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SURVEY OF SOVIET HEAVY INDUSTRY (20)

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## SURVEY OF SOVIET HEAVY INDUSTRY (20)

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 under the broad categories listed below in the table of contents.

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## MOTOR VEHICLES I

### Penza Bicycles

Day before yesterday (on 3-February 1961), the seven-millionth bicycle left the main conveyer of the Penza Bicycle Plant. (Stroitel'naya Gazeta, 5 February 1961)

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### Elevator Trucks

The APK-6 x 4.5 elevator-body truck designed for loading baggage and freight high onto huge airliners was developed at a repair enterprise in the design bureau headed by V. Kental', and has been put into series production. The first consignment of these trucks has been distributed among the Vnukovo, Shermet'yevo, Khabarovsk, Vladivostok, and Novosibirsk airports. (Grazhdanskaya Aviatsiya, January 1961, page 32)

### New Motorcycle

Designers at the Long-Range Planning Design Bureau of the Minsk Motorcycle and Bicycle Plant have developed, and the plant has produced, an experimental model of the new M-103 motorcycle with a 125-cc, 6-hp single-cylinder engine. This machine is based on the currently produced M-1-M motorcycle. The plant will start series production of the M-103 during the first half of 1961. (Sovetskaya Belorussiya, 17 August 1960)

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### Poor Bicycle Production

V. P. Dzhanpoladov, director of the Penza Bicycle Plant, has expressed dissatisfaction with the organization of the "Moscow Exposition of Industrial Incompetence" sponsored by the periodical Krokodil (krokodil'skaya yarmarka brakodelov v Moskve), and has declined to participate. On the other hand, we the editors of Krokodil insist on the participation of Dzhanpoladov, so that he may share the vast experience he has accrued in his struggle against quality inspection. About a year ago, the entire finished output of his plant was rejected, and a special procedure was established for the inspection of bicycles. "Don't just give me a hard time," beseeched Dzhanpoladov, "and I'll be a good fellow, and the bicycles will be even better!" He was taken at his word, but by the end of last year the plant had regaled the trade network with very nearly 5000 bicycles which turned out to be pure junk! Dzhanpoladov, however, does not agree with this appraisal of his product. He persists in surfeiting his trusting consumers with worthless wrecks of bicycles which torture the eyes and ears as well as the trousers. Dzhanpoladov cannot be permitted to exempt

Poor Bicycle Production (cont'd)

himself in this manner. We are sending him a personal invitation in a rose-colored envelope! (Krokodil, No 5, 20 February 1961, page 13)

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PAZ-651 Bus

The 30,000th PAZ-651 bus has left the main conveyer of the Pavlovo Bus Plant imeni Zhdanov. (Ekonomicheskaya Gazeta, 1 September 1960)

### Cattle Truck

A new truck, the GAZ-63 I cattle truck, has been developed at the Gor'kiy Motor Vehicle Plant. This truck body is divided into three sections and will accommodate 13 head of cattle, 30 hogs, or 100 sheep. (Moscow, Sel'skaya Zhizn', 17 March 1961)

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### Racing Cars

The Tallin Motor Vehicle Repair Plant No 1 proposes eventually to organize the series production of racing cars classed up to 500-cc displacement. Until now these vehicles have been built by various sports organizations in Moscow, Leningrad, Kiev, Tallin, and other cities. (Moscow, Tekhnika Molodezhi, No 8 August 1960, page 27)

Dump Truck

The Zhodino Belorussian Motor Vehicle Plant has assembled its first 40-ton dump truck. (Moskovskaya Pravda, 16 October 1960)

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Hydraulic Vehicle

The Miass Ural Motor Vehicle Plant is developing a new vehicle which dispenses with the usual automotive drive train, from clutch through differential, and in its place employs a system analagous to that of a hydraulic lift. A hydraulic pump is attached to the engine and pumps fluid through lines to hydraulic motors at each wheel. The first rough model of this vehicle has already been built and tested, and has been found more economical and maneuverable than conventional models. (Tbilisi, Zarya Vostoka, 19 August 1960)

MACHINE TOOLS

Bearing Production Automation

The Technical Council of the Moscow First State Bearing Plant has considered the plan for reconstruction of the enterprise, which would involve the application of a large number of automated equipment and the organization of more automatic shops. Labor productivity would be doubled and production increased manifold. Capital outlay would be recovered within 2-3 years. (Turkenskaya Iskra, 26 August 1960)

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Automatic Bearing Line

The Saratov Bearing Plant has started assembly of a new automatic line, the sixth line this year, for the machining of bearing rings. This line was designed locally and manufactured by the plant itself. Since the July Plenum 1960 this plant has organized the production of 40 new types of bearings. By the end of this year, 12 new automatic conveyer and constant-flow lines will have been put into operation. (Ekonomicheskaya Gazeta, 20 August 1960)

### Automatic Brake Lines

In honor of the July Plenum of the CC (1960) of the Party, the Moscow Brake Plant assembled from standardized components and put into operation the first of seven planned automatic lines, all of which are to be built with the plant's own resources in cooperation with scientific research institutes. This first line has increased labor productivity eightfold, and that of several sections will eventually be increased 30-fold. Costs are expected to be recovered within 24-30 months. (Moscow, Standartizatsiya, No 2, February 1961, page 13)

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### Bicycle Tools

The Riga Sarkana Zvaygzne Bicycle Plant has been assigned the series production of Riga-1 machine tools [machine tools used in making Riga-1 motorbikes ?], without disrupting the production of its main products. To fulfill this assignment, a general overhaul and modernization of its machine tools is required; plant engineers state that this should take at least 3 years. The Komsomol committee of the plant asked the director, N. O. Buresh if it were possible to shorten the time period needed for this work. The director was doubtful, since he did not believe that the Division of the Chief Technologist could get the designs out on time. The Komsomol then went to work, and one of their efforts toward accelerating the plant's conversion was the creation of a public design bureau. With the aid of the Komsomol members, 18 machine tools have already been modernized. The Latvian SSR Komsomol organization has appointed itself a "guardian" over the modernization of 5000 machine tools. (Moscow, Komsomol'skaya Pravda, 21 September 1960)

Kazakstan Bearing Plant

The obligation accepted by the collective of the Alma-Ata Repair-Bearing Plant is to produce 1000 above-plan bearings and save 290,000 rubles worth of raw materials and other materials by the Republic's Anniversary Celebration. The workers are keeping their word. They have already produced for the village about 15,000 above-plan bearings and have saved 300,000 rubles. The collective of the repair-khramirovochnyy [?] department has moved ahead of the other competitors, for it has won the Challenge Red Pennant of the Lenin Rayon Party Committee and the Rayon Executive Committee. A stand-out here is Rayon Soviet Deputy Nikolay Durakov. Every day he fulfills his shift norm by 110-120%. Fame is also being won at the enterprise by grinders Valentina Dmitriyeva, Z. Ufimtseva, L. Golovanova, fitters Ye. Kalinina, T. Nikitnenko, A. Antonova and many others. All of them are regularly overfulfilling their shift norms.

This plant has a great future. The Planning-Design Bureau of the Alma-Atinskiy Sovnarkhoz is already drawing up working plans for the reconstruction of the enterprise. After a short time a shop for producing new tractor-combine

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Kazakstan Bearing Plant (cont'd)

and automobile bearings will rise up next to present buildings. It is planned to set up an automatic line in the shop. In the grinding section, two semi-automatic grinding machines received from the German Democratic Republic have been installed. By the end of the Seven Year Plan the plant will produce for the village 1.5 million restored and one-half million new bearings of more than 200 types. New parts with the mark of the Kazakstan Bearing Plant will be coming into the repair shops next year. (Kazakhstanskaya Pravda, 25 August 1960. Full translation)

### Ninth Bearing Plant

The Ninth Bearing Plant is not one of the lagging enterprises of the Kuybyshevskiy Sovnarkhoz. On the contrary, lately much has been said about its achievements. It is true that this is usually accompanied by the following: "Naturally they've got a long ways to go to catch up with the Fourth--they haven't produced the same results, but they've done quite well." The plant over-fulfilled the six-month program for gross and commodity production. Production has been incorporated for several new types of bearings. Costs have been decreased by 0.2% lower than planned costs. The enterprise collective is taking pains to secure the technical improvement of production. Three automatic lines are already in operation. Creative brigades have incorporated several new methods of machine parts. This will speed up the production of bearings and save hundreds of tons of metal. Designers and forge operators, metal workers and machinists are working with high spirits in the plant creative brigades. They do not contain only engineer-economists. Is this not why the calculated "conditional annual" savings remains conditional, although expenditures for incorporating tech-

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### Ninth Bearing Plant (cont'd)

nical innovations were unconditional. This is what happened, for example, with the automatic line in the automatic lathe shop . . . Although the plant is fulfilling the plan, the collective has not yet achieved clear-cut rhythm. The shops have not overcome work stoppage of both equipment and workers, "a big rush" at the end of the month when it is necessary to forget about Saturdays and Sundays. This is one of the reasons for the great labor fluctuation. In seven months of this year alone, almost one-eighth of all the workers left the plant.

The tasks for decreasing metal expenditure are not being fulfilled, and the plant is using considerably more metal than any other enterprise of the Sovnarkhoz Machinery Construction Administration. Losses are quite alarming which are being caused by wastefulness and lack of organization in certain plant shops. These are primarily fines: for not meeting production deadlines and for shipping defective products, for railroad car stoppage and for pollution of the Samara River--this is the same river on the banks of which the plant workers like to have recrea-

Ninth Bearing Plant (cont'd)

tion in the summer. . . How is it possible to eliminate the many losses and non-productive expenditures? How can qualitative indices be improved? How can existing reserves be mobilized? The Plant Economic Service was first appealed to to answer these questions. But it can't do this. The Planning-Economic Division possesses various photographs of various processes. The Department did not even possess essential data for correct evaluation of plant operations: equipment use, effectiveness of expenditures for incorporating new technology, losses of work time divergences from the metal expenditure norms, etc. "We actually don't know much," department head Vasyukov agrees, "and therefore we could never give the Director a real analysis of the plant economy. But look what we have to work with . . . ." It is not only a matter of the economists being overloaded with operations work and that they are drawing up plans and summaries, joining and separating endless figures without drawing a breath. The fact is that they have never done anything else and many of them are not capable of doing anything else. They told me about such a case in the editor-

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Ninth Bearing Plant (cont'd)

ial room of the plant paper. One of the largest shops in the plant managed to save quite a bit of money last year. The editors asked the head of the Shop-Planning Economic Bureau to relate how this was achieved. "I don't have any figures," he answered, "if you're interested you can ask the shop boss . . . ." We are speaking about a man who is considered to be an extremely conscientious worker, and we have no basis to doubt this. But in order to direct the economic work in a shop containing about 1,000 workers it is necessary to have knowledge in addition, and the head of the Planning-Economic Bureau obviously does not have sufficient knowledge: he finished only four years of school. Other than him, the shop has one more employee who is supposed to deal with the economy. Previously, having finished law school, she worked as an inspector in the housing-communal department. Several economists of the plant administration? "We should really strengthen this service," plant director Rylov says, "but it is not so easy to find good engineer-economists." It is true that it is not easy. However, until quite recently nobody bothered to look for them. \*have about the same training.

Ninth Bearing Plant (cont'd)

It is true that Rylov has been working for less than a year and a half as director; but we can assume that he would not allow such a situation to exist even a week in any of the other basic plant units.

Two large bearing plants are situated in one city, subordinated to one Sovnarkhoz administration, but their economic indices are quite different from one another. Differing from the Ninth Plant, all the lines of the Fourth Plant work steadfastly and rhythmically. Expenditures per ruble of commodity production are 65 kopeks and at the Ninth-- 84. There is about the same difference in production per unit of production space and other indices. How is this to be explained? A direct comparison of general data, without considering nomenclature and all conditions of the economic operations of both plants naturally cannot furnish an answer to this question. The Sovnarkhoz Machinery Construction Administration, as well as its Planning-Economic Department long ago should have conducted a detailed technical-economic analysis of the operations of both enterprises jointly with plant workers. Several workers of the Ninth Bearing Plant for some reason think that their neighbors are not willing

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Ninth Bearing Plant (cont'd)

to disclose the secrets of their success. At any rate, if exchange of information between the two enterprises is more or less set up in the area of technology, there is none at all in the sphere of economics. "At one time we attempted," Vasyukov says, "to compare the economic indices of our automatic lathe shop with an analogous shop of the Fourth Plant, but nothing came of this: we were not able to obtain exhaustive data. A systematic exchange of information characterizing the economies of enterprises producing similar products can play an important role in the fight to improve production results. Up to the present this type of information both on the economic rayon scale and on a national scale is unsatisfactory and there is a great need for it.

Experience is posing many complicated problems for the economists of enterprises, and they are not always able to solve these problems independently. They need large-scale aid from economic institutes. Take the following problem. In connection with the mechanization and automation of processes new plant service units developed, and new categories of workers were formed. Naturally new principles must be

Ninth Bearing Plant (cont'd)

thought of in relating them to basic and auxiliary production, if this division has not become obsolete. More scientists should make a thorough study of the grouping of expenditures according to economic elements and calculation items, introducing changes into this grouping, caused by the conditions of production development. Existing grouping for complex items often leads to a situation whereby expenditures which comprise a considerable proportion of product cost are not revealed and are not analyzed. This holds primarily true for so-called shop expenditures, the proportionate weight of which achieve 35 to 40% of production costs in many enterprises. At present no one is arguing the fact that the Economic Service Units should occupy a leading position at enterprises. But for this, besides strengthening by means of qualified cadres, it is necessary to determine its structure in a clear-cut manner, as well as its tasks and work methods, which should be formed on a truly scientific basis. (Ekonomicheskaya Gazeta, 20 August 1960. Full translation)

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MOTOR VEHICLES II

Modern Bus

Under the title "Modern Comfortable Bus for Moscow" our newspaper published on 19 April of this year the open letter of a group of workers of passenger transport in Moscow to Gosplan member Strokin. The editorial staff has received an answer from the head of the Machinery Construction Department of the USSR Gosplan, Yezhevskiy, who reports that the criticism contained in the letter against the quality of buses produced by the Likinskiy Plant (Moskovskaya Oblast), as well as delays in organizing production of large capacity buses at the Plant imeni Uritskiy (the city of Engel's) was justified. The answer stated that the USSR Gosplan, together with the Council of Ministers State Committee on Automation and Machine Construction, examined the complaints of the Moscow Transport Workers and, with the participation of representatives from the Likinskiy and L'vov plants, outlined measures for improving bus quality. In 1961 production is to begin at the Likinskiy Plant of

Modern Bus (cont'd)

modernized ZIL-158 buses, equipped with power-steering, power-brakes, pneumatic body suspension. In addition, this enterprise is planning the production of a city-use bus with a more powerful engine situated in the rear. Production on this bus will begin in 1962-1963. Buses produced by the L'vov Plant are also to receive several improvements. In this manner the operational qualities of the motor vehicles will improve considerably. In 1961 production is planned for the first consignment of the ZIU-6 large capacity buses, built on the basis of a new trolleybus. (Moskovskaya Pravda, 12 August 1960. Full translation)

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New Motor

Automobile men call a motor the heart of the vehicle. This is an accurate definition. An automobile without a motor is only a pile of cold, inert material. The heart of the newly-born baby automobile "Zaporozhets" has begun to beat. The first persons who listened attentively to its beat were the Melitopol' Motor Builders. Jointly with the Moscow Scientific Research Motor Vehicle Institute, they built an air-cooled motor of about 23 hp. However, it later was discovered that in spite of all of its good features, the motor had a serious defect--the crankshaft was faulty. The builders of the motor began to work on a new model. We shall not describe all of their troubles--this is an interesting tale of stubbornness, steadfastness and energy of persons creatively approaching their task. Much ingenuity and inventiveness was shown by young engineers Felichev and Chayko, Deputy Chief Designer Reepikh, Transmission Bureau Head Beremenson and tester Kaplin. It is not easy to sit behind the wheel for hours in the summer heat or winter cold, "running the motor and carefully listening to the finest nuances of its 'disposition'." This difficult mission was

New Motor (cont'd)

successfully handled by experienced test drivers Oleynikov and Kosobakov. The designers incorporated many valuable improvements in the motor thanks to their suggestions. It is now firmly beating in the sparkling body of the machine--a powerful heart, a result of collective creativity. The new power unit, as it is called at the plant, the 4-cylinder motor is fan-forced air-cooled. The motor has been subjected to lengthy plant testing and passed with flying colors. The "heart" put into the "Zaporozhets" is excellent, but its builders are not resting on their laurels. The plant designers, jointly with the Institute, are continuing to work on the further improvement of the motor.

We became acquainted with the heart of the "Zaporozhets" a few days after the plant's Chief Engineer, Gulyayev, returned from Moscow, full of impressions from the demonstration of the tiny automobile to highly-placed Party and government officials in the Kremlin. He had to retell the details of this demonstration a thousand times. "After the inspection," Gulyayev related, "the Chairman of the Presidium of the USSR Supreme Soviet, Brezhnev, sat behind the wheel and drove around the Kremlin. He was pleased with the automobile."

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New Motor (cont'd)

"The car handles easily and drives well," he said. Then Khrushchev suggested that USSR Gosplan Chairman Novikov sit behind the wheel. Then Khrushchev got into the car and drove around the Kremlin grounds. Khrushchev also approved of the "Zaporozhets." We are proud of the performance of our automobile and its motor. On the same day a consignment of motors was sent to the "Kommunar" Plant in Zaporozh'ye. This year 1,500 of the ultra-compact will be produced. The obligation of the Melitopol' men is to produce 500 motors above plan.

It is impossible to organize mass production of motors without the collaboration of parts supplier plants. The attitude of some of these is causing just concern on the part of the motor builders. For example, the Leningradskiy Sovnarkhoz promises to ship us 25 carburetors in August instead of the 150 we need. The B. Tokmakskiy Plant of the Zaporozh'skiy Sovnarkhoz is sending us short units. The Odessa Spare Parts Plant is shipping piston rings which do not conform to the GOST and technical conditions. Uneasiness is being caused by the unsatisfactory quality of

New Motor (cont'd)

generators and starters produced by the Kherson Electro-Mechanical Plant. The Melitopol' men are also dissatisfied with the quality of rubber products from the Berdyansk "Asovkabel'" Plants. The Directors of the Khar'kov Bearing Plant are doing nothing about the fact that they have neither organized the production nor shipped two types of bearings on which depends an increase in reliability of transmission operation. There are many justified complaints against the workers of the Leningrad Plant imeni Il'ich, who are not paying much attention to shipping a machine tool for producing crankshafts. This makes it impossible to produce oblique crankshafts.

(FROM THE EDITORS: On 6 August Ekonomicheskaya Gazeta published the correspondence "Ultra-Compact Braked." It dealt with the fact that several enterprises have slowed down for months the production of the ultra-compact automobile "Zaporozhets." In particular, serious complaints were made against the Gor'kiy Motor Vehicle Plant, which up to now, in spite of the fact that all deadlines have passed, has not shipped to the "Kommunar" 25 types of basic parts equipment. The Moscow Compact Automobile Plant is

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New Motor (cont'd)

delaying the delivery of 20 part types. The Chernovitskiy Tool Plant has not shipped even one tool of 18 different automobile tools. The Kremenchug Motor Vehicle Plant has delayed the shipment of rims for a year and a half, and not one shipped with the first consignment has been found suitable. Deadlines are being broken for deliveries by the Mechanical Plant of the Lipetskiy Sovnarkhoz, the Supizskiy of the Vinnitskiy Sovnarkhoz and the Shadrinskiy Plant of Kurganskiy Sovnarkhoz. The article printed today named several other enterprises delaying the production of the ultra-compact "Zaporozhets." One is struck not only by the indifferent attitude on the part of the Directors of these enterprises toward endless letters and reminders by the "Zaporozhets" automobile men, but by the intolerable attitude toward articles in the press. Ekonomicheskaya Gazeta hopes that the directors of the enterprises guilty of breaking deadlines for the production of the ultra-compact "Zaporozhets" will finally take measures to fulfill their obligations and will inform the public about these measures through our newspaper. (Ekonomicheskaya Gazeta, 16 August 1960. Full translation)

MISCELLANEOUS

Welding

Our plant, in cooperation with scientific workers, has done much for the incorporation of automatic welding on part machine production lines. With the aid of the Electric Welding Institute named Ye. O. Paton we built and incorporated a highly-productive machine tool for welding motors for motor vehicles, which made it possible to automate all basic and auxiliary operations. It is this friendship with the scientists which made it possible for us to incorporate automatic welding under flux as well as such types of welding as argon-arc, vibro-arc and others. The application of modern welding technique has opened wide possibilities for a significant increase in labor productivity, metal savings and savings in labor expenditures. Here is an example: a diesel engine for a motor vehicle has a part called the flywheel rim. When it was welded on an obsolete design machine, more than one-half of all parts were defective. Now the efficiency experts of our plant have developed a new design welding machine. Fused and forged camshaft drive has been replaced with hydraulic. This machine increases welder labor productivity threefold and eliminates defective production. Right now the collec-

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Welding (cont'd)

tive of our laboratory is preparing for the redesign of a junction welding machine in the aggregate shop. This will make it possible to fully automate all welding operations. In the press shop many parts are also being changed over from the gas manual arc welding method to highly productive relief welding.

Our success could have been greater if we had not been limited by technical-material supply. The plant now receives very little welding equipment, electrodes for fusing hard alloys and certain other materials. We hope that now, after the discussion of the situation of welding science and technique at the Plenum of the CC of the Party, obstacles in the material-technical supply of welding laboratories sectors and shops will be eliminated rapidly. It is also necessary to eliminate our own defects. Here in the Yaroslavskiy Economic Rayon talk has been going on for three years about a central welding laboratory which would direct and coordinate the operations of enterprises in this field. Twice decisions were reached on this, but nothing has been done. At many plants in the Sovnarkhoz there are not even

Welding (cont'd)

small welding bureaus, and welding equipment is being used poorly or even not at all. Here is an example showing the attitude of the Yaroslavskiy Sovnarkhoz to the needs of welders. In March 1959 the Sovnarkhoz was severely criticized at the Oblast Welder's Conference for the low technical level of the welding production of the plants under its jurisdiction. The participants at the Conference stated at that time that no one in the Sovnarkhoz was dealing with these problems, that the technology of welding processes was being violated at most of the plants and that this technology was very poorly mechanized. A year passed, and at the regular Welders' Conference the same things were said once again. It seems that the Sovnarkhoz did nothing to implement last year's recommendations. We cannot reconcile ourselves with this attitude toward the needs of welders. (Ekonomicheskaya Gazeta, 13 August, 1960. Full translation)

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