

CENTRAL INTELLIGENCE AGENCY REPORT

INFORMATION REPORT

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1. The Sergo Ordzhonikidze Machine Tool Factory (Moskovski Stankostroitelny Zavod imeni Sergo Ordzhonikidze) is located at 21 5th Donskoi Proyezd, Leninski District, near Kaluzhskaya Zastava, Moscow. A special wide-gauge railway branch line leads to the Ordzhonikidze Factory from Kanatchikovo station of the Moscow Circular Railway.
2. In the vicinity of the Sergo Ordzhonikidze Factory is another machine tool factory, known as Stankokonstruktsiya (Machine Tool Construction) Factory, which is an experimental factory of the Experimental Scientific Research Institute for Metal-cutting Machine Tools (ENIMS - Eksperimentalny Nauchno-Issledovatelny Institut Metallorezhushchikh Stankov).
3. The factory is controlled by the Chief Directorate of Machine Tool Construction Industry of the Ministry of Machine Tool Construction of the USSR and is one of the largest machine tool factories in the country.
4. There is another Ordzhonikidze Factory in Moscow, namely, that of the Ministry of Transport Machinery, the director of which is Bogoroditski. Also at Podolsk, near Moscow, is the Ordzhonikidze Factory of the Ministry of Heavy Machinery, the director of which is Khabenski.
5. The erection of the factory was begun in 1928 on the initiative of S. Ordzhonikidze. In 1931, the first stage was completed and in 1932 production was begun. In 1934, the second stage of the factory was completed.
6. The factory has its own large farm at the village of Boryakino in Kaluga Oblast, with over 500 hectares of land under grain and vegetables. This farm is well-equipped with tractors, ploughs, and other agricultural machinery. About 2,000 of the workmen and employees have their own kitchen gardens in the Leninskiye Gory (hills) (ex-Vorobeviye Gory), near Moscow, and at other places.

Type of Product

7. When production was first started, the factory was producing in large series turret lathes and several types of automatic and semi-automatic lathes, such as 4-spindled lathes of type 123 and semi-automatic lathes of type 116.

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8. In the first years after the war, the factory produced machine tools of comparatively similar type, e.g., turret lathes of type 1 M 36 in large series and of type 137 in medium series, semi-automatic machines of types 116 and 118 and automatic machines of type 123 in small series. But every year production became more complicated; old types of machine tools were modernized; and in the last two years the factory has specialized in the production of complex special and aggregate machines, automatic and semi-automatic universal multiple-spindle machines, and special aggregate machines for automatic lines of machines, intended for the machining (obrabotka) of separate mass-produced articles.
9. Following are details about some of the machine tools and semi-automatic and automatic machines produced:
- a. Turret lathes of types 1 A 36 and 1 M 36 were modernized by ENIMS and passed to the factory for mass production. Type 1 A 36 machines were modified as follows: the output of the electric motor was increased to 10 KW and the rpm of the spindle was increased to 31-724 by the replacement of pulleys (shkiv) on the driving shaft and on the electric motor by V-belt (klinoremenny) pulleys of other diameters. In the case of type 1 M 36, the output was also increased to 10 KW and the number of rpm of the spindle to 43-988. A very large number of these machines has been produced.
 - b. Semi-automatic multi-blade (mnogoreztsovy) lathe, type 1 A 16-2. Distance between the centers: 450 mm. Height of axle of spindle from the base (stanina): 255 mm. Longitudinal and lateral oscillating supports (support). Output: 8-17 KW. Weight of machine: 3,000 kg. Overall dimensions: length 2,170 mm, width 1,210 mm, height 1,820 mm. Limits of rpm of spindle (8 phases 'stupen'): 56-376.
 - c. Semi-automatic multi-blade lathe, type 116-2. Distance between centers: 800 mm. Height of axle of spindle from the base: 255 mm. Longitudinal and lateral oscillating supports. Output: 8-17 KW. Limits of rpm of spindle (8 phases): 56-376. Weight of machine: 3,500 kg. Overall dimensions: length 2,540 mm, width 1,210 mm, height, 1,820 mm.
 - d. Semi-automatic multi-blade lathe, type 1 B 16-2. Distance between centers: 1,200 mm. Height of axle of spindle from base: 255 mm. Longitudinal and lateral oscillating supports. Output: 8-17 KW. Limits of rpm of spindle (8 phases): 56-376. Weight of machine: 4,000 kg. Overall dimensions: length 2,970 mm, width 1,210 mm, height 1,820 mm.
 - e. The three types of semi-automatic multi-blade lathes listed above, 1 A 16-2, 116-2, and 1 B 16-2, are identical central semi-automatic machines, differing only in the distance between the centers and the number of supports. The basic parts and joints of the machines are absolutely identical. On the basis of these machines, the factory is producing a large number of special adjustments and modifications intended for the machining of specific parts. Such machine tools are called "special". The rpm of the spindle in many special machine tools has been almost doubled to 700.
 - f. Semi-automatic multi-blade lathe, type 118. Distance between the centers: 600 mm. Height of axle of spindle from base: 395 mm. Limits of rpm of spindle (9 phases): 19-126. Longitudinal and lateral oscillating supports. Output: 10-26KW. Overall dimensions: length 3,700 mm, width 1,580 mm, height 2,400 mm.
 - g. Semi-automatic multi-blade lathe, type 118 V. This is a somewhat modernized 118 machine.

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- h. Semi-automatic multi-blade lathe, type 118 A. Distance between the centers: 1,000 mm. Height of axle of spindle from base: 395 mm. Limits of rpm of spindle (9 phases): 19-126. Longitudinal and lateral oscillating supports. Output: 10-26KW. Weight of machine: 7,100 kg. Overall dimensions: length 4,100 mm, width 1,580 mm, height 2,400 mm.
- i. Semi-automatic multi-blade lathe, type 118 B. This is a somewhat modernized version of 118 A.
- j. The above four types of semi-automatic multi-blade lathes, 118, 118 V, 118 A, and 118 B, differ only in the distances between the centers and are identical in other respects. They are intended for the machining of larger parts than those treated by type 116. The maximum diameter of the part machined by these machines is 450 mm (above the longitudinal support), whereas in 116 machines it is 200 mm.
- k. Semi-automatic multi-blade lathe, type 117. This is called a semi-automatic machine of "original design" [redacted] Output: 32 KW. Four electric motors for the main drive, feeding, cooling pump, and lifting device. Maximum diameter of article treated: 160 mm.
- l. Semi-automatic multi-blade lathe, type 1 D 16. Occupies an intermediate place between machines of types 116 and 118. Output: 20 KW. Limits of rpm of spindle: 43-380. A somewhat improved version of type 117. Output of the electric motor of the gear box in type 1 D 16 has been increased to 3.6 KW.
- m. Automatic lathe for high-speed machining of fastening parts and other articles of rod metal with maximum diameter of 90 mm. Six tools work simultaneously, machining an article in succession.
- n. Twenty-four-spindle horizontal boring (gorizontálno-sverlilny) aggregate, for drilling holes in metal constructions of railway and road bridges and for large engineering works. Drills 24 holes simultaneously.
- o. Four-spindled rod automatic machine of type 1268, for rods with maximum diameter of 90 mm.
- p. Aggregate machine tool of type A-131, for drilling from two sides 52 holes in the body of the rear bridge of STZ tractor. A boring lathe. Treats 11 bodies of rear bridge per hour. Replaces 10 universal lathes. This type of machine was designed by ENIMS and passed for production first to the Stankokonstruktsiya Factory and later to the Ordzhonikidze Factory.
- q. Aggregate milling machine, type A 625, for milling gear boxes (karter) of the rear bridge of an automobile. Length of machine: 2,300 mm; width: 2,900 mm.
- r. Aggregate machine, type A 822. Simultaneously mills two surfaces (ploshchadka) and drills 17 holes in the gear box of rear bridge of a truck.
- s. Aggregate machine, type A 437. Likewise performs the two operations of drilling and milling simultaneously.
- t. Aggregate machine, type A 821, for milling inclined surfaces of gear box of the rear bridge of an automobile.
- u. Aggregate machine, type 1 A 397, for milling surfaces of the bracket (kronshteyn) of the front spring of a truck.
- v. Aggregate machine, type 1 A 399. Like 1 A 397, for the treatment of an automobile bracket. Has a four-position turntable.

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- w. Horizontal four-spindle semi-automatic machine, type A 836, for the treatment of radiator sections.
 - x. Special milling-centering machine, type FTs, for the treatment of ends (torets) and the centering of shafts.
 - y. Two types of rail-finishing milling machines.
 - z. Four types of pipe-threading machines.
 - aa. Vertical ball-filing automatic machine for the ball-bearing industry.
 - bb. A large number of aggregate machine tools for automatic lines of machines.
 - cc. Machine tool type 1365 was produced in small series and passed for large-scale serial production to the Alapaevski Machine Tool Factory.
 - dd. Early in 1949, production of the turret lathe type 137 was considerably reduced at the factory, and it is rumored that this machine will be produced at other machine tool factories.
 - ee. Aggregate machine tools for boring and drilling buffers and buffer casings (stakan) for railway cars. These machines have been sent to Kalininski, Dneprodzerzhinski, and other railway car works.
 - ff. Production of cutting machines of type 142 b ceased at the beginning of 1949.
10. Since 1946, the factory has produced twelve automatic lines of aggregate machine tools for the treatment of mass-produced articles at transport, automobile and tractor, and agricultural engineering (production of combine harvesters) factories.
11. Automatic lines of aggregate machine tools have been built for the Stalin Automobile Works in Moscow, the Stalingrad Tractor Works, the Nizhni Tagil Railway Car Works, the Kirovski Tractor Works at Chelyabinsk, and the Kalinin Railway Car Works. For example:
- a. An automatic line of aggregate machine tools for the treatment of engine blocks of the ZIS truck, now in operation at the Stalin Automobile Works, Moscow; it produces a completed block about every three minutes. This line is composed of 45 aggregate machine tools divided into four sections:
 - 1) 1st Section, consisting of 16 aggregate machine tools (types A 291 to A-306, inclusive), treats all holes on upper surfaces. The length of this section is about 17 meters. Total output of motors: about 90 KW. Number of spindles: 232.
 - 2) 2nd Section, consisting of eight machine tools (aggregate machine tools of types A 261 to A 268, inclusive), treats holes on ends. Total output of motors: 48 KW. Length of line: about eight meters. Number of spindles: 60.
 - 3) 3rd Section, consisting of 14 machine tools (aggregate machine tools of types A-421 to A-434, inclusive), treats holes on lower surfaces. Number of spindles: 255. Total output of motors: 74 KW. Length of section: about 17 meters.
 - 4) 4th Section, consisting of seven machine tools (aggregate machine tools of types A-413 to A-417, inclusive), treats valve holes.

The 2nd Section was built by the Stankokonstruktsiya Factory, the three others by the Ordzhonikidze Factory.
 - b. An automatic line of aggregate machine tools now operating at the Nizhni Tagil Railway Car Works treats 85 different holes in side girders, 12 meters long, for freight cars of large capacity. All holes in the girders are treated in two minutes. The entire process of treating a girder, with automatic feed and release of girder, takes five minutes. The length of the line is about 15 meters. Output of all motors: 83 KW.

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12. The automatic lines installed and now operating at different factories, some of them for three years already, have not justified the optimistic results which were expected at first. One of the reasons for this is stoppage of the line necessitated by the replacement, often prolonged and difficult, of the cutting tools. The stoppage of a single aggregate, a defect in the electrical equipment, or in something else brings the whole line to a standstill. Discussions on this problem are in progress among the engineering personnel of the Ministry of Machine Tool Construction and of factories. Nevertheless, the Ministry continues to place orders for automatic lines, hoping that experience will lead to a completely satisfactory system.

Actual Output

13. In 1948, the factory produced about 2,300 machine tools of various types. Of these, about 45-50 percent were of the universal type, about 30 percent special machine tools, and about 20-25 percent aggregate machine tools.
14. In 1949, the assembly of machine tools was reorganized: aggregate and special machine tools are assembled in one assembly shop, and universal multi-spindle automatic and semi-automatic machines in another. Serial production has been separated.

Destination of Products

15. The factory delivers its machine tools to a very large number of enterprises of the USSR. Aggregate and special machine tools are supplied mainly to:
- a. The Ministry of Automobile and Tractor Industry (Yaroslavl Automobile Works, Molotov Automobile Works at Gorki, Stalin Automobile Works at Moscow, Kharkov Tractor Works, Altai Tractor Works, Lipetski Tractor Works, Stalingrad Tractor Works).
 - b. The Ministry of Transport Machinery (Kirov Works at Chelyabinsk receives a large number of aggregate and special machine tools for the production of caterpillar tractor S-80 and its engine; Kalininski Railway Car Works, Nizhni Tagil Railway Car Works).
 - c. The Ministry of Agricultural Machinery.
 - d. Ministry of Aviation Industry.
 - e. Ministry of Armaments.

Personnel

16. At the beginning of the war there were 4,500 employees. In 1949, the number of personnel was about 5,200. Three shifts are worked.
17. The director is Volkov, who has been absent for a long time and has been replaced temporarily by D. S. Shishayev, chief engineer.

Chief Technologist: M. Ya. Volovik, Stalin Prize Laureate.

Chief Designers: I. A. Rostovtsev, who replaced V. D. Gorbunkov.

Designers and Engineers: Askinazi, Korenkov, Tsentsiper, Trifonov, Polyakov, Kochetkov, Shitov, Nazarovski, Kruk, Nikitin, Kaisaryants, Mesevitski, Novosad, Kriulin, Druzhinina.

Technologists: Engineer Rys, Smurov, Kondratov, Apshtein, Gindin, Orlov.

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Installations

18. In addition to a large number of shops and departments, including a well-equipped foundry shop, the factory has a very large central laboratory working in close touch with ENIMS and a large training combine which trains specialists of every kind for the factory.
19. The factory has a branch at Tula, which really serves as its foundry and supplies the factory with castings of various kinds. A large number of castings are also received from the Moscow Stankolit Factory (lathe turrets, machine carriages, apron bodies for universal machine tools, bases, etc).

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