

CLASSIFICATION **SECRET**
 CENTRAL INTELLIGENCE AGENCY
 INFORMATION FROM
 FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT 50X1-HUM
 CD NO.

COUNTRY USSR
 SUBJECT Economic; Technological - Machine tools, Electric power
 HOW PUBLISHED Daily newspapers; monthly periodical
 WHERE PUBLISHED USSR
 DATE PUBLISHED 23 May - 24 Nov 1950
 LANGUAGE Russian

DATE OF INFORMATION 1950
 DATE DIST. 26 Jan 1951
 NO. OF PAGES 5
 SUPPLEMENT TO REPORT NO.

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NOTE HEAVY CUT IN MOSCOW POWER CONSUMPTION;
NEW MACHINE TOOLS READ BLUEPRINTS

HEAVIEST REDUCTION DURING THIRD QUARTER -- Moscow, Vechernyaya Moskva, 2 Nov 50

In 10 months of 1950 Moscow enterprises have cut down their electrical consumption by 94 million kilowatt-hours. Of this total, 40 million kilowatt-hours were saved during the third quarter of the year.

About two thirds of the power consumed by Moscow enterprises goes into the machining of metal. Hence, the tremendous economy effected by the conversion to high-speed cutting. Speedup of cutting at the First State Bearings Plant saved 213,000 kilowatt-hours; at the Dinamo Plant, 100,000 hours.

Another way of saving power is through the use of automatics and improved organization of production. Such measures at the Moscow Plant for Low-Power Automobiles saved 750,000 kilowatt-hours in 10 months. The Serp i molot Plant saved 400,000 kilowatt-hours.

Unfortunately, not all enterprises are cooperating in the power-conservation drive. The Krasnokholmskiy Combine regularly exceeds its monthly quota of electric power. The Moscow Elektroprovod Plant wastes about 100,000 kilowatt-hours a month.

The Moscow Electric Power System is vigorously preparing its facilities for the winter peak period. Industrial enterprises should do the same.

TAKE MEASURES TO SAVE ELECTRIC POWER -- Moscow, Vechernyaya Moskva, 24 Nov 50

At the beginning of 1950, although the electric power substation for the Stankolit Plant was working at full capacity, more new equipment had to be put into operation.

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Electrical engineers were faced with the problem of putting additional equipment into operation without receiving additional power.

The problem was solved by increasing the power factor, decreasing machine idling, eliminating losses in large motors and mains transformers, and intensifying a drive to save power at all sections of the plant.

This not only effected a saving of power but also made further mechanization possible in sand preparation, compressor stations, and ventilation. The plant has freed itself from fines which it had to pay for inefficient use of electric power.

The plant's specialists took advantage of the experience of other enterprises. More economical casting equipment was used. Instead of sand-blasting chambers and knocking-out grates, operating in compressed air, metal-shot blasting chambers and electromechanical knocking-out grates were introduced. This decreased the consumption of electric power more than 150,000 kilowatt-hours per year.

The plant's electrical engineers have given a great deal of attention to preparing the electrical power system for the fall and winter season. To lighten the load on the existing line leading into the repair-machine and pattern shops, an additional 1.5 kilometers of cable have been laid. High- and low-voltage cables have been checked, and all of the plant's electrical equipment has been grounded.

Not resting on their laurels, the electrical engineers and mechanics are working on measures for further saving of power. For increasing the power factor during nonworking days and between shifts, a low-capacity mains transformer will be switched on. Another sand-blasting chamber is being replaced by a metal-shot blasting chamber. The plant's work regime is being organized so as to maintain the maximum load at 20 percent below the established limit during the evening hours. One of the furnaces is being converted to operate with preheating of blast. -- V. Gubskiy, chief electrical engineer, Stankolit Plant

ROBOT MACHINE TOOL READS BLUE PRINTS -- Moskovskiy Komsomolets, 8 Oct 50

The plant at which engineer-designer A. I. Kir'yanov works has put out a machine for machining locomotive cylinders. Although it weighs 180 tons and ten railroad cars are required to transport it, a single button controls it.

