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SURVEY OF SOVIET HEAVY INDUSTRY (21)

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This is a series report, published approximately biweekly, which contains items of interest on Soviet heavy industry as reflected in articles, short news items, announcements, etc., appearing in various USSR and other publications. The items contained in this report fall uncer the broad categories listed below in the table of contents.

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MOTOR VEHICLES

Diesel Production

In Zaporozh'ye at the "Kommunar" Plant, the ultra-compact "Zaporozhets" is about to be produced. The new automobile requires reorganization and specialization of other enterprises in the Oblast also. The Melitopol' Motor Plant was re-tooled for production of motors for the "Zaporozhets" and the production of diesels which it had produced is transferred to the Bol'shoy Tokmak Diesel Plant imeni Kirov, and we are to organize the production of the Melitopol' diesels during 1960. For this it was necessary to construct and expand several shops in Bol'shoy Tokmak. As early as 1959 the Sovnarkhoz passed a resolution Allocating 16.2 million rubles and set up in Bol'shoy Tokmak an office of the "Zaporozhstroy" Trust, which would be delegated the construction of the mechanical assembly shop and renovation of the forge-press shop. Head of the enterprise's construction and reconstruction projects was Chief Engineer of "Zaporozhstroy" Baranovskiy. But last year the Plant imeni Kirov did not receive one square meter of new production space. Only 4.7 million rubles were used instead of 16.2 million. Now comes the strange part. The Sovnarkhoz closed its eyes to all this and increased our

Diesel Production (cont'd)

1960 plan by 76.6% and requested us to organize new production. The problem of reconstructing the plant hung in the air. The Machinery Construction Administration of the Sovnarkhoz allocated a total of 1.8 million rubles for construction in 1960. This isn't even enough money to complete the forge-press shop, let alone the mechanical assembly shop, for the completion of which a million rubles are required.

No matter how hard we tried, nothing was achieved. We have the impression that Ivanovskiy, Chairman of the Sovnarkhoz, and Martirosov, Head of the Machinery Construction Administration, for some reason have refused to reconstruct the Plant imeni Kirov. Can it be that they don't understand that our enterprise, without stopping former production, cannot begin new production which was handled by a similar plant, in the same production space? The plant has sought out and implemented all reserves and has achieved a production increase of more than 56% with great effort. The decisive role in this was played by an increase in labor productivity--it has increased by almost 35%. Nevertheless the

Diesel Production (cont'd)

plan was not fulfilled. The plant has changed from one of the leading plants in its field to a position lagging far behind, and has produced many diesels short. We believe that this would worry the "Zaporozhets" Oblast Party Committee of the Ukraine and the Ukrainian SSR Gosplan Heavy Machinery Construction Department. The longer we go on at this the more complicated the situation will become at the plant--by the end of the Seven Year Plan we are to produce almost four times more than we did in 1958. The more rapidly the problem is solved and the reconstruction of the Plant imeni Kirov, the better it will be for the collective and for the country as a whole. (Pravda Ukrainy, 26 August 1960. Full translation)

New Semi Tractor

The Belorussian Motor Vehicle Plant has produced an experimental model of a new piece of machinery--a powerful dual-axle saddle tractor for pulling semi-trailers. It is designed for pulling auto-unloading semi-trailers with a 36 to 40 ton load capacity, used on open-face mining operations. The new machine has been built, based on the famous 25-ton dump trunk "MAZ-525". It has a closed cab and a special saddle mechanism has been mounted for connecting the semi-trailer. The length of the tractor is 6.7 meters and its width--3.2 meters. It has a 12-cylinder 300 hp diesel motor. The tractor can travel up to 30 km/h with a full load. The new machine of the Belorussian Motor Vehicle Builders, built on the order of the Dnepropetrovskiy Sovnarkhoz, has been shipped to the Krivoy Rog Central Mining Combine for testing. (Sovetskaya Belorussiya, 26 August 1960. Full translation)

"Karpaty" Bus

A new and interesting display has appeared at the Exhibit of the Achievements of the National Economy--the "Karpaty" interurban bus, designed by the L'vov Bus Plant and the "NAMI" Institute. Everything has been done to make the passengers and driver comfortable during a long trip. The bus contains 22 comfortable seats with high backs and arm rests. Instead of springs, the seats are equipped with foam rubber. The passengers can regulate the angle of the seat. In the evening an individual light is provided for each seat, the light from which does not disturb persons nearby. There are no suitcases in the passenger section--the baggage compartment is situated below the floor. The bus contains a snack bar. Ventilation is provided by constant fresh-air flow. A transparent sun roof which can be opened lets in much light. The bus is equipped with warm air heating, in the winter the passengers can check their coats. Power-steering and automatic transmission make it easy on the driver. Thanks to the fact that pneumatic suspension is used both front and back, instead of ordinary springs, the bus rides smoothly even at top speed. Soon, "Karpaty" buses will begin to

"Karpaty" Bus (cont'd)

cruise the highways of the Ukraine and the Baltic Republics, the Caucasus and Belorussia, as well as other regions in our country. (Sovetskaya Latviya, 17 September 1960. Full translation)

New Tourist Bus

The word "Tourist" is written in silver letters on the body of the shiny new bus. This is a new type of bus produced by the L'vov Motor Vehicle Plant. The driver opens the door and invites us into the bus. The bus is spacious, full of light and very comfortable. The ceiling is painted ivory and the panels--sky blue. The windows contain mirror glass, and the ceiling is decorated. The bus contains 33 soft seats with adjustable backs. In front of each seat is a pocket for newspapers and magazines, an ashtray, an individual reading lamp. The 34th seat is next to the driver. It is designed for the tour leader. A microphone has been installed in front of it. The bus contains ventilation, heating, signalling, a clock, thermometer--everything essential to the passenger on a long trip. There is even a small snack bar. One feature of the bus is its excellent shock absorbers. It rides smoothly and silently.

"How does the machine operate?" we asked Leonov, the bus driver. "The speedometer shows about 5,000 km. I've made several runs to Leningrad and Yasnaya Polyana. My passengers were tourists from East Germany, France,

Japan, and all of them praised the new bus. The bus can easily do better than 80 km/h. This notwithstanding, it runs steady. In front of me is a panel full of instruments. One of them is a signaller. If the bus is low in water, oil, gasoline or the air in the tires is low, a red light goes on on the panel. The first consignment of these buses has been received by the "Intourist" Bus Operations Center. (Vechernyaya Moskva, 30 September 1960. Full translation)

Bus and Trailer

A passenger bus and trailer cruises the highway joining Stavropol' with the construction sight of the synthetic rubber plant. It consists of a bus-tractor and a trailer, operated by one driver. This unit was created at the suggestion of Chmerev, driver from the Stavropol' Auto Transport office. For the trailer, Chmerev used the body of the ZIL-155. Students in the fifth semester of the Motor Vehicle Faculty of the Saratov Polytechnical Institute, Kayerlepp, Isnatov and teacher Gribenko helped in designning a mechanism for coupling the tractor with the trailer. They worked for more than a month on the coupling. The project was successful. The trailer follows the tractor both on a straightaway and on curves. It does not weave even at high speeds. Both the tractor-bus and the trailer have air brakes. The unit carries about 150 passengers. Soon 10 more of these units will be produced in Stavropol'. This will save about 250,000 rubles. (Sovetskaya Rossiya, 3 September 1960. Full translation)

New Truck Trailer

The new powerful YaZ-210 truck was moving along the Ring. It was pulling a long, low trailer, specially constructed for hauling large loads. The new trailer has 36 wheels, and it is 17 meters long. It can handle as much freight as two large freight cars. A few days ago the "MosAvtopogruz" Trust received some of these trailers. The truck depot tested them. The powerful YaZ-210 truck, hooked up to the trailer with a 100 ton load, hauled it from one end of the city to the other. The trailer turned out to be reliable and easy to handle in operations. The loaded machine travelled at 20 km/h. (Vechernyaya Moskva, 6 September 1960. Full translation)

New Truck

A truck travels rapidly along the dirt road, raising clouds of dust. It easily negotiates chuckholes, bumps and ruts. The GAZ-63 is being tested. This is an unusual machine: it does not have metal springs. They have been replaced by air-cushion suspension, [with rubber], the inner section of which (diaphragm) is of kapron. The modernization was developed according to a plan worked out by Galashin and Bucharon, workers in the Chair of Wheeled Machines of the MVTU imeni Bauman,* . Yesterday the tests were completed successfully. The new suspension insures a smooth ride along bad roads and saves much expensive steel. (Moskovskaya Pravda, 16 September 1960. Full translation)

[MVTU imeni Bauman: Moscow Superior Technical School imeni Bauman.]

Truck Production

The collective of the Gor'kiy Motor Vehicle Plant was the first in the Oblast to run an honor shift in honor of the 43rd Anniversary of the Great October Revolution. In their increased obligations the Motor Vehicle Plant men gave their word to fulfill the 10-month program for gross production ahead of time--by 28 October. They are devoting particular attention to the incorporation of new technology. In particular, it has been resolved to produce by 7 November two experimental-production consignments of improved Volga automobiles. In honor of the national holiday, the men from Gor'kiy will transfer to the testing grounds six experimental models of trucks, including the GAZ-53, with a load capacity of from three to four tons, and three GAZ-52 trucks, with a load capacity of 2.5 tons. (Sovetskaya Litva, 16 September 1960. Full translation)

"Spriditis" Bus

"Spriditis" in translation means "Tom Thumb." This nickname, borrowed from fairy tales, has been used by the Riga Motor Vehicle Builders to christen their latest creation--a small 9-person bus. "Our plant was instructed in 1958," Klege, head of the experimental shop of the Riga Motor Vehicle Plant, said, "to develop a small passenger bus based on units from the 'Moskvich' automobile." I was given capable designers-motor vehicle builders Sils and Ositis to aid me. We had the task of developing a bus which, although small in size and with an economical motor, would be able to transport 8 to 9 passengers under various conditions. After a few months the plans for the first variation for the ultra-compact bus were finished. But before the first model could be built, it was necessary to introduce various corrections in the design with the aim of improving a future model. All of last year went for this. This year the collective of the experimental shop built five models of the "Spriditis." One of them was sent to the exhibit in Moscow, two are at international exhibits abroad, and two have been kept at the plant for comprehensive testing. What does the latest model of the "Spriditis"

"Spriditis" Bus (cont'd)

look like? It is a miniature bus with an aerodynamic body. There are nine seats including the driver. Comfortable, soft seats have been installed in the bus for the passengers, with extended backs. There is good forced ventilation. In addition, the central section of the roof can be slid back. The new bus is designed chiefly for sanitoria and vacation resorts, but it is particularly suitable for tourists. The sun roof makes it possible for the passengers to stand up at full stature and provides a good panoramic view. The bus motor, reinforced by lateral reduction gears, makes it possible to negotiate steep mountain roads with ease. The maximum speed of the bus is 80 km/h. In addition to all the other features the "Spriditis" is radio-equipped. The small bus is also to be used in government motor pools and in ambulance work. In the future the plant plans to produce on the model of the "Spriditis" ambulances of the "first -aid" type. (Sovetskaya Latviya, 10 September 1960. Full translation)

The "Zaporozhets"

On 6 and 16 August, in the articles "Ultra-Compact Braked" and the "Heart of the Zaporozhets," published in Ekonomicheskaya Gazeta, several enterprises were criticized for ruining delivery plans of equipment, parts and tools for the "Zaporozhets" automobile. Serious complaints were made, in particular, against the Moscow Compact Automobile Plant, the Khar'kov Bearing Plant, the Leningrad Plant imeni Il'ich, the Gor'kiy Motor Vehicle Plant and others. The editorial staff has received letters from the Directors of the enterprises producing equipment for the new ultra-compact car. Chief Engineer of the Kherson Electrical Machinery Plant Pereyaslov, reports that now the plant collective has improved the design of the stator and has improved the quality of generators in compliance with the demands of the client plant. The first consignment has been sent to the plant assembling the "heart" of the "Zaporozhets." In addition, Pereyaslov makes complaints against the Ukranian SSR Gosplan and Khersonskiy Sovnarkhoz, which have not yet solved the problem of furnishing the enterprise with essential metal-cutting equipment. This re-

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The "Zaporozhets" (cont'd)

flects on the amount of time taken to fill the orders placed by the "Kommunar" Plant. The Director of the Chernovitskiy Tool Plant, Ivanov, informs the editors that of 18 different automobile tools, 11 have already been shipped to the "Kommunar" Plant. The plant assumed the obligation to ship this year twice as many sets of tools for the "Zaporozhets" as stipulated by the plan. In addition, Ivanov reports that the "Kommunar" Plant has not furnished the Chernovitskiy toolmakers with the proper type of metal. Similar complaints are made against the "Kommunar" by the head of the Machinery Construction and Power Engineering Administration of the Vinnitskiy Sovnarkhoz, Letopur. Stating that the article "Heart of the 'Zaporozhets'" was discussed at a meeting of the Chief Engineers of supplier enterprises and the cricitism was recognized as correct, Letopur focuses attention on the tardy transfer of funds for metal for the production of jacks. In spite of numerous reminders by the Dnepropetrovskiy Mechanical Plant to the Zaporozhskiy Sovnarkhoz and the "Kommunar" Plant to send material for jack production, up to the present the

The "Zaporozhets" (cont'd)

supplier enterprise does not have a sufficient quantity of metal. This is delaying both the production and shipment of jacks. Letopur also informs us that the delivery of light fittings was delayed by the Sutisskiy Plant due to a lack of sopolimer and silicate glass. On 22 August funds were received for sopolimer, and soon the plant will begin to ship light fittings to the "Kommunar." Chief Engineer of the Shadrinskiy Auto Aggregate Plant, Kaplunov, reports filling an order for heaters for the "Zaporozhets." At the same time, we are puzzled by the stubborn silence on the part of the directors of other enterprises. The Moscow Compact Automobile Plant, Kremenchug Motor Vehicle Plant, the Odessa Spare Parts Plant and the Khar'kov Bearing Plant have not considered it necessary to answer the criticism. (Ekonomicheskaya Gazeta, 10 September 1960. Full translation)

MACHINE TOOLS

Automatic Shop

The collective of the Minsk Bearing Plant has answered with deeds the Resolution of the July Plenum of the CC of the Party. Large-scale work is being conducted to incorporate new technology, production automation and mechanization of labor-consuming processes. Two automatic lines for ring grinding with the use of original design auto-operators are already in operation at the enterprise. Automatic machines check the quality of production, assemble cardan bearings, carry out several other complicated operations. Complex mechanization has been incorporated in the thermal processing of ball and roller bearings. Transport mechanisms have been installed in the forge shop for transferring blanks from the kilns to the hammers. Right now the designers of the mechanization and automation department are developing an automatic shop. In this shop outer and inner rings for the most mass-produced ball bearing will be produced on a basis of the most modern equipment and latest

Automatic Shop (cont'd)

technology. All operations, from the transfer of blanks for machining to the finished ring, will be done by machines. The drawing up of the technical plans is proceeding at full speed. The plan is being worked on by designers Madorskiy, Vasilevskiy and Kasper. Pro[illegible]tion of individual components has begun. An experi[illegible] section is being formed for developing production p[illegible]sses--a model of the future grinding section of the aut[illegible]matic shop. According to estimates by economists the conditional, annual savings on the incorporation of complete mechanization of machining bearing rings in the automatic shop will amount to 5 million rubles. More than 20 automatic lines will be installed at the bearing plant in the present Seven Year Plan. (Sovetskaya Belorussiya, 8 September 1960. Full translation)

Automation Progress

The workers of industry, construction and transport of the Republic have met the Resolutions of the July Plenum of the CC of the Party with great eagerness. These Resolutions formulated the new and great tasks in the field of technical progress. The collective of each enterprise and each construction job can already relate the work done in the field of technical progress, reconstruction and improvement of production. Great changes have also taken place at our plant. It is sufficient to say that during the period between the two Plena (July 1959 and the last one), motor vehicle parts production has doubled. In June of last year we produced only two types of spare parts--front and rear brake cylinders, while now the number of different motor vehicle parts produced has increased to six. Mass production ofmaster brake cylinders and repair kits has been incorporated, as well as spring bolts and valve guider bushings. At the middle of last year not one automatic machine was in operation, for they were still in the process of preparation. Now the most complicated production operations are carried out by 27 automatic machine tools.

Automation Progress (cont'd)

A complete semi-automatic line has been installed for machining spring bolts and hardening them with high-frequency current. The job of automating this operation is continuing. Formerly 18 persons were employed for maching by-pass valves. They have been replaced by two automatic machines which are operated by two adjusters. Two automatic machines have replaced 12 workers for machining brake-stop rods. Adjusters Kryazhevskiy and Chekvnov have doubled their productivity, modifying the machine tools for operating with double-rod placement under the parts being machined. Technical progress means a continued struggle to find new methods of economizing on materials. Endeavoring to answer the letter of the CC of the Party on economizing on ferrous and non -ferrous metals with deeds, we have gone over to stamping stop rods with high-frequency current heating. Thanks to the introduction of this innovation, we will save up to 60 tons of metal per year.

The progressive method of machining metals by pressure has found broad application at the plant. Now 27 punches are being used for producing master brake cylinders alone. All the technical innovations developed at the plant

Automation Progress (cont'd)

are the fruit of the tireless efforts on the part of our efficiency experts. Shimkov, Chairman of the Tool Shop, made suggestions for two new punches, and this idea has been approved by the Plant's Technical Council. Forge worker Negmatov proposed an original method of repeated use of scarce matrices which are labor consuming to produce for a punch for producing aluminum pistons. Many changes have taken place at other parts of the plant. A powerful compressor department has begun operations. The foundry shop has been changed around. Here machines have replaced manual molding. The shop now contains 9 mechanical molding devices. Formerly one worker produced 40 mold frames per shift with manual molding, while now productivity has been increased four and one-half fold. In view of reconstruction the shop work area has decreased twofold, while production has increased at the same rate. Credit goes to the shop head, Yermatov, who was able to organize the use of mechanical molding machinery. This year our casters have incorporated shell casting. For example, the master brake cylinder piston is poured into shells. Pouring into rigid

Automation Progress (cont'd)

metal molds assures a high accuracy to parts, a speed-up in the process, a decrease in non-ferrous metal expenditure, because of which the plant has saved 3 tons of aluminum. Improvements made in the casting shop have made it possible for indices to improve considerably. A great victory by the foundry men was the incorporation of such complicated casting as the master brake cylinder casing. Tadzhikistan's first vertical drying kiln has been completed at the plant, which, together with the installation of sand-blaster rod machinery and a chain suspension conveyor, will solve the problem of the total automation of rod production.

Speaking of the success of the collective in the struggle for technical progress, we must mention the tremendous and fruitful work in this direction done by the chief mechanical engineer's department, headed by Karabanov. The collective of the department, dealing with unfamiliar and complicated techniques, sometimes without plans, not only became well acquainted with it in a short period but was able to make the machinery serve efficiently. Our plant is aiding the Isfarinskiy Electro-Mechanical Plant, producing special punches and non-standard equipment. At present

Automation Progress (cont'd)

the first consignment of primary essential punches has been completed and sent to the Isfarinskiy Plant. We approach the July Plenum of the CC of the Party with good results. The lag at the beginning of the year, caused by unsatisfactory material-technical supply, has been eliminated. Now the enterprise has to its credit more than 160,000 rubles worth of above-plan production, and the 7-month plan was produced ahead of time by 21 July. We are sure that the yearly plan and the reconstruction plan will be completed ahead of schedule. (Kommunist Tadzhikistana, 23 August 1960. Full translation)

MISCELLANEOUS

Specialization

In the Dnepropetrovskiy Economic Rayon, multi-branch machinery construction has developed in recent years. Machinery and equipment for metallurgy, mining, transport, agriculture, the food and electro-technical industry has been built, and the variety of products is increasing constantly. Among new products with the mark of the Dnepropetrovsk Plant is a rotary railroad car tipper with mechanized car feeding and special maneuvering mechanism, machinery for lubricating steel casting molds and for pressure casting, a loader with rake attachment for the mining industry, a harvesting combine which cuts off plants at the root, and many others. Even wider horizons have opened up before the Dnepropetrovsk Economic Rayon now. The total volume of machinery production will increase by 73% during the Seven Year Plan, and more than twofold in machine tool construction and electro-technical machinery. These prospects require a clear-cut specialization for the enterprises of the Economic Rayon, but there is much to be desired. For example, in the opinion of the Rayon's machinery builders, the USSR and Ukrainian SSR Gosplans are incorrectly solving the problem of

Specialization (cont'd)

specialization of the largest heavy machinery plant in the Dnepropetrovskiy Economic Region--the DZMO. This plant produces basic metallurgical and rolling equipment, chiefly for ferrous metallurgy production installations. It seems that further specialization should be introduced in the plant for this production. The powerful machine tools with which the shops are equipped work more effectively under such circumstances. However, the Ukrainian SSR Gosplan, supported by the USSR Gosplan, has decided otherwise and has planned for the plant the production of "ad'yustazhskiy"* equipment. It is like using a cannon to shoot sparrows: the capacity of the unique shop equipment is being expended uselessly, its use effectiveness is far from optimum.

This seems to be particularly stupid if one considers that at one time the Staro-Kramatorsk Plant imeni Ordzhonikidze was equipped for producing "ad'yustazhskiy" equipment, when the plant had already passed through the period of incorporation, had prepared fittings, and had specialized workers and engineering-technical workers. Here are some additional examples. Right now the problem

[*ad"yustazhskiy; not translated; may refer to spare parts]

Specialization (cont'd)

has become very critical of the production of heavy 40-ton MAZ-530 dump trucks and trailers for them for the requirements of Krivoy Rog Mining Basin. In the opinion of the USSR Gosplan, production of these machines should be handled at the former Dnepropetrovsk Autoaggregate Plant (now the Mining Equipment Plant). The originators of this idea were evidently deceived by the former specialization of the plant: it used to produce autoaggregates, and now it can produce heavy trucks. Actually, this plant has absolutely no production basis for this. However, such a base does exist at the Dnepropetrovsk Electric Locomotive Plant, which is now faced with the necessity of using another speciality. The fact is that its former products--industrial electric locomotives--used chiefly at iron mines for hauling ore and delivering it to concentration plants--have been removed from production. Experience has shown that trucks are more suitable for these operations.

The Dnepropetrovskiy Sovnarkhoz and the Moscow "Giproavtoprom " Planning Institute have reached the conclusion that the former electric locomotive plant is just

Specialization (cont'd)

the place to organize the production of the 40-ton MAZ-530 dump trucks. This enterprise possesses sufficient production area, crane and machine tool equipment, and with limited expenditures, as early as 1961 can begin production of this machinery for the country's mining basins. Having such a production base, the plant, in cooperation with the Motor Vehicle Builders of Belorussia, can assure an annual production of hundreds of MAZ-530 trucks in a short time, as well as semi-trailers with a load capacity of 60 to 80 tons. The most expedient specialization for the plant is determined--the production of heavy dump trucks. Their production would definitely have an effect on increasing coal extraction as well as decreasing capital investments in the organization of transporting ore from the mines of Krivoy Rog Basin.

However, a plan has been developed in the same high places for the plant to produce electric motors. But an electric locomotive and an electric motor are not the same thing, for that production capacity which the plant possesses is not needed for the production of the latter. We might

Specialization (cont'd)

mention the requirements of one more enterprise. The "progress" plant , . for example, should specialize in the production of forged steel ammoniac and acid-resistant fittings. More than a year and a half has passed since this Resolution, but the Ukrainian SSR Gosplan has still failed to allocate funds for the proper reconstruction of the "progress." The plant is being strangled due to a lack of production space and is on the verge of shutting down due to the insufficient supply of power engineering funds, but this is no cause for concern to the Ukrainian SSR Gosplan. As if nothing at all were the matter, it is continuing to plan the production of these fittings, and at an even greater volume. The machinery builders of the Dnepropetrovskiy Economic Rayon are worried by such lack of proper foundation for plans outlined for specializing certain of their enterprises. (Ekonomicheskaya Gazeta, 6 September 1960. Full Translation)

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