ACCESSION NO: AP3006764

S/0190/63/005/009/1393/1397

AUTHORS: Fomenko, B. A.; Volodin, V. P.; Sidorovich, A. F.; Kuvshinskiy, Ye. V.

TITLE: Thermomechanical investigations of polyisobutylene by means of dilation and penetration

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 9, 1963, 1393-1397

TOPIC TAGS: polymer, thermal oxidation, single axis elongation, polyisobutylene, amorphous polymer, thermomechanics

ABSTRACT: The low-molecular-weight polymer was prepared by means of thermal oxidation decomposition of the high-molecular-weight product, heating the latter in air at 160-170C for 50 hours. The characteristic molecular weights M_{w_1} and M_{w_2} were 0.55 x 10^6 and 1.86 x 10^6 respectively. The method of investigation consisted of single-axis elongation of a film strip under a constant force, and penetration by a 3-mm cylindrical indentor under a gradual temperature rise. The results show behavior of polyisobutylene analogous to other linear polymers. As in other amorphous polymer deformations, a sharp branch in the thermomechanical curve of polyisobutylene shows a superelastic behavior. Orig. art. has: 4 figures.

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ACCESSION NO: AP3006764

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of High-Molecular-Weight Compounds AN SSSR)

SUBMITTED: 07Mar62.

DATE ACQ: 30Sep63

ENCL: 00

SUB CODE: CH

NO REF SOV: 008

OTHER: 000

Card 2/2

GARCHEV, Petr Ivanovich[Harchev, P.I.]; MALKIYEL', Semen
Veniaminovich [Malkiiel', S.V.]; FOMENKO, B.A., red.;
LIMANOVA, M.I., tekhn. red.

[Lenin Collective Farm in Lebedin District of Sumy
Province] Kolhosp imeni Lenina Lebedynskoho raionu na
Sumshchyni. Kharkiv, Kharkivs'ke knyzhkove vyd-vo,
1963. 90 p.   (MIRA 17:1)

FOMENKO, B.A.; ORLOV, V.A.; TARAKANOV, O.G.

Studying the kinetics of polyurethane formation by the change of
the specific volumetric resistance of the thermosetting system.
Plast.massy no.10:47-49 '64.   (MIRA 17:10)

L 24116-66   EWT(1)/EWP(m)/EWA(d)/T-2/EWA(1)   IJP(c)

ACC NR: AP6011515   SOURCE CODE: UR/0382/66/000/001/0074/0084

AUTHOR: Vulis, L. A.; Fomenko, B. A.

ORG: none

TITLE: Transient conditions of flow in magnetohydrodynamics

SOURCE: Magnitnaya gidrodinamika, no. 1, 1966, 74-84

TOPIC TAGS: magnetohydrodynamics, transient flow, conductive fluid, laminar flow, Reynolds number

ABSTRACT: A discussion is presented of the qualitative characteristics of a conducting liquid flow in a channel in the presence of a magnetic field in the transient region of the flow between the laminar and turbulent flows. Interpolation formulas for the friction coefficient as a function of Reynolds and Hartmann numbers are analyzed. Theoretical data are compared with the experimental results. Orig. art. has: 9 figures and 16 formulas. [Based on authors' abstract]   [NT]

Card 1/1   UDC: 538.4

FOMENKO, B.D.

Meteorological observations during the solar eclipse of June 30, 1954.
Biul.VAGO no.20:47-50 '57.   (MLRA 10:8)

1.Stalingradskiy pedagogicheskiy institut.
        (Eclipses, Solar--1954)
        (Meteorology--Observations)

FOMENKO, B.D.

Variations of the coefficient of atmospheric transparency during
the total solar eclipse of June 30, 1954 [with summary in French].
Astron. zhur. 34 no.6:868-882 N-D '57.   (MIRA 11:2)

1. Stalingradskiy pedagogicheskiy institut i Gosudarstvennyy
astronomicheskiy institut im. P.K. Shternberga.
        (Eclipses, Solar--1954)   (Atmospheric transparency)

FOMENKO, B. D. Cand Phys-Math Sci -- (diss) "Change in the

Coefficient of Atmosphere

~~Diathermancy Coefficient of the Atmosphere~~ During the Total

Solar Eclipse of 30 June 1954." Mos, 1957. 6 pp 22 cm. (Mos State

Univ im M. V. ~~XXXXXXXXXX~~ Lomonosov, State Astronomical Inst im

P. K. Shternberg), 100 copies (KL, 26-57, 104)

- 14 -

FOMENKO, B.D.

Aurora borealis in Stalingrad. Astron.tsir. no.185:24-25 O '57.
(MIRA 11:4)

(Auroras)

KLIMENKO, I.Ye.; FOMENKO, B.D.

Some problems in observing artificial earth satellites. Biul.
sta.opt.nabl.isk.sput.Zem. no.6:8-10 '59.
(MIRA 13:6)

1. Stalingradskaya stantsiya nablyudeniya iskusstvennykh
sputnikov Zemli.
(Artificial satellites--Tracking)

FOMENKO, B.D. (Stalingrad)

Changes in the total and scattered solar radiation during
the solar eclipse of June 30, 1954, observed in Tikhoretsk and
Sal'sk. Biul.VAGO no.24:37-40 '59.   (MIRA 13:4)

1. Stalingradskoye otdeleniye Vsesoyuznogo astronomo-geodezi-
cheskogo obshchestva.
          (Eclipses, Solar--1954)
     (Solar radiation--Observations)

Fomenko, B. D.

PHASE I BOOK EXPLOITATION   SOV/5575

Akademiya nauk SSSR. Astronomicheskiy sovet.

Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh
    sputnikov Zemli, no. 6. (Bulletin of the Stations for Optical
    Observation of Artificial Earth Satellites. No. 6) Moscow,
    1959. 23 p. 500 copies printed.

Sponsoring Agency: Astronomicheskiy sovet Akademii nauk SSSR.

Resp. Ed.: Ye. M. Gindin; Secretary: O. A. Severnaya.

PURPOSE : This bulletin is intended for scientists and engineers
    concerned with optical tracking of artificial satellites.

COVERAGE : The bulletin contains 9 articles which present the
    results of satellite observations, and describe methods and
    specific equipment used for photographic observation of earth
    satellites. An appendix contains a listing of 84 Soviet satel-
    lite observation stations with station number. No personalities

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'9

Bulletin of the Stations (Cont.)   SOV/5575

   are menticned. There are no references.

TABLE OF CONTENTS:

Panova, G. V., T. Ye. Syshchenko, B. A. Firago, and D. Ye.
Shchegolev [Glavnaya (Pulkovskaya) Astronomitheskaya cbser-
vatoriya AN SSSR - Main (Pulkovo) Astronomic Observatory of the
Academy of Sciences of the USSR]. Observations of the Second
Artificial Earth Satellite (1957 β) at Station No. 039 (Pulkovo)
(Observations: B. A. Firago, D. D. Polozhentsev, G. V. Panova,
N. M. Bronnikova. Measurements and Calculations: T. Ye. Syshchenko,
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Academy of Sciences of the USSR]. On Methods for Precise Photo-
graphic Determinations of the Positions of Artificial Earth Satel-
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Bulletin of the Stations (Cont.)   SOV/5575

Klimenko, I. Ye., and B. D. Fomenko [Stalingradskaya stantsiya
nablyudeniya ISZ - Stalingrad Satellite Tracking Station] On
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Khusainov, S. Kh., and Sh. Kuratayev [Stantsiya nablyudeniya ISZ
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Station at the Kzyl - Orda State Pedagogical Institute]. Table
of the Conversion of Horizontal Coordinates Into Equatorial Co-
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Eynasto, Ya., and U. Veysmann [Institut fiziki i astronomii
AN ESSR - Stantsiya nablyudeniya sputnikov pri Tartuskom gos-
darstvennom universitete - Institute of Physics and Astronomy of
the Academy of Sciences of the Estonian Soviet Socialist Republic.
Satellite Tracking Station at Tartu State University]. Prelim-
inary Results of Using Automatic Recording in Theodolite Satel-
lite Observations   11

Zatsiorskiy, L. M. [Main (Pulkovo) Astronomic Observatory]. Modifi-

Card 3/6

37316
S/169/62/000/004/018/103
D228/D302

3, 5/20

AUTHORS: Pariyskiy, N. N., Hu Jen-Ch'ao, Fomenko, B. D. and
Gindilis, L. M.

TITLE: Changes in the ozone layer during the annular solar
eclipse of April 19, 1958, on Hainan Island

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1962, 7, ab-
stract 4B68 (Acta geophys. sinica, 10, no. 1, 1961,
1-16)

TEXT: A Sino-Soviet group investigated the ozone content from so-
lar-eclipse observations during the annular solar eclipse of April
19, 1958, on Hainan Island. A spectrograph, which was employed to
observe simultaneously the zodiacal light and the counter-radiance,
was used in the observations. The observational procedure and the
processing of the resulting data are described. The results show
that the content of atmospheric ozone changes conspicuously during
a solar eclipse. It is noted that the concentration rises up to
the moment half an hour after the middle of the eclipse; the lay-

Card 1/2

Changes in the ozone ...   S/169/62/000/004/018/103
                                  D228/D302

yer's thickness then subsequently decreases. /¯Abstracter's note:
Complete translation._7

Card 2/2

3.1800

39090
S/169/62/000/006/071/093
D228/D304

AUTHOR: Fomenko, B. D.

TITLE: The synoptic relation of solar activity to processes
               in the troposphere

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 8, ab-
               stract 6G40 (Solnechnyye dannyye, no. 9, 1961, 74-78)

TEXT: Local high-temperature coronal areas over the sun's active
regions generate high-energy corpuscles, ensuring the high elec-
tron temperature of coronal gas at the distance of the earth's
orbit (Chapman (Chepmen) model of an extended corona). The solu-
tion of the heat-conductivity equation shows that the ionosphere's·
heating in a comparatively short time and the development of syn-
optic-type tropospheric disturbances, associated with this heating,
can be guaranteed only by high-speed flows of corpuscles. Such a
mechanism leads to tropospheric disturbances only in years of
high solar activity; in years of minimum activity there are no lo-
cal areas of heating, since local high-temperature coronal areas

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The synoptic relation ...

39090
S/169/62/000/006/071/093
D228/D304

are absent over the active regions. The coefficients of correla-
tion between the level of solar activity, characterized by the
area of sunspots, and the change in the atmospheric pressure (the
atmosphere's local heating must lead to airmass movement and con-
sequently to pressure changes) were calculated from the data of
meteorologic stations near Volgograd in order to verify these con-
siderations. Very low values for the coefficients, when there is
practically no relation, are also found in addition to high values.
The coefficients are of different signs. It is supposed that for
the earth's local areas the simultaneous effect of two types of
solar activity influence on the troposphere may hamper the ex-
posure of this correlation. On the whole the correlative dependence
bears a pulsatory character, reflecting the pulsatory nature of
the solar activity itself. / Abstracter's note: Complete transla-
tion. /

Card 2/2

3.5/50 '

S/169/62/000/009/079/120
D228/D307

AUTHOR: Fomenko, B. D.

TITLE: Variation in the atmospheric transparency factor in
             the spectral sections 2900-5250, 5250-6250, and 6250-
             20,000 Å during a solar eclipse

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 29, ab-
             stract 9B175 (Uch. zap. Stalingr. gos. ped. in-ta,
             no. 11, 1959, 61-79)

TEXT: Measurements were made on an actinometer with Schott (Shott)
filters near Tikhoretsk during the solar eclipse of June 30, 1954.
The transparency factors were computed from the formula of Bouguer.
Using the distribution of solar energy at the atmosphere's upper
boundary ($S_{0,\lambda}$), the values of $S_{0,\Delta\lambda}$ were calculated for three cho-
sen spectral sections and for the eclipse's different phases. The
transparency factors for the eclipse's different phases were deter-
mined from the measurement data and the calculated values of $S_{0,\Delta\lambda}$.
On the grounds of the relations obtained the author supposes the

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Variation in the atmospheric ...   S/169/62/000/009/079/120
                                        D228/D307

increase in the transparency factor in the short-wave spectral sec-
tion, when the eclipse's phases are >0.95, to be connected with
the fact that the amount of ozone decreased by 1/3 during the
eclipse. This occurs in consequence of the effect whereby the so-
lar disc is darkened from the center towards the edge, when the
share of the intensity of ozone-forming radiation diminishes as
compared with that of ozone-disintegrating radiation. The result-
ing increase in the transparency factor during the eclipse in the
long-wave spectral section is related to the increase in the abso-
lute humidity that occurred as a result of the changed synoptic
conditions. /¯Abstracter's note: Complete translation._/

Card 2/2

FOMENKO, B.D.

Meteorological observations during the total solar eclipse of
February 15, 1961, in Volgograd Province. Biul.VAGO no.32:
32-34 '62.   (MIRA 15:11)

1. Volgogradskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo
obshchestva.
                    (Eclipses, Solar--1961)
          (Volgograd Province--Meteorology--Observations)

S/886/62/000/000/002/003
D207/D308

AUTHORS: Pariyskiy, N.N., Hu Jen-ch'ao, Fomenko, B.D., and
                Gindilis, L.M.

TITLE: Measurements of the ozone layer during the annular
                solar eclipse on April 19, 1958, on Hainan Island

SOURCE: Sbornik trudov MGU po Mezhdunarodnomu geofizicheskom
                godu; astronomiya. (Moscow) Izd-vo Mosk. univ., 1962,
                31-53

TEXT: The observations during the eclipse were carried out
by a joint Soviet-Chinese expedition led on behalf of the USSR Acad-
emy of Sciences by A.P. Molchanov, and on behalf of the Chinese
Academy of Sciences by Ch'eng Fang-yung. The expedition was organ-
ized by the Chairman of the Astronomicheskiy sovet AN SSSR (Astron-
omical Council, AS USSR) A.A. Mikhaylov and his deputy B.V. Kukarkin.
On the Chinese side there was a special committee led by the Vice-
President of the Chinese Academy of Sciences Wu Yu-hsiung. The opti-
cal group included N.N. Pariyskiy of the Institut fiziki Zemli AN

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Measurements of the ozone ...

S/886/62/000/000/002/003
D207/D308

SSSR (Institute of Physics of the Earth, AS USSR) and the Gosudarst-
vennyy astronomicheskiy institut im. P.K. Shternberga (State Astron-
omical Institute imeni P.K. Shternberg), L.M. Gindilis of the State
Astronomical Institute imeni P.K. Shternberg, Hu Jen-ch'ao and Yu
Hai-jen, both of the Peking Geophysical Institute of the Academy of
Sciences of the Chinese People's Republic. The optical group was
led by N.N. Pariyskiy. The results were analyzed by B.D. Fomenko
of the Stalingradskiy pedagogicheskiy institut im. A.S. Serafimovi-
cha (Stalingrad Pedagogical Institute imeni A.S. Serafimovich) under
the direction of N.N. Pariyskiy. The time service was provided by
the Chinese scientists Ch'eng Fang-yung and Wang Shou-kuan. The
observations were carried out at the south extremity of Hainan Is-
land at a latitude of about $+ 18^\circ.3$. The variations in the ozone
layer thickness during the eclipse were observed together with the
gegenschein using a very-high-speed nebular spectrograph HKC (NKS)
with quartz-lithium fluoride optical parts; the spectrograph is
described in detail in the article of N.N. Pariyskiy and L.M. Gindi-
lis. Since the NKS spectrograph was designed primarily for observa-
tions of the gegenschein and zodiacal light, a special photometric

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Measurements of the ozone ...   S/886/62/000/000/002/003
                                       D207/D308

attachment was used to adapt it for ozone line measurements. The
ozone spectrum (3000 - 3400 Å) showed a general tendency for the
ozone-layer thickness to increase up to 1 hour after the climax
of the eclipse. A detailed analysis will be published in a separate
communication. There are 4 figures and 7 tables.

SUBMITTED: January 2, 1960

Card 3/3

3 /540

41490
S/033/62/039/005/003/011
E032/E314

AUTHOR: Fomenko, B.D.

TITLE: Properties of type-M solar corpuscular streams as
            deduced from an analysis of their influence on the
            troposphere

PERIODICAL: Astronomicheskiy zhurnal, v. 39, no. 5, 1962,
            833 - 839

TEXT: A statistical analysis is reported of the correlation
between plages and tropospheric disturbances for the descending
branch of solar activity when the relative Wolf number is in
the range $15 < R < 75$.   719 plages were included in the analysis
covering the period 1906 - 1952.   The observational material was
taken from the data on the passage of plages through the solar
centre, as reported by the Sluzhba Solntsa SSSR (Solar Service,
SSSR), Meudon, Coimbre, Guadalcanal and Mount Wilson observatories.
A full list of the data is given in the papers of E.R. Mustel'
(Astron.zh., 38, 28, 1961;   39, 813, 1962).   The analysis also
includes meteorological data on atmospheric pressure for
Moscow, Tbilisi, Volgograd, Archangel and Omsk.   The superimposed
Card 1/3

Properties of ....

S/033/62/039/005/003/011
E032/E314

epoch method is used to analyse the data. Inspection of the
statistical curves shows that they all have a maximum at about
$\Delta t = 6^d$ and this suggests that the maximum disturbances in the
lower layers of the Earth's atmosphere occur six days after the
passage of the plages through the centre of the solar disc.
There are further secondary maxima to the left of the principal
maximum at $\Delta t = 6$ but these are ascribed to the longitudinal
distribution of plages on the Sun. It is argued that these
curves indicate that type-M corpuscular streams are responsible
for an increase in the pressure in the lower layers of the
terrestrial atmosphere. The fact that this effect occurs in the
entire atmosphere is indicated by Fig. 3, in which the statis-
tical curves for the seven points mentioned above are given
(curves 1-7, respectively). Curves 5-7 refer to night obser-
vations. In all cases, the maximum occurs at $\Delta t = 6$ days. The
general conclusion is that there is a definite correlation
between atmospheric disturbance and plages, that the atmospheric
disturbances reach a maximum after an average interval of six

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Properties of ....

S/033/62/039/005/003/011
E032/E314

days after the passage of the plages through the centre of
the disc, that the atmospheric disturbances in the lower layers
of the atmosphere are accompanied by an increase in the
atmospheric pressure and that the plages are the main sources
of corpuscular streams. There are 3 figures and 1 table.

ASSOCIATION: Volgogradskiy pedagogicheskiy institut
                (Volgograd Pedagogical Institute)

SUBMITTED: October 15, 1961

Card 3/3

FOMENKO, B.D.

Calculating relative changes in the atmospheric transparency
coefficient during a solar eclipse. Biul. VAGO no.33:16-18
'63.   (MIRA 16:4)
1. Volgogradskoye otdeleniye Vsesoyuznogo astronomo-geodezi-
cheskogo obshchestva.
                    (Eclipses, Solar)
                    (Atmospheric transparency)

ACCESSION NR: AT4016594   S/2556/63/000/034/0003/0004

AUTHOR: Fomenko, B. D.

TITLE: Solar corpuscular streams of active regions and atmospheric disturbances

SOURCE: Vsesoyuznoye astronomo-geodezicheskoye obshchestvo. Byulletin', no. 34, 1963, 3-4

TOPIC TAGS: corpuscular stream, solar active region, sun, astronomy, M-disturbance, calcium flocculus, flocculus, geomagnetic disturbance, atmospheric pressure, frozen-in magnetic field, upper atmosphere, stratosphere

ABSTRACT: Mustel' has demonstrated that geomagnetic M-disturbances are caused by solar corpuscular streams associated with calcium flocculae. A geomagnetic M-disturbance sets in $\Delta t = 6^d$ after a flocculus crosses the central meridian. Disturbances in the lower layers of the atmosphere set in after the same time. M-disturbances cause an increase of atmospheric pressure with a maximum at $\Delta t = 6^d$. It is postulated that the frozen-in magnetic field of the stream is broken up in the upper atmosphere and the latter experiences considerable heating and expansion, leading to the same effects in the lower layers. A study has been made to test this mechanism. Radiosonde data for Volgograd and Moscow were used; data on flocculae were furnished by Mustel'. The super-

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ACCESSION NR: AT4016594

posed epochs method was used to determine the relationship between disturbances at different atmospheric heights and solar corpuscular streams from active regions. The "zero phase" corresponds to passage of a flocculus across the central meridian. Statistical curves for Moscow and Volgograd for the heights 0, 5, 10 and 15 km are shown in Enclosures. There is a lag of $0.5\text{-}1^d$ in the surface layer in comparison with the event in the stratosphere. The character of the maximum and its distance from the "zero phase" indicates that the mean velocity of corpuscular streams is 370-400 km, in good agreement with other determinations. The stable maximum of disturbances at $\Delta t = 6^d$ for all heights in the troposphere and stratosphere indicated correctness of the postulated mechanism. Orig. art. has: 2 figures.

ASSOCIATION: Volgogradskiy pedinstitut, Volgogradskoye otdeleniye VAGO (Volgograd Teachers Institute, Volgograd Division VAGO)

SUBMITTED: 00   DATE ACQ: 24Feb64   ENCL: 02

SUB CODE: AS   NO REF SOV: 004   OTHER: 001

Card   2/

ACCESSION NR: AT4016595   S/2556/63/000/034/0005/0007

AUTHOR: Fomenko, B. D.; Bonelis, I. V.

TITLE: The relationship between calcium flocculae and disturbances of the lower layers of the earth's atmosphere in 1950

SOURCE: Vsesoyuznoye astronomo-geodezicheskoye obshchestvo. Byulleten',, no. 34, 1963, 5-7

TOPIC TAGS: astronomy, sun, calcium flocculus, geomagnetic disturbance, corpuscular stream, M-disturbance, solar activity, sunspot, atmospheric pressure, superposed epoch, flocculus, solar active region

ABSTRACT: A study has been made of the relationship between solar calcium flocculae and disturbances in the earth's atmosphere for a period of solar activity when $65 < R < 125$, where R is the smoothed sunspot number. Synoptic charts for solar rotations 1291-1299, prepared at the Meudon Observatory, were used, together with atmospheric pressure data for Tbilisi, Volgograd and Arkhangel'sk. The superposed epochs method was used for determining the relationship between disturbances in the lower atmosphere and corpuscular streams associated with calcium flocculae. Forty-six flocculae observed during March-November 1950 were used. The number of flocculae crossing the central meridian with

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ACCESSION NR: AT4016595

longitude intervals $\triangle L_{sol}$ of 1^d, 2^d, 3^d, ... days is shown in Enclosure. In construct-
ing statistical curves for flocculae with identical $\triangle L_{sol}$ the following values were combined:
$\triangle L_{sol} = 3\text{-}4^d$, $\triangle L_{sol} = 5\text{-}6^d$, $\triangle L_{sol} = 9\text{-}10^d$ ... Statistical curves obtained by the super-
posed epochs method are shown as Figures 1, 2 and 3 in Enclosure. On these curves there
is only one peak, falling at $\triangle t = 6^d$. The peak shows that for the most part the disturbance
maximum in the lower atmosphere appears $\triangle t = 6^d$ after a calcium flocculus crosses the
solar central meridian. Calcium flocculae determine the boundaries of active regions.
Therefore, corpuscular streams emanating from active regions are responsible for the re-
current geomagnetic disturbances causing disturbances in the earth's atmosphere. "The
author wishes to thank S. B. Nikolayev for assistance in collection of the meteorological
data". Orig. art. has: 3 figures.

ASSOCIATION: Volgogradskiy pedinstitut, Volgogradskoye otdeleniye VAGO (Volgograd
Teachers Institute, Volgograd Division VAGO)

SUBMITTED: 00   DATE ACQ: 24Feb64   ENCL: 04

SUB CODE: AS   NO REF SOV: 003   OTHER: 000

Card   2/2

ACCESSION NR: AP3004325   S/0033/63/040/004/0700/0702

AUTHOR: Fomenko, B. D.; Bonelis, I. V.; Kuby*shkin, V. V.

TITLE: The latitude and height dependence of atmospheric disturbances
due to type M solar corpuscular streams

SOURCE: Astronomicheskiy zhurnal, v. 40, no. 4, 1963, 700-702

TOPIC TAGS: atmospheric disturbance, atmospheric disturbance latitude
dependence, atmospheric disturbance height dependence, corpuscular
stream, solar corpuscular stream, type M solar corpuscular stream,
radio sounding

ABSTRACT: The latitude dependence of atmospheric disturbances has
been detected from a study of data, in addition to that used previously
(B. D. Fomenko, Astron. zh., v. 39, 833, 1962).   It is found that the
amplitude of atmospheric disturbances increases with geomagnetic
latitude.   Radio sounding data show that the disturbance occurs in the
atmosphere.   Orig. art. has: 4 figures and 1 table.

Card 1/2

ACCESSION NR: AP3004325

ASSOCIATION: Volgogradskiy pedagogicheskiy institut (Volgograd
Pedagogic Institute)

SUBMITTED: 07Feb63   DATE ACQ: 20Aug63   ENCL: 00

SUB CODE: 00   NO REF SOV: 005   OTHER: 000

Card 2/2

FOMENKO, B.D.

Correlation of the secular intensity variation of cosmic rays in
the stratosphere with solar activity. Geomag. i aer. 4 no.2:402
Mr-Ap '64.   (MIRA 17:4)

1. Volgogradskiy gosudarstvennyy pedagogicheskiy institut.

ACC NR: AR6032141   SOURCE CODE: UR/0169/66/000/006/A015/A015

AUTHOR: Fomenko, B. D.

TITLE: Influence of solar corpuscular streams on the lower layers of the terrestrial atmosphere

SOURCE: Ref. zh. Geofizika, Abs. 6A91

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2, M., Nauka, 1965, 53-84

TOPIC TAGS: atmospheric pressure, corpuscular stream, active solar region, chromospheric flare, geomagnetic latitude, solar corpuscular stream, SOLAR CHROMOSPHERE, SOLAR FLARE, SOLAR· CORPUSCULAR RADIATION)

ABSTRACT: The correlation between variations of atmospheric pressure in the lower atmospheric layers and corpusular streams has been studied. Streams from active ·.. regions generating recurrent geomagnetic perturbations and also streams ejected from chromospheric flares are discussed. Investigations are made by superposition of epochs. Atmospheric pressure in the lower layers reaches maximum approximately six days after the passage of the active region through the central meridian. The perturbation amplitude of atmospheric pressure increases with geomagnetic latitude and diminishes with the altitude above the earth's surface; the effect of disturbed atmospheric pressure vanishes totally at the height fo 20—25 km. The highest pressure, caused by corpuscular streams, occurs three days after the chromospheric

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ACC NR: AR6032141

flare. The correlation between the variation of atmosheric pressure and solar corpuscular streams is proved statistically.

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AR6032353   SOURCE CODE: UR/0169/66/000/007/A020/A020

AUTHOR: Fomenko, B. D.; Kubyshkin, V. V.

TITLE: Temperature fluctuations in atmospheric disturbances as a function of recurrent solar corpuscular streams

SOURCE: Ref. zh. Geofizika, Abs. 7A116

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 85-87

TOPIC TAGS: atmospheric disturbance, solar corpuscular radiation, solar corpuscular stream, solar corpuscular temperature fluctuation, flocculus

ABSTRACT: Data on center flocculi, i. e., floculli having a heliographic width of not more than 6° and situated in the solar hemisphere disposed to affect the earth, were selected for subsidence curves of the 18th and 19th solar activity cycles, when the Wolf number was between 15 and 75. At the same time an analysis was made of flocculi having a heliographic width greater than 6° and situated in the solar hemisphere not producing geophysical effects on the Earth. Data obtained in high altitude temperature soundings made at Tbilisi, Volgograd, Moscow, Arkhangel'sk and Murmansk were used as the geophysical index. The method of superimposed

Card 1/2   UDC: 551.5:523.745

ACC NR: AR6032353

epochs was used. Data obtained in high-altitude temperature soundings were
analyzed simultaneously with disturbances in atmospheric pressure as a function
of active solar regions. It was found that the temperature maximum in the 0—20-km
layer occurs 7 days after the passage of the active region through the central solar
meridian. B. Rubashev. [Translation of abstract]

SUB CODE: 03, 04/

Card 2/2

ACC NR: AR6028768   SOURCE CODE: UR/0269/66/000/006/0063/0064

AUTHOR: Fomenko, B. D.

TITLE: Effect of solar corpuscular fluxes on the lower layers of the earth's atmosphere

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.487

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 53-84

TOPIC TAGS: solar corpuscular radiation, solar flare, lower atmosphere

TRANSLATION: The relationship between variations in atmospheric pressure in the lower layers of the earth's atmosphere and the corpuscular fluxes was examined. Fluxes from active areas causing recurrent geomagnetic disturbances, as well as fluxes related to the chromospheric flares were considered. It is found that the atmospheric pressure reaches its maximum value approximately six days after the passage of the active area through the center of the visible solar disc. The amplitude of the disturbances grows with increasing geomagnetic latitude, and decreases with the altitude. At altitudes of the order of 20 to 25 km, there is no disturbance of the atmospheric pressure. The maximum growth of the pressure caused by corpuscular fluxes from flares takes place three days after the flare. 35 references. B. Rubashev.

SUB CODE: 03
                                                      UDC: 523.75:525.23

Card 1/1

ACC NR: AR6028769   SOURCE CODE: UR/0269/66/000/006/0064/0064

AUTHOR: Fomenko, B. D.; Kubyshkin, V. V.

TITLE: Temperature changes in atmospheric disturbances caused by recurrent corpuscular solar fluxes

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.488

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 85-87

TOPIC TAGS: solar activity, solar corpuscular radiation, sunspot cycle

TRANSLATION: To determine the effect of corpuscular fluxes upon temperature variations, data on the flocculi for the descending branches of the 18th and 19th cycles of solar activity were selected; the selection was made at a heliographic latitude of <6°, when the Wolf (sunspot) numbers were within 15 to 75. Data on altitude temperature probes at Tbilisi, Volgograd, Moscow, Arkhangel'sk and Murmansk were taken as a geophysical index. The superimposed-era method was used. The moment of the passage of the active area through the central meridian was set to be the zero "phase". The maximum temperature was observed seven days after the passage of the active area through the central solar meridian. 8 references. B. Rubashev.

SUB CODE: 03

UDC: 523.75:523.165

Card 1/1

IVANOV, V.P.; YAKOBSON, G.A.; FUMENKO, B.S.

Effect of soil moisture on the exchange of root exudations.
Fiziol. rast. 11 no.4:630-637 Jl-Ag '64.

(MIRA 17:11)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

IVANOV, V.P.; YAKOBSON, G.A.; FOMENKO, B.S.

Mutual influence between corn and broad beans through their
aerial organs. Fiziol. rast. 10 no.4:447-457 Jl-Ag '63.
(MIRA 16:8)

1. Timiriazev Institute of Plant Physiology, U.S.S.R.
Academy of Sciences, Moscow.

GRANKOVSKIY, Vladimir Fomich; KIKLEVICH, Nikolay Antonovich;
 SIMONCHAK, Vasiliy Trofimovich; FOMENKO, Dmitriy Ivanovich;
 SAPILOV, A.V., otv. red.; BELOV, V.S., red. izd-va; SABITOV, A.,
 tekhn. red.; OVSEYENKO, V.G., tekhn. red.

[Electric equipment with 660 volt rating for mines]Rudnichnoe
elektrooborudovanie na napriazhenie 660 v. [By]V.F.Grankovskiy
i dr. Moskva, Gosgortekhizdat, 1962. 119 p.   (MIRA 15:8)
                (Mining machinery—Electric driving)

KIKLEVICH, N.A.; SIMONCHAK, V.T.; FOMENKO, D.I.; PLOSKOGOLOVYY, Yu.P.

Some shortcomings of the magnetic PMV-1365A starter for 660 voltage.
Ugol' 37 no.3:32-33 Mr '62.   (MIRA 15:2)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut.
   (Electricity in mining) (Coal mining machinery)

AD'YASEVICH, B. P.; ANTONENKO, B. G.; POLUNIN, Yu.P.; FOMENKO, D.Ye.

Source of polarized ions. Atom. energ. 17 no.1:17-22 Jl '64.
(MIRA 17:7)

L 40782-66   EWT(1)/EWT(m)/T/EWP(t)/ETI/EWP(k)   IJP(c)
ACC NR: AP6018611   SOURCE CODE: UR/0420/65/000/004/0107/0109

AUTHOR: Lopatin, A. I.; Balyberdin, V. V.; Chumachenko, V. S.; Gurov, V. M.; Trubcha-
ninov, F. N.; Kirichenko, R. F.; Fomenko, F. I.

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

TITLE: Investigation of an electrohydraulic source and some of its potential appli-
cations

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 4, 1966, 107-109

TOPIC TAGS: electrohydraulic effect, shock wave, electric discharge

ABSTRACT: The authors describe a highly efficient coaxial electro-
hydraulic source for industrial use. A diagram of the device is
shown in figure 1. The annular aluminum electrode 2 is fastened
to textolite base 1 by bolts. Stainless steel electrode 3 is fas-
tened to the base inside the aluminum electrode and located on its
central axis. Voltage is fed to the annular and central electrodes
from a battery of condensers through a controllable discharger.
The electrical discharge between the electrodes develops in the
form of individual spark channels. A schematic diagram of the ex-
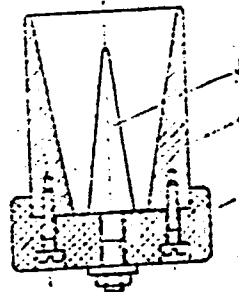perimental unit used for testing the source is shown in figure 2.

Figure 1

Card 1/3

L 40782-66
ACC NR: AP6018611

Voltage from regulator *1* is fed through step-up
transformer *2* and high-voltage rectifier *3* to
condenser battery *5* with a total capacitance of
6 μf. The charging voltage is monitored on
electrostatic kilovoltmeter *6*. The current in
the discharge circuit is registered by a low-
-inductance Rogowski loop with an integrating
circuit connected in the coaxial cable. The
signal from this integrating circuit is fed to
one channel of an oscillograph. A capacitance
signal from the voltage divider is fed to the
second channel of the oscillograph through a
75 Ω impedance matching resistor. Analysis of
the oscillograms shows that the cyclic frequen-
cy of the discharge is 925 Kc while the induc-
tance of the discharge circuit is 0.2 μh. The
current amplitude of the discharge reaches 16
Ka when 10 Kv is applied to the condenser
plates. Water velocity is a linear function
of discharge voltage with the approximate equa-
tion $W=4V+1$, where W is water velocity in m/sec
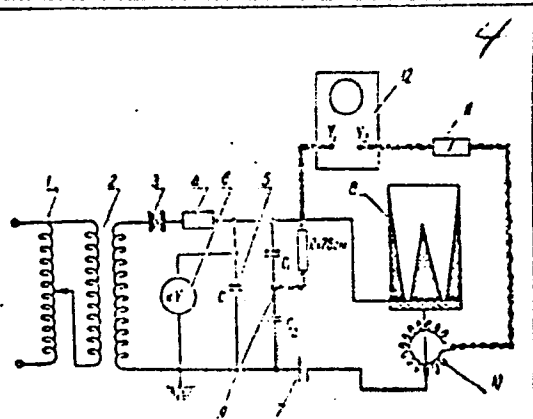and V is voltage in Kv. At a distance of 3 m

Figure 2: 1—voltage regulator; 2—
step-up transformer; 3—20 Kv high-
-voltage rectifier; 4—60 KΩ dis-
charge resistor; 5—IM-50-3 condenser
battery; 6—S-96 kilovoltmeter; 7—
discharger; 8—electrohydraulic
source; 9—D6-2 voltage divider; 10—
Rogowski loop; 11—integrating cir-
cuit; 12—OK-17M double beam oscillo-
graph

Card 2/3

L 40702-00

ACC NR: AP6018611

from the source, the cross sectional area of the water stream is no more than three times that of the source. Orig. art. has: 4 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 007
20/

Card 3/3

L 40782-66   EWT(1)/EWT(m)/T/EWP(t)/ETI/EWP(k)   LJP(c)   DS/JD/HW
ACC NR: AP6018611   SOURCE CODE: UR/0420/65/000/004/0107/0109

AUTHOR: Lopatin, A. I.; Balyberdin, V. V.; Chumachenko, V. S.; Gurov, V. M.; Trubcha-
ninov, F. N.; Kirichenko, R. F.; Fomenko, F. I.

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

TITLE: Investigation of an electrohydraulic source and some of its potential appli-
cations

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 4, 1966, 107-109

TOPIC TAGS: electrohydraulic effect, shock wave, electric discharge

ABSTRACT: The authors describe a highly efficient coaxial electro-
hydraulic source for industrial use. A diagram of the device is
shown in figure 1. The annular aluminum electrode 2 is fastened
to textolite base 1 by bolts. Stainless steel electrode 3 is fas-
tened to the base inside the aluminum electrode and located on its
central axis. Voltage is fed to the annular and central electrodes
from a battery of condensers through a controllable discharger.
The electrical discharge between the electrodes develops in the
form of individual spark channels. A schematic diagram of the ex-
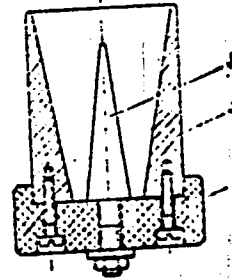perimental unit used for testing the source is shown in figure 2.

Figure 1

Card 1/3

L 40782-66

ACC NR: AP6018611

Voltage from regulator *1* is fed through step-up
transformer *2* and high-voltage rectifier *3* to
condenser battery *5* with a total capacitance of
6 μf. The charging voltage is monitored on
electrostatic kilovoltmeter *6*. The current in
the discharge circuit is registered by a low-
-inductance Rogowski loop with an integrating
circuit connected in the coaxial cable. The
signal from this integrating circuit is fed to
one channel of an oscillograph. A capacitance
signal from the voltage divider is fed to the
second channel of the oscillograph through a
75 Ω impedance matching resistor. Analysis of
the oscillograms shows that the cyclic frequen-
cy of the discharge is 925 Kc while the induc-
tance of the discharge circuit is 0.2 μh. The
current amplitude of the discharge reaches 16
Ka when 10 Kv is applied to the condenser
plates. Water velocity is a linear function
of discharge voltage with the approximate equa-
tion $W = 4V + 1$, where W is water velocity in m/sec
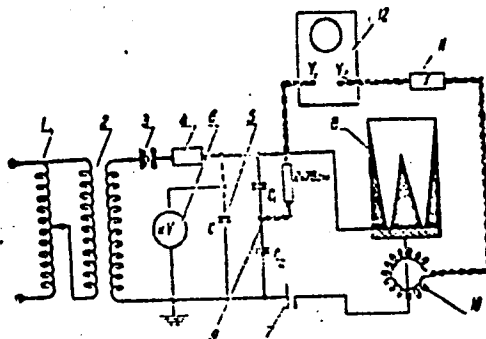and V is voltage in Kv. At a distance of 3 m

Figure 2: 1—voltage regulator; 2—
step-up transformer; 3—20 Kv high-
-voltage rectifier; 4—60 KΩ dis-
charge resistor; 5—IM-50-3 condenser
battery; 6—S-96 kilovoltmeter; 7—
discharger; 8—electrohydraulic
source; 9—D6-2 voltage divider; 10—
Rogowski loop; 11—integrating cir-
cuit; 12—OK-17M double beam oscillo-
graph

Card 2/3

L 40782-66

ACC NR: AP6018611

from the source, the cross sectional area of the water stream is no more than three times that of the source. Orig. art. has: 4 figures.

SUB CODE: 13/ , SUBM DATE: none/ ORIG REF: 007
20/

Card 3/3

RYZHAVSKIY, I.M.; SHEPELEVA, M.D.; KATS, F.A., nauchnyy red.; LEVIN, B.Z.,
    nauchnyy red.; FOMENKO, F.N., nauchnyy red.; STROYEVA, Ye.V.,
    red.; TRUSOV, N.S., tekhn.red.

[Use of hard alloys and cermets; a collection of articles]
O primenenii tverdykh splavov i mineralokeramiki; sbornik statei.
Moskva, 1957. 87 p.   (MIRA 11:6)

1. Moscow. TSentral'nyy institut informatsii tsvetnoy metallurgii.
        (Alloys)   (Cermets)

FOMENKO, Fedor Nikitich; GRIGORYAN, N.G., red.; GUREVICH, Ya.D., vedushchiy
red.; POLOSINA, A.S., tekhn.red.

[Electric drills for drilling oil and gas wells] Elektrobury
dlia bureniia neftianykh i gazovykh skvazhin. Moskva, Gos.
nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 241 p.
                    (Boring machinery)   (MIRA 12:2)

FOMENKO, F.N., inzh.

Studying losses in electric drill spindle bases and in power used by bits in well drilling. Trudy VNIIBT no.1:184-192 '58.   (MIRA 11:12)

(Boring)

14(5)

SOV/92-58-8-3/36

AUTHOR: Fomenko, F.N., Member of the VNIIburtekhnika

TITLE: Flushing Wells in Electrical Drilling (Promyvka pri elektroburenii

ABSTRACT: The author states that the drilling of oil wells with an electric drill, connected by a cable run inside the pump-tube column to a transformer, considerably differs from other drilling methods, and has a number of advantages. In contrast to turbo-drilling where the turbine is kept in motion by a drilling fluid, which plays a very important role, the performance of the electric drill does not depend much on the quantity and quality of the drilling mud. Here it is used primarily for swabbing the borehole. A reverse flow of mud can be used for flushing the well when the latter is drilled with the electrically driven bit. Moreover, it is not necessary to maintain a high operating pressure in the pump tubes. As a result they last longer, and light centrifugal pumps can be employed instead of heavy piston pumps. Different types of electric drills such as the EBSh-250, driven by the MAP1-25-617/10 motor, and the improved E250/8, driven by the 230 kwt MAP1-25-725/8 motor which operates at 680 r.p.m., were tested by the Tuymazburneft'

Card 1/2

Flushing Wells in Electrical Drilling   92-52-3-3/36

Trust under various geological conditions and at different depths.
In 2 tables the author summarizes drilling results obtained by
using first one and then two pumps, and concludes that the use of
two pumps of the U-8-3 type does not raise the mechanical drilling
speed, and the per bit footage. In a diagram the author shows
different drilling rates, attained in perforating formations at
various stages and horizons with the aid of an electric drill. The
author also states that experimental electrical drilling, combined
with air flusing of wells, produced promising results. There are
2 tables and 1 diagram.

ASSOCIATION: VNIIburtekhnika

Card 2/2

FOMENKO, F. N., Candidate Tech Sci (diss) -- "Electric drills: methods of increasing their power and reducing their dimensions". Moscow, 1959. 15 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Inst of the Petroleum-Chem and Gas Industry im I. M. Gubkin), 160 copies (KL, No 24, 1959, 142)

FOMENKO, F.N.

Specific power consumption in drilling wells with tricone bits.
Neft.khoz. 37 no.3:25-32 Mr '59.   (MIRA 12:5)
          (Oil well drilling)

FOMENKO, F.N.

New equipment for electric drilling. Neft. khoz. no.9:26-31
S. '60.   (MIRA 13:9)
        (Oil well drilling--Equipment and supplies)

FOMENKO, Fedor Nikitich. Prinimali uchastiye: SHKOL'NIKOV, B.M., kand.
tekhn. nauk; SUD, I.I., inzh.; GRACHEV, Yu.V., kand. tekhn. nauk;
PETROVA, Ye.A., ved. red.; FEDOTOVA, I.G., tekhn. red.

[Electrodrills for drilling oil and gas wells] Elektrobury dlia
bureniia neftianykh i gazovykh skvazhin. 2., dop. i perer. izd. Mo-
skva, Gos.nauchno-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry, 1961.
327 p.   (MIRA 14:12)
          (Oil well drilling, Electric—Equipment and supplies)

FOMENKO, F.N., kand.tekhn.nauk

Ways of increasing the rotative moment of electrodrills. Trudy
VNIIBT no.3:89-110 '61. (MIRA 15:1)

(Boring machinery)

S/129/63/000/001/008/017
E073/E335

AUTHORS: Fomenko, G.D., Engineer, Yegorov, V.S. and Andreyeva,
A.G., Candidates of Technical Sciences

TITLE: Investigation of the contact strength of case-hardened
steel 12Kh3A (12KhN3A)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no. 1, 1963, 23 - 25

TEXT: The effect of carbon concentration in the case-hardened
layer on the contact- and fatigue-strength was investigated on
specimens carburized (for 4 h) to a depth of 1-2 mm in a 15-litre
capacity laboratory furnace. Sintin was used as a carburizer
and the carbon content of the surface layer was about 0.75% if
5 drops/min were applied and about 1.3% if 20 drops/min were
applied. After cooling in air, the specimens were heated in a
salt bath to 780-800 $^\circ$C, oil-quenched, cooled to -70 $^\circ$C and
tempered at 150 - 170 $^\circ$C. The surface was then ground-off to a
depth of 0.1 mm; the surface hardness was 61-63 HRC. The
specimens were made to rotate between clamping rings to simulate
the loading conditions of gear teeth; they were subjected during
Card 1/2

Investigation of ....

S/129/63/000/001/008/017
E073/E335

rotation to contact stresses varying along the circumference,
the maximum being 700 kg, as well as to about 2% slip. The
maximum contact strength, about 3 350 kg/cm^2, was obtained with a
1.1% C content of the surface layer. In this case, the structure
of the surface zone was acicular martensite with fine carbide
plates and grains. The fatigue strength increased almost linearly
from about 68 kg/mm^2 for 0.6% C of the surface layer to about
75 kg/mm^2 for 0.9% C and remained almost constant with increasing
C content. Therefore, to achieve the highest fatigue and contact
strength the surface layer of case-hardened steel should be sat-
urated to contain 1 - 1.2% C.

Card 2/2

ACCESSION NR: AP4020246

S/0129/64/000/003/0033/0037

AUTHOR: Yegorov, V. S.; Andreyeva, A. G.; Fomenko, G. D.

TITLE: Gas cyaniding and carburizing of stainless Khl7N2-(EI268) steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1964, 33-37, and insert facing p. 41

TOPIC TAGS: diffusion layer, hardness, carburization, cyanidation, sub zero treatment, Khl7N2 steel, stainless steel

ABSTRACT: The authors investigated the possibility of obtaining a thin layer with a hardness higher than Rockwell hardness 58. For that purpose, steel Khl7N2 specimens were cyanided in a 10-liter laboratory muffle furnace into which pyrobenzol and ammonia were introduced. Air cooling was followed by oil quenching from 1020 C. Finally, the specimens were treated at -70 C and subsequently tempered at -160 C. Hardness was highest after treatment at 700-750 C. The zone with a hardness of $H_\mu = 700$ was 0.075-0.12 mm deep. 40-45 cm^3/min ammonia and 15 to 18 drops pyrobenzol per minute introduced into the furnace were found to enhance hardness which reached $H_\mu = 1040$ without changing the depth of the active

Card 1/2

ACCESSION NR: AP4020246

zone which was 0.5 mm deep after a six-hour holding period. Sub-zero treatment
prior to high-temperature tempering did not affect the amount of residual
austenite in the layer and the temper hardness. The authors recommend the
application of sub-zero treatment at temperatures of -70 C or -120 C for case-
hardened Kh17N-2 steel parts. If the sub-zero treatment is applied for the
purpose of enhancing hardness characteristics of the carburized layer, the cooling
media should have a temperature of -70 C. Volumetric changes are effectively
prevented by the application of a sub-zero treatment at -120 C. Orig. art.
has: 9 figures.

ASSOCIATION: None

SUBMITTED: 00   DATE ACQ: 31Mar64   ENCL: 00

SUB CODE: MM   NO REF SOV: 003   OTHER: 000

Card 2/2

L 10006-65   EWT(d)/EWT(m)/EPF(c)/EWA(d)/EWP(v)/EPR/T/EWP(t)/EWP(k)/EWP(h)/
EWP(z)/EWP(b)/EWP(l)   Pf-4/Pr-4/Ps-4/Pu-4/Pad   IJP(c)   MJW/JD/HW/JG/GS
ACCESSION NR: AT4049813   S/0000/64/000/000/0056/0062

AUTHOR: _Alekseyenko, M. F._; Andreyeva, A. G.; Yegorov, V. S.; Fomenko, G. D.

