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USSR Report

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PORTS AND TRANSSHIPMENT CENTERS

CIVIL AVIATION

ACHIEVEMENTS OF FEMALE TEST PILOT MARINA LAVRENT'YEVNA POPOVICH PROFILED

[Editorial Report] Moscow PRAVDA in Russian 1 January 1984 carries on page 6 a 400-word item on the career and recent accomplishments of Engr-Col Res Marina Lavrent'yevna Popovich, candidate of technical sciences and well-known Soviet test pilot. It is noted that Marina Lavrent'yevna, who is married to cosmonaut Pavel Romanovich Popovich, has set 101 records in the course of her flight work. While working with the O. K. Antonov Design Bureau, she has set records in the AN-22, the AN-24 and, most recently, as a member of the record-setting AN-72 crew.

NEWLY APPOINTED CHIEF SUGGESTS WOMEN NOT FIT FOR CAREERS IN AVIATION

[Editorial Report] Moscow IZVESTIYA in Russian 19 January 1984 carries on page 6 a 500-word interview with Zhorzh Konstantinovich Shishkin, who, it is announced, has been appointed chief of the Ministry of Civil Aviation's Flight Service Administration. Shishkin, born in 1937, is a senior pilot who graduated from the Buguruslan Flight School and from the Civil Aviation Academy. Prior to assignment with the Flight Service Administration several years ago, he served in the Far North and at Domodedovo Airport. Shishkin responds to questions about the importance of having highly skilled pilots in whom the passengers can have confidence. When asked what kind of improvements in equipment he would like to see, he specifically mentions "more economical engines and a comfortable cabin, better protected from noise, vibration and other effects on the crew." Finally, the interviewer, V. Belikov, asks Shishkin's advice to young female readers who think of becoming pilots, navigators, flight engineers or radio operators. Answer: "I must disappoint them--aviation medicine is categorically and irrevocably against the idea of allowing women into flying. It's still difficult labor, connected with systematic nervous and physical stresses. Let's leave the controls to men!"

CSO: 1829/150

BRIEFS

IL-76 ON NORTHERN ROUTES--Magadan--Northern air routes have begun utilizing the new Il-76 aircraft. Its use in Magadan Oblast, where aviators have to deliver a large amount of different kinds of freight--from foodstuffs to heavy bulldozers and other mining machinery--to settlements in the Far North is extremely effective. In one flight the air giant can carry about 40 tons of freight. This is three times as much as the AN-12 cargo aircraft, which now operate on northern routes, are carrying. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Sep 83 p 1] 8936

AIRPORT RADIO FACILITIES--Ordzhonikidze--There is a clear sky over the mountain airport in Ordzhonikidze most of the days in the year. Aircraft destined for Mineral'nyye Vody come here and land. When the resort city is fogged in, the runway at Ordzhonikidze is able to accommodate even the heavy Il-86. But until recently, equipment for the landing system, air traffic control, radar control, and radio navigation at this airport did not meet today's requirements. Soon the situation will be corrected. This year the complete replacement of all radiobeacon systems will be completed and the mountain airport will be equipped with new radio facilities. Their installation for the second landing direction is especially important. The Ordzhonikidze airport now will be able to receive and dispatch airliners of all types, and when the direction of the prevailing winds changes, flight regularity will be increased significantly. [By N. Kaznetsov] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 22 Sep 83 p 2] 8936

NEW AIRPORT--The new airport complex for local air routes located in the rayon center of Chelkar in Aktyubinsk Oblast was approved for continuous operation by a state commission on the eve of USSR Constitution Day. Construction collectives of the "Aktyubsel'stroy" Trust No 21 of the Kazakh SSR Ministry of Agriculture and "Dorstroy" No 2 of the republic's Ministry of Highways have erected an attractive glass-and-concrete building for the air terminal. A runway, taxi strips and an asphalt ramp have been built. The new airport is able to handle An-24 and Yak-40 passenger aircraft. In order to transport air passengers on time from the rayon center to the airport a good-quality hard-surface road more than 10 kilometers long has been built. Communication lines have been installed from the airport to the city of Chelkar. They also have looked after those who service the new airport complex. Quarters recently were put into use, and finishing work is being completed on another dwelling.

Residents of the Irgizskiy, Mugodzharskiy and Chelkarskiy rayons, as well as the cities of Emba, Irgiz and Chelkar, now can fly every day to the oblast center of Aktyubinsk, other cities in Kazakhstan and fraternal republics in comfortable aircraft. [By S. Shatan] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 7 Oct 83 p 1] 8936

AN-28 OPERATIONAL TESTS--Dushanbe--Aviators of the Tajik Administration were the first in the country to begin operational tests of the new An-28 aircraft. This high-wing monoplane, with two 1,000-horsepower turboprop engines, has a cruising speed of 350 kilometers per hour and will replace the An-2, which has provided good service, on passenger routes. The latest radio navigation equipment will enable a two-man crew to conduct flights day and night. Of particular importance for the republic with the country's highest mountains is the fact that flights can be made in the new aircraft from the same airports now used by the An-2. The An-29 is economical and is notable for its comfort. Soft comfortable seats for 15 passengers and excellent ventilation will make a flight pleasant and not tiring. The first to have the right to retrain in the new aircraft were V. Staroverov, deputy chief of the Administration for flight operation organization; Tu-134 copilots O. Goncharov and S. Zakirov; An-2 aircraft commander A. Tairov; An-2 copilot Kh. Karimov; and others. [By A. Larensk] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 7 Oct 83 p 3] 8936

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BOXCAR ROLLING STOCK IMPROVEMENTS FOR BETTER FOODSTUFF TRANSPORT

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 8, Aug 83 pp 23-27

[Article by V. I. Gridyushko, doctor of technical sciences, and N. G. Martynyuk, engineer: "Improved Rolling Stock for Hauling Foodstuffs"]

[Text] At the present time a considerable portion of railroad hauls of agricultural goods and foodstuffs is being carried out in multi-purpose boxcars. Suffice it to say that they account for 70 percent of the volume of grain hauls. In connection with this, ensuring the high level of the technical and commercial condition of these cars, their on-schedule and high-quality preparation for loading, and their reliable operation in use all are of great importance for the successful solution of the task posed by the Food Program with regard to improving the transport services of the agro-industrial complex.

Analysis of the Technical Condition

As is known, the technical condition of freight cars can be characterized by the indicator of the frequency of the cars coming in for routine maintenance during a year's period of use. Over the last 6 years this indicator for boxcars has increased by a factor of almost 1.4. The increase in the number of boxcars being uncoupled is closely tied to the increase in the intensity of their use. Thus, in recent times there has been a significant growth in the proportion of new, more powerful means of mechanizing loading and unloading, there has been an increase in the speed with which cars are released from humps, as well as an increase in the static load per car, and there has been a lengthening of the time periods between planned types of repairs.

Analysis of the data on damage to cars in carrying out freight operations during the years 1973--1981 has indicated a certain reduction in the number of uncouplings of cars. To a certain degree, this was brought about by the fact that, because of an increase of car turnover time during this period, there was a reduction in the number of freight operations per car in the course of a year. Furthermore, this period coincided with the promulgation of measures to limit, and then to completely ban, the use on the railroad sidings of industrial enterprises of certain non-standard means of mechanizing loading and unloading operations with obviously inadmissable characteristics of affecting the structural components.

At the same time there has continued to be an uninterrupted increase in the damage rate of cars at station yards when they are released from humps. During the years 1979--80 at 100 investigated humps of 19 railroads with speeds exceeding that allowable in accordance with the PTE /Rules of Technical Operation/ there was a collision rate of uncoupled cars amounting to 51.4 percent, while at speeds of more than 10 km per hour this figure was 3.1 percent. At automated humps the average speed of collision amounted to 6.3 km per hour. Investigations conducted by the Urals Division of the VNIIZhT /All-Union Scientific Research Institute of Railroad Transport/ have indicated that, on a daily average as a result of heavy collisions of cars, doors fall off and truck springs are lost from several dozen cars. In 20,000 uncouplings 108 cases of grain leaks were established. In 22.7 percent of the cases of collisions opening of the doors in loaded boxcars was observed, and in 13.2 percent of the cases--an opening of the hatch covers.

In order to evaluate the technical condition of cars in the operating fleet, the VNIIZhT has developed a special methodology with the aid of which it periodically establishes with what frequency cars built during various periods are put into use. According to the existing data for boxcars built from 1964 through 1973, this value amounts to 2.65 times per year, while for those built after 1974--this figure is 1.72 times per year. Investigation of the technical condition of the recently built boxcars has shown that, with regard to strength and reliability of construction, they are considerably inferior to other types of cars being produced by the car-building plants.* Taking into account the fact that during the current five-year plan it has been planned to deliver to transport a large number of multi-purpose boxcars, it is important to perfect their construction and significantly improve their strength characteristics as soon as possible.

New Norms for designing cars for strength must be put into effect in the immediate future; they must be directed at significantly improving the reliability of newly built cars of all types, including boxcars as well. Moreover, in accordance with the plans for modernization during the current five-year plan, provisions have been made to replace the wooden body sheathes with metal ones on 10,000 boxcars, and in 8,000 cars to carry out a modernization of the floors by placing a metal plate in the area of the door opening. The planned filling out of the fleet with new, more reliable, and modernized boxcars will allow us to significantly improve their technical condition, substantially cut down on the number of uncouplings for routine maintenance, and, consequently, to more completely satisfy the requirements of the railroads for this rolling stock.

Of particular importance in the matter of stepping up the struggle to improve the technical condition of the car fleet is the active implementation of the GOST [State All-Union Standard] 22275--76 requirements regarding car maintenance. At the present time the VNIIZhT, along with all the organizations concerned, is conducting work on introducing necessary changes into the GOST indicated above, as well as an extension of the time period of its validity.

*See ZHELEZNODOROZHNYY TRANSPORT, 1983, No 7.

Considerable improvement in the maintenance of boxcars and their timely renovation have been facilitated by the increasingly broader dissemination in the country of the initiative shown by a number of advanced enterprises in the city of Moscow with regard to organizing the repairs of cars and containers by their own efforts directly at the rail sidings of the enterprises involved.

One of the reserves for improving the technical condition of boxcars is the introduction of rational time periods of their service. At the present time during the established 40 years of service the frequency of boxcars coming in for routine maintenance increases nine-fold. The labor consumption of station-yard repair work respectively increases by a factor of 2.26, while that of capital repairs goes up by a factor of 1.3. Outlays on technical servicing and planned types of repairs throughout the entire service life exceed the initial cost of a boxcar by a factor of 2.73. Studies which have been carried out show that, proceeding from the requirements for minimizing the financial, material, and labor resources, the service life of a boxcar should not exceed 30 years. The task is now to see to it that the new, scientifically grounded service lives be examined and approved by the appropriate organizations.

The over-all renovation of the freight-car fleet is facilitated by the timely write-off of old-fashioned and obsolete cars. Considerable means are expended on servicing them, and the effectiveness of this work is frequently extremely low. They rapidly become damaged again and are taken out of operation. It has been ascertained that each boxcar operating beyond the limits of the service life comes in for routine, uncoupled repairs as many as 11 times per year, moreover, in these cars there is a rapid deterioration in the technical condition of the bodies. At the present time the fleet of boxcars contains approximately 3 percent of cars operating beyond the limits of their service lives. In fact, during the period from 1971 through 1975 boxcars were eliminated from the inventory at a level of 2.0--2.7 percent of the operating fleet, from 1976 to 1980 the amount ranged from 1.73 to 1.89 percent, and it was only in 1982 that this percentage increased again somewhat (to 2.31), as compared to the required level of elimination of about 2.5 percent. It is also important in the elimination of cars to make maximum use of the old spare parts and materials, particularly the metal. The successful solution of the above-mentioned problems would be aided by the creation of well-equipped centers for dismantling cars to be written off.

The technical condition of the rolling stock in use is greatly influenced by the quality of performance of the planned types of repairs. Over the course of a lengthy period there has been insufficient development of a production base for the capital and station-yard repairs of cars. The rate of its development has lagged and continues to lag behind the growth rate of the car fleet and the needs of the cars for repairs. Thus, during the last 10 years the fleet of freight cars increased by more than 50 percent, while the repair base for station-yard repairs (with respect to the number of repair positions) increased by only 26 percent. During this very same period the output of cars from capital repairs at car-repair plants grew by only 22.3 percent. The narrowing of the gap between the need for and the presence of a technical base for repairing cars has been facilitated, to a certain extent, by the introduction of a new periodicity in the planned types of rolling stock repair. For boxcars this has ensured a reduction in the needs for plant repairs by 5

percent, and for station-yard repairs--by 2.07 percent. However, repair capacities continue to be insufficient. Moreover, increasing the time periods between repairs has brought with it an increase in the frequency of boxcars coming in for routine, uncoupled repairs by an average of 3 percent.

In order to evaluate the quality of the performance of the planned types of repairs in accordance with the methodology developed by the VNIIZhT with the participation of the Planning and Design Bureau of the Main Administration of Cars of the Ministry of Railways (PKB TsV) and the railroad groups of reliability, information has been gathered and processed concerning cars coming in for routine, uncoupled repairs after they have been built, then undergone capital and station-yard repairs. It has been established that the probability of restoring operational capacity by the station-yard repair of boxcars amounts to 0.68, while by capital repairs it amounts to 0.72, i.e., the level of the technical condition of the repaired cars is far from always meeting the proposed requirements.

The necessity for improving the quality of renovating boxcars and increasing their discharge from repairs has placed top priority on the task of further developing and improving a base for the planned types of repairs. First of all, we must broadly introduce, based on the experience of the advanced enterprises, the progressive, assembly-line method of repairing boxcars and their assemblies by using the means of comprehensive mechanization and automation of the production processes. This will allow us to increase labor productivity by 8--10 percent, ensure the increase of the turnout of cars from repairs by approximately 20--25 percent, without increasing the production areas. At the same time it is necessary to perfect the methods of management, to be more active in introducing progressive forms of labor organization, and, in particular, the brigade method in repairing boxcars, to increase the motivation of the enterprises in improving the quality of their renovation. The above-indicated and many other reserves are being implemented at the present time; however, this work must be conducted in a more purposeful and active manner, on a broader scale.

Perfecting the Preparation of Boxcars for Hauls

The steady and quantitatively necessary provision of enterprises of the agro-industrial complex with improved boxcars for shipping out agricultural products, as has already been noted, depends, to a large extent, on the timeliness of their preparation for loading, and, consequently, on the development of appropriate technical centers on the railroads. During periods of intensive hauls of foodstuffs the maintenance of boxcars in operating condition is basically provided by points for the comprehensive preparation of boxcars on the following railroads of mass loading: the Odessa, Southern, Dnepr (Pridneprovsk), North Caucasus, Volga, Kuybyshev, West Kazakhstan, Southeastern, Tselin, South Urals, and West Siberian Railroads. In connection with the sharp increase in the volumes of loading during these periods, and hence in the needs for rolling stock as well, these railroads have experienced considerable difficulties in organizing the routine maintenance of boxcars. To a large extent, this is connected with the non-fulfillment in the amounts assigned of deliveries to the railroads of previously prepared (repaired and cleaned) cars on a regularly assigned basis. The trains often include cars which, with regard to their technical condition, require station-yard or

capital repairs, and sometimes should even be eliminated from the inventory. Therefore, the volume of the necessary repair operations, as well as cleaning and washing the cars to be suitable for loading with foodstuffs, particularly grain, has exceeded, as analysis has demonstrated, the capacities of the freight-hauling railroads.

All the points used for the comprehensive preparation of boxcars for hauling, in accordance with the special directives of the Ministry of Railways, must, according to the mandatory procedure, have technical equipment appropriate to their capacities. Operating at the present time on the railroads engaged in the mass hauling of grain are more than 30 points belonging to the first category with regard to their capacities. However, only half of them have units for the exterior washes of the car bodies, while only 25 percent have units for the interior washing and drying of the cars before loading, cleaning facilities and sewerage, as well as sections for repairing the doors.

Nor can we acknowledge as favorable the position with regard to the technical equipment of points of average and small capacity, relegated to the second and third categories. Only 8 percent of the second-category points, situated on the railroads engaged in the mass loading of grain, have units for the exterior washing and checking of the car bodies to make sure they are waterproof, while approximately 17 percent have units for interior drying, water pipelines, and sewerage. These points are lacking in car-washing machines for washing interior surfaces and sections for repairing doors, as well as mobile repair machines. Slightly more than half of them have mechanical-fitting and carpentry sections, while only a third have roofing sections. Very poorly equipped, and not even existing everywhere, are the third-category points. It is not surprising that the quality of routine repairs on rolling stock carried out at them is extremely low. The working capacity of cars is restored here by no more than 40 percent.

The labor consumption involved in preparing boxcars for hauling is closely connected with the intensity of rolling stock use. Analysis of the streams which have formed of empty and loaded cars as well as the anticipated volumes of loading and unloading, taking into account the utilization and climatic characteristics of the specific regions, has allowed us to divide all the railroads into the following three statistical groups. Relegated to the first group are railroads with a large volume of loading operations and which receive cars on a regularly assigned basis. Observed on these railroads is the heaviest operational system of using the car fleet. Included in the second group are railroads with an equal balance of loading and unloading, while relegated to the third group are railroads which discharge cars on a regularly assigned basis. With respect to the characteristic of utilizing boxcars, from among the 11 grain-loading railroads under consideration, 5 may be relegated to the first statistical group, 2 to the second, and 4 to the third group.

The average labor outlays expended on restoring the operational capacities of boxcars on the railroads relegated to the first statistical group exceed by a factor of 1.8 the average network level, to which the railroads of the second statistical group may be related. On the railroads of the third group the amount of outlays is approximately 50 percent lower than the average network level. In order to fully restore the operational capacities of the boxcars,

it is necessary that the material resources, number of workers, and level of equipment at the comprehensive preparation points correspond to the average labor consumption of repair operations required for the given railroad. However, analysis of the number of workers at the comprehensive preparation points located on the grain-hauling railroads (the first statistical group) has shown that the number of workers being planned for them is 30--40 percent lower than the actual requirement, as determined by the technical condition of the boxcars.

Given the insufficiency of labor resources, the chief condition for mastering the growing amount of boxcar preparation consists of increasing labor productivity by means of mechanization and automation. The use of car-repair machines, mobile complexes, and other mechanisms allow us to carry out repair operations with the maximum degree of parallelism; it ensures the complete observance of the repair regulations and technical specifications, particularly in conducting electric- and gas-welding operations. Furthermore, as practical experience has shown, it reduces by 30 percent the idle time of trains while they are being processed; it increases labor productivity by 40--50 percent, and substantially improves its working conditions.

The Urals Division of VNIIZhT has recommended the creation of the following four groups of car-repairing machines for preparing boxcars: for non-uncoupled repair in trains at outdoor points of the station yard, for routine, uncoupled repair at specially equipped, outdoor tracks, and for non-uncoupled and uncoupled repairs within enclosed areas. It is feasible to equip the machines with sets of apparatus for a carpenter, welder, fitter for repairing the body and the frame, fitter for repairing the axle-box assembly, and a fitter for repairing the brakes. For the convenience of the repair workers all the sets of apparatus must be easy to hoist and mounted on the portal or the frame of a machine.

Taking into consideration the fact that, at the present time, there is an increase in the number of uncouplings of cars for deficiencies in automatic braking equipment, it would be feasible to equip the car-repair machines with sets of devices for repairing and testing the automatic brakes, in particular, with an attachment for tightening the lever transmission of a brake in accordance with plan T 132.00.sb, the IE 4303 drill with a Ts-1 screw-cutting attachment, the T 356.00. sb pibe-bending unit, and apparatus for testing the T 439.11.sb and T 439.12.sb brakes.

It should be noted that the Car Administration's Planning and Design Bureau has developed a plan of a machine for repairing boxcars (T-439); however, it is being introduced extremely slowly. Several of the railroads engaged in hauling have employed their own efforts to develop new means of mechanization for repairing boxcars or have adapted for this purpose existing machines and mechanisms which were designed to repair other types of rolling stock. For example, a car-repairing machine created by innovators at the Likhobory Depot, in conjunction with the PKB TsV, is in operation at the South Port Station of the Moscow Railroad.

Good experience in mechanizing labor-consuming operations has been accumulated by the group at the repair center located at the Ugleural'skaya Station of the Sverdlovsk Railroad. In repairing cars here, use is made of a special car-repairing machine of the Syzran' type, as manufactured by the efficiency experts. With its aid, repairs are carried out on the wooden floor sheathings, and the car doors are replaced. This machine is equipped with a portable electric-power tool, and welding transformer, and circular-saw unit, and an emery wheel. It has the necessary reserve supply of materials and spare parts. Utilization of this car-repairing machine has allowed labor productivity to increase by 30--35 percent.

The Shumikha Station of the South Urals Railroad has manufactured and introduced a self-powered, multi-purpose machine for repairing car bodies at the center for the comprehensive repair of boxcars for hauling. It is equipped with circular saws, a mechanical milling cutter, a sharpening unit, compressor, welding unit, and electric cutters. This machine provides service to a repair point and ensures the carrying out of several operations in repairing car bodies. Its use has allowed an increase in labor productivity by 22 percent, as well as a substantial reduction in the idle time of cars while preparing them for hauls.

Of particularly great importance for increasing the productivity and quality in the routine maintenance of boxcars is equipping the centers used for preparation with serially, industrially manufactured means of small-scale mechanization. However, the supply organizations, railroads, and main car administrations have not yet satisfactorily solved this problem, although it is far from new. Let us note that, in order to perform the complex of carpentry operations, industry produces IE 1012 drilling machines, IE 1103 nut-turners, IE 5102A disk-saws, IE 5402 cutters, and other tools. In order to carry out welding operations, it would be feasible to have at the centers a welding transformer, a unit for repairing roofs by a weld of the type created at the Korosten' Depot of the Southwestern Railroad, an RP-227.09.sb.1 liquid-fuel torch, a chopping hammer, an IE 6002 drilling machine with a set of attachments, and certain other equipment and attachments.

The most effective utilization of technical means can be ensured only under the conditions of large-scale mechanized centers, where use is made of progressive technology and efficient organization for washing, cleaning, and repairing the cars. The most effective forms of labor organization have been set forth in the standardized and prospective technological processes issued by the Ministry of Railways TsV for the operations of the comprehensive preparation of boxcars and insulated cars. At the present time the "bottleneck" in the technology of renovating boxcars is roof repair. An interesting solution to this problem has been proposed by the VNIIZhT scientists. The recommended technology excludes such welding defects as the formation of extremely rigid joints and excessive burning of metal, since it provides for a glueing of roofing damages with the aid of fiberglass and epoxy glues containing hardening agents.

Recommendations with regard to the rational placement of centers for the comprehensive preparation of boxcars and the selection of the optimum parameters of their functioning are contained in the Instructional-Methodological

Directives on the Placement and Improvement in the Work of Centers for the Technical Servicing of Cars, published in 1982. Based on the methods developed by VNIIZhT, the Giprotranstei /State Institute for Technical and Economic Research on and Planning for Railroad Transport/, after conducting a great deal of research, provided specific proposals with regard to the effective placement of technical centers throughout the entire railroad network, taking into account the prospects for developing railroad transport and converting rolling stock to roller bearings. It also furnished recommendations on how to modernize and create new, large-scale centers for preparing boxcars for hauls.

Useful experience in planning and creating an up-to-date industrial base for repairing boxcars has been accumulated at the South Urals and Sverdlovsk Railroads. The Utyak Station of the Kurgansk Division of the South Urals Railroad has built a new center for preparing boxcars; it has a fine track development, a heavy-duty boiler-room, gantry, workshops for making wooden parts for cars, repairing doors and grain shields, as well as a garage for motor-vehicle transport, and pump-boiler unit, everyday service areas, a compressor, and cleaning facilities. The preparation of cars is conducted by assembly-line technology. When there is a large volume of repair work, a car is fed onto a specialized repair track, fitted out with load-hoisting mechanisms and an electric-actuator instrument. Over the course of a number of years successful operations have been carried out at the mechanized, comprehensive-preparation center at the Berezniki-Sortirovochnyye Station of the Sverdlovsk Railroad. Here, for the first time on the network, the washing and repair of cars began to be carried out in enclosed, heated areas by means of the assembly-line method. However, the railroad network still do not have enough such centers. Frequently, in planning and building new centers, because of the limited amounts of capital investments being allocated, the requirements of scientific labor organization are not taken into account in the necessary manner.

For the complete, good-quality restoration of the operational capability of boxcars it is necessary to have a sufficient quantity of spare parts and materials at the centers. At the present time the requirement for material resources for routine car maintenance is planned in accordance with their runs. As a result, considerable stocks of materials, especially lumber, necessary for repairing car bodies are allotted not to the freight-hauling railroads but to the transit railroads. In connection with this, the Main Car Administration of the Ministry of Railways, upon the recommendations of the VNIIZhT, uses supplementary, differentiated norms for distributing certain types of materials, the expenditure of which does not depend on runs. Calculations carried out for 11 grain-hauling railroads have indicated that the planned need for lumber has declined somewhat on the Dnepr, Volga, and Southeastern Railroads. It should be noted that, because of a lack of special accountability, it is extremely complicated to precisely establish the actual expenditure of materials and spare parts on the technical servicing and routine repair of cars in operation and, hence, to monitor their use in the manner necessary. In our view, it is necessary to institute the proper procedures in this matter as soon as possible.

A large role in improving the quality of preparing boxcars for hauling foodstuffs must be played by a comprehensive system of quality controls over products, based on enterprise standards and to be introduced in the car

administration of the network. However, there are still quite a few unresolved problems in this matter. The special directives published in 1976 by the PKB TsV on the development and introduction of this system contain the basic positions and, in a general form, the method for calculating the indicators defining the quality of car repairs. It is still not possible, however, to conduct a comparative evaluation of the car administration line enterprises, making distinctions as to capacity, completeness of personnel staffs, equipment, etc. We must establish a list of documents of accounts and accountability for the Ministry of Railways, and these documents must be the points of departure in calculating the quality indicators of technical service. Nor has a list of standardized quality indicators been set up. In connection with this, the car administration, the VNIIZhT, and the railroads must continue their work on perfecting a comprehensive system of quality control in order to make it an effective means for improving the technical condition of boxcars.

Basic Conclusions and Top-Priority Tasks

The successful solution of the complex of tasks connected with improving the technical condition and increasing the effectiveness of the boxcar fleet's use, reducing the losses of agricultural goods during hauls, and the steady provision of the agro-industrial complex with improved rolling stock--all this is possible only on the basis of a well-planned improvement in the work of the appropriate sub-divisions of the car administration with the active support of the other services of railroad transport and the car-building industry.

First of all, the Main Car Administration should obtain from the car-builders the development and implementation a complex of measures aimed at inceasing the strength and design reliability, as well as improving the construction quality, of boxcars, taking into account the requirements of the new edition of the Norms with regard to designing cars for strength. It is also feasible, based upon the VNIIZhT's research, to pose for USSR Gosplan the problem of changing the service lives of boxcars, proceeding from the actually occurring conditions of use, as well as the extensive utilization of up-to-date means of mechanizing the loading, unloading, and switching operations. It is also necessary to speed up the removal from use of boxcars operating beyond the limits of their service lives; to restore the operational capability of such cars diverts significant labor and material resources.

In order to improve the technical condition of the cars belonging to the fleet in use, it is necessary to urgently solve a number of problems directly affecting the grain-hauling railroads. In particular, it would be feasible for the Main Traffic Administration of the Ministry of Railways to determine the stable flows of empty cars in order to feed the grain-hauling railroads with boxcar-type rolling stock on a stable basis. This would establish the responsibility of the railroads providing empty boxcars on a regularly assigned basis for the suitability of rolling stock loaded with grain. For every empty train dispatched to be loaded the issuing railroad, in our opinion, ought to fill out a certificate of technical condition, witnessed to by the responsible officials of the PTO [Technical Servicing Center] and the dispatching station. Cars unsuitable for loading with grain should be uncoupled for routine repair during the making up of the empties.

It would be feasible for the Main Car Administration of the Ministry of Railways to determine a list of the most important centers for the comprehensive preparation of boxcars, located on the grain-hauling railroads and divisions and to provide them with a top-priority supply of materials and spare parts, taking into consideration the actual condition of the cars. At the same time we must set up on the railroads and in the appropriate main administrations a strict accounting of the expenditure of deficit materials earmarked for car repair and decisively cut short instances of their being expended for the wrong purposes.

It is no less important to improve the furnishing of preparation centers with technical equipment and means of small-scale mechanization for routine car maintenance. A portion of them can be obtained in the localities by means of funds allotted by the railroad chiefs. In our view, it is necessary to include in the operational plan of the PKB TsV and speed up the development of, taking into account the recommendations of the Urals Division of the VNIIZht, effective designs of car-repair machines with the subsequent organization of their serial production for the comprehensive centers engaged in preparing boxcars and insulated cars.

Particular attention must be paid to improving the quality of the repair operations being performed. We must regularly conduct targeted check-ups on the observance of the requirements of the technical processes in renovating cars at the preparation centers, as well as the effectiveness of the technical means of repairs possessed by them; we must likewise use all measures to strengthen labor and technical discipline in the car administration subdivisions, as well as increasing the responsibility of officials for the quality of the work.

In developing a base for the technical servicing of boxcars, it would be feasible for the Main Planning and Economic Administration of the Ministry of Railways, in conjunction with the Car Administration, to allot the necessary funds for the planning and subsequent construction of large-scale, mechanized centers for the comprehensive preparation of cars for hauls and to create them, first of all, in regions where there is mass accumulation of defective boxcars, from which they have no return trip as empties. It is also necessary to revise the planning of the manpower contingent for the preparation centers, particularly those located on the railroads which receive a large number of cars on a regularly assigned basis. We must give greater consideration in planning to the technical condition of the fleet and the volume of work involved in restoring its operational capability.

A comprehensive solution of the above-listed, top-priority tasks will facilitate a rise in the level of the technical condition of the boxcar fleet, an increase in the load resources of the railroads, and, in the final analysis, an improvement in the transport servicing of agriculture.

2384
CSO: 1829/50

BRIEFS

NEW SUBWAY SYSTEM PLANS--The collective from the "Lenmetrogiprotrans" /Leningrad State Institute for Subway Transportation System Planning/ Institute has started compiling plans for development of subway systems in Perm, Odessa, and Donetsk. There are now subway systems in the country's 8 largest cities--Moscow, Leningrad, Kiev, Yerevan, Tbilisi, Kharkov, Tashkent and Baku. By the year 2000 residents of 25 more cities should get them. Therefore Gosplan USSR has commissioned design institutes to prepare their considerations for underground rail systems. The Leningraders got Perm, Odessa and Donetsk. A large amount of work has already been done in Perm by specialists from Lenmetrogiprotrans on future lines for the subway. For now, two are planned for here: a total length of 30 kilometers. The lines will connect the downtown regions with the large industrial zones. A single underground line is being planned initially for Odessa and Donetsk. They will link the downtown areas of these cities with the areas where intense construction is currently in progress. /By M. Tarasov/ /Text/ /Leningrad LENINGRADSKAYA PRAVDA in Russian 10 Jul 83 p 1/ 9194

ELECTRIC LOCOMOTIVE FOR BAM--In Czechoslovakia, testing of the new "ChS-8" electric locomotive went successfully. This "heroic giant" with a 7,200 kwt motor was built at the "Shkoda" Association, and it is intended for use on the Baykal-Amur Main Line. /Text/ /Vilnius SOVETSKAYA LITVA in Russian 22 Jul 83 p 4/ 9194

2TE-121 LOCOMOTIVE TESTING--Voroshilovgrad--Performance testing of the 2TE-121 mainline freight locomotive, rated at 8,000 horsepower, are being wrapped up at the "Voroshilovgradteplovoz" /Voroshilovgrad Diesel Locomotive/ Production Association. The new machine is capable of pulling trains weighing up to 6,000 tons. And still in line is the design of still more powerful "4TE-10M" diesel locomotive (rated at 12,000 horsepower), intended, in particular, for operation on the Baykal-Amur Main Line. /By V. Mikhaylichenko/ /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Aug 83 p 2/ 9194

BAM PASSENGER TRAFFIC--TASS, Urgal, Khabarovskiy Kray--Regular passenger traffic is open on a section more than 200 kilometers long between Urgal and Fed'kin Klyuch on the BAM line. Now passenger trains travel a 700 kilometer route connecting numerous stations in the taiga with Komsomolsk-on-Amur, the terminal station on the Eastern branch of the main line. In February, 1975, the first rail link of BAM lay on the far-eastern soil. Having displayed

constancy and selfless labor, envoys from the Ukraine, Moldavia, Tajikistan and the krays and oblasts of the Russian Republic, laid the steel track through taiga, swamps and mountain ranges, beating the deadlines. Eleven villages were built, as were various station facilities. Now the entire Eastern sector of the main line is operational. A considerable part of the freight from the country's western regions which is destined for Kamchatka, Magadan and Sakhalin Oblasts is now delivered via the shorter route. The BAM has accelerated development of the economic policies of the Komsomolsk and Rugalsk territorial-production complexes. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Aug 83 p 1/ 9194

TUNNEL WORK IN ARMENIA--Yerevan--Builders of the Idzhevan-Razdan railroad are accelerating their work. The connector has been completed in the Dilizhan tunnel. This crossing consists of 3 parts in a line, at times cutting through the mountains, at times emerging onto the surface. The middle section has now been put through. The total length of the tunnel is about 4 kilometers. It would seem that this is no great distance, but for the builders, this sector is fraught with difficulties: non-uniformity of the soil, the hard rock makes it necessary to change the tactics for tunneling constantly, and makes unforeseen blasting work necessary. This is why the central "corridor" was opened here first. Two more will still be made. The new main line will make an important contribution to the development of the republic's economy. Having become an extension of the existing railroad, it will connect Armenia with the country's northern regions via the shortest possible route. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 24 Aug 83 p 1/ 9194

CSO: 1829/351

DETAILS OF NEW MULTIPURPOSE, ARCTIC CARGO SHIP 'NORIL'SK'

Moscow MORSKOY FLOT in Russian No 5, May 83 pp 36-41

[Article by V. Kuzovkin: "Vessels for the Arctic"]

> [Text] The party and the government have outlined in the 11th Five-Year Plan intensive economic development of the regions in Siberia and the Far East, therefore the maritime fleet is called upon to ensure reliable transportation links via the Northern Sea Route and to extend the period of the Arctic navigation season to the maximum.
>
> For the purpose of solving these tasks it is planned to replenish the maritime fleet with icebreakers and icebreaker-transport ships of new types. Among them are multipurpose dry cargo icebreaker-transport ships with a deadweight of nearly 15,000 tons, whose series are being built at the Finnish shipyards Wartsila in Turku and Valmet in Helsinki. The leading vessel--the motorship "Noril'sk"--was built at the Wartsila shipyard in November 1982 and turned over to the Murmansk Steamship Company.

The motorship "Noril'sk" is earmarked for transporting general, lengthy, baled, heavy and oversize cargos, refrigerated cargo in 20-foot containers, liquid oil with the flash point not lower than 60° C, wheel equipment with filled up fuel tanks, International Organization for Standardization [ISO] containers of the 1A and 1C type, stacked lumber, fuel and lubricants, explosives, highly inflammable liquids and chemicals in containers (in hold No 1), ore (in holds Nos 2, 3 and 4), converter matte (the intermediate product of nonferrous metal production) in special containers (two tiers in holds Nos 2, 3 and 4 and one tier in tweendecks in holds Nos 2, 3 and 4), and coal and highly inflammable dry cargo as well as bulk grain (in holds Nos 2, 3 and 4).

Vessels of the "Noril'sk" type are two-decked with five cargo holds, intermediate stern location (between holds Nos 4 and 5) of the engine room and a living quarters superstructure, twin sides (in holds Nos 2, 3 and 4 and in the engine room), a rolling tweendeck which extends from the bulkhead of the tiller section in the stern to the forward bulkhead of hold No 2 and a stern angular ramp on the starboard side. The vessels have a sloping side below the waterline, an

icebreaker form of the stempost and a transom stern in the upper works with a tow opening. The vessel can sail in ice independently or follow an icebreaker. The vessel's ice performance--solid 1 m thick ice on which there is 0.2 m of snow at a speed of 1 knot and 90 percent capacity of maximum continuous operation. When the thickness of ice is 0.8 m and of snow 0.2 m, the vessel's constant speed is 3 knots at same capacity.

The vessel was built under observation and to the USSR Registry class KM * ULA 2 A2. The vessel's sailing area is unlimited. The vessel can operate normally when the external air temperature is as low as -50°C.

Fuel supply ensures maximum cruising range of 16,000 miles. It has an ability to transfer about 900 m^3 of heavy fuel as bunker to other vessels, with its cruising range reduced to 12,000 miles. Self-sufficient cruising as regards supply of drinking water and provisions is 60 days and as regards supply of dry provisions 120 days. Fresh water supply is replenished by water distilling plants.

The hull is completely of welded construction, framed according to a combination framing system and is divided in length by eight watertight bulkheads which reach the upper deck in height. The steel above the waterline and in the ice belt area was selected on the basis of work conditions with external air temperature at -50°C. Intermediate deep web frames are raised in the ice belt area.

Decks are executed without saddle backing, with straight saddle backing only at the ends of the upper deck. The upper deck has a straight-line camber of 0.25 m at the sides. The rolling tweendeck is calculated for a uniformly distributed load of 40 (kN/m^2) (4 ts/m^2) and for axial load of 2x17 (ts/axle) with the distance between axles of 700 mm from (roll-trailer) of 40 t mass or 19 (ts) per one axle. The height of the passage in light on the rolling deck is 4.3 m.

Construction of the raised forecastle, the upper section of the stempost, the poop and the stern tow opening are reinforced owing to the ship's close quarter working conditions with an icebreaker. The shape of the bow end in the surface section is executed similarly with the bow end of the "Dmitriy Donskoy" type vessels, which have proven themselves while working together with icebreakers. The shape of the stern notch is executed in imitation of the bow end of the icebreakers "Arktika" and "Kapitan Sorokin."

The twin bottom in the area of holds Nos 2, 3 and 4 is reinforced for transporting specialized containers with converter matte in two tiers and also for working with a grapple. The strength of the twin bottom plating is calculated for a uniformly distributed load of 100 (kN/m^2) (10 ts/m^2). The twin bottom height is 1,500 mm.

The vessel has one rudder of the semibalanced semisuspended type with suspension on two pins and flanged joint with the head. To protect the rudder from ice damage during the vessel's reverse movement, and "ice tooth" was installed behind the rudder.

Cargo hatches in holds Nos 1-5 on the upper deck have watertight "folding" type covers. Hatches Nos 1-4 have a hydraulic drive and hatch No 5 a cable linkage

from the crane. The sealing rubber of hatch covers maintains work capacity to a temperature of -60°C. Hatch covers in holds Nos 2, 3 and 4 are paired. Hold No 3 is designated for loading lengthy cargo.

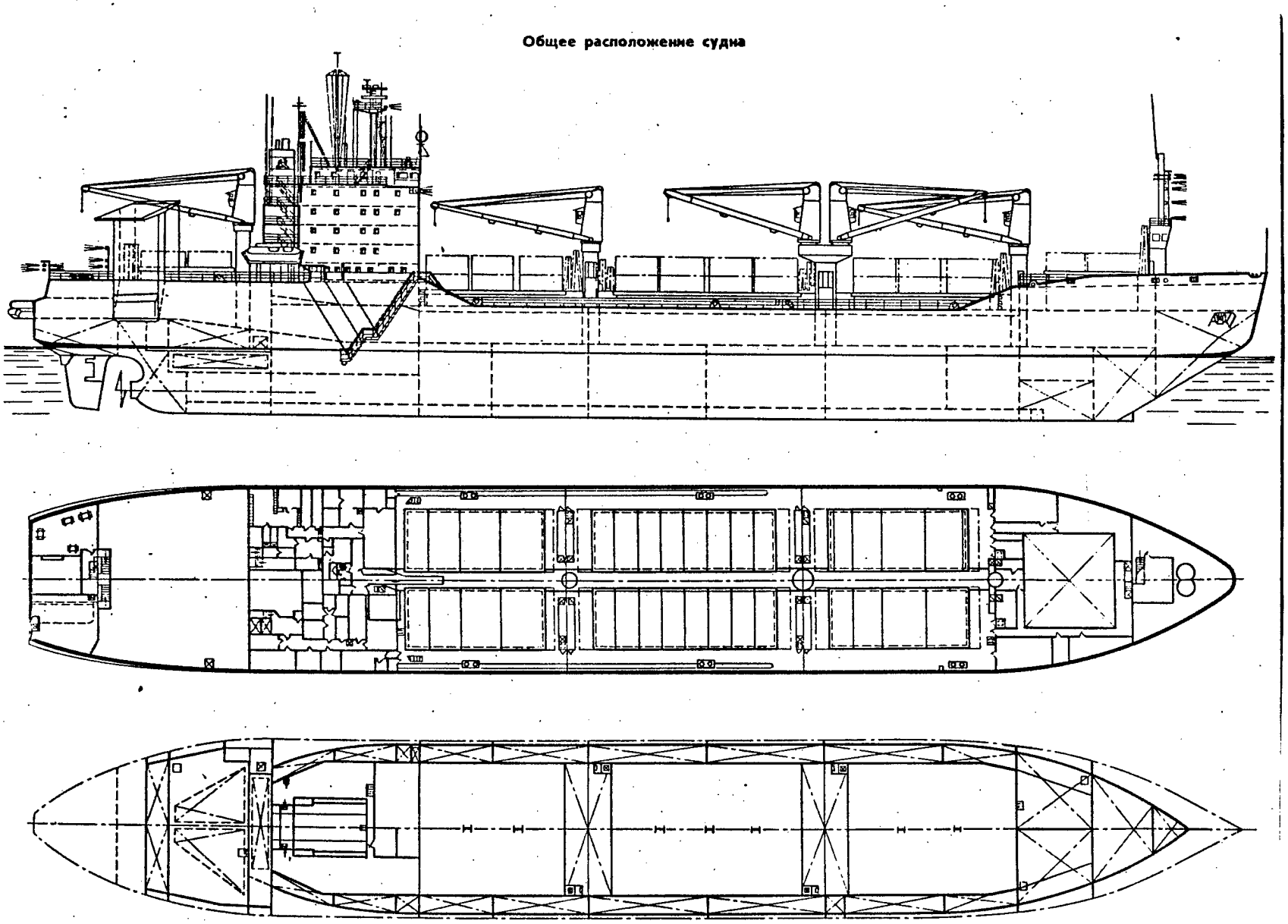
Cargo hatches on the upper deck are of the following sizes: 12.8 X 13.0 m in hold No 1, 19.2 X 8.0 in hold No 2, 25.6 X 8.0 in hold No 3, 19.2 X 8.0 in hold No 4 and 12.8 X 11.0 m in hold No 5. Cargo hatches on the tweendeck are permeable, have cable linkage from cranes and are executed flush with tweendeck plating for passage of wheel equipment on it. To ensure passage of wheel equipment the length of the vessel on the rolling tweendeck, four transverse watertight tweendeck bulkheads have five 5.0 X 4.3 m side ports with a cover folding to the side. The cover drive is electrical.

Basic Characteristics of the Vessel

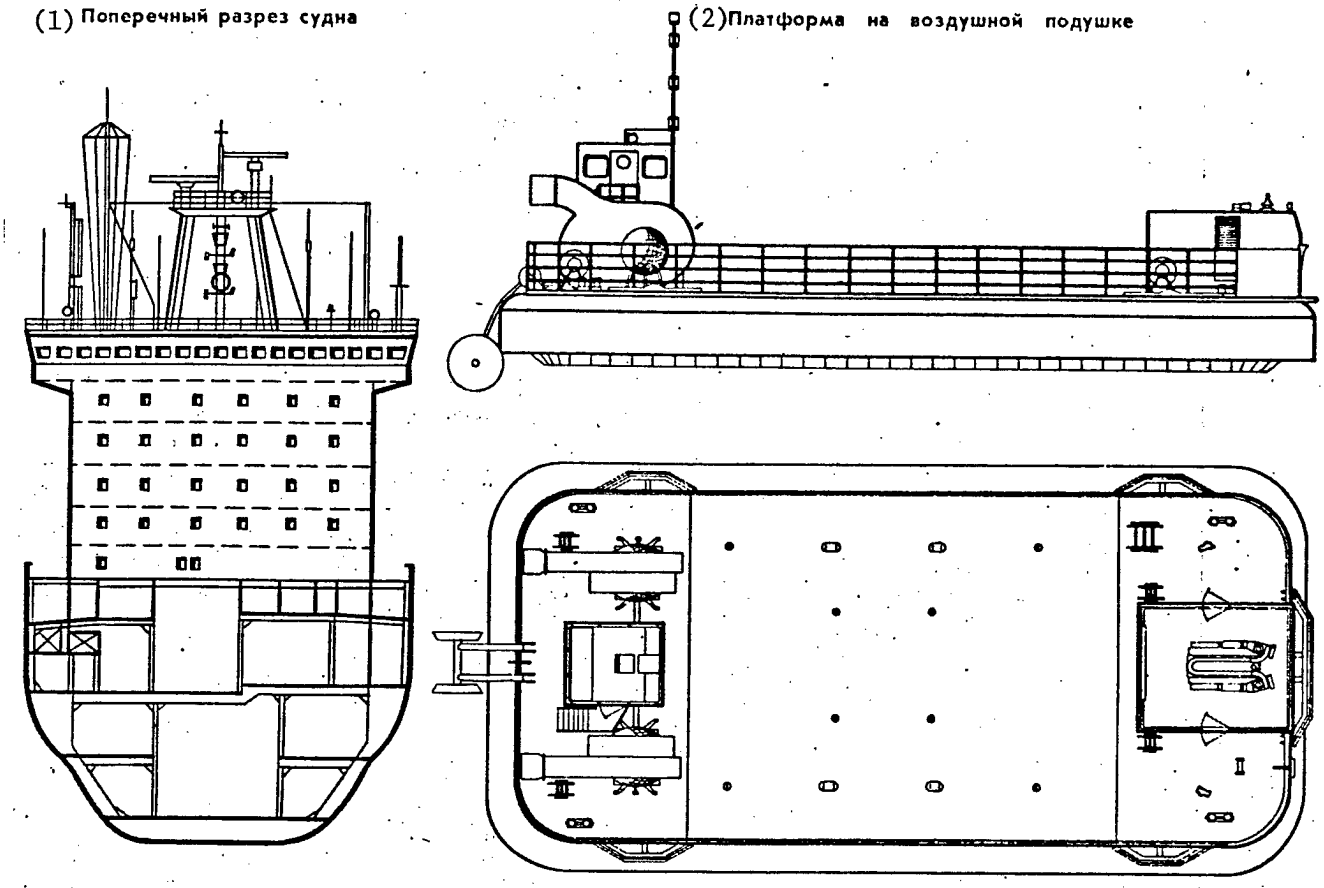
Length:	
greatest (without tow opening)	173.5 m
along constructional waterline [KVL]	165.1 m
Width:	
greatest	24.5 m
along constructional waterline [KVL]	24.0 m
Height of the side:	
to the upper deck	15.2 m
to the tweendeck	10.2 m
Draught:	
arctic (during dual cutoff of floodability)	9.0 m
maximum (nonarctic)	10.5 m
Deadweight:	
during arctic draught	14,500 t
maximum	19,800 t
Carrying capacity (full)	31,185 m^3
Container capacity (20-foot)	576 items
Net cargo-carrying capacity:	
during arctic draught	10,145 t
maximum	15,500 t
Capacity of main engines	2 X 7.7 megawatt (2 X 10,500 horsepower)
Maximum continuous power on propeller shaft (without fluid coupling)	14.2 megawatts (19,360 l.c.)
Speed on ice-free water with 90 percent of engine capacity	17.5 knots

All cargo compartments are equipped with forced air supply. The rolling tweendeck and hold No 1 have 20-fold ventilation and holds Nos 2,3 and 4 have 6-fold ventilation. Ventilation of holds and tweendecks is executed in dust-ignition-proof construction.

The stern corner ramp is located along the starboard side at a 65° angle to the vessel's centerline. The ramp consists of two sections. The ramp's overall length is 18 m, the width of passage inside is 5 m. The maximum overall load on the ramp is 56 tons, axial loads are the same as on the tweendeck. The ramp has a hydraulic drive. To ensure turning out of the ramp



Overall Arrangement of the Vessel



Key:

1. Cross section of the vessel
2. Platform on an air cushion

during icing conditions there are hydraulic ice cylinders. The operation of the ramp is calculated for docks 1-4 m high above the water level with the angle of inclination to 8°. The possibility of using the ramp will be tested for the first time in unloading the vessel on fast ice.

In place where the ramp is installed, the stern gates are closed by a 5.0 m wide and 4.6 m high side port, which is equipped with a hydraulic drive and hydraulic ice cylinders. The vessel's system of hydraulics consists of the following units: a hatch cover drive unit, which consists of three sets of machinery with two electric motors and two pumps in each set of machinery, which are located in deck (tambuchiny) and under the forecastle; the stern ramp and side port drive unit, consisting of three pumps; and manual pump units at every bulkhead side port. The effective pressure in the hydraulics systems is 21 megapascal [MPa].

The anchor-handling gear consists of two electrically driven anchor capstans located on the forecastle deck. The capstan motors are equipped with heating. The motor, the regulator and the braking gear are located under the forecastle deck. Provision is made for remote efficiency of belt brakes of capstans from the wheelhouse. Indicators of the length of paid out anchor chain and the speed of anchor drop are also installed there. There are three Hall's anchors of 7 t each, one of which is a spare.

The mooring gear consists of four automatic electrically driven single-drum docking winches. The tractive force of the winches is 120 (kN) (12 ts). Winch motors are equipped with electrical heating. A device for securing and rapid delivery of "tug whiskers" with control posts, which are located on the forecastle deck and in the wheelhouse, is installed on the forecastle deck. The device is intended for reducing expenditure of hard manual labor in cranking and delivering "tug whiskers" when the vessel is guided close behind the icebreaker.

The vessel's collective rescue means include 2 enclosed motor lifeboats for 55 persons each, which are installed on gravity-type davits, 3 inflatable life rafts of the PSN-5 type and a PSN-6 raft. There is also a 6.5 m long motor service boat with a bow cover.

The cargo-handling gear consists of four electrohydraulic stationary revolving cranes of the Swedish Hagglund firm: 3 single cranes with a hoisting capacity of 20 t with the boom's overhang of 3-22 m; and a double crane with hoisting capacity of 2 X 40 t with overhang of 2.5-20.0 m. The vessel has a traverse for hoisting heavy cargo in bulk up to 80 t. The cranes can operate normally when the external air temperature is down to -40°C and maintain their ability to operate after locating when the temperature is -55°C.

The vessel is provided with a sufficient quantity of welded and removable fastening components for containers, wheel equipment, rolling cargo, baled timber and other cargo.

To raise ice performance and struggle against ice sticking to the hull, the vessel is equipped with a pneumatic washing arrangement, which includes two air compressors of 735 kW capacity with a diesel drive. Under normal conditions

one of the compressors works through the blowing openings on the starboard side, and the other through the blowing openings on the port side. Each compressor can operate separately on the opposite side. The blowing openings of the pneumatic washing arrangement are located in the vessel's bow section, in the area of the bilge at a length of nearly 90 m with a 2.4 m pitch. They are controlled from the central control console [TsPU] and the wheelhouse.

The vessel has cabins for 39 people. They are single-berth cabins with air conditioning and individual sanitation and hygiene facilities. Eight cabins of the senior command staff are modular. Additionally there are the following cabins: for the chief of the expedition, which is outfitted according to the type of a cabin for the senior command staff, five two-berth cabins for passengers and a two-berth cabin for pilots. During construction of the vessel, a modular method of forming additional living structures was used. Cabin modules were completely assembled in a shop and then installed on the vessel in a finished form.

The vessel's public facilities include: a messroom and a rest saloon for the command staff; dining hall of the crew with a rest saloon for the rank-and-file, where a motion picture hall is being equipped; captain's and passengers' saloons; a library; a photolaboratory; and facilities for amateur occupations.

The vessel has a sports and health improvement complex: a sports hall with a large selection of sports equipment and games, including training devices for rowing and cycling, table tennis, volleyball, basketball, a boxing ring, a track and field athletics running track, exercise bars, wall bars, equipment for developing hand strength, an indoor heated pool, sauna and a solarium.

There is an elevator between the engine room and the residential structure.

The vessel's power plant consists of two 14ZV40/48 (Wartsila-Zultser) average-speed, four-stroke, single-acting main engines with a turbocharge and transmission of power to the adjustable-pitch propeller by means of a single-stage paired reducing gear, two fluid couplings and two plate clutch couplings. Flexible couplings are installed between the engines and the reducing gear. The thrust bearing is installed on the shaft line separately from the reducing gear. The plant's efficiency on the flanges of the reducing gear when working through the clutches is 98 percent and 89 percent when working through fluid couplings. The maximum continuous capacity of each engine is 7.7 megawatts (10,500 horsepower) with the rotational speed of 560 rpm.

The engines operate on fuel of 1,500 (c Redwood 1) viscosity at 100° F. The manufacturer of fluid couplings is the Voith firm (FRG) and of the reducing gear and plate clutch coupling the (Renk) firm) (FRG). The strength of the reducing gear is calculated for perception without damages of brief dynamic loads, which exceed loads fivefold and occur during transmission of combined nominal turning moment of main engines. The gear ratio of the reducing gear is 1:4.66.

The fluid couplings are serviced by six hydraulic oil pumps. Depending on the load at the screw, 1,2 or 3 pumps work for every hydraulic coupling with the oil feed intensity correspondingly equaling 2,000, 4,000 or 6,000 liters per

minute. At 90 percent capacity of maximum term, the normal slip of hydraulic couplings is 9 percent. In case of screw and ice interaction, the couplings operate without time limitation during slipping up to 100 percent. The time of rapid emptying of hydraulic couplings is 6 (c), and of filling couplings at oil feed intensity of 6,000 liters per minute--13 (c).

In case of any kind of damage to the mechanism of the adjustable-pitch propeller [VRSh], the screw can operate in the fixed-pitch propeller [VFSh] mode. In this case, by regulating the degree of their filling, the hydraulic couplings make it possible to reduce the rotational speed of the screw below the minimally stable rotational speed of main engines to the rotational speed of 15-20 rpm, which ensures the vessel speed of no more than 4 knots in ice-free water. Provisions are made for one main engine working the screw.

The clutches ensure direct transmission of power from the main engines to the reducing gear and the adjustable-pitch propeller without reducing the rotational speed of engines as well as multiple switching during frequent reversals. The control of clutches is pneumatic. The use of fluid couplings is due to the vessel's operation under ice conditions and for the purpose of protecting the engine-propeller complex from damage during the screw's impact against ice and during jamming of the screw.

Sailing in ice-free water is accomplished with emptied hydraulic couplings and engaged clutches. The changes of screw revolutions and reverse are accomplished by the fixed-pitch propeller. Taking into consideration that the power plant's capacity was selected on the basis of ensuring sufficient ice performance and is excessive while operating in ice-free water, the vessel can operate on a single engine in ice-free water at a speed of about 14 knots.

The fluid couplings are filled and clutches are disengaged while sailing in ice.

The control of the power plant is accomplished from the wheelhouse with a remote automated control [DAU] system from one handle as in the "engines-adjustable-pitch propeller" combined program control system while sailing in ice-free water as well as during constant rotational speed of the main engine while sailing in ice. Separate remote control of the adjustable-pitch propeller and engines is accomplished from central control console.

Engaging clutches or fluid couplings is accomplished from the central control console on a command from the bridge. Control over the extent in filling up of hydraulic couplings is accomplished from the wheelhouse or the central control console.

The adjustable-pitch propeller, which is a four-blade propeller of stainless steel, was designed and made to the USSR Registry's ULA class. The propeller's diameter is 5.6 m and its rotational speed is 119 rpm. Construction of the adjustable-pitch propeller ensures the possibility of replacing blades while afloat and preserving complete inner space air-tightness of the adjustable-pitch propeller. Every vessel is supplied two spare blades of the adjustable-pitch propeller. During a breakdown of the adjustable-pitch propeller control system, the blades can be installed in the full speed ahead position while operating in the fixed-pitch propeller mode. The Swedish firm KaMeWa is the supplier of the adjustable-pitch propeller.

The vessel's deadwood equipment--on water lubrication with rubber and metallic bearings of the kind used on icebreakers of the"Kapitan Sorokin" type. Deadwood equipment on oil lubication will be used in the second series of the "Noril'sk" type vessels.

Five 624TS type diesels of the Wartsila plant in Vaasa City are installed as auxiliary engines. The capacity of the diesels is 810 kW (1,100 horsepower) with rotational speed of 750 rpm. These are four-cycle six cylinder single-acting diesels equipped with turbo-supercharging. Four diesels are connected to brushless generators of the (Stremberg) firm and form diesel generators of the ship's electric power station, one of which is also connected to the compressor of the pneumatic washing equipment. The fifth diesel works directly for the second compressor of the pneumatic washing equipment. Each compressor delivers 4.9 m^3 per second.

The ship's auxiliary boiler plant consists of two automated steam boilers of the vertical type with a productivity of 6.0 tons per hour with steam pressure of 900 kilopascal [kPa]. The boilers operate on heavy fuel. Two exhaust-heat boilers with a productivity of 2 tons per hour during operation of main engines at 90 percent capacity of the maximum term are also installed.

The vessel uses two types of fuel: diesel fuel and heavy fuel 1,500 (c Redwood 1 at 100° F.) Fuel of average viscosity for auxiliary diesels is prepared in a fuel mixer.

Transfer of fuel cargo to other vessels can be accomplished through a heavy fuel bunkering suction line. Fuel transfer pumps are used in transferring fuel. Two 25 m long hoses and a flowmeter are supplied to the vessel.

The fire-extinguishing system in the engine room and cargo holds is of the high-pressure carbon dioxide type. A supplementary system of medium ratio (1:100) foam extinguishing by connecting the GVP-600M type foam generators to fire hydrants is also provided.

The vessel is equipped with two ice compartments (side and inner bottom) and a Kingston valve for emergency fire pump.

The main and auxiliary diesels are cooled by fresh water, which is cooled by sea water in the cold storage. The possibility of the sea water cooling system operating briefly by closed cycle to one of the ballast tanks is envisaged.

An emergency diesel generator of 100 kW capacity is part of the ship's electric power station in addition to the four auxiliary diesel generators. Provision is made for connecting electric energy to feed 50 refrigerated containers, including 20 in hold No 4 on the tweendeck and 30 on hatch covers in hold No 4 on the upper deck.

Two halogen searchlights of 2 kW capacity are installed on the compass platform. A similar searchlight is also installed on the roof of the observation post on the bow. The windows in the wheelhouse and the observation post at the bow are electrically heated and are equipped with brush windshield wipers. All windows in the wheehouse are blast-cleaned with warm air from inside.

Characteristics	"Noril'sk"	"Dmitriy Donskoy"	"Amguema"
Length, m:			
greatest	173.5	162.1	133.0
along constructional waterline	165.1	154.9	123.3
Width, m:			
greatest	24.5	22.9	18.8
along constructional waterline	24.0	22.9	18.5
Height of the side, m	15.2	13.5	11.6
Arctic draught, m	9.0	9.0	7.6
Displacement, t	25,500	24,600	11,290
Deadweight, t	14,500	16,870	6,220
Type of power plant	Geared diesel with adjustable-pitch propeller and hydraulic couplings	Diesel with fixed-pitch propeller	Diesel electric with fixed-pitch propeller
Power plant capacity, horsepower	21,000	11,200	7,200
Speed, knots	17.5	15.2	15.0
Drive efficiency	0.89/0.98 through hydraulic couplings/clutches	--	0.86
Power on propeller shaft, horsepower	18,700/20,600	11,200	6,100
Power ratio, horsepower,t	0.73/0.81	0.46	0.54
Ice performance, m	1.0	0.5	0.6
Ice class	ULA	UL	ULA

Connection to coastal electric power supply of 400 ampere is provided.

Automation of the power plant is executed according to class A2 of the USSR Registry for engine room maintenance without on duty watch.

The vessel has the following completely equipped workshops: a machine workshop (with lathes and milling, drilling and tool grinding machines), a welding workshop (with electric and gas welding equipment), an electrical workshop, a nozzle pressure testing facility and a carpenter workshop. Three sets of diving equipment and a set of tools for replacing blades of the adjustable-pitch propeller while afloat are supplied to the vessel.

The vessel's electric and radio navigational equipment includes two navigational and satellite navigational systems, radar with a collision warning system, radio direction finder, two echo sounders, two gyrocompasses, Doppler acoustic log and an induction log. A device for controlling the vessel's load, stability and strength of the Kokums type (Sweden) is installed.

The vessel meets the existing international conventions and national regulations.

The table gives comparable vessel characteristics of the "Noril'sk" type and existing icebreaker-transport vessels of the "Amguema" and "Dmitriy Donskoy" type, which were brought to Arctic conditions.

To ensure unloading of vessels on roadsteads under unequipped coast conditions in the Arctic and Far Eastern basins and with the aim of reducing the use of hard manual labor by eliminating transfer of cargo near the coastline, one cargo platform on an air cushion with a carrying capacity of 40 t (PVP-40) is supplied to each "Noril'sk" type vessel.

Basic Characteristics of Platform on Air Cushion [PVP]-40

Length:	
overall on an air cushion	20.7 m
along cargo waterline	18.0 m
Width along the deck	8.5 m
Height of the side	1.0 m
Draught afloat (without skids)	0.65 m
Lift on air cushion	0.6-0.7 m
Pressure in air cushion	5,400 pascal [Pa]
Platform mass without load	38 t
Carrying capacity	40 t
Fuel mass	4 t
Load displacement	82 t
Fuel endurance	24 hours
Cargo area dimension	10.0 X 8.5 m

The platforms are stowed on hatch covers on the upper deck. They are lowered and raised by a paired ship's crane with a lifting capacity of 80 t. Measures are provided for ensuring basing of the PVP-40 on the vessel--fuelling, electric supply and technical servicing.

The PVP-40 is built according to USSR Registry class K * III SVP with the distance from shelter or the base vessel up to 10 miles during sea disturbance of up to force-four. The platform has single compartment unsinkability. Sailing region III is limited according to USSR Registry. Operation of the platform is ensured at a wave height of 1 m during movement on the air cushion and up to 2 m in the displacement position.

The platform can operate at external air temperatures ranging from +20 to -40° C and maintains efficiency during storage temperature of down to -50°C.

The platform's power plant consists of the main engine, which puts two air superchargers into rotation through a reduction gear to create an air cushion. A symmetrical arrangement of the power plant complex, air superchargers, the operator's deckhouse and fuel supply is used for trimming the platform. The main engine is located in the bow section and the reduction gear and superchargers in the stern, where propelling nozzles with extraction of air from superchargers are also located. A thrust of up to 4,000 (N) is created with the aid of these nozzles, which ensures controllability and independent movement of the platform at a speed of 2.6 knots.

The main engine -- a nonreversing four-cycle diesel with a pipe supercharger of the M633 (12 ChSN 18/20) type with a capacity of 625.2 kW (850 horsepower) at the rotaational speed of 1,500 rpm--is of domestic production. The diesel is connected to the transmission shaft by a flexible coupling. The scheme of the air cushion is of the chamber type.

The flexible skirt consists of a 1.5 m wide balloon and 112 segmented elements. A splashproof skirt is installed on the outer side of the flexible skirt to prevent splashing of the PVP-40. The material of the flexible skirt is frost resistant rubberized fabric with tensile strength of 160 kilogram force/cm^2. The safe life of the flexible skirt while operating in ice-free water is at least 750 hours.

The supply includes 40 percent of spare segments of the flexible skirt. The platform body is executed from carbon steel with transverse framing. The operator's deckhouse is located in the platform's stern section from where remote control of the main engines and nozzle equipment is accomplished.

The platform is equipped with anchor, mooring and towing gear. Provision was made for the possibility of installing a detachable ramp on the side. Four eyebolts and a sling welded to the body are for raising the platform.

The PVP-40's electric power station consists of a direct current generator of 3 kW capacity and a voltage of 28 v which is mounted on the main engine. The scheme for electric energy distribution is of the two-wire type.

Normal operation of the PVP-40 during unloading on the roadstead is implemented by the towing method, using an amphibious tower.

The design of the PVP-40 was developed by the Wartsila shipyard in Helsinki. A Soviet license for a seagoing platform on an air cushion, whose design was developed by the Leningrad Central Planning and Design Bureau [TsPKB], was used in developing the design. The PVP-40 was built at the Wartsila shipyard.

9817
CSO: 1829/272

ODESSA RAILROAD CHIEF ON IMPROVING TRANSPORT OF FOODSTUFFS

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 8, Aug 83 pp 5-9

[Article by Odessa Railroad Chief I. S. Shevernyayev: "Improving the Quality of Transporting Agricultural Cargo"]

[Text] The USSR Food Program approved by the May 1982 Plenum of the CPSU Central Committee called for linking in a single national economic complex the development of agricultural production, its maintenance by branches of the industry, procurement, storage, transporting and processing output, development of the food industry, and trade in foodstuffs. This agricultural and industrial complex, as the party indicates, must be planned and managed as one entity.

Provision of transportation is one of the most important links of the Food Program. Measures for improving maintenance of the agroindustrial complex by a branch and the structure of the rail car inventory used for shipping agricultural cargo and foodstuffs are stipulated for this purpose in railroad transportation. This determines the basic tasks confronting workers of the branch and, specifically, the collective of our railroad.

The Odessa Railroad holds the leading place in providing transportation to the southern and, particularly, to the southwestern and Donetsk-Pridneprovsk economic regions of the Ukraine, and it services the economic system of six branches of the republic. In the area of the railroad's influence are coal-loading regions and a large network of enterprises for agricultural machine building, chemical and light industry, and building materials. At the same time, this is a region of well-developed agricultural production. More than 1,300 produce procurement organizations ship the output annually from its fields. At the same time, equipment, fuel, mineral and chemical fertilizers, and industrial and building materials are delivered to the national economy in a continuous stream.

The network of food industry enterprises is broadly developed in particular. More than 30 sugar refineries and 50 canneries, over 120 elevators and grain receiving centers and many other enterprises are located in the region being

serviced. All this makes for submitting millions of tons of agricultural and food output per year for shipment, and besides this its volumes are growing intensively. Just during two years of the current five-year plan, grain shipments have increased by 19.8 percent and fruits and vegetables by 23.4 percent.

At the present time, more than 50 percent of foodstuff cargo shipments being performed by steel lines passing over the territory of the Ukraine are handled on the Odessa Railroad. This is hundreds of thousands of rail cars, and workers of the main railroad profoundly understand their participation in the overall campaign for the harvest and also for its timely delivery in a completely safe condition to storage and comsumption locations.

Export and import shipments through principal ports of the Black Sea Maritime Steamship company, the largest in the country, as well as the Sovetsk-Dunay Steamship Company, hold an important place in operation of the railroad. The development and extension of political and economic contacts with socialist countries within the bounds of CEMA and the expansion of trade with other foreign states predetermine an increase of foreign cargo shipments, including grain and foodstuffs.

This is why providing shipment of all these cargoes requires the execution of systematic, comprehensive, and scientifically based measures for organizing and improving them, reinforcing the material base, and improving the interaction of transportation workers at stations and in ports. All organizational work of the railroad management, branch services, collectives of stations and cooperating enterprises, and party, trade union and Komsomol organs is directed precisely towards this.

A comprehensive and specific program was developed for expediting and unconditionally providing for shipment of foodstuff cargoes on the railroad. It stipulates reinforcing the technical base of loading centers, port stations and the approaches to them, rail car preparation centers, and others. The planned implementation of this comprehensive program allows the railroad's collective to steadily provide for constantly increasing shipments. Results of the 5 months of 1983 are indicative of this. The task was overfulfilled by 12.9 percent while fulfilling the loading plan as a whole by 103.1 percent for cargo of the foodstuff group. Moreover, this was achieved for their entire products list. Basically, shipment of cargoes of this kind is provided for upon presentation.

Shipment of seeds for spring sowing in 1983 was performed in a timely manner. More than 1,500 rail cars of seed grain were dispatched to kolkhozes and sovkhozes. No less attention was devoted to cargo shipments for agriculture. The loading plan was fulfilled by 112.4 percent, including grain shipment by 105.5 percent.

Altogether for the last period of 1983, Odessa railroad workers in close cooperation with workers of the agroindustrial complex, sailors, and motor vehicle workers shipped several million tons of grain and other foodstuff cargoes to consumers.

With each year, the role of the Ilichevsk (USSR) to Varna (People's Republic of Bulgaria) ferry is growing in these shipments. More than one-fourth of the total volume of cargo arriving from the People's Republic of Bulgaria by ferry is fruit and vegetable products. During the last 2 years these shipments have increased by 30 percent. Their distinction is in the compressed time periods for carrying them out. Apples, cabbages, tomatoes, grapes and other fruits and vegetables come to our country from Bulgaria.

/Comprehensive Organization of Shipments/ [in boldface]

Strengthening the industrial bases for organizing loading, transfer, and unloading of output from gardens and fields, and food industry enterprises, and reinforcing the technical base of the shipment process are important factors for improving cargo shipments of the foodstuff group. In compliance with the projected plan until the end of the current year, it is stipulated to correct or develop anew industrial processes for many second and third class stations which basically are indirectly connected with cargo shipments of the agro-industrial complex. At the same time, correcting the industrial processes of railroad office operations is coming to an end. Conditions are expressed in these documents for efficient interaction of railroad transportation enterprises and cargo consigners and consignees in achieving the ultimate goal--fulfilling the shipment plan and providing for efficient use of transportation facilities.

Providing for the loading of rolling stock is the most complex matter for the railroad in implementing the transportation section of the food program. Unfortunately, the railroad's rail car setup is lagging behind shipping requirements, and particularly in preparing cars for loading. Just in the recent past, this work was performed at weak preparation centers which do not have the necessary devices and equipment. Suffice it to say that cleaning machines were installed at only one of them.

In view of the fact that, in spite of the considerable size of shipments containing foodstuff cargoes, resources were not allocated to the railroad for a number of years for modernization of the rail car setup and construction of mechanized centers for preparing rail cars, we decided through our own efforts to strengthen existent preparation centers, modernize them, introduce mechanized repair facilities, and improve labor conditions.

During the last two years, work was done on building washing racks and repairing tracks by laying reinforced concrete. Repair tracks were built and "Donbass" rail car repair equipment with devices for repairing covered cars was installed at four centers. Stands for repairing and manufacturing doors on covered cars were introduced at six preparation centers. Electric welding lines were laid, lighting was increased, and mechanized facilities were introduced at all centers. During the current year, construction of two living facilities is being completed and the building of one more will begin.

These measures made it possible to increase the preparation volume of rail cars for loading foodstuffs and grain. However, the daily requirement for covered

cars suitable for loading these cargoes was met by available centers by only 50 to 60 percent. An especially complicated situation arose when the new harvest was presented for shipment.

Once again it required carefully checking the utilization of production capacities, bringing additional repair areas to light, and conducting operations small in volume and resources in order to increase preparation of rail cars for loading. After appropriate study and engineering estimates by the railroad's technical and economic council, basic trends were approved for strengthening the rail car setup and raising the quality of repair and preparation of cars for loading. This is envisaged at rail car depots in the 1983 to 1985 period by expanding shops, introducing new flow lines, mechanized positions and other mechanized facilities, and improving the repair process to increase the depot repair program for covered cars by more than 50 percent.

Operations will continue for strengthening rail car preparation centers. In particular, it is planned to equip repair tracks with machinery for increasing the release of rail cars from repair. In the current year already, 100 covered rail cars per day more than before will be coming out of consolidated repair.

However, for the time being the problem of providing for loading of foodstuff cargoes with loading resources is not completely resolved. This year construction began on a heavily mechanized center for preparing rail cars and which will be operational in 1985. In 1984 it is planned to begin construction of a second mechanized center with an operational date in 1986. Basically, this will afford the opportunity at the railroad to resolve matters of preparing rail cars.

For the time being, the railroad periodically experiences difficulties with loading resources. In our opinion, this problem can be solved today through two methods. In the first place, trying to get only empty covered rail cars that are suitable for loading in accordance with regulation tasks for delivery to the railroad. Right now many essentially defective cars needing extensive repairs are coming to us. Approximately 2,000 covered cars without doors, 1,000 with an unserviceable roof, and more than 3,000 cars with damaged floors and bodies were sent to the railroad during 5 months of 1983. This causes a long work stoppage of rolling stock in repair and a large outlay of metal and lumber, and delays turn-around of the car. It is necessary to stop transferring defective rail cars requiring priority repairs from railroad to railroad, just as it was clearly stated at an enlarged session of the MPS [USSR Ministry of Railroads] board in December, 1982.

In the second place, providing for more efficient use of special rolling stock--grain-hauling rail cars. Use of them is most expedient when through-freighting shipments at the maximum. During the last period of this year, a large part of the grain was shipped via grain cars in through freight rolling stock from ports being serviced by the railroad. However, many through freight trains are not being returned back to the railroad.

And there is still one matter concerning the grain-carrying cars. They can be used successfully with through freight shipments of raw sugar. However,

matters of modernizing unloading facilities are being resolved slowly at consignees and enterprises located in the republic. This deters broader use of efficient rolling stock.

When planning shipments of foodstuff cargoes, a lot of attention is devoted to their efficiency. A careful check of quarterly requisitions and monthly detailed plans submitted by cargo consigners was imposed at the railroad. Monthly plans are calculated with the aid of computer equipment and inefficient shipments are excluded. Last year alone, more than 12,000 requisitions were recognized as inefficient and were not accepted in the plans. More than 500,000 tons of cargo were transferred to other kinds of transportation.

A continually functioning operational grain group was created at the railroad to unconditionally provide for shipments of grain cargoes. It includes representatives of the railroad, the Black Sea Maritime Steamship Company, port stations, maritime commercial ports, administrations of grain products and the "Soyuzvneshtrans" office. There is an administration dispatch center.

The dispatcher conducts a schedule of traffic performed which reflects arrival at the railroad of through freight grain trains and empty covered cars and the work of centers in preparing rail cars. Cars for loading are directed to grain loading stations with strict adherence to the schedule.

Particular attention is devoted to the deployment and progress of grain-carrying rail cars. For this purpose, close communications are maintained constantly with MPS workders and neighboring railroads. On the basis of a plan for supplying empty grain-carrying cars and covered rail cars, data on the availability of grain in ports, and requisitions of grain loading stations, the grain group is developing plans for each day for loading and providing it with loading resources. Experienced dispatchers A. S. Antonyuk, A. G. Savin, A. M. Kokoshkin and other specialists are working on the group's staff.

/Development of Port Stations/ [in boldface]

In recent years, because of the disparity which intensified between processing capacities of port stations and berths of maritime commercial ports, difficulties arose at the railroad in providing for timely transshipment of cargoes being transported in mixed [ship] traffic. Considering that the principal port stations of the Ports of Odessa, Ilichevsk, Nikolayev and Kherson are located in the city boundaries and essentially are "blocked" by industrial and residential structures, we decided to implement a comprehensive modernization of existent track development and lay additional tracks, switches, and inclined tracks in order to increase maneuverability in operations. Operations were carried out to reinforce the track setup, increase the speed of traffic, and strengthen switching facilities. At the Port of Odessa station (at the berth which is specially configured for transshipping grain) an additional two tracks were laid, the track setup of the port elevator was modernized, tracks were added in the station's depot, and the scales setup was completely renovated and new scales were built. At the Ilichevsk station, new tracks became operational in a third area of the port, and station and connecting tracks were electrified. At the Belgorod-Dnestrovskiy station, a new transshipping grain complex was put into operation and the existent one was strengthened.

Considerable resources allocated to modernizing port stations were developed through the efforts of railroad workers themselves. Many operations were accomplished in close cooperation with workers of maritime commercial ports and procurement organizations. Local party and soviet organs rendered continuous assistance. All this provided an appreciable addition to the processing capability of stations and berths and made it possible to set up steady processing of cargoes. It also required resolving a number of matters connected with strengthening the traffic capacities of railroad sectors and approaches to maritime commercial ports. At the railroad in 1981-1982, more than 60 kilometers of station tracks and 30 kilometers of second track were laid, more than 700 kilometers of automatic block signaling and dispatcher interlocking became operational, and approximately 1,000 turnout points were equipped with electrical interlocking. Electrification of the Dolinskaya to Pomoshnaya line is coming to an end.

The Odessa maritime commercial port and Odessa port station comprehensive development plan worked out for the period until 1985 is an example of subcontractors' overall efforts in strengthening the material base. The port is developing berths, creating additional capacities for receiving export cargoes, and introducing new, highly efficient machinery. In their turn, railroad workers set up operations for modernizing the station's primary depot with subsequent electrical interlocking of switches and signals.

Fulfilling the overall comprehensive plan will make it possible to increase the large quantity of transferred rolling stock by 400 tons, reduce the staff of switchmen by 75 people, raise the carrying capacity of the station's access areas, and increase the number of simultaneous stops at berths and cargo operations being performed. Labor productivity will grow considerably.

As is generally known, providing for them in the industrial process is an important factor for efficient use of new production capacities. A new and more progressive processing method is bound to promote a strengthening of the material base and the introduction of new machinery and equipment. Therefore, while resolving the matter of providing for shipments, we are devoting a lot of attention to the timely correction and development of new industrial processes. In content, all of them are united with related kinds of transportation and enterprises.

Development of the Odessa transportation center's industrial process on the recommendations of scientists from the Dnepropetrovsk Institute of Engineers and Railroad Workers is nearing completion at the present time. Matters envisaged in it are the improvement of shipments and operations of the center's stations, the maritime commercial port, and the motor vehicle and industrial associations according to a unified industrial process.

Some elements of the new industrial process already are being put in practice. In 1983, a new organization was introduced for transshipping grain from ships to rail cars with the aid of grain handling equipment produced in the German Democratic Republic. An advantage of this equipment is that the cargo is weighed automatically according to an assigned program depending on the load capacity of the rail car being loaded. Loading can be done during inclement

and windy weather when the operation of gantry cranes has come to a halt. And, finally, the new equipment makes it possible to use the full load capacity of each rail car and it eliminates the necessity of weighing packaging materials and determining large quantities of cargo and its weight feed.

/Comprehensive Competition of Transportation Workers/ [in boldface]

It is known that the interaction and cooperation of collectives of related kinds of transportation and the organization and wide scope of labor rivalry play a decisive role in fulfilling the tasks set before the country's transportation by the party and the government. The comprehensive competition of the Odessa transportation workers--collectives of the Black Sea Maritime Steamship Company, the Odessa Railroad, and the Odessa Oblast administration of cargo-carrying motor vehicle transportation--and the initiative of which was approved by the CPSU Central Committee, is gaining strength, improving and becoming more extensive with each passing year.

As a rule in the past, if a competition contract was concluded it was only the station and the port, but now the entire transportation complex participates in it: the station, the maritime commercial port, the office of the "Soyuzvneshtrans" foreign trade association, and the motor vehicle enterprise. The conditions for competition are improved and unified dispatch shifts are created.

The range of contenders expanded considerably. Locomotive crews, workers at the technical maintenance center for rail cars, operators of the rail hump, and the port's shift mechanics are included in the unifed comprehensive shifts. In addition, measures were expanded for stimulating moral and material interests. In particular, an extra bonus was awarded to station workers in the amount of 20 percent for overfulfilling the plan in processing grain. Station workers are awarded a bonus from the maritime port fund for processing ships ahead of schedule. An important indicator such as the static load of a rail car was put into the terms of competition and that directs collectives of the comprehensive shifts towards efficiently using a car's load capacity and increasing their utilization.

It is important to note the fact that the comprehensive competition which was born at the Ilichevsk station and maritime commercial port found wide dissemination in enterprises of the agroindustrial complex and at construction organizations. This year the collectives of more than 700 enterprises, 170 stations, 8 maritime commercial ports, and 10 interbranch enterprises of industrial railroad transportation made joint commitments. With a view towards further extending comprehensive competition and strengthening the interaction of subcontractors, comprehensive plans for the social development of their collectives were developed for all of the railroad's most important transportation centers.

Contacts with science are being expanded. On the initiative of the Odessa Oblast committee of the Ukrainian Communist Party, scientists from the southern scientific center of the Ukrainian SSR Academy of Sciences and transportation institutes jointly with specialists of the transportation departments developed

a program for development of transportation in Odessa Oblast. It envisages the resolution of both general matters for enterprises of all related kinds of transportation working jointly at transportation centers and specifically according to each kind of transportation. The program provides for the mutually linked development of all transportation enterprises of the oblast as one of the decisive conditions for growth of volume, efficiency, and quality of shipping.

As a whole, guidance for putting the program into operation is entrusted to its coordinating council, and drawing up its subprograms is entrusted to the appropriate scientific and technical councils. Through a decision of the Odessa obkom party bureau, execution of program tasks is taken into account when summing up socialist competition in regions, cities and oblasts.

Development of competition among transportation workers provides for constantly raising the pace of cargo processing and shipping and improving the utilization of transportation facilities. In the first quarter of the current year, the station's collective at the Port of Odessa (the station chief is V. Ya. Shokot'ko) achieved good results. The loading plan was fulfilled by 109.1 percent, the task for static load of a rail car was overfulfilled by 2 tons, and rail car downtime as against the plan was reduced by 2.3 hours. The task for labor productivity was fulfilled by 104.3 percent and production cost was reduced by 4.8 percent.

While loading citrus using the consolidated method, the station's senior delivery agent A. A. Khovrun, working in close cooperation with the docker and machine operator V. A. Leonenko, loaded more than 100 rail cars in which more than 1,000 tons of additional cargo were shipped.

Results in the collective at Ilichevsk station (the station chief is A. G. Kukava) are quite good. In addition to the plan, the workers at Ilichevsk shipped more than 100,000 tons of grain and they overfulfilled the task for static load by 7.4 tons; as a result several thousand rail cars were released. Eight thousand rail cars were released by reducing the downtime for additional shipments.

The collective of switching dispatcher Ya. F. Kabantsov's Komsomol and youth shift became the winner in comprehensive socialist competition. Rail car downtime by shift as against the plan was reduced by 8.4 hours. Z. G. Ostapets, one of the station's best senior receiving and delivery agents and wearer of the Order of Friendship of Peoples, increased the static load of a rail car by 7.5 tons by using consolidated loading.

While noting the successes of the railroad's leading collectives, shortcomings which exist in organizing shipments of foodstuff cargoes should be noted also. Thus, introduction at the Port of Odessa of a new industrial process for transshipping grain with the use of automatic cargo handling equipment, which permits automatic weighing of the loaded grain, affords the opportunity to dispatch cars with the port's seals and to release the railroad's receiving and delivery agents. It is time for the Ministry of the Maritime Fleet jointly with the MPS to resolve this matter.

It is a good thing as well to use water routes more efficiently for transporting grain cargoes. Grain is presented for shipment on our railroad destined for enterprises in the Ukraine located in immediate proximity to ports which ship grain cargoes as well. For example, in the first quarter of the current year rail cars with grain which had traveled more than 800 kilometers over sections of 3 railroads were dispatched to the stations of Volnovakha and Debaltsevo on the Donetsk Railroad for enterprises in Donetsk and Voroshilovgrad Oblasts. It would have been possible at the same time to ship this grain through the ports of Zhdanov and Berdyansk.

The railroad administration appealed repeatedly to all participants in the shipping process with a proposal for shipping grain by "Volgo-Balt" and "Volga-Don" type ships from the ports of Odessa, Ilichevsk and Nikolayev to the ports of Zhdanov and Berdyansk for enterprises in Voroshilovgrad and Donetsk Oblasts, to the port of Feodosiya for Crimean Oblast, and to the port of Berdyansk and via the Dnepr River for Zaporozhye Oblast. However, until the present time, a decision has not been reached.

The subcontractors themselves also must eliminate a number of deficiencies in the operation. In particular, there is a requirement during compressed periods to strengthen technical communications facilities to incorporate an automated system for managing the shipment process in accordance with the experience of the Belorussian Railroad. At the present time, we still have a low reliability of information about the approach of cargoes and about what workers of other kinds of transportation and cargo consignees are telling us as true.

For the time being still, the experience of Moscow enterprises in repairing the bodies of rail cars is being introduced slowly at the railroad. This was talked about at the recently held seminars and conferences of party organization secretaries from railroad transportation enterprises and leaders of industrial enterprises and territorial party organs.

There is also a number of other organizational, industrial and technical measures which we will have to implement and towards the execution of which the organizational work of railroad and department managers and party, trade union, and Komsomol committees is directed.

Odessa main line workers are fully resolved to successfully fulfill the planned tasks for 1983 and of the 11th Five-Year Plan as a whole, and to increase and expedite shipping of foodstuffs and other cargoes.

9889
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VLADIVOSTOK PORT HAS GROWTH OF LOSSES DURING TRANSSHIPMENT

Moscow VODNYY TRANSPORT in Russian 6 Oct 83 p 2

[Article by L. Stukun, VODNYY TRANSPORT special correspondent: "While the Guilty Party Is Sought, Fiscal Losses Continue in the Port Of Vladivostok Through Losses Incurred in Cargo Handling"]

[Text] It goes without saying that the forward area of the Vladivostok Commercial Port is impressive. From a distance, as you enter Zolotoy Rog, the new container terminal can be seen: powerful gantry crane booms extend to the sea, and there are multi-colored stacks of containers. This is a distinctive visit card of the port, its pride, its future. Wharves of the cargo complexes for the Arctic and Kamchatka sectors, even though they are situated in the center of the port, create a different impression--the cargoes here are mixed, non-standard, the containers are not as bright, and somewhat smaller in size.

Three "Kamchadal" stand at the wharves of Number 5 Complex: the "Grigoriy Koval'chuk", the "Roslavl'", and the "Olyutorka", vessels of the Kamchatka Steamship Company, permanently assigned to work that line. The "Grigoriy Koval'chuk" has already loaded its holds with cargo and has settled in the background of empty neighbors who have just begun taking on their first tons. The crew of V. Dunayev, a well-known crew chief throughout the entire Far Eastern Basin, has finished work. It is break time. I explain to Valeriy Valentinovich my reason for the visit, concisely expressed: in recent years, the Vladivostok port has incurred large fiscal losses due to losses experienced in the transshipment of cargoes. For example, during the past year, the "write-offs" item was triple that suffered in 1981, amounting to slightly less than 218,000 rubles. Already in the first half of the current year, port personnel from Vladivostok have lost 115,000 rubles for this reason. Of this, the Kamchatka sector was responsible for 82,000 rubles. This situation is repeated year after year.

"The reason for the losses? Just take a look at what the shipper is doing." V. Dunayev took me along the wharf. The scene was not a pleasant one: warped packing materials, boxes with loose walls, containers somehow thrown together, and which are falling apart. "Is this really packing? What can we do? We load...The 'Koval'chuk' there is full of such 'goods'. It is clear that they will not arrive in one piece, and we, the port, will be accountable."

The crew chief summed it up: first and foremost, the shipper is guilty; he should be the starting point.

And so, the first instance--the shipper. It is possible, of course, to place full responsibility with him--in actuality, to this point in time, despite instructions and requirements from the GOST (State Standards), cargoes come into the port in non-standard packing, frequently without any packing, or with packing which is in poor condition. In a shell hastily knocked together from worthless lumber. Shipping markings are either done in a slovenly manner contrary to standards, without stencils, imprecisely, and with paint which the first rain will wash away, or are missing completely. Then the addressee must be established by the packing list, and markings redone for the port service. And what if both are totally missing?

Within the territory of Complex 5 there is a special area (in the port, it is called the "showcase of negligence") where, for several years the so-called undocumented cargoes have reposed, costing, it is assumed, thousands of rubles. No one is managing these cargoes. Does it turn out that they are unneeded? For 3 years, boxes containing equipment addressed to the Kamchatka "Sel'khoztekhnika" from the Moscow-area village of Klekotka have lain here. Neither party has inquired about them. Someone's powerful aircraft engine, cast iron pipes, concrete columns, and barrels containing who knows what and for whom. Owners, please respond! Alas, no answer. And there is no way to establish who the owners are.

I repeat that the shipper and consignee are culpable. But the port's operations services must be asked also as must the cargo department. After all, if the cargo is in port, it had to be accepted by someone. If it was accepted, then where are the appropriate documents? Unfortunately, such confusion with the shipping of cargoes without documents and documentation without cargo has become almost a "tradition" for the Vladivostok commercial port. A lack of control, a weak performance discipline, and an undemanding personnel policy all contribute to this situation.

But what is most curious about the matter? Port Chief N. Tsakh, at the August council attended by the chief of the steamship company, a session devoted to this very problem, declared that he was alarmed by the weak performance discipline of the average operations unit. The Chief of the Far East Steamship Company, Yu Vol'mer, also stated here that he was bothered by the situation at the port. Alarmed and bothered, but no evidence of any change is yet visible.

The plan for vessel loading to this point has not become law for the Vladivostok port workers. Today, this is one of the weakest areas for operations services of the entire Far East Steamship Company. Both the crews of the ships and the cargo consignees suffer from this. In the port of Vladivostok, this internal muddle (when virtually nothing remains of the cargo plan) irritates the sailors. Suffice it to say, the loading plan for the "Grigoriy Koval'chuk" was redone and rechecked three times. I saw the document, a sample of the everyday work of the Valdivostok port workers; it was marked all over with entries, items were crossed out and corrected. I can boldly assert that its final form differed by two-thirds when compared to the original.

A hitch has develped on the "Olyutorka". The crane booms are motionless. What is the problem? A fodder cargo has spoiled. The sailors do not want to accept it. A report is drawn up. "What caused the spoilage?" I ask the chief of the Number 5 Transshipment Complex, S. Yumanov.

"The cargo got wet" he responds, "the roof leaks on warehouse 51 in the cargo area. Yes, the management is aware of it, but there is no tar or equipment. All-in-all, the roof will not be repaired very soon."

For now, we are trying to protect bags of feed concentrate stacked in a warehouse with an unreliable cover against the moisture by fashioning a tarpaulin roof. Unfortunately, it is unreliable, judging from the sailors' testimony.

Yet another cause of losses. The port personnel do not approach their area of operations with the requisite proprietary attitude. I have already commented on the fact that the territory belonging to the Number 5 Complex is trashy, and that the cargoes are at times warehoused according to the "small heap" principle. The warehouse covered facilities and storage areas are in need of repair, considerable repair and major overhaul. In addition to that, it is obligatory that personnel be taught a sense of responsibility in all areas.

The feed concentrate was nevertheless moved from the damp warehouse into the holds of the "Olyutorka".

It is obvious that the causes of losses in transshipment of cargoes must be sought not only with the shippers, but in the port's "own backyard" as well. And to seek also to undertake programs to eliminate those losses. Until now, the Vladivostok commercial port and its management are primarily involved with searching for the reasons in the wrong quarter.

8851
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LACK OF CONTAINER REPAIR HAMPERS WEST SIBERIAN RIVER SHIPPING

Moscow VODNYY TRANSPORT in Russian 27 Sep 83 p 2

[Article by G. Vstavskiy, VODNYY TRANSPORT special correspondent, Tyumen - Omsk: "Where Can Containers Be 'Treated'?"]

[Text] Hanging in the central dispatch facility of the Ob -Irtysh United Steamship Company are some curious charts which depict fulfillment of monthly plans for every vessel's crew. Accounting for fleet operations is simple: if the team is fulfilling the plan, red cubes are colored in, and if it is not, a white space remains. To this point, unfortunately, there are more white spaces, particularly for the container fleet.

At present, more than thirty container lines with motor freighters, towboats, barges, and specialized container-carriers assigned, are operating in the Ob -Irtysh Basin. During navigation, this fleet must transport 260,000 tons of various cargoes. According to operational data, as of 1 September, more than one-half of the navigational plan had been accomplished, with 19,000 tons behind schedule. The container fleet did not operate optimally during the month of August. For the first 20-day period of the month, there was better than a 5-day lag behind schedule. It is not surprising, then, that many vessels engaged in containerized shipping are now among those lagging. There are numerous examples. The motorships "Tavda", ST-145, and ST-158 fulfilled the plan only during May, and the container-carrier "Loz'va" more than once failed to fulfill the plan. Motorships ST-142, ST-150, and ST-146 met their assigned tasks only in a single month--June. A similar picture with respect to plan fulfillment is being observed for other container-ships.

A legitimate question is raised here: why is shipping employing containers, to put it mildly, operating unsatisfactorily?

"There are many reasons," explained Nadezhda Aleksandrovna Aksenova, senior engineer for cargo service and commercial operations of the Ob'-Irtysh United Steamship Company, "first, many containers, to be more precise, in excess of 7,000 wintered in the northern basin area--in Nadym and Urengoy. They arrived in southern ports only during the peak navigation period. They still had to be cleaned and repaired. Therefore, a significant part of the container fleet operated on other lines, engaged with the transport of salt, pipe, and reinforced concrete items. Even now it is not uncommon that specialized vessels are pulled from containerized lines for other transport..."

A considerable reserve also lies in improved processing of the container pool, particularly in the basin's northern ports. The primary volume of containerized shipping today is accomplished by collectives in the Omsk and Tyumen ports. Here, specialized container wharves have been constructed. To accelerate the processing of containers in Omsk and Tyumen , consolidated-integrated teams have been organized. However, to accelerate turn-over of containers overall for the steamship company, it will be necessary to radically change the processing scheme for containers in the northern latitudes, where, in a majority of cases, they are converted to warehouses on the wharves. The norm for turn-over of a container in the Ob -Irtysh Basin must not exceed 13 days. But what is actually happening? In the port of Khanty-Mansiysk, this indicator equals 42 days, in Nadym, 132 days (ten times the norm!), in Ust -Akha, 37 days...Only in Omsk port is this indicator one-half the norm, 7 days.

"Container turn-over," continuing the conversation is the deputy chief, port service, for the shipping line, O. Lovkov, "can be considerably expedited, but a good repair base for the container inventory is needed. We still do not have that..."

In actuality, this problem is not yet resolved to this day in the basin. At the beginning of the current five-year plan, the Irtysh Steamship Company issued an order regarding "Measures To Further Develop and Increase Effectiveness of Containerized Shipping for 1982-1985". This document provided for the construction of shops in Omsk for routine repair and major overhaul of universal and high-tonnage containers, and for Tyumen', construction of a shop for routine repair of containers, and for construction of shops in the port of Tobol'sk for repair of the container pool.

Since that time, a great deal of water has flowed in the Irtysh, the first half of the five-year plan is history, the work listed is yet to be commenced in the shipping line. Moreover, with the establishment in Tyumen of the United Steamship Company, a new document is being prepared relating to the development of a repair base in the basin. But time is passing, and there is concern that the base for repairing containers will not be constructed during the current five-year plan.

So, just as in the past, thousands of containers will be doomed to spend extended downtimes awaiting routine repair and major overhaul. And, evidently it will not be an accident, that in the report for the first 6-month period, in the column "fulfilled", many enterprises will show zeroes. Among those are the ports of Nizhevartovsk, Salekhard, and Khanty-Mansiysk. Port workers from Nefteyugansk, Surgut, and Tyumen' failed to meet the 6-month tasks.

We will examine now how this problem is being resolved at several ports in the basin. In Tyumen , for example, the port workers have transferred all concerns for repair of containers to their allied associates, the railroad and freight shipping personnel. For the year, they are rehabilitating slightly more than 2,000 universal containers. The Tyumen workers have not begun to develop their own base. The port workers of Omsk are approaching the problem differently. A special team has been organized, an area allocated here for the repair of sea-going, river, and railroad containers. A specific plan has been established for the team, which incidentally, is being fulfilled.

As proof of the above, the team was recently awarded the honorific title, "Collective of Communist Labor" for high indicators in socialist competition. The outstanding team is led by the experienced organizer and skilled teacher, Anatoliy Konstantinovich Kachesov.

The problem of repairing large cargo containers warrants special discussion. Presently, 100 large-tonnage containers are in use in the Ob -Irtysh United Steamship Company. Many of them already require repair, but are no bases where this type of work can be completed in the basin. It is for this reason, for example, that 38 20-ton containers are sitting motionless in Surgut. There are similar cases in the ports at Omsk and Nizhnevartovsk.

Of course, to increase the effectiveness of containerized shipping and to expedite the delivery of cargoes from door to door, one repair base will not solve the problem. It is necessary to radically change the attitude of the operations personnel toward the shipping of containers, and to establish more stringent control over the movement of every container-carrier, of every "box". And finally, to build more rapidly new wharves and areas in the northern Basin. This argument is becoming particularly pressing, if one considers that the considered decision was made quite some time ago that all tare-piece, foodstuffs, and industrial goods addressed to northern consignees in the Ob-Irtysh basin will be shipped only in containers.

Mention must be made here again of the unused reserve to reduce turnover of containers, a concerned attitude toward this form of transportation. I saw in Omsk and Tyumen mountains of bent containers which had been in the northern latitudes of the basin. Doors torn off, bent, crumpled into accordion-like forms, bodies pierced, ripped bottoms--this is hardly an exhaustive list of the defects that containers coming into the southern ports have. If this outrage continues, then no repair base will be of help. It is time, evidently, to change the attitudes of both their owners and the consignees toward these containers. In such cases, it is effective to raise both administrative and material responsibility for negligence.

The resolution of these problems in conjunction with the creation of a high capacity specialized base for container repair on the Irtysh will aid considerably in accelerating the development of progressive shipping, and to more fully accommodate the growing cargo traffic destined for oil and gas extraction workers of the Tyumen northern area.

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OPERATIONS AT IGARKA RIVER PORT LESS THAN OPTIMAL

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[Article by G. Simkin, VODNYY TRANSPORT special correspondent: "To Succeed Before Ice-Over"]

[Text] Not far from the Kara Gates, we met several sea-going timber carriers, enroute from Igarka to England, Spain, and Syria with lumber materials. This year, Igarka is to ship 1,200,000 cubic meters of such cargoes to 18 countries. It is sensed that the pulse of the lumber-export navigation beats intensely, but precisely. Sawmill personnel, maritime, and river navigation workers are hurrying to ship planned cargoes before ice-over.

The Igarka port this year regrouped: the inner harbor did not see the continuous wall of barges and lighters with lumber materials, which by long tradition, had delayed here for 15-20 or more days. The causes for this were at times a shortage of sea-going tonnage, holding ships in the Kara Sea, schedule disruptions, and sometimes slow processing of the fleet by crews. Loading has been done on an around-the-clock basis, with all barges containing goods being shifted upon arrival by port tugs directly alongside the sea-going vessels, while at the same time dozens of lumber carriers in Igarka were being processed. Three such vessels were anchored at the wharves, and the remaining were loaded in the inner harbor.

"To this point, there has been no excess demurrage of a single barge for loading or other operations," relates the acting chief of the Igarka River Port, G. Filippanov. "We have already delivered here more than 150,000 tons of lumber materials from Lesosibirsk. The barges are almost immediately unloaded at the sea-going vessels. Their turn-around has been improved. We calculated that transshipment of river tonnage has accelerated currently by a factor of two. Our plan provided for receipt of more than 100,000 rubles from the mill personnel for frequent transfers of barges: at the roadstead, from one sea-going vessel to another and back. However, during the current navigation season, there have been virtually no such transfers. The lumber export navigation season has taken on an ordered, rhythmic nature.

The chief of the Igarka Service Department for Fleet Maintenance of the Northern Steamship Company, N. Proshutinskiy, involved for many years with Igarka lumber export, nods his head approvingly:

"At the beginning of the navigation season, we had disruptions. The first motorships were held in the Kara Sea at the edge of the ice. We had to await the arrival of an icebreaker. At the end of June, six "Moscow Pioneer" type motorships arrived in Igarka. Two of those were loaded immediately and left port, but the remaining vessels had to await the arrival of cargo transporters. The work of the sailors is often delayed by the lumber mill workers and river workers. Such delays have occurred, but to date not a single vessel has departed Igarka with demurrage. Moreover, several were loaded 100-170 hours ahead of schedule."

Documents support the words of N. Proshutinskiy. Daily, vessels in port are loaded with from 10 to 19,000 cubic meters of wood products. This is a considerable accomplishment, and a great deal here is dependent upon fine-tuning of the entire transportation network, primarily of all lumber exporting enterprises. Earlier, the "plague" of all navigation seasons were the hundreds of "layered" barges which came in from Lesosibirsk. A single barge contained goods for 3-4 vessels, the ship consignments were not organized in complete units, and at times were from numerous sea-going vessels converted to floating warehouses in Igarka. The tugs did were not able to transfer the barges. Having loaded one or two holds, sea-going vessels awaited the remainder of their cargo consignment. As a result, the lumber exporting navigation season ended at the end of November in 40 degrees of frost.

An interdepartmental conference at the Krasnoyarsk party kray committee, with deputy ministers of the maritime and river fleets, of lumber and paper industries, and foreign trade participating, a resolution was adopted to improve lumber exporting navigation on the Yenisey. An interdepartmental center was established in Lesosibirsk and tasked with resolving all problems arising at junctions, eliminating obstacles, and above all, curtail the off-loading of "layered" barges.

From the beginning of the current navigation season, the combines have focussed attention on a more precise selection of cargo consignments, and the local port has been allocated a tug to reposition barges from one wharf to another. This has aided in creating more stable consignments. The effort has gone rhythmically, with operations being delayed only by a shortage of barges and tugs for Yenisey Steamship Company workers. The flow of "layered" barges into Igarka has almost stopped. The value of the commercial schedule has increased.

The motorship "Petrokrepost'" is moored at one of the wharves. We arranged a meeting with its captain, Rezvan Ibragimovich Ibragimov. For almost 40 years, he has transported lumber for export from Igarka aboard various vessels. There was a barge alongside, loaded with packets, but transfer had not been done. I was told that the transfer was stopped at the direction of the captain. Ibragimov, tall, smart, and with animated, smiling eyes, in mood was intransigent. The transfer has been stopped and will not resume until waste in the operation is eliminated, and there is a great deal of waste.

"Externally, everything appears to be good," the captain ardently states, "The loading is progressing at a rapid rate, but it concerns me as to why my colleagues do not demand quality. Speed is not always beneficial. Our ship must deliver goods to three ports: Tunis, Sousse, and Sfax. The lumber materials must be stacked to ensure that minimum time is spent not only on loading,

but on unloading as well so as not to lose time in other ports. Even now there is re-sorted cargo in the ship's hold, poorly and unreliably marked. The loading does not conform to specifications. Low quality loading results in high losses, and I cannot accept this. Unfortunately, Igarka cannot use procedures designed for other ports. Not one time prior to operations was a loading order presented with all requisitions. Only with the receipt of such an order can loading be commenced, having the crew's directions as to when and what to load. The combine does not issue specifications, and we have to accept more than 7,000 cubic meters of wood products. I notified the port management in writing to unload all packets from the hold and to conduct a quality loading. It is extremely expensive for us to cope with apathy. For example, the motorship "Kapitan Glazychev", next to us, produces from 6 to 10,000 rubles net profit daily. How much is lost due to idle times in port for unloading?"

With me in the captain's cabin were representatives of the "Eksportles" All-Union Association, Yu Nikiforov, O. Pertat, and one of the managers of the Igarka combine, V. Kozlov. The conversation was nervous and animated. Captain Ibragimov very correctly and convincingly proved the rightness of his position. To illustrate, he invited his guests to see how the packets were loaded in the hold. I went down with them also. It was difficult to argue--the lumber materials were indeed loaded incorrectly. The representatives from "Eksportles" agreed that waste was allowed in this operation and proposed unloading the packets and to stack them in accordance with the directions of the captain.

I honestly admit that it was a pleasure for me to observe the actions of the captain, who demonstrated a responsible knowledge and proprietary interest in the results of the operation. However, that very same day, I was able to visit other vessels and observe that loading was not being carried out in a qualitative fashion. The ships' navigators were in agreement. None, however, lodged any serious protest, nor demanded as did Ibragimov, that order be instituted. The main thing was to leave port and put out to sea. This, obviously is praiseworthy, but one should take a pencil and calculate just what this hurry costs.

I related the incident on the "Petrokrepost'" to the director of the Igarka Lumber-Transshipment Combine, L. Alifirov. He is running his first navigation season here.

"It's the first I've heard of it", he answered. "Captain Ibragimov has raised a very important matter; I will meet with him today. I think that we can impart order here, improve the quality of loading operations, and to implement the procedure for completing the appropriate paperwork. Of course, processing of the ships is progressing better than during previous years. The rate of processing can still be improved, but from the first days, the river workers have delayed both us and the sea-going sailors: too few barges are provided to Lesosibirsk, and there are not enough tugs."

The director noted that considerable merit belonged to the interdepartmental center in improving operations by eliminating the "layered" barges. The outstanding training of the forman crews and improved cooperation with the Northern Steamship Company played major roles also. The combine now receives information from the line concerning ship arrivals for a month. It is easier now

to deploy people and equipment and to prepare goods. It would be desirable that the port have the same contacts with the Yenisey Steamship Company.

The motorship "Petrokrepost'" left port and set course for Tunis, and other vessels departed. In their places new vessels were moored, having arrived via the Northern Sea Route. Intensity of operations on the transportation lumber export lines continues to increase.

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