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# USSR Report

TRANSPORTATION

No. 132

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## MOTOR VEHICLES AND HIGHWAYS

### PLANNING COSTS FOR MOTOR VEHICLE TRANSPORT

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 4, Apr 83 pp 7-10

[Article by G. Guseva, head of the finance and cost department of the KaSSR Gosplan, and by V. Shpenst, assistant head of the KaSSR Ministry of Motor Transport's Main Computer Center and candidate in economic sciences: "Planning Costs for Motor Vehicle Transport"]

[Text] It is well known that planning plays a critical role in the economic mechanism. Therefore the perfection of planning systems, the efficient combination of sector and territorial planning and balanced transport demands--these are the most important tasks. A whole new series of plan indices has been introduced.

Specifically, the increased emphasis given to production costs in evaluating economic activity will improve the way in which material, labor and financial resources are used in transportation; this will eventually lead to lower production costs in other sectors of the economy.

Let's consider here the projection of costs in motor transport. Motor transport enterprises are given limits (break even levels) in five-year and in annual plans for input expenditures per unit of transport work. Taken together with goals for transport costs, an absolute sum of expenditures within plan estimates is determined. We must point out, however, that at the present time only two figures are recognized: expenses per ten adjusted ton-kilometers or per ruble of revenue in all modes of transport.

The cost indices that are used as expense indicators for selected transport modes are maintained as internal account figures. The same motor enterprises confirm and carry out the plan based on these figures and within the limits imposed by appointed tasks.

As much as an evaluation of transport costs depends on one of two indices, it is important to explain in what instances and within what limits one or the other has greater economic significance (table 1).

From the table it is clear that any method of calculation yields a real difference in costs for varying transport modes. And if we measure this difference by the expenses per 10 adjusted tons/km, the greatest amount occurs

for trucks on an hourly basis, while if we measure cost by expenses per ruble of revenue, fixed-route buses are the most expensive.

Table 1

Transport mode	(1)	(2)	(3)	Cost of transport in kopecks based on expenses per		
				(4)	(5)	(6)
Truck (unit work)	tons/km	1.0	62.05	45.4	45.4	73.2
Truck (hourly)	paid hours	11.2	25.15	2230	199.1	88.7
Fixed-route buses	passenger/km	0.25	12.23	13.27	53.1	108.5
Bus (hourly)	paid hours	52.5	3697	3144	59.9	85.0
Taxi cabs	paid km	4.0	230.6	145.0	36.2	62.9

Key:

1. Unit of measure of transport volume
2. Coefficient of determination of transport volume in adjusted tons/km
3. Average rate per 10 units transported, kopecks
4. 10 units of actual indices
5. 10 units adjusted tons/km (column 5, column 3)
6. One ruble of revenue (column 5: column 4x100)

Where there is an imbalance in plan fulfillment in certain transport modes, a serious distortion of actual work results in mixed auto transport enterprises may result. We will demonstrate this with a theoretical model.

Let's say that the enterprise must have one million of the adjusted tons/km done by trucks on a unit basis and the same amount by trucks on a hourly basis, this using the accepted costs at the level of indices in table 1. It follows that the planned expenses per 10 adjusted ton-kilometers will amount to:

$$\frac{1 \text{ million tons/km} \times 45.4 \text{ kopecks} + 1 \text{ million tons/km} \times 199.1 \text{ kopecks}}{2 \text{ million tons/km}} = 122.25 \text{ kopecks}$$

If the enterprise under consideration exceeds plan fulfillment by 10 percent for certain shipments, the base cost (without altering it for the mode of transport) will decrease without any real saving by three percent and will amount to:

$$\frac{1.1 \times 45.4 + 1 \times 199.1}{2.1} = 118.59 \text{ kopecks}$$

When the plan is exceeded by the same 10 percent for trucks on an hourly basis, the base cost--with no other changes--will be three percent higher than the planned cost:

$$\frac{1 \times 45.4 + 1.1 \times 199.1}{2.1} = 125.91 \text{ kopecks}$$

In a similar way there may be changes in the base cost to mixed enterprises, those handling several types of transport, when the index for expenses incurred per ruble of revenue is used.

In order to really evaluate the effect of changes in the actual transport structure as opposed to the planned structure on cost indices, we must consider the part played by various transport modes in the entire sphere of transport work. For this we will weigh the percentage deviations of costs in each transport mode from the total value, taking into account the volume transported in corresponding cost units (adjusted tons/km and in rubles of revenue). This computation is shown in table 2.

Table 2

Transport mode	Expenses per 10 adjusted tons/km				Expenses per ruble/revenue			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Truck (unit work)	45.4	-10.5	62.7	-6.5	73.2	-9.6	62.0	-6.0
Truck (hourly work)	199.1	+292.4	2.3	+6.7	88.7	+9.6	8.3	+0.8
Fixed-route buses	53.1	+4.7	24.2	+1.1	108.1	+33.6	19.0	+6.4
Buses (hourly)	59.9	+18.1	3.8	+0.7	35.0	+5.1	4.2	+0.2
Taxi cabs	36.2	-28.7	7.0	-2.0	62.9	-22.3	6.5	-1.4
Total	50.74	---	100.0	0	80.92	---	100.0	0
Average deviation (%)	---	---	---	3.4	---	---	---	3.2

Key:

- |   |  |
|---|--|
| 1. Kopecks  | 5. Kopecks                                       |
| 2. Percent deviation from total                           | 6. Percent deviation from total                  |
| 3. Share of adjusted tons/km in particular transport mode | 7. Share of revenue in particular transport mode |
| 4. Weighted deviation (column 3X column 4/100)            | 8. Weighted deviation (column 7X column 8/100)   |

Figures from columns five and nine allow us to determine the role played by each transport mode in determining base cost. Using these figures then, structural displacement due to the amount of work performed by trucks (unit work) and trucks (hourly work) will have the greatest effect on costs when expenses per 10 adjusted tons/km are employed. And when measuring the costs in kopecks per ruble of revenue, the growth or decline in revenues from trucks (unit work) and fixed-route bus transport will be the most significant. For the other transport modes, each percentage change in revenues or in the adjusted turnover rate of goods based on percentage of plan fulfillment for various transport modes can be attributed to the growth or decline of base cost up to 0.01-0.02 percent, which is insignificant.

The main conclusion to be made from these calculations in table 2 is the following: given the transport structure, the average percentage cost deviation for various transport modes from total value both for expenses per 10 adjusted tons/km and per ruble of revenue is almost the same, 3.4 and 3.2 percent. With the given criterion, both methods of cost measurement are acceptable--but only for a typical transport structure. At various



enterprises there will be more or less significant deviations. The correct choice of a cost index therefore demands an additional study of a series of objective conditions which leads to the following.

1. Coefficients for translating transport work into adjusted tons/km are set up on the commensurability of labor expended per output unit in each transport mode and of one ton/km for trucks (unit work). The adjusted ton-kilometers for motor transport purposes, calculated with the help of these coefficients (analogous to normative net production in industry), are used to determine labor productivity and other plan indices. Yet they are not good in evaluating specific expenses for transport. This is convincingly corroborated by comparing the existing translation coefficients and the correlation indices between cost per unit of transport work in various modes with cost per ton/km of truck (unit work) transport (see table 3. Calculations are from figures in column 5, table 1.)

Table 3

<u>Transport mode and units</u>	<u>1</u>	<u>2</u>
Ton-kilometers of freight automobiles (unit work)	1.0	1.0
Paid hours of freight automobiles (hourly work)	11.2	49.1
Passenger-kilometers of route buses	0.25	0.29
Paid hours of buses (hourly work)	52.5	69.3
Paid taxi runs	4.0	3.2

Key:

1. Coefficient of translation into adjusted tons/km
2. Functional coefficients between cost for the particular transport mode and cost for freight transport (unit work)

Various levels of hourly productivity for cars explain the large differences of the corresponding coefficients for labor and general expenses (especially per paid hours for freight automobiles and buses).

2. The adjusted conventional tons/km reflect only the transport work without an accounting of various transport-dispatch operations and services of motor transport enterprises.

In calculating cost as expenses per ruble of revenue, results can be measured with all those expenses related to operations of motor transport.

3. The level of expenses for each ton/km of freight transport (unit work) greatly depends on the distance. When the distance is increased from 10 to 15 km the cost is reduced by an average of 22 percent, all else being equal. Considering just how much these shipments make up total transport work, the cost in adjusted tons/km when distance is varied can significantly increase

or decrease from planned cost because of conditions independent of the motor transport enterprise. This leads to attempts to favor long-distance shipments.

When evaluating cost of transport per ruble of revenue, this obstacle can be eliminated because the rate structure contains a relative reduction of expenses for transport as the distance increases.

Outlays per ruble of revenue directly reflect the efficiency level of transport expenses and require no additional computations to determine the amount of adjusted tons-kilometers--this an important consideration in choosing the cost index.

In such a manner all mixed motor transport subdivisions should give preference to the cost index for expenses per ruble of revenue. And at the same time it is all the more important for motor transport enterprises to ascertain costs by means of the accepted index of 10 units of actual transport work. Most motor transport enterprises in such cases do not have to resort to additional new indices in their accounting system.

Directives issued by the USSR Gosplan, the Ministry of Finance and the USSR Central Statistical Administration do not oppose the above proposition. These directives stipulate that transport ministries can prescribe cost goals for subordinate enterprises and organizations that emanate from other indices used in the plan for work output.

Questions of transactions together with existing transport regulations for unit calculation and for cost planning merit special attention, as does the imposition of limits on input expenditures in financial terms of the accepted index.

Here we have in mind not the formal calculation of these expenses but rather the specific improvement of methods of accounting and cost determination on the basis of new information and the creation of conditions for reinforcing normative bases in the planning of production expenses.

Use of the new indices will permit greater harmony between transport costs and other plan aspects--with indices for labor, material and technical supply and the financial plan, this will improve the methodology for planning expenses in both the general and sectorial networks.

Most cost indices in auto transport are multilevel, consisting of a series of adjusted expense items. The structure and relationship of these values as percentages of general expenses in the case of truck transport (unit work) in Kazakhstan (general motor transport) are given in table 4 (see page 10).

The difficulty of a parallel introduction of unit cost accounting is shown by the fact that expenses for materials, salary and deductions for social insurance are contained in five different cost indices, amortization deductions in three.

Table 4

Cost items	Expenses per 10 tons/km as a percent of total	Including the following items				
		mater.	wages	insurance deduction	amort.	other
Driver pay with deductions	25.88	---	24.58	1.30	---	---
Fuel	20.88	20.84	0.04	---	---	---
Lubrication and other operating materials	0.95	0.95	---	---	---	---
Tire wear and repair	6.61	6.59	0.02	---	---	---
Technical service and routine repairs on rolling stock	12.14	6.93	4.95	0.26	---	---
Amortization deduction						
a) for complete restoration	12.23	---	---	---	12.23	---
b) for major repair	7.88	---	---	---	7.88	---
Overhead	13.43	2.55	3.79	0.20	1.38	5.51
Total	100	37.86	33.38	1.76	21.49	5.51

The largest share of expenses--more than 70 percent of general costs--goes to materials and salaries. Miscellaneous outlays make up the largest share of overhead expenses. These are mostly travel expenses, payment for administrative security, personnel training, computer center services, payments and rewards for inventions, technical improvements and cost-saving suggestions, rental of official vehicles, systems of water supply and plumbing, and all types of deductions, fees, dues and taxes.

To calculate expenses by item it is necessary to make a corresponding change in the initial account. This mainly concerns overhead expenses and, as is apparent from the figures in table 4, this includes all types of expenses.

For those items which are absolutely necessary (for example, outlays for labor security, routine repairs, fixed capital, etc.) material expenditures must be provided. And categories such as outlays for administrative security and other limiting and non-limiting outlays, should be adjusted by individual item. As composition and structure are more accurately determined, it follows that each category should be linked with factors which predetermine the extent of corresponding costs.

The issue of having a complete break down of overhead expenses in the context of quarterly or even annual accounts of motor transport enterprises must be resolved. This would permit a fuller analysis and improve the theoretical foundations for cost planning methods.

Material outlays in the motor transport sector are mainly used for the basic work, that of shipping. But not just for shipping. Some of the interchangeable operational and repair materials are used for overhauling the

rolling stock, equipment and production sites, for the upkeep of homes, Pioneer camps and health facilities, for the creation of subsidiary farms. As such there is a limit of material expenditures for the primary activity, while for other activities these expenses are limitless. Therefore it would be wise to have limitations on material expenditures for non-productive demands which stem from the general plan for material and technical supply.

In accordance with the above-mentioned decree of the CPSU Central Committee and the USSR Council of Ministers, a series of normative procedures should be developed in 1982-85. Among them are:

--methodological directions for carrying out state plans for the economic and social development of the USSR (section "Transport Planning");

--methodological directions for planning and computing labor productivity in transport and also for determining wage norms per unit of production;

--methodological directions for calculating transport expenses as plans for production location and specialization are carried out;

In this regard there will be changes in national statistical calculations and in accounting procedures.

Detailed examination of questions raised in this article and their resolution by specialists from ministries, administrations, enterprises and organizations will ensure fulfillment of those measures undertaken by party and government to economize on the use of material, labor and financial resources.

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MOTOR VEHICLES AND HIGHWAYS

EXPERIMENTAL VAZ-2802 LIGHT ELECTRIC TRUCK

Riga SOVETSKAYA LATVIYA in Russian 12 Aug 83 p 2



[Text] TOL'YATTI. Specialists at the Volga Motor Vehicle Plant have developed light electric trucks for intra-city hauls. Experimental models of such vehicles have been tested. The electric vehicles have a reliable and economical electric drive. A one-time charging of the battery can last for 85-100 kilometers. The load-carrying capacity of the new vehicle is 300-500 kilograms. A motor vehicle without exhaust gases from an operating motor will be of help in making a city's air cleaner and reduce the noise level. In the photo: an experimental model of the VAZ-2802 electric motor vehicle. It is designed for hauling as much as 500 kilograms of freight in city districts.

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## MOTOR VEHICLES AND HIGHWAYS

### KUTAISI PLANT DEVELOPS SINGLE-AXLE SEMITRAILER

Moscow EKONOMICHESKAYA GAZETA in Russian No 30, Jul 83 p 10

[Article by A. Gordiyenko: "The KAZ Loses Weight"]

[Text] An annual effect amounting to 10 million rubles will be provided for the Kutaisi motor-vehicle builders by a design development whose implementation has allowed, instead of the traditional double-axle semitrailer for the serially produced KAZ-608V, the production of a single-axle one. As tests have demonstrated, their reliability and load-carrying capacity have not been reduced at all, whereas the design group has actually made the following solid gain: on each semitrailer 500 kilograms of metal will be saved, and the weight of the semitrailer has been reduced by almost a ton. This is a fresh example of a creative search by the plant designers.

"One of the main lines of the search," stated the chief engineer of the Kutaisi Motor-Vehicle Plant Production Association, V. Sikharulidze, "is the reduction of material consumption in production. The 'transformation' of a double-axle semitrailer into a single-axle one is the latest development by our designers."

In the department of the chief designer, which is directed by S. Batiashvili, this new development is termed provisional: the idea of creating a single-axle semitrailer instead of a double-axle one emerged here as far back as eight years ago. But at that time it did not last long: everything ran into opposition in the GOST, which prescribes a load on each axle of a semitrailer of six tons. The idea had to be postponed, even though the designers were still convinced of the following: the standard had been set with a large amount of tolerance, and the load on an axle could be significantly increased.

"It is considered that to operate at the limit of a GOST, if not dangerous, is risky," stated S. Batiashvili. "But, you know, it is precisely this limit which makes it possible to operate most effectively. And we proceeded from this in developing the new design for a semitrailer. We judged as follows: according to the standard, the load on an axle must not exceed six tons--the tires could not stand any more. However, the amount of tire pressure also has its own GOST--ranging from 4 to 6.5 atmospheres. The thing is, the axle load of six tons presupposed the lowest limit of tire pressure. But what if the tire pressure were to be increased? Then, of course, the load on an axle could also be increased.... In the Ministry of the Automotive Industry our calculations were supported, and the standard for the axle load was revised."

According to the calculations of the plant specialists, converting to the output of single-axle semitrailers will provide a savings in metal of as much as 3,600 tons per year and will reduce the labor consumption required to manufacture them by 20 percent.

The example of the semitrailers is not an isolated one. Thanks to the introduction of the latest design and technological developments, the quantity of ferrous metals per million rubles of output produced during the last few years at the Kutaisi Motor-Vehicle Plant has been reduced from 430 to 366 tons. Moreover, with a growth in production output during the past five-year plan amounting to 47 percent, the consumption of rolled metal here increased by only 20 percent.

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MOTOR VEHICLES AND HIGHWAYS

ZAZ-1102: IMPROVED 'ZAPOROZHETS' TO BE PRODUCED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 5 Aug 83 p 4

[Interview with Ivan Pavlovich Koshkin, master of sport and specialist first class, by Ye. Aleksandrov: "Meet the ZAZ-1102"; date and place not specified]

[Text] The AvtoZAZ Zaporozhets Production Association is preparing to turn out a newly designed motor vehicle. What kind of car is this and how does it differ from the Zaporozhets cars that we all know?

I decided to conduct an interview with master of sport and specialist first class, Ivan Pavlovich Koshkin. For many years now he has been testing only these motor vehicles. At present he is working on a car of the latest generation, one which is scheduled to go into production.

[Question] Please tell me about this model.

[Answer] This new car has front-wheel drive rather than rear-wheel drive. In the first place, this has allowed us to make a better arrangement of the components, and, consequently, to increase the usable space. Both the interior and the trunk turned out to be at least as large as they are in the Zhiguli, even though the exterior dimensions of the vehicle have not been increased. In the second place, this car handles better, and that is a safety factor. It is also more convenient to park.

The engine is liquid-cooled and is 50-horsepower. This capacity is fully sufficient, particularly if one takes into consideration the fact that this car has become considerably lighter than the model now in serial production, and the fuel expenditure has been reduced.

[Question] And how does this car stand up with regard to service? This is of great interest to automobile buffs.

[Answer] In no case do the assemblies need to be lubricated, and they are fully accessible for repairs.

[Question] Has the design complicated this car?



Answer No, a number of assemblies have become much simpler. This is also a substantial merit.

Question And one more question: do you like this car?

Answer In principle--yes, but now everything depends on the quality of manufacture....

At that time two ZAZ-1102's drove up to the garage of the experimental workshop. Small, low-slung, looking not at all like the usual Zaporozhets, they, judging by everything, had traveled a long distance.

"Have you driven a long way?" I asked one of the test-drivers, Roman Andriychuk, in the past an apprentice of Ivan Pavlovich Koshkin.

"Seven thousand kilometers over various kinds of roads."

"Were there any breakdowns?"

"A tire was punctured, but there were no other accidents."

"Do you like this car?"

"If I had one like it at a rally, I would win all the gold."

"Is this car suitable for long trips?"

"It is a very convenient and quiet car. It is stable and handles well...."

And then I sat down in the car. It really is convenient: there is good visibility and restful seating. Moreover, even though the car has two passenger doors (a third door belongs to the trunk), it is convenient to sit in it. The doors are significantly wider. And there is yet another merit. Thanks to the front-wheel drive, the car's floor is smooth; the hump-like box does not run through it, and this allows the rear seats to be set low. And this area can be used either as a convenient sleeping place or a very large baggage area. In short, this new car contains many successful design solutions. Its serial production will be begun during the next five-year plan.

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## RAIL SYSTEMS

### CPSU OFFICIAL ON IMPORTANCE OF MOSCOW CAR REPAIR INITIATIVE

Moscow ZHELEZNODOROZHNYI TRANSPORT in Russian No 6, Jun 83 pp 6-13

[Article by V. S. Dobychin, head, department of transportation and communications, Moscow city committee of the CPSU: "Each Car, Each Container in Proper Condition"]

[Text] Buoyed by a great upsurge of enthusiasm, the workers of Moscow along with all other Soviet people are now working to carry out decisions of the 26th CPSU Congress, striving with concentrated effort to implement the party's industrial and agroindustrial development and transport operational improvement programs, programs which were formulated in their final form at the November (1982) CPSU Central Committee plenum. Through better organization and tighter discipline, the working collectives of the capital, the workers, engineering and technical personnel and employees of Moscow's enterprises are now exploiting hitherto untapped productive potential.

### VALUABLE INITIATIVE

The efficiency of the production operations of our city's industrial enterprises as well as of our country's economy as a whole depends heavily upon the quality of the performance of our transportation system. Transportation plays an important role in efforts to fulfill our economic and social development plans. The CPSU's Moscow city committee is devoting continuous attention to efforts to improve the capital's transportation system and raise the level of utilization and reliability of its means of transportation. To insure the smooth operation of our rail transportation system is particularly important in this regard.

Moscow is a major rail center. Each year sees millions of tons of a vast variety of industrial freight arrive and depart its stations. Railroad workers make a substantial contribution to provision of the food, raw materials, fuel and other products required to sustain a normal life for the people who live here and insure the smooth operation of the city's enterprises as well as to the shipment of products of Moscow's industries to other parts of the country and abroad.

Most of a rail center's freight-handling operations will be performed on the numerous access lines of its industrial enterprises. Over 1000 enterprises and organizations in Moscow receive and ship containers.

Under conditions imposed by continuing increases in the volume of rail freight shipments and shortages of rolling stock, it becomes of utmost importance that we be careful and economical in our use of cars and containers and maintain them in proper condition, what with the growing intensity with which we are using our rolling stock, the increases we are seeing in their carrying capacity and the mass-scale introduction of mechanized loading and unloading operations. Unfortunately, however, both at terminals of the Moscow rail center and on the access lines leading to the city's industrial enterprises and construction organizations we are still seeing cars being damaged during loading, unloading and switching operations. Many of the cars coming in to the central terminal empty or for unloading are damaged. For a variety of reasons, some 12 per cent of the cars and 25 per cent of the containers have to be repaired either prior to loading or after unloading.

All this, of course, has a negative impact on our ability to handle freight securely and keep it in good condition. Small bits of damage on a large scale will ultimately make it impossible for cars to carry certain types of cargo. This makes it more difficult to achieve planned rail shipment targets and unnecessarily complicates enterprise production operations with untimely deliveries of raw materials and product components and outbound shipments of finished products. The large number of cars requiring moderate and in a number of instances extensive repairs after being unloaded is one of the reasons for disruptions in arrivals of rolling stock for loading.

Rail workers are expending a great deal of effort in repairing and reconditioning rolling stock. We are seeing operating capacities increased, repair and reconditioning operations and processes improved, facilities and equipment modernized and repair and maintenance shops enlarged. Performance figures are rising. Last year, for example, the terminal repaired 4.6 per cent more cars each day than in 1981. But the problem is that the facilities and equipment at the disposal of its carshops is not adequate for what has to be done to put all arriving rolling stock in proper operating condition. This used to result in considerable delays in car and container movement because they had to be sent to the repair shops and back, this necessarily involving additional idle time. It would not infrequently happen that a plant or factory would load a car with a damaged or defective body and then dispatch it to the consignee. Such use of our rolling stock would lead to substantial losses of both freight and freight-handling equipment.

Working collectives of Moscow's leading enterprises and the capital's rail terminal have now resolved to adopt a different attitude toward this public property. Concerned to protect the interests of the state, and undertaking a practical, creative solution to the problem of accelerating rail freight movement, workers of the Automobile Works imeni I. A. Likhachev; the Serp i Molot; Stankolit; Krasniy proletariy; Lyublinskiy Foundry and Machine; Moscow Tube; State Bearing No.1 (GPZ-1); Krasnopresnenskiy Prefabricated Reinforced Concrete (ZhBK), Glavmosstroy and ZhBK-2, Glavmospromstroyaterialy plants and the Moscow Food and Trekhgornaya manufaktura combines jointly with the rail workers have undertaken the obligation to dispatch cars and containers from Moscow terminal enterprises in proper operating condition only. This Muscovite initiative has been approved by the CPSU's Moscow city committee and received broad support from all working collectives in the capital.

The value and the great national-economic importance of the initiative thus undertaken by leading Moscow enterprises consists in the fact that it will help increase rail shipment volumes by accelerating the circulation of means of transportation and increasing their productivity and insure timely loading and shipment of many cargoes to consignees because enterprises will now be not only repairing and maintaining the cars they need to ship their own products, they will also be putting empty cars into proper operating condition before dispatching them from access lines to the assembly points. Because more cars are unloaded in Moscow than are loaded, this will help improve the quality with which control tasks are performed and insure that only rolling stock in a proper state of repair is dispatched to bulk freight loading points.

What with the existing shortage of rolling stock, it would be difficult to overstate the importance of the Muscovite initiative, this undertaking to work together with the rail workers to the end of better organizing the repair and maintenance of cars and containers and of dispatching only cars and containers in proper operating condition. The communists and workers of all Moscow enterprises are supporting with a number of effective measures, which constitute a creative, practical solution to the problem of accelerating rail freight movements.

Managers and party, trade union and Komsomol organizations in the enterprises responsible for this initiative have undertaken a great organizational effort within their working collectives with the objective of developing a new attitude on the part of each worker toward the utilization of our means of transportation. This has also required the implementation of a number of technical-organizational measures to set up the necessary repair and maintenance work positions, make available the specialists needed and locate and acquire the equipment and material resources required.

The ZIL [Likhachev] production association is one of the Moscow terminal's largest freight shippers and consignees. Tens of kilometers of access track run to and from the association's head enterprise alone, the Motor Works imeni I. A. Likhachev. Each day sees the stations here process hundreds of cars and heavy-freight containers. The plant used to return to the railroad as many as 70 per cent of the cars it was sent because they were not in proper operating condition. This not infrequently created serious difficulties in efforts to insure timely shipment of these motor vehicles so important to the functioning of the national economy; the plant ground would become "jammed" with finished products awaiting loading and shipment to their destinations.

Calculations performed by plant specialists showed that the organization of car maintenance and repair in house would in the final analysis yield a substantial saving in time. In the context of a single national economic organization, this step would be entirely in order, what with the fact that it would to a substantial degree solve the problem posed by the shortage of means of transportation.

The motor works people have indeed gained a certain amount of experience in dealing with small-scale car damage. To undertake more extensive repairs, however, has required correspondingly greater knowledge and skill as well as other kinds of facilities and equipment. Enterprise car reconditioning operations has to be placed on a firmer technical and economic foundation. Plant personnel familiarized themselves in detail with operations at the Kozhukhovo assembly facility,

selected a site for a repair section and set about manning it with personnel and machinery. The railroad made available all the necessary documentation; people set to work on plans and designs and outlined a program of construction, installation and assembly operations.

ZIL is now repairing hundreds of railroad cars, and the scale of its repair and reconditioning operations is scheduled to grow 1.5-2-fold within the near future. In the future, when this industrial trunk-line rolling stock repair facility, set up and organized on an up-to-date technical level, finally goes into operation, we are going to see the plant performing all types of rail car body repairs.

The Serp i molot plant, too, is taking a state-minded approach to the reconditioning and utilization of its rolling stock. The enterprise has formed a special section for routine car body maintenance and repair. It is manned by a brigade composed of an arc welder, a gas welder, two fitters and a carpenter. And what is particularly remarkable, the freight handlers here have begun to be more careful about the way they treat the cars. As a rule, all the cars repaired here are used for shipping the enterprise's own products.

State Bearing Plant No. 1 is also a major user of the rolling stock here. Responding in deed to the party's call for demonstrations of greater responsibility for protecting national, public interests, the workers, engineering and technical personnel and employees of GPZ-1 are now engaged in a resolute effort to rid their operation of all vestiges of localism and blinkered bureaucratic narrowmindedness in their relations with the railroad.

The plant has set up a container repair section in its rail shop. This facility for the most part does fitting, welding and carpentry work. It is manned by workers working two shifts. With the objective of creating a solid base for the plant's repair operations, the party committee here took the initiative in the development of an integrated scheme of sequencing and upgrading the organization of freight-handling operations, beginning with the stage at which the bearings are packed in the shop running all the way to the point where they are finally dispatched from the plant.

Working collectives at the Krasnopresnenskiy ZhBK plant and the Presnya station have also found themselves able to move from a conflict situation which saw exchanges of mutual claims and grievance to one in which mutual assistance is the mode of operation. For over three years now their work has been organized on the basis of joint responsibilities. Competition has been the decisive factor in both the quantitative and qualitative improvement they have achieved in their performance as well as in their continuous reductions in car off-loading idle times.

Plant workers have always performed all their own repairs on cars carrying structural components for housing to be built for workers in the oil fields of Western Siberia. This has been necessary because of the complicated procedures involved in securing the loads and the long distances to be covered.

The plant has now, however, begun to repair all types of damaged rolling stock. In the course of only a brief period of time and with help from the railroad, it has been able to train the personnel required, set up a specialized repair facility and provide work places with all necessary tools and equipment. Together

with Presnya station personnel they have organized an effective system of monitoring car flows, developed car repair methods and procedures and allocated spare parts and materials.

Each month now sees some 20 cars repaired on enterprise access lines. Its in-house rail car repair and reconditioning operations have helped it maintain a considerably smoother flow of rolling stock to the loading platforms and contributed to its success in overfulfilling plans for product sales.

Over the course of the past year, enterprises involved in this initiative completed in-house repairs on more than 800 cars and 9000 containers. This amounted to a substantial contribution to the effort to increase the cargo-carrying resources available to transport the products of the capital's industries.

The imaginative initiative undertaken by working collectives in Moscow industrial, construction and transport enterprises, which have assumed the obligation to insure that each car and container leaving the capital's rail terminal is in proper operating condition, is of great importance for our national economy as a whole. The particular value of this initiative, as well as its deeper significance, lies in the fact that an effort to insure that rail rolling stock is undamaged and in proper operating condition has now become the common concern of both the railway workers and workers in related industries.

#### PARTY SUPPORT

The bureau of the CPSU's Moscow city committee has put its stamp of approval on this initiative launched by leading Moscow enterprises involving them in a program in which they lend assistance to the railroad workers, a program which increases their contribution to an effort to increase the operating efficiency of the capital's central rail terminal. The city party organization has launched a large-scale effort itself to enlist other Moscow enterprises and organizations in this effort. All new enterprises and organizations are participating in this great and necessary program. They include the Kompressor, Karacharovskiy Machine, Vladimir Il'ich, Dinamo, Frezer, Stankoagregat and many other works.

The meeting of representatives of capital working collectives and enterprises which had participated in the launching of the initiative to insure that all cars and containers leaving the central Moscow rail terminal are in proper operating condition held by the CPSU's Moscow city committee in November 1982 was a most important landmark occasion in the effort to enlist more extensive support for this valuable initiative. Meeting participants discussed the tasks falling to party and economic administrative authorities in the way of helping railroad workers in their car repair operations, creating the proper conditions for this in the city's enterprises and of upgrading the overall operating condition of railway cars and containers. They appealed to all city enterprises and organizations receiving and shipping freight in rail cars and containers to organize rail car repair and reconditioning operations within the structure of their own work forces and to take all steps necessary to insure that these operations be performed in the shortest possible periods of time.

Bureaus of the rayon party committees and the administrative party aktiv have outlined a program of measures to apply the results of the experience gained in

this effort on as extensive a basis as possible. The CPSU's city committee has set up a special commission. Its members include senior officials of the CPSU's Moscow city committee, the executive committee of the Moscow city soviet and the Moscow city trade union council as well as organizational managers from the rail and motor vehicle transportation industries. The commission takes a systematic look at what enterprises are accomplishing in the way of rail car repairing and reconditioning, helps coordinate these efforts and assists in the solution of any problems which arise.

A commission of the CPSU Central Committee has designated city enterprises which are to set up rail car and container repair and reconditioning operations. It has been decided that these operations will be set up at over 400 industrial and construction enterprises which are fed by access track, container repair operations at more than 100 enterprises with container exchange points where containers are loaded and unloaded after removal from trucks or rail cars.

It is anticipated that Moscow industrial enterprises will be repairing a daily average of at least 100 cars and 140 containers. At the same time, a program of measures is now being implemented with the objective of increasing the volume of car and container repairs performed by carshops of the Moscow road and the Moscow division of the Oktyabr'skaya road located at the capital terminal. These combined efforts will make it possible this year to repair and reconditions some 140,000 cars and 150,000 containers.

Enterprise party organizations have instituted a rigorous monitoring system to insure that each car and container returns from the access line with bodies in proper operating condition and all remainders from previous loads removed. With an eye to experience gained by the initiators of this effort, plants and factories are creating specialized sections and brigades to be responsible for rolling stock repair and taking steps to insure that their repair operations are provided with all necessary materials and equipment.

A number of important organizational problems have been solved as well. Enterprises setting up their own car and container repair operations are concluding agreements with the Moscow road. These agreements lay out the mutual obligations the parties undertake and procedures to be followed in turning cars over to an enterprise for repairs and then for returning it after repairs to the railroad.

Repairs performed by an industrial enterprise will involve the repair or replacement of damaged metal or wooden body components: diagonal braces and uprights, framework components, doors and their structural components, footboards, rails and handles, platform sides, car flooring and linings, unloading hatch covers and the devices securing them, hinges and torsion components, ventilator openings and loading hatches on covered cars, cover caps and discharge valve devices on tank cars, the loading and unloading devices on tank cars and cement and grain cars etc.

For each car turned over for repair, representatives of the railroad and the enterprise concerned fill out a general-purpose form specifying the repairs to be made and the period of time for which the car is going to be idle. Car idle time for repairs as specified on the general-purpose form, 0.5-2 hours as a rule, is not counted in the process of computing total rolling stock time on the access line for loading.

Procedures for turning cars and containers over for repair, releasing them from repair facilities and computing idle time for loading operations and repairs, as well as the use each enterprise is to make of repaired rolling stock are all governed by an agreement. Car body repairs are performed in accordance with existing USSR Ministry of Railroads regulations and instructions. The time a car or container is to be in the repair facility is specified in each individual case, an enterprise receiving rolling stock requiring body repairs. Repairs to running gear, brake systems and automatic coupling devices, all of which are of critical importance to rail safety, will continue as always to be performed in terminal carshops.

The party committees and trade union and Komsomol organizations of Moscow industrial enterprises and organizations are engaged in a systematic effort to develop in personnel involved in loading and unloading operations an awareness of the need for care and caution in the treatment and handling of rail cars and containers; they are dealing decisively with any instance of mismanagement, indifference or negligence in this important area and placing more of the responsibilities in this connection upon the shoulders of their working collectives. Top priority tasks include steps to take to maintain cars and containers in proper condition and to prevent damage to them during loading and unloading and to insure rapid repair of any damage done.

The railroaders in turn are striving to exploit to the fullest their own internal resources with the aim of increasing the volume of car and container repairs they perform in both their carshops and their stations, modernizing their facilities and equipment, building new repair sections and equipping them with the necessary machines and equipment. Major classification yards have installed Donbass and Likhobory car-repair machinery, and the operational capacities of the Perovo and Losinoostrovskaya carshops are being expanded.

Enterprises and organizations which have concluded rolling stock repair agreements are being provided with the necessary materials and spare parts. We see smooth and efficient interaction between traffic department people, car inspectors and transport shop personnel in all matters concerning rail car repair. Station and locomotive depot workers have undertaken obligations to see that rolling stock is maintained in proper repair both under way and during switching operations.

The Lyublino carshop has organized a seminar for enterprise personnel in industry, construction and other branches represented in the city's economy in which they study the methods and procedures employed in rolling stock repair operations. Instructional and methodological material has been developed. Carshop and station workers are rendering direct assistance in enterprise car-body repair facilities. The railroad provides them with the necessary technical documentation and briefs enterprise personnel on regulations governing rail car repair, work safety and accident prevention.

#### THE INITIATIVE SPREADS

Moscow's party, soviet and industrial organizations continue to spread the word on the practical experience accumulated by the leading enterprises now performing



their own car and container repairs and are enlisting the participation of all city enterprises receiving and shipping freight by rail. This, that is, exploiting our existing rolling stock more intensively, is an important means of increasing our cargo-carrying resources without adding to current car inventories.

The capital's working collectives see the help they are giving the railroaders as extending beyond the mere repair of rail cars and containers. They also look upon it as including assistance in achieving further reductions in rolling stock idle time through mechanization of repair and freight-handling operations and cutting the volume of materials they use in manufacturing their products to reduce demand for empty cars.

Here is a remarkable fact. Once they become involved in the car repair program, enterprise personnel begin to take more of an interest in the causes of damage occurring on the access tracks. It was found at the Karacharovskiy Machine Works, for example, that rail cars are frequently damaged through the use of inefficient methods of packing and securing cargoes. Modification of these methods and the use of improved containers and packaging have yielded tangible results. The packaging of elevator doors, for example, has made it possible to double the lift loading of gondola cars, free up some 400 cars a year to carry other freight, cut in half the length of time it takes a car to be loaded and to reduce the damage done to cargoes during loading operations.

As an effective way of solving what at first glance appears to be a purely technical, operational problem, the organization of car repairs within the scope of our enterprise operations is also bringing about positive moral changes. Now participating directly in the car-reconditioning process, production personnel are undergoing a complete change of attitude toward rolling stock coming in to the plant, adhering more closely to required loading and unloading procedures and taking a generally more economy-minded approach to the use of our transport resources.

Rayon party organizations are engaged in a major effort to mobilize industrial enterprise collectives for maximum efficiency in the use of rolling stock and better handling of transport resources. As early as January 1983, for example, all enterprises of those designated by the Moscow CPSU city committee commission undertook to set up car and container repair operations on the basis of mutual obligations and agreements concluded with the railroaders. Practical experience gained in in-house rolling stock repair operations is being most successfully introduced in the capital's Petrovskiy, Volgogradskiy, Babushkinskiy, Timiryazevskiy and Kirovskiy Rayons. Practically all industrial and construction enterprises here having access lines have concluded and are now implementing car repair and reconditioning agreements. Working collectives in neighboring operations are now collaborating with one another increasingly intensively as well as extensively, their cooperation beginning to extend beyond the collaboration of individual stations, repair facilities, plants and combines.

On the Moskovsko-Okruzhnoye section of the capital trunk line, for example, which serves many enterprises in a majority of the city's rayons, car repair agreements have been signed with virtually all the major freight shippers and receivers. A program providing for a specific series of measures has been developed and a commission set up which comprises senior personnel from the sectional administration and the major enterprises involved as well as representatives of party, trade union and Komsomol organizations.

Initiative groups composed of section and carshop department supervisors have also been organized. Together with party rayon committee representatives, specialists from these groups have held meetings at each of the stations with managers of all the industrial enterprises involved. This has made it possible effectively to determine upon specific means of implementing the plans which have been developed. With the objective of assisting the people at ZIL, for example, who have decided to build a special repair facility at their Kozhukhovo station, efforts have been undertaken to establish equipment, power-supply and manpower requirements and lay out the most efficient arrangement of equipment in the repair shop.

The majority of industrial enterprises have studied their repair facilities and positions and prepared recommendations concerning requirements in the way of equipment, instruments, tools, scaffolding etc. The collective at the Likhobory carshop has now built up the stocks of materials required to repair and recondition car body floors and linings as well as the spare parts provided enterprises running their own access-line car repair operations in accordance with their expenditures of car repair resources. Pursuant to car-repair agreements, procedures have been established for receiving and transferring cars and taking account of car idle time and a clear-cut list drawn up of operations to be performed by each enterprise.

Collectives of industrial enterprises which have set up their own access-line car and container repair and reconditioning operations are continually looking for ways to increase both the efficiency of their operations and the quality of the repairs they perform. Of interest in this particular regard is the experience in practical collaboration gained by the Krasnyy proletariy, Sergo Ordzhonikidze and Stankokonstruktsiya plants, which all share a common access line. These plants decided to divide up rolling-stock repair responsibilities on the basis of the specializations involved in the operations to be performed taking account of the special capacities of each enterprise. One of them takes on the job of reconditioning the wooden linings of the cars, another the welding operations and the third the finish work. Personnel of the Kanatchikovo station, which serves these plants, have in turn undertaken to insure timely car deliveries and allocation of all materials necessary to perform required repair operations.

Collectives of the ZIL, GPZ-1 and Dinamo plants have now come out with a new initiative. They have proposed the organization of cooperative in-house fabrication of certain types of spare parts and car components out of scrap and waste generated by their production operations.

The initiative launched by leading capital enterprises is gathering momentum. Collectives of more than 500 of Moscow's plants, factories and construction organizations have already enlisted in this patriotic movement. A result has been that the first quarter of this year saw the repair and reconditioning of over 8000 cars and containers. Calculations show that if all capital enterprises disposing of access lines were to involve themselves actively in this effort it would be possible to repair as many as 40,000 more cars and 30,000 containers each year. This would be of enormous assistance to our railroaders.

To accomplish this important national task the party organizations, managers and working collectives of Moscow's enterprises are going to have to place their rolling-stock repair operations on a higher level. The combined efforts of our

railroaders and workers in industry, construction and other sectors of the economy must be directed toward improving the situation with the repair and reconditioning of rolling stock and returning all cars and containers in proper operating condition for use within the national economy within the shortest possible periods of time.

At the same time, however, we are seeing a number of the city's enterprises unjustifiably delay introduction of the experience of our leading collectives, the managers of these enterprises still failing to demonstrate the necessary interest and expedition in accomplishing these tasks. There are deficiencies to be noted in the performance of our railroaders as well. All Moscow terminal entry stations have yet to set up effective procedures to insure that accurate records are kept on all cars coming in off the line requiring reconditioning or repairs. Moscow road supervisors should monitor operations more closely to insure that all rolling stock is maintained in proper repair and that all repairs are properly performed. The program of seminars and briefings for industrial enterprise personnel covering regulations governing and procedures involved in repairing cars and containers should be expanded.

To identify more and more new ways to help our railroaders and strive for high performance figures in these joint undertakings is the duty of every party, soviet and economic administrative body, each working collective either receiving or shipping freight by rail. In its efforts to spread the word and generate more extensive practical support, support in deed, for this initiative launched by our leading enterprises to repair and recondition all incoming cars and containers, the CPSU's Moscow City Committee is assigning the rayon party organizations an increasingly important role in the campaign to mobilize workers for this vital national effort. The city party committee is throwing its full support behind the managers of enterprises which are beefing up their transport shop operations, creating special rolling-stock repair sections and brigades and generally creating all conditions necessary for a successful car and container repair program.

Everybody knows that the repair and reconditioning of cars and containers will entail certain material expenditures. It is for this reason that Moscow's material and technical supply administration's plans provide for deliveries of lumber and other materials to enterprises and organizations running in-house rolling-stock repair operations.

Our railroaders can also make an important contribution to the success of this Muscovite initiative. The Moscow terminal can do no little more to increase the volume of car and container repairs it is performing in its carshops and other car repair facilities. This will require an acceleration of remodeling and modernization projects, the replacement of equipment, the creation of new repair facilities and the equipment of these facilities with all the necessary machinery. Responsible officials on the Moscow road and the Moscow division of the October road are going to have to step their efforts in connection with the development of rolling-stock repair capacities, insure that enterprises and organizations are supplied as fully as possible with all necessary materials and spare parts and establish effective cooperation between enterprise and station and carshop personnel in all matters associated with the car-repair program.

Economy-minded attitudes toward our transportation resources and technically competent utilization of these resources are critically important. Each instance in

which cars and containers are damaged because of a lack of worker concern for insuring that they remain in proper repair, breaches of rules governing loading and unloading or in the course of switching operations must be subjected to thoroughgoing investigation on the part of the enterprises, analyzed and the situations resulting in damage to rolling stock rectified. Party committees and primary organization bureaus must hold guilty parties strictly accountable to the party and insure that they make compensation for the damage they have caused.

Nor, of course, can the party organizations and management of our road divisions, stations and shops stand aside from these problems either. Their task is to insure strict compliance on the part of all operations personnel with existing norms and rules governing switching operations and hold middle-level supervisors more accountable for the state of repair of our rolling stock.

Particular attention needs to be paid to efforts to tighten production, economic administrative and labor discipline, to the need to improve educational programs, to the creation within our working collectives engaged in car and container repair operations of an atmosphere conducive to the development of a creative energy and efficiency and the elimination of time losses. We must work to exploit all heretofore untapped potential and increase the efficiency of our transport operations.

In carrying out the decisions of the 26th CPSU Congress and the November (1982) plenum of the CPSU Central Committee, the communists and workers of the capital's enterprises and organizations are striving consistently to improve both the efficiency and the quality of their work and rendering effective assistance to our rail transport system, the country's primary vital artery.

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## RAIL SYSTEMS

### DEPUTY CHIEF ON DEVELOPMENT OF CAR REPAIR INITIATIVE ON MOSCOW RAILROAD

Moscow ZHELEZNODOROZHNIY TRANSPORT in Russian No 6, Jun 83 pp 23-26

[Article by Ye. Ye. Sorokin, deputy chief, Moscow railroad: "Moscow Trunk Initiative Gains Momentum"]

[Text] The initiative launched by capital industrial and construction enterprises to organize jointly with the railroaders for the repair and reconditioning of rolling stock coming in on their access lines is gaining increasingly extensive support along the entire Moscow trunkline and the Moscow, Tula, Kaluga and other oblasts it serves. More than 1000 enterprises have now concluded car and container repair agreements. The first quarter of this year has seen them repair over 11,000 cars and 12,000 containers. Contributing to an important degree to the success of this valuable initiative has been the enormous organizational effort undertaken by the railroaders themselves, the concrete, practical assistance rendered by local party and soviet bodies and the increasing interest and understanding shown by enterprise managers in industry, construction and other sectors of the economy of the importance of improving the operating condition of our rolling stock.

A program of concrete, practical measures to promote more extensive adoption of this innovative program has been outlined in the course of two special, expanded meetings of the road's technical-economic council. With this program of objectives in mind, the carshops involved have held seminars for industrial enterprise managers, at which were thoroughly discussed the practical problems involved in setting up for car and container repair operations on the access line.

The road administration has set up a special commission headed by the deputy chief of the railroad and composed of the chiefs of a number of services and departments with the objective of organizing more effective efforts to solve the problems involved in promoting more extensive adoption of experience gained by Moscow enterprises. Similar commissions headed by division chiefs have been formed at division level. These commissions undertake weekly analyses of progress being made with introduction of the Muscovite experience, check on the performance of both industrial enterprises and the carshops and help them organize their rolling-stock repair operations. Together with the parties involved they have developed a standardized agreement governing mutual obligations undertaken by the parties, procedures to be employed in recording and checking the number of cars repaired etc. In agreements concluded by allied enterprises, obligations are being undertaken to insure that each car or container released after unloading and turned over as empty for loading is in a proper state of repair and to

not transfer to Ministry of Railroads lines any rolling stock not in proper repair and still containing remains of previous cargos. In this instance an enterprise undertakes to restore only the car bodies to their proper condition. Obligations assumed by the railroaders call for them to provide enterprises with all necessary spare parts and materials, organize instruction for enterprise personnel in basic repair technology, advanced repair procedures and regulations governing repairs and to inspect all repaired rolling stock.

An agreement will provide that the norm for car idle time for repair be established by a representative of the railroad in accordance with the amount of work which has to be performed. This will ordinarily run from 0.5 to 2 hours. These figures are included in the provisions of the standard agreement. If, however, an enterprise is undertaking to recondition a car requiring extensive repairs, the repair time allowed will be extended accordingly. The agreement in this instance will take account not only of the amount of work which has to be done, but also the fact that industrial enterprise personnel do not have the same professional skills possessed by workers in the railroad's carshops and other facilities where cars are readied for loading. Computation of the length of time required to perform a specific repair will be based upon the standardized technically based norms governing freight car maintenance job times taking account of local conditions, the level of repair-facility equipment and the skills of repair personnel. The operating condition of a car is evaluated with reference to requirements contained in the technical operating regulations and the car inspector's handbook.

A common, general-purpose form will be prepared for each car to be repaired specifying the work which has to be done, the time required to perform the repairs involved and the spare parts and materials required. The time required for repairs (but no more than that allowed in an agreement) is not included in the total time a car has to be idled on the access line. It should be pointed out that as this initiative has spread, rather than the general-purpose form a number of divisions along the line have begun to use a more detailed deficiency log, on the basis of which car services personnel prepare the required VU-23 and VU-26 forms.

Basic requirements governing car repair have been set forth in special instructions for organizing freight car maintenance and repair at industrial and construction enterprises, which have been distributed in sufficient quantities to enterprises involved and all car repair facilities. A number of operations have also received charts illustrating car-body repair procedures and technical instructions for maintaining and repairing freight-car bodies and containers at industrial and transportation enterprises, which were prepared some time later by the main car administration's planning and design office.

As was mentioned above, railroad personnel conduct regular briefings for enterprise workers dealing with regulations governing repair operations, labor health and safety and accident prevention. Carshop supervisors and technical-engineering personnel, to include deputy shop supervisors, foremen, instructors and engineers, are participating in this program. As a rule, the assistance they provide an enterprise will involve a trip to the facility, where directly at the workplace itself they will familiarize repair personnel with requirements governing repair operations, methods and procedures involved in performing a particular operation etc. Carshops frequently give periods of instruction for industrial enterprise representatives in their own car repair organizations. Particular

attention is given to proper performance of body welding procedures, among other things, to insuring compliance with regulations providing that electric current not be allowed to damage roller-bearing axle box components. In accordance with these requirements car welding operations must be performed with the return lead from the power source must be securely connected in the immediate vicinity of the weld so as to insure that the welding circuit is not closed via the axle box and automatic coupler. Neither do regulations allow rails to be used as return leads, since this will destroy axle box bearings.

The railroad is engaged in a vigorous effort to develop and introduce joint technical operating procedures to be performed by both stations and access line facilities of industrial enterprises engaged in car and container repair operations. These reflect all questions involved in the relationship between the railroads and their clientele, establishing, among other things, procedures for receiving and turning cars over for repair, rules governing the use of rolling stock after repairs, record keeping on damaged cars coming for repairs and cars on which repairs have been completed, procedures for insuring that enterprise repair facilities are supplied with everything they need in the way of materials and spare parts etc. These operating procedures are signed by the industrial enterprise manager, the connecting station agent for the access line involved and the carshop supervisor and approved by the division superintendent. Practical experience has demonstrated the advantage and the effectiveness of introducing these joint operating procedures, which improve cooperation between allied facilities and establish this cooperation on a clear-cut, businesslike basis.

One of the most important questions involved in efforts to set up a rolling stock repair operation in an industrial enterprise is that concerning provisions for supplying the enterprise with everything it requires in the way of spare parts and materials. It should be pointed out here that most enterprises which have set themselves up in the car and container repair business have undertaken to fabricate the spare parts they need themselves using waste and scrap from basic production operations. In accordance with the agreements they have concluded, the railroad carshops are providing a great deal of assistance in the way of supplying materials and spare parts. In this regard, in addition to turning over new spare parts to industrial enterprises, the railroad is intensifying its use for this purpose of old spare parts cannibalized from cars which have been removed from the inventory. Special facilities carefully remove all spare parts from these cars; these parts are then thoroughly checked and, after all necessary repairs and reconditioning, turned over to the industrial enterprises.

This valuable initiative is now being taken up by all divisions of the railroad. Between 80 and over 100 agreements to organize car maintenance and repair operations have now been concluded within the Moskovsko-Okruzhnoye, Moskovsko-Kurskoye, Kashirskoye, Moskovsko-Ryazanskoye and Moskovsko-Smolenskoye divisions. Since undertaking this effort, enterprises served by these divisions have repaired from 500 to 3000 cars. By mid-March, access line facilities at enterprises within the Kurskoye, Ryazanskoye, Tul'skoye and Smolenskoye divisions had repaired or reconditioned over 300 cars.

The largest number of cars repaired or reconditioned—over 3000—has been recorded by enterprises served by the Moskovsko-Ryazanskoye division. At this point we could also mention the active participation in this important effort of the Kolo-menskiy Diesel Engine Works, which has set up a repair facility with the necessary

materials and equipment and manned it with a special brigade of eight. The initiative has been no less successful in the Moskovsko-Smolenskoye division, where more than 100 enterprises are now engaged in rolling-stock repair operations. The Vnukovskiy Refractory Works was one of the first to conclude the necessary agreement and allocate the necessary facilities, equipment and manpower to launch a repair operation. Enterprises served by this division have repaired or reconditioned a total of more than 1000 cars.

Railroaders and their clients are also successfully collaborating in the Bryanskoye and Novomoskovskoye divisions. Over 70 and approximately 60 agreements have been signed here respectively resulting in the repair and reconditioning of 800 and 700 cars. After concluding its agreement, the Bryanskiy Machine-Building Works began its rolling-stock repair operation at the end of last year. A special track has been set aside here for this purpose. Workers in the plant's transport shop responsible for performing its repair and reconditioning operations now have everything they require in the way of tools and equipment. Among other things, they have bridge and gantry cranes as well as welding positions. A good system of equipment and material supplies for the repair facility has been organized with assistance from the railroaders. An open-cut operation where nonmetalliferous materials are mined and a firebrick works in the Novomoskovskoye division have not done a bad job of organizing a car repair operation. These facilities, too, have allocated special tracks for their car repair work, organized repair brigades composed of carpenters, fitters and arc welders and put up racks to hold spare parts and materials. By the end of the first quarter the firebrick works had repaired or reconditioned some 100 railroad cars.

We could point to many other examples indicating that the initiative launched by some of Moscow's leading enterprises to undertake in-house car-body and container repair operations is gaining momentum everywhere and drawing support from the development of the necessary industrial base for rolling-stock repair operations. Preliminary computations indicate that with the launching of this initiative and the creation of support facilities and organizations it will now be possible for the railroad as a whole to repair another 100,000 or so cars and 75,000 containers each year. Taking account of the fact that we are simultaneously seeing a substantial improvement in the overall state of repair of our rolling stock, we can say that the development of this initiative along the line has already generated an appreciable increase in our freight-carrying resources. This is also reflected favorably in a reduction in the turnaround times required for rolling stock to be repaired and returned to service, decreases in the amount of reclassification it requires within a terminal, shorter periods of time for which cars are idled out of repair etc. The average length of time required to perform all operations involved in running car repairs on the line is something over 20 hours, while as pointed out above, the in-house repair and reconditioning done by our enterprises will take up to 2 hours altogether. In the final analysis, all this is helping to speed up overall rail car turnaround time.

Timely and effective assistance on the part of enterprises in various branches of the national economy in the way of repairing and reconditioning cars and containers is having a positive impact on efforts to improve the overall state of repair of our rolling stock. Playing the primary role, however, in efforts to develop a basic solution to this problem will continue as always to be the special-purpose enterprises of our railroad system—the carshops, the facilities



responsible for readying railroad cars for taking on freight and the car maintenance facilities. Attention is being devoted above all to efforts to improve the capital trunk's car handling operations, to making maximum use of available capacities and then on this basis to achieve all possible increases in volumes of rolling-stock repairs performed and improvement in the quality of these repairs.

The railroad is taking a target-program approach to the development and reequipping of its car operations. This means that the specialization of the various carshops and the location and equipment of the car preparation and repair facilities are determined on the basis of the structure of the road's operations taking its future development into account. Planning for the specialization of a particular facility, for example, will have to take account of rolling-stock structure in the individual directions and the type of freight to be carried. All carshops along the stretch of the Kashirskoye direction where cars take on Moscow-area coal, for example, as well as along lines carrying empties for hauling bulk iron ore shipments will specialize in gondola repairs. Carshops in the Ryazan-skoye division, on the other hand, where we characteristically see high volumes of petroleum products loaded and transported, are specializing in tank car repair.

To perform car repairs in the various repair categories planned and improve the quality of these repairs, a great deal of importance is being placed upon efforts to fully mechanize and automate carshop operations, introduce advanced continuous-line technology and scientific organization of labor and to make more efficient use of available work space. Fifteen carshops have now conveyORIZED their car and container repair operations. There are now some 200 continuous-line and other types of conveyORIZED car and container repair lines and centers. The task for this five-year plan period is now to convert all carshops on the railroad over to operations using these advanced conveyor line technologies in accordance with the experience of leading enterprises at Lyublino, Uzlovaya, Bryansk, Likhobory and Bobrik-Donskoy.

The first phase of the carshop modernization program, involving the creation of truck facilities and the improvement of repair and storage areas, is now virtually complete. Intensive work is now under way on the second phase of the program, which calls for extending the car assembly areas, installing more powerful bridge cranes and the creation of roller production facilities. These projects have already been completed at carshops in Bobrik-Donskoy, Kursk, L'gov, Kaluga and Voskresensk. It is important to point out here that these enterprises are being modernized with an eye on future changes in the structure of our rolling-stock inventory, which has made it possible for us to undertake timely preparations and perform repairs and maintenance on new types of cars—large capacity and aluminum containers, tank cars for carrying cement and pelletized products etc.

Likhobory carshop workers have not achieved disappointing results in their efforts to set up a large-capacity container repair operation.<sup>1</sup> Recent years have seen them undertake a major modernization of their operations facilities and build two container-repair flow lines equipped with advanced operating equipment. They are successfully introducing into their operations a scientific organization of labor, the brigade method, an integrated system of maintaining quality control

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<sup>1</sup> See ZHELEZNODOROZHNYI TRANSPORT, 1982, No 10 and 1983, No 3.

over the performance of container repair operations etc. Worthy of particular attention is the general-purpose container-repair machine developed by this carshop's rationalizers, which can perform all repair operations necessary to restore large-capacity containers to proper service condition. The collective of this particular carshop, incidentally, was one of the first to undertake the obligation to insure that each car and container dispatched from the Moscow terminal is in proper repair and has rendered a great deal of assistance in helping dozens of Moscow enterprises organize their own car-repair operations.

The railroad is also engaged in a major effort to improve rail car maintenance and the operations performed in the process of readying them for movement. All major maintenance facilities are equipped with systems of oil and air lines, centralized signalling systems and consoles for operating centralized brake testing systems. The railroad is using more than 100 self-propelled, mobile repair stations to help speed up and improve the quality of train maintenance performed by its rolling-stock repair facilities. This year will also see car inspectors begin to use portable radios at most of the major car repair facilities. Practically all facilities responsible for readying rail cars for loading and movement have been equipped with the highly efficient Donbass and Likhobory car-repair machines, which are now being used to repair some 45 per cent of the total number of cars undergoing repairs.

Good repair facilities are to be found in the Moskovsko-Okruzhnoye, Kaluzhskoye and Bryanskoye divisions. The experience gained by the Novomoskovskoye division, the Moscow railroad's main coal-loading area, remains the most outstanding example of the integrated development of a car maintenance and repair operation, however.<sup>2</sup> The two carshops here specialize in the maintenance and repair of gondola cars. All repair facilities have been modernized. The introduction of advanced new equipment here making it possible to perform the basic series of repairs on flow lines and other conveyerized systems also made it possible during 1982 to bring the number of cars turned out by a single one of the repair positions in these facilities to more than 1000, which is substantially above the average figure for the system as a whole. The division has created 11 facilities for readying cars for line movement, which have installed five Donbass car-repair machines. These repair facilities are equipped with all the other equipment they need for efficient operation. The result has been that as compared with 1970, 1980 saw the number of cars repaired and reconditioned within the division grow almost 2.5-fold, which has made it possible to ready all incoming gondolas for loading on schedule regardless of their state of repair. The experience the division has had in undertaking such an integrated development of its car maintenance operation has been endorsed by participants in the system's school of innovation.

The railroad has developed a program of measures for the period 1983-1985 designed to improve its car maintenance operations. To increase the volume of rolling-stock repair and reconditioning operations performed, for example, plans call for the creation of more than 10 new car-repair facilities and three container-repair facilities. These plans call among other things for the completion of work on the installation of equipment in a new shop which is being built to repair large-capacity containers at the Kuntsevo-2 station. When this facility comes on line it will be possible to perform maintenance and repairs on all large-capacity containers arriving at this station requiring repairs or reconditioning.

<sup>2</sup> See ZHELEZNODOROZHNYI TRANSPORT, 1979, No 9.

The Likhobory and Yuzhnyy port stations are building two new highly mechanized facilities for preparing rail cars for taking on freight. This will make it possible roughly to double the volume of car repairs performed here.

The railroad has recognized the advantage to be derived from setting rolling-stock repair targets for the various divisions of the road (taking account of their available repair facilities and the possibility of improving them) with a view to insuring that all cars leaving a division are in a proper state of repair.

The road is also developing a series of steps to take to achieve further reductions in the periods of time a car remains in inoperable condition. Progressive schedules are being prepared for each station and car-repair facility, for example, showing precisely how long should be taken to turn unserviceable cars over for repairs and to return them to the station after repairs with the objective of insuring compliance with established norms governing the length of time cars can be idled in unserviceable condition.

All divisions have been set higher targets for repairing flatcars with missing platforms or damaged sides, boxcars without doors, the unloading devices on cement-carrying tank cars etc. At the same time, a number of other measures are being formulated with a view to enhancing enterprise interest in performing the proper repairs on these cars. It is categorically forbidden to add cars in unserviceable condition to a train and dispatch them to another division. Any case of the release of unserviceable cars will be analyzed in detail and appropriate action taken against the responsible parties. The car processing service and the various divisions of the road will be particularly closely monitoring compliance with Ministry of Railroads norms governing the maintenance and repair of boxcars and refrigerated rolling stock during the period in which preparations are made for the mass-scale shipments of agricultural products.

Taking account of the course which has now been set in the direction of extensive introduction of conveyORIZED operations, expanding carshop repair operations and more extensive introduction of the shift system, a number of steps are being planned to increase the capacities of the primary work areas of the road's car-repair facilities. Plans call among other things for the creation of new facilities to repair roller bearing axle-box assemblies in the Pavelets, Perovo, Orekhovo-Zuyevo, Voskresensk and Kaluga and the fabrication and introduction in carshop operations of eight new continuous-flow and conveyORIZED lines for repairing wheel pairs of roller bearing axle-boxes and other car assemblies and components.

The integrated approach the railroad is taking to the development and improvement of its rail-car repair capacities and the enormous assistance industrial and construction enterprises are now rendering in the way of repairing and maintaining our rolling stock are helping increase the efficiency of the railroad's use of its rolling stock and contributing to successful fulfillment of stepped-up targets for industrial freight movements. Personnel of the capital's trunk system are fully resolved to insure that each car and each container is put to maximum use in the freight transport process and yields the greatest possible return.

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## RAIL SYSTEMS

### MINISTRY OFFICIALS PROMOTE ADOPTION OF CAR REPAIR INITIATIVE

Moscow ZHELEZNODOROZHNIY TRANSPORT in Russian No 6, Jun 83 pp 27-30

[Article by N. I. Skorina, deputy chief, main administration of rail cars, ministry of railroads, and F. M. Uzdin, chief engineer, freight car operations and repair department, main administration of rail cars: "Universal Support for the Muscovite Initiative"].

[Text] The November (1982) plenum of the CPSU Central Committee set railroaders the task of insuring smooth, trouble-free delivery of our industrial cargoes in the shortest possible periods of time. Successful accomplishment of this task will depend to a substantial degree upon insuring, in turn, that our industrial enterprises, construction projects and agriculture receive complete and timely deliveries of all the rolling stock they need in a proper state of repair. Becoming matters of particular urgency in this connection are those of the improvement required in the operating condition of our rolling stock and the need to increase the efficiency with which we use it and the need to work for maximum possible reductions in nonproductive idle time and empty runs, to insure that rolling stock is maintained in a proper state of repair and to improve the quality of the repairs and maintenance we perform.

Together with the car-building industry, the Ministry of Railroads has over the past few years implemented a number of important measures designed to improve the design and increase the strength and reliability of our freight cars. We are completing, for example, the changeover to all-metal construction of newly built cars, systematically converting rolling stock to roller bearings and modernizing older cars and cars with weakened or deficient components. We are also continually increasing the proportion of high-efficiency special-purpose cars in our inventory, which substantially increases the productivity of the labor involved in freight-handling operations, cuts car idle time for freight handling and helps keep freight in proper condition in transit.

At the same time we are seeing the implementation of major technical-organizational measures designed to improve the system as well as the quality of the scheduled preventive maintenance we perform on our rolling stock, improve and expand our carshop and in-house enterprise repair facilities and improve and increase the volumes of work performed in the overall process of preparing our rolling stock to take on and transport cargoes. Particular attention is being given in this connection to efforts to tap as many sources of still unexploited potential as possible with the objective of increasing labor productivity and

and intensifying the repair and maintenance processes. Vital importance is being attached to efforts to insure more extensive adoption of practices from the fund of experience gained by our leading rail-car enterprises, most importantly the carshops on the Krasnoarmeysk Donetskaya, Bobrik-Donskaya and Novomoskovsk Moskovskaya roads, the freight-car preparation facility on the Dubrovka Yuzhno-Ural'skaya road and the car maintenance facilities on the Georgiu Dezh Yugo-Vostochnaya and Chelyabinsk-Glavnyy Yuzhno-Ural'skaya railroads. All these things are contributing to timely performance of scheduled preventive rolling-stock maintenance, efforts to shorten the periods of time cars stand idle in unserviceable condition and, in the final analysis, to insuring our railroads a steadier supply of rolling stock.

At the same time, however, despite the measures which have been taken to improve our inventory of rolling stock and car-repair capacities, the operating efficiency and overall state of repair of our rolling stock is not fully measuring up to the level of current operational requirements. There are a number of reasons for this. On one hand, existing repair and maintenance capacities are still inadequate to permit performance of all scheduled car repairs within the periods of time allotted and, on the other, our rolling stock is being used with an increasing intensity, which is causing various assemblies and components to fail more frequently and malfunctions and deficiencies to accumulate. Recent years have seen, for example, substantial increases in the maximum loads cars are allowed to carry, while trains are now traveling faster and covering greater distances nonstop without maintenance and repairs.

Freight-handling procedures have undergone a profound change. We are now seeing the introduction in freight-handling operations of such high-efficiency equipment as car dumpers, electric loaders and unloaders, lift trucks and gantry, travelling-bridge and clamshell cranes. Extensive use of different kinds of machinery and equipment will ultimately have a substantial affect on the condition of a car. Because of incompetent use of equipment in freight loading and unloading operations and the lack of any effective monitoring of the way these operations are performed at our enterprises there will frequently be damage done to a substantial number of cars and car components and assemblies, but most frequently to car bodies. According to figures looked at for 1982 alone, for example, several tens of thousands of cars were damaged in the course of freight-handling and switching operations. During periods between carshops maintenance, each gondola car had to go in for unscheduled repairs an average of 5-6 times because of such damage. The record for maintaining boxcars in proper repair is no better.

For the reasons we have just discussed, our railroads are continually accumulating cars which have fallen out of repair or what are referred to as cars of only limited suitability for carrying freight, cars which are either standing empty and idle awaiting repairs on a Ministry of Railroads track somewhere or at one of our enterprises or are transferred in this unserviceable condition from one railroad to another. The upshot of all this is that we are losing the use of substantial transportation resources, which given a shortage of rolling stock has an extremely negative impact upon efforts to fulfill planned industrial freight transport targets. To bring the process by which we are accumulating these damaged and unserviceable cars to a halt and to undertake to repair and recondition them on a mass-scale basis and so return them to productive circulation within the rail freight transport system—to accomplish all this through the

efforts of our railroaders alone is not now possible. Successful accomplishment of this difficult task, which is of vital importance to our national economy as a whole, will be possible only on the basis of close collaboration and mutual assistance on the part of transport personnel and the collectives of enterprises they service, through the exercise of care and responsibility in the treatment given our rolling stock and by bringing about a fundamental improvement in the way we repair and maintain them.

This analysis of the operating condition of our inventory of rolling stock has shown that there are a large number of cars now in operation with minor damage to floors, bodies, sides, doors etc. It has also been established that many cars coming in to our enterprises for loading are missing door plates, rollers, hinged hatch covers, lock catches and stops or need to have door handles welded back on, sometimes they need new wooden frames and braces. As a rule, cars and containers like this requiring only minor repairs are simply declared defective and unsuitable for service, returned to the Ministry of Railroads system and sent to special car-repair enterprises sometimes located tens of kilometers away from the point where they are to be loaded. The result is that they are removed from productive operation for as long as 1-2 days despite the fact that the repairs they require take only a short period of time.

So in this connection we can easily see the importance and timeliness of the initiative launched by a number of leading Moscow industrial enterprises, whose personnel, motivated by an awareness of the state's interest in more efficient utilization of transportation resources, resolved by way of helping the railroaders themselves to undertake maintenance and repairs on car bodies and containers and to release them, both empty and loaded, from enterprise access lines only if they are in proper repair and made suitable for carrying industrial loads. Coming out with this patriotic initiative have been the I. A. Likhachev automotive works, the Serp i molot and Stankolit plants, the Lyublinskiy Machine and Foundry plant's Krasnyy proletariiy works, the Moscow Tube Works, State Bearing Plant No. 1, Glavmosstroy's Krasnopresnenskiy ZhBK and a number of other facilities.

This valuable initiative thus launched by the Muscovites has won high praise within the CPSU Central Committee and enjoyed widespread support among the working collectives throughout the capital. The task before us today lies in seeing that the experience gained at the Moscow terminal finds its way more quickly out to all railroads and all enterprises receiving and shipping freight in rail cars or containers. We need to undertake a most resolute effort to repair and recondition our rolling stock and to begin to develop more responsible attitudes toward it on the part of all personnel.

Joint efforts on the part of our industrial, construction and transportation enterprises to repair and maintain rolling stock will make it possible to add tens of thousands more cars and containers to our operational inventory and meet transport resource requirements more completely and in a more timely manner. This will also permit more effective utilization of existing rail-car-service enterprise resources and capacities to perform the most labor-intensive scheduled car preventive maintenance at carshops and freight-car preparation facilities and repair thousands more cars and containers to ready them to carry industrial cargoes. The organization of in-house rolling-stock repairs on the part of our enterprises themselves will to a substantial degree help make enterprise personnel more

responsible for the way rolling stock is handled during loading, unloading and switching operations and thus reduce its vulnerability to damage. This, too, will add appreciably to our supply of available transport resources.

The managers and collectives of all industrial enterprises, construction projects and organizations should have an interest in developing support for the Muscovite initiative, what with the fact that they will now have an opportunity to load cars and containers which have just been repaired and so to ship their finished products out in a more timely manner, to avoid having to let them accumulate in storage facilities for inordinately long periods of time and thus to improve the economic performance figures of their operations.

In view of the enormous national economic importance of the initiative launched by these Moscow industrial, construction and transportation enterprises, the question of ways to promote its adoption on a more extensive scale has been discussed by republic, kray and rayon party bodies with extensive participation on the part of railroad, division and industrial enterprise managers. The Ministry of Railroads collegium also met and outlined a number of top-priority tasks directed toward insuring that this valuable experience is adopted in all operations and directed railroad and division chiefs to take all steps necessary to conclude agreements and contracts with repair and maintenance enterprises governing work to be performed on car bodies and containers and toward insuring that all possible assistance be given enterprises supporting this patriotic initiative.

It is being recommended that these efforts be undertaken in a well-planned, integrated manner, jointly with ministries and enterprises in industry, construction and other sectors of the national economy, while at the same time relying upon assistance from local soviet and party bodies.

A great organizational effort has been launched to implement the collegium decision. The Ministry of Railroads moved expeditiously with the preparation and distribution to the railroads of the necessary information on standards governing enterprise car-body and container repair operations, flow charts, spare parts catalogs etc. To enhance the effectiveness of efforts to introduce the Muscovite experience on the part of railroad administrations and divisions, special commissions have been organized and placed under the direction of senior personnel within these organizations. These commissions are charged with the task of undertaking regular reviews of progress being made in incorporating car and container repair experience in industrial and construction enterprise operations, rendering them practical assistance in creating and manning their own special repair facilities, obtaining materials and equipment etc.

Road division car departments and carshops have undertaken to identify the enterprises which can perform maintenance and repair operations and organized procedures involved in concluding the agreements and contracts with these enterprises and established the mutual obligations assumed by each of the parties. Experienced specialists have been assigned to instruct enterprise personnel in the methods and procedures involved in repairing rail cars and containers, make timely determinations of what repairs are required and to inspect cars on which repairs have been performed. Many carshops have sent their own people to the enterprises they are helping, and these specialists have then become members of the enterprise repair brigades. Railroaders are giving enterprises substantial help in equipping their repair facilities with the necessary tools, instruments

and equipment for mechanizing their labor-intensive operations and insuring high levels of labor productivity and work quality.

Since the beginning of this year the railroads have been drawing on their own stocks of spare parts and materials for rail-car and container repairs to provide enterprises and organizations with, among other things, hatch covers, bolting mechanisms, end door leaves, flatcar sides, boxcar doors, hinges, locks, lining material etc. The first quarter of the year, for example, saw some 800 m<sup>3</sup> of lumber and various spare parts valued at more than 85,000 rubles delivered to enterprises running in-house repair operations.

By agreement with the USSR Central Statistical Administration, the railroads began January 1, 1983 to keep monthly records on car and container repairs performed by enterprises they service using specifically agreed-upon bookkeeping and accounting forms. The primary document is the VU-3 form, which is prepared jointly by representatives of the road divisions and enterprises involved for each car repaired. This form indicates what work is to be done, the spare parts and materials required to repair the given car or container and the time needed to do the work. If a job requires more than two hours, the form is marked to indicate repairs with uncoupling. When the form is submitted to the station from the enterprise, the time required for repairs is subtracted from the total time the car had to stand idle on the access track.

On the basis of the general-purpose (VU-3) forms received, the carshop keeps a log using the VU-7 form providing a numerical record of all cars on which repairs have been performed. This makes it possible to keep a record of all car and container repairs performed by each enterprise by the day and by the month.

The VU-5 form, a record of cars out of service on hand and of damaged cars (containers) repaired, provides the fullest picture of the participation of enterprises in industry, construction, transport and other sectors of the national economy in maintenance and repair operations on rolling stock on enterprise access lines. This form is prepared by the railroad carshops, divisions and administrations on the basis of agreements concluded, the general-purpose forms and the VU-7 log. This record reflects the number of enterprises and organizations which have concluded repair agreements, the number of cars repaired (to include the separate record kept of decoupled repairs performed) and total idle for repairs in car-hours. It also shows the quantities lumber, metal and spare parts the railroad has delivered to enterprises over the course of the month. It indicates the number of railroad personnel engaged in transferring and inspecting rolling stock. It should be pointed out here that this particular report is also broken down by ministry and department, that is, it permits analysis of the progress each branch is making with the organization of car-repair operations after the Muscovite experience.

As analysis has shown, the patriotic initiative launched by working collectives in Moscow enterprises is now gaining increasing momentum throughout the rest of the country. This valuable initiative has been enthusiastically adopted in Gor'kiy, Leningrad, Perm', Chelyabinsk, Sverdlov, Kemerovo, Yaroslavl', Kuybyshev and a number of other oblasts. More than 4700 enterprises in industry, construction and other organizations have now concluded car-repair agreements, while over 870 have signed agreements to repair containers. The first four months of this year have seen them perform maintenance and repairs on more than 166,000



cars and 55,000 containers, which has made a solid contribution to efforts to increase available transportation resources and improved the flow of rolling stock going to many enterprises and organizations.

Some 14,000 cars have been repaired by enterprises served by the Gor'kovskaya railroad, 11,200 by enterprises on the Moskovskaya road, 9,000 on the Sverdlovskaya, 7,400 on the Severnaya, over 5,000 on the Yuzhno-Ural'skaya, Oktyabr'skaya Pridneprovskaya, Donetskaya and L'vovskaya and over 4,000 cars repaired by enterprises on the Zapadno-Sibirskaya and Yugo-Zapadnaya railroads. Enterprises on the Yuzhno-Ural'skaya, Belorusskaya, Kuybyshevskaya, Zapadno-Sibirskaya, Gor'kovskaya, Sverdlovskaya and Moskovskaya railroads have also repaired between 1000 and 12,000 containers.

The organization of this effort by the Yaroslavskoye division of the Severnaya railroad can serve as an example of what we mean by taking an enthusiastic, creative approach to adoption of the Muscovite enterprise experience. From January to March the industrial and construction enterprises this section serves performed repairs and routine maintenance on more than 4,400 cars and 500 containers. The Yaroslavl' tire plant alone repaired over 2,100 cars. Rolling stock repairs here are performed on a specially equipped siding designed to accommodate 20 cars. The track is electrically illuminated for night work and provided with a power supply line for arc welding. Repair work is done here in two shifts by a combined brigade of 13 men, 6 of whom are employees of the Yaroslavl'-Glavnyy carshop. The brigade is composed of arc welders, carpenters and fitters. The carshop foreman supervises repair operations. Each day sees the plant ready as many as 30 cars for loading. The carshop supplies the materials necessary to perform the required car repairs.

The Vtorchermet works, too, has succeeded in setting up a well-organized repair operation, which during the first three months of the year turned out repairs on some 180 rail cars. The same period saw the Yaroslavl' Motor Works prepare approximately 350 cars and 400 containers for loading. The management of this enterprise has undertaken the obligation to take a number of steps in 1983 with assistance from the railroaders to improve the repair facilities and equipment here.

A number of other enterprises have also done a good job in organizing in-house car and container repair operations; this would include Yaroslavl's Lakokraska production association, the Volzhskiy Machine-Building Plant, the Rybinskoye Engine-Building Association and others. Division car services personnel give regular briefings and instruction for industrial enterprise workers and fill enterprise requests for spare parts and materials required for car repairs. All this has made it possible to shorten the periods of time cars must be idled for repairs, to improve the flows of rolling stock supplied to enterprises and to get finished production shipped out on schedule.

The Muscovite initiative has also received widespread support at the Vladivostok terminal. The CPSU's Primorskiy Kray committee, the kray executive committee and the council of terminal party organization secretaries have been of great assistance in introducing these innovations into operations here. The maritime port is also now successfully engaged in a rail-car repair operation. It has created a special mobile repair facility manned by a brigade of workers, who have been able every year to increase the volume of repairs performed. All our

port facilities and a number of large enterprises have developed a program of technical and organizational measures designed to insure that rolling stock is maintained in proper repair and are rigorously monitoring compliance with these requirements. These measures made it possible during the past year to reduce damage to cars by more than 45 per cent and raise the percentage of cars repaired to 86. Terminal transport personnel and their clients have now set themselves the task of not only increasing the volumes of repairs they perform, but of substantially improving the quality of the work they do as well. With this objective in view they have decided to concentrate their repair facilities and materials at the largest enterprises having the greatest car turnover, the best system of access track and the most substantial manpower pools.

Much has been done to introduce this valuable initiative at the Lipetsk rail terminal as well. While until recently only the starter motor works and the Bumiz factory were repairing cars and containers, the Novolipetsk metallurgical, cement, tube, tractor, silicate and a number of other plants as well as the Zhelezobeton Trust are now engaged in these operations. This year will see Lipetsk enterprises repair and recondition some 6000 cars. It is important to point out that an experience specialist is assigned to each enterprise, who not only monitors the quality of the car repairs being performed, but also instructs enterprise personnel and help them organize their repair operations in accordance with established repair methods and procedures.

Also devoting serious attention to adoption of the Moscow enterprise initiative are our ministries of ferrous metallurgy, the chemical industry, construction materials, the timber and wood-processing industry and a number of others. The Cherepovetskiy and Vyksanskiy metallurgical plants, for example, repaired 350 and 600 cars respectively during the first two months of the year, a substantial portion of these being decouple repairs. The Vyksanskiy plant has formed a car repair brigade of 18 men, and the railroad has allocated it a 150-meter stretch of track equipped with two Donbass car-repair machines.

Special track and the necessary manpower have also been allocated for car repair by the Uzel'stroyindustriya construction materials combine in Termez, which is served by the Central Asian Railroad. The carshop here supplies the combine with spare parts and materials, while an experienced instructor provides instruction for repair personnel. The combine now experiences virtually no shortages of rolling stock.

We also see well-organized car-repair operations at the Gomel'skiy pulp and paper plant, which is repairing and reconditioning as many as 50 cars a day, the Sumskoye Khimprom production association, the Azot production association in Dneprodzerzhinsk and other facilities. Among enterprises within the Ministry of the Petrochemical Industry which have created the essential base of repair operations we can mention the Angarskiy Petrochemical Combine and the Omsk Tire Plant, each of which have repaired or reconditioned some 200-250 cars.

Railroaders on the Gor'kovskaya Railroad and personnel of the Gremyachevskiy Mining and Concentration Combine, the Kemerovo Road and the Nagornaya mine are also providing examples of creative, businesslike collaboration in taking up the important Moscow initiative. Also working closely with one another in this important effort are collectives at carshops at Vikhorevka on the Eastern Siberian Railroad and the Bratsk aluminum plant and the carshop at Tapa on the Baltic

Railroad and the Slantsekhim production association. A major effort is now under way at the Chelyabinsk Tube-Rolling Plant. This facility has allocated a separate track accommodating 18 cars for its repair operation. It is equipped with a Donbass car-repair machine and other necessary tools and equipment. Each month now sees it process some 800 cars. With assistance from car-services specialists from the Yuzhno-Ural'skaya [Southern Ural] Railroad's Chelyabinsk division, this plant is now repairing not only car bodies, doors and hatches, but individual automatic coupler components as well. Waste from the plant's rolling operations which used to go for metal scrap is now used to fabricate railroad car parts.

Many other enterprises in various branches of our national economy are also giving a great deal of attention to the problem of repairs for freight cars and containers being released after unloading and ready for loading and to the creation of the base for repair operations required to tackle this problem. Efforts to instill responsible attitudes toward our rolling stock and to undertake mass-scale car- and container repair and reconditioning programs are now taking shape on an ever-increasing scale.

At the same time, however, there are places which have yet to take the steps necessary to adoption of the Muscovite initiative on any extensive scale. This has so far been a slow-moving effort at enterprises in Azerbaijan, Armenia, Kazakhstan and Moldavia. We are still seeing only inadequate efforts to organize car-repair operations at enterprises served by the Baykal-Amur, Far Eastern, Transbaykal, Volga, Tselinnaya, Transcaucasian and Odessa Railroads. Work can hardly be said even to be under way on the railroads in Azerbaijan and Moldavia. Among enterprises so far failing to give proper attention to the need to adopt this important initiative are those of the ministries of power-machine building, ship building, light industry, electrical equipment industry, coal industry, machine building, industrial construction and a number of others.

The Ministry of Nonferrous Metallurgy has so far taken only a perfunctory attitude toward this important matter; it has simply issued a directive setting enterprises the task of setting up a rolling-stock repair operation. The initiative as adopted by the various collectives has in this instance been only a limited one, what with the fact that it involves car repairs undertaken by agreement with appropriate organizations of the railroad only if the latter supply them with all the spare parts and materials they need and compensate them for the cost of the repairs performed. As is the case with many enterprises in other ministries, nothing is being done here to set up or improve existing repair facilities within the enterprises of the branch themselves.

Adequate steps have yet to be taken to prepare car-repair agreements to be concluded between enterprises of the Ministry of the Pulp and Paper Industry and individual railroads, among them the Krasnoyarsk, Baykal-Amur, Transbaykal, Eastern Siberian and Belorussian roads. At the same time, however, the enterprises of this ministry dispose of supplies of lumber adequate to support car-repair operations and could be rendering more effective assistance to the railroaders, particularly given the fact that there are already examples of this.

The Bratsk lumbering operation of the Ministry of the Pulp and Paper Industry and the Korshunovskiy mining and concentration combine of the Ministry of Ferrous Metallurgy, which are served by the Eastern Siberian Railroad, and the Dneprovskiy

Metallurgical Plant imeni Dzerzhinskiy and Zaporozhstal', collaborating with the Dnepr' Railroad, have so far not committed themselves to this important national effort. The Vorkutaugol' and Pechorgres enterprises of the coal industry and Ministry of Electrification located within the territory of the Northern Railroad and a number of mining and concentration combines within the area served by the Southern Railroad have yet to undertake any in-house car-repair operations. Under a variety of pretexts the Tallin maritime port facility, the Omsk Prefabricated Concrete Works, a number of major facilities of the Ministry of the Petrochemical Industry and other plants are still declining to conclude freight car-repair agreements.

This kind of attitude on the part of senior officials in certain ministries and the managers of a number of enterprises toward adoption of the Muscovite initiative is to be explained by the fact that many of them still look upon our rolling stock and containers as the property of the Ministry of Railroads, forgetting that in reality they are a national asset and that those who use railroad rolling stock are duty-bound to exercise due care and responsibility when they use it. In the context of efforts to insure efficient, economical exploitation of all our resources, to include resources in means of transportation, these attitudes, this approach, requires radical alteration. Collectives of capital industrial enterprises have provided a good concrete example in this regard, models to be emulated by all with any interest in the operating condition of enterprise or organizational rolling stock. All those who have so far failed to attach the importance due the need to adopt this important initiative should now draw the appropriate conclusions and add their contribution to this effort so important to our national economy.

Setting up in-house car- and container-repair operations in enterprises in industry, construction and other sectors of the national economy will of course encounter certain difficulties, generate the trouble and responsibilities involved in seeing to the creation of necessary repair capacities, coming up with the resources required etc. The practical experience which has now been accumulated in this connection makes it possible at this point to outline some ways to accomplish these tasks more efficiently. In our view, for example, it would be to advantage for ministries and railroads together to take a look at the possibility of consolidating in-house car- and container-repair facilities operated by the industrial enterprises. Excessive dispersion of these operations results in inefficient utilization of equipment and manpower, low-quality repair work and less rigorous control over the level of operating condition to which rolling stock is being restored. Repair and maintenance operations should be concentrated in the largest enterprises and more extensive cooperation established between a number of different enterprises. This will make it possible to mechanize the labor-intensive aspects of decoupled repair operations, increase the number of cars repaired and improve the quality of the repair work performed.

Now as far as setting up to perform minor car and container repairs is concerned, repairs which would not make it necessary to send them to a specialized facility, this can and should be done in all industrial enterprises when a car is released for loading or after it has been unloaded.

Worthy of enthusiastic approval and widespread adoption is the initiative launched by managers of the Dinamo, Frezer, GPZ-1 and ZIL enterprises in Moscow, who have come out with an initiative not only to perform maintenance and repairs on rail

cars and containers, but also to undertake centralized fabrication of certain spare parts for all Moscow enterprises engaged in in-house repair operations. As practical experience has demonstrated, this kind of cooperation is highly effective and helps improve the flows of material and technical support to enterprise repair facilities.

We should now dwell on a number of problems concerning the organization of rolling-stock repair operations on enterprise access lines, problems whose solution will promote more extensive adoption of the Muscovite initiative. The USSR Gosplan and Gossnab should, in our view, take a good look at the question of allocating necessary resources to ministries and departments now engaged in in-house car- and container-repair operations to support development of the essential technical base upon which they can build their repair facilities, resources to cover the manpower costs involved and the costs of acquiring the materials necessary to perform essential maintenance and repairs to rolling stock. For the fact is that the Ministry of Railroads does not now dispose of resources which would allow it to bear the entire burden of supplying enterprises with everything they need to support their car-repair operations, what with the fact that this would cost several tens of millions of rubles a year. It will be very difficult for many enterprises, particularly the small ones, to set up to perform high-quality rolling stock maintenance and repair operations on the basis of their own available internal resources due to the prevailing stringent economies imposed on the use of these resources, and this is a definite impediment to extensive adoption of the Muscovite initiative.

To increase enterprise interest in the car- and container-repair program, it would also be to advantage, in our view, to offer enterprises the right to priority use of repaired rolling stock not only on the basis of the plan targets an enterprise has been assigned, but on the basis of shipments of above-plan production as well. We also need to increase management interest in setting up rolling stock repair operations by introducing a program of incentives not only for repair personnel, but for managers as well, for fulfillment of car-repair obligations.

The railroad's campaign in support of adoption of the patriotic initiative launched by enterprises in the capital has not yet reached its goal. Only 60-70 per cent of the enterprises capable of undertaking a car- and container-repair operation have actually assumed this obligation. So, leaning on support from party and soviet organs, as well as from the ministries and other agencies involved, our senior railroad and division personnel are going to have to take steps to intensify their effort. Universal adoption of this innovative program will make it possible to increase the use we can get out of the rolling stock available to us, improve its operating condition and meet our national-economic rolling-stock needs more completely and efficiently. This will constitute a concrete contribution to the effort to improve the functioning of our rail transport system and to successful accomplishment of tasks set it by the 26th Party Congress and the November (1982) plenum of the CPSU Central Committee.

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## RAIL SYSTEMS

### CONSTRUCTION OF MOSCOW METRO'S POLYANKA, BOROVITSKAYA STATIONS

Moscow MOSKOVSKAYA PRAVDA in Russian 11 Sep 83 p 2

[Article by V. Krakhotina: "For the New Metro Stations"]

[Text] One of the underground routes, which the subway builders are building today, passes through the center of the capital -- from Dobryninskaya Square through Polyanka and further to the Library imeni Lenin. Two subway stations -- "Polyanka" and "Borovitskaya" -- are being constructed here deep underground. They will open their doors for the people of Moscow next year. Connecting with the Serpukhovskaya line that will be turned over for this year's November holidays, the new subway section will connect the city's center with the housing tracts of Chertanov.

Both stations are being erected in direct proximity to the existing subway, in areas of dense urban construction. This is the main feature of their construction. It forces the subway builders to use reliable and safe working methods, which will in no way disrupt the operation of the subway and the life of the city's inhabitants.

The SMU-8 collective, which is building the complex at "Polyanka" recently finished the work on one of the difficult excavations -- the escalator tunnel or incline, as its builders call it -- under difficult hydro-geological conditions.

When preparing for its construction, the collective planned to begin and complete the work long before the entire station complex was put into operation in order to have a reserve of time for the qualitative performance of waterproofing and decorative work. This time was also required for the erection of the vestibule whose construction almost always depends on the completion times of the work on the escalator tunnel.

Thus, a mining equipment set, with whose help the work on the incline began in April of this year was ready at the construction site, which is at the corner of Bolshaya and Malaya Polyanka, in January of last year. By 1 May, the subway builders had already installed the first elements of the tunnel's construction -- the cast-iron rings. The brigades of V. Korneyev, V. Kozlov and A. Skovorodin worked here, and the work was organized in three shifts.

The Moscow subway workers, who are accustomed to abundant water, floating earth and hard rock, encountered here such an unusual phenomenon for the local geology as the absence of a water-confining layer (clay) between the water-bearing sand and bedrock. This considerably increased the danger of the work and required a search for and the adoption of precautionary measures which, of course, were immediately reflected in work tempos. Primarily, dynamiting of the rock was strictly limited and, in some sections (in frozen soil), entirely ruled out.

After the frozen quicksand, the brigades cut into solid rock -- very hard dolomite and dense limestone. The SMU-8 engineers decided to work, partially employing the drilling and blasting method. The remaining soil was worked with a jack hammer. The facing brigades moved to the 50th ring in this geology and using this method, advancing 10 meters.

V. Korneyev's brigade was the first to descend into the facing of the incline tunnel; None of the workers had ever gone through the escalator tunnel. Its construction was new even for V. Privalov, the young director and sector chief. Today, all of them -- both the facing workers and the sector chief -- possess equal experience. There is a new task facing the collective: to prepare the incline for the assembly of the escalators. One other -- no less complicated -- excavation is necessary for this. It, just as much other construction, will be dug here in direct proximity to the operating subway system. The section has already begun to work on it.

8802

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## RAIL SYSTEMS

### PLANS FOR MOSCOW METRO'S THREE NEW SOUTHERN LINES

Moscow GUDOK in Russian 17 Sep 83 p 1

[Article by K. Borisov: "The Southern Radials"]

[Text] The name "Lyublino" has now been preserved on the capital's map as the name of the largest marshalling yard in the communications center. At the beginning of the last century, this locality not far from the borders of old Moscow was known as the grand country estate of N. A. Durasov and had a theater, theatrical school, stables, a park, hot house....

Lyublino was included in Moscow Oblast until 1960. Basically, railroad workers, who worked at the station, in the depot and workshops, lived here. After the inclusion of the city within the capital's precincts, however, the area between Volgogradskiy Prospect and the Kursk railroad line became the site of mass housing construction. The load on the local electric trains grew sharply with this.

The "Tekstil'shchiki" metro station of the Zhdanovsko-Krasnopresnenskaya line, which opened almost two decades ago with a platform of the same name, solved the problem to some degree. From here, however, the underground radial sharply swings to the east to the junction of the Kazan railroad route with the "Zhdanovskaya" metro station. The inhabitants of the new Lyublino housing must get to "Tekstil'shchiki" by surface transportation as before.

That is why the share of transportation, which the underground light blue express trains of the three southern diametric lines--Serpukhovskiy, Orekhovo-Borisovskiy and Lyublinskiy --will shoulder, is high in the long range schedule for the development of the capital's transportation.

A. Glonti, manager of the subway department of the All-Union Scientific and Research Railroad Transportation Institute, says the length of the capital's underground lines will increase by almost 30 kilometers during the current five-year plan. Of them, one can say that 13.9 kilometers of the Serpukhovskiy radial are already prepared. Test runs have taken place on it. The new line will be commissioned on the eve of the Great October holiday. Light blue trains will travel between Profsoyuznaya Street and the Varshavskoye Highway in



Chertanovo from "Serpukhovskaya" Station which will be connected by a transfer point on the ring with "Bobryninskaya". The line will be lengthened another 1.3 kilometers from the final station of "Yuzhnaya" to the "Prazhskaya" subway station in 1985. Incidentally, the Serpukhovskoy radial will become the southern section of the future Timiryazevsko-Serpukhovskoy diametric line that is being built through the center of the city to the north to Otradnoye. Before the end of the five-year plan, the underground route will be lengthened another three kilometers in the direction of the center -- toward the "Polyanka" and the "Borovitskaya" stations; here, three lines -- Kirovsko-Frunzenskaya, Arbat-sko-Pokrovskaya and Filevskaya -- will directly intersect...."

Then, we continued our trip with Anzor Nikolayevich to the capital's southern rayons along the future underground trunkline. There is another radial going south -- the Orekhovo-Borisovskiy. It has received the name of Zamoskvoretskaya line. Its first phase from the operating "Kashirskaya" subway station will be put into operation next year with three stations, and the inhabitants on the outskirts of Krasnogvardeyskiy Rayon will receive another two stations -- "Domodevovskaya" and "Krasnogvardeyskaya" -- a year later.

Nevertheless, the load on the Kursk line remains high as before. How can this problem be solved?

One can receive an answer to this question today in the Administration for Engineer Equipment and Preparation of the Territory of the Main Architectural Planning Administration of the Moscow city ispolkom where development plans for another future main southern subway radial -- the Lyublinskiy -- have been set by the scientific research and design institute for the capital's general plan and by "Metrogiprotrans". Based on the estimates of the specialists, it will significantly decrease the stream of passengers on the most strained section -- Tsaritsyno-Moskva-passenger-Kurskaya. This will create more conveniences for the inhabitants of the Moscow area.

Among the capital's stations, Kurskiy will become the second after Kiyevskiy which will have three subway stations with a single transfer point. The new underground trunkline will begin from here. Eight stations will be constructed on it, and the length of the line will be almost 14 kilometers.

The section from "Kurskaya" to "Sharikopodshipnikovskaya" at the junction with "Proletarskaya" will be the first to be commissioned. It will be built under Il'ich Square and the Krest'yanskaya Gates. Further on, the tunnels will pass under the industrial area of the "Southern Port" and the housing tracts of the Nagatinskaya water-meadow. Then, the route will be extended under the ribbon of the Kursk route of the Moscow road to the housing tracts of Lyublinskiy Rayon, and the stops of Lyublino, Depo and Pererva will discharge local passengers. In the more remote future, underground steel threads will extend from "Kurskaya" in the direction of the center -- through Turgenevskaya and Kommuny Squares and past Ostankino to the Degunino and Beskudnikovo platforms of the Savelovskoye route.

The southern subway radials.... Today, not only their routes are known but their designs have already become a reality. Only a few weeks remain to the commissioning of the Sertukhovskoy radial, and the first phase of the Orekhovo-Borisovskiy will be opened next year. If one looks at tomorrow, it is not such a long time before the light blue express trains will run to the busy tracts of modern-day Lyublino -- with its broad noisy boulevards, tall blocks, enormous self-service department stores, and smart-appearing schools.

8802

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## RAIL SYSTEMS

### CONSTRUCTION PROGRESSES ON MOSCOW METRO'S OREKHOVO-BORISOVSKAYA LINE

Moscow VECHERNYAYA MOSKVA in Russian 19 Sep 83 p 2

[Article: "The Orekhova-Borisova Subway"]

[Text] The time is not far away when the light blue express subway trains will arrive for the inhabitants of the large housing tract.

Five stations are being constructed on the 12-kilometer route: "Kantemirovskaya", "Lenino", "Orekhovo", "Domodedovskaya", and "Krasnogvardeyskaya".

The subway builders are now working on the cross tunnels.

Finishers from the special work administration are already working at "Lenino" station which is being constructed by the SMU [construction and assembly administration] collective No. 11 of the Moscow Subway Construction Administration.

"Lenin is the founder and leader of the Communist Party and the Soviet state". The architectural and artistic design of the new station is devoted to this subject. Its designers are V. Cheremin, the chief design architect of "Metrogiprotrans" and a veteran, and A. Vigdorov, a young specialist.

Polished granite and marble from the country's various deposits are being used for the facing of the station. The brigade of K. Slonov, an honored RSFSR builder, has already laid dozens of square meters of granite slabs.

The new underground station is being constructed at the intersection of Tovarishcheskaya and Kaspiyskaya Streets near the suburban platform of Tsaritsyno on the Kursk route of the Moscow railroad.

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## RAIL SYSTEMS

### PROGRESS OF DNEPROPETROVSK METRO CONSTRUCTION

Moscow GUDOK in Russian 2 Sep 83 p 2

[Article by Yu. Grachev, chief inspector for the quality of construction and assembly work in the Main Subway Administration, Moscow: "They Are Working Harmoniously"]

[Text] Subways are being constructed in many of our country's cities, including Dnepropetrovsk. Only two years have passed since the customer's board of directors was organized. Generally speaking, this is not a long time; however, at the same time, it is completely sufficient for the work style and methods of the collective, from which there is something to be learned, to have been formed.

The new subway is being built under complicated geological and hydrogeological conditions: Rocky soil and rocks with a high level of hardness have been a difficult barrier from the very first days, and there are numerous fissures through which ground water gets into the face. Nevertheless, the management collective headed by B. Denisenko is convinced that it is possible to construct the project ahead of the planned time.

It is necessary to mention that there is justification for this conviction. The work is now being performed in eight faces, and they will soon be expanded to 24.

Having detected shortcomings in the construction, we -- the inspectors -- very often hear endless complaints about the shortage of personnel. We have not had occasion to hear these divergent arguments in Dnepropetrovsk. Yes, there are few defects. A high quality of construction is being assured both in the approach excavations and in the first meters of the tunnels.

I would like to point out that Ye. Marnosov, the chief engineer of the board of directors, deserves a great deal of credit for this. So that quality control of the advancing construction and the performance of construction and assembly work would be at the necessary level, he assures technical inspection by the required measuring instruments and technical documentation. For example, pocket templates for checking the conformity of the iron tubing to the technical requirements have been made. It is possible to measure five parameters

of the item using these templates. When there is an opportunity, the chief engineer himself is not ashamed to check the quality of the material and structures being used on the construction project -- although this is not included in his duties.

Exact observance of the conditions of the design, technology and norms has been achieved here thanks to the high level of responsibility and exactingness. All of this has permitted the management collective to save 170,000 rubles during the two years.

Not only the customer is watching the quality of work. N. Lobanov, the chief of SMP [construction and assembly train] - 720, is also paying a great deal of attention to this. He requires that his subordinates effectively solve all the customer's instructions about improving the quality of the construction project.

Every worker in the customer's and contractor's groups strictly performs his duties here, and that is why the leaders of these organizations do not have to interfere in small matters. For example, if the management's technical inspection inspector has made a note that requires the correction of a defect detected in a structure, the construction section chief acquaints himself with it on the very same day and provides the necessary instructions. The next day, the foreman reports by a telephone message to the inspector that everything has been done. You see, the construction and assembly administration leadership, the management board and the design supervision must intervene in order to solve this question in some subway building organizations.

The highly principled and -- at the same time -- flexible position of the two cooperating organizations, the initiative and boldness in solving complicated production tasks, and the close business contacts are helping the cause. Let us say that the builders of the Dnepropetrovsk subway lack drilling equipment. In this case, the customer's management board does not take the position of a detached on-looker -- although it would seem to be a concern foreign to it -- but takes a very active part in searching for a way out.

Party and soviet bodies are heartily supporting the cooperation of the management board and SMP-720. The construction of the subway has been declared an urgent city Komsomol construction project. It has been staffed with specially trained personnel.

There is one more trait which is insignificant at first glance: the maintenance of the construction area. Unfortunately, piles of rubbish, used metal items and boards often lie about construction areas. The tidy, clean and rationally planned construction areas of the Dnepropetrovsk subway builders are especially pleasant against this background. It is easy on such sites to organize correct quality control over arriving materials and items and it is possible to keep good quality and rejected items separate.

There are, undoubtedly, also difficulties and shortcomings in Dnepropetrovsk. In particular, the need has matured to create their own subway construction

administration base. The designers are still taking insufficiently strict positions in improving quality. The ear-marking of material and technical resources for SMP-720 through "Khar'kovmetrostroy" is delaying the subway's construction. However, the entire organization of the task here provides a basis for hoping that these growth difficulties will be overcome.

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CSO: 1829/377

## RAIL SYSTEMS

### EXPANSION OF TASHKENT METRO CONTINUES

Moscow VECHERNYAYA MOSKVA in Russian 8 Sep 83 p 2

[Article by Sh. Shaabdurakhimov, chief of the Tashkentsykiy Subway imeni V. I. Lenin: "The Underground Trains Are Running"]

[Text] The Tashkent subway, which today has become a reliable and normal type of urban transportation, began to operate several years ago for the first time in Central Asia. The fraternal republic participated in the construction of the unique underground palaces. The collectives of 250 plants from 120 cities sent the necessary equipment and materials to Tashkent. The construction project which was unusual in its scope, was declared a national one. During the days before it was commissioned, from 5,000 to 10,000 inhabitants of the city actively helped the builders.

More than 20 collectives have developed designs for the architectural and artistic decoration of the stations, which reflect the historical development of our people and the republic's national coloring. Thus, the panels in the "Oktyabr'skaya revolyutsiya" Station returned to the time of the establishment of Soviet power in central Asia. The "Druzhiba narodov" Station has become a symbol of the unity, brotherhood and mutual help of our republics -- our brother peoples.

The structures of the Tashkent subway are based on high seismic activity. More than 300 tremors have already been registered since they were put into operation; however, not the slightest crack has been detected. For the first time in the practices of our native subway building, an irrigation system with special cooling and cleaning of the air, which is supplied to the station, has been installed here for the comfort of the passengers. This is of no small importance because of the hot climate. In order to insure safety, accuracy and smoothness in the movement of the light blue express trains, an integrated automated system for controlling the movement of the trains has been incorporated.

During the years that the subway has been in operation, the traffic volume has grown on the average from 141,000 passengers a day to 270,000, labor productivity has increased by 65 percent, and transportation costs have decreased by 22 percent.

Today, the construction of a subway line from "A. Navoi" Station to "Gorodok aviastroiteley" Station, whose first section to the "Tashkent" Station with five stations having a length of 5.5 kilometers is scheduled to be put into operation in the fall of 1984 and second section -- in 1985 a little before the stipulated time, is taking place at accelerated tempos. Moreover, the work on the feasibility study for the construction of a third section of a second line from "A. Navoi" to the Karakamysh tracts through the VUZ town is being completed. Hydrogeological research for the construction of a third line from the Yunusabad tract to the airport through "Oktyabr'skaya revolyutsiya" and "Aybek" Stations is being performed. The subway will be further expanded during the 11th and 12th Five-Year Plans. It is planned to bring the overall length of the underground route to 60 kilometers by the year 2000.

8802

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## MARITIME AND RIVER FLEETS

### ZVENIGOVO SHIPYARD FACILITIES EXPANDED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Aug 83 p 1

[Article by V. Sidorov: "An Urgent Order"]

[Text] Recently a barge, heavily settled under the weight of grain-handling devices, left the Mari city of Zvenigovo, down along the Volga to Kazan and further--to Saratov. Two units, allowing the transfer of as much as 300 tons of grain per hour from ships' holds to railroad cars, were manufactured by the beginning of the harvest season. The urgent order from the Kazan and Saratov river ports was carried out ahead of schedule by the shipfitters of the Zvenigovo Shipyard imeni Butyakov.

This is the first time that the group has handled such equipment. Nevertheless, they successfully coped with the order. Furthermore, according to the plan, it had been proposed to manufacture the units in a dismantlable variant, but at the shipyard they managed to carry out the overall assembly as well. This will save time for the port workers.

The grain-handling devices were the first products to emerge from the vaults of the new workshop. Its production area comprises a thousand square meters. This would seem to be not very large if we compare it to the KamAZ or the Cheboksarskiy Industrial Tractor Plant. But here entire vessels, large-tonnage barges and fire boats, will be assembled under a roof. Up to now a roof over the heads of shipyard workers has been an unusual thing. The new building has shielded the workers from bad weather; also located therein are facilities for changing clothes, a dining room, shower rooms, and a reading room.

The new workshop has been furnished with up-to-date equipment. A particularly great amount of attention has been attracted at this time to the line engaged in the preliminary processing of metal.

"There are still very few such lines at the enterprises of the RSFSR Ministry of the River Fleet," stated the chief of the Shipfitting Workshop, S. Domnin. "When we have assembled it, it will significantly increase labor productivity on the set-up operations."

At present three of the eight basic units of the line are already prepared for work. And right alongside--in the second bay of the workshop--assembly work

will begin on the renowned Volgari-class pusher-tugs, vessels which have been awarded the state Badge of Quality. The building slips for them have been placed not on reinforced-concrete floor coverings, but on a pre-laid, metal, universal assembly stand. This stand is the result of an efficiency-improvement proposal by the deputy chief of the workshop, V. Kalinin, and the technologist S. Kryukova. Its essence lies in the fact that now, when the transition is made to manufacturing another type of tugs, the concrete floor in the workshop will not have to be stripped off and poured again. There will be savings in time and a considerable amount of funds.

The assembly of the first barge is now proceeding in the new workshop.

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## MARITIME AND RIVER FLEETS

### NIKOLAYEV SHIPYARD BEGINS WORK ON IMPROVED 'BERINGOV PROLIV' CLASS SHIPS

Kiev RABOCHAYA GAZETA in Russian 31 Aug 83 p 1

[Article by A. Kuznetsov: "A Class Higher--Nikolayev Shipbuilders Have Begun Construction of a Series of More Improved Refrigerator Ships"]

[Text] In the workshops and departments of the Order of Lenin Plant imeni 61 Communards one often hears today the words "new plan." While finishing up construction of the large series of transport refrigeration ships of the Beringov Proliv type here, they have begun building more improved ships of this same class.

The deputy chief builder of the refrigerator ships, V. Dmitriyev, and his colleague I. Beblo have spread blueprints and rough sketches out on the table. What will the new types of floating freezers be like?

"The plan includes the latest achievements of shipbuilding," notes V. Dmitriyev. Provision has been made for a new main engine. The wheelhouse will have up-to-date navigational equipment, while the holds will have modern refrigeration equipment. The construction technique has been well-thought-out. A course has been adopted aimed at making more extensive use of the block-unit method and reducing the proportion of manual labor in outfitting the ship's areas."

The re-structuring of the group's production facilities has become a genuine test of its skills and maturity. From the administrative staff to the line personnel, great demands have been placed on initiative, enterprising spirit, and non-stereotyped actions.

"A new ship," V. M. Dmitriyev continues, "is always interesting. Although the work is intense, at times up to the limit of our strength."

I. Beblo has a particularly great number of cares and concerns; he has been entrusted with the task of seeing the flagship of the series through from its "diapers" to the moment of turning it over to the sailors of Kaliningrad. It is not so simple to coordinate the actions of all the units of a shipbuilding conveyor and to set up contacts with new suppliers. Just after you have seen Ivan Dmitriyevich at a working conference with the chief engineer, within half an hour he may be demonstrating something in the department of the chief technologist. I asked him in what shop they were already working on the new refrigerator ship.

"Drop down to the hull-processing workshop," he said, and busied himself again with studying the schedule for the manufacture of the block-units.

This shop occupies a special place in the technological chain of operations. It is from here that all the ships begin which the Communist workers are building at the orders of the fishermen. Moreover, working here are many of those who also cut the metal for the Sibir' type of refrigerator ships. As veterans, it is obvious to them how the workers' skills have increased. The technological level of production has also risen.

Senior Foreman Luchin and I walked along the line for cutting rolled sheet metal; it has been fitted out with the highly productive Kristall machines, equipped with programmed control. Mikhail Sergeevich has been working in this shop for 30 years.

"I remember," he told me, "when we had gas-type cutting automatic units. It was not a bad machine, but it cannot be compared with the Kristall."

We paused at the workplace of the operator Lidiya Stryapchina. Through a dark glass she was watching the movement of the light-blue stream of flame as it easily cut through the thick rolled metal. There are still several parts to do!

"Today we learned that the first batch of metal for the new refrigerator ship had been turned over to the next workshop for section assembly," this operator said with a smile.

N. N. Golutva's brigade, which works on the line of Kristalls, since the beginning of the five-year plan, has exceeded its production plan by almost 9,000 rubles. Also ahead of the working calendar is a whole series of other groups in this shop. Five months ahead of schedule are the brigades of D. F. Marakhovskiy, I. Ya. Badovskiy, and A. I. Plakhotnyy from the section of cold and hot bending. It is here that the plates of the outer sheathing are given their necessary form. In other words, the architecture of the refrigerator ships emerges in this section.

Badovskiy operates large rolling mills, while Marakhovskiy and Plakhotnyy operate heavy-duty presses. These foremost brigade leaders are characterized by mutual assistance, by sharing their experience for the common cause. It has happened on more than one occasion that, when a new complex operation begins, all three of them gather together at a single workplace. In order to think over together how it could be performed more rapidly and with the least expenditure of labor. A genuine business-like concern for the plan and for quality.

...The end of the shift was approaching. In the hull-processing workshop they were preparing to send off yet another batch of blanks for sections to the assembly-welding shop. The metal plates were marked with white paint, which signifies the following: "Attention! For the new refrigerator ship."

2384

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## MARITIME AND RIVER FLEETS

### NEW FLOATING REPAIR DOCK IN PLACE IN VLADIVOSTOK

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 Aug 83 p 1

[Article by V. Frid'yev: "Across Two Oceans"]

[Text] A floating dry dock, capable of accepting any vessel of the Far Eastern Basin for repairs, has tied up at the mooring of the Dal'nyy Shipyard in Golden Horn Bay. This enormous structure came to Vladivostok across two oceans and seven seas, linked with a convoy of three rescue-type tugs.

The length of the dry dock is 280 meters--this is more than two soccer fields. Its load-hoisting capacity is 29,000 tons. This was the first time in world practice that a structure of such magnitude was conveyed almost all the way around the world.

When the Sudoimport All-Union Association decided to commission a Japanese firm to build a large-capacity floating dry dock for repairing our Far Eastern vessels, the path to a mutually profitable contract was blocked by the policy of sanctions inspired by the American president. Then the shipwrights of Sevastopol' were called upon to build the floating giant. And they successfully coped with this complicated task in record time. Now it was necessary to tow the dry dock from the Black Sea to the Sea of Japan.

The task of making this run was undertaken by the specialists of the expeditionary detachment of the emergency-rescue and underwater-engineering operations of the Black Sea Steamship Line. On 15 April an extraordinary convoy, consisting of the ocean-going rescue ship Yaguar, along with the rescue-tugs Bizon and Ametist, towing the enormous dry dock on cables 66 millimeters in diameter and anchor chains, set out for the Bosphorus.

"Usually in such an operation large tankers take part along with the tugs," stated the expedition leader, long distance Captain K. Kotov. "But we considered it uneconomical to utilize a freight-type vessel for traction power. We decided to get by with our own heavy-duty tugs. We also included in the expedition services which are not needed by ordinary vessels. In the first place--divers for inspecting the underwater section and for performing possible repair work."

A dry dock is an object with very little maneuvering capacity. This required a very high degree of professionalism on the part of the ships' pilots.

In the Bosphorus Straits they underwent their first trying experience. The convoy, which stretched out for 700 meters, provoked an unhealthy interest on the part of warships of the American Sixth Fleet, which began to maneuver at an unacceptably close distance. In the Suez Canal they underwent another type of experience. The tugs were towing the 50-meter-wide dry dock through a channel of water about a hundred meters wide. The slightest deviation could have obstructed the canal. For more than 24 hours neither the ships' pilots nor the deck crews closed their eyes, until the dangerous narrow sections had been left behind.

The participants on this journey planned to pass through the Indian Ocean prior to the height of the monsoon winds and to avoid the traditional typhoons in the Pacific Ocean. The factor of speed, therefore, was of paramount concern. The optimal conditions and the best displacement point of the dry dock were successfully determined during the first few days. This helped them to maintain a steady speed.

Eight sailing days were gained on the route from Sevastopol' to Aden. The fuel savings thus achieved enabled them to avoid stopping at Colombo and Hong Kong, and this saved yet another seven days. In the final analysis, by means of reducing the time required for this run, 400,000 rubles were saved for the state.

"We say: the weather allowed it," said the Yaguar's captain, Yu. Bogun, with a smile. "But, to be more precise, this was permitted by our chief of the Lyulyava Radio Station, who provided us with a constant supply of weather maps, and this helped us to choose a safe course, thus favorably coping with the elements. You know, one has to act like a hero most frequently because of a kind of maritime illiteracy. Fortunately, on this journey we did not have to rescue anything or contend with any accidents...."

And still. Let's just imagine that enormous dry dock and the comparatively modest-sized tugs in the middle of the ocean, which always remains a zone of heightened danger for human beings. Thousands of miles from home but perhaps only a few steps away from a storm at any moment. And foreign aircraft racing along over their heads inadmissably close. And so, throughout the entire trip the crew had to maintain their self-control, restraint, and a high state of readiness to engage in any actions. And they carried out their task precisely and creatively.

The run was carried out with a mark of "excellent" in 98 days. The expedition was able to deliver the dry dock, while maintaining on it the mounted gantry cranes. After being made secure at the mooring of the Dal'nyy Shipyard, the dry dock was already prepared to take on vessels for repairs.

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## MARITIME AND RIVER FLEETS

### FASTER DEVELOPMENT OF RIVER TRANSPORT IN FAR NORTH URGED

Moscow PRAVDA in Russian 24 Jul 83 p 3

[Article by I. Titov, PRAVDA correspondent, Anadyr, Chukotskiy Autonomous Okrug: "Along the Chukotskaya River"]

[Text] The rivers of the Far North are ice-bound for a large part of the year. Navigation, however, is opened on many of them at the height of the summer. Caravans of vessels, which are loaded with coal, oil products, mining equipment, construction materials, and food, travel to the almost inaccessible regions. Nature provides too little warm weather and it is necessary to carry out the planned work quickly and in an organized manner.

A problem arose with the very first steps in the economic development of Chukotka: There were practically no modern transportation communications on the enormous territory with an area of more than 700,000 square kilometers. All hopes were placed on reindeer and dog teams.

Now, ocean-going motor vessels arrive each summer in the ports of the Arctic basin accompanied by powerful icebreakers. Transport aviation has taken upon itself a large percentage of the freightage. A great deal of freight is brought in trucks over winter and ice roads.

Nevertheless, the problem of transportation to the peninsula's remote regions remains a critical one. We are now talking about the fact that it is not easy to provide the inhabitants of the northern villages and settlements with everything necessary and to organize the transportation of freight at a modern technical level with the least expenditures.

River transport is rightfully considered the most economic and suitable one for the peninsula's central rayons, but it is still not as developed as the interests of the national economy require. Its capabilities are great. Let us take the Anadyr River. It cuts through the heart of the peninsula for a thousand kilometers, passes through the most inhabited rayons with an indigenous national population, and -- although it is still not being studied and organized adequately -- has been used for transporting freight for more than two dozen years. Vessels ascend to the settlement of Markovo which is located more than 600 kilometers from the sea coast.

Unfortunately, the development of navigation on this river, which began rapidly, has been slowed down recently. The plans have not been fulfilled for six years in a row.

Why is this happening? There has been and is still no organization of the RSFSR Ministry of the River Fleet in the region. Evidently the freight volume on the Anadyr and the other rivers is on a republic scale not significant enough to create some subunits of this ministry here. That is why the development of river transportation was entrusted to the Anadyrskiy port of the Far East Steamship Company. It has available the necessary fleet and manpower. Although the seamen did not have any experience in navigating on rivers, they took on the task with a sense of full responsibility and have achieved good results: They have transported several hundred thousand tons of cargo under the very difficult conditions of the capricious rivers, which abound with shoals, without any modern channel navigation equipment.

Quite a bit of demurrage is being permitted for organizational reasons. The port's leadership and specialists lack flexibility and the ability to calculate their actions in the future. Almost every year, the Anadyr estuary is cleared of ice much later than the rivers are opened in their upper reaches. When the motor vessels depart on a long voyage, the water in the river has already fallen and the vessels do not always manage to get to the final points. The opinion is being expressed: Organize the bottom for shallow-bottomed vessels in the upper reaches and near the transshipping bases so that they can carry cargo in the spring, when there is more water, not only to Markov but also to the center of the reindeer-breeding sovkhos that is located on the Vayeg River. It would be possible to gain almost a month of navigational time by a simple organizational measure.

It would not be right to be silent about the reasons for the lagging behind, which do not depend on the water transport workers. River transport has been entrusted to the seamen, and they engage in this work in so far as the material base and the existing organizational schedule permit. The fleet has not been updated for a long time, and many vessels are on the verge of being written off and already cannot insure transportation as is required. The Ministry of the River Fleet cites the fact that there is no river shipbuilder in its system and this is why it cannot satisfy orders. The Anadyr River is "foreign" to the RSFSR Ministry of the River Fleet; there are no organizations belonging to it there. And, consequently, no justification for being disturbed about deliveries of new ships to it. Is it not time and wise to put departmental interests in the background?

The Anadyrskiy seaport will soon celebrate 25 years of intense exploitation of the river. However, there are still no wharfs and moorings on it. Dry cargo motor vessels and tankers moor directly at the unequipped bank. Containers and boxes with different goods, construction materials and coal are unloaded with the help of a truck-mounted crane mounted on a pontoon. Is the size of its reach great? The cargo is piled up near the water itself and often suffers from high water.



And the navigation conditions? Navigational equipment is still only in the estuary's water area. Further on, there are only rare alignment signs on the entire route which extends many hundreds of kilometers.

A hydrological survey of the river was made in the middle of the Seventies. The navigational channel and the outlines of the banks have changed since that time and new shoals and shallows have appeared. Captains and navigators must rely only on their own observations and experience.

It appears that the interested ministries should combine their efforts and organize navigation on the Anadyr as necessary. The consignees in the Anadyr basin, in the settlements of the large reindeer-breeding sovkhozes, in the geological parties, in the subunits of the rural builders, and in "Sel'khoztekhnikha" also cannot stand aside. They should be able to equip moorings and approaches to them and transshipping bases with their own resources.

Every ruble, which is invested in setting up the river, will be returned a hundredfold.

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## MARITIME AND RIVER FLEETS

### WEATHER HAMPERS SUMMER NAVIGATION IN EASTERN ARCTIC

Moscow VODNYI TRANSPORT in Russian 21 Jul 83 p 1

[Article by L. Stukun, special correspondent: "In the Grip of the Ice"]

[Text] This year's navigation in the Eastern Sector of the Arctic is unfolding in an extremely complicated situation. Whereas practically all the Eastern Sector is normally already operating in the middle of July, not a single ton of cargo has been delivered as yet to the banks of the Kolyma, Indigirka and Tiksi-- although the first five ships departed from Cape Serdtse-Kamen on 21 June for the edge of the ice, which begins at the exit from the Bering Strait, and have safely reached Cape Shmidt. The "Admiral Makarov" icebreaker, which is acting as a guide, has led the "Nizhneyansk" with cargo bound for the Kolyma further. Considering the high seafaring qualities of this vessel, it was assumed that 12,000 tons of cargo would be delivered to Pevek.

Strong northeast winds firmly pinned the Ayonskiy 10-force ice massif to the shore, firmly closing the exit from Chaunskaya Inlet. The "Admiral Makarov" managed to slip through the most difficult section of the route. However, the diesel-electric ships "Kapitan Bondarenko" and "Vankarem" and the tanker "Usinsk" did not traverse even a third of the route, which separates Cape Shmidt from Pevek, as the weather took a sharp turn for the worse and a northeaster began to prevail. The caravan hove to for a long time. All of the attempts to break out of the strong icy embrace did not lead to success. A total of 35 miles now separates the caravan from Cape Navarin near the entrance to Pevek. However, the situation has changed again. The caravan is waiting for very small weather changes in order to move forward even if only a few miles.

But what about at the very beginning of the route? Today, 13 vessels bound for different areas have piled up near the ice's edge in expectation of a guide. The "Magadan" and "Leningrad" icebreakers recently led and concealed three of them in the shelter of Cape Shmidt. They also travelled to Shmidt with great difficulty and, at times, made 10 miles a day. However, they arrived. By this time, 11 vessels, one-third of which are bound for the Kolyma and Pevek, were in the shelter of Cape Shmidt. However, the icebreakers, which had broken through to Shmidt, still left three vessels there and led two vessels, which had been freed of their cargo, to the edge of the ice.

Nikolay Fedorovich Inyushkin, captain tutor of the icebreaker fleet service of the Far East Steamship Company, says: "Arctic navigation periods are often similar to each other; however, they are distinguished by one thing -- they always entail great difficulties and have more than once brought surprises similar to the latest. However, we are prepared for them. We had a similar beginning to the navigation period four years ago. However, just as then, we do not intend to surrender. During these tense days and nights, our maritime operations staff, which is headed by the very experienced captain tutor Filipp Kharitonovich Polunin, is following the hydro-meteorological situation in a very careful manner, making the maximum effective decisions. Ice reconnaissance aircraft and helicopters are continuously on duty in the skies, searching out possible paths even if only for a minimal advance. And as soon as a favorable situation arises, the guiding of the vessels continues. The seamen are doing everything possible in order to get again on the schedule from which the arctic drove us when it again displayed its stern nature.

It was only toward evening of 14 July that the "Kapitan Khlebnikov" icebreaker, which led after it the diesel electric ship "Bankarem" -- one of the three vessels that was caught in the grip of the ice half a hundred miles from Chaunskaya Inlet -- reached Pevek to help the "Nizhneyansk". After it, the "Admiral Makarov" and "Vladivostok" led the diesel electric ship "Kapitan-Bondarenko" and the tanker "Usinsk" to Pevek. Having delivered the vessels to the moorings, the icebreakers caught up to the "Kapitan Khlebnikov" with the "Nizhneyansk" almost near Cape Shmidt, helped them to pass through the Longa Straits and took the new vessels under their guidance.

Thus, the work on the difficult section of the Cape Shmidt-Pevok route has been revitalized. Despite the fact that the grasp of the ice is not decreasing, the northeaster is blowing as before without weakening, and the ice continues to be thick, vessels, supported by icebreakers and exploiting the slightest opportunity, are getting through to Pevek. The "Kapitan Khlebnikov" led another vessel there on 18 July -- the "Kapitan Sakharov".

The work in the Eastern Sector of the Arctic is continuing. The crews of the vessels and the collectives of the shore enterprises are doing everything possible and -- at times -- the impossible in order to overcome that which has been omitted because of the extremely difficult weather conditions, setting an example of selfless work on the sea, amidst the ice and on the shore.

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## MARITIME AND RIVER FLEETS

### BRIEFS

**NEW FREIGHTER**--A freighter of the "river-sea" type has been released from its slip at the Kiev Shipbuilding and Ship Repair Works. This is the latest vessel in a new series built by shipbuilders in the Ukrainian capital. The new ship has greater maneuverability, it is equipped with a modern navigation system, automatic collapsible masts, and other innovations. All this will make it possible to operate these river giants with a 3600 ton carrying capacity on rivers as well as on coastal maritime waterways. [By V. Nikipelov] [Text] [Moscow IZVESTIYA in Russian 14 Jul 83 p 1] 9967

**UNDERWATER VESSEL**--An unusual underwater vessel is being developed at the maritime base of the "Okean" Special Design Bureau of the Leningrad Shipbuilding Institute. On the outside, it looks like an airplane: it has a tail, wings, and a bubble-like structure over the cabin. It is designed primarily for examining the underwater supports of bridges, but it can also be used to study the flora and fauna of marine shelf regions. It can go as deep as 40 meters. Up until recently, in order to examine the underwater parts of bridge supports divers had to make numerous dives. Now, with the help of special television equipment installed on board the underwater vessel, they can transmit images up to the surface. [By S. Krayukhin] [Text] [Moscow IZVESTIYA in Russian 17 Jul 83 p 1] 9967

**NEW FISHING VESSEL**--The "Atlantik-333" is a marine trawler-seiner fishing vessel built for the Soviet Union at the Stralsund Shipyard (GDR). It is the first in a new series of freezer ships. It is equipped with an automated guidance system, as well as the latest equipment for fishing at various depths, including coastal waters, and for processing and freezing fish. [Text] [Vilnius SOVETSKAYA LITVA in Russian 22 Jul 83 p 4] 9967

**BARGE DESIGNED**--The Petrozavodsk Repair and Operation Base of the White Sea-Omega Steamship Company was the first enterprise to produce a barge with a 140 ton carrying capacity that will be able to travel on rivers less than 1 meter deep and deliver cargo to points on the riverbank where there is no moorage. This new barge was developed at the request of agricultural workers and is designed to carry equipment--trucks, combines, and tractors. It is equipped with a special collapsible bridge to reach the shore. It takes the skipper only a few minutes to get it ready for use. This year the first barges will begin operating on the rivers of the Karelian ASSR, and Arkhangelsk, Vologda, and Kostroma Oblasts--in areas that are lacking good roads. The design of the barges for agricultural workers was developed by specialists at

the Leningrad Central Technical Design Bureau of the RSFSR Ministry of the River Fleet. [By V. Shevtsov] [Text] [Moscow TRUD in Russian 24 Jul 83 p 1] 9967

FREIGHT TO NORILSK--Navigation in the direction of Dudinka has begun in Arkhangelsk. Two ships are already on their way to the arctic port, and the "Vorkuta" has also set off in that direction. Thousands of tons of cargo from the national economy will be delivered by sailors of the Northern Steamship Company to the Norilsk Mining and Metallurgical Combine. Late arctic navigation creates unusually difficult conditions for sailors and port workers, but the northerners are doing everything to fulfill the intensive plan. [By G. Shaposhnikova] [Text] [Moscow VODNYI TRANSPORT in Russian 2 Aug 83 p 1] 9967

VEGETABLE TRANSPORT--A vegetable transport ship is being unloaded at the Northern river port. It has delivered over 600 tons of tomatoes from the farms of the Lower Volga. The entire trip from the loading site to the capital's moorage took only 8 days. Usually it takes ships 2 weeks to cover this distance. This is the first voyage of a ship in a new series. The speed of the trip is a great advantage. There are fewer losses because the produce retains a marketable appearance. There is one more advantage: the ship is equipped with an automated air-conditioning system. The temperature throughout the trip is kept between 8 and 10 degrees; and the required humidity is maintained so that the vegetables that are not quite ripe yet can ripen on the way. Today the unloading was completed. The ripe produce was not put into storage, but was sent directly into the commercial network. [Text] [Moscow VECHERNYAYA MOSKVA in Russian 9 Aug 83 p 1] 9967

REFRIGERATOR SHIPS--Shipbuilders at the Nikolayev Shipbuilding Works imeni 61 Communard, bearer of the Order of Lenin, have started assembling the first sections for the new transport refrigerator ship. The leading ship, which will be named "Bukhta Russkaya", is being built for Kaliningrad sailors. Refrigerator ships of this type will meet the highest requirements. The powerful new engine from the Bryansk Machine Building Plant will make it possible for the refrigerator ship that has a hull length of 30 meters to reach high speeds. Powerful refrigeration units will maintain a temperature of minus 38 degrees in the holds. The shipbuilders plan to make significant reductions in the time needed to build ships in this new series. Metal is being cut out on mechanized lines equipped with machines of the "Kristall" type that have programmed control. For the construction of the hull, there will be extensive use of the efficient block-unit method, as well as other progressive technological processes. [By A. Kuznetsov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Aug 83 p 2] 9967

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## PORTS AND TRANSSHIPMENT CENTERS

### GRAIN TRANSSHIPMENT PROBLEMS ON DON RIVER

Moscow VODNYI TRANSPORT in Russian 12 Jul 83 p 2

[Article by A. Malyshev, special correspondent, Kalach-na-Donu-Volgograd:  
"About Freight Cars and Obstacles"]

[Text] The river workers here do not experience any happiness from their work. This was also noticeable in the administration of the Kalachevskiy port. Frowning navigators stood there and angrily entered the office of the deputy chief, M. Nosov. They asked him one question:

"When will they finally unload the vessel?"

It was not difficult to explain the reason for the navigators' poor mood. They had carefully prepared the crews for the crucial trips, they had tried to transport the grain more quickly, and they had cherished the valuable cargo along the way as the apple of their eye; but now all of the efforts had gone to pot because of the demurrage. The deputy chief sympathized with them.

"How can I help?" He spread his hands. "You are not alone in standing so long in line".

From the office window, it was possible to count eight vessels, floating grain warehouses that were paralyzed on the blue waters of the Don. One of them, the GT -355, had been there for four days already.

Kalach-na-Donu is the only place in this region to transship grain from the water to the railroad. From early spring to late autumn it arrives here from the ports of the Azov Sea and from the grain receiving points on the Middle Don and the Tsimlyanskoye Reservoir. Many of these points are separated from the railroad by dozens of kilometers and are linked to it -- except by the river-- only by dirt roads. It takes a long time and is expensive to transport several hundred tons of grain by truck over them.

The very cheap river transport has everything necessary for this. The amount of tonnage is sufficient: Local water transport workers are able to transport up to 3,000 tons of grain a day. There are two grain moorings, which are equipped with the necessary equipment, in the port. The construction of a third

one will be completed by the receipt of the new harvest. The assembly of two stationary pneumatic transloaders with a capacity of 120 tons of grain per hour is already being completed on it.

Interruptions in the work of the transportation conveyor occur here because of the untimely arrival of railroad freight cars. Every navigation period, the Kalachevskiye port workers are shorted several hundred units of rolling stock. Last August, for example, the river transport workers were not able to unload 1,347 vessels with grain at the very height of the harvest shipping for this reason. During the first two months of the present navigation period when the volume of work is comparatively small, the Volgogradskoye branch of the Volga Railroad shorted the water workers almost one and a half hundred freight cars.

When the talk has turned to the grain that has not been transported during the period and to the losses that the river transport workers have suffered because of the fleet's demurrage, the railroad workers complain about the shortage of rolling stock. These are not words; there is not enough tonnage in the country. However, is it only this circumstance which prevents the solving of the problem of transshipping grain in the Volgograd Oblast?

V. Tarasenko, the deputy chief of Volgograd Oblast's grain product administration, has said: "The department has several hundred empty grain carriers. The trouble is something else. It does not wish to let them outside of its borders."

This is true. This has happened more than once: Grain carriers arrive at the Donskaya port station in Kalach-na-Donu. At the sight of them the river transport workers sigh with relief: Finally! However, their happiness is often premature. Finding out that the grain is intended to be transported beyond the limits of the oblast, V. Blinkov, the station chief, has categorically refused to send the empties to the moorings.

He has justified himself by this: "The grain carriers do not return again from the other roads, and it can happen that grain for the people of Volgograd cannot be transported."

Indeed. It has happened that grain carriers have departed from here, for example, to the neighboring Southeast Railroad, and when the people of Volgograd entreat their colleagues to return the specialized cars, they usually are answered with a refusal from Voronezh.

Normally rolling stock is used here to transport grain to the neighboring oblasts. There is not enough of it, however.

The river transport workers report the arrival of each vessel during the week to the Donskaya station. In order to plan their work correctly, they also need to know -- even if only for a day -- in what amount and when the freight cars will arrive in the port. They ask their suppliers about this, but even they do not have available information on the approach of the rolling stock -- even a few hours before its arrival. It is clear that the absence of this information has a negative effect on the transshipping of the grain.

For the sake of justice, it is necessary to mention the following here. B. Chashkin, deputy chief of the movement department of the Volgogradskoye Branch of the road, has said:

"The railroad workers do not deliberately blame only themselves for the demurrage of the vessels and the shortage of freight cars." In order not to make unsubstantiated statements, he then pointed to a geographical map: "Here, they unload the grain from the vessels into the freight cars; they transport the grain in them over this route parallel to the Volga-Don Canal imeni V. I. Lenin to Volgograd-Port Station."

"The grain then finds its way into a city elevator from where they load motor vessels again", said B. Chashkin, asking: "Is it really impossible to avoid the additional transportation handling of the grain in this case?"

The reproach, which sounded in his words, was justified. You see, the transportation of freight on a railroad instead of a waterway requires additional forces, time, resources and freight cars. This reproach was addressed to the state suppliers of services. The Volgogradskoye administration for grain products sends orders in which it is not always considered how the grain will be transported with the least amount of expenditures. As a result, approximately three percent of the grain is being delivered from here by inefficient means during the navigational period; hundreds of pieces of rolling stock, which could be used to much greater effect on other routes, are required in all.

Several thousand tons of Don grain were not transported on time during 1982 to dozens of the country's oblasts. The demurrage of vessels, which were waiting for rolling stock, reached 117,200 tonnage-days during the last navigational period alone. This was equivalent to putting almost one and a half hundred type GT motor vessels out of operation for an entire month! Judging from the facts, lessons are not being learned from the past even now. When and how will the "Kalachevskaya" problem be finally solved? There is no answer as yet to this natural question.

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## PORTS AND TRANSSHIPMENT CENTERS

### COOPERATION OF SARATOV PORT WORKERS LESS THAN OPTIMAL

Moscow VODNYI TRANSPORT in Russian 2 Aug 83 p 2

[Article by A. Malyshev, special correspondent, Saratov: "Not for the Sake of Form"]

[Text] They began to work in Saratov in 1978 using the method of the people of Leningrad. However, the expected effect from the incorporation of the advanced method here has still not been obtained. Last year, the suppliers -- although they speeded up the processing of freight cars, the fleet and trucks -- did not in return significantly increase the delivery of freight both from the railroad to the water and in the opposite direction. The plans for these types of work were fulfilled by only 7 and 72.2 percent, respectively! Judging from the latest facts, these indicators are not improving.

In the Saratov transportation center, the production interests of river transport, railroad and motor vehicle workers collide. Here, they transfer national economic freight from hand to hand. The success of one often depends on how the others work. That is why the suppliers must discuss in advance what work they are faced with and in what volume, notify each other about changes taking place, and inform each other as to where it is necessary to pay primary attention -- in a word, they must achieve together accuracy and teamwork in the work of all the collectives.

It is impossible to say that the shift to the new work method was neglected here. The people of Saratov studied the experience of the people of Leningrad five years ago. At the time, they created an interdepartmental commission by a special decree of the oblispolkom. The first directors of the river port, Volga Railroad Administration and Volga Territorial Transportation Administration were on it. A coordination group, which meets monthly during the first ten days, solves problems in fulfilling the plans, sums up the results of socialist competition, and discusses the amount of rolling stock to be sent to the port based on the specific situation, has also started working.

A working group, which is composed of the directors of the port's freight areas and the chief of Saratov-Port Station, has also appeared here.

It is possible to achieve success when shifting to the Leningrad method of work if the transportation workers grieve over the common success and not only over their own. However, doesn't charity begin at home for everyone?

Last year, they -- as they say -- kept dunning into everyone's ears during the meetings of the commission and the coordination group that the planned amount of crushed stone was being transported from the railroad to the water. It is produced in the local Berezovskiy quarry and transported to the city of Brezhnev. The savings from the combined method for delivering the freight is three kopecks, and the running of the rolling stock is decreased by 664 kilometers by this. Nevertheless, despite numerous discussions between the directors of the transportation enterprises and the clear benefits, which the state receives, more than 300,000 tons of crushed stone were not delivered this way to the port and sent on vessels to Kama.

The situation has still not changed. True, the suppliers now break their lances for other reasons. For example, approximately 10,000 tons of technical salt, which is intended for the Novolipetskiy Metallurgical Combine, has accumulated in the port since the first of May. During this time, the freight has stuck together and been transformed into a solid monolith. It will be necessary to break it up before dispatching it. Only this will not be soon.

When you are getting acquainted with the fact that the orders of the river transport workers for the supplying of empties to the port are not being fulfilled, you will come to this conclusion. In July, the water transport workers requested 930 freight cars from the railroad workers; they received from them all told 777. Not many, if you consider the fact that the work of about two dozen permanently operating "revolving doors", which transport mineral and construction cargo from the port to the enterprises of the city and the oblast, depended on this indicator.

This reluctance to burden themselves with extra concerns is also characteristic of motor vehicle workers. The Volga Territorial Transportation Administration sends trucks to the port in an uneven manner. At the beginning of the month, no more than 10 of them are working here; at the end -- twice as many. Generally speaking, motor vehicles are not seen in the port on days off. Meanwhile the drivers are able to transport more than 100 containers, or approximately 300 tons of freight, from here during a day.

In Saratov, they also blame the river transport workers -- mainly for the frequent breakdown of cranes and for the fact that the port is not equipped for loading dry cargo into covered freight cars. It is less difficult to supply them than flatcars..

The people of Saratov cite quite a few reasons justifying the shortcomings. The railroad workers complain about the shortage of flatcars and that it is impossible to send them to other roads -- they are not returned. The motor vehicle workers justify themselves by the fact that the enterprises, to which they transport cargo from the port, do not work on days off. The river transport workers complain about the shortage of spare parts for the cranes.... No one, however, talks about the fact that the main obstacle to the work is departmental disassociation....

When there is no desire to engage seriously in the work, one looks for reasons; when there is a desire, -- means. The people of Leningrad have proven: The true cooperation of the transport workers brings its own fruits. And they are not bad ones. During the first year of cooperation alone, the workers in the city on the Neva increased the delivery of freight by very cheap river transport by 42 percent. The people of Saratov are still reporting on their deficiencies. This will continue until the colleagues in the transportation center unit into a single collective for the task-- not as now for the sake of form.

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## PORTS AND TRANSSHIPMENT CENTERS

### RECONSTRUCTION OF RYBINSK PORT GRAIN FACILITY STILL UNSATISFACTORY

Moscow VODNYI TRANSPORT in Russian 13 Sep 83 p 1

[Article by Yu. Kerner, special correspondent: "Demurrage Continues"]

[Text] "Paradoxes of Reconstruction" -- thus was called a letter that was published in our newspaper on 7 May of this year. It reported on the poor technical condition of the moorings at grain product enterprises in the city of Rybinsk. Because of this, the majority of ships with grain have a great deal of nonproductive demurrage during unloading.

In the middle of June, the editors received a reply to this publication signed by P. M. Kon'kov, the RSFSR deputy minister of procurement. It was specifically reported in it that "the failure to carry out the work of renovating the moorings of several grain product enterprises during recent years is connected with the absence of capital investments and limits in the design work". The deputy minister further reported that the repair of the transportation, electrical engineering and weight measuring equipment is being carried out in order to prepare the mooring of the Rybinskiy Fodder Plant for this year's navigation period. Dredging work, the adjustment of automatic systems for controlling the mechanisms and the replacement of electrical illumination accessories are being carried out.

Our correspondents again visited these enterprises four months after the article's publication, and here is what they saw. The mooring of the fodder plant has the same miserable appearance, and -- except for the dredging work-- nothing has been done here. Moreover, V. Zaytsev, the chief engineer of the Yaroslavskoye Oblast Production Administration for Grain Products has reported to the plant that in view of the absence of a contractor for repairs to the underwater part of the mooring, the size of the capital repairs for this year is being decreased by 20,000 rubles.

The results did not fail to be felt: Throughout the navigational period seven vessels were loaded here with the plant's product -- and all with considerable demurrage.

The situation remains very complicated in Rybinsk's main enterprise -- the grain product combine to whose share falls one-third of the gross product and sales

volume of the oblast administration. During the 40 years since the day the elevator was constructed, its mechanisms have become so worn that they regularly break down and the drainage system is out of order. Each breakdown of the mechanisms leads to a halting of the entire transportation line and, consequently, to a halting in the unloading of the vessels and to their nonproductive demurrage. Out of the 72 vessels processed this year, 29 were unloaded ahead of time or on time; but the average demurrage was 20 hours for each unit and 36 ship-days were lost.

That is why, unfortunately, the measures, which were mentioned in the reply of the RSFSR Ministry of Procurement, can hardly be called sufficient for the development of the grain moorings of one of the largest water transportation centers on the Volga.

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## PORTS AND TRANSSHIPMENT CENTERS

### HISTORY, DEVELOPMENT, OPERATION OF IL'ICHEVSK PORT

Moscow MORSKOY FLOT in Russian No 8, Aug 83, pp 14-17

[Article by V. Merem'yanin: "The Port on Sukhoy Liman--Commemorating the 25th Anniversary of Il'ichevsk Seaport"]

[Text] On 5 August 1958 the first ship--the passenger liner "Ukraina" of the Black Sea Steamship Line--came alongside the berth of a new seaport. On the same day the steamship "Omsk" delivered the first batch of cargo--6,500 tons of Donetsk coal--from Zhdanov. This day became the official date for the founding of the Il'ichevsk seaport. Important events and the heroic labor of several thousand hydroconstruction workers, sailors, and longshoremen preceded the red-letter date.

The Bugov farmstead was on Sukhoy Liman since olden times. The farmstead increased twofold during the years of Soviet power. In 1927 on a petition from its inhabitants the farmstead was renamed Il'ichevsk. The settlement's inhabitants united in the "Chervona Strilka" collective fishery.

During the earliest years of the Great Patriotic War, the Il'ichevsk farmstead became the forward line of the front. From 19 August up to 16 October 1941, Odessa's line of defense passed along the shores of Sukhoy Liman. Its shores are stained with the blood of those who defended our motherland.

During the postwar period when the sailors of the Black Sea Fleet could no longer content themselves with the volume of processing cargo at the Odessa port, a decision was made by the Ministry of the Maritime Fleet to build a new port 26 kilometers southwest of Odessa on Sukhoy Liman.

In December, 1957 the dredge "Vaygach" cut the spit and joined the estuary with the sea. Mechanical dredgers, suction dredgers, and dirt-removing hopper barges entered the bay that was formed. Builders from the "Chernomorgidrostroy" trust erected the port's berths and waterside units. It is stated in the annals of Il'ichevsk's history that the first piles under the berths' foundation were driven by a team of pile drivers headed by I. Paliye, who took part in the Great Patriotic War.

The new port was created according to the latest word in universal hydroconstruction practice: an unrestricted water area for ship traffic, deepwater berths, and a spacious port area providing convenient maneuvering for transportation inside the port and transshipping equipment.

The settlement of port builders and longshoremen grew. During a quarter of a century it turned into a city with a population of 60,000 people. There are beautiful streets, multistoried houses with all the conveniences, stores, kindergartens and day nurseries, schools, a port club, a sports complex, a vocational and technical school, and a training and instructional center.

For two and a half years the berths on Sukhoy Liman were subordinate to the Odessa port. On 31 January 1961, the independent Il'ichevsk commercial seaport was established by order of the minister of the maritime fleet. Today more than 8,000 longshoremen work here. More than 30 of its dozens of berths are stretched out for 10 kilometers. The port processes general cargoes and cargoes in bulk without packaging, wheeled equipment and containers, large diameter pipe, and many other things. The sea lanes from the port of Il'ichevsk go to 120 ports of various countries in the world. The level of fully mechanized loading and unloading operations at the port reached 96.4 percent--the best showing in the branch.

The CPSU Central Committee decree "Initiative of the Port Workers' Team at the Il'ichevsk Seaport" was published in March, 1974. In it was mentioned the valuable initiative for creating the fully consolidated industrial team headed by A. Baranovskiy. This was considered a new step on the way towards improving labor organization in the industrial collectives of port workers. The initiative of the Il'ichevsk longshoremen won national recognition. It found followers in Cuba, Vietnam, Bulgaria and other countries of the socialist commonwealth.

More than 50 UKB [fully consolidated teams] uniting nearly 2,000 workers are operating now at the Il'ichevsk port. All of the more fully consolidated teams of longshoremen and machine operators are changing to a self-supporting operation.

On the eve of opening the 25th CPSU Congress, the Il'ichevsk port was awarded the Order of the Red Banner of Labor for successes in the 9th Five-Year Plan. Particularly in the 9th Five-Year Plan, the people of Il'ichevsk reached creative maturity and began to show labor models deserving the attention of longshoremen of all countries.

In September, 1976 the people of Il'ichevsk experimented by organizing port and fleet operations in an optimum operating routine with the use of continuous plans and schedules for port operations (NPGRP). In 1977 a board of the Ministry of the Maritime Fleet approved the valuable undertaking of the longshoremen.

The planning system developed by the people of Il'ichevsk improved the port's relations with steamship lines and with the transportation workers of cooperating enterprises. Subsequently and with regard to accumulated experience and

the new developments implemented by the people of Leningrad, the Il'ichevsk port collective conducted for itself a continuous plan and schedule for operating the entire transportation center (NPGRTU), employed a progressive form of organizing the work of cooperating collectives on a qualitatively new basis, and became the sponsor for developing and introducing into practice comprehensive plans for the social and cultural development of collectives of transportation ministries and departments.

The longshoremen built new units and introduced new transshipping capacities simultaneously with improving labor organization. On 1 June 1976 the first phase of a new container terminal was put into operation at the port. Now the terminal is processing approximately 1 million tons of cargo annually. On 14 November 1978 the Il'ichevsk-Varna international ferry operation was opened at the port. "This unique passage across the sea is living evidence of the creative resources of socialism," it was noted in the salutatory message from the CPSU Central Committee to the Soviet and Bulgarian builders. Now the ferry's entire travel cycle and its turnaround with visiting 2 ports takes less than 60 hours. On the average approximately 10 hours are spent on unloading and loading the ferry. Four ferries are working efficiently: the Soviet ones--"Geroi Shipki" and "Geroi Plevny" and the Bulgarian ones--"Geroi Odessy" and "Geroi Sevastopolya."

Quite recently a roller berth, on which wheeled equipment is processed, was put into operation. Along with the storage area for vehicle equipment the roller complex is the best in our branch.

The Il'ichevsk longshoremen put in some good work in the first two years of the 11th Five-Year Plan. The plan and socialist obligations for 1982 were successfully fulfilled. More than 600,000 tons of cargo were processed above the quota, more than 3.2 million tons of food products were transshipped and dispatched from the port, in comparison the transshipment of metal cargo exceeded that of 1981 by 21 percent, and the gross rate of processing ships exceeded that of 1981 by 10.1 percent. A specialized complex for transshipping grain in bulk to ships of the river-to-sea type grew to projected capacity in 1982.

Having organized specialized teams to which highly efficient equipment was given, the people of Il'ichevsk worked on tasks for expediting the processing of cargoes of foodstuffs in bags. For the first time in the branch a method was developed for sorting stacks of bag cargo in the space below the deck and for the delivery of goods to the hatch opening by loaders traveling along metal false ceilings of the cargo ship. The novelties of loading equipment were used: comb-filled cases in a complex with ton-and-a-half automatic loaders with multiforked gripping devices; and composite, lightweight and comb-filled pallets which solved the problem of a constant shortage of them for package processing of cargo.

An improved system of arranging large containers at the servicing terminal, along with the proper processing method for operating the gantry loaders at it, was introduced to expedite processing of ships and container conveyances.



The people of Il'ichevsk changed the scheme for arranging stacks of containers, standardized the length of rows, and organized a two-way shuttle entrance into the rows for the loaders. The result: the capacity of the container warehouse was increased by 1,300 units. Construction of a second phase of the container complex is still not completed, but the Il'ichevsk longshoremen have already increased the traffic capacity of the berths to 75,000 containers per year.

The roller complex is working more intensively with the storage area operations. A new industrial process was developed for loading the rollers with batches of commodities prepared beforehand on roller-trailers. The processing intensity of ships increased by a factor of 1.5 thanks solely to this. A special column of vehicle and container conveyances created at the port allowed them to improve processing of the specialized fleet and to provide timely delivery of commodities in accordance with the "from door to door" system.

The Il'ichevsk longshoremen responded zealously to the call of the communist party and the Soviet government to expedite building of the Urengoy-Pomary-Uzhgorod gas pipeline. They decided at the port to develop the transshipment of high volumes of large diameter pipe. The self-supporting, fully consolidated team of longshoremen and machine operators, headed by bearer of the Order of Lenin A. Rotar, is successfully transshipping the large diameter pipe with a polyethylene coating, which requires special accuracy and precision in performing all operations, beginning with unloading from the ship's hold and ending with their stowage in the gondolas. Loading operations with the pipe are being conducted in a rapid and qualitative manner.

The collective of the Il'ichevsk port is in the front ranks of all-union socialist competition for fulfilling the 11th Five-Year Plan ahead of schedule. The Il'ichevsk longshoremen repeatedly have taken prizes in socialist competition and received merit awards. And these days competition is spreading among the port's collectives to fulfill the 1983 plans ahead of schedule. United production control shifts, the "one thousands" and the "two thousands" who are experts on the efficient loading of railroad rolling stock, are waging a persistent campaign for rapidly processing ships and rail cars. The people of Il'ichevsk supported the initiative of the Muscovites and through their own efforts they are repairing rail cars in order to reduce their downtime. The labor initiative of the longshoremen is inexhaustible.

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## PORTS AND TRANSSHIPMENT CENTERS

### BRIEFS

FREIGHT CAR UNLOADING IMPROVEMENTS -- The unloading time for freight cars with grain, groats and fodder in the Kazanskiy river port has been shortened twofold. This is the result of introducing a mechanized unloading system which was proposed by M. Gataullin, the chief engineer of the port elevator. Several years ago, he began to work at creating dual telescoping conveyors whose use would allow the labor of the workers at the unloading areas to be considerably lightened. He has accomplished his purpose. Whereas three loaders, who performed labor-intensive manual operations, worked in each freight car previously, today one person observes the operation of the mechanisms. Labor productivity has been increased one and a half-fold. The USSR Ministry of Procurement has requested the rationalizer to prepare an operating model of the new innovation. It will be represented in the USSR Exhibition of National Economic Achievements next year. [By U. Bogdalov, special correspondent, Kazan] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 5 Aug 83 p 2] 8802

TRANSSHIPMENT IMPROVEMENTS -- A letter entitled "Navigation on the Lena Is Not Waiting" (No 27) talked about the piling up of freight in the port of Osetrov and about delays in unloading arriving vessels. G. Tarin, the chief of the Main Port Administration of the RSFSR Ministry of the River Fleet, reported to the editors: The opening up of navigation on the Lena was delayed by 10 days this year. That is why all of the storage areas were completely occupied with freight. This led to a decrease in the frontage for unloading freight cars in the port and to their piling up on the approaches to Osetrov. The situation was aggravated by the fact that part of the packaged piece goods arrived in the port not in containers but in standard covered freight cars. In the situation which has taken shape, the RSFSR Ministry of the River Fleet has taken a number of steps to speed up the unloading of the freight cars. In particular, additional materials for packaging freight have been allotted to the port, a student detachment (375 people) has been sent there, and the feeding of vessels for loading has been intensified. Thanks to this, the quota for dispatching freight from the port by water was overfulfilled in June. In July, the average daily unloading of freight cars in Osetrov exceeded 200 units. The workers of the RSFSR Ministry of the River Fleet are solving operational questions, which arise, on the spot, [Text] [Moscow EKONOMICHESKAYA GAZETA in Russia No 33, Aug 83 p 18] 8802

RAILROAD CAR SHORTAGE -- An enormous amount of copper and nickel ore, which the metallurgical enterprises are waiting for, is now arriving in the Murmansk seaport from Norilsk. In order to cope with the unloading of this raw material, the user requires about 150 railroad flatcars every day. Murmansk Station allots 60-80. Naturally, the ore is piling up in the port.... The freight areas with copper and nickel ore can contain a maximum of 250,000 tons. The ninth mooring is completely chock-full. It is more and more difficult to work with each passing day: You see, another 11 (!) vessels with ore will arrive before 6 September. This is another 178,000 tons. If the railroad workers do not find any reserves of rolling stock, the question will arise about closing the port to the reception of ore. It seems, such a complicated situation has never existed here. The enormous expenditures for the compulsory shoveling of the ever growing mountains of ore, whose place is in the warehouses of the metallurgical plants and not on the wharf, are evoking an unhappy attitude. You see, this picture is being repeated from year to year. [By A. Voronov, correspondent for the ARKTICHESKAYA ZVEZDA newspaper, and V. Panyushkin, VODNYY TRANSPORT correspondent] [Text] [Moscow VODNYY TRANSPORT in Russian 1 Sep 83 p 2] 8802

NEW TYPE CONTAINERS-- A total of 30,000 tons of carbamate, which is being produced by the Cherkassy chemists this year, will be shipped by "river-sea" type motor vessels in special soft containers. Original gripping devices, which have been developed by the engineers of the port of Cherkassy, permit heavy 800-kilogram containers to be loaded easily and rapidly. Four-six bags are stacked literally within minutes. The use of this strong, cheap and waterproof packaging instead of the traditional iron containers allows railroad cars which are needed for transporting other cargos, to be freed and loading operations to be made considerably easier. [By Zh. Tkachenko, special correspondent, Cherkassy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Sep 83 p 2] 8802

NEW GRAIN LOADER -- The preparation of the documentation and maintenance requirement cards for the manufacturing of a new grain loader has been completed by the specialists of the Slavyanskiy Ship Repair Yard. The new grain loader is an improved model of similar all-weather seamen and docker helpers which are already operating today in the ports of Vladivostok and Nakhodka. [By L. Stukin, special correspondent] [Text] [Moscow VODNYY TRANSPORT in Russian 13 Sep 83 p 1] 8802

NEW FLOATING CRANE-- The construction of a new floating crane, which is intended for the Soviet Union, is being completed in Budapest in the Vengerskiy Ship and Crane Building Yard. Cranes in this series are noted for their complete self-sufficiency because they have their own high-capacity power source. They are able to work in sea and river ports. After testing is completed in October, the crane will be sent to Leningrad where it will be used in the construction of a dam that will protect the city on the Neva from floods. Before the end of the five-year plan, Soviet seamen and river transport workers will receive several more floating cranes of the new series. [Text] [Moscow VODNYY TRANSPORT in Russian 14 Sep 83 p 1] 8802

NEW UNLOADING EQUIPMENT-- A telescoping chute and new equipment for unloading large-tonnage vessels have been developed and introduced by the innovators of the Novorossiyskiy commercial seaport. The use of the innovation has decreased the unloading time of lighters with grain by more than twofold, considerably decreased the expenditure of electricity, and lessened the covering of the work places with dust. The main advantage is the decrease in the unloading time of transport vessels with grain. The use of the telescoping chutes in the Novorossiyskiy port during their development provided an annual savings of 18,000 rubles and decreased electricity expenditures by 40,000 kilowatt hours. [Text] [Moscow VODNYI TRANSPORT in Russian 17 Sep 83 p 3] 8802

AUTOMATIC LOADING DEVICE -- An automatic device has been developed in the Central Testing and Design Bureau of the Ministry of the River Fleet. It is designed for loading (unloading) onto trucks and piling in two tiers average tonnage containers with a weight of up to three tons using an automatic loader with a lifting capacity of five tons. This friction gripper is different from previously produced ones in its increased lifting capacity, lightened weight and rational selection of parameters and kinematics. An automatic device for a crane with a lifting capacity of six tons has also been created in this same central testing and design bureau for bundles of lumber with a weight of 4.5 tons. The design of the gripper permits bundles, which are standing next to each other and which have a clearance of only five centimeters between them, to be taken. The economic effect from using the innovation is 7,700 rubles. [Text] [Moscow VODNYI TRANSPORT in Russian 17 Sep 83 p 3] 8802

NEW PIPE CLAMP -- A pipe clamp, which has been proposed by the rationalizers of Tobolskiy port, has successfully changed the design of the hook. With its help, it was possible previously to unload only the upper rows of large diameter pipe from gondola cars. Now, a gondola car is unloaded completely without the participation of port workers. [Text] [Moscow VODNYI TRANSPORT in Russian 17 Sep 83 p 3] 8802

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