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ASSONOV, A.D., kand.tekhn.nauk; LAKEDEMONSKIY, A.V.; PROSYANIK, G.V.

Shell molding of gears. Avt.prom. no.1:28-30 Ja '59. (MIRA 12:1)

1. Moskovskiy avtozavod imeni Likhacheva.
(Shell molding (Founding))

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

AUTHOR: Assonov, A.D., Candidate of Technical Sciences SOV/129-59-5-11/17

TITLE: New Process of Heat Treatment of Forgings (Novyy protsess termicheskoy obrabotki pokovok)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 5, p 51 (USSR)

ABSTRACT: Forgings cooled down slowly from the heating temperature will contain a mechanical mixture of lamellae of ferrites and carbides and also perlitic islands. The speed of formation of perlitic islands determines the quantity of pearlitic inclusions and their dimensions. In the case of slow cooling this speed increases only slightly and, due to diffusion of carbon atoms, the size of the perlitic section increases. Forging is stopped at temperatures above the Ac_3 point and, therefore, the forgings can be placed at a lower temperature into the chamber for slow cooling. The cooling is usually carried out according to the schedule for "softening" or high temperature annealing. In the case of softening annealing, a structure with granular perlite is obtained which is unfavourable for heat treatment of case hardened low carbon steels. However, for steels with carbon contents above 0.5% C such a structure is permissible.

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New Process of Heat Treatment of Forgings SOV/129-59-5-11/17

In the first case it is necessary to place forgings into a container for slow cooling at a temperature above the Ac_3 point and in the case of slow cooling, coarser perlitic formations will be obtained, i.e. a structure which is favourable from the point of view of machining. During subsequent carburization and case hardening, the austenitic grain size can become the same as it was during delivery. For obtaining minimum deformations during hardening it is necessary to use a fine grain steel with an austenitic grain size of 8-7 "balls". Cooling of the forgings in the container should not be too slow since this may cause a great deal of coagulation of carbides which reduces the hardenability of the steel. The cooling time is selected as a function of the grade of the steel and the mass of the metal charged into the container. Slow cooling can be applied to forgings made of any constructional steel. If the steel has a short incubation period of the perlitic transformation, isothermal treatment can be applied. Such isothermal holding at certain temperatures during cooling from the forging temperature can be applied to the steels 18KhGT,

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New Process of Heat Treatment of Forgings SOV/129-59-5-11/17

30 KhGT, 20KhGTR. The steels 12Kh2N4A and 18KhNVA should be cooled slowly. Isothermal treatment (holding) is favourable since it permits utilising automated equipment in which the forgings are maintained at a given temperature. The here described technological process permits using a continuous flow of forgings in the forging section and eliminates the necessity for transportation into the heat treatment shop. In addition, verification of the hardness can be dispensed with due to the fact that uniform cooling of the entire mass of the metal is ensured. In the case of slow cooling of the forgings, as soon as they are full, the containers should be moved from the forging shop into the cooling drums of the cleaning section; the forgings should be discharged only after having cooled down to a temperature below the Ac_1 point. The heat content of the forging

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New Process of Heat Treatment of Forgings SOV/129-59-5-11/17

heating can also be utilised for improving forgings made of carbon and alloy steels.
(Note: This is a complete translation with the exception of the first 4 paragraphs.

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BELOV, N.Ya.; ASSONOV, A.D.; CHIZHIK, A.I.; ZAMOTAYEV, S.P.; BUTOMO, D.G.; SERGEYEV, L.N.; rukovoditel' issledovatel'skoy gruppy; MASUROVA, A.I.; SHUBIN, G.N.; NOVIK, A.A.; PODSHIVALOV, R.N.; ALEKSO, A.I.; KUZ'MINA, L.I.; KORF, D.M.; KOZACHENKO, N.S.

Articles and suggestions of supervisors of central industrial laboratories. Zav. lab. 25 no.1:5-22 '59. (MIRA 12:1)

1.Nachal'nik TSentral'noy zavodskoy labotarorii Kirovskogo mashinostroitel'nogo zavoda (for Belov). 2.Glavnyy metallurg Avtozavoda imeni Idkhacheva (for Assonov). 3.Nachal'nik TSentral'noy zavodskoy laboratorii Leningradskogo metallicheskogo zavoda imeni Stalina (for Chizhik). 4.Nachal'nik TSentral'noy zavodskoy laboratorii Uralmashzavoda, g. Sverdlovsk (for Zamotayev). 5.Nachal'nik TSentral'noy laboratorii zavoda "Krasnyy Vyborzhets" (for Butomo). 6.Laboratoriya zavoda "Krasnyy Vyborzhets" (for Sergeyev). 7.Nachal'nik khimicheskoy laboratorii metallurgicheskogo zavoda imeni Petrovskogo (for Masurova). 8.Nachal'nik TSentral'noy laboratorii Verkh-Isetskogo metallurgicheskogo zavoda (for Shubin). 9.Zamestitel' nachal'nika TSentral'noy zavodskoy laboratorii zavoda imeni Malysheva, g. Khar'kov (for Novik). 10.Zamestitel' nachal'nika TSentral'noy zavodskoy laboratorii Sverdlovskogo turbomotornogo zavoda (for Podshivalov). 11.Nachal'nik eksperimental'nogo otdela Spetsial'nogo konstruktorskogo byuro Sverdlovskogo turbomotornogo zavoda (forAlekso). 12.Nachal'nik TSentral'noy laboratorii Okhtinskogo khimicheskogo kombinata (for Kuz'mina). 13.Nachal'nik TSentral'noy laboratorii zavoda "Krasnyy khimik" (for Korf). 14.Nachal'nik TSentral'noy zavodskoy laboratorii Kiyevskogo mashinostroitel'nogo zavoda "Bol'shevik" (for Kozachenko).

(Chemical engineering laboratories)(Testing laboratories)

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AUTHOR: Assonov, A. D., Chief Metallurgist of the Automobile Factory imeni Likhachev SOV/32-25-1-3/51

TITLE: Articles and Suggestions of the Directors of the Central Factory Laboratories in Connection With the Theses Laid Down by Party Member N. S. Khrushchev at the XXI Congress of the CPSU "Control Figures of the Development of National Economy of the USSR in the Years 1959-1965" (Stat'i i predlozheniya rukovoditeley Tsentral'nykh zavodskikh laboratoriy v svyazi s tezisami doklada tovarishcha N. S. Khrushcheva na XXI s"yezde KPSS "Kontrol'nyye tsifry razvitiya narodnogo khozyaystva SSSR na 1959-1965 gg.")

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 7-8 (USSR)

ABSTRACT: It is pointed out that the achievements of science and technique in recent years have to be made use of in the automation of working processes and of shifting of objects from one working operation to another. The factory laboratory workers are called on to contribute towards the solution of these tasks. Also the quality of metals and that of finished products is to be improved. A selection of steel types with respect to hardening allows an exchange of nickel steels by

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Articles and Suggestions of the Directors of the Central Factory Laboratories in Connection With the Theses Laid Down by Party Member N. S. Khrushchev at the XXI Congress of the CPSU "Control Figures of the Development of National Economy of the USSR in the Years 1959-1965" SOV/32-25-1-3/51

steels with special additions. These last mentioned steels are easy to work on and have a short incubation period of the perlite transformation. They allow an increased cutting speed and an isothermal hardening of complicated parts. A high frequency heating on hardening instead of on cementing is to be introduced, as an alloying of the steel can thus be avoided and operating time can be cut from a few hours to a few seconds. By heating the air blasted into the pit furnaces, an acceleration of the melting process and an increase of the metal temperature as well as a decrease of the coke consumption would be made possible. The melting in vacuum, as well as the casting in vacuum would serve to increase the metal strength and would permit to cast the parts instead of punching them.

ASSOCIATION: Avtozavod im. Likhacheva (Automobile Factory imeni Likhachev)

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ASSONOV, A.D., kand.tekhn.nauk

Autumn conference of the French Metallurgical Society held on October 17-21, 1960. Metalloved. i term. obr. met. no.5:63-64 My '61. (MIRA 14:5)

(Metallurgy--Congresses)

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ASSONOV, A.D.

In the laboratories of the Moscow Automobile Factory.
Zav.lab. 26 no.7:895-897 '60. (MIRA 13:7)

1. Glavnyy metallurg zavoda imeni Likhacheva.
(Moscow--Metallurgical laboratories)

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Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Metallovedeniye i termicheskaya obrabotka (Physical Metallurgy and Heat Treatment of Metals) Moscow, Mashgiz, 1961. 330 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov UkrSSR. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Editorial Board: M. P. Braun, Doctor of Technical Sciences, I. Ya. Dekhtyar, Doctor of Technical Sciences, D. A. Draygor, Doctor of Technical Sciences, I. S. Kamenichnyye, Engineer, Ye. A. Markovskiy, Candidate of Technical Sciences, V. G. Permyakov, Doctor of Technical Sciences, and A. V. Chernovol, Candidate of Technical Sciences; Ed.: M. S. Soroka; Tech. Ed.: M. S. Gorncstaypol'skaya; Chief Ed., Mashgiz (Southern Dept.): V. K. Serdyuk, Engineer.

Card 1/10

PURPOSE: This collection of articles is intended for scientific workers and technical personnel of research institutes, plants, and schools of higher technical education.

COVERAGE: The collection contains papers presented at a convention held in Kiyev on problems of physical metallurgy and methods of the heat treatment of metals applied in the machine industry. Phase transformations in metals and alloys are discussed, and results of investigations conducted to ascertain the effect of heat treatment on the quality of metal are analyzed. The possibility of obtaining metals with given mechanical properties is discussed, as are problems of steel brittleness. The collection includes papers dealing with kinetics of transformation, heat treatment, and properties of cast iron. No personalities are mentioned. Articles are accompanied by references, mostly Soviet.

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ASSONOV, A.D., kand.tekhn.nauk

Autumn conference of the French Metallurgical Society on October 17-21, 1960. Metalloved. i term. obr. met. no.6:63-64, 3 of cover. Je '61. (MIRA 14:6)

(Metallurgy—Congresses)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, A.D.

Vacuum heating. Biul.tekh.-ekon.inform. no.8:85-87 '61.
(Vacuum technology) (Furnaces, Heating) (MIRA 14:8)

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ASSONOV, A.D., kand.tekhn.nauk

New steel brands for making pinions and processes for their heat treatment. Vest.mash. 41 no.8:45-49 Ag '61. (MIRA 14:8)
(Steel--Heat treatment)

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VASILEVSKIY, P.F., kand. tekhn. nauk; DEMAKOV, A.Ye.; PLEKHANOV, P.N.; ASSONOV, A.D.; VLASOV, V.I.; KANEVSKAYA, T.B.; SHLENTSOV, K.G.; RYZHIKOV, A.A.; RUBTSOV, N.N., zasl. deyatl' nauki i tekhniki RSFSR, doktor tekhn. nauk prof., red.; MARTENS, S.L., red. izd-va; EL'KIND, V.D., tekhn. red.

[Handbook on founding; shaped steel casting] Spravochnik liteishchika; fasonnoe stal'noe lit'e. [By] P.F.Vasilevskii i dr. Pod obshchei red. N.N.Rubtsova. Moskva, Mashgiz, 1962. 611 p. (MIRA 15:6)

(Founding--Handbooks, manuals, etc.)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

SAMOKHOTSKIY, A.I.; ~~ASSONOV, A.D.~~, kand. tekhn. nauk; FRID, L.I., inzh., red.; EL'KIND, V.D., tekhn. red.

[Technology of the heat treatment of metals]Tekhnologiia termicheskoi obrabotki metallov. Moskva, Mashgiz, 1962. 427 p. (MIRA 16:2)

(Metals--Heat treatment)

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BELYAYEV, N.V.; ASSONOV, A.D., kand. tekhn. nauk, retsenzent; KANTIN, Ya.A., inzh., red.; STEPANCHENKO, N.S., red.izd-va; GORDEYEVA, L.P., tekhn. red.

[Induction heating practices in forging] Praktika induktsionnogo nagreva v kuznechnom proizvodstve. Moskva, Mashgiz, 1963. 149 p. (MIRA 17:1)

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ASSONOV, A.D.

New developments in heat treating procedures at the Moscow Automobile Plant. Metalloved. i term. obr. met. no.6:2-4 Je '63. (MIRA 16:6)

(Moscow—Steel, Automobile—Heat treatment)
(Case hardening)

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YURGENSON, A.A.; ZELENSKAYA, G.I.; ASSONOV, A.D., doktor tekhn. nauk, retsenzent

[Metals for high-speed diesel engines and their heat treatment; a manual] Metally bystrokhodnykh dizelei i ikh termicheskaia obrabotka; spravochnoe posobie. Moskva, Izd-vo "Mashinostroenie," 1964. 266 p. (MIRA 17:7)

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ASSONOV, A.D., doktor tekhn. nauk; SIDORIN, I.I., doktor tekhn. nauk, prof., retsenzent; KOZLOVSKIY, I.S., kand. tekhn. nauk, dots., red.

[Modern methods of heat treatment] Sovremennye metody termicheskoi obrabotki. Moskva, Izd-vo "Mashinostroenie," 1964. 188 p. (MIRA 17:7)

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78133
SOV/129-60-3-12/16

AUTHOR: Assonov, A. D. (Candidate of Technical Sciences)

TITLE: Automation and Mechanization. Automation of Control Heat Treatment of Processes

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, Nr 3, pp 52-58 (USSR)

ABSTRACT: This is an article by the Candidate of Technical Sciences associated with Moscow Automobile Plant imeni I. A. Likhachev (ZIL) (formerly Moscow Automobile Plant imeni I. V. Stalin (ZIS)). It is devoted to Soviet possibilities regarding problems of organizing the complex automated and mechanized sections at various manufacturing plants. One of the first of these problems is the automation of die forging, heating, and heat treatment operations. The proposed sequence of operations is as follows: The workpieces are cut from the bar and are moved to the electric heater. After heating by high-frequency current, the workpieces are automatically transferred to die forging, are trimmed, and then transferred

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Automation and Mechanization. Automation of Control Heat Treatment of Processes

78133
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Into cooling chamber After cooling, they are transferred into the chamber of retarded cooling for hardening and tempering. Heating and die forging should be conducted in the protective atmosphere of argon. The author states that it is imperative to create in the next few years standard equipment for heat treatment of die forgings with utilization of the residual heat after flash removal. The next problem is the production of automated section for heat treatment of gears. The gears for gear boxes and main drives of automobiles and the gear boxes for tractors and various machine tools are as a rule made from the case-hardening types of steel. Therefore, there is a division (in accordance with existing technology) between the mechanical and heat treatment processes. The latter last for hours and are accompanied by the emission of large quantities of heat and gas. This retards the creation of complex continuous production lines, including the installations for mechanical and heat treatment The author states that the development of gas case-hardening and

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Automation and Mechanization [illegible]
of Control Heat Treatment of Products [illegible]

generation of gear teeth [illegible] heating by high-frequency current with subsequent [illegible] producing the right precision teeth profile. Since the means to solve the problem (on the basis of complex technology) of designing a fully automated section of gear production. The sequence of operations should be as follows: The workpiece comes to an automatic line, is roughed, and transferred to the machine tool for generation of teeth with heating by high-frequency current. Then the gear is transferred to the profiling machine (for final shaping of the teeth) and machining of central hole. The gear is transferred to the automatic machine for gas case-hardening with heating by high-frequency current and austempering; then it is transferred to washing and grinding. The time required for manufacturing the gear by this method is reduced to 2 hrs. Combination of such a section with the die forging section gives the solution for complex automation of gear production. The realization of such an idea is fully possible because a mechanized section of forging is being developed at Moscow Automobile Plant (Moskovskiy avtomobil'nyy zavod).

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Automation and Mechanization of Control Heat Treatment of Processes

Automation

SOV/[illegible]-60-3-19/[illegible]

A container installation for heat treatment of forgings, with utilization of forging heat, is also being developed there. Installations for gas case-hardening (single and double line types) and for teeth generation are also being created. The complex technology with automation is also possible in manufacturing of springs. The spring sheets are heated by high-frequency current and are bent in the hardening drums, with subsequent austempering and automatic assembling. All of the above became possible with application of high-frequency heating, which reduced the duration of heat treatment to minutes and seconds. Questions of automation are inevitably connected with questions of controls. Automatic devices for control of heating and cooling as well as for control of gas composition were developed. The Scientific Research Institute of Transportation of Automobile Industry (NIITAVTOPROM) developed a device for control of the degree of metal saturation by carbon. The author gives a brief review of similar U.S.

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[illegible]

ASSOCIATION: Moscow Automobile Plant im. I. A. Likhachev (ZIL)

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S/129/60/000/012/010/013
E193/E283

AUTHOR: Assonov, A. D., Candidate of Technical Sciences

TITLE: Promising Directions (of the Development) in the Technology of Heat Treatment

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No. 12, pp. 44-49

TEXT: Although the current heat-treatment technology at various Soviet machine building plants compares favourably, in many respects, with that in use abroad, the Soviet industry lags behind in the application of mechanized and automated processes. The present author discusses the means of remedying this state of affairs and suggests that any future improvements should aim at: 1 - utilization of the heat content of forgings in subsequent heat-treatment operations; 2 - application of H.F. induction heating in heat-treatment processes; 3 - application of isothermal treatment (austempering) for volume-and surface-hardening; 4 - incorporation of heat-treating equipment in the mechanized lines; 5 - development of automatic lines which would incorporate casting, forging, and mechanical and heat-treatment operations. In many

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E193/E283

Promising Directions (of the Development) in the Technology of Heat Treatment

cases, the modification of the existing processes may entail the application of different materials and different equipment. Thus, for instance, the nickel-chromium steels may have to be replaced by nickel-free steels with alloying additions such as titanium, boron, zirconium, chromium, etc. Steels 18ХГТ (18KhGT), 30ХГТ (30KhGT), 40ХГТ (40KhGT), 18ХГЦ (18KhGTs), 40Р (40R), 20ХГТР (20KhGTR) and 40ХГТР (40KhGTR), widely employed in the Soviet automobile and tractor industries, are typical examples of such materials. Special instrumentation would be required for the automatic lines which would have to include equipment such as automatic controller of the composition of carburizing gases or protective atmospheres, automatic gas mixers of the "Renereks" type, hermetically sealed salt baths, radiation furnaces, ceramic fans operating in the heating zones of the furnaces, and automatic materials-handling equipment. Gas-heated furnaces should also be automated, with the aid of instruments such as "Milliskop" (an optical pyrometer which automatically controls the heating operation and governs the action of

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E193/E283

Promising Directions (of the Development) in the Technology of Heat Treatment

the materials-handling mechanism). Based on the experience acquired at the Car Factory imeni I. A. Likhachev, the following modified schedule for forging steel components, is recommended: pre-heating to a temperature no higher than 1200°C; completing the forging operation at a temperature 100-150°C above Ac3; cooling the forging to Ac3 + 50°C; quenching in oil. Large economies can be attained in the manufacture of small case-hardened components by using low-hardenability steel and replacing case-hardening with surface-hardening. More use should be made of austempering, which permits closer dimensional control, and of other metal fabricating techniques such as shell-mould casting and investment casting. The author's recommendations are supported by tabulated data on comparative costs (production costs and capital outlay) of various heat-treatment processes. There are 3 figures, 1 table and 4 references; 3 Soviet and 1 non-Soviet.

ASSOCIATION: Moskovskiy avtomobil'nyy zavod (Moscow Car Factory)

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11110

S/129/61/000/007/015/016
E073/E535

AUTHOR: Assonov, A.D., Candidate of Technical Sciences

TITLE: Normalization Annealing by Electric Current Pulses

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No.7, p.58

The over-heated metal is characterized by a coarse grain structure. In practice, attempts are made to achieve a coarse grain structure by heating above the Ac_3 point and then cooling. For this purpose the process of normalization is [illegible]. The normalized steel has a pearlite or [illegible] structure into which the Widmanstaten structure which is characteristic for over-heated [illegible] becomes transformed. The process of diffusion takes a long time (hours) and depends on the thickness of the castings. The journal Schweissen und Schneiden No.9, 1957 contained an article "Normalization of over-heated carbon constructional steels with impulse currents" describing a method of refining the over-heated structure of carbon steels by means of 50 c/s current. Steel with 0.1 to 0.45% C was investigated. The specimens were heated to 1300°C for 30 min in a salt [illegible]

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Normalization Annealing by ...

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bath for the purpose of improving the over-heated structure. Experiments have shown that a pearlite ferrite structure can be obtained by heating the over-heated specimen with impulse currents for a few minutes. The heating is effected to a temperature slightly above Ac_3 without any holding time, since the latter would lead to a growth of the austenitic grains. In the intervals between the individual impulses, the specimen is cooled to 500-200°C. After each impulse of heating and cooling the structure becomes finer. The process can be stopped after any number of impulses. The finest structure is obtained after multiple heating and cooling if the temperature does not exceed Ac_3 + 50°C. Experimental verification of this process on steel [illegible] (30KhGT) has shown that the over-heated structure recovers immediately after a single heating to 950°C for 1 min by means of an induced current of 8000 c.p.s. This phenomenon can be explained by the fact that in the over-heated state (Widmanstatten structure), the solid solution is more uniformly alloyed with carbon and other elements which, due to the larger number of germinations, will result in obtaining a pearlite.

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Normalization Annealing by ... S/129/61/000/007/015/016
E073/E535

ferrite structure after the cooling which follows the impulse heating. According to data given in the literature, this method can be applied for improving the structure of weld seams.

[Abstractor's Note: This is a complete translation.]

ASSOCIATION: Moskovskiy avtomobil'nyy zavod (Moscow Automobile Works)

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28903
S/129/61/000/010/012/012
E071/E135

AUTHOR: Assonov, A.D., Candidate of Technical Sciences

TITLE: Intensification of heat treatment processes

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.10, 1961, 56-59

TEXT: The author considered that the Ac_3 point loses its importance as a characteristic indicator in the technology of heat treatment. Above the Ac_3 point up to the beginning of the melting phase transformations in a solid solution do not take place and therefore the problem of heating should be dealt with only on the basis of controlling diffusion processes inside the volume of the austenitic grains. An investigation of the mechanical properties of chromium nickelmolybdenum (0.13% C, 1.2 Cr, 4.2 Ni and 0.4 Mo) and 12Х2Н4А (12Kh2N4A) steels hardened from various temperatures showed that an increase in the hardening temperature considerably above the Ac_3 point of chromiumnickel steel does not lower its mechanical properties and thus the grain size cannot be used as a criterion of the strength of the steel. This is explained on the basis of the dislocation theory. An increase in the density of

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Intensification of heat treatment ... S/129/61/000/010/012/012
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dislocations with increasing hardening temperature is related to a more complete homogenation of the solid solution and work hardening during the $\alpha \rightarrow \gamma$ transformation; therefore a decrease in the density of dislocations after a certain degree of heating is related to the recrystallisation of austenite. The critical point corresponding to the maximum concentration of dislocations on the grain boundaries for the majority of steels is above 1200 °C, and for steels containing elements forming heat resistant carbides and possessing high affinity to sulphur this point is about 1300 °C. The author called temperatures from which after hardening there is no decrease in the strength of steel "extreme temperatures". The lower boundary of the "extreme zone" corresponds to obtaining a grain size not exceeding 5. The plastic properties of steel hardened from the temperatures of the "extreme zone" can be controlled by annealing conditions. It was established on the basis of X-ray and electron microscope studies of steel specimens heated to high temperatures that the stability of statistical indices of the strength for steels hardened from the "extreme zone" temperatures is due to the homogenation of the solid solution, an

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Intensification of heat treatment ... S/129/61/00/010/012/012
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increase in the density of dislocations on the grain boundaries of austenite, a decrease in the size of mozaic blocks and the formation of an optimal fine structure due to work hardening in the $\alpha - \gamma$ transformation during heating. The high temperature heating can be utilized for speeding up cementation during heating with high frequency currents, for the hardening of parts directly after stamping, for soldering with copper, for isothermal hardening of carbon steel tools, and for annealing of malleable iron.

There are 4 figures and 10 Soviet-bloc references.

ASSOCIATION: Moskovskiy avtomobil'nyy zavod imeni I.A. Likhacheva (Moscow Automobile Works imeni I.A. Likhachev)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

S/902/62/000/000/007/015
E193/E383

AUTHOR: Assonov, A.D.

TITLE: Combined forging with heat-treatment

SOURCE: Novyye protsessy obrabotki metallov davleniyem; doklady Soveshch. po novym prots. obrab. met. davleniyem v mashinostr., 1960. Ed. by V. D. Golovlev. Moscow, Izd-vo AN SSSR, 1962. 81 - 84

TEXT: The present paper is concerned with the practice of hardening forged steel parts by quenching them immediately after completing the forging operation. This practice, in wide use in the USA and west Germany, is now beginning to be adopted in the Soviet Union. Since preheating steel to relatively high forging temperatures can lead to excessive growth of the austenite grains which, in turn, can impair the mechanical properties of the steel, the possibility of successfully applying the technique under consideration depends on how the strength and plasticity of a given steel are affected by preheating it to temperatures considerably higher than its hardening temperature - hence the present

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investigation, conducted on steels 45, 40Р, (40R), 18ХГТ (18KhGT), 18ХГТЦ (18KhGTs), 30ХГТ (30KhGT), 30ХГТЦ (30KhGTTs) and 12Х2Н4А (12Kh2N4A). The experimental specimens were quenched from 950 - 1300 °C and tempered at 200 - 650 °C, after which the UTS, yield point, elongation, reduction in area and impact strength were determined. Analysis of the results led to the following conclusions: 1) There is a temperature range to which all the steels studied can be preheated without losing their mechanical properties. The upper limit of this range (approximately 1 250 °C) should be 100 °C below the temperature at which sulfur readily diffuses to the grain boundaries; the lower limit is the temperature at which the most stable carbides in a given steel go into solid solution (on heating). 2) A steel the least sensitive to overheating (and therefore the most suitable for combined forging and heat-treatment) should contain alloying additions (Ti, Mo, Ce, Zr, B) that promote degassing and deoxidation, form dispersed carbides stable at high temperatures and slow down the diffusion of sulfur. 3) The beneficial effect that preheating of steel to high temperatures has on its mechanical properties is associated with homogenization of the solid

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solution, strengthening of the mosaic-block grain boundaries and a decrease in the block dimensions. 4) The mechanical properties of steel are further improved by the grain-refining effect of the forging operation. This is demonstrated by data reproduced in Table 2 giving (in this order) the values of UTS (kg/mm^2), yield point (kg/mm^2), elongation (%), reduction in area (%) and impact strength (kgm/mm^2). There are 3 figures and 2 tables.

Table 2:

Type of Steel	σ_B, kg/mm^2	σ_T, kg/mm^2	δ, %	ψ, %	a_k, kgm/mm^2
40ХН (40KhN)	82	62	17	56	15
40Х (40Kh)	86	62	16	84	10
45	77	61	19	60	10

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L 41650-65 EWT(m)/T/EWP(t)/EWP(b) JD

ACCESSION NR AM5004508 BOOK EXPLOITATION S/

Assonov, A. D. (Doctor of Technical Sciences)

Modern methods of heat treatment (Sovremennyye metody termicheskoy obrabotki), Moscow, Izd-vo "Mashinostroyeniye", 1964, 189 p. illus., bibliography. Errata slip inserted. 5,000 copies printed.

TOPIC TAGS: heat treatment, quality control, iron, steel

PURPOSE AND COVERAGE: The book covers the state-of-the-art of heat treatment [illegible]

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Ch. III. Heat treatment of iron and steel castings -- [illegible]
[illegible] Heat treatment equipment -- [illegible]
[illegible] Mechanization of automatic control of heat treatment processes -- 11[illegible]
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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ARKONOV, A.D.

Metals for high speed diesels and their thermal treatment. Review of the book by A.A.Yurgenson and G.I.Zelenskaya. Metalloved. i term.obr.met. no.1:59 Ja '65. (MIRA 18:3)

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ASSONOV, A.D.

Developing a technology of heat treatment. Metalloved. i term. obr. met. no.8:31-34 Ag '65. (MIRA 18:9)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

L 15213-66 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(h) JD

ACC NR: AP6002912 SOURCE CODE: UR/0286/65/000/024/0074/0074

INVENTOR: Shepelyakovskiy, K. N.; Stroganov, K. V.; Shklyarov, I. N.; Orlov, I. V.; Nikonov, V. F.; Assonov, A. D.

ORG: none

TITLE: Steel for surface-hardened parts. Class 40, No. 177083

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 74

TOPIC TAGS: steel, surface hardened steel, manganese containing steel, silicon containing steel, chromium containing steel, shallow hardenable steel

ABSTRACT: This Author Certificate introduces a steel for surface-hardened parts containing 0.4—1.2% carbon and alloyed with manganese, silicon, and chromium. To obtain steel with a specified hardenability, one of three alloying elements is added in a specified amount and the content of the other two is limited. For example, in steel containing 0.3—1.4% manganese, the chromium and silicon contents are limited to 0.15% and 0.17%, respectively. Steel with 0.3—1.4% silicon should contain 0.15% chromium and 0.20% manganese, and steel with 0.3—1.8% chromium should contain 0.20% manganese and 0.17—0.27% silicon. [AZ]

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PROSKURIN, Petr Vasil'yevich; ASSONOV, Georgiy Fedorovich [Assonov, H.]; MAL'TSEV, L.G. [Mal'tsev, L.H.], glavnyy red.

[Economic condition of workers in the U.S.A.] Ekonomichne stanovyshche trudiashchykh v SShA. Kyiv, 1960. 39 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.1, no.3). (MIRA 13:3)

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Stress-strain, high elasticity and viscosity properties of rubber solutions. Koll.zhur. 21 no.4:485-491 Jl-Ag '59. (MIRA 13:8)

1. Institut fizicheskoy khimii AN SSSR, Laboratoriya obleokolloidov i monosloyev, Moskva.

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ASSONOV, V.A.

PROCESSES AND PROPERTIES INDEX

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New explosives. V. A. Assonov. *Ugol* 1936, No. 130, 44-52.—An enumeration of explosives used in Russia is given and their action described. A. A. Boehtlingk

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Ca

24

Harmful gases formed during explosions in the coal mine and their neutralization A. A. Assonov and B. D. Rood. *Ugol* 1938, No. 12, 62-70. CO and NO_2 formed during explosion can be neutralized to the extent of 50-60% by $Ca(OH)_2$, $CaCO_3$, aq. soln. of $Ca(OH)_2$ and water.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Ammonium nitrate as an explosive for open mining. V. A. Assonov and B. D. Rossi. *Gornyi Zhur.* 1939, No. 7, 38-41.—From a comparison of the vols. of gases evolved per kg. of the explosive, heats of explosion, velocity of detonation and performance, it is concluded that NH_4NO_3 is inferior to other explosives only in its heat of explosion. The permissible moisture content of NH_4NO_3 is 0.5-0.15%, depending on the size of the charge. Methods for detonation, charging, drying and grinding are discussed. As a standard of performance it is proposed to take the expansion in a Trauzl block; for ammonite No. 2 it is 280 cc.; for dinamon K, 300 cc.; and for NH_4NO_3, 225 cc. The replacement of ammonite No. 2 and dinamon K by NH_4NO_3 effects savings of 55.3% and 30.5%, resp. **Reply.** G. A. Abinder and K. Andreev. *Ibid.* 42-3.—Explosion of NH_4NO_3 without combustible matter causes a 35% loss of the work which could have been obtained in the presence of a combustible substance. If the relative content of energy in the most important explosives is taken then the following relations are obtained: gelatin dynamite 85, nitroglycol 103, trotil 67.5, ammonal T 97.4, NH_4NO_3 + 10% naphthalene 58 and NH_4NO_3 28.4. The claims of economy are incorrect. **Ammonium nitrate as an independent explosive substance in open mining work.** A. G. Horst. *Ibid.* 43-5.—NH_4NO_3 does not possess the required explosive properties; its use is not justified. Through *Khim. Referat. Zhur.* 1939, No. 11, 117-18. W. R. Henn

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[illegible], Vasilii Andreevich.

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25528

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ASSONOV, V. A.

PA 16/49T101

USSR/Mining Methods
Explosives

Oct 48

"Increasing the Energy Concentration of Ammonites," V. A. Assonov, Ye. P. Maksimova, Inst of Mining, Acad Sci USSR, 1 3/4 pp

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Report of experiments on ammonite explosions. Density of charge was increased by pressing, thus enabling depth of hole to be reduced.

[redacted]

16/49T101

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ASSONOV, V. A.

USSR/Mining Methods
Blasting

Nov 48

"A New Book on Blasting" ½ p

"Ugol'" No 11 (272)

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CH

Accepted, I.M.

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M. Hosch

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A[illegible] Vs [illegible] Andreevich.

Blasting in metallic ore mines. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1950. 168 p. (51-21803)

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ASSONOV, V. A.

Expediency of using pressed ammonite. Gor. zhur. No. 7 1952.

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ASSONOV, V. A.

Book [illegible] Assonov, V. A. Blasting works. Vsevsia rabo[illegible] [illegible]

Book is intended as a textbook for mining [illegible]

[illegible]

the theory [illegible] IX investigates industrial blasting techniques [illegible] describes the methods [illegible] changes [illegible] with the [illegible] and records use [illegible] and a bibliography included.

The book gives a fairly detailed summary of practical blasting methods used in the Soviet Union. The physical principles of the theory of the action of explosives on soils and rocks, and the corresponding mathematical foundations, are dealt with very summarily. [illegible] Pokrovski, USSR

Courtesy of [illegible]

Translation Courtesy Ministry of Supply, England

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BUCHNEV, V.K.; ASSONOV, V.A., redaktor; SABITOV, A., tekhnicheskiy redaktor

[Drilling and blasting work parameters in the practice of progressive mine tunnelers] Moskva, Ugletekhizdat, 1954. 85 p. (MLRA 8:4)
(Mining engineering) (Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

Assonov, V.A.

USSR/Miscellaneous -- Poison Gas Standards

FD-2635

Card 1/1 : Pub. 41-21/21

Author : Assonov, V. A. and Rossi, B. D.

Title : Development of norms and method of determining poison gases occuring during explosions

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 4, 159-160, Apr 1955

Abstract : Describes method developed for determining presence of poison gas and suggests norms for classification of toxicity. Investigations were conducted in various type mines (copper, iron ore, coal, apatite). States that existing standard (of 1933) is outdated. Suggested standard was submitted to Committee on Standards for their consideration.

Submitted : March 20, 1955

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MAGOYCHENKOV, Maksim Alekseyevich; ASSONOV, V.A., otvetstvennyy redaktor; GRISHAYENKO, M.I., redaktor izdatel'stva; NADEINSKAYA, A.A., tekhnicheskiy redaktor

[Blasting in coal mines] Vzryvnye raboty v kamennougol'nykh shakhtakh. Moskva, Ugletekhizdat, 1956. 142 p. (MIRA 10:3)
(Blasting)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

POKROVSKIY, Georgiy Iosifovich, professor; FEDOROV, Il'ya Sergeyevich, professor; [redacted], nauchnyy redaktor; GIMPEL'SON, A.Z., redaktor; GILENSON, P.G., tekhnicheskiy redaktor

[Force of impact and explosion on the deformation area] Deistvie udara i vzryva v deformiruemykh sredakh. Moskva, Gos.izd-vo lit-ry po stroit.materialam, 1957. 275 p. (MIRA 10:11)
(Blast effect)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

LUR'YE, Aron Isaakovich; ASSONOV, V.A., otvetstvennyy red.; GRISHAYENKO, M.I., red.izd-va; KOROVENKOVA, Z.A., tekhn.red.; SABITOV, A., tekhn. red.

[Electric detonation of charges] Elektricheskoe vzryvanie zariadov. Moskva, Ugletekhizdat, 1957. 289 p. (MIRA 11:3)
(Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A., kandidat tekhnicheskikh nauk.

Assortment of industrial explosives. Bezop. truda v prom. 1 no.4: 24-26 Ap '57. (MIRA 10:6)

(Explosives)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A.; ROSSI, B.D.

Causes of poisonous gas formation during underground blasting operations. Trudy Inst. gor. dela 4:114-122 '57. (MLRA 10:6)
(Blasting) (Mine gases)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A., kandidat tekhnicheskikh nauk.

New explosives and blasting supplies. Shakht.stroi.no.5:8-12 My '57. (MLRA 10:7)

(Blasting--Equipment and supplies) (Explosives)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

4(6) PHASE I BOOK EXPLOITATION SOV/1902

USSR. Gosudarstvennyy nauchno-tekhnicheskiy komitet

Spravochnik po promyshlennym vzryvchatym materialam (Handbook on Industrial Explosives) Moscow, Ugletekhizdat, 1958. 71 p. Errata slip inserted. 20,000 copies printed.

Resp. Ed.: V.A. Assonov; Ed. of Publishing House: I.K. Khodakov; Tech. Ed.: S. Ya. Shklyar.

PURPOSE: The book is intended for persons working in the mining and building industries and other branches of the national economy.

COVERAGE: The book lists various types of industrial explosives (VV) and detonators (SV) all of which are designated as explosive materials (VM). The basic characteristics, main uses, and cost of various explosive materials are given. The book attempts to help consumers make a correct choice of explosives for use in blasting under various conditions. The book contains information on all explosive materials authorized by Gosgortekhnadzor for use in mining and in other branches of the national economy as of May 1, 1958. The explosive

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materials which passed industrial tests but were not officially approved by Gosgortekhnadzor are listed with a special comment. Various packing procedures for each type of explosive are discussed in the introduction. No personalities are mentioned. No references are given.

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SERGEYEV, A.A., red.; ANPILOGOV, I.M., red.; ASSONOV, V.A., red.; BABAYANTS, N.A., red.; BABOKIN, I.A., red.; BALAMUTOV, A.D., red.; BOGORODSKIY, N.N., red.; BOLOMENKO, D.N., red.; BUCHNEV, V.K., red.; VAKHMINTSEV, G.S., red.; VORONKOV, A.K., red.; GARKALENKO, K.I., red.; GORBATOV, P.Ye., red.; GOLOVLEV, V.Ya., red.; DOKUCHAYEV, M.M., red.; DUBNOV, L.V., red.; YEVTEYEV, A.D., red.; YEREMENKO, Ye.K., red.; ZENIN, N.I., red.; KRIVONOGOV, K.K., red.; KUPALOV-YAROPOLK, I.K., red.; MATSYUK, V.G., red.; NIKOLAYEV, S.I., red.; ONISHCHUK, K.N., red.; PETROV, K.P., red.; PILYUGIN, B.A., red.; PLATONOVA, A.A., red.; POLESIN, Ya.L., red.; POKROVSKIY, L.A., red.; POMETUN, D.Ye., red.; POLYUSHKIN, A.Kh., red.; REYKHER, V.P., red.; SEDOV, N.A., red.; SIDORENKO, I.T., red.; FIDELEV, A.A., red.; CHAKHMAKHCHEV, A.G., red.; CHEMODUROV, M.Ya., red.; SHUMAKOV, A.A., red.; YAREMENKO, N.Ye., red.; PARTSEVSKIY, V.N., red.izd-va; ATTOPOVICH, M.K., tekhn.red.

[Standard safety regulations for blasting operations] Edinye pravila bezopasnosti pri vzryvnykh rabotakh. Izd.2. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1958. 318 p. (MIRA 13:1)

1. Russia (1923- U.S.S.R.) Komitet po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.
(Mining engineering--Safety measures)

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PHASE I BOOK EXPLOITATION 1086

Assonov, Vasiliy Andreyevich

Vzryvnyye raboty (Blasting Operations) 3d ed., rev. and enl. Moscow, Ugletekhizdat, 1958. 351 p. 20,000 copies printed.

Resp. Ed.: Burmistrovich, Ye.L.; Ed. of Publishing House: Grishayenko, M.I.; Tech. Ed.: Sabitov, A.

PURPOSE: This textbook, which constitutes an independent, second part of the study program in drilling and blasting operations, is written for students in mining vuzes, or other technical institutes offering a course in blasting operations. It may also be used by engineering and technical personnel engaged in mining enterprises.

COVERAGE: Following a brief treatment of the history and theory of blasting, a detailed description of the types of industrial explosives, as well as the techniques and methods involved in their testing, detonation, disposal or storage, and transport is presented. The theory of blasting action in a solid medium, computation of charges, methods of detonation, etc. are also discussed.

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The book contains 86 figures and 77 tables. There are 207 references of which 185 are Soviet, 9 English, 5 German, and 1 Czech.

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ANDROS, I.P., inzh.; ASSONOV, V.A., kand. tekhn. nauk.; BERNSHTEYN, S.A., inzh.; BOKIY, B.V., prof.; BROVMAN, Ya.V., inzh. BONDARENKO, A.P., inzh.; BUCHNEV, V.K., kand. tekhn. nauk; VERESKUNOV, G.P., kand. tekhn. nauk; VOLKOV, A.F., inzh.; GELESKUL, M.N., kand. tekhn. nauk; GORODNICHEV, V.M., inzh.; DEMENT'YEV, A.Ya., inzh.; DOKUCHAYEV, M.M., inzh.; DUBNOV, L.V., kand. tekhn. nauk; YEPIFANTSEV, Yu.K., kand. tekhn. nauk.; YERASHKO, I.S., inzh.; ZHEDANOV, S.A., kand. tekhn. nauk; ZIL'BERBROD, A.F., inzh.; ZINCHENKO, E.M., inzh.; ZORI, A.S., inzh.; KAPLAN, L.B., inzh.; KATSAUROV, I.N., dots.; KITAYSKIY, E.F., inzh.; KRAVTSOV, Ye.P., inzh.; KRIVOROG, S.A., inzh.; KRINITSKIY, L.M., kand. tekhn. nayk; LITVIN, A.Z., inzh.; MALEVICH, N.A., kand. tekhn. nauk; MAN'KOVSKIY, G.I., doktor tekhn. nauk; MATKOVSKIY, A.L., inzh.; MINDELI, E.O., kand. tekhn. nauk; NAZAROV, P.P., kand. tekhn. nauk; NASONOV, I.D., kand. tekhn. nauk; NEYYENBURG, V.Ye., kand. tekhn. nauk; POKROVSKIY, G.I., prof., doktor tekhn. nauk; PROYAVKIN, E.T., kand. tekhn. nauk; ROZENBAUM, inzh.; ROSSI, B.D., kand. tekhn. nauk; SEMEVSKIY, V.N., doktor tekhn. nauk; SKIBGELLO, O.B., inzh.; SUKHUT, A.A., inzh.; SUKHANOV, A.F., prof., doktor tekhn. nauk; TARANOV, P.Ya., kand. tekhn. nauk; TOKAROVSKIY, D.I., inzh.; TRUPAK, N.G., prof., doktor tekhn. nauk; FEDOROV, S.A., prof., doktor tekhn. nauk; FEDYUKIN, V.A., inzh.; KHOKHLOVKIN, D.M., inzh.; KHRABROV, N.I., kand. tekhn. nauk; CHEKAREV, V.A., inzh.; CHERNAVKIN, N.N., inzh.; SHREYBER, B.P., kand. tekhn. nauk; EPOV, B.A., kand. tekhn. nauk; YAKUSHIN, N.P., kand. tekhn. nauk; YANCHUR, A.M., inzh.; YAKHONTOV, A.D., inzh.; POKROVSKIY, N.M., otvetstvennyy red.; KAPLUN, Ya.G. [deceased], red.; MONIN, G.I., red.; SAVITSKIY, V.T.,

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ANDROS, I.P.---(continued) Card 2.
red.; SANOVICH, P.O., red.; VOLOVICH, M.Z., inzh., red.; GORITSKIY, A.V., inzh., red.; POLUYANOV, V.A., inzh., red.; FADEYEV, E.I., inzh., red.; CHECHKOV, L.V., red. izd-va; PROZOROVSKAYA, V.L., tekhn. red.; NADEINSKAYA, A.A., tekhn. red.

[Mining; an encyclopaedic handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M. Terpigorev. Moskva, Gos. nauchno-tekhnicheskoe izd-vo lit-ry po ugol'noi promyshl. Vol.4 [Mining and timbering] Provedenie i kreplenie gornykh vyrabotok. Red-kollegiia tom: N.M.Pokrovskii... 1958. 464 p. (MIRA 11:7)

(Mine timbering) (Mining engineering)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A., kand.tekhn.nauk; ROSSI, B.D., kand.tekhn.nauk

Specifying poisonous gases in materials produced by blasting. Bezop. truda v prom. 2 no.7:26-28 Jl '58. (MIRA 11:9)
(Blasting) (Gases, Asphyxiating and poisonous)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A.

Scientific and technical conference on boring and blasting operations. (MIRA 11:4)
Ugol' 33 no.4:46 Ap '58.
(Boring) (Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, Vasiliy Andreyevich; GRISHAYENKO, M.I., otv.red.; IL'INSKAYA, G.M., tekhn.red.

[Instructions for blasters and blaster-helpers] Pamiatka mastera-vzryvnika i vzryvnika. Izd.5., perer. i dop. Moskva, Ugletekhizdat, 1959. 150 p. (MIRA 12:8)
(Coal mines and mining--Safety measures)
(Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

MEL'NIKOV, N.V., red.; ASSONOV, V.A., red.; BARON, L.I., red.; DEMIDYUK, kand.tekhn.nauk, red.; DOKUCHAYEV, M.M., gornyy inzh., red.; PETROV, N.G., kand.tekhn.nauk, red.; SOSEDOV, O.O., red.; KHARLAMOV, T.F., red.; MAKSIMOVA, Ye.P., red.; RATNIKOVA, A.P., red.izd-va; SHKLYAR, S.Ya., tekhn.red.; KOROVENKOVA, Z.A., tekhn.red.

[Improvements in boring and blasting operations in the mining industry; transactions of the Scientific and Technical Conference on Boring and Blasting Operations] Trudy Nauchno-tekhnicheskogo soveshchaniya po burovzryvnym rabotam: Sovershenstvovanie burovzryvnykh rabot v gornoi promyshlennosti. Pod red. N.V.Mel'nikova. Moskva, Ugletekhizdat, 1959. 443 p. (MIRA 12:4)

1. Nauchno-tekhnicheskoye soveshchaniye po burovzryvnym rabotam, 3d, Moscow, 1958. 2. Chlen-korrespondent AN SSSR (for Mel'nikov). 3. Institut gornogo dela AN SSSR (for Demidyuk). 4. Vsesoyuznyy trest po burovym i vzryvnym rabotam (for Dokuchayev). 5. Vsesoyuznyy nauchno-issledovatel'skiy ugol'nyy institut (for Petrov).
(Boring) (Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A.; DOKUCHAYEV, M.M.; KUKUNOV, I.M.; NIKOLAYEV, N.A., retsenzent; ROSSI, B.D., retsenzent; SINYAKIN, P.V., retsenzent [deceased]; DEMIDYUK, G.P., kand.tekhn.nauk, nauchnyy red.; GOMOZOVA, N.A., red.izd-va; STEPANOVA, E.S., tekhn.red.; RUDAKOVA, N.I., tekhn.red.

[Boring and blasting operations] Burovzryvnye raboty. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 406 p. (MIRA 13:5)

(Boring) (Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

BURMISTROVICH, Ye.L.; VATOLIN, Ye.S.; DEMIDYUK, G.P.; MARCHENKO, L.N.; ROSSI, B.D.; TATARNIKOV, A.A.; SHATAYEV, M.G.; ASSONOV, V.A., otv.red.; OKHRIMENKO, V.A., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Handbook on blasting operations] Spravochnik po burovzryvnym rabotam. Pod red. V.A.Assonova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 450 p. (MIRA 13:3)
(Blasting) (Coal mines and mining)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

MINDELI, Elizbar Onisimovych; ASSONOV, V.A., otv.red.; ZVORYKINA, L.N., red.izd-va; BEKKER, O.G., tekhn.red.

[Boring and blasting operations in mining] Burovzryvnye raboty pri provedenii gornykh vyrabotok. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. 454 p. (MIRA 13:7)
(Mining engineering)

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KOROVCHENKO, Grigoriy Mitrofanovich; ASSONOV, V.A., otv. red.; GRISHAYENKO, M.I., red. izd-va; ZAKHAROV, M.I., red. izd-va; SABITOV, A., tekhn. red.

[Blasting foreman] Master-vzryvnik. Moskva, Gos. nauchno-tekhn. izd-vo po gornomu delu, 1961. 238 p. (MIRA 14:11)

(Blasting)

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PHASE I BOOK EXPLOITATION SOV/6098

Assonov, V. A., and L. A. Paporotskiy, Resp. Eds.

Novoye v sredstvakh i sposobakh vzryvaniya (New Developments in Blasting Means and Methods). Moscow, Gosgortekhizdat, 1962. 124 p. (Series: Vzryvnoye delo; Sbornik no. 48/5) Errata slip inserted. 3000 copies printed.

Sponsoring Agency: Nauchno-tekhnicheskoye gornoye obshchestvo.

Ed. of Publishing House: A. Ya. Koston'yan; Tech. Eds.: L. I. Minsker and G. M. Il'inskaya.

PURPOSE: The book is intended for mining engineers, workers in scientific research and planning organizations, and also for teachers and students of mining and technical schools.

COVERAGE: This collection of articles describes new blasting means and methods, means of protecting electric detonators from stray currents, and improved methods of short-delay detonation.

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MAGOYCHENKOV, Maksim Alekseyevich; GALADZHIY, Fedor Maksimovich; ROSINSKIY, Nikolay Leonidovich; DEMIDYUK, G.P., retsenzent; ASSONOV, V.A., otv. red.; RATNIKOVA, A.P., red. izd-va; LOMILINA, L.N., tekhn. red.; SHKLYAR, S.Ya., tekhn. red.

[Blasting foreman]Master-vzryvnik. Moskva, Gosgortekhizdat, 1962. 287 p. (MIRA 15:8)

(Blasting)

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ASSONOV, Vasiliy Andreyevich; KOROLEVA, T.I., red.izd-va; LAVRENT'YEVA, L.G., tekhn. red.; MINSKER, L.I., tekhn. red.

[Explosives and their use in mining] Vzryvchatye veshchestva i ikh primenenie v gornoi promyshlennosti. Moskva, Gosgortekhizdat, 1963. 139 p. (MIRA 16:6)
(Blasting) (Explosives)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

MEDVEDKO, Aleksandr Il'ich; KUCHERYAVYY, F.I., kand.tekhn.nauk, retsenzent; ASSONOV, V.A., kand.tekhn. nauk, otv. red.; SHMELEV, A.I., red.izd-va; MINSKER, L.I., tekhn. red.

[Boring and blasting operations] Burovzryvnye raboty. Moskva, Gosgortekhizdat, 1963. 334 p. (MIRA 16:9)
(Boring) (Blasting)

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LUR'YE, Aron Isaakovich; OZERNOY, M.I., prof., retsenzent; ASSONOV, V.A., kand. tekhn. nauk, otv. red.; RATNIKOVA, A.P., red.izd-va; KOROLEVA, T.I., red.izd-va; PROZOROVSKAYA, V.L., tekhn. red.; LOMILINA, L.N., tekhn.red.

[Electric detonation of charges] Elektricheskoe vzryvanie zariadov. Izd.2., perer. i dop. Moskva, Gosgortekhizdat, 1963. 260 p. (MIRA 16:12)

(Blasting)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000102410017-5

ASSONOV, V.A. [deceased]; DEMCHUK, F.A.; KUZNETSOVA, D.S.

Determining the optimal length of sand and clay stemming of boreholes. Vzryv. delo no.55/12:60-68 '64.

(MIRA 17:10)

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