A. I. Kir'yanov designs machine tools for the Leningrad Plant imeni Sverdlov.

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At present, designers are working on "obedient" machine tools which respond to the push of a button, and so-called "seeing" machine tools. "Reading" photoelectric cells are used in such a machine tool. Taking his place at the machine tool with the "reading" instrument, the worker fills the machine with coolant, checks the lubrication, and then "hands" the drawing of the part to be manufactured to the machine tool.

A sheet of paper with a profile drawing of the part is secured beneath the reading instrument. A fine, needlelike beam of light glides over the drawing while the machine tool saws, grinds, drills.

Machine tools that read drawings are sometimes called "machine tools with a higher education," which is a very appropriate name. All of the latest technical achievements have been incorporated in their manufacture, such as photoelectric cells, electron tubes, electric-spark tools, and a number of complex and precision instruments. All this makes the machine tool "seeing." Parts which were formerly machined on various types of machine tools by skilled workers are now manufactured by these machines. -- Leningrad

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OPTICAL ATTACHMENT SOLVES CUTTER-SUPPLY PROBLEM -- Moscow, Pravda, 4 Nov 50

Ivan Kartashev, a fitter at the Leningrad Ekonomayzer Plant, has successfully simplified and decreased the cost of the manufacture of milling cutters (zubchikovyy rezets) used for machining turbine disks and gate parts. These cutters are widely used and for this reason are frequently scarce at turbine-building plants. They must be accurate to thousandths of a millimeter.

Until now these cutters were manufactured on special machine tools. Supplying plants frequently delayed shipment of these tools. Each cutter cost the enterprise a considerable amount of money. Practice has shown that the special machine tools will not produce cutters to the required accuracy, and therefore the cutters had to be finished by hand at the receiving plant. Highly skilled gauge-makers had to perform this operation.

Kartashev designed and tested a very simple optical attachment which he mounted on an ordinary grinding machine. A motor drove the spindle on which the grinding stone was mounted. The optical system made it possible for the worker to see that the cutters were given the required profile. With the use of a special screen, a 20-power linear image of the tooth being machined is projected. Use of the new attachment has shown that the cutter can be machined to an accuracy which cannot be compared with those manufactured on special machine tools. The process of their manufacture is speeded up many times. The cutters cost the plant 25-30 times less than formerly. They can be manufactured by any rank-and-file machine-tool operator.

Formerly scarce tools are now abundant at the Ekonomayzer Plant. One worker can now produce enough precision milling cutters on an ordinary machine tool in two shifts to last a whole month.

The chief of the Main Administration of Enterprises of the Boiler and Turbine Industry has issued an order in which he instructs all directors of boiler and turbine plants to take advantage of the innovation and use the new attachment extensively.

Some time ago Kartashev rejected the technically outdated and inadequate plan of electronic control used in the Gisholt Machine Company's dynamic balancing machines for turbine rotors. He claims to have developed and assembled a system wherein the control panel is simplified and a faultless accuracy of balancing has been achieved.

Leningradskaya Pravda, 11 Nov 50

For the purpose of wide dissemination of Kartashev's methods, the institute of Orgtyazhmash, together with the inventor, is working on shop drawings on the proposed attachments.

The following works will be published for plants of the Ministry of Heavy Machine Building: "Grinding Diametric Checking Devices," "Grinding Linear Checking Devices," "Grinding Disk Cutters," and "Methods of Engraving."

The Central Scientific Research Institute of Heavy Machine Building together with Kartashev will make shop drawings for balancing machines and machines for profile grinding. These machine tools will be produced in 1951.

Kazakov, Minister of Heavy Machine Building, has expressed appreciation to Kartashev for his invention and has rewarded him with 5,000 rubles.

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Leningradskaya Pravda, 19 Nov 50

The grinding of one complex-shaped cutter used in the manufacture of turbine disks formerly took 60 hours to do by hand. With the use of Kartashev's invention, only 25-30 minutes are required.

TBILISI PLANT MAKES DIP-300 -- Tbilisi, Zarya Vostoka, 27 Sep 50

The Tbilisi Machine-Tool Building Plant imeni Kirov is the only plant in the USSR making DIP-300 lathes. It is now putting out the 1D63A, a new improved version of the DIP-300 universal screw-cutting lathe.

Tbilisi, Zarya Vostoka, 23 May 50

The Tbilisi Machine-Tool Building Plant imeni Kirov is the only plant in the Soviet Union which makes the DIP-300 lathe.

[Note: The above items are further refutation of the statement appearing in OO-W-16010 that the DIP-300 was made at the Moscow Krasnyy proletariy Plant.]

DRIVE TO SAVE TIME SPENT ON AUXILIARY OPERATIONS -- Tbilisi, Zarya Vostoka, 23 Nov 50

The introduction of a technological process for conveyor production of the 1D63A lathes is being completed. A great deal of work has been done on the introduction of new high-duty attachments and on the perfection of new special machine tools ordered for special operations. This makes possible a rapid decrease in the time required for auxiliary operations, an important factor in better utilization of production reserves.

Stakhanovites using high-speed methods of machining metal have achieved notable success. However, the amount of time consumed for auxiliary operations has not been affected. Auxiliary operations comprise the following: installation of the part on the machine tool, removal of the finished part, its inspection, and measuring its machined surfaces. This usually consumes more than 50 percent of the total time required for machining parts.

Over 600 attachments are used for the machining of parts for the 1D63A machine. During 1950, 280 of these were put into operation during the time that the conveyor technology was being introduced.

PRODUCE NEW MACHINE TOOL -- Tbilisi, Zarya Vostoka, 11 Nov 50

The Tbilisi Stanok Plant has started production of a new thread-generating machine with hydraulic drive.

PRODUCE NEW AUTOMATICS -- Leningradskaya Pravda, 5 Nov 50

The Leningrad Automatics Plant has produced the first series of automatic machine tools for straightening and cutting nickel pipes and wire. It has also started series production of new drilling and milling automatics.

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PARTS BY-PASS TECHNICAL INSPECTION DEPARTMENT -- Kiev, Pravda Ukrainy, 22 Nov 50

The the Kiev Machine-Tool-Building Plant imeni Gor'kiy, 60 workers have their own individual stamps for marking parts which they manufacture. Parts which are thus stamped by-pass the technical inspection department.

21-HOUR THREADING OPERATION NOW TAKES 19 MINUTES -- Moscow, Komsomol'skaya Pravda, 14 Nov 50

With the use of a special attachment, a so-called vortical milling head, 1,100-millimeter-long lead screws for lathes can now be cut in 19 minutes instead of the regular 21 hours. Its accuracy and finish meet the most rigid requirements.

COMPLETE ASSEMBLY OF 4 NEW CONVEYER LINES -- Moskovskaya Pravda, 10 Oct 50

The Moscow Electric Pump Plant recently completed the assembly of four new conveyor lines. A machine for die casting has been put into operation at the foundry. Precision parts from nonferrous metal are manufactured on this machine and do not require any additional machining.

AUTOMATIC FOR OXYGEN CUTTING OF STEEL -- Moscow, Morskoy Flot, No 11, Nov 50

The "Vniiavtogen ASSh-1" automatic for acetylene oxygen cutting of various-shaped parts from 5- to 100-millimeter-thick sheet steel is being produced by domestic plants. The largest parts (750 x 1,500 millimeters) can be cut to a 0.3-0.5 millimeter tolerance. Cylinders, generators, etc., may be used for feeding the acetylene.

The cutting regimes and consumption of gases are given in the following table:

Thickness of sheet (mm)	5	10	20	30	40	60	80	100
Jet No	1	1	2	2	3	4	4	4
Oxygen pressure (atm)	3	4	4.5	5.5	5.5	6	7	8
Cutting speed (mm/min)	550	475	380	320	270	220	190	160
Oxygen consumption (liters/min)	70	95	175	250	400	670	870	1,200
Acetylene consumption (liters/min)	12	16	20	26	34	45	57	75

The automatic weighs 730 kilograms.

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