TITLE: Hardening of stainless heat resistant and heatproof steels by thermal
diffusion

SOURCE: Soveshchaniye po uprochneniyu detaley mashin, 1962. Protsessy uprochnen-
iya detaley mashin (Processes of the hardening of machine parts); doklady sovesh-
chaniya. Moscow, Izd-vo Nauka, 1964, 56-62

TOPIC TAGS: stainless steel, stainless steel hardening, stainless steel thermal
diffusion, stainless steel nitriding, stainless steel carburizing, heat resistant
steel, heatproof steel, steel corrosion resistance

ABSTRACT: The paper describes the results of investigations of the surface hard-
ening of stainless heatproof and heat-resistant steels. These tests were required
in order to increase the durability and wear resistance of parts operating under
corrosive conditions, as well as at high temperatures. Austenitic EI-69 and EI-
946 steel, SN2, SN3 and SN4 steel, martensitic 1Kh13, Kh17N2, EI-736 and EI-961
steel, as well as EI-696 and EI-786 heat resistant steels were tested. Prior to

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L 40006-65
ACCESSION NR: AT4049813

8

thermal diffusion, the oxides on the stainless steel should be removed by sand
blasting, etching and other methods. The best method is nitriding with NH_4Cl.
Corrosion stability is lowered when stainless steels are nitrided. In martensitic
and ferritic nitrided steels, 50-80% of the total thickness of the nitrided layer
snows low corrosion stability, while in austenitic steels this is only true of
2.-40%. This depth depends on the phase composition and chromium and nitrogen
in the solid solution. The depth of the nitrided layer depends on the
grade of steel, 3bKhMYuA steel having the deepest nitrided layer. In turn, this
depends on the type of crystal lattic and quantity of alloying elements. As the
content of chromium increases, the depth of the nitrided layer drops, being 0.2 mm
for a chromium content of 25%. Increasing the temperature from 560 to 650C does
not affect the depth of the layer. Nickel lowers the nitride depth to an even
greater extent. The addition of tungsten, molybdenum, titanium vanadium and
aluminum up to 5% lowers the depth to the same degree as chromium, but in this
case the depth of the nitride layer depends on the temperature. The optimal depth
of nitriding for martensitic steel is attained at 550-600C. Austenitic steels
snow a limiting depth at 550C. The hardness of the nitrided steel depends on the
nitriding compounds and temperature, determining the degree of nitride dispersion.

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ACCESSION NR: AT4049813

Variation of nickel content does not change the hardness. Nitrided stainless steels
tested on the IMASh machine showed high wear resistance up to 600C. The coeffi-
cient of friction dropped from 0.7 at 200 to 0.1 at 600C. The quality of the
layer depends on the grain size. Carburizing of heat treated steel also
results in loss of corrosion stability. This is explained by the redistribution
of chromium between the solid solution and the carbides. By nitrocarburizing it
is possible to harden all tested grades of steel, especially kh17N2 and EI-696
the same loss of corrosion stability is observed. Orig. art. has:
5 figures.

ASSOCIATION: None

SUBMITTED: 21May64   ENCL: 00   SUB CODE: MM

NO REF SOV: 005   OTHER: 000

Card 3/3

YEMEL'YANOV, V.P.; ILYUKOVICH, B.M.; MERKUR'YEV, S.Ye.; FOMENKO, G.G.

    In the rolling mills of the land. Metallurg 10 no.12:38 D '65.
                                            (MIRA 18:12)
    1. Chusovskiy metallurgicheskiy zavod (for Ilyukovich, Merkur'yev).

S/068/60/000/003/002/003
E071/E233

AUTHORS: Kolyandr, L. Ya., Tyaptina, M. I., and Fomenko, G.M.

TITLE: Impurities in Pure Benzole

PERIODICAL: . Koks i khimiya, 1960, No. 3, pp. 42-47

TEXT: The nature of impurities present in pure benzole
and sensitivity of methods of their determination are discussed in
the light of the author's own and literature data. The sensitivity
of methods of determination of the individual sulphurous compounds
was tested by using samples of pure benzene with addition of
known proportion of the corresponding sulphur compounds (thiophene
- Table 1; elemental sulphur - Table 2; mercaptons - Table 3).
It is concluded that the sensitivity of methods of determining the
individual sulphur compounds as percent of sulphur is as follows:
Thiophene (isatin tests) down to 0.00005% elemental sulphur
(copper strip) - down to 0.0005%; mercaptons (doctor's test) -
down to 0.0002; carbon disulphide (reaction with diethylamine) -
down to 0.0001%. The main impurities in pure benzole are hydro-
carbons of paraffin and cycloparaffin series, n-heptane, cyclo-
hexane, dimethylpentanes and methyl cyclopentane (Table 4). The

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S/068/60/000/003/002/003
E071/E233

Impurities in Pure Benzole

determination of non-aromatic impurities can be done cryoscopically using the following formula: $x = 1.80 \cdot \Delta t$, where x – content of non-aromatic hydrocarbons in wt.%, and Δt – temperature depression. The accuracy of the equation in which the mean molecular weight of non-aromatic impurities was taken as 92 is sufficient for the purpose (Table 5). On careful rectification non-aromatic compounds are concentrated in the head and final fractions (Table 6) and by combining various fractions the quality of the pure benzole can be controlled (Table 7). The influence of the toluene content on the boiling range of benzole is shown in Table 8. By limiting the boiling range of benzene to 0.5-0.6°C, the content of toluene below 0.1% can be guaranteed. The content of nitriles in various pure benzoles expressed in mg of ammonia per litre (Table 9) varies from 5-10 mg/l. In the content of naphthalene in pure benzole on average about 0.01%. The synthesis grade of benzole obtained by redistillation the naphthalene content should not exceed 0.001%. There are 9 tables and 18 references: 5 Soviet and 13 non-Soviet.

ASSOCIATION: UKhIN
Card 2/2

KOLYANDR, L.Ya.; FOMENKO, G.M.; STARKOVA, L.S.

Obtaining industrial carbon disulfide of a higher quality. Koks
i khim. no.9:44-46 '62.   (MIRA 16:10)

1. Ukrainskiy uglekhimicheskiy institut.
        (Carbon disulfide)   (Coke industry—By-products)

KOLYANDR, L.Ya.; FOMENKO, G.M.; STARKOVA, L.S.

Ways to increase the yield and improve the quality of
dicyclopentadiene. Koks i khim. no.12:29-34 '63.

(MIRA 17:1)

1. Ukrainskiy uglekhimicheskiy institut.

PETROV, L.A.; FOMENKO, G.N.; KACHEGIN, V.F.

Advantage of using wood and concrete rod bolting. Gor.zhur.
no.10:72-73 O '64.   (MIRA 18:1)

1. Sibirskiy proyektnyy nauchno-issledovatel'skiy institut
tsvetnoy metallurgii (for Petrov, Fomenko). 2. Glavnyy inzh.
Sovetskogo rudnika Krasnoyarskogo soveta narodnogo khozyaystva
(for Kachegin).

FOMENKO, G.N., aspirant

Rhinoplasty in herd bulls. Veterinariia 42 no.10:60-62 O '65.

(MIRA 18:10)

1. Khar'kovskiy zootekhnichesko-veterinarnyy institut.

S/058/63/000/001/017/120
A062/A101

AUTHOR: Dimov, G. I., Fomenko, G. P.

TITLE: Betatron with a toroidal magnetic field

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 41, abstract 1A384
              (In collection: "Elektron. uskoriteli." Tomsk, Tomskiy un-t,
              1961, 91 - 99)

TEXT: The motion of electrons in a betatron with an additional toroidal
magnetic field directed along the orbit has been studied approximately. On the
basis of this study a conclusion is drawn on the possibility of stable accelera-
tion of particles in such a betatron; for an efficient injection a large rate of
increase of the toroidal magnetic field is then required. It is maintained that,
due to the increase of focusing, the intensity of accelerated particles in the
betatron considered is higher by 3 - 4 orders than in the conventional betatron
and is determined chiefly by the magnitude and rate of increase of the toroidal
magnetic field.

                                                          A. Fateyev

[Abstracter's note: Complete translation]

Card 1/1

L 33161-65   EWT(m)/EPA(w)-2/E*A(m)-2   Pt-10/Pab-10   IJP(c)
ACCESSION NR: AP6005231   S/0057/65/035/002/0293/0297

AUTHOR: Didenko, A.N.; Fomenko, G.P.

TITLE: Influence of beam loading on the shunt resistance of the accelerating sys-
tem of a cyclic electron accelerator

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.2, 1965, 293-297

TOPIC TAGS: cyclic accelerator, synchrotron, linear accelerator, resonator Q factor

ABSTRACT: The influence of beam loading on the operation of a cylindrical resonant
electron accelerator is discussed theoretically. The electron beam is assumed to be
... the bunches to have negligible dimens... The ... ...
... ...ated by expanding in normal modes of the ... ... and an
... derived for the energy lost by the beam t... this field. The q of the
accelerator cavity is expressed in terms of an equivalent shunt resistance and a
... derived for the voltage in the acc... ... g... ... ...
... the power applied, and the charact... ... ...
... ...ower and beam characteristics ... is an optimum equivalent

Card 1/2

L 33161-65
ACCESSION NR: AP5005231

shunt resistance that produces maximum acceleration. The results are illustrated by calculations relating to the Cambridge Electron Accelerator (CEA-81 1960). It is found that with a power of 300 kW and a bunch size of 2.6×10^9 particles the optimum equivalent shunt resistance is 300 megohm. The actual equivalent shunt resistance of 120 megohm would be optimal if the bunch size were 4.8×10^9 particles. Orig. art. has 16 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 10Apr64   ENCL: 00   SUB CODE: NP,EM

NR REF SOV: 005   OTHER: 003

AUTHOR: Minenko, L.I.; Fomenko, G.P.

TITLE: Investigation of the electron beam from a ring gun

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.4, 1965, 705-710

TOPIC TAGS: electron beam, space charge, injector, betatron, ring gun, electron gun

ABSTRACT: The authors are interested in a method of betatron injection proposed
by G.I.Dimov (Izv. VUZov,Fizika 1,62-71,1957) that employs a hollow conical con-
verging electron beam. In the present paper they calculate the influence of space
charge on the motion of the electrons in the region of the crossover and report re-
sults of measurements with an experimental beam. The inner and outer diameters at
the gun of the 1.6 A experimental beam of 10 kev electrons were 5.5 and 6.3 cm, re-
spectively. The vertex angle of the conical beam was 2 x 13°, and the focus (cross-
over) was accordingly 15 cm from the gun. Preliminary observation of the beam was
performed with a movable fluorescent screen, and the current distribution was mea-
sured with a multiple collector. Information concerning the radial velocity distri-
bution in the beam was obtained by examining the cross-section variation of the

Card 1/2

L 43201-65
ACCESSION NR: AP5010808

portion of the beam that passed through a 0.5 mm diameter aperture in a screen. It was found that when the space charge was sufficiently great the hollow conical con- ... became, after the crossover, a solid diverging beam with the maximum ... on the axis. Moderate discrepancies between theory and experiment ... the influence of ionized molecules of the residual gas the pres- ... was (1-3) x 10^{-6} mm Hg. A future study of betatron ... with hollow conical electron beams is promised. Orig.art.has: 10 formulas and 6 figures (02)

ASSOCIATION: none

SUBMITTED: 11Jun64   ENCL: 00   --   SUB CODE: NP

NO REF SOV: 006   OTHER: 001   ATD PRESS: 3242

Card 2/2

L 11429-67   EWT(m) IJP(c)   SOURCE CODE: UR/0057/66/036/009/1560/1568
ACC NR: AP6031260

AUTHOR: Didenko, A. N.; Fomenko, G. P.

ORG: None

TITLE: The use of high-frequency fields for focusing particles in cyclic accelerators

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1560-1568

TOPIC TAGS: particle accelerator, circular accelerator, focusing accelerator, electron optics, alternating electromagnetic field, high frequency, strong focusing

ABSTRACT: The authors discuss the focusing by high-frequency electromagnetic fields of charged particles moving in a toroidal track of circular or rectangular cross section. It is shown that strong focusing can be achieved in a weak-focusing accelerator with the aid of either traveling or standing waves. Conditions for the stability of the motion and expressions for the strength of the focusing are derived. For strong focusing, the high frequency magnetic field must be stronger than the dc guiding field, and focusing is most readily achieved with traveling waves propagating in the direction opposite to that of the motion of the particles. In the calculations for the toroidal track with circular section it was assumed that the high frequency field has the same form as in a straight waveguide of circular section. The equations of motion of a particle in the presence of TE waves reduce for zero wave frequency to those for a

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L 11429-67
ACC NR: AP6031260

particle moving in a p-fold helical field (p is an integral parameter) and, for the values of 2 and 3 of p, to the equations of motion obtained by V.S.Zakharov and M.S. Rabinovich (ZhTF 34, 1986, 1992, 1964) for a charged particle in a double or triple helical field. In the case of a toroidal track of rectangular cross section the high frequency fields in a straight waveguide cannot be employed in the calculations because the curvature of the track lifts the degeneracy of the TE and TM modes. For the rectangular cross section calculations the field is expanded in LE and LM waves, and results analogous to those for the circular cross section case are obtained. In all these calculations it is assumed that the component of the velocity of the particle in the direction of the track is constant. In a final section a criterion for the validity of that assumption is derived and an integral of motion is obtained with the aid of which corrections can be calculated in case the criterion is not met. Orig. art. has: 29 formulas.

SUB CODE: 20/   SUBM DATE: 08Oct65/   ORIG REF: 020/   OTH REF: 004

Card 2/2   bab

Fomenko, D.E.

AUTHOR   SKLYAREVSKIY,V.V., FOMENKO, D.E., STEPANOV,E.P.   PA - 2669
TITLE   Investigation of U^{235} Fission γ-Rays in the Energy Range up to
              250 keV
              (Izlucheniye γ-luchey deleniya U^{235} v oblasti energiy do 250 keV-
              Russian)
PERIODICAL   Zhurnal 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 demonstra-
              ted in a sketch. An ionization chamber with a layer of U^{235} was
              placed into a bundle of thermal neutrons of a reactor. The spec-
              trum of the γ-rays was measured by means of a scintillation spec-
              trometer with NaJ(Tl) crystal.
              The results and their discussion: Several diagrams show the spec-
              tra 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 ne-
              utrons by the iodine nuclei in the NaJ(Tl) crystals. The peak at
              75 keV characterizes the Roentgen-K-radiation of lead which is cau-
Card 1/2   sed in the protective layer (surrounding the crystal) by γ-rays

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

and fission neutrons. The spectra were recorded in different po-
sitions of the crystal and they have almost identical shapes but
different intensities. The spectrum of the γ-rays which are crea-
ted 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 fis-
sion fragments. The life span of these states ($\sim 10^{-9}$sec) obvious-
ly indicates a dipole-like character of the transitions. To the
quadrupole transition with the life span of 10^{-9} sec there corre-
sponds a quadrupole moment of the nucleus of $\sim 2.5.10^{-24}$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

FOMENKO, G., starshiy radiomaster.

Shock absorber for Kulikov's antenna. Voen. sviaz; 16 no.5:47
My '58.   (MIRA 11:5)

(Radio—Antennas)

Fomenko G. M.

68-58-2-10/21

AUTHORS: Kolyandr, L.Ya., Orlov, M.L., Tyaptina, M.I. and Fomenko, G.M.

TITLE: Production of High-quality Benzole for Organic Synthesis (Polucheniye vysokokachestvennogo benzola dlya organicheskogo sinteza)

PERIODICAL: Koks i Khimiya, 1958, Nr 2, pp 44 - 46 (USSR)

ABSTRACT: A new standard for benzole for synthesis I, introduced in September, 1957, required a very low concentration of thiophene (0.005%). An investigation was carried out in order to study the process of purification of benzole-toluole fraction up to the limits required for the benzole synthesis I and to develop the optimum scheme for the production of such benzole. The investigation of the appropriate fractions from Zaporozhe and Bagleysk Coke Oven Works (Table 1) under laboratory conditions was carried out. At first, a direct washing of the whole fractions was tested (Table 2); the results obtained indicated that this method of purification is unprofitable. Therefore, the following investigations were carried out: 1) Separation of BTX (mixed) fraction into a narrow benzole fraction and a toluole-xylole fraction with their subsequent treatment to a required purity; 2) The usual washing of mixed fraction to limits required to obtain pure products

Card1/2

68-58-2-10/21
Production of High-quality Benzole for Organic Synthesis

(bromine numbers benzole $\leqslant 0.6$;   toluole $\leqslant 0.3$) with subsequent washing of pure benzole to the required standard. Experimental results are given in Tables 3-5. It is concluded that for Southern works, the second scheme is most suitable, but for Eastern works, which deal with low-sulphur products, the first scheme may be more rational. It is pointed out that both methods of production of benzole for synthesis are imperfect and that further research is necessary. There are 5 tables and 6 references, 2 of which are Soviet, 2 English, 1 French and 1 German.

ASSOCIATION: UKhIN

AVAILABLE: Library of Congress
Card 2/2

1. Benzole - Production   2.   Benzole - Purification
3. Benzole - Synthesis

SOV/68-58-11-13/25

AUTHORS: Kolyandr L.A., Tyaptina M.I., and Fomenko G.M.

TITLE: The Composition of Crude Benzole (Sostav Syrogo Benzola)

PERIODICAL: Koks i Khimiya, 1958, Nr 11, pp 38-42 (USSR)

ABSTRACT: Chemical composition of crude benzole is discussed taking as an
             example of crude benzoles obtained by coking of Donets
             coals. The influence of coking temperature within ranges
             950, 1000-1050 and 1050-1100°C on the composition of
             crude benzole is given in Table 1, typical composition
             of raw benzole in Table 2, the distribution of
             unsaturated hydrocarbons between the individual benzole
             fractions in Table 3, and its dependence on coking
             temperature in Table 4; the types of sulphur compounds
             and their distribution between various benzole fractions
             in Tables 5-7, the distribution of saturated compounds
             between various benzole fractions in Table 8 and their

Card 1/2

The Composition of Crude Benzole   SOV/68-58-11-13/25

        influence on the properties of benzole and xylole
        fractions in Tables 9 and 10 respectively.
        There are 10 tables and 5 references (3 Soviet and
        2 German)

ASSOCIATION: UKhIN

Card 2/2

S/068-x/60/000/008/001/003
E071/E435

AUTHORS: Kolyandr, L.Ya., Tyaptina, M.I. and Fomenko, G.M.

TITLE: The Composition and Yield of Xylole, a By-Product of
the Coal Carbonization Process

PERIODICAL: Koks i khimiya, 1960, No.8, pp.41-44

TEXT: The composition of technical xylole, a by-product of the
coal carbonization process, was little investigated, mainly due to
lack of reliable methods and the lack of demand for the individual
isomers.   In the paper, the yield and composition of xylole
produced on 9 coking works was investigated using mean dynamic
samples for the fourth quarter of 1957.   In addition to xylole
fraction a part of xylole remains in heavy benzole and solvent
naphtha; it was therefore necessary to determine the content of
xylole in the above two products (Table 1).   The determination of
the xylole content was done by careful rectification using a
column equivalent to 30 theoretical plates at reflux ratio of 5 - 6,
whereupon the fraction boiling at 135.0 to 144.5°C was considered
as xylole.   The distribution of xylole between the individual
products was found to be as follows: 78.8% pure xylole fraction

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S/068-x/60/000/008/001/003
E071/E435

The Composition and Yield of Xylole, a By-Product of the Coal
Carbonization Process

(GOST 10465-39), 13.1% solvent naphtha (GOST 1923-50) and
8.1% heavy benzole.   The content of the individual isomers in
technical xylole as well as in xylole separated from solvent
naphtha and heavy benzole was determined by the spectrophotometric
method.   In addition, paraxylole was determined cryoscopically
and methaxylole was determined by the usual method through
trinitromethaxylole.   Non-aromatic admixtures (paraffins and
naphthenes) were determined spectrophotometrically (the difference
between 100 and the sum of determined aromatics) and by the usual
method; sulphonation with 98% sulphuric acid (at 20° for 20 min).
The content of toluol was determined by rectification.   The
composition of xyloles from the individual works was found to be
similar and is given in Table 2.   On the average, the composition
of technical xylole was as follows, in % :   ethylbenzene 4.8;
paraxylene 21.1; methaxylene 58.0; orthoxylene 13.5;
toluene 1.3; non-aromatic and other admixtures 1.3.   The
composition of xyloles separated from solvent naphtha and heavy
benzole was, on average, as follows: 3.6% ethylbenzene:

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S/068-x/60/000/008/001/003
E071/E435

The Composition and Yield of Xylole, a By-Product of the Coal
Carbonization Process

16.5% paraxylene; 48.5% methaxylene; 28.5% orthoxylene;
2.9% unsaturated and other admixtures (for individual work see
Table 3). The average overall composition of xylole was:
4.5% ethylbenzene; 20.1% paraxylene; 56% methaxylene;
17% orthoxylene; 2.4% unsaturated and other admixtures; it
differs from the equilibrium composition (given in Table 4).
The following yield of the individual isomers was obtained from
raw benzole (mean sample for the fourth quarter 1957);
0.23% ethylbenzene; 0.97% paraxylene; 2.70% methaxylene;
0.82% orthoxylene. There are 4 tables and 5 references:
3 Soviet, 1 English and 1 German.

ASSOCIATION: UKhIN

Card 3/3

FOMENKO, G. S.

NEKRYACH, Ye.F. [Nekriach, IE.F.]; NAZARENKO, Yu.P.; CHERNETSKIY, V.P.,
[Chernets'kyi, V.P.]; BABKO, A.K., akademik, otv.red.; ROZUM,
Yu.S., kand.khim.nauk, red.; FIALKOV, Ya.A., red. [deceased];
FOMENKO, G.S. [Fomenko, H.S.], kand.khim.nauk, red.; SHEKA,
I.A., prof., doktor khim.nauk, red.; GNATYUK, G.M. [Hnatiuk, H.M.],
red.-leksikograf; POKROVSKAYA, Z.S. [Pokrovs'ka, Z.S.], red.izd-va;
YEFIMOVA, M.I. [IEfimova, M.I.], tekhn.red.

[Russian-Ukrainian chemical dictionary; 6000 words and terms] Russko-
ukrainskii khimicheskii slovar'; 6000 terminov. Sost.E.F.Nekriach,
IU.P.Nazarenko i V.P.Chernetskii. Kiev, 1959. 204 p.
                                                    (MIRA 13:4)
1. Akademiya nauk USSR, Kiyev. 2.AN USSR (for Babko). 3. Chlen-
korrespondent AN USSR (for Fialkov).
            (Chemistry--Dictionaries)
        (Russian language--Dictionaries--Ukrainian)

ABRAMOVA, T.M.; GANKINA, I.L. [Hankyna, I.L.]; FOMENKO, G.S. [Fomenko, H.S.]

    Investigating cathode reduction of oxygen to hydrogen peroxide on a
carbon-nickel electrode. Dop.AN URSR no.9:974-976   '58.
                                     (MIRA 11:11)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR. Predstavil
akademik A.I.Brodskiy [O.I.Brods'kyi].
                (Hydrogen peroxide)

NEKRYACH, Ye.F. [Nekriach, IE.F.]; NAZARENKO, Yu.P.; CHERNETSKIY, V.P.
[Chernets'kyi, V.P.]; [Babko, A.K.], akademik, otv.red.;
ROZUM, Yu.S., kand.khim.nauk, red.; FIALKOV, Ya.A. [deceased],
red.; FOMENKO, G.S. [Fomenko, H.S.], kand.khim.nauk, red.;
SHEKA, I.A., prof., doktor khim.nauk, red.; GNATYUK, G.M.
[Hnatiuk, H.M.], red.-leksikograf; POKROVSKAYA, Z.S.
[Pokrovs'ka, Z.S.], red.izd-va; YEFIMOVA, M.I. [IEfimova, M.I.],
tekhn.red.

[Russian-Ukrainian chemical dictionary; 6000 words] Rossis'ko-
ukrains'kyi khimichnyi slovnyk; 6000 terminiv. Kyiv, Vyd-vo
Akad.nauk URSR, 1959. 204 p.   (MIRA 15:5)

1. AN USSR (for Babko). 2. Chlen-korrespondent AN USSR (for
Fialkov).
                (Chemistry—Dictionaries)
            (Russian language—Dictionaries—Ukrainian)

BIBIKOV, I.; DEREVYANKO, K.; KAZACHKO, V.; KIRICHENKO, I.; KUCHER, N.;
    MACHUKHO, A.; NABATNIKOV, P.; SOKOLOV, D.; SIVOKON' Ya; US, V.;
    SHCHIGALEV, V.; BURAVENKO, N.; KOVSHAROV, S.; SOKOLOV, S.;
    ZAGORUL'KO, S.; TSYBA, M.; FOMENKO, I.; LYAKHOVETSKIY, M.

Let us help farmers grow an abundant crop. Grazhd. av. no.3:3
Mr '61.   (MIRA 14:3)
            (Aeronautics in agriculture)

S/182/60/000/007/012/016/XX
A162/A020

AUTHORS: Zaykovskiy, G.S.; Dytynenko, M.I.; Fomenko, I.A.

TITLE: New Technological Process for Stamping of Connecting Rods

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 7, pp. 15 - 17

TEXT: The forging of connecting rods at several Soviet plants is describ-
ed. At the Automobile Plants of Gor'kiy and the Moscow Plant imeni Likhachev
the process is time-consuming and requires much skill from the press operator.
Eleven forming stages are necessary. The technology of the process has been im-
proved at the Moskovskiy zavod malolitrazhnykh avtomobiley (Moscow Small-Capaci-
ty Automobile Plant). The two connecting rods are stamped simultaneously from
one billet on a 2,000-ton mechanical forging press in three operations (Fig. 2).
A different, simpler and swifter process is used at the Luganskiy zavod imeni
20-letiya Oktyabrya (Lugansk Plant imeni of the 20-th October Anniversary) for
manufacturing the "Moskvich" automobile connecting rod. It consists of a machine
line (Fig. 3) and includes forging rolls and hot stamping presses. The billets
are cut from a 42-mm round rolled bar of "45" steel on shears in the line. The
40-ton forging rolls are shown in a photo (Fig. 5). The billet passes from the

Card 1/3
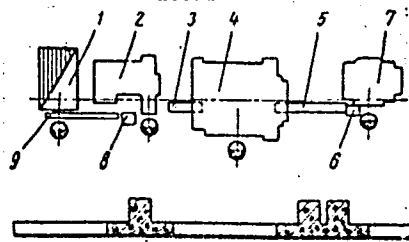
New Technological Process for Stamping of Connecting
Rods

rolls to a 1,600-ton crank press which gives it its final shape in three strokes.
The ridges are coined afterwards on a 2,000-ton coining press. The forging rolls
operations with 3 passes requires 5-6 sec. A 30-mm shorter billet is needed for
the process and is three times as productive as stamping in presses, 323 g of
metal are economized on every rod, i.e., 21%, and the mechanical properties of
rolled billets are higher.

Figure 2:
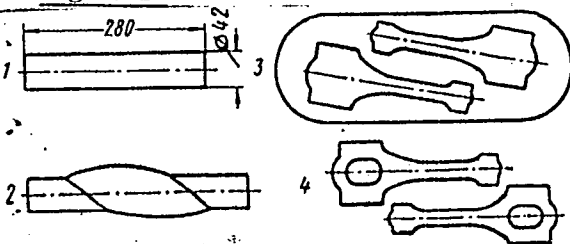
Technological Process for Stamping Con-
necting Rods on M3MA(MZMA): 1-billet for
2 parts; 2-distortion bending; 3-stamping
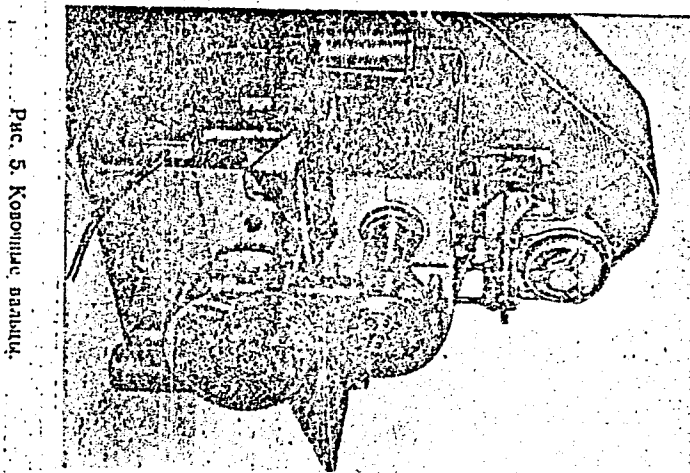Card 2/3   in 2 operations; 4-trimming.

Figure 3:

Machine Line: 1-heating furnace; 2-
forging rolls; 3-hot-stamping crank
press with a force of 1,600t; 5,9-chain
transporters; 6,8-tables; 7-trimming
crank press.

S/182/60/000/007/012/015/XX
A162/A0

New Technological Process for Stamping of Connecting Rods

Figure 5:

Forging Rolls

Рис. 5. Ковочные вальцы.

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