V.C. Evaluation of the Viscosity Properties of Consistent Lubricants at Low Temperatures by Using Rotary and Capillary Viscometers

199

The above-mentioned methods are described in detail. 1) The rotary viscometer [Ref. 2] is based on measuring the resistance of lubricants on a revolving roller. 2) The capillary viscometer [Ref. 1, 4, 7] is based on measuring the resistance of oils passing through a capillary tube. The rotary viscometer has no temperature limitations, it is stated, and the viscosity of lubricant greases can be determined at -30° C. The rotary method was worked out by

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V.P. Pavlov and the capillary method by the Institut nefti AN SSR (Petroleum Institute, Academy of Sciences, USSR).
There are 2 tables, 2 figures and 7 Soviet references.

Bagryantseva, P.P. and Badayeva, M.K. The Influence of the Volatility and Viscosity of Mineral Oils on the Operational Properties of Cold-resistant Consistent Lubricants

206

Commercial lubricants were investigated to compare their physicochemical and volume properties, and to test their work capacity in roller bearings on stands and under operational conditions as well. It was concluded that viscosity properties and work capacity of lubricants are dependent upon the hydrocarbon content and upon the volatility and viscosity, respectively, of their component mineral oils. Also, volatility showed great influence on viscosity properties, which were dependent in a linear relationship. Experiments were carried out at an experimental station of the ENII-PP. There are 9 figures and 4 tables.

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Luneva, V.S., and Kovalev, V.A. Quick Method for Determining
the Protective Capacity of Concistent Lubricants 219

This article outlines methods for and gives results of evaluating the protective effectiveness of lubricants against corrosion in both liquid and gaseous media. Petrolatum, gun lubricant and commercial vaseline were the more resistant to gaseous corrosion, while corrosion was best controlled in liquid media according to GOST 5757-51, which is based on measuring the width of the protective coating of oil deposited on metal surfaces at various temperatures, and several other factors. There are 4 figures, 7 tables and 14 Soviet references.

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ПУЧКОВ, Н.Г.; СЕРОВ, А.В.; БЕЛЯНИКОВ, Г.П.; РЕЗНИКОВ, В.Д.; ПЫШКОВ, С.И.
PUCHKOV, N.G.; SEROV, A.V.; BELYANCHIKOV, G.P.; REZNIKOV, V.D.; PYSHKOV, S.I.

Suitability for engines of diesel oils derived from sulfur crude oil.
Trudy VNII NP No.6:3-12 '57. (MIRA 10:10)
(Diesel fuels)