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# USSR Report

TRANSPORTATION

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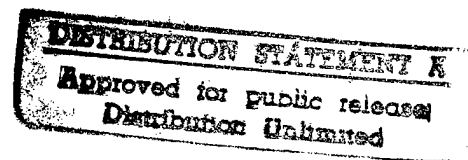
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TRANSPORTATION

2 March 1984



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2 March 1984

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## CIVIL AVIATION

### DESIGNER, SCIENTIST ON PROJECTED DEVELOPMENTS IN AVIATION

Moscow ZNAMYA in Russian No 9, Sep 83 pp 198-212

[D. Gay article: "Heaven and Earth. The Views of a Designer, Scientist, Pilot and Passenger on Aviation in the Eighties"]

[Excerpt] The Three Improvements.

Now, it is impossible to make a helicopter that would not fly. A bad aircraft is one that never goes into series production, and it differs from a good aircraft in several important respects: it has a slightly poorer flight performance and it is slightly heavier. This is the thought of the eminent designer M.L. Mil'. The same can be said about fixed-wing aircraft. The designers try to improve all the characteristics of aircraft.

"An aircraft that satisfies the most stringent requirements must include three improvements, namely in aerodynamics, engines and architecture, that is, configuration," says L.L. Selyakov. "And, of course, it must be reliable."

Leonid Leonidovich is an authority in aviation. When still a lad, at the age of 16 he attended the Central Institute of Aerodynamics, and since then he has been in aircraft building and now is already in "his second half-century of work seniority." He is a chief designer and a Lenin and State Prize laureate. He has been lucky: he designed aircraft under the leadership of V.M. Petlyakov, V.M. Myasishchev, A.S. Yakovlev, and then again with V.M. Myasishchev. The leaders of the most famous design bureaus have also been lucky to have such a close aide... For the last two decades Leonid Leonidovich has been bringing benefit to the famous "Tu" name. His is a complex character, easily ruffled, and he places the concept of honor and duty above everything and he follows this undeviatingly. In his work he values independence; he is impatient of petty tutelage and he does not fear responsibility. He takes much on himself.

Selyakov remembers the heavy, prewar Tupolev aircraft and the development and improvement of the PE-2, the dive-bomber that could outrun the fastest fighters. L.L. Selyakov participated in the design of the Myasishchev strategic bombers and a supersonic missile carrier...

By improvements in aerodynamics Selyakov means one thing: an aircraft should not be made to do extra work just because the most successful aerodynamic shape

has not been chosen. This is the concept of the aerodynamic quality of winged aircraft. This index must be traced, it must be directed. For example, when an aircraft moves along a flight path at a specific altitude and at a constant speed, fuel is burned and the entire aircraft and its center of gravity change... And the aerodynamic quality of the aircraft changes from what it was, and this means that it is necessary to alter the trim and accommodate to the altered flight conditions.

"It is possible to model the behavior of an aircraft under different conditions both analytically and with the aid of wind tunnels. Now absolutely everything is modeled," says Selyakov. "Modeling also makes it possible to determine with a high degree of accuracy on the ground the nature and 'habits' of a future winged aircraft and its aerodynamics."

"From today's standpoint," says Selyakov, "the firstborn of jet passenger aviation, the Tu-104, was not a profitable aircraft. It was fitted with uneconomical engines. But it suddenly increased speeds from 350 k.p.h. to 850 k.p.h. And it was comfortable. Fast and comfortable flying pleased everyone. The years passed. Turbojet and turboprop engines were improved. Major design and technological problems were resolved. The earlier turbojets gave way to engines that were much more economical. And so a new word appeared in world aircraft building--turbofans and helical-flow engines [vintoventilyatornyy dvigatel']".

"Equipment should be reliable in all respects. Not too long ago there were still cases where engines would fail in the air. However, aircraft were different--smaller and lighter. An aircraft could be saved by making a forced landing in a field or on the outskirts of a city. In general, equipment was trusted. Chkalov and Gromov dared to set off for America on only one engine. But we know that Valeriy Chkalov joked that 'one engine is a 100 percent risk, four engines are a four-hundred percent risk.' A telling joke.

"Sometimes accidents would happen because of some absurdity. For example, a lighter would fall out of the pocket of a flying jacket and find its way right into a crack in the cockpit floor and jam the controls. This is a prewar story. But here is an incident that occurred in the Fifties: an Mi-4 helicopter crashed because of a minor technical failure. A spring with an internal diameter of 4 millimeters was fitted in a certain place. In the control mechanisms (the hydraulic actuators) this spring was supposed to hold a small valve. But the proper attention was not given to it; indeed, no attention at all. And so the mechanic forgot to fit a cotter pin, a nut vibrated loose, a small bolt dropped, and the valve fell free, blocking the aperture for the hydraulic fluid. The hydraulic actuator failed, the helicopter became uncontrollable and crashed to the ground. A third unhappy incident occurred quite recently.

"Several years ago," writes M.L. Gallay, 'a Douglas DC-10 flying from Turkey to France crashed. The investigation of the crash showed the following sinister chain of events: because of the failure of a lock during flight at a high altitude the aircraft's freight compartment was depressurized; because of the resulting difference between pressure in the freight compartment and in the passenger section, the bulkhead separating these two compartments was deformed and warped;

the control rods mounted on this bulkhead were jammed and the aircraft became uncontrollable.... The main conclusion reached by the Douglas firm and the airline to which the aircraft belonged was that the lock of the freight compartment was to blame for everything, and consequently, in order to avoid any repetition of this kind of accident the lock should be reinforced; and this was done.... The least that can be said of this conclusion is that it suffers from being an incomplete solution. Of course the lock can be strengthened, but this is not the most important thing! The most important thing is that an aircraft does not have the right to crash just because a lock fails...'

"And this stems from a principle that has been accepted in aircraft building worldwide: an aircraft must be highly reliable in terms of 'normally reliable' elements. The accident with the DC-10 was very rare and, I would say, improper, because the exception should not occur!"

"It is possible to reduce the probability of the 'exception' to zero," L.L. Selyakov said, "only by duplication, or, as we say, by using backups for the various systems and control organs in an aircraft. A second, third or even fourth backup. If any element fails the reserve is instantaneously switched in. Of course, not all the elements in an aircraft--and there are thousands of them--are duplicated. But for the main systems on which flight safety directly depends, it is essential. Of course, given the highest quality for all items in general that make up an aircraft."

We see that it is already not just a matter of engines, but also of the "entire aircraft" and its reliability.

Leonid Leonidovich has spent a great deal of effort on improving the Tu-134 passenger aircraft. And the "material part" of this aircraft has been set up so that no accident has ever resulted from the failure of any specific assembly, component or control organ.

A designer has many cares. For example, what are the qualities that should be given to passenger aircraft so that they can fly in any weather?

Aeroflot is a commercial organization, its aircraft must operate profitably, and it is less profitable to see aircraft parked on the hard-standing, just standing there, and to hear the announcement at the airport: "The flight is delayed because of the weather..."

What is nonflying weather? At one time it was the real scourge of aviation. Now... Now we know that both the aircraft and the "ground" accepting them are equipped with automatic approach and landing equipment. The International Civil Aviation Organization (ICAO) has confirmed three categories of landing approach, depending on the weather--the cloud cover, fog, rain, snow cover and so forth. Landings are made under category 2 at many airports in the Soviet Union; this corresponds to a vertical visibility of at least 30 meters and a horizontal visibility of at least 400 meters. And so, for example, whereas before a Tu-134 used to have to make its landing approach with visibility of at least 100 meters per 1,000, now the figure is at least 60 to 80 meters. And now it lands when visibility is the minimum corresponding to ICAO category 2.

The higher category 3 is a blind landing in zero visibility, 100-percent automatic. For our aircraft this is still a thing of the future, although the near future. But facts are facts: the regularity of air movements is depending less and less on the weather.

In the early Seventies the average speed of our passenger aircraft was 500 k.p.h., but now it is more than 700 k.p.h. And the proportion of air movements done with the Tu-134, Tu-154 and Il-62 has increased to 70 percent. During the last decade the Tupolev aircraft alone carried 313 million passengers.

"The example of the Tu-134 is typical," L.L. Selyakov tells us. "This aircraft has been in service for more than 15 years. At first it carried 44 passengers. Then new configurations appeared, for 64, 72, 76 and 80 seats. Finally there were versions for 90 and 96 passengers. Increasing the number of seats in passenger aircraft in a sensible way is profitable because the increase in fuel consumption is only slight. For every aircraft that now flies, kerosene consumption is little more than half what it was previously. And the crew now includes three pilots instead of five. Aircraft service life is now great--20,000 flights or 30,000 flying hours. Our design bureau has made 12 versions of the Tu-134 alone. And each one is better and more reliable than the earlier versions. Even though the Tu-134 is already one of yesterday's aircraft.

"Designers are also modifying the Tu-154--now the most widely used aircraft in our civil aviation. Its specific fuel consumption is relatively low and its configuration ('architecture') is also being changed. The Tu-154M--the latest version--is equipped with extremely economical turbofan engines that are new for this class of aircraft. It is becoming possible to achieve a much greater flight duration. Comfort has also been improved: the cabin has been made more convenient and the seats are better spaced... This aircraft of the Seventies fully meets today's requirements.

"Of the Soviet aircraft of the Eighties the first named must be the Il-86 wide-bodied aircraft. It is clear that these aircraft are the most attractive. Each of them can replace two or three earlier passenger aircraft. The Il-86 is helping to eliminate the traditional congestion in passenger transportation during the peak summer period. And air traffic control is simpler when there is one aircraft in the air instead of two or three. In the final analysis the Il-86 is commercially profitable and meets the requirements of today's air travelers.

"As is known, The O.K. Antonov Design Bureau was the first group in the USSR to begin wide-bodied design work. We recall the An-22 'Antey.' Earlier, another of our remarkable designers, R.L. Bartini, had expressed his extremely interesting ideas and partially completed test aircraft. Having seen our "Antey" at the Le Bourget air show, the Americans were very upset. Boeing, Lockheed and Douglas became competitors in the struggle to develop their own military transport supersonic. Lockheed won the competition, having built, albeit not very successfully, the "Galaxy."

"Then the 490-seater Boeing-747 passenger aircraft appeared. Competitors hustled about, sensing a favorable situation--an enormous flow of tourists from Europe to the United States.... The Franco-German A-300 started to fly.

At first everything was fine. Then the load coefficients began to fall and fall. And in step with this the attitude toward wide-bodied technology began to change. The Americans, for example, recently built the 211-seater Boeing-767 (a scaled-down version of the airbus). It has a range of up to 5,000 kilometers and its fuel consumption is one-third less than earlier aircraft of the same class. At the same time they also started to produce a somewhat smaller version--the Boeing-757. The firm invested about \$4 billion to set up production. And the risk? Considerable! For the famous Boeing-747 has finally started to justify the costs 12 years after it went into production...

"The Soviet airbus now flies regularly on domestic routes--to Mineral'nyye Vody, Tashkent, Simferopol, Novosibirsk, Rostov-na-Donu, Leningrad. However, a problem is arising with its load factor. Are all seats always occupied? For it is impossible to fly at a loss. It is bad, impermissible when an aircraft that excites such delight sits at an airport waiting for people wanting to use its hospitable cabin. What is to be done? Cancel other flights in the schedule and combine all the passengers in the airbus and thus avoid sending it off half empty? This is obviously no solution. The movements schedule cannot be disrupted because this is to the detriment of passengers.

"The Americans, who know how to save the pennies, have built, I repeat, a smaller version of the airbus with 211 seats. Our Il-86 has 350 seats, which in and of itself is not bad considering the growing demand for air transportation. The Moscow aviators plan Il-86 flights to Frunze, Kemerovo, Ordzhonikidze. And sooner or later this aircraft will start regular flights to Sochi. But the essential question remains. No one can guarantee constant demand for the wide-bodied aircraft, so that all seats will be occupied. Or at very worst, 75 percent. The magnitude of air movements varies sharply from season to season, from month to month. And so the danger of unfilled scheduled flights arises."

About a year before the start of regular Il-86 flights, Leonid Leonidovich had shown me the manuscript of an article that he had written about the advisability of using wide-bodied aircraft in general, and in particular about the so-called flexible aircraft.

"Do you know what this is, the 'flexible' aircraft?" Leonid Leonidovich asked at that time, and he answered the question himself. "Its fuselage is built on a two-deck plan in a somewhat 'variable dimension' form. The upper deck is for comfortable seating of passengers and hand luggage. The lower deck is for baggage, mail and containerized freight. Operation of such an aircraft will always be profitable: the accompanying freight (in containers) compensates for the inadequate number of passengers. I think that the reason for the containers is clear. Containers mean mechanized loading and unloading operations at the airport. It has been calculated that even with only half a passenger load, profit from the operation of the 'flexible' aircraft is four times higher than profit from a regular aircraft that does not carry containers. And fuel is used to maximum effect.

"Of course, it looks easy enough on paper but the pitfalls should not be forgotten. Much is required for the 'flexible' aircraft: a service for the

accompanying freight, a containerized freight system. These services and systems must operate like clockwork, responding on a current basis to any changes in the situation. If freight is needed, then get it and load. And without running about for it, or inconvenience."

Now Leonid Leonidovich and I recall this conversation. Many of his predictions have been fulfilled. And the most important of them is that containerized freight on the Il-86 has become a normal thing. There are, of course, complications; thus, the freight flow is not very great on some of the routes, and all eight containers are not always filled... But no new undertaking is accomplished without complications... What is important is that the principle of the "flexible" aircraft has been upheld and implemented.

This directly answers the concerns of the party and government to improve the organization of the transportation of national economic freight and passengers.

L.L. Selyakov reckons that, judging from the long-term predictions, by the year 2000 the carriage just of freight should increase by a factor of eight. Already, he says, only one-third of such transportation is done by cargo aircraft abroad, while two-thirds of freight flies in the "holds" of regular and wide-bodied passenger aircraft. This is worth thinking about...

#### Projects and Paradoxes.

I asked Lenin and State Prize Laureate Doctor of Technical Sciences L.L. Kerber a question that was evidently not framed as well as it might have been: what is the same about aircraft design now and, say, 40 years ago?

"The only thing they have in common is that the final result of the effort is the construction of a flying apparatus. As for the rest, they have virtually nothing in common because a real revolution has taken place in aircraft building. Before, scientists and designers worried about, for example, the problems of static strength or flutter... Now, many very complicated new problems have appeared that cannot be compared with the old problems, while old problems are being solved in a new way. For instance, how can you compare the first postwar passenger aircraft like the Il-12 and the Il-14, and even the Li-2, which was known prewar, with today's airliners?"

L.L. Kerber touched on only some aspects of aircraft and helicopter design, but it was clear that it is a question of the complications typical of modern aircraft building.

"For example, the problem of the weight of an aircraft. At one time they organized competitions in the design bureau to 'save' so many kilograms on the individual elements of structures. The winners expected prizes. Now these problems are solved without competitions. Attempts are made to reduce the weight of entire assemblies and units using modern technical devices, automatics, electronics, the latest composite materials, and indices for strength, elasticity and plasticity that are several times better than those we use now, while weight is decreased. It is known that a total of only three percent of composite materials made it possible to reduce the weight of the new American Boeing-767

by 600 kilograms. It is no simple matter to get rid of these kilograms. Production technology for materials new to aviation is extremely complicated and expensive. But the future lies with them.

"It is possible to sharply increase the service life of aircraft using various methods. Some seem paradoxical. 'A fail-safe structure' is one in whose elements, for example, cracks have appeared. It would seem to be something unthinkable in aviation, but modern methods of calculation prove that in certain cases there is no need to fear this: the cracks have no effect at all on flight safety during the period between servicing; it is normal. But, of course, there are all kinds of cracks.

"I remember a passenger Tu-114 that had been to Havana, New York, Tokyo.... It had spent many hours in the air. There were various unexpected events, for example, at one point five children were born aboard the Tu-114, and the parents named the little boys after the aircraft commanders, and the little girls after the stewardesses. But that is by the by. The point is, the aircraft was structurally reliable [arkhinadezhnyy].

"But just the same... The four engines with their coaxial propellers had created so much vibration and such acoustic loads on the wings and fuselage that fatigue cracks appeared and the aircraft had to be written off. We see that there are cracks and there are cracks.

"Being able to determine without error which microfailures are dangerous and which are not is now possible with the aid of computers, with whose help the most refined computations are made for all the parts of an aircraft. The aim is to know structural stress under various flight conditions, in each specific form and in aggregate.

"Today's aircraft designers make confident use of the mathematical apparatus; in contact with the scientists they make use of an automated design system right through from the initial calculations to the final design.

"It is the same in the technology of aircraft construction. Data recorded with the aid of computers are being used with increasing frequency to control numerically programmed machine tools at the leading enterprises.

"Promising new directions have been opened up in aerodynamics and engine building. When he talks about these things a specialist first of all mentions work on supercritical wing sections, high-bypass engines, boundary layer studies...

"What are we talking about?

"Supercritical wing sections make it possible to distribute pressure across a wing evenly and reduce so-called wave drag and in the final analysis improve the aerodynamics. An aircraft with these kinds of wing sections is highly efficient and economical. Supercritical wing sections will be typical for the passenger aircraft developed during the Eighties.

"Without going into the technical details it can be said that the so-called high-bypass engines, which make efficient use of fuel, have now been recognized

as extremely rational. The helical-flow engines are also promising. Many people are astonished: going back to propellers? But these are qualitatively different engines from the earlier ones. The propellers have a large number of broad blades. But a number of questions arising in connection with the development of engines of this type remain unsolved.

"I recall a recent conversation with a friend of mine, an aviation engineer, who defends what from my viewpoint is a curious viewpoint:

"A highly efficient engine can be obtained either by increasing its efficiency and reducing fuel consumption or... by increasing its service life. I prefer the second possibility. You doubt it? In the journal IZOBRETATEL' I RATSIONALIZATOR academician A.A. Mikulin published an article where he shows that not everything about "engineering" is economical and that building in a long service life in an article promises wonderful prospects. From his standpoint, extending the service life of engines is more expedient than developing engines that are designed merely to save fuel.'

"In my argument with my friend we could reach no agreement. But I think that the scientific, design, and engineering quest should, in any event, be diverse. One direction does not abolish or replace another.

"And now a few words about the direction of boundary layer studies.

"During flight the boundary layer as it were sticks to the wings, fuselage and tail section of an aircraft. As is known, so-called laminar drag in the boundary layer is less than turbulent drag. Consequently, it is worth retaining it. And given the same fuel consumption, the duration of a flight can be considerably increased.

"All this is well known. The question is: how to retain the profitable condition? The whole world is thinking about this.

"The path has been determined: find ways of employing suction or removal of part of the boundary layer, creating lamination artificially. It is true that up to now no acceptable design decision has been found. But the idea is so good that sooner or later it will be done."

We also talked about the prospects for supersonic passenger aviation, and I showed Leonid L'vovich Kerber an extract from a recent article in the French journal POINT that was reprinted by NOVOSTI. It discusses the unhappy fate of the Anglo-French Concorde.

This is what it says: "Concorde is dying. This supersonic passenger airliner goes out increasingly rarely on the air routes.

"After years of glory and polemics, its end is drawing nigh--a kind of death under anesthesia.

"From April last year Concorde flights from Paris to Rio de Janeiro and Caracas were curtailed, and from November the flights to Washington and Mexico. At

that time, the flights to Washington were filled 51 percent, and the flights to Mexico even less--43.7 percent. During the year ticket sales slumped 6.7 percent for aircraft flying between Paris and New York...

"Things are no better across the English Channel. The Concorde flights to Singapore and Bahrain have been canceled. Now these airliners fly only to North America. The company is making use of a government subsidy to the tune of 19 million pounds sterling.

"What are the reasons for such a sad ending?

"First, bad luck. The repeated oil price increases have made operation of the aircraft extremely costly; it uses as much fuel to transport 100 passengers as the Boeing-747 does to carry almost 500. In addition this airliner, which develops a very high noise level, started to be operated at a time when the environmental protection movement was gaining strength.

"Second, a dirty game. American firms, which do not have an aircraft capable of competing with Concorde, have started to put all kinds of obstacles in its path.

"Third, obsolescence. Concorde is fitted with engines that run at the limit of their capabilities. They were produced using obsolete technology that cannot be seriously improved.

"What is suprising is not that the end of Concorde has been repeatedly predicted but that it stays alive. This has been done for prestige purposes; using taxpayers' money the government is covering 90 percent of the operating losses and it has completely cancelled all debts. In accordance with the contract between Air France and the state, the latter must cover costs even if the airliner becomes a museum piece and is grounded.

"Concorde has no future and no present. The only thing that remains to be done is make the decision, just like when efforts are finally abandoned to save a dying man in a hospital bed."

"Supersonic technology in civil aviation has definitely been unlucky," Leonid L'vovich comments. "It was developed before the start of the fuel and energy crisis and then the fruits of its own inopportune birth were depressed. I think that despite the objective difficulties, there is a future for this technology. The designers do not retreat once they have attained a speed. And from the viewpoint of the passenger, it is tempting and attractive to fly, say, to Khabarovsk in three-and-a-half hours."

Tempting and attractive. Very accurately put. I was aboard the Soviet Tu-144 airliner on one of its test flights.

We took off early in the morning and climbed up into the stratosphere to an altitude of about 20 kilometers. The black of the sky with its very bright and seemingly very near stars, just like in a planetarium, shone through the

window. With feelings such as these, the passenger does prefer a supersonic aircraft above all others! Plus, of course, the significant saving in time.

But supersonic flights are too costly compared with our present regular airliners. Fuel is expensive. Should the ticket prices be increased? Or should, say, the engines be improved? Evidently the latter is preferable. Specialists are now working on new engines for supersonic aircraft.

It is also apropos to remember the discussion about the significant harm caused to the environment by supersonic passenger aircraft. The researchers' conclusion is that although the problem in general still remains, flights by supersonic passenger aircraft do not result in any visible environmental changes. They do not destroy the ozone layer, and the bangs when they go supersonic and the other noise do not affect the normal life of people living either in cities or the countryside. The dangers are more apparent than real.

And if we look further ahead to the year 2000... Here, for example, is what the aviation expert A.N. Ponomarev writes about this:

"The new generation of winged machines to which the foreign press is giving so much attention will be aircraft that are different in terms of speeds, size and technical characteristics. From regular aircraft like today's, flying at speeds of 1,000 k.p.h. and carrying 100 to 200 passengers, to giants capable of carrying almost 1,000 people into the stratosphere at speeds up to 10,000 k.p.h. From flights made at altitudes of 10 to 15 kilometers to those at 25 to 100 kilometers. But only supersonic aircraft flying at speeds of 6 to 10 times the speed of sound will be capable of the latter."

Evidently the aircraft of the future will use liquid hydrogen fuel. Compared with today's power plants, the engines operating on liquid hydrogen fuel will have exhausts containing twice as much water and only half as much nitrogen oxides.

The thoughts of the scientists and designers are turned not only toward the supersonic future. Extremely curious experimental apparatuses of various kinds are being developed. For example, the Solar Challenger, an aircraft with an engine that operates on solar power. Thousands of battery elements that trap solar rays are mounted on the wings and horizontal tail. On 7 July 1981 the Solar Challenger flew from Paris to London. It took 5 hours and 23 minutes at a maximum altitude of 3,600 meters and an average speed of 60 k.p.h.

What a brilliant engineering achievement! And this is just experiments. This is how it always starts.

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## CIVIL AVIATION

### HUNGARIAN OFFICIALS COMMENT ON PERFORMANCE OF SOVIET-BUILT AIRCRAFT

Moscow SOVIET EXPORT in English No 6(147), Nov-Dec 83 pp 18-22

[Interviews with Jozsef Fazekas, Malev Hungarian Airlines first deputy general director; Arpad Szasz, Agronomy Department manager; and chief pilot Laszlo Pusztai by SOVIET EXPORT special correspondent A. Andryuschenko: "Soviet-Made Aircraft in Hungary"; date, place and occasion not given]

[Text] Correspondent: How many Soviet-made airplanes are operated by the airline and on which flights?

J. Fazekas: Today, Malev's fleet consists of ten Tu-154's, eight Tu-134's, and four Il-18's.

Malev's routes total about 50 thousand kilometers. They link Budapest with 40 cities in 27 European and Middle East countries. Lately, we have been carrying over a million passengers every year. Traffic is steadily growing by 10 percent to 12 percent annually.

Correspondent: Your planes are kept very busy, then?

J. Fazekas: Each plane logs from 1,800 to 2,000 flying hours a year, which gives an average utilization factor of 51 percent. Of course, this figure is a great deal higher in summer. True, some routes handle a maximum amount of traffic all the year round--these are the flights to Moscow, Kiev, Berlin, and Sofia, for instance.

Correspondent: You say Malev's traffic is showing a steady upturn every year. And this despite stiff competition in Europe. So, you are not only keeping your traditional customers but are gaining many new ones. How do you manage this?

J. Fazekas: Yes, we do have a number of strong rivals in our region. Not counting airlines in the socialist countries, we have to compete with old-established West European airlines.

Tu-154's are competitive in many respects with the airliners of capitalist firms.

So, the answer is very simple: it is Soviet-made liners that have attracted so many passengers and helped us maintain flights on schedule and ensure comfort on the journey. Also, bad weather is seldom an obstacle for the Tu-134 or Tu-154--both can cope with extremely difficult conditions.

We are going to stake on the Tu-154 in the future, too. We are looking forward to flying its later version, the Tu-154M whose engines burn 20 percent less fuel. We understand it has recently been put on the export list.

Correspondent: Do you keep in touch with the Tupolev Design Office and the manufacturers of this plane? If so, how do you benefit from this?

J. Fazekas: Yes, we have very fruitful co-operation that shows itself in many ways. For example, we have jointly laid out the Tu-154B-2's cockpit to accommodate a crew of three. The initiative was ours and the Tupolev Design Office met us halfway. So, today this layout is in use by all the carriers flying the jet.

Another example is the maintenance of Tu-154's according to their actual serviceability, no matter how many hours they have logged. Using non-destructive testing methods and computers, we now check the units without tearing them down and, depending on their performance, decide whether they should be replaced or repaired. This saves us a good deal of time and money.

Recently, on analysing our experience with the Tu-154, we asked the Design Office for permission to extend its life in terms of the number of landings. As a result, five thousand more landings may now be performed within the allocated 30,000 hours of service.

Now for our co-operation with the manufacturers. For one thing, they help us solve various problems associated with engine performance. We run regular checks both in the air and on the ground, analyse the results on computers, and report any off-normal conditions to the manufacturers. Then, pooling our expertise, we work out recommendations to be followed in further service.

Another illustration is the new wash-down technique for the gas-air passage of the Tu-134's D-30 engine. The method adopted has turned out so effective that today CSA of Czechoslovakia and Lot of Poland send in their planes for engine wash-down and tuning.

Correspondent: Will you tell us a few words about how Malev trains its flying and ground personnel, please?

J. Fazekas: We get a good deal of help from AVIAEXPORT. The association arranges for the training of our personnel at Aeroflot's best schools. Our pilots receive their basic training in Hungary. Then, most of them are sent for flight practice on Tu-134's and Tu-154's to the Ulyanovsk Higher Flying School in the USSR. As a matter of fact, a sizeable proportion of our engineers and technicians have been trained there, too. Many of Malev's specialists are graduates of the Kiev Civil Aviation Engineering Institute

and aviation colleges in Leningrad, Riga, and Aktyubinsk. We are more than satisfied with the training.

Correspondent: Malev's relations with AVIAEXPORT, aren't confined to the training of personnel I imagine?

J. Fazekas: By no means. We've been co-operating with AVIAEXPORT since it was established over 20 years ago.

An efficient system of spares supply is a must if an operator is going to run planes safely and economically. In collaboration with AVIAEXPORT and Aviazagranpostavka, we are continually developing and improving such a system and using computers on an ever wider scale.

I've already touched upon the training of Malev's personnel. There's one point, however, I would like to make. For continuous teaching and practice, it certainly pays to have a Tu-154 flight simulator on the spot. We have bought one through AVIAEXPORT whose experts helped us install and adjust it, together with a Luch-74 flight-procedure monitoring system.

Last year, we built a new airplane maintenance base. It will help us cut down the turn-around time for maintenance and boost aircraft utilization. Here, too, the latest equipment and all the necessary documentation have been supplied by AVIAEXPORT.

As for the overhaul of aircraft, engines, and various units and systems--all this is done at Soviet factories under contracts with AVIAEXPORT. I must say that repair service keeps strictly to time and the quality deserves an A-1 mark.

#### Soviet-Made Helicopters Are Indispensable for Many Farming Jobs

Malev is not the only user of Soviet-made aircraft in Hungary. Seventy out of the hundred Ka-26 utility helicopters sold to Hungary by AVIAEXPORT are operated by the Aviation Service of the Hungarian Ministry of Agriculture and Food Industry which has an overhaul depot of its own set up with assistance from AVIAEXPORT.

Here is an interview with Arpad Szasz, Agronomy Department Manager, and Laszlo Pusztai, Chief Pilot.

Correspondent: What farming jobs are Ka-26's used on in Hungary?

A. Szasz: The agricultural season of the Ka-26 lasts for about eight months, beginning with early spring. From mid-March to April, the 'copters top-dress cereals. Then, till the end of May, they are used for the chemical weeding of winter wheat. After that, half of them spray vineyards, and the rest continue spraying field crops. Vineyard spraying goes on till the end of August when it gives way to sunflower dusting which ends late in October...

On the average, the Ka-26's log 500 to 600 flying hours each, and some even 800.

We've been operating Ka-26's for more than ten years now. In 1970, Balaton Boglar, a state-owned farm, test-operated them in vineyard dusting and spraying. And the performance they showed was well beyond our expectation.

Since then we've bought many more helicopters and considerably extended their service range, although vine still dominates. Ka-26's are now treating about 60 percent of vineyards in this country.

Correspondent: Why did the Aviation Service choose the Ka-26?

A. Szasz: Mostly because of its coaxial rotor system. For one thing, it creates swirling air streams which help distribute pesticides over the plant foliage from top to bottom. For another, the pesticides cover either side of the leaves or blades. This cannot be done by single-rotor helicopters, let alone airplanes.

L. Pusztai: Another advantage of the coaxial rotors is excellent manoeuvrability. With the Ka-26, it is safe to work close to forest shelterbelts and power supply lines or in the mountains. You would never dare to do that with an airplane or a tail-rotor helicopter.

Also, an airplane needs more space not only in the air, but also on the ground--you can't imagine one without a runway. In contrast, the Ka-26 can be parked as close to the field as possible. In fact, it can land anywhere you want.

Correspondent: Being a chief pilot, you must have handled many types of planes and helicopters. What can you say about the Ka-26?

L. Pusztai: I can say that the Ka-26 is one of the most reliable and easy to handle whirlybirds.

It has an excellent flight performance. For instance, it has a remarkable speed range from 30 to 110 km/h and can fly at a mere one metre above the plants.

It has a comfortable cabin completely isolated from the externally mounted implements, because the chopper is built as a tool carrier. It has an air blower-separator to prevent pesticides getting into the cabin.

Correspondent: Where else, apart from farming, do you use Ka-26's?

L. Pusztai: Well, I can mention aerophotography, game keeping, flood reconnaissance, mosquito control in floodlands, chemical weeding of woods...

A. Szasz: Also, Ka-26's deliver spare parts for machinery to localities difficult of access, lay cables in marshland, land blasting parties to fight ice-jams on the Danube, control traffic on motorways, serve as ambulances, and so on. This is a utility chopper all right.

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## CIVIL AVIATION

### SUCCESSFUL ARCTIC TESTING OF KA-32 HELICOPTER

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 5 Oct 83 p 4

[Article by A. Dyatlov: "At the Air Pier. Testing of the New KA-32 Transport Helicopter Is Complete"]

[Text] It is easy to imagine: the southern shore of the Arctic Ocean, a tiny scientific station on a little island. Three men, a weather site, a small house with a radio station. Once a year, during the short season when navigation is possible, ships arrive from Murmansk. And probably no one waits for them like the winterers do. For a ship means mail, fuel, instruments, products for the station. In short, its life for the next overwintering, until the next convoy.

Nevertheless, any polar inhabitant will tell you that the ships, appearing one morning from out of the dank fog, bring with them not only the happiness of meetings, not only the parcels from back home, but more exhausting work also.

Imagine four polar inhabitants and the crew of a maritime "freighter," who must carry on their own shoulders and with their own hands dozens of tons of freight from the ship to the station as quickly as possible. It is fine as far as the shore; they move on launches and scows, even across stormy water. And from the shore? There are no tractors there: the meteorologists carry the load on their own shoulders. Across the surf, across the stones, up the rocks on the beach, go the cement, food, letters, instruments fuel and construction materials, just as they have for 60 years (ever since the Northern Sea Route has been in existence), thrown across the shoulders of the winterers. If they are lucky it takes several days. If there is a gale, several weeks. And this costs the convoy money, waiting until the unloading is finished, losing time. For it has to visit dozens of such stations.

It would seem that there is no way to help the polar inhabitants. You cannot construct a jetty with cranes every winter.

Nevertheless, help is on its way! In the form of the KA-32 helicopter. It is standing on the apron at a Moscow airport under an autumn shower, resting. It has the right to do this. For several weeks it has been organizing a real holiday for the polar inhabitants of Ostrov Medvezhiy and has been the real hero of an unusual experiment.

Test pilot G. Provalov of the State Scientific Research Institute of Civil Aviation took off from Ostrov Dikson and flew to a rendezvous point with one of the ships from the convoy that had just arrived off Ostrov Medvezhiy. As arranged, dry freight was waiting there off the island. Some of the freight in the hold included cement, fuel, produce; already a huge pile was waiting on the deck. The helicopter commander called on the radio for permission to start work. He heard the command "commence" and went directly to the ship.

A minute later the astonished winterers on Ostrov Medvezhiy saw the helicopter jauntily snatch a freight container from the deck and set off immediately for the island. Above the water, above the stones on the shore, above the rocks. The container hung on a thin rope beneath its fuselage.

No more than 5 minutes elapsed before the helicopter returned to the ship for more freight. And instead of everyone aboard the ship and ashore working, there were only a few people: four of them lashed the containers on the deck, and four more accepted them at the very door of the expedition's house. What did the others do, for their hands were not full? Correct: they were ecstatically waving to the helicopter.

"However, they did not wave for long," said G. Pisklov, section chief at the State Scientific Research Institute of Civil Aviation, "because our KA-32 helicopter finished its business surprisingly quickly. In a total of only 30 trips it managed to carry across almost 200 tons of freight earmarked for the station. There were even moments when our flight controller B. Okhotnikov, who was operating the radio aboard the ship, asked the pilots to 'hold off for a while!' and the helicopter obediently made 'extra' circles above the ship. Otherwise the crane operators would have been unable to unload the containers from the hold onto the deck."

"If everything was so simple, why have helicopters not been used before to unload convoys?"

"They could have, but it is complicated. The fact is that only the KA-32 is ideal for this. Even externally. Here, look."

I looked around at the KA-32. It is squat, looking more like a freight truck with two rotors on its roof than a helicopter. It does not have the usual "tail." The pilots sit high in the cockpit, like sitting on a throne, and their field of vision is excellent. I remembered what the first test pilot of the KA-32, helicopter subdivision commander V. Andreyev, had told me about it.

"Even we who had flown in many helicopters, were amazed with this one. First, this 'little one' has fine engines. Second, in it you can maintain a true course above both tundra and ice, where there are no radio beacons or air traffic controllers. The onboard systems look after this very well." Andreyev spoke accurately and calmly, like a test pilot does, but even so he had been unable to restrain himself. "It is a real polar helicopter. A real gem of a helicopter!"

And V.G. Smykov, deputy chief of the institute, added: "The experiment conducted by our institute was so successful that it has been decided that helicopters

will be included in future convoys. And the 'whirlybird trucks' will fly from the deck to unload the convoy along its route."

Welcome your helper, polar inhabitants!

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## CIVIL AVIATION

### NEW WORLD RECORDS SET BY AN-72 TRANSPORT

Moscow PRAVDA in Russian 16 Nov 83 p 6

[Article by PRAVDA correspondent O. Gusev: "Record Flights. World Records Set by Soviet Pilots"]

[Text] The new AN-72 jet transport landed yesterday at Kiev's Borispol airport. It had been flown by a crew consisting of Marina Popovich and Sergey Maksimov and flight eningeer Tamara Medvedeva. At a press conference the pilots talked about the series of record flights aboard this aircraft.

Before November this year the AN-72, which PRAVDA has already talked about, had climbed to altitudes not exceeding 11,000 meters. Specialists analyzed the reserves of the new multipurpose aircraft and all reached the conclusion that the AN-72 can and should fly even higher. The more so since theoretically this possibility was not excluded. But plans are one thing and practical implementation another. Maximov and Popovich were given permission to try for a new altitude.

Shortly before takeoff the senior engineer B. Borash met them at the airport. Some advice and remarks, a few notes on a pad and--Marina Lavrent'yevna, who was the captain during the first flight, went hurrying off to the apron with her colleagues.

On this first record-attempt flight the commander flew the aircraft empty. It was important for the crew members to determine how it would behave at the limits of the engines' altitude.

... The short report was received in the tower: "Ready for takeoff!" Through the windows the unusual, sleek lines appeared; the engines are mounted high above the wings. A short, energetic takeoff run and the AN-72 was in the air.

Together with the pilots, ground services specialists and sports officials we observed the aircraft as it formed a white contrail in the frosty blue sky and became just a tiny dot.

"Flight normal!" We hear the commander's voice through the loudspeaker. The last few hundred meters to the planned "ceiling" were not the most difficult

thing. It is important not only to get there but also hold the aircraft for a certain time at maximum altitude, and this was 13,410 meters, while strictly observing a given speed.

Explaining the difficulties of the flight, leader of the flying subdivision I.D. Babenko compared the final stage, in terms of stress, with that experienced, for example, by a car driver who has been given the task of maintaining a speed of 100 kilometers an hour with a permissible deviation of only plus or minus 1 kilometer.

"Mission complete." We hear Marina Lavrent'yevna. "Request permission to descend."

Then another mission. The AN-72 maintained a "holding pattern" for 90 seconds at an altitude of 12,980 meters. And then this STOL aircraft climbed to 13,100 meters carrying commercial loads of one and two tons.

We conducted a short interview on the airfield immediately after the landing. Veteran of the Great Patriotic War, former test pilot and participant in the preparations for the record flights, M.B. Tarasyuk: "The three fliers managed to cope fully with this complex mission. A two-man crew can handle the aircraft just as successfully, improved equipment helps them."

"It is pleasing to hear good comments from people who used to fly the AN-24," said general designer O.K. Antonov. "The new aircraft is simple to handle. Marina Lavrent'yevna Popovich has once again shown in practice that it is possible not only to rapidly feel at home with this latest innovation from our special design bureau but also establish a number of new world records with the AN-72..."

Material on the achievements of the Soviet pilots is being sent to Paris to the International Aviation Federation for registration as world records.

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## CIVIL AVIATION

### IL-76 USED SUCCESSFULLY FOR ARCTIC CARGO AIR DROPS

Moscow VOZDUSHNYY TRANSPORT in Russian 15 Dec 83 p 4

[Article by special correspondent V. Tamarin: "An Arctic Flight. The Chronicle of a Unique Flight by the IL-76 in the High Latitudes"]

[Text] Moscow--Magadan--Pevek--North Pole--Moscow--I was to board the IL-76 transport in Magadan, where it had arrived with a cargo of products for winterers. And so the first part of the flight was in a comfortable Il-62. However, when I boarded the Il-76 in Magadan I felt no difference in the comfort. But we were on an experimental flight; we had work ahead of us.

On 7 December the leaders of the flight to conduct the air cargo drop for the SP-25 [drifting polar scientific research station] Zhorzh Konstantinovich Shishkin and the chief of operations for scientific backup for the program, first deputy chief of the State Scientific Research Institute for Civil Aviation Vikto Georgiyevich Smykov, introduced me to the crew, the technical team and the cargo-drop group.

The aircraft commander was Mikhail Kuznetsov, honored pilot of the USSR and chief Il-76 test pilot, who flew the aircraft for its certification on the Aeroflot routes.

The second pilot's seat was occupied by Zh. Shishkin. The navigator was chief test navigator for this aircraft, Igor' Abdulayev. Other crew members--also Il-76 specialists--included flight engineer Anatoliy Bragin and radio operator Vasiliy Gerasimov. Vasiliy Rulyakov was flying as the second radio operator; he has great experience in long-range flying. As, indeed, have all the crew members.

Preparations for the execution of the high-latitude flight had been entrusted to the State Scientific Research Institute of Civil Aviation on instructions from the Ministry of Civil Aviation. During the flight the institute was represented by the chief engineer for the Il-76, Aleksandr Bol'shakov, and I. Kurzenev was responsible for the positioning and preparation of the cargo for the drop, and Ye. Lukashenko for the parachutes and emergency rescue equipment. V. Zhuchkov was responsible for the method used for the drop operations.

The group of experimenters also included technicians N. Yegorenkov, V. Vasil'yev and A. Aganin. Specialists on navigational equipment V. Belyavtsev and V.

Levin from the Automated ATC Scientific Experimental Station, A. Yegutko and V. Pomyatoykin from the special design bureau imeni S.V. Il'yushin, movie cameraman A. Goryachev, and G. Artem'yev, section chief for the "Sever-35" high-latitude air expedition, and S. Kessel' the chief of "Sever-35", both from the Arctic and Antarctic Scientific Research Institute, were organizationally attached to the group. A regular series Il-76 was selected to convey the expedition. But why precisely the Il-76?

Aleksandr Bol'shakov explains.

The Il-76 had to be tested for a quick cargo drop at very low altitudes, namely from 45 meters without the parachute and from 150 meters with parachutes. This complicated work can be done not only via the loading ramp at the back doors but also simultaneously through two automatically opening doors on the side of the aircraft. The design features of the aircraft make it possible to mount a special attachment for dumping the cargo--a pallet on rollers. It was prepared for operation by specialists at the State Scientific Research Institute of Civil Aviation jointly with representatives from the special design bureau imeni S.V. Il'yushin. In general I would like to note that at the special design bureau they offered great methodological and consultative help in preparing the aircraft."

In Magadan, while they were making the aircraft ready for the operation on instructions from the commander of the aviation enterprise N. Propkopenko, I talked with Gennadiy Artem'yev, section chief for scientific expeditions at the Arctic and Antarctic Scientific Research Institute.

"The state flag of the USSR was hoisted on the Severnyy Polyus-25 station on 16 May 1981," he said. "Since then the ice has drifted into the western hemisphere, and on 7 December its coordinates were 85 degrees 48 minutes 9 seconds north and 133 degrees 56 minutes west. That is, it is located outside the range of the aircraft operating in the Arctic.

"The third crew of polar explorers on the station is engaged in the study of a little-investigated region: weather observations, processing satellite weather data, studying ice physics and conducting hydrological studies. This information is extraordinarily valuable. And so, despite the small size of the ice floe it was decided to retain the station. And so that the polar explorers can last until April, when the work will end, they need food and spares for scientific and technical equipment. They have been waiting for a long time for mail and letters, news from home. The total amount of cargo that we have prepared is about 5 tons. The number of loads is 33."

8 December. Morning. After flying 1,500 kilometers we land at Pevek. The commander of the Chaunskiy aviation enterprise N. Perevalov has organized everything for the crew's rest and servicing of the aircraft. When we went into the aircraft servicing area Mikhail Kuznetsov was anxious, and, as if thinking out loud, he said: "Now we have to deal with many unknown problems..."

"What kind?" I decided to ask.

"Find the station, make the drop..."

For almost 9 hours aircraft technicians German Cherkasov, Igor' Baranov, Mikhail Rudakov, Aleksandr Sidorov and Aleksandr Kiselev worked without a break. They rested only when the crew switched on the turbines for the takeoff.

1800 hours. We are on course for the ice floe. At first everyone gathers at the windows. But outside there is impenetrable murk. No moon can be seen, no snow below. Curiosity fades. We talk the time away, and suddenly we hear the voice of the commander: "The SP-26 is below us."

And so 1 hour and 16 minutes into the flight after 1,100 kilometers, we saw the lights of a small settlement off to the right, and then a shot from a flare pistol.

I had a lump in my throat: this salute from our people to a Soviet airliner flying so high above to their colleagues, on a mission that was to take it another 1,100 kilometers across the silent Arctic, was surprisingly touching.

True, for us, the airways were not silent. All the time the aircraft was in contact with Moscow, the radio operators at SP-26, and Pevek airport. Only the radio stations in Alaska and Canada failed to respond to our calls, even though they had been informed beforehand about our flight. Thirty five minutes before we entered the international sector of the Arctic the radio operator Vasiliy Rulyakov sent in faultless English: "Aeroflot number 76473. On route." But even then there was no response.

2015 hours. We hear the command: "Get ready. Gear up." All the members of the technical command, the drop group, and the journalists put on their fur clothing, protective helmets, parachutes, and hook up their safety belts. Everyone has his station and his duties. We check each other for safety and how we will interact during the drop.

2017 hours. We hear the words: "Prepare for descent." At 15 minutes before the descent a new command is given: "Everyone please take their places." Five stand at the cargo doors, another five at the side doors. The lights are turned down and red lamps are switched on in the cabin. The sealed bulkhead to the cargo doors is opened, the twin doors are moved to the side, the ramp is lowered. The howl of the turbines and the wind would burst your ears were it not for the protective helmet.

Aleksandr Bol'shakov stood on the metal platform in the middle of the cabin. Both his headset and that of V. Pomyatoykin were hooked up to the navigator's communication device. Bol'shakov had to repeat his commands using little flags.

2038 hours. Bol'shakov raised his left hand. That meant there were 2 minutes to go. They made ready for the drop. The black murk of the abyss could be seen beyond the open doors.

And now both his hands are up: "Attention!" Only 30 seconds to go. The tension is very high: the cargo must be dropped with an accuracy of seconds, because, as the calculations of our ballistics man Ye. Lukashenko have shown, each second of delay equals 100 meters of flight by the cargo along the course of the aircraft. And remember the size of the ice floe--350 by 500 meters!

The hand comes down. The drop! We peer tensely into the darkness. We see the parachute opening between two lines of fires. On target! Rockets are fired up from the ice floe. This means that the cargo has been received.

Meanwhile the aircraft is going round again as once more we load cargo onto the upturned pallet.

Held by my side fastenings I pick my way inside the cabin to the side doors. A. Yegutko and Ye. Lukashenko are also acting synchronously to the commands of A. Bol'shakov. The noise here is even louder because the wind is smashing with a howl against the open doors.

As it makes the left turn back toward the ice the huge aircraft seems to be slowing. We know that this is only apparent, for our speed is 250 kilometers an hour. On the command the cargo is pushed through the doors.

The aircraft goes round for a third approach, and I head for the navigator's cabin, where the navigator Igor' Abdulayev, half sideways, half lying, is staring intently at the approaching fires at the station and "working his magic." Cargo-away! And as the Il-76 soars up I manage to get a glimpse of the little houses of the polar explorers and the tiny figures at the signal fires.

Another approach. Then another two. A total of 18 loads have been dropped via the ramp and 15 through the side doors. On the last drop we throw out two new-year firs. The commander decides to make a farewell turn. They salute us with flares, and over the radio the station chief German Lebedev thanks the pilots. And somewhat unexpectedly for us, he asks which of the boxes contains the waybill...

8 December, 2150 hours Moscow time. That was the time on my watch when the cargo drop was completed. It had lasted 1 hour and 10 minutes.

On the return leg, in accordance with the flight plan we "took a look" at the North Pole in order to evaluate the operation of the navigation system. At 2235 hours we circle for 3 minutes above all the Earth's meridians. And then on to Pevek. We have 2,400 kilometers ahead of us. The Il-76 is brought onto course...

I thought that this happened only to sailors: the joy of returning to their own shores. I was wrong: it happens to anyone who has been far from the motherland. We had only been over the Arctic Ocean for a few hours and flown several thousand kilometers in a fast aircraft. But what joy lit up in the eyes of those on the flight when the commander announced that we were in the Soviet zone of the Arctic, under the protection of the motherland! We somehow felt more hopeful, more confident.

In Pevek I asked A. Bol'shakov if he was satisfied with the result of the experiment.

"Yes, absolutely," he replied. "They reported from the station that they received the entire cargo. And we also carried out another mission: we worked out procedures for cargo air drops. And we also drew up recommendations for crews flying in the high-latitudes, so that pilots in the operational enterprises of civil aviation will be able to carry out such flights.

"I think that the Il-76 is an irreplaceable aircraft in the regions difficult of access in the North, Siberia, and the Polar regions. Our flight has shown that it can deliver and drop any kind of cargo."

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## MOTOR VEHICLES AND HIGHWAYS

### BRIEFS

NEW TRUCK MODELS--Kremenchug (Poltava Oblast) (TASS)--An addition has been made to the family of motor vehicles produced by the Kremenchug Large-Truck Production Association. Mass production of new all-purpose truck models has begun. The vehicles are semi-tractors, as well as multi-purpose chassis, on which heavy cranes, derricks, excavators and other equipment can be mounted. The new triple-drive-axle all-terrain vehicles are equipped with up-rated engines. The specific metal content of the vehicles has been reduced as load capacity has significantly increased. This is a result of design improvements and the use of progressive rolled shapes, plastic and fiberglass. The mass production of the new "KrAZ" trucks has helped bring together the nation's leading motor vehicle plants, which produce various equipment and complex dies. With their cooperation, the Kremenchug motor-vehicle producers have modernized and increased production. All this will allow the "AvtoKrAZ" collective to begin production of seven more new truck models by the end of the five-year plan. Next will be high-speed, 16-ton all-terrain dump trucks and dump trailers. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Nov 83 p 2] 12595

SINGLE-PASSENGER SNOWMOBILE--Rybinsk (Yaroslavskaya Oblast)--Specialists at the Rybinsk Motor Production Association have designed a new one-passenger snowmobile, the "Ikar." It will weigh half as much as the well-known "Buran," which has proven itself in various areas of the country. Fuel consumption will be significantly reduced. The "Ikar" will travel 150-200 kilometers on a tankful. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Dec 83 p 2] 12595

IZHEVSK PLANT'S TWO-MILLIONTH CAR--(TASS)--The two-millionth automobile has rolled off the assembly line of the Izhevsk Motor Vehicle Plant. This was preceded by a socialist competition for the right to assemble the milestone car. The competition winners formed a symbolic brigade. V. V. Alekseyev, brigade leader of the test-drivers, was among them. He was devoted many years to his favorite job--helping perfect Ural automobiles and improve their quality. And he became the owner of that two-millionth IZh automobile. It took less than six years for the Izhevsk personnel to produce their second million of small cars. The first 300 "Moskvich-408" cars were assembled in Izhevsk in 1966. Now they produce the updated "Moskvich-412," the "IZh-kombi," vans and pickups. The Ural trademark is also widely known abroad--in Cuba and Finland, in Kuwait and Hungary, where cargo versions are especially popular. [Text] [Moscow ZA RULEM in Russian No 11, Nov 83 p 9] [COPYRIGHT: "Za Rulem," 1983] 12595  
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## RAIL SYSTEMS

### RAILWAYS COLLEGIUM REVIEWS PROGRESS SINCE NOVEMBER 1982 CPSU PLENUM

Moscow GUDOK in Russian 23 Dec 83 pp 1-2

[Article: "Along the Route of the Third Year of the Five-Year Plan: Railroad Workers in the Struggle to Implement the Decisions of the November (1982) Plenum of the CPSU Central Committee"]

[Text] The Collegium of the Ministry of Railways has examined how the decisions of the November (1982) Plenum of the CPSU Central Committee are being carried out. It summed up the results of what has been accomplished. It outlined ways to further improve the work, to increase its effectiveness and quality.

Today we are publishing materials from the Collegium.

Slightly more than a year has passed since the November Plenum of the CPSU Central Committee. In the resolution of the Plenum and the speech delivered there by the general secretary of the CPSU Central Committee, Comrade Yu. V. Andropov the activity of the Ministry of Railways and the work of railroad transport were subjected to sharp criticism. It was noted that the Politburo has been disturbed by the state of affairs in transport. The national economy's needs with respect to hauls is not being satisfied. The operational indicators of railroads have grown worse year after year, despite significant capital investments in their development. It was emphasized that the organization of locomotive repairs and operations, as well as that of train traffic, were at a low level. The following task was assigned--to correct the situation and to improve the transport service of the national economy.

In order to carry out the directives of the party and the government, the expanded session of the Collegium of the Ministry of Railways, which was held on 13 December 1982, specified a broad program of concrete acts and worked out measures for the purpose of changing the state of affairs and achieving an upsurge of railroad operations within the briefest possible time period.

Groups at all sub-divisions and enterprises were mobilized in order to solve the problems assigned to them. On the whole, the sector has adopted intensified socialist pledges for 1983. Today, in summing up the results of what has been accomplished, we can note positive shifts in the work and point to specific facts and figures to prove how railroad transport is coping with the large, complex tasks assigned to it.

Immediately after the Plenum the efforts of the railroad workers were directed at the unconditional fulfillment and over-fulfillment of assignments with regard to hauls. Practically from month to month the established volume of freight dispatched has been over-fulfilled. Since the beginning of the present year more than 60 million tons of various national-economic products have been hauled. All the railroads have coped successfully with the plan. The entire increase in hauls has been mastered by means of increasing labor productivity. We have completely made up for the losses which were permitted during the first two years of the five-year plan. The very attitude toward the plan has changed. Its steady and systematic fulfillment has become the main concern of the workers in all the services, of all the principal subdivisions. Organizational work has been conducted, aimed at inculcating in each commander and each railroad worker a feeling of personal responsibility for carrying out the plan for hauls.

Having placed their trust in their own efforts, the railroad workers became convinced that, within the existing degree of technical equipment, with the capacities at hand, and with the carrying and traffic capabilities, reserves could be found in order to successfully cope with the plan for hauls. How much this means, when people have confidence in themselves! This confidence has helped them to act decisively and boldly, to energetically utilize all the possibilities for an upsurge in the work.

What has been achieved is, above all, the result of the great concern on the part of the CPSU Central Committee and the party organs in the localities for improving the work of the country's main conveyor, for its technical refurbishing, and for the people who bear the work duties on the steel mainlines. The upsurge in the work has been facilitated by a re-structuring of the operational style and methods, a change of attitude toward the task at hand, a strengthening of state, labor, planning, and technological discipline, the creation within the groups of a creative situation, a favorable psychological climate. Psychological re-structuring, the re-structuring of people's attitudes, is not, of course, a simple matter. It was necessary to put an end to various manifestations of a lack of responsibility and slackness, to achieve a consistent promulgation of the party's Leninist personnel policy, to surround honest, conscientious, initiative-minded workers with concern and attention. At the same time we had to raise standards and intensify the demands for the task entrusted to us. It was impossible to put up any more with the practice whereby some commanders spent a considerable portion of their own time on bustling about with sessions, on justifying operational mistakes and failures. A large role has been played by the objectivity of evaluating the activity of enterprises and subdivisions, the justifiable summing up of the results of socialist competition.

The re-structuring which was carried out has had a favorable effect on all the basic operational indicators of railroad transport during the present year. During the 11-month period the plan for freight shipments has been over-fulfilled by 1.6 percent. In comparison with the analogous period of last year, 117.2 million tons of products more were hauled. The assigned task with regard to freight turnover was surpassed by 1.7 percent, and with regard to passenger turnover--by 2.6 percent. The fulfillment of the plan for ore-type

freight was improved. The plan for shipping hard-coal was over-fulfilled by 1.7 million tons. As compared to last year, the volume of hauls of this most important freight was increased by 7.7 million tons. More than 600,000 tons of petroleum and petroleum products in excess of the plan were shipped by freight. The plan for hauling iron and manganese ores was over-fulfilled by 5 million tons.

Nevertheless, we have still not succeeded in fulfilling the assigned tasks with regard to delivering freight in the entire products list nor, hence, the uninterrupted provision of the transport needs of all branches of the national economy, of all enterprises. Hauls of timber products, although increased by 7.6 million tons, still fell short of the plan by 8.4 percent; this was basically the fault of the October (Leningrad), Northern, Gorkiy, Sverdlovsk, and East Siberian Railroads. They were unable to completely dispatch their own products to the enterprises of the Ministry of the Coal Industry, particularly those in rayons served by the Donetsk, Tselin, Kemerovo, and Krasnoyarsk Railroads. What has had an effect, above all, is the disruption of regular assignments with respect to the delivery of empty cars to the places of mass loading.

On the whole, out of 42 types of freight established by the products list, the fulfillment of assignments is being provided on 37. Although this is a noticeable step forward in comparison with what was the case in the past, it, nevertheless, still poses the problem of fulfilling the plan with regard to the entire products list. It is precisely this which is required by the interests of our national economy.

A number of measures have been carried out for strengthening the reciprocal actions of railroad workers and the workers at the sidings of industrial enterprises. This could not help but have an effect on speeding up unloading and on curtailing idle times. The volume of unloading increased by 3.3 percent. Remaining freight cars not unloaded on schedule were reduced by an average of 1,900 cars per day. The idle time of cars on enterprise sidings was reduced by 0.14 hours. But many cars still are not uncoupled on schedule; they remain unloaded and stand idle during the loading operations more than the established norm. Such a major reserve as increasing unloading at night and on holidays is far from being fully utilized.

The operating rhythm of the hauling conveyor depends, to a large extent, on the precision of actions at the junctions, on the dimensions of the stream of cars being supplied. The expanded session of the Collegium of the Ministry of Railways, held in December of last year, outlined an increase in the transfer of cars amounting to at least 7 percent, along with a substantial increase in the volume of train traffic on lines with diesel-locomotive traction. Nevertheless, this important indicator was able to rise by 7 or more percent on only 6 railroads. And, on the whole, the transfer increased by only 2.9 percent. When there were considerable surpluses of transit freight, the assigned amounts of transfers were not being ensured on the railroads of Kazakhstan and Central Asia, nor on the Southeastern, Volga, October (Leningrad), North Caucasus, West Siberian, Kuybyshev, and Gorkiy Railroads.

As a result of introducing progressive technical processes, strengthening discipline, and increasing the technical degree of equipment, station operation has been improved. Nevertheless, on certain railroads, primarily on the Southeastern, Volga, West Kazakhstan, Alma Ata, and Central Asian Railroads, idle times have increased at technical stations. At a number of important classification yards, particularly the Leningrad-Moscow, Kochetovka, Likhaya, Georgiu-Dezh, Rtishchevo, Saratov-2, Kartaly-1, Orsk, and Orenburg Yards, disruptions have often been allowed in the dispatching of trains on schedule because of a violation of operational technology, unsatisfactory technical servicing of the cars, or failure to provide locomotives and crews on time. The number of violations of the plan for making up trains is still being reduced too slowly.

Improvement of the work of all links of the hauling conveyor and the strengthening of discipline have favorably affected the qualitative operational indicators as well as the utilization of technical means. Car turnover has been accelerated by 4.7 percent. The average idle time during a single freight operation has been reduced by 5.7 percent, and at one technical station--by 6.2 percent. The average daily productivity of cars has increased by 5.2 percent, while for locomotives the figure is 1.4 percent. Section speed has been increased by 1.3 percent. The average weight of a train has been increased by 30 tons. The performance of the train traffic schedule has been improved somewhat.

Of great importance has been the improvement of the freight-carrying capacity of the cars. Increasing the static load has allowed us, without drawing upon an additional car pool, to haul 8.5 million tons of freight. The socialist pledges made by the railroad workers with regard to this indicator have been fulfilled.

Nevertheless, the reserves and potentials for improving the use of rolling stock and other technical means are far from being fully implemented. On a number of railroads, and, in particular, on the Central Asian, Alma Ata, West Kazakhstan, Volga, Southeastern, and Caucasus, the assigned tasks with regard to car turnover, increase of locomotive productivity, and other important qualitative indicators have not been fulfilled. Here too we are confronted with a great deal of persistent work to be done.

The Collegium of the Ministry of Railways is constantly keeping within the field of its vision questions of improving passenger hauls, as well as improving service in stations and on trains. This important problem was the subject of a special, expanded session of the Collegium, held in May with the participation of the railroad chiefs, along with the commanders and employees directly involved with passenger hauls. A decision has recently been adopted concerning improvements in the structure of administering passenger hauls in order to bring about a situation whereby problems are resolved in a comprehensive manner, moreover, more consistently and firmly. Unfortunately, we have not yet managed to make serious moves toward the better in this work. Many railroads are still lacking in the proper concern over the lateness of passenger trains, use has not been made of the possibilities for eliminating lines at the ticket windows, for improving the quality of preparing trains for a run, as well as the standards of serving the passengers. Much still remains to be accomplished in improving indoctrinational work in groups at stations, reserves of conductors, and car depots.

Subways are playing an ever-increasing role in solving the transportation problems of the largest cities. For the 11-month period all subways over-fulfilled their plan for hauls. Some 3.8 billion passengers were carried, 53 million more than had been planned. The best results were achieved by the workers of the Moscow, Kiev, and Baku subways.

Steady operation of railroads and subways depends, to a large extent, on the reliability and the quality of the maintenance and repair of technical means. Constant attention has been paid to the problems connected with this. The problems of making improvements in locomotive, car, and track maintenance were examined at expanded sessions of the Collegium with the participation of the managers of the services and enterprises, leading production workers, and transportation experts.

A large role has been played by the innovations of the leading groups and production innovators, aimed at providing uninterrupted operation of the equipment. Widespread acceptance has been achieved by the initiative of the depot locomotive engineer of the Moscow Classification Yard, Hero of Socialist Labor V. F. Sokolov, who called upon railroad workers to have an economical attitude toward the equipment and to take it under socialist care, as well as the good initiatives of many other innovators and leading production workers.

Measures have been undertaken to strengthen technological discipline in all sectors of the economy. Monitoring controls have been intensified over the observance of the established time intervals between repairs and the quality of the work.

As a result of the work which has been conducted, there has been some improvement in the condition of the locomotive pool, there has been a reduction in the number of machines in need of adjustment and in the amount of drop-outs for unscheduled repairs. Thus, the depot percentage of defective electric locomotives has gone down by 0.4 percent, while that of the diesel locomotives has decreased by 0.7 percent. There has been a reduction in the average time required for locomotives to be in repairs and technical servicing. Nevertheless, on a number of railroads, in particular, the Alma-Ata, Sverdlovsk, Gorkiy, and Volga Railroads, there remain many defective diesel locomotives, while on the Azerbaijan, Transcaucasian, and Sverdlovsk Railroads--there are many such electric locomotives.

Greater attention has been paid to the quality of car repair and to the development of a production base. The assigned task with respect to car repairs has been over-fulfilled by 0.2 percent. Some 21,300 more cars were repaired than in 1982.

In developing the initiative of the Muscovites, as approved by the CPSU Central Committee, the workers of other sectors in the national economy during the 11-month period repaired over 630,000 freight cars and more than 190,000 containers.

Nevertheless, there has still not been any reduction in the number of car uncouplings for technical defects, especially because of unsatisfactory maintenance of the box-assemblies. On a number of railroads, in particular, the

October (Leningrad), Gorkiy, and Azerbaijan Railroads, cars stand idle for a long time while undergoing current repairs. All this leads to great losses of freight resources. There has been no reduction, but even an increase, in the number of damages to cars both in the yards as well as at enterprise sidings.

During the present year a great deal has been done to repair the tracks, the volume of capital repairs has been increased, routine maintenance of the rails has been improved, and there has been an improvement in operational organization so that on the most important freight-intensive lines "windows" do not occur at the peak times of hauls. Occurrences of "windows" during capital repairs of the tracks have increased by 4 percent. This is half a percent more than was intended by the Collegium. The number of warnings on the speed limits imposed on train traffic has been reduced. However, their total number is still quite large, particularly on the October (Leningrad), Moscow, Volga, Central Asian, and South Urals Railroads.

Several measures have been undertaken to increase the reliability and ensure the more precise operation of the power-supply apparatus, the signaling and communications equipment, as well as the other technical means.

Further development has been attained by the plant base of transport. Enterprises engaged in the repair of rolling stock and the production of spare parts over-fulfilled their industrial production plan by 1 percent during the 11-month period. Products worth 15.5 million rubles in excess of the plan were produced, and production volume increased by 2.3 percent. At the same time a number of plants failed to fulfill the plan with respect to commercial output. The needs of the railroads for the repair of rolling stock and the production of spare parts are still far from being fully satisfied. At certain enterprises the quality of repairs is low. A large amount of publicity is beginning to emerge.

Special attention has been paid to traffic safety on the basis of strengthening production and technological discipline, upgrading the occupational skills of the workers involved in train traffic, and drawing a wide circle of railroad employees into the fight against accidents. A stricter procedure has been introduced for qualifying violations of traffic safety and investigating crashes, accidents, and instances of deficiencies. Requirements have been upgraded for checking up on the status of maintenance and the level of discipline in the line enterprises. There has been an enhancement in the role and responsibility of the inspection apparatus for conducting organizational work with regard to ensuring traffic safety.

Many groups at enterprises and sub-divisions reliably guarantee the uninterrupted operation of the hauling conveyor. At the same time on a number of railroads, particularly on the West Kazakhstan, Alma-Ata, Tselin, South Urals, Central Asian, and October (Leningrad) Railroads, the situation with regard to traffic safety has continued to remain clearly unfavorable; the number of accidents and instances of deficiencies not only is not decreasing but is even growing. Such a situation is intolerable. Under all conditions traffic safety must be guaranteed. This is the prime, unbreakable law of transport operations.

An important link in the re-structuring has become improvement of the methods of administering hauls, as well as of the entire railroad transport operation. The work of the Ministry's leading officials, the administration chiefs of the Ministry of Railways, railroads, and divisions has been regulated. A number of structural changes in the Ministry's apparatus and on the railroads have been made, aimed at a more precise and effective administration of hauls.

The leading officials and specialists of the Ministry of Railways, as well as those of the railroads themselves, when they go out onto the line, do not now replace the managers in the localities, as used to be the case formerly, but rather help them to work out effective measures in order to eliminate bottlenecks and shortcomings in the work more rapidly; they also monitor how the given directives are being carried out. Limitations have been placed on the number of selective conferences and the extent of their continuation in order to free up the time of the managers at all levels for practical work. As a rule, the conferences attract those persons who are directly connected with the problem under discussion. These conferences are being conducted in a more businesslike manner and with better results. Every commander, every worker strives to manifest the maximum of initiative on his own section. At the same time their responsibility has been increased for the decisions being taken, for carrying out the plans and assignments. Great importance has been ascribed to enhancing the role played by the workers of the leading occupations--dispatchers, locomotive engineers, along with the direct organizers of production--foremen and brigade leaders.

Implementation of the decisions of the November Plenum of the CPSU Central Committee and the program of actions worked out at the expanded session of the Collegium, held on 13 December 1982, has allowed us to improve the basic economic indicators of railroad transport work. It is particularly gratifying that a high increase in an extremely important economic indicator has been attained--that of labor productivity. In comparison with last year, it grew by 3.9 percent, as compared with an assigned increase of 2.1 percent. The normal correlation between the growth rate of wages and that of labor productivity has been ensured. Hauling costs have been lowered by 1.8 percent, as compared to the plan. As a result, more than 400 million rubles of above-plan profits have already been obtained. Thus, the Ministry of Railways will fully carry out its obligations with regard to contributions to the state budget and, to a large extent, will amortize the indebtedness which was permitted during the first two years of the five-year plan.

The Collegium and the Ministry administrations have accorded a great deal of attention to increasing the intensity of utilizing producer goods and to observing a strict system of economies on labor, material, and fuel-energy resources. However, there are still quite a few losses, which must be eliminated, and reserves, which must be put into action.

The provision of the railroads and enterprises with material-technical resources has been improved. This has been of help in carrying out the program of repairing and modernizing the rolling stock and other technical means, as well as coping with the plans for capital construction and the production of new output. A considerable amount has been accomplished for the purpose of expending materials more economically, restoring and re-using older materials.

Nevertheless, as the check-ups and accounts rendered by the railroad chiefs to the Ministry have shown, there are still quite frequent violations of the procedure for accounting, storing, and using materials, products, and equipment. In a number of localities they are being drawn too slowly into economic circulation.

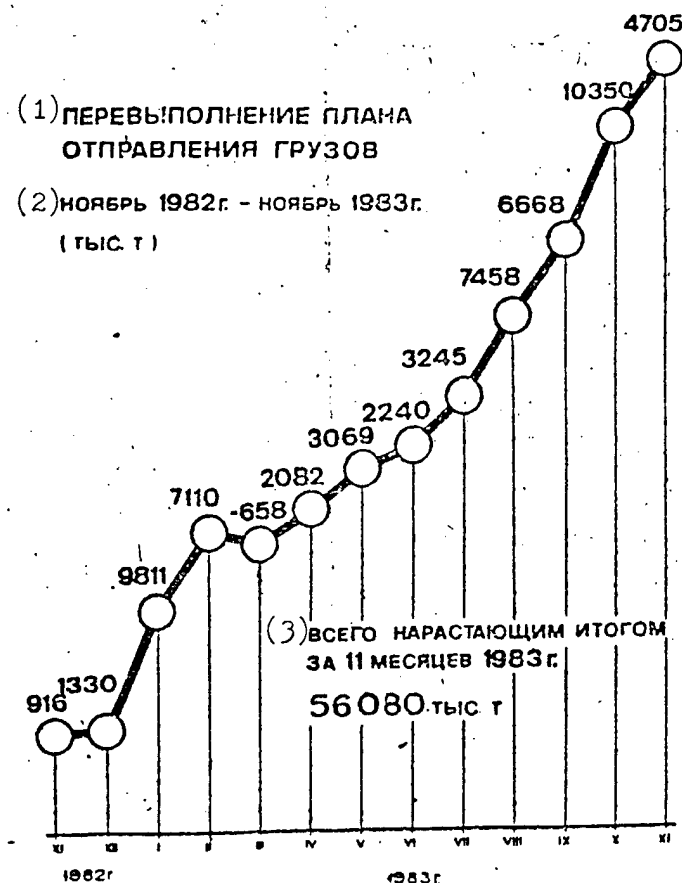
The railroads are still suffering considerable losses due to spoilage, losses, and theft of goods. And although the situation with regard to the preservation of material valuables entrusted to transport has improved somewhat, much still remains to be done in this respect. We must intensify legal propaganda and indoctrinational work in the groups, as well as closing up all loopholes for losses and thefts.

Having achieved the steady fulfillment of the plans with regard to the basic indicators, the Collegium precisely specified the boundaries for the immediate future and worked out the main lines of technical progress in railroad transport. By the end of the present five-year plan it is intended to reach the milestone of 4 billion tons of freight shipments. This will allow us to virtually completely satisfy the national economy's needs for hauls. Specific indicators have been determined which must be attained during 1984 and the concluding years of the five-year plan with regard to freight turnover, passenger turnover, train weight, car and locomotive productivity, car turnover, sectional speed, and growth of labor productivity. Provisions have been made to advance within the course of the next few years to the foremost positions in the world with regard to labor productivity.

While making maximum use of the existing production base, it is also necessary to be concerned about its development, about the creation of reserves which will allow us to successfully handle the increasing volumes of hauls. In the Ministry and on the railroads the unconditional fulfillment of the plan for capital construction has been firmly achieved. In order to increase the effectiveness of capital investments and to reduce the amounts of unfinished construction, a large portion of the funds allocated during the current year have been directed at start-up projects connected with the growth of traffic and carrying capacities, at eliminating bottlenecks in operations. Principal attention has been paid to the comprehensive introduction of new lines and enterprises, at strengthening cooperation and reciprocal actions between users and builders. Particular importance is ascribed to the fastest possible completion of work on, and the opening as soon as next year of, through traffic on the entire Baykal-Amur Mainline.

The Collegium of the Ministry of Railways and the Scientific and Technical Council of the Ministry of Railways Have precisely determined the basic thrusts of this sector's scientific and technical progress, on which the efforts of transportation scientists and specialists must be concentrated during the present and ensuing five-year plans, as well as what must be done in order to extensively utilize the achievements of science for the purpose of radically improving all sectors of the economy.

Analysis has shown that in the future approximately 60 percent of the increase in hauls will have to be handled by means of increasing train weight and 40 percent based on increasing traffic intensity. Increasing train weight is the



Key:

1. Over-fulfillment of the plan for freight shipment
2. November 1982--November 1983 (in thou. t)
3. Total increased amount for the 11-month period of 1983--  
56,080,000 t

principal way to increase the carrying capacities. And assuming particular importance is development of the initiative, as approved by the CPSU Central Committee, of the Moscow Railroad workers with regard to increasing train weight and length. On the Moscow Railroad trains weighing 10,000 tons make regular runs; on the South Urals Railroad an electronic apparatus has been introduced for controlling two 8-axle electric locomotives in accordance with a multi-unit system, which allows them to drive trains with significantly greater weight than formerly. This system will already be applied on a number of railroads during the coming year.

A good initiative with respect to making up large freight trains weighing up to 15,000--18,000 tons each has been manifested on the North Caucasus and Tselin Railroads. Specific directions have been determined where, in the shortest possible time, train weights must be considerably increased. While developing large freight-train traffic, we must, at the same time, firmly bar the way for trains which are less than full weight or with less than the full complement of cars; there are still too many of these.

In order to increase the intensity of train traffic, a new system of two-way automatic block signaling has been developed. It allows us to significantly reduce the intervals between trains and to create the conditions for more flexibly controlling the passage of strings of cars.

Increasing the traffic intensity requires radical improvement of station operations, furnishing them with up-to-date means of automatic control. The scientific and technical-design base has already been created for automating the processes of disassembling and making up trains, for automatic traffic control with the aid of microprocessor equipment. The plants of the Ministry of Railways are mastering the production of these installations.

Computer centers are now functioning on all railroads and subways. The task has been assigned of using their base to create as soon as the next few years an effective automated system for controlling the hauling process and, subsequently, the entire railroad transport operation as well.

The Collegium has adopted a number of measures in order to concentrate the efforts of specialists of all the services and transportation experts on the solution of this important task for the future. The attention of the leading railroad officials has been drawn to the need for the soonest possible dissemination of the experience already accumulated in this matter, in particular, on the Belorussian Railroad.

Growth in the scope and tempo of the work, as well as the introduction of advanced equipment, requires a radical improvement of technology. Our main technological document--one which unites the efforts of the workers from all the services--is the train traffic schedule.

During the present year a system has been adopted for use for working out schedules with the aid of a computer, allowing a 10--15-percent improvement in utilizing the traffic capacities of the sections and lines by means of plotting the "threads" of the schedule.

The most important trend in technical progress, having not only great production but also social significance, is the comprehensive mechanization of labor-consuming operations. For us in transport this means primarily track-repair and loading-and-unloading operations. A sequence of track vehicles has been worked out which allows us, to a considerable degree, to mechanize and automate labor-consuming operations both in the repair as well as in the current maintenance of the track. Re-structuring has begun of operations for the current maintenance of rails on a mechanized basis. Useful experience in this matter has been accumulated on a number of railroads. Concentration of freight operations is continuing at key supporting stations. Containers and pallets are

becoming more and more widely disseminated. All this allows us to raise the level of the mechanization of loading-and-unloading operations.

Now the task consists of conducting work on mechanizing and automating labor-consuming operations in all sectors of the economy in a purposeful manner, in accordance with very carefully worked-out, comprehensive plans. On how these plans are carried out will depend, to a large extent, the provision of personnel as well as the prestige of railroad occupations.

Recently a number of measures have been adopted in order to enhance the prestige of the railroad occupations. The Ministry and the Central Committee of the trade union have energetically supported the appeal of the locomotive workers of the Kurgan Depot, which called upon all workers on the steel mainlines to work conscientiously, to value dearly the honor of railroad workers, to continue the glorious labor traditions, and to be persistent in achieving improvements in transport operations. Propaganda concerning the transport occupations has been stepped up. There has been an improvement in the vocational guidance of schoolchildren for the purpose of attracting them into transport, into the Ministry of Railways educational institutions for youth. A course has been set toward universal improvement of training personnel in the mass occupations and transportation specialists.

During the year which has elapsed since the November Plenum of the CPSU Central Committee quite a bit has been accomplished for enhancing the material well-being of the railroad workers, stepping up the provision of incentives for highly productive, effective work. At the same time incentives were instituted for error-free work over the course of a year in the amount of the railroad workers' wage rates in a number of the leading occupations. The amount of the bonuses for improvement in passenger service and for a high quality of track maintenance has been increased. More purposeful methods began to be used to stimulate the labor of workers, brigade leaders, and foremen, engaged in current repairs and technical servicing of locomotives. In many sectors the brigade form of organizing and stimulating labor has been developed, taking into account the coefficient of labor participation. Bonuses for workers, engineers, technicians, and office employees from the wage fund increased by more than 20 million rubles, while from the material-incentives this increase was by almost 15 million rubles. Furthermore, according to the results of the socialist competition, for fulfilling especially important tasks bonuses were paid out amounting to 1.3 million rubles more than last year.

Plans for the social development of groups are being consistently carried out. Housing construction has been improved. During the present year about 1.6 million square meters of well-built housing will be put into use. As a result, the housing conditions of 23,000 families of railroad workers are being improved. A great deal is being done to improve the existing housing--equipping it with water pipes, gas, central heating, sewerage, and so forth. During the year capital repairs were made on apartment houses with a total area of 1.5 million square meters.

Questions of improving working conditions, everyday life, commercial and medical services have been specially examined at sessions of the Collegium. Implementation of the measures outlined is under the supervision of the Ministry and the railroads.

An important role in strengthening party leadership of railroad operations in the light of the requirements of the November (1982) Plenum of the CPSU Central Committee and the directives of the general secretary of the CPSU Central Committee, Comrade Yu. V. Andropov was played by the conference, held in March of the present year in the party Central Committee, of the chiefs of the Departments of Transportation and Communication of the Central Committees of the Communist Parties of the Union republics, the party kraykoms and obkoms, as well as the secretaries of the joint party committees of railroad transport.

In the decree recently adopted by the CPSU Central Committee on the work of the Ministry's partkom it was noted that measures are being carried out with regard to developing the initiative of Communists in the apparatus, aimed at improving the activity of railroad transport. It was emphasized that it is necessary to achieve a situation whereby every employee of the Ministry demonstrate an example of model performance of his own service duty, as well as being intolerant of any manifestations of slackness, seniority in the order of preference, and a narrowly bureaucratic approach to the matter at hand.

Successful execution of the basic plan tasks during the present year is the fruit of the self-sacrificing labor of thousands and thousands of railroad workers. The most substantial contribution has been made by the leading groups, the outstanding participants in socialist competition, and the innovators of production.

The group of the Moscow Railroad emerged as the initiator of the competition to complete the assigned tasks for 1983 ahead of schedule. It has kept its word with honor. The plan for freight shipments was fulfilled on 15 December. The socialist pledges with respect to the volume of freight and passenger hauls, indicators of effectiveness, and work quality. Significant savings of energy, material, financial, and labor resources were achieved.

Emerging for three quarters in a row as the winners of the All-Union Socialist Competition were the groups of the Southwestern and Moldavian Railroads, the Moscow-Yaroslavl, Minsk, Zaporozhets, and Ashkhabad Divisions, the locomotive depots of the Moscow Classification Yard, Solvychevodsk, and Kurgan, the Minsk Commercial and Nizhnedneprovsk Junction Stations, and a number of other enterprises.

An example of purposeful introduction of progressive technology in car repair was shown by the workers of the Novomoskovskiy Division. A high degree of production effectiveness and the successful solution of social problems has made the Ussuriysk Refrigeration Depot renowned. The experience and initiative of these and a number of other advanced groups have been approved by the Collegium of the Ministry of Railways, the Presidium of the trade union Central Committee, and have received widespread acceptance on the entire network of railroads.

Outstanding achievements in labor were attained by the railroad workers who this year were awarded the USSR State Prize for developing socialist competition and introducing advanced methods for the highly effective use of technical means of transport. The locomotive engineer of the Inskaya Depot, V. V.

Babekov came out with an initiative to unleash a competition for mastering an increase in freight turnover on economized electric power. V. G. Kolegova, the person in charge of inspection and repairs at the Sverdlovsk Classification Yard Car Depot, became an expert at the high-quality preparation of trains for runs. F. I. Sobolevskiy, a train dispatcher from the Minsk Commercial Station, has successfully utilized the new technology for making up trains with the utilization of computer equipment. V. S. Korzh, a fitter at the Grebenka Locomotive Depot, is working with the motto "Finish every production operation ahead of schedule and with a high level of quality!" The track-vehicle group of Station No 61 of the Kuybyshev Railroad has steadily achieved the laying of 3,500 running meters of track grid within a six-hour "window." And this is due, in large part, to the work of I. V. Khatimullin, the operator of a track-laying crane. O. N. Patlay, senior checker of freight and baggage at the Taras Shevchenko Station, is utilizing the carrying capacity and available space on cars with the utmost effect. V. I. Krivopusk, a driver of a tractor-type loader, has become the organizer of mechanized columns for loading-and-unloading operations at the Krasnoyarsk Division. Substantial contributions to the treasury of advanced experience, to the struggle for the successful fulfillment and over-fulfilment of the plan tasks have been made also by many other transport innovators, the best representatives of our workers' guards.

The Communist Party and the Soviet government are constantly paying careful attention to developing and improving the work of railroad transport, to the improvement of the railroad workers' working and living conditions. In response to this concern, it is a matter of honor for the workers of the steel mainlines to reinforce and multiply the successes achieved during the present year, to make a confident start in the new year of 1984, and to see to it that this gigantic hauling conveyor operates precisely, efficiently, and without interruption, that it satisfies the needs of the national economy and the population for hauls, as required by the decisions of the 26th CPSU Congress and the November (1982) Plenum of the CPSU Central Committee.

2384

CSO: 1829/119

## RAIL SYSTEMS

### OFFICIAL CITES INCREASE IN IRRATIONAL CROSS HAULING

Moscow TRUD in Russian 11 Oct 83 p 2

/Article by V. Medvedev, chief of the department for rational shipments of the USSR Ministry of Railways: "From Point 'A' to Point 'B': Cross Hauling is Costly for the Soviet Union"/

/Text/ Everyone remembers the school problem: "a train departs from point 'A' for point 'B' while another train departs toward the first..." As a rule the problems do not mention what sort of freight the trains are carrying. But in real life this is often very important. For frequently the cargoes, which are shipped from point "A" to point "B" and the other way around, are identical. Which means that there is no need to ship them; but they are shipped all the same! This ridiculous paradoxical situation is called "cross hauling".

Here are some examples. The Uzbek Metallurgical Plant ships 500,000 tons of billets to enterprises in the Urals, Siberia and the Transcaucasus. Specifically the shipments are going to the Novokuznetskiy, Orsko-Khalilovskiy and Beloretskiy metallurgical combines and to the Rustavskiy Metallurgical Plant. From there they forward from Siberia, from the Urals, from the Kuznetskiy Metallurgical Combine the Northern Pipe Plant and others in the opposite direction to the Uzbek Metallurgical Plant 100,000 tons of steel billets. Take note that all of these enterprises are subordinate to the USSR Ministry of Ferrous Metallurgy. What is the reason for these absurd cross haulings? Different mills produce different billets. But mills can be modernized, rebuilt; there is ample experience in doing this both here and abroad. Of course, everything can be done, it is agreed in the ministry, but it takes money, time and designs. In a word, it turns out that over the years it has been easier to send trains loaded with metal in counter directions throughout the entire USSR rather than seriously undertake to solve the problem.

Of course, for someone this is simpler - having issued the orders for the cross hauling and there are no problems. The economic estimates even show that this is advantageous. A lot less money is

spent on the cross hauling than is required to modernize the mills. But this is a very temporary advantage. And if one bases this reasoning on overall-governmental interests rather than on departmental interests with a view for the long-term, there can be no two opinions on the question: cross hauling is a wasteful practice, which does great harm to the Soviet economy.

One could cite several examples of cross hauling within the framework of a single branch of industry. But the interdepartmental barriers, where cargoes are shipped to the ends of the earth from "their own" plants, also do a lot of harm, while refusing to accept the manufactured articles that are produced nearby by the enterprises of a different branch of industry.

There are two quarries in Moscow Oblast: one is near the Yelizavrovka station near Klin; the other is at Chismena Station, about 150 kilometers away from Klin. One might ask where does the sand come from that is used for construction in the city of Klin? It turns out that the sand comes from Chismena Station. And it seems that this is done because the quarries are subordinate to different organizations. The one that is close to Klin belongs to the Moscow Executive Committee, while the one that is further away is subordinate to the Main Administration of Moscow Oblast Construction Materials. What is easier than for the two organizations to trade resources and to save both time and railroad cars. No, they cannot agree to this.

One other example. Reinforced concrete articles are produced by nearly 6,000 enterprises. The production of these articles has been organized almost throughout the entire nation. It would seem that there could be no reasons to justify long-distance cross hauling of reinforced concrete materials. But no. Over the past several years the distance for shipping reinforced concrete articles has increased by more than 200 kilometers. Here is the riddle: the reinforced concrete articles (ZhBI) plants are subordinate to tens of different ministries and departments, each of which is consumed with the desire to provide its subordinate organizations exclusively with its product. Distances are not taken into consideration. For no good reason they are sending trains thousands of kilometers and wasting time and workers for useless loading and unloading work. At the same time there is a reduced opportunity for permitting other trains with important national economic cargoes to pass.

According to an estimate of the Institute for Comprehensive Transportation Problems under the USSR Gosplan, the amount of irrational shipments has reached six to seven percent of the total freight turnover. Within a single 24-hour period the USSR Ministry of the Railways loses almost 70,000 railroad cars for this reason. If we eliminated irrational hauling, we would completely eliminate the railcar shortage.

But each ministry with its truths and untruths seeks to designate its own route for shipping freight. Recently the USSR Ministry of Railways, for example, introduced a plan for rational freight flows for communications and power transmission line supports. Soon they received a letter from the deputy minister of Power and Electrification, who categorically insists on being able to refuse having to exchange resources and to supply reinforced concrete articles from the enterprises of his own branch of industry. In this regard, of course, it is demonstrated that the needed supports are manufactured only by enterprises belonging to the USSR Ministry of Power and Electrification. The workers of the USSR Ministry of Heavy Construction share a similar position. They are prepared to send the conclusions of a laboratory on the fact that local crushed rock is not suitable for construction projects in Rostov-na-Donu and that a different crushed rock is needed which is located far away, but from the ministry's own quarry.

Today there are no effective economic barriers, which would prevent such costly wastefulness. There is no true system for taking stock of transportation expenses.

And even in those conditions when the enterprises are point blank instructed to eliminate irrational shipping practices, not everyone rushes to do this. Over a distance of 3,500 kilometers coal is shipped from Karaganda to Donetsk Oblast for the Kurakhovskaya GRES. Meanwhile the Donetsk coal is shipped in a completely different direction to the Yaroslavskaya TETs-2. As recently as 1974 a decision was made that the USSR Ministry of Power and Electrification would switch this Yaroslavskaya TETs to other forms of fuel. But this decision still has not been fulfilled.

Here is another paradox. We are beginning to ship quite a bit more than we produce. Last year, for example, some 49 million tons of scrap metal was procured, but some 62 million tons of the scrap were shipped by railroad. Is this not a clear example of poor management and irrational shipping practices!

How do we fight against this? Of course, with administrative measures and economic levers. For example, we can raise the rate for irrational shipping and establish a maximum distance for them.

The planning and supply organs must seriously study the cross hauling problem and demand of the ministries that they do away with the wasteful expenditure of state assets.

8927

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## RAIL SYSTEMS

### ELECTRIFICATION OF KIEV-KOROSTEN LINE COMPLETED

Moscow GUDOK in Russian 6 Nov 83 p 3

[Article by GUDOK correspondent V. Denisenko: "Electrification Completed"]

[Text] "The electric train is bound for the Korosten station", engineer G. Shostak somberly announced on the radio from the Fastov depot. And the elegant electric train, shining with light blue lacquer, ran along the newly electrified road section.

The participants of the joyous event are nervous, even though everything has been meticulously checked in detail, because the important work has been completed into which they have put energy, knowledge, and part of their heart and soul.

The transfer to electric traction of the 150 km section of the Southwestern railroad was carried out in stages. First, the electric locomotives were bound for the Teterev station, then they advanced to Malin, and then to Chepovichi. The construction of the second portion took 5 years. The contact suspension bracket has been mounted, the traction substations and the House of Communications have been built, the STsB [Signalization, Centralization and Block System] devices were reconstructed, the LEP [Electric Cable Lines] settings were made, and much, much more.

The SU-146 [Construction Administration] collective of the Yugozaptransstroy trust has successfully accomplished the responsible task, the subcontractors-- SMP-803 [Construction Assembly Contractor] of the Transsignalstroy trust, EMP-707 [Electric Assembly Contractor] of the Transelektromontazh trust, SMP-858 of Transsvyaz'stroy also did not let them down. However, to put it directly, without the tremendous help from the railroaders of the Southwestern road, the electrification would have become a long term construction.

"A considerable part of the road power engineering work we have fulfilled on our own", the Chief of the Electrification Services and Power Engineering Unit P. Zubets says; he is the oldest and most experienced expert, honored power engineer of the republic. The transition of the Southwestern main railroad to electric traction was carried out under his leadership.

"So, what did we do?", Petr Grigor'yevich continues, "First of all, we rebuilt the electric lines. We hung the contact cables. The mounting and adjustment of the traction substation in Korosten' and the introduction of the autoblock system took a lot of labor. The suspension bracket we made so that electric trains can go at the speed of 140-160 km/h."

Due to the exhaust transformers, a lot of the expensive cable was saved. The contact cable was attached using the explosion method. This will increase the suspension bracket reliability. The road communication workers, together with the construction workers and fitters, reconstructed the signalization, centralization and block system devices, and laid the cable from Malin to Korosten.

The road construction workers fulfilled all the work on the autoblock system title on the road section Spartak-Korosten. It is probably hard to determine whose contribution is larger. But this is the point; the customer and the contractor did not compare, but helped each other and built together. The socialist competition of operators, construction workers and designers for the timely and high quality fulfillment of work contributed a great deal. It was led by crane operator I. Korchinskiy of Yugtransstroy, the SU-16 brigade of A. Ivanenko, the EMP-707 brigade of I. Tokarev, contractors supervised by the interval chief A. Ivanenko, and others.

Thus, the electrification has been completed. This will permit railroad workers to transfer the traffic on the traction arms Darnitsa-Kiev-Korosten to the electric traction and, consequently, to increase the train weight, the traffic speed, and to save diesel fuel. The population received convenient local transportation.

From the traction substations Golovka and Korosten', supplying is envisioned for the rayon and agricultural consumers; the electric supply for the stations, line-route buildings, and the STsB and communication devices will considerably improve. In a word, one more step has been taken on the path to increase the effectiveness and quality in the work of transportation.

It took only 3 hours for our electric train to cover the distance of 150 km, and it arrived at the Korosten station.

The Korosten' people have received a good gift. A. Stashkevich, second secretary of Zhitomir party gorkom, spoke about this yesterday at the meeting on the occasion of the introduction of regular electric train traffic. He thanked the railroaders and the transport construction workers for their conscientious labor and congratulated them with the successful completion of the construction. Then he presented the collective of the Korosten department the Challenge Red Banner of MPS [Ministry of the Railroads] and the Trade Union Central Committee that has been awarded on the basis of the work results in the third quarter. At the meeting, the Chief of the Southwestern Railroad B. Oleynik spoke. He named those who led in the first ranks of the competing workers. He thanked the construction workers for the timely completion of the order and emphasized that electrification will continue; this is why, using the accumulated experience, in close collaboration of the construction workers and railroaders, it is necessary to more successfully solve the tasks that they are facing.

All those who spoke said that, on the holiday eve, great joy came to the city, and it was brought by the construction workers and the railroaders.

The music sounds. The first-rank workers are presented flowers.

And meanwhile, an electric train, having taken new passengers, is headed back to Kiev. The regular traffic has begun.

12404

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## RAIL SYSTEMS .

### TRUNKLINE ELECTRIFICATION COMPLETED ON MOSCOW-BREST-POLISH BORDER ROUTE

Moscow GUDOK in Russian 7 Nov 83 p 1

[Article by GUDOK correspondent: "They Kept Their Word"]

[Text] Brest--The State commission under the chairmanship of Deputy Chief of the Belorussian Railroad G. Pan'kov took over the main facilities of the newly electrified road section Beryoza-Kartu-Brest extending for 101 km. Thus, the way is open for electric trains from Moscow to the state border.

The collectives of the major contractors from the Beltransstroy trust and those of the subcontracting organizations worked with great effort on the electrification facilities. As early as 20 October, the customer--the Belorussian Railroad Administration--sounded the alarm: the schedule for the installation of supports for the contact lines was threatened.

Urgent measures were taken. At the spans Zhabinka-Koshelevo, the SU-315 [Construction Administration] brigades worked with greatest possible speed. They turned over the road section on time for the contact lines mounting. The brigades of V. Grebenkin and V. Kolesnikov from the electric assembly train No 702 showed high class. On some days they worked through the entire daylight time and fulfilled the plan by 250 percent.

There were numerous examples of high labor efficiency. Due to the large responsibility of the collectives participating in the electrification, cold rolling was carried out on the road section from Beryoza-Kartu to Brest on 5 November, followed by the final adjustments of the equipment and machinery.

And yesterday, 6 November, just the way it was written in the socialist pledges, the first electric train arrived at Brest. The passengers were those who, due to their selfless labor, decided to complete the big work ahead of schedule. The best of the best were named at the populous meeting that took place at the square by the station.

12404

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## RAIL SYSTEMS

### ELECTRIFICATION OF TASHKENT-KHAVAST LINE COMPLETED

Tashkent PRAVDA VOSTOKA in Russian 29 Nov 83 p 3

[Article: "Electric Trains Go to Khavast"]

[Text] The electrification of the 180 km part of the Central Asia railroad is fully completed, it connects the Uzbekistan capital with Khavast, a large junction station in Golod steppe. Now, not only passenger electric trains go there, but also heavy cargo trains pulled by powerful electric locomotives. This has permitted the increase of the cargo transportation on volume and the speedup of the delivery of technology, fuels, construction materials and structures for the virgin land sovkhozes in Syrdarya and Dzhizak Oblasts. On the return trip, the electric locomotives pull trains with fiber obtained from the crop grown on the virgin lands. It is intended for the textile workers of Russia, Ukraine and other regions of the country.

The construction workers of the Sredaztransstroy trust completed the electrification of the last 23 km span Yangiyyer-Khavast ahead of schedule. They had to work under difficult conditions, since the train traffic on this section did not stop even for an hour. Yet still, the brigades of the construction-assembly train No 503 laid the foundations and installed the reinforced concrete supports here within a short period. And the fitters from the Birobidzhan construction train No 708, who came to their assistance, mounted the steel structures and, during the short "windows" between the trains, hung the contact cables. The specialists also adjusted the necessary automatic machinery that controls train traffic.

Now the Sredaztransstroy trust has begun preparatory work on the electrification of the railroad section Tashkent-Chingeldy. This will increase the west-bound traffic capacity and the cargo transportation volume on the Central Asia main railroad.

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## RAIL SYSTEMS

### MOSCOW METRO BEGINS RUNNING EIGHT-CAR TRAINS

Moscow VECHERNYAYA MOSKVA in Russian 27 Sep 83 p 1

/Article by V. Maksimov: "Eight Cars Instead of Seven: Metro Trains Are Longer"/

/Text/ This morning the first eight-car metro trains were placed on duty.

The largest blue express trains have started traveling on the Zhdanovsko-Krasnopresenskiy line.

This is one of the heaviest travelled lines in Moscow. Many stations, for example the Tekstil'shchiki, Zhdanovskaya and Begovaya stations, have been combined with railroad platforms, which significantly increases the influx of passengers. There is no way to add trains here - the throughput capacity of the line is nearly exhausted. A particularly difficult situation develops during the peak hours.

To improve service to the passengers it was decided for the first time in Soviet practice to use eight-car trains, each of which can carry nearly 2,000 passengers.

The joining together of the eight cars was started at the Planernoye Depot. For now they have lengthened only a few trains; but by 1 October all blue express trains on this line will consist of eight cars rather than seven. According to rough estimates this will make it possible to transport an additional 10,000 passengers per hour in each direction.

The chief of the Planernoye Depot, B. Gelayko, and I drop in at the production building. Gleaming in the mirrors of the windows the "underground" trains stand. To one of them they roll an additional railroad car and snap the locks of the autocoupling. Then there is a careful check of the work.

To do this the brakes on the car are engaged and the train attempts to move. The autocoupling is in order and has passed its examination. Then they connect the electrocontacts and check the connections.

It only takes a few minutes to connect the eighth car, but this is only the final step in a great deal of preparation work. On the more complicated sections of the line they have installed additional automatic signaling devices. They have identified the sections where the trains can move faster and they have made the appropriate changes to the system that automatically regulates speed.

Probably there are few people who remember that the very first metro trains were half the size the present ones. And now they have achieved the maximum that was spelled out fifty years ago in the designs for metro stations.

A. Nepiypa, a machine operator-instructor, says that "it is more difficult to operate an eight-car train. The locomotive crews must truly master their work. Previously even when there was automatic operation of the train the precision of the station stop could vary two to three meters. Now the precision is literally measured in decimeters and the train is almost as long as the platform. 'Rehearsals' began earlier. For almost more than a month the depot operators at the Planernoye Depot have been stopping the blue expresses at the very entrance to the tunnel; they are handling them as if they were the longer trains."

"Such training is very important in a psychological sense," says A. Nepiypa.

The privilege of operating the first eight-car blue express has been won by Yu. Starchenko, who was the winner in the socialist competition among the Komsomol crews.

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## RAIL SYSTEMS

### PACE OF BAKU METRO CONSTRUCTION SAID TO BE IMPROVING

Baku VYSHKA in Russian 12 Oct 83 p 3

/Article by N. Nagiyev; chief of the SMU-3 /Construction and Installation Administration Number 3/ of Baktonnel'sstroy /Baku Tunnel Construction Trust/: "Things Are Getting Shaped Up for the Builders of the Metro"

/Text/ B. Petrosov, Secretary of Baku Metropolitan Party Committee, in his article "Home for the Blue Express Trains" (VYSHKA, 28 Aug) touched also upon the question about the construction of the second section of the metro, having noted that the builders have prolonged its completion. He also touched upon the reasons for the delay - a serious accident, water from an underground river broke into the completed section of the tunnel, which our crews had built from the Elmlyar Akademiyasy station toward the village of Musabeko to shaft No 57.

He scolded the builders for the fact that even after the accident was cleared up, which took two years altogether, the work of the general contractor still is not well organized. SMU-3 was the recipient of this scolding. But commencing in August we have seen a lot of changes. We solved several complicated technical problems, which has had a positive effect upon the pace of work. We have started work on the connector tunnel; we have already completed more than one hundred meters. In addition, in the past two months we have commenced seeing more return from the measures that were taken to strengthen labor discipline; these measures were developed to carry out the instructions of the November (1982) and June (1983) plenums of the CPSU Central Committee.

It is no secret that mining work demands a particular degree of discipline. A mandatory condition is to ensure that the work shifts are fully staffed. If someone does not come to work, his spot is empty in the stope. This means that some operation in the technological chain of the drilling work is performed slowly, which slows the speed of the drilling and reduces work safety.

Recently at a session of the trade union committee a driller was called in for his unauthorized absences (I will not give his name since I think he is now on the right path). When all of the circumstances were explained for his behavior, brigade leader Yu. Belyanin, had this to say: "A very important question is being decided here: will our accused comrade remain in SMU-3 or not? We have discussed his conduct at our brigade meeting. And today the entire brigade has come here, even though we were not invited. On his behalf I ask that you do not dismiss him. He has promised us that he will no longer fail to show up for work and that he will not even commit any violations of labor discipline."

After discussing the request of the drillers, the trade union committee members decided that the working comrades know what they are doing. They continued on with their discussions. Yu. Belyanin's words meant that the brigade accepted responsibility for each of its members and that in the future it will continue to answer for their actions. This concept was supported.

We have carried this idea over into the other brigades. Together with other measures this has yielded good results. Let us compare some data: in the second quarter of last year we had 23 instances of labor violations, resulting in the loss of 58-man-days. During the second quarter of the current year these losses have been reduced four-fold.

To what is new within the collective following the June (1983) Plenum of the CPSU Central Committee, it is necessary to add the goal of speeding up the construction of tunnels in the second section of the Baku Metro as seen in the competition for the best drilling brigade.

The substance of this competition can be seen in the formula: "from exemplary discipline to high productivity". The competition is directed at overfulfilling the per-shift assignment by achieving the maximum drilling speed. Three differentiated cash awards, to be paid from the material-incentive fund, have been established under the heading "bonus for the fulfillment of especially important assignments".

One bonus of 200 rubles goes to the brigade that works from seven in the morning to noon. The bonus is given to the brigade in the event that while working in this time frame over a period of three days the brigade will give a contract for 80 centimeters of drilling (the norm is based on the length of work - five hours). A second bonus of 300 rubles goes to the brigade whose shift lasts from 1200 to 1800 or from 1800 to 2400 hours. Over a period of three days it is required to drill through one meter of rock (the length of the work shift is six hours) each day. The third bonus of 400 rubles goes to the brigade that works from midnight to 0700 hours in the morning. Its task is to complete 1.2 meters every shift.

There are no words. These are large bonuses and it may suggest that we are too generous in rewarding those who excell. But let us remember that the metro builders are working in difficult conditions. The rapid pace of drilling is advantageous to the state, since it makes it possible to achieve a final goal - the completion of the second section of the Baku Metro. This is the way that we want to deal with the delay and fulfill our duty.

Material and moral incentives are an important matter. The brigades have joined in the competition on a friendly basis to win the title of "best drilling brigade". And there are already some winners. The first order to issue the 300 ruble bonus was signed in September. The contract brigade of F. Akhmedov was the winner. In a three-day period it drilled three meters of rock. Naturally, in overfulfilling the assignment (previously on these shifts the maximum drilling distance did not exceed 60 centimeters), the pay increases.

I want to note that in the Baktonnel'stroy system the workers have many opportunities to earn a good wage. To do this it is only necessary to build tunnels as quickly as possible. The correct correlation between the growth of labor productivity and pay is maintained within our organization. The first indicator is always three to four percent higher.

Our brigades have already drilled 153 meters of the left tunnel. The drilling of the right tunnel will get underway this year. Only one kilometer remains to be drilled to shaft No 57; beyond this point the route is completed all the way to the microrayons. The run from the Nizami Station to the Elmlyar Akademiyasy Station is also completed. It remains only to drill the station tunnels and finish work on the station building.

Now much depends upon our partner - the subcontracting organization of the Baku Section No 8 of the Moscow Specialized Administration No 157, which is managed by A. Marchenko. The section collective for lowering the water level is doing a great deal of work. Not all of the wells that were drilled for this are now operating. In these days just before the stope, where our brigades are at work, three of the wells are not in operation. The excess water is complicating and slowing the work of the drillers. It is necessary to organize the repair of the wells right away and to put them into operation. The section must guarantee our safety in drilling. New wells along the path of the metro must be built as quickly as possible.

In a word, the drillers understand their responsibility to the residents of Baku and are doing everything that they can to speed up the construction of the underground railroad system on the final section and to put the second section of the metro into operation.

A few words about the work on other sections. From the Neftchilyar Station toward Akhmedlov some 110 meters have been drilled. The section collective, headed by A. Musayev, is keeping ahead of the monthly schedule for drilling by five meters. The brigades of F. Kerimov and A. Mursaliyev are the best here.

The SMU-3 collective has also been given the task of building the left and middle distribution tunnels for the 28 April transfer station. B. Vilayatov, the section chief, is in charge of the work here. This collective too has success as a partner - it has completed drilling the left tunnel ahead of schedule and with a high quality. The brigades of Yu. Belyanin, G. Kel'bikhanov and R. Aliyev are overfulfilling the shift assignments.

Without slowing the pace and quality of drilling on these two sections, we are directing most of our effort toward completing the final tunnels of the second section of the metro so that we can put it into operation on schedule.

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## MARITIME AND RIVER FLEETS

### PROBLEMS PERSIST IN BLACK SEA PORT RO-RO OPERATIONS

Moscow VODNYY TRANSPORT in Russian 15 Oct 83 p 1

[Article by Ye. Chekha, deputy chief of the fleet operation administration of the Black Sea Shipping Line: "Ro-Ro Vessels at the Berth"]

[Text] The assimilation of something new is always associated with certain difficulties, and at times with costs too. Experience doesn't come easy, and in this sense the creation of a new transportation processing system--ro-ro shipments--in the Black Sea Shipping Line was no exception. A great number of problems connected with operating a specialized fleet had to be resolved, and, frankly speaking, not everything went off without a hitch as we would have wanted.

But looking back now, it's possible to say with confidence that ro-ro shipments completely proved their value and are continuing to be developed and improved. This year 10 ro-ro vessels of the shipping line--4 "RO-12", 3 "RO-30", and 3 "RO-60" ships--operated successfully on the Cuban route and the "Blasko Oriental Line." According to qualitative indicators, all tasks were overfulfilled. The purpose--to provide shipment of the entire freight flow of the wheeled processing method--was brought to their attention even before commencing operation of this fleet. And now it's possible to say that this goal has been achieved: at the ports of Odessa and Ilichevsk, the labor productivity of dockers and machine operators during processing of ro-ro vessels increased four or fivefold in comparison with general-purpose ships.

In short, the new system passed the test of time. Other facts also speak about its formation. Nonproductive demurrage for "RO-12" ships decreased by almost 22 percent in comparison with last year, and for "RO-30" ships by 54.1 percent. In addition, the products list of cargoes being shipped is constantly expanding, and new ways of lashing and stowing it are being introduced. Thus, for example, two shipments of block-modules were accomplished from Kerch to the port of Bung-Tau (Socialist Republic of Vietnam).

It's possible to add to this that the new standard documentation and contemporary forms for organizing the labor of port employees had a positive effect as well on the operation of the transportation and processing system.

And nevertheless, in spite of the obvious achievements, is it possible to say that today's operation of a ro-ro fleet meets all requirements being demanded of it and its resources? Of course not. We are still faced with too much to do in order that this fleet may operate under optimum conditions. And first and foremost here it's worth speaking about this: resources of the specialized fleet by far outstripped the resources of the coastal base.

The problem, which it is possible to designate conventionally as "a ro-ro ship at the berth," continues to remain one of the most serious. In our case, if one is to be precise, there is a ro-ro vessel at two, and perhaps also at three berths, as it has to be processed with two to three reberthings. These ships are partially processed at the Ilichevsk container terminal. And its carrying capacity--45,000 containers annually--has already by far failed to keep pace with our requirements today: this year we're turning out 80,000 containers. And what is going to happen?

It's easy to imagine. Just before the end of the current five-year plan the Black Sea Shipping Line will receive five more ro-ro vessels, and it will become unbearably crowded at the berths. Under conditions of this kind, non-productive demurrage as if planned beforehand can't help causing anxiety: in fact, considerable measures which are bound to contribute to an intensification of ro-ro fleet operations have already been planned by us for next year. Here are some of them: organizing shipments of wheeled and tracked equipment and general cargoes via "Ro-60" ships from the port of Ilichevsk to Kampuchea, shipments of wheeled equipment in two tiers, and shipments of heavy block-modules on the upper decks of ro-ro vessels.

You must admit that the incorporation of these and many other leading technological processes will be quite difficult under our conditions. Therefore the creation of a modern cargo base for servicing the specialized fleet is an imperative necessity.

I have already spoken about the fact that unproductive demurrage for "RO-12" and "RO-30" ships have been reduced. But they have increased for "RO-60" ships. Though not by much, they have increased. And technical reasons are the blame for this. Practice has shown that the main engines of these ships require preventive maintenance with every voyage. And this takes five to six days over and above cargo operations. As a result, sometimes delivery of ships to the line is hampered.

It still wasn't too long ago that justifiable rebukes were heard about the Black Sea Shipping Line concerning the fact that far from everything was being done in order that repair of ro-ro vessels, especially those large ships such as "Kapitan Smirnov," "Kapitan Mezentshev" and "Inzhener Yermoshkin," might occur at the proper level. Everything is normal--technical servicing between voyages was not planned in advance, and there was no reserve of spare parts, oils, chemicals and the like.

Now the deficiencies have been eliminated and the ship organization and material and technical supply services are providing the ships with everything necessary for normal operation of the main power plants on voyages. Technical servicing and repair of shipborne transshipping equipment, which is performed by the fleet's technical servicing base, have also improved markedly between voyages.

But the whole trouble is that the technical servicing base can't perform major repair.

Where is the way out? I see it in removing the ro-ro vessel from operation once a year without fail, and of course with an obligatory substitution. Then for sure we'll be able to avoid also many repairs not provided by the plan.

And there's one last thing I would like to speak about. The ro-ro fleet is a special fleet. And not only in service and operation, but also in administration. The mechanical transfer of old methods to the administration of specialized ships adversely affects its operation. It's probably worth it in the beginning if only to extend the rights of KhEGS [expansion unknown] in supervising the conduct of cargo operations by ports and using and servicing ro-ro equipment.

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## MARITIME AND RIVER FLEETS

### MARITIME OFFICIALS REPRIMANDED FOR INATTENTION TO WORKER SAFETY

Moscow VODNYY TRANSPORT in Russian 11 Oct 83 p 3

[Article: "At the Collegium of the Ministry of the Maritime Fleet"]

[Text] Reports from managers of the Black Sea and Baltic Shipping Lines were heard at the regular joint meeting of the collegium of the Ministry of the Maritime Fleet and the central committee of the trade union for workers of the maritime and river fleet concerning progress in the shipping lines in implementing a comprehensive plan for improving conditions, labor protection and sanitary measures.

The collegium noted that for the first six months of the current year a considerable volume of operations was implemented which provided a reduction in the level of noise, vibration, dust content and gas pollution and an improvement in the temperature and humidity conditions at work sites, and additional personal sanitary accommodations were put into operation.

In addition, the collegium and the central committee of the trade union called the attention of managers from both shipping lines to inadequate organizational work in creating healthy conditions in production, proper maintenance of personal sanitary accommodations at enterprises, and the elimination of emergency projects; and to the slow rates of renovation and major repair of production buildings and the incomplete assimilation of resources being allocated for these purposes.

The deputy chiefs of the shipping lines--K.A. Strel'tsov of the Baltic and A. I. Mytnik-Gonte of the Black Sea--were reprimanded for not providing proper supervision in the course of implementing the comprehensive plan. The attention of V. I. Kharchenko, chief of the Baltic Shipping Line, and Yu. M. Nabatov, chairman of the basin committee of the trade union of workers of the maritime and river fleets, was called to serious omissions in organizing implementation of tasks for the comprehensive plan. The collegium took into consideration the statement of managers of the Black Sea and Baltic Shipping Lines that specific measures will be taken by them in 1984-85 for catching up with the arrears allowed in the 1981-83 period.

The report of the chief of the Sakhalinsk Shipping Line was discussed at the joint meeting concerning progress in implementing the minister's order on working conditions for preventing occupational injuries.

A check conducted by a commission of the Ministry of the Maritime Fleet on the administration of shipping lines, ships and ports showed that managers of shipping lines, did not draw the proper conclusions from decisions of the managing organs and the minister's orders for creating safe working conditions in production and preventing occupational injuries. Only the irresponsibility of shipping line managers can explain the fact that for a number of years an examination was not conducted on the labor safety practices of supervisory and engineering and technical personnel of the administration. The minister's order concerning the bringing of manufacturing charts in compliance with the requirements of GOST [All-Union State Standard] was not completely implemented by the shipping line. The port service and the department of the chief process engineer did not organize effective supervision for conducting this operation. Cases of gross violation of rules for operating electrical equipment were tolerated at the ports. Serious omissions in organizing safe transshipping operations took place at the ports of Kholmsk and Vanino. Formalism on the part of officials in organizing constant supervision for conducting this operation is a general shortcoming for all ports of the shipping line.

S. F. Kamyshev, chief of the Sakhalinsk Shipping Line, was severely reprimanded for serious omissions in organizing and supervising working conditions in accordance with labor safety procedures at ports, and G. A. Uvarov, chairman of the Sakhalinsk basin committee of the trade union of workers of the maritime and river fleets, was reprimanded. The management of the shipping line was ordered to make officials guilty of unsatisfactory working conditions in accordance with labor safety procedures answerable in a strict disciplinary sense.

The collegium discussed as well the reports of M. A. Kurbatov, chairman of the "Morkonteyner" V/O [all-union association], concerning progress in implementing measures for increasing containerized cargo shipments and V. S. Petukhov, chairman of the "Morpasflot" V/O, "on the status of and measures for providing passenger transportation in 1984-85 and in the 12th Five-Year Plan," and heard a matter on the status of control and revisory work in the Latvian Shipping Line.

Appropriate decisions were made on all matters discussed.

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## MARITIME AND RIVER FLEETS

### BRIEFS

**NEW CONTAINER SHIP**--The State Flag of the Soviet Union has been hoisted aboard a new ocean-going ship in a solemn ceremony in Rostok. The motor vessel bears the name of the well-known poet N. S. Tikhonov. The new container ship is the fourth in a uniform series of vessels built by GDR shipwrights for the Baltic Steamship Line. The container ship's dimensions are impressive. It is 175 meters long, with a beam of more than 25 meters and a hull height to the main deck of 16 meters. The ship has a high speed--21 miles per hour. The "Nikolay Tikhonov" is intended for transporting 20- and 40-foot international standard containers, of which it can take up to 940 in its 5 holds and on deck. The latest in automation features insure remote control of the machinery from the captain's bridge. All the sailors have individual cabins with air conditioners. The ship has a sports hall and a swimming pool. Command of the container ship has been entrusted to the experienced ship's master A. F. Turuntayev. After hoisting of the flag, the motor vessel departed on its first working voyage--to fetch large-diameter pipe in Bremen, which it will deliver to its port of registration, Leningrad. [By S. Kharlampiyev] [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 4 Oct 83 p 2] 12462

**NEW CASPIAN TANKER**--A tanker bearing the name of the ardent revolutionary Sergey Mironovich Kirov has joined the petroleum-carrying fleet of the Caspian Sea Steamship Line. The ship, which is intended for transporting refined petroleum products, has arrived in Baku. The "Sergey Kirov" is the first ship in a new series of high-tonnage oil-carriers that Romanian shipwrights are building for the Caspian sailors. According to the ship's captain, Il'yas Mamedov, during its trials the tanker demonstrated excellent speed qualities, and is stable and easy to handle. The ship is equipped with modern navigational instruments and a reliable system to protect the surrounding area from pollution. The need to create a new series of high-tonnage oil-carriers, which the Caspian sailors will receive during the 11th and 12th Five-Year Plans, is dictated by the development of oil refining in the republic. In recent years, large installations for the initial refining of oil have gone into operation at the Novobakinskiy Petroleum Refining Plant imeni Vladimir Il'ich and the Baku Petroleum Refining Plant imeni 22d Congress of the CPSU, and a pipeline has opened which delivers West Siberian oil to Azerbaijan. [AzerINFORM] [Text] [Baku VYSHKA in Russian 10 Nov 83 p 1] 12462

**TANKER 'SERGEY KIROV' ARRIVES IN BAKU**--Baku--The petroleum-carrying fleet of the Caspian Sea Steamship Line is being enlarged. Yesterday the tanker "Sergey Kirov," intended for the transporting of refined petroleum products,

arrived at its port of registration. The ship's carrying capacity is 5,300 tons. [TASS] [Text] [Moscow VODNIY TRANSPORT in Russian 10 Nov 83 p 1] 12462

WIND POWER IN MODERN NAVIGATION--Spécialists see an excellent future for the sail, which after poles and oars is the most ancient form of ship propulsion. They intend to employ the free energy of the wind widely in modern navigation. A tanker of the "Drogobych" type will become one of the first such "winged vessels." The workers of the Central Scientific Research Institute of the Maritime Fleet proposed the original plan of its wind-energy rigging. According to their calculations, it will help save more than 10 percent in fuel on the passage from the Baltic to Cuba alone. There are many interesting plans "in the briefcases" of specialists at other Leningrad design, training, and scientific research organizations of water transport, fisheries, and shipbuilding. Representatives of these industries will gather today at a conference in the Leningrad Central Planning and Design Bureau of the Ministry of the Maritime Fleet of the USSR to discuss the results of their work and experiments and to review prospects for creation of a new generation of ships. [By L. Frolov] [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 11 Nov 83 p 1] 12462

NEW SERIES OF MINISHIPS FOR ARCTIC--Murmansk--The Murmansk Ship Repair Facility of the Ministry of the Maritime Fleet of the USSR is building a new series of miniships for the Arctic--side towing launches. The "Sever-1," which has just been launched and is undergoing mooring trials, is a launch in this series. It will augment the fleet of the expeditionary force of emergency rescue, shipraising, and underwater-technical work of the Murmansk Steamship Line. This maritime workhorse will transport freighted barges from an off-shore vessel to the polar shore. [By S. Baranova] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 18 Nov 83 p 1] 12462

NEW CONTAINER SHIP FOR ARCTIC FLEET--The country's Arctic fleet has been joined by the new dry-cargo vessel "Vitaliy D'yakov." The shipwrights of the Nava-shino plant "Oka" have sent it on its first voyage. It is the first ship in a new series of seagoing container ships intended for use in the high latitudes. The container ship has a strong steel hull with special ice reinforcement in the bow and the sides. There are boilers for heating the ballast water, and a system for heating valve equipment permits loading operations to be conducted in severe frost. [TASS] [Text] [Moscow VODNIY TRANSPORT in Russian 22 Nov 83 p 3] 12462

NEW BALTIC AUTO FERRY--Leningrad--The automobile and passenger ferry "Il'ich" was made fast to a mooring in Nevskiy harbor yesterday. It has joined the fleet of the Baltic Maritime Steamship Line, which previously possessed no such vessels. The motor vessel, which is intended for year-round service in the Baltic, will accommodate more than 300 cars or dozens of heavy-laden transport trucks. [TASS] [Text] [Moscow VODNIY TRANSPORT in Russian 26 Nov 83 p 4] 12462

NEW CONTAINER SHIP COMPLETES TRIALS--Leningrad--The shipwrights of the plant imeni A. A. Zhdanov have won another labor victory. Sea trials of a new container ship from a series of modernized ships with a horizontal means of

freight handling have been completed here. On the side of the motor vessel, whose port of registry will be the city of Riga, has been placed the name of a famous son of the Latvian people, "Yuriy Avot." The sea trials, conducted in exceptionally harsh weather conditions, were successful. The whole delivery crew functioned efficiently and in well-coordinated fashion, particularly V. Mikhalochkin's brigade of diesel fitters, Yu. Goregin's brigade of hold unit installers, and A. Vil'ner, the automatic equipment adjustment engineer. The shipwrights will declare the ship ready for delivery to their client in late November, a month ahead of schedule. [By V. Gorshkov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Nov 83 p 1] 12462

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## PORTS AND TRANSSHIPMENT CENTERS

### MINISTRY OFFICIALS ON WAYS TO SPEED SHIP PROCESSING IN PORTS

Moscow MORSKOY FLOT in Russian No 12, Dec 83 pp 10-11

[Article by V. Sen'ko, first deputy chief, Black Sea Shipping Line, and N. Pavlyuk, deputy chief, port of Odessa: "The Fleet Is In Port: How Can Processing Be Speeded Up?"]

[Text] The decree of the CPSU Central Committee and the USSR Council of Ministers "Improvement in planning and organization of transporting economic cargoes and passengers and increasing the effect of the management mechanism in improving efficiency of transportation enterprise and organization operations" is directed toward providing the ultimate result in operations for all forms of transportation for shipment of cargo with minimal expenditures.

Attainment of this ultimate result for each form of transportation is envisaged through the most effective use of transportation enterprises' production-technological base and elimination of losses in the traffic and carrying capacities of the transportation system by creating their optimum reserves.

The ever increasing disproportion which exists in maritime transportation between the growing carrying capacity of the dry-cargo fleet and cargo processing capacities by ports determines to a large extent the increase in unproductive demurrage of the fleet while awaiting processing (entry into the NPGRP) [continuous schedule-plan of port operations]. Reduction of the gross berth time of vessels in port is the primary reserve increasing the carrying capacity of the fleet, and consequently in increased efficiency operations within the sector overall.

Without dwelling upon causes which lie outside the sector (shortages of railroad rolling stock, uneven delivery and shipment of cargoes, etc.), it is necessary to focus attention on the fact that the existing situation is due in large part to an imperfect economic management system for processing the fleet in port. The basic reasons for this, in our view, are the following:

First, the primary planning indicator for port operation, volume of cargo processing, is not tied to quality of service for vessels in port. It does not orient the port collective toward reduction of the gross berth time for

for the fleet being processed. The indicator of gross intensity is today not primary, and in essence does not play a role in the management process.

Secondly, the fund-producing indicator of labor productivity for port workers (in enterprises called upon to service ships and similar transport equipment arriving in port with irregularity) results in a shortage of that part of the labor force which, in the absence of loading operations, is utilized in non-port operations, and during the period of maximum ship accumulation is capable of ensuring their processing with sufficient intensity. Under these conditions, a shortage of labor force reserve results on the one hand, in increased berth time for the fleet, and on the other, to underutilization of ports' production capacities.

Third, the existing system of profit/loss accounting relationships between the vessel owner and the port is directed not at possible reduction of the vessel's total berth time, but at only that portion for which the port is responsible. This situation creates objective conditions for expansion of the operational area for vessels processed during a 24-hour period, which, with limited labor resources reduces the intensity of loading operations and consequently, to an increase in the gross berth time of the fleet.

Fourth, in current practice for the operational regulation of tonnage flow into ports, there is lacking a precise reference point which could, depending upon the traffic capacity of the port, establish a possible queue for vessels awaiting processing. This is the underlying cause for the lack of coordination with the port's planned task for gross intensity and for breaking the fleet's work schedule.

The shortcomings listed for the planned management system for fleet processing in port define ways to perfect that system.

We will examine primarily the method which will result in reduced total berth time for vessels in port, which actually increases the carrying capacity of the fleet.

During the third and fourth quarters of 1981, the port of Odessa conducted an experimental check (by the computational method) of the control of the fleet processing operation in accordance with methodological directives for planning and computation of gross intensity indicators for processing the fleet in port, as developed by Chernomorniiprojekt [Black Sea Scientific Design Institute].

The results of the experiment were reviewed at meetings of a commission specially created in the port and in the service of the port organization of the Black Sea Shipping Line. As the analysis indicated, the experiment confirmed the validity of the proposed method: planning for the port of the gross intensity indicator, which is calculated based on the workload of the port and the availability of production resources while the evaluation of this indicator's fulfillment, accomplished in light of specific existing conditions for fleet processing which are not dependent upon the port, motivates the port collective to resolve the main problem reduction of the berth time for the fleet in port.

In the computation of the planned indicator for gross intensity for fleet processing, with consideration given actual irregularity of vessels' arrival in port, it is necessary to determine the average daily number of arriving vessels, the probability of fleet accumulation for the average time for which a single vessel is under loading and auxiliary operations with allowance for breaks due to weather, and also the maximum number of vessels processed simultaneously for a 24-hour period which the port can provide for with the current number of employees.

The computation tables executed according to this methodology provide for establishment of an average daily queue for vessels. Here, relative to the convergence of the indicator values, characterizing on the one hand, requirements for volume and structure of cargo processing, and on the other, the capability of the port for availability of resources, the queue of vessels grows.

A result of the experiment conducted has demonstrated that expansion of the vessel processing area during a shortage of labor resources reduces the intensity of cargo operations.

In evaluating the results of port operations overall, the reported level of gross intensity was higher than the planned, if no consideration is given to the change in structure of processed cargoes and the current intensity of vessel arrivals in port.

With the exclusion of all those factors which do not depend upon the port, it was established that the plan task for cargo processing was fulfilled only by 90--93%, plan quota for the processing of vessels with grain cargoes and raw sugar, by 101 and 135% respectively, and for general cargoes, 94 and 74%, which affected the port's overall result.

The reason behind the port's nonfulfillment of the refined plan task often is the practice of organizing shift-daily processing of vessels with overt and covert "overtime", which results in dissipation of port resources and to a reduction in the net intensity of cargo operations against the normative, which is the basis of the plan task.

Fulfillment and overfulfillment of tasks for gross intensity of vessel processing relating to bulk cargoes are explained by underrated existing norms for ship-hours for these cargoes. Conversely, in view of the rigidity of existing norms for the processing of ships with general cargoes and resource dissipation prior to entrance into the NPGRP, the port was in no condition to achieve the planned level of gross intensity for these cargoes.

From what has been stated, it follows that the mechanism put forth by the methodology to compute the plan task and to evaluate its fulfillment direct the port toward attainment of the assigned level of gross intensity through concentration of resources in the processing of vessels.

In our opinion, to regulate tonnage flow to the ports by month, it is fully expeditious to use such computational indicators: port capabilities for

maximum number of vessels processed in one day and requirements for resources according to the number of vessels arriving in port during the average processing period (or for the number of vessels processed in a 24-hour period, which is one and the same).

The difference between these indicators provides a quantitative expression to the reserve of the port's traffic capacity which is necessary to cover the uneven daily arrivals of vessels throughout the planned period.

An analysis of these indicators for the situation existing in the port of Odessa for months in 1979-1981 established that the value of their difference varied from +6.12 (July 1980) to -5.28, indicative of the existing shortfall in traffic capacity in December 1980. As a result, the number of vessels left unprocessed and carried over to January of the next year sharply increased.

With a numerical value of port traffic capacity reserve less than the quantity 1.8, the number of vessels carried over increased, defining the shortfall of the reserve; with a value of more than 1.9, a reduction of the queue was observed.

In all probability, both a permissible value of resource capacities for the port and an optimum value exist.

It is absolutely obvious that the search for these values and the creation of instructions for their use to evaluate management decisions taken at the interport level are tasks of prime importance in the regulation of tonnage flow through redistribution among interchangeable ports.

This methodological basis demonstrates also a capability which is scientifically sound to review the existing state of mutual-computations of ports with vessel owners for berth times of vessels.

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## PORTS AND TRANSSHIPMENT CENTERS

### PORT PERFORMANCE WRAP-UP FOR OCTOBER 1983

Moscow VODNYY TRANSPORT in Russian 19 Nov 83 p 2

[Article: "Stimulating Creative Interaction"]

[Text] Collectives of the transportation centers achieved substantial successes in pre-October socialist competition. On the whole, the cargo transshipment plan for October was fulfilled by 104.7 percent. Arkhangelsk, Kandalaksha, Vyborg, Odessa, Belgorod-Dnestrovskiy, Novorossiysk, Batumi, Makhachkala and other transportation centers worked confidently during the month and coped successfully with the plan.

In October, the Leningrad workers had to encounter great difficulties. But efficiency in organizing operation of the coordinating council and its working group and persistence in achieving the goals which were set ensured fulfillment of the cargo transshipment plan.

In October, the Ventspils transportation center, where an experiment was being conducted on the resting period of a large-capacity ship, had to resolve a primary task. Heavy gales disrupted the work of port workers. However, they unloaded a ship 226 meters in length until its draught was passable and delivered it to the berth. Processing at the berth was organized on two sides of the ship-- rail cars and small ships. As a result, the port employees and railroad workers completed the experiment on 7 November.

In October, railroads leading to the ports operated efficiently. As a whole, stations provided delivery of rail cars with export cargoes to the ports. On the Odessa railroad, the transportation centers of Izmail, Belgorod-Dnestrovskiy, Nikolayev, Odessa and Kherson obtained the monthly norm and provided timely unloading of rail cars. The Baltic and Donetsk Railroads provided the planned number of rail car deliveries with export cargoes to Klaypeda and Zhdanov, and the Far Eastern Railroad coped successfully with delivering rolling stock to Nakhodka and Vanino. It is necessary to maintain the assigned rates so that in the time remaining before the end of the year delays are not allowed in products being shipped by industry for export and for shipment by sea in interport traffic.

In October, the ports of Tallinn, Riga, Klaypeda, Kerch, Baku, Termez, Vladivostok, Nakhodka and Vanino allowed disruptions in unloading rolling stock. Maritime transportation centers which have a lot of experience in coordinated operations are obliged to eliminate similar delays in cargo transit.

The plan for transshipping imported cargoes from ports was fulfilled successfully, by 105.1 percent, by railroad workers and seamen. Grain, perishable and other food cargoes, equipment and metals were dispatched to consignees in a timely manner. Transportation centers were feverish with activity because of a lack of multiple purchase orders for some batches of pipe directed to stations of the Sverdlovsk Railroad. In this respect, the transportation workers have serious complaints regarding the "Soyuzvneshttrans" V/O [All-Union Association] and the Ministry of Construction of Petroleum and Gas Industry Enterprises.

The transportation centers of Vyborg, Tallinn, Feodosiya, Belgorod-Dnestrovskiy, Zhdanov, Kerch, Berdyansk, Reni, Vladivostok and Vanino fulfilled the import shipping plans. The example of these centers speaks about the real resources of subcontractors. However, the largest centers, for which fulfillment of the plan for import rail cars determines in many respects the basic operating indicators, are not always equal to the occasion. For example, in October the Leningrad port did not receive 4,157 import rail cars; Riga--500; Odessa--2,704; Illichevsk--1,165; Nakhodka-2,033; and Vostok--1,208. What is being talked about here is the withdrawal of empty rail cars from the transportation centers even with imported cargoes in the warehouses of ports and ships against directives of the MPS [Ministry of Railways] management. It is necessary to strive for precise fulfillment of them everywhere. Appeals of the transportation centers to the ministry became more frequent for rendering assistance in providing rail cars. As a rule, analysis of each such appeal leads to the conclusion that railroads, shipping lines, stations and ports can independently decide the majority of matters set before them, but they can't withdraw from their decisions.

Unfortunately, in October a lack of coordination was talked about in the operation of the Klaypeda, Riga and Sakhalin transportation centers, and the Baku to Krasnovodsk ferry was operating unsatisfactorily.

A great deal was done in the Magadan transportation center for the continuous receipt of cargoes. Relations of the seamen and vehicle drivers became business-like, an overall production control service was organized, the warehouses were cleared of stale and unclaimed cargoes, and the coordinating council operates every day. But the transportation worker's efforts, which were not supported by cargo consignees and the Northeastern Main Supply Administration in the first instance, did not lead to successes. And what is more, the situation deteriorated in October in connection with the transshipping of vegetables, the reception of which was poorly organized by trade organizations. A high state of being well organized and the discipline of mutual obligations is required from the subcontractors in Magadan in order to provide for the export of not less than 8,500 tons of cargo from a port per day.

In October, the presence of cargoes with a long shelf life grew by 40,000 tons at transportation centers, including Leningrad and Vladivostok where the quantity of cargoes with a shelf life over one month increased. A majority of the centers reduced their stocks of imported cargoes. The seamen and railroad workers of Tallinn, Odessa, Nikolayev, Kherson, Zhdanov, Reni and Vanino achieved good indicators. As of late, the situation in Ilichevsk has deteriorated somewhat. It is necessary to take immediate measures for shipping cargoes with a shelf life over three months from Leningrad, Riga, Ventspils, Klaypeda, Ilichevsk Zhdanov, Taganrog, Nakhodka and Vladivostok. There is a real possibility of doing this in a 10-day period.

In October, serious difficulties appeared in the operation of a number of transportation centers, including the Baltic and Dunay areas, due to weather conditions. In November and December, they become considerably complicated in all the basins. It is necessary for transportation workers to take this into consideration.

The severe conditions of the Arctic make a serious test for the transportation centers of Arkhangelsk and Murmansk. Having cargoes on board, the ships return in a westerly direction. Containers, which must be delivered immediately to industrial enterprises, arrive in large quantity from Norilsk. All together at the present time, there are 30,000 tons of various cargoes in Arkhangelsk for shipment by rail, and 188,000 tons in Murmansk.

The breakdown of the reclaimer at the coal complex in Vostochnyy Port must serve as a serious warning for workers in the Far East. The port workers couldn't restore the equipment for a month. An imperfection in the manufacturing arrangement of machinery at this complex led to a delay in shipping coal for export. It's something for the "Soyuzmorniiprojekt" institute and the port specialists to think about.

With the onset of the fall and winter period, the smooth running condition of transshipping equipment is an important condition for a successful operation for all transportation centers.

Workers in all sectors of the national economy perceived with interest the decree of the CPSU Central Committee "On work of the party committee of the Ministry of Railways for stimulating initiative and increasing the responsibility of communists of the organization for implementing the decisions of the 26th Party Congress and the November 1982 and June 1983 Plenums of the CPSU Central Committee." Especially close to collectives of the transportation centers is the directive of our party's central committee to universally assimilate the experience of seamen, railroad workers, vehicle drivers and river transportation workers of the Leningrad center in further developing cooperation in the operation of all kinds of transportation, as well as the requirement to show more initiative through interaction with other ministries and departments in reducing inefficient cargo shipments and making better use of personnel.

These directives of the party must find specific realization in matters of the transportation centers. The positive results of October should be developed for a successful conclusion to the year.

## PORTS AND TRANSSHIPMENT CENTERS

### DEVELOPMENT, ACTIVITIES OF BELGOROD-DNESTROVSKIY PORT

Moscow VODNYY TRANSPORT in Russian 17 Nov 83 p 2

[Article by D. Romanov, VODNYY TRANSPORT correspondent at Belgorod-Dnestrovskiy Port in Odessa: "A Second Breath"]

[Text] This schematic chart in the office of port chief Viktor Kondrat'yevich Baranenko attracts one's attention right away. On it is the Belgorod-Dnestrovskiy port. There are multikilometer berthing lines, deepwater berths, and a lighter base. But, frankly speaking, when you leave the office and get to the port itself, you feel a disappointment. It's small: there is a total of six berths and the first impression is that they work here without particular strain.

Of course, the impression is erroneous. It's simply difficult to immediately switch over and grasp this really small port after Odessa or Ilichevsk. But, in fact, the Belgorod-Dnestrovskiy port was also conceived as an auxiliary one, and its primary task consists of processing small ships and freeing the deepwater berths of Odessa and Ilichevsk.

The port has coped with its task. Since the moment of its opening in January, 1971, about 5,000 ships of this kind from 28 countries of the world were processed here. The port processes grain, canned goods, vegetables, timber, pipe, equipment and metal with around 30 designations in all. One more berth, the seventh, which stretches for 160 meters, is being built now. Nearly a million tons of construction cargoes will be transshipped here from maritime to river ships.

And, nevertheless, the port bears a very small resemblance to the outlines of the one marked on the schematic diagram. But let's remember: after all, the Ilichevsk port also began as only one of the areas of the Odessa port. And, perhaps, one of the most important qualities of a manager is to see the prospect of development and not to isolate oneself just within the limits of today's concerns. Baranenko was able to demonstrate that the Belgorod-Dnestrovskiy port can operate differently, more productively, and with greater efficiency. It is located at the mouth of the Dnestr and is eight miles from the outlet to the Black Sea. As is generally known, ports at the mouths of rivers throughout the world are engaged in the transshipment of cargoes from maritime to river ships. This port is almost not engaged in transshipping.

But there's a need for this, and what a need as well! Moldavia imports nearly a million tons of timber from the Volga-Kama basin, more than a half million tons of metal from Zaporozhye, Zhdanov and Dnepropetrovsk, machinery and equipment--you can't even enumerate all of it. And all these cargoes travel basically by railroad. And there is a two-way flow. Lime meal, which is mined at the Kripov mine, travels from Moldavia to Belorussia via a complicated route: at first, via motor vehicle to the station of Gidichich, and then via railroad. The volume of these shipments is quite large--more than a million tons per year.

And what about canned vegetables for which the republic is famous? Annually, 800,000 tons are shipped to the northern and eastern areas of the RSFSR. Of course, it travels via railroad and motor vehicle transportation too. On the whole, all 684 kilometers of the navigable Dnestr, which "lies" on Moldavian territory, are actually standing idle, and railroad workers and vehicle drivers are working with a full load to make up for it.

This is what V. Baranenko, his deputy for operations V. Oleynichenko, and other specialists maintain on the basis of analyzing port operations: it's already possible now to be involved in transshipping a portion of the cargoes from maritime to river ships. Several years ago an experiment was conducted for shipping lumber from Rostov-na-Donu to the port of Varnitsa on the Dnestr. Timber in the amount of 10,000 tons was transshipped from river and sea type ships to barges of Moldavia's Main Administration of the River Fleet. As a result, they succeeded in freeing nearly 250 rail cars.

This is how the experiment and proposal of the Belgorod-Dnestrovskiy port workers was evaluated at a meeting in the department of transportation, communications and road management of the Moldavian SSR Gosplan: "a considerable quantity of grain, coal, soda ash and other cargoes, which are regularly delayed in being sent to their destinations because railroad cars are not provided for reasons that depend on the Ministry of Railways, can enter through the Belgorod-Dnestrovskiy maritime port for the needs of the Moldavian SSR."

That is to say, the timeliness and direct benefits connected with the port workers' proposal do not require special demonstrations. But this, so to speak, is in the theoretical plan. And how is it turning out in practice? One matter is the experiment and the other is daily practice. Certainly this most useful idea requires careful scientific study and a change in the established relations of all participants in the transportation process, supplementary capital investments and so forth.

That is precisely why scientists were attracted to the matter from the very beginning. Thus, scientific research work was conducted by "Chernomorniiprojekt" for increasing the area of the port by creating and incorporating new technological processes of using sea bottoms during dredging operations. In accordance with the institute's recommendations, in the near term port workers will obtain depths of 5.5 meters in the channel (until now the depth did not exceed 4.5 meters) and an alluviated area of 10 hectares for further development. The developers are participating most directly in switching freight flows from rail transportation to maritime and river, and they are processing the necessary documentation.

And, meanwhile, cargoes at the Belgorod-Dnestrovskiy port are being transferred more and more frequently to barges of the Moldavian Main Administration of the River Fleet. This fall several motor ships were processed in this manner--quickly, profitably, and cheaply.

But, nevertheless, what's next? How soon will the experiment become the norm? I asked V. Yatsenko, director of "Chernomorniiprojekt," and V. Vakuyev, laboratory chief for complex transportation research, to talk about this.

Y. Yatsenko: "I think that specific measures which need to be taken today in developing the port and "tying" to it the freight flows of basic building materials, timber, metal and agricultural products are an imperative necessity. We can and must remove the load from railroad transportation and expedite the delivery of cargoes. But for the time being here it turns out to be a closed circle: not much cargo at the Belgorod-Dnestrovskiy port is transferred to Moldavia's river ships because the republic's Main Administration of the River Fleet basically has only barges and platforms for shipping sand and gravel, and you can't transport either grain or canned goods on them. On the other hand, a situation such as this was created because sand and gravel travel to Moldavia via river, and until now there wasn't any need for other ships. It's true that several barges with holds, which can be used for delivering grain and canned goods, will show up this year already in the Main Administration of the River Fleet. Leasing of barges with holds from the Ukrainian SSR Main Administration of the River Fleet was envisaged as well. On the whole, work which is being conducted now at the Belgorod-Dnestrovskiy port and in Moldavia's Main Administration of the River Fleet is important and necessary. And certainly in the not too distant future, cargo transshipment at the Belgorod-Dnestrovskiy port will become a routine matter."

V. Vakuyev: "The products list of cargoes which it is possible to switch from rail to water transportation is being coordinated now. At first we propose transporting timber, coal and grain totalling 250,000 tons per year. And later on, both tractors, canned goods and many other things. In this case, one should take into consideration the resources of suppliers and consignees, the provision of Moldavia's wharves with necessary equipment, further development of the Belgorod-Dnestrovskiy port and many other things. The work involves multiple plans and it is complex. The experiment this year went off well. Prospects are also coming to light for the future."

By now I was looking at the map of the giant port in a different way. Experienced and competent people and enthusiastic people who are anxious to work are working at the Belgorod-Dnestrovskiy port. And that's why I believe that this small port will surely become the type of port they envisage for tomorrow.

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## PORTS AND TRANSSHIPMENT CENTERS

### COLLEGIUM CRITICIZES RIVER PORT CAPITAL CONSTRUCTION DELAYS

Moscow VODNYI TRANSPORT in Russian 29 Oct 83 p 3

[Article: "In the Collegium of the RSFSR Ministry of the River Fleet and the Presidium of the Central Committee of the Trade Union--Making Projects Operational by the Deadline"]

[Text] At its regular meeting, the collegium of the Ministry of the River Fleet examined the matter of progress by the Northwest and Amur Shipping Lines in constructing shore projects and berths for customers. As was noted, these shipping lines are conducting inadequate organizational work in planning and constructing berths for their own ports, cargo consigners and consignees, as well as a number of industrial projects.

Construction of a rail belt line to the port of Vazhina in the Northwest Shipping Line is proceeding at a slow pace. For its part, the installation of departmental berths is not being properly supervised. Only one out of nine such berths stipulated by construction in the 11th Five-Year Plan was put in operation.

In the course of several years, the Amur Shipping Line is not fulfilling capital investment plans for construction of a port at Komsomolsk-na-Amure and a fleet operations and repair base at Malysheva. During the 9 months of the current year, the plan for construction and installation work on these projects was fulfilled by a total of only 60.7 percent, and that causes serious misgivings about making them operational by the established deadlines. Residential construction is poorly organized in this shipping line. During the 9 months, the plan for it was fulfilled by 78.8 percent according to capital investments.

The collegium demanded that comrades Fomin and Yegorov, managers of the Northwest Shipping Line and comrades Sukhov and Mazurenko, managers of the Amur Shipping Line, take effective measures for correcting the situation which was created in the area of capital construction.

It was proposed that the Northwest Shipping Line continue work with the Leningrad gorispolkom, Ministry of Power Machine Building, and the RSFSR Ministry of Procurement for inclusion in the plan in 1984-1985 the construction of a berth with a warehouse for construction sand in Leningrad, a berth for

the "Izhorskiy Zavod" association in the settlement of Pontonnyy, and a berth for the small combine imeni Kirov in Leningrad. At the same time, "Lengi-prorochtrans" [Leningrad State Institute for Planning in River Transportation] is charged with expediting the development of planning and budgeting documentation on the small combine.

During the remaining period of the year, the collegium proposed that the Amur Shipping Line implement measures to ensure making operational a complex now underway with mechanized berths of 100 linear meters in length at the port of Khabarovsk, as well as to eliminate the lag allowed in construction of a port at Komsomolsk-na-Amure and a REB [fleet operations and repair base] at Malysheva.

It was proposed that GUKS [Main Administration of Capital Construction] and Glavsnab [Main Supply Administration] render assistance to the shipping lines in constructing part of the shore projects and berths for customers.

The collegium of the RSFSR Ministry of the River Fleet and the presidium of the central committee of the trade union reached a decision "on the progress of construction projects for residential and social-personal purposes in the Western Siberian Shipping Line." In particular, it was noted in it that in 1983 the shipping line is carrying out construction of residential and social-personal projects in an unsatisfactory manner. During nine months, the plan for bringing in the over-all area was not fulfilled. A considerable lag was allowed in constructing a hospital in Novosibirsk, a house for the fleet's REB in Samus, and dormitory facilities for the NIIVT [Novosibirsk Institute of Water Transportation Engineers]. Construction of the 216-apartment building for the fleet's REB in Novosibirsk was not begun, and the public and personal wing of the GPTU [gas and steam turbine power plant] for the fleet's REB in Moryakov was not completed.

This shows that the management of the shipping line and the baskomflot [basin committee of the trade union of workers of the maritime and river fleets] underestimate the importance of residential and social-personal construction, and they lowered the exacting requirements on managers of enterprises for fulfilling the plan and they aren't rendering the necessary assistance to them in organizing operations by themselves.

The collegium of the ministry and the presidium of the central committee of the trade union demanded that measures be taken for absolute fulfillment of the plan for 1983 and for making planned projects operational by the deadline.

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## PORTS AND TRANSSHIPMENT CENTERS

### VARIOUS PROBLEMS HINDER MAGADAN PORT PERFORMANCE

Moscow MORSKOY FLOT in Russian No 12, Dec 83 pp 12-15

[Article by special correspondent M. Kurnosov: "Magadan Port Problems"]

[Text] As usual, ships stand idle. -- The contractual relations of motor vehicle operators and freight recipients hinder the removal of freight from the port. -- Not all the bases of freight recipients operate around the clock. -- Only packetized or containerized cargoes should go in to Magadan! -- Warehouses for goods in transit are needed.

The sun shines brightly over the port of Vanino. It is July - midsummer. It is warm as on the Black Sea coast. All the berths are occupied, only the ferry landing is empty. Captain A. Belonogov, who was calm and composed, is beginning to be nervous. His motorship, "Prokop'yevsk", finished loading early in the morning, five hours ago, but all the documents are not available. How many times has he appealed to the dispatcher and the transport fleet, and each time the answer is that in 15 minutes all will be ready? Finally, they bring the heap of papers - the cargo documents - not sorted out according to what is in the holds or on deck. There is not time to sort them out. The berth must be vacated quickly for the motorship "Pavlovo" which is waiting in the roadstead. "Nevermind", the captain reassured himself and the second assistant, "we will look into the papers during the voyage." Two tugs draw our "Prokop'yevsk" away from the pier. On "Pavlovo" they already are weighing anchor.

As it turned out later on, the hatch lists did not correspond to the disposition of the cargo which caused an incorrect composition of the loading plan. And this is not the only case when the disposition of the cargo in the holds of ships calling at Magadan did not correspond with the accompanying loading plan. This is one of the reasons why agreed daily-shift plans for unloading are turning out to be unrealistic. The whole technology of the transportation process is being disrupted and cargoes, not planned to be removed, are going into the warehouse. The problems of the Magadan transshipment center begin far away from Magadan. In Magadan, on this occasion, sensing the incorrectness, they then and there sought to rectify the loading plan. The Roll-on/Roll-off ship "Ivan Skuridin" loaded quickly but was in no hurry to free the berth - documents also delayed it.

The shipping line, Vanino to Magadan, is one of the main lines of the Sakhalin Steamship Company. Along it go all the general cargoes that comprise half of the total amount of cargo transported on the Magadan route from Nakhodka and Vostochnyy as well. Ships on the line must operate on schedule. But in the first half of the year, of 87 ships calling at Magadan strictly on schedule, only 16 left on time. During this time the Sakhalin Steamship Company spent 342 ship-days awaiting berths and, because of a weak rate of processing at the berths, lost another 128 ship-days. That is the equivalent of excluding three "Petrozavodsk" class ships from the transportation process for this period. To reduce the losses, the Steamship Company was compelled to omit six established positions about the port of Vanino with general cargoes and two with containers. That is equivalent to an undershipment of 32,000 tons of freight. Because of the omissions of the positions and the unproductive idleness of ships at Magadan, the Steamship Company did not haul a large amount of freight.

According to the chief of the port of Vanino, V. Bykov, the fleet required to operate on this line clearly is inadequate. All the time the railroad on one hand loads up the port, and on the other, holds back the Magadan transportation center. In the second quarter, 253,000 tons should have been hauled away according to plan, but only 221,000 tons were. As a result, there are idle rail cars. At the same time, as the deputy chief of the Sakhalin Steamship Company, Yu. Goncharenko, told your correspondent, cargoes for the Magadan route are delivered irregularly to Vanino, which creates the preconditions for low quality loading of the ships. For example, beginning in June, basically large, light-weight, cargoes are delivered to Vanino which do not provide for the planned loading of the ships operating on the line as required by the schedule. In June alone, because of the departure of under-loaded ships, 5,600 tons were not transported.

On this occasion the Sea of Okhotsk, famous for its storms was kind to the seamen. For all of 3.5 days the surface of unagitated water was like a mirror. The lights of Magadan already have been lighted along the course. As promised, "Prokop'yevsk" was provided with a berth right away. Now the whole area of the piers is occupied. Astonishingly, only "Ivan Skuridin" is in the roadstead.

"Why are so few ships in the port?" I asked the pilot.

"It is summer, a very easy time for Magadan. Now ships mainly are going to the Arctic. But in winter time - you cannot shoulder your way by us" answered the pilot.

There are few ships, but the freight in the port - two cars cannot pass each other. From the height of the bridge it can be seen that the grounds of the port are filled up with all possible kinds of freight and equipment crammed together as with a crow bar - there is not one free meter.

For a long time there has been no special motor vehicle base in Magadan concerning itself with the removal of freight from the port. The "Severovostok-zoloto" [North East Gold] transportation and dispatching combine used to carry out this responsibility. The combine was unable to provide for the

more than 400 freight recipients connected with the port. It simply did not have the vehicles. Five years ago the Magadan Transportation and Dispatching Enterprise (Mag. TEP) "Vostokavtotrans" [Eastern Motor Vehicle Transport] was created. At first Mag. TEP served only the large bases, but since last year, complete, centralized removal of freight from the port is being implemented. Quite recently Mag. TEP and the Third Motor Vehicle Freight Enterprise merged and formed the Magadan Industrial Motor Vehicle Transport Association (Mag. PATO). The organizations for transportation and the operation of motor vehicle transport are now in one association. A Coordinating Council for the Magadan Transshipment Center has been created. Entering into its make-up are the port administration, the leaders of the motor vehicle transport association, the North East Administration of USSR Gosplan, and the principal bases of the freight recipients. In accordance with the proposal of the Magadan oblispolkom, USSR Gosplan has reduced the number of freight recipients. Having adopted all these measures, it seemed that the Magadan Transshipment Center would operate smoothly. As usual, however, ships wait in port and freight is not being removed from the port satisfactorily. The average daily removal from the port for the half year amounted to 6,992 tons in all (general freight and bulk cargoes) while the plan was for 8,500 tons. This is the lowest index for the past four years. What is the reason?

A. Makarov, deputy chief of the port of Magadan, considers that there are several reasons but mainly, that the existing contractual relations of the motor vehicle operators with freight recipients impede the removal of freight from the port. These contractual relations are limited to agreed average daily plans, whereas it is impossible to deliver freight, which is going across the whole country, to every client uniformly, even within the limits of one quarter. Let us illustrate with an example. At the "Gorpromtorg" [City Commercial Organization for Trade in Industrial Goods] base, 500 containers arrive at the same time. Over a year, an average of 30 tons a day should arrive. Considering the receipt at the same time of other cargoes without containers, or just the 500 containers (there is insufficient warehouse space in the port), it will take a whole month to remove this freight if it is guided by "The Rules for the transportation and dispatching service of enterprises, organizations, and establishments of the RSFSR".

For terminal transshipment centers like Magadan we need a single document which takes into account the departmental interests of all sides and which should be used by seamen, railroad men, motor vehicle operators, shippers and recipients.

I had occasion to attend one of the sessions of the Coordinating Council of the transshipment center at which it was noted that for the current week (14-20 June) the removal of freight from the port had diminished. Small organizations do not receive containers on the second shift, on Saturdays or Sundays. For the first half of 1983 compared with the same period in 1982, the removal of freight was reduced. Idleness of the fleet and of the brigades of dock workers increased because of a scarcity of transport. The Council adopts solutions but they are not always carried out. It is necessary to turn to Party and Soviet bodies for help.

The results of the socialist competition for the half year were brought to this session. Fourteen enterprises of the transshipment center participate in the competition, but for the summing up of the results of the representative indicators of the operations, there were only 9. There is no incentive fund whatever, nor certificates or pennants for the winners. The effectiveness of such an endeavor, of course, is low. The seaport collective was acknowledged as the victor of the socialist competition.

The port of Magadan is constantly being developed. It is capable now of processing a significant volume of freight, but these capabilities are not being used.

For the half year, the gross intensity of processing the fleet in comparison with last year amounted to 93.8 percent. The net intensity in processing general freight is 98 percent. The loss of working time per dock worker for the half year was about 100 hours (it is known that 11 shifts did not work). For the six months, 70,000 tons of individually packaged cargoes less than planned were brought into the port. And in that time, 150,000 tons of large-tonnage cargoes more than planned were brought in. Because of the bulk and other large-tonnage cargoes, an increase of 103.3 percent in productivity was achieved. But at the same time, compared with last year, wasted working time increased by 127 percent. The plan for profits for the first half year was not fulfilled (82 percent).

A significant disproportion has been allowed in the development of the port and the other subdivisions of the transshipment center. Glavflot [Main Administration for Transportation and the Operation of the Fleet] sends ships to Magadan on the basis of USSR Gosplan orders and port capacities, but it cannot take into account the capabilities of the motor vehicle operators or of the bases of the clientele.

The perfect sunny weather continues in Magadan. The "Balakhnales" is being unloaded. The ship has been operating on the line for about a year, but, according to the captain, V. Gushchin, this is the first time they were put into a berth right away. The grain fodder is in sacks (and part in sling packages). Departure is scheduled for tomorrow, but only the deck cargo has been unloaded. How many decrees have there been that sacked cargoes should be sent into the Extreme North only in packets or containers? But, alas, as usual, the RSFSR Ministry of Procurement sends grain products (grits, flour, mixed feed) in sacks without packetizing. Fifty thousand sacks in just one hold! They are poorly separated and have markings that you cannot read even when digging them out for special examination. Here you try to unload a ship quickly, but like it or not, the ship is turned into a floating warehouse. If cargoes are accepted from the MPS [Ministry of Railways] that are not packetized, then, before forwarding, packetize them yourselves; or, if they are not in containers, use containers for further transport! But when cargoes are received this way, we cannot force the prescribed packaging to be done and we cannot do it ourselves.

Dock loading-machine operators of one of the best brigades in the port, under the leadership of foreman, A. Rek, are working in the second hold. But how can you call them machine operators if it is necessary to check each sack, and then load them with a pallet onto the machine by hand? The sorting is terrible - here are peas, buckwheat, flour, and even sugar all in one hold. The ship waits, and the motor vehicles stand by.

And what kind of a base for grain products is it to which all this cargo is directed? With the first passing car, they departed. At the port entrance there is a stop for the official registration of documents. The vehicles in back honk. The drivers take no notice. They stand in line at the window and are filled with indignation that there is more standing in line than driving. They also have a plan to fulfill. In the beginning the drivers receive documents in the billing office and then the port inserts its own requisitions into these documents. And all this is done by hand in multiple copies. The time for such a procedure is not less than for the loading itself. And if all is not just so, the poor devil of a driver runs to the ship for the tal'man [purser?] to correct some error he made.

The Magadan base of the Administration for Grain Products serves the whole oblast but it is poorly equipped. Motor vehicles come here with sacks in sling packages. The workers untie them and by hand put them on to a belt conveyor and then, again by hand, pile them up under a shed. For them there are neither loading platforms nor unloading equipment. And it is not known when there will be.

"This year we received 3,100 containers (3- and 5-ton containers), but we processed them by hand. As a result, there is much idleness of containers" says B. Solonar', the base director. "It is true that when the containers arrived, the port helped us very much and provided several mobile cranes. But we still have grievances against the port and the motor vehicle operators. There are many torn bags and much sorting out to do. Accelerating the unloading of ships would be convenient for us if some of the same machines were secured for the base and if they would run on schedule. But when we prepare to receive in a shift, let us say 120 tons of fodder, they bring us 200 tons. They plan to send 120 tons and then do not bring one and we are not informed about it. They send us containers and there are no inventories in them of how much space or what weight there is (this is really a grievance against the port of Vanino). We create a commission, we unload from the containers onto a machine, we weigh, and then again unload. You can understand how this takes time and effort. Telegrams were sent to Vanino but all remains as usual. Recently, special attention was given to our base. Representatives came to us from the Ministry of the Maritime Fleet, from the RSFSR Motor Vehicle Transportation, and other departments, but from our own RSFSR Ministry of Procurement, there has never been anyone. Apparently, to them it makes no difference what our conditions are or how we are working."

The grounds of the base are insufficient. If only the building of large warehouses could be taken in hand and if they could be fitted out with loading equipment and an asphalted area.... It must be noted that this base works in three shifts as does the port. At other bases matters are worse - they receive freight in one or two shifts.

All the same, the weakest point in the operation of the transshipment center is the fact that the port accepts all freight from the ships, but the motor vehicle operators are selective; that is, they accept only those cargoes that are claimed by clients. This turns the port into a "warehouse of lost property". Plate glass in crates and bridge crane girders addressed to "North East Supply" have been lying around for many months. And it is unknown how much longer they will lie around. It turns out that there is no special motor vehicle equipment for the transport of long or out-sized loads with which to remove them. Metal pipes (about 40 tons) sent to the Magadan repair and mechanical plant certainly are not needed - they have been in the port since last December. The pipes are iron - they can lie around for a while. But there are such scarce cargoes as cement which has not been removed in more than two months. As a result, 5 vehicles were returned to the port from 47 kilometers out. "Magadanstroyssnab" [Magadan Construction Supply] refused to accept the cement as useless. Now a commission must be named to decide where to put the 623 tons of cement and to decide if it all has gone bad or is there part of it that can be used. There are a great number of such examples.

Since 1 April 1983 the decree of USSR Gosplan about the enlargement of the bases of freight recipients has been operative. According to the list, only 89 large bases will now be connected with the port. It seems that there should be a sharp improvement in the operations of the port and the motor vehicle operators. But practically nothing has changed. The removal of freight from the port has not increased. The Administration of Supply and Marketing of the Magadan oblsposkom should receive freight for local industrial enterprises only through its own base in the port, but cargoes both have been, and are going to the addresses of individual enterprises. The base of "Magadanelektromashsnabsbyt" [Magadan Electrical Machinery Supply and Marketing] has been obliged to provide enterprises in the oblast with spare parts and equipment. The arrival of freight for mines and mine concentrating combines situated several hundreds of kilometers from the city is continuing. As a rule these cargoes are not removed from the port in a timely fashion. That hampers the port because of the limited warehouse space and storage grounds. The USSR Gosplan decree about enlarging the bases of freight recipients is being upset by its own North East Territorial Administration which is releasing funds to contractors not through the enlarged bases of Magadan, but directly to small local recipients (which do not appear on the Gosplan list). For example, according to the USSR Ministry of Nonferrous Metals, several facilities situated far from Magadan have been singled out as independent recipients. So, a mine enriching combine 150 kilometers from the port is receiving spare parts, mining equipment and special ore containers in the port. The combine sends finished products in these containers through the "Magadanstroyssnab" base, but that base does not undertake to return them. As a result, the empty special containers are in the port for a long time jamming up the passages and storage grounds.

The Oblsposkom Administration of Supply and Marketing is one of the most undisciplined freight recipients. It constantly refuses freight and returns loaded vehicles to the port. Sometimes they have no people or place for unloading, or no accountable person to receive freight. And then there is the

"Sel'khoztekhnika" [Agricultural Equipment] Association. All freight arriving in the port for them is stored in their own warehouses with subsequent conveyance directly to the recipients. Their freight causes no problem for the port or Mag. PATO. In order to remedy the situation, the port proposed the creation of common transit warehouses from which cargoes could be removed as needed. The NorthEast Administration of Gosstnab, however, did not support the proposal.

In 1977 a project was approved to expand the port of Magadan by constructing two specialized berths: a sixth with a container terminal and a seventh for processing Roll-on/Roll-off ships. It was proposed to put several auxiliary port services into operation, and the necessary funds were allotted for social and cultural construction. At present both berths have been built and are in operation. The sixth berth is operating according to a temporary arrangement. For the time being, bulk cargoes (coal, slag, etc.) are being processed on it. In the plan for the current year as the second phase of the sixth berth, it is specified to put a dispatch point into operation with the basic purpose of mechanized, enclosed storage for international-standard containers. When it begins to operate, the capacity of the container terminal will be doubled. But, in the opinion of the port's chief engineer, V. Pimenov, there is a gross slippage in the start up of this facility because of the completely unsatisfactory installation of the metal structure of the warehouse by the "Stal'konstruktsiya" [Steel Construction] Trust of the Ministry of Installation and Special Construction. Over the first half year only 20 percent of the year's work has been completed. In addition, the delivery of special production equipment is being delayed by the Ministry of Heavy Machine Building. It should have delivered the bridge cranes for containers in the first half of 1983. The port, however, even now, does not know the precise delivery dates. The seventh berth for Roll-on/Roll-off ships was put into operation in November last year.

Over the past 5-7 years a block of living quarters for dock workers, an administration building with 200 desks, and a number of other economic facilities have been built. At the same time, the social and cultural construction has fallen sharply behind in production. Before 1985 practically all the capital investment specified in the plan for the expansion of the port's productive facilities will have been assimilated. But, from all appearances, of the funds for domestic, cultural, and dwelling facilities, only 10-12 percent will have been assimilated. Such disproportion in the port development creates additional difficulties in providing a labor force for the facilities already turned over and those being built. And this is all because the general contractor, "Glavseverovostokstroy" [Main North East Construction Trust] is not receiving or is not utilizing the funds for these facilities annually. For the third year the contractor is failing in the construction of the community for dock workers by 140 places and a second community for 340 places is generally not being included in the plan.

The importance of the port for the huge Magadan oblast is growing every year. "Dalmorniiproekt" [Far East Maritime Scientific Research Institute for Planning] is now developing a plan for the further expansion of the port of Magadan. The construction of three more berths is envisaged, one with a

refrigerator for 10,000 tons. The Ministry of the Maritime Fleet is taking steps so that the port and the Magadan shipping line will operate smoothly. Other partners in the transportation and production process, though still very slowly, are being included in the work. This applies in the first place to the bases of the freight recipients (the RSFSR Ministry of Procurement, the USSR Ministry of Trade, and others). The RSFSR Ministry of Motor Vehicle Transport is a principal partner of the Ministry of the Maritime Fleet for the removal of freight from the port. Despite the fact that it is replenishing its Magadan enterprises with new vehicles, its equipment base remains weak. Motorvehicles quickly break down.

Port workers and seamen consider that Mag. PATO should have not only the number of vehicles necessary for the steady removal of freight from the port but also motor vehicle reserves. Here is the opinion of one seaman, A. Belonogov, captain of the motorship "Prokop'yevsk": "The larger the means of transport, the higher is its cost of operation, and the less it should be idle. It may even be that because of planned idleness, a less expensive means of transportation is, as we will say, the motor vehicle."

Strange as it may seem, the motor vehicle operators, according to their own rules, consider the port as one of their ordinary clients and not as partners in the transportation process. It excites them little that the optimal technological variant for the removal of freight from on board a ship is a motor vehicle. They consider that to plan the removal of all freight in transit is impossible. It makes no difference, part of the freight will go into the warehouse because of the uncoordinated norms for the unloading of holds and the norms for loading motor vehicles. And the port plans for the shipment of that same freight from the warehouse. If the plans for the processing of freight into the port and onto motor vehicles are summed up, from the answer it would seem that there is more freight than had been brought in. The port very poorly analyzes the freight not removed (as to specifically what it is and whose fault) and then abstractly, by arithmetic, determines some supplementary quantity of removals for presentation to Mag. PATO. Because of this there are frequent disputes and reciprocal claims arise.

From the reciprocal claims and futile disputes there came a time to change over to coordinated efficient work. The plans for the delivery of freight originate from the Magadan oblast. Its Party, counciling, and economic bodies can and must take measures so that all the kinds of transportation become a unified conveyor, and so that the bases of freight recipients finally receive proper development. There is every possibility for this. The experience of the leading transshipment centers teaches that in order to increase the efficiency of transport operations, it is necessary to create a unified comprehensive transportation system aimed at the national economic final results and not at the partial indicators of the departments and industrial sectors. A comprehensive planning for transportation is necessary which intends to develop all the kinds of transportation proportionately. This is pointed out in the decree of the CPSU Central Committee and the USSR Council of Ministers: "On improving the planning and organization of the transportation of national economic freight and passengers and strengthening the influence of the economic mechanism on raising the efficiency of the work of transportation enterprises and organizations."

For Magadan port workers December of this year is an anniversary - they are celebrating the 50th year of the port. Port workers are developing a socialist endeavor devoted to this important date under the slogan "For the 50 years of the port - 50 weeks of accelerated work!" They are seeking to celebrate the birthday of their Order-bearing enterprise appropriately. The huge, well coordinated collective has a potential such that according to its indicators, the Order of the Badge of Honor port of Magadan will become the best in the sector.

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From the editor: Our magazine has already written about the problems of the Magadan Transshipment Center ("MORSKOY FLOT" No 8, 1976). Since then much has changed but the main problem remains - the unproductive delays for ships in the port. We hope that interested organizations will write about how they see getting out of the situation that has developed.

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## PORTS AND TRANSSHIPMENT CENTERS

### CONTINUED DEVELOPMENT OF SPECIALIZED TRANSLOADING FACILITIES URGED

Moscow MORSKOY FLOT in Russian No 11, Nov 83 pp 10-11

[Article by O. Ambaryan, deputy chief, Black Sea Shipping Line, and V. Yakubenko, deputy chief, shipping line capital construction and development service: "Transshipment Complexes" Estimates Confirmed"]

[Text] The appearance at the beginning of the seventies of highly efficient specialized ships in maritime transportation marked the beginning of a qualitative change in shipping technology and loading-unloading operations. In conjunction with an expansion of the berth sector and a technological re-equipment of the crane-transport machinery pool, construction was undertaken of high production transshipment complexes (SPK).

Practical results of the operations of such transport-technological systems as packet, roll-on/roll-off, container, ferry, and barge operations have permitted a significant increase in the efficiency of shipping, a radical change in the conditions and nature of dockers' work in maritime ports, an increase in labor productivity, and a considerable reduction in requirements for labor force.

Of the 19 SPK built in Ministry of the Maritime Fleet [MMF] ports over the past 10 years, 6 were constructed in ports of the Black Sea Shipping Line.

With the construction of the SPK in the port of Odessa transportation center, the significance of the transport-technological system was expanded, a system which includes industrial facilities. These are plants which process raw materials arriving by sea or which manufacture products for export via sea-borne transport.

Thus, in 1973, the Odessa port commissioned an industrial-transportation specialized transshipment complex [PTSPK] for the processing of raw sugar. A singular feature of this complex is that the transshipment lines and warehouse operations of the port are directly linked with plant transshipment equipment and warehouses. Here comprehensive mechanization of the transshipment and warehouse operations is provided for by matching purpose and output of port installations with plant facilities. In practice, one berth provided for the transfer of 1 million tons of raw sugar annually. With the traditional mode of loading operations, this would have required four berths with warehouses and additionally, more than 100 longshoreman-machine operators.

A further search for technological solutions for the processing of granular cargoes (with allowance for their seasonal nature) led to the necessity for including the facilities of the port elevator in the PTSPK with creation of a highly mechanized port region for the transshipment of raw sugar and grain cargoes. The pier, formerly designed only for the transshipment of sugar, is used simultaneously for processing grain cargoes. Additional transport galleries from the pier to the port elevator provide the operation with receipt of grain directly into the elevators' bins. The cargo region created from two PTSPK possesses great flexibility: when there is no raw sugar, all transport galleries, warehouse-storage units of the port, and three railroad stations are involved in receiving grain simultaneously from two vessels.

The PTSPK in the port of Yuzhnyy includes facilities involved in production from the Odessa port-affiliated plant and loading equipment lines. A complex for liquid chemical cargoes for export is designed to ship ammonia, methanol, dichloroethane, and vinyl chloride and for receipt of imported superphosphate acid. Dry chemical products produced at the port-affiliated plant, including 1.2 million tons of carbamide for export annually, are processed at the second complex which includes 2 berths.

The advantages of establishing the PTSPK, if one considers that the portion of transportation delays in the cost of products may reach 40%, are obvious.

Currently, work is underway to establish specialized complexes in the port of Yuzhnyy for coal, ore, phosphorites, and for construction of a SPK for the transshipment of sulphur.

The experience gained from the operation of the Nikolayevsk SPK for the transshipment of iron ore over 8 years has confirmed its high level of efficiency. To cope with the planned cargo turnover of this complex would require no fewer than three berths with universal mode of loading-unloading operations.

The successful operation of the ferry complex in Ilichevsk not only confirmed the computed technico-economic indicators, it surpassed them.

The container terminal with a complex for the processing of RO-RO ships in Ilichevsk provided for an increase in the intensity of cargo operations by a factor of 3-4, and permitted a reduction in numbers of workers to half the former level.

A comparative analysis of the properties of shipping line transshipment complexes indicates that the implementation of the outlined program of construction and the operation of existing SPK will enable planned cargo turnover to be attained with a reduction of 3880 longshoremen-machinery operators, and will not require the construction of 27 berths.

At the same time, realization of all the advantages of SPK and PTSPK goes beyond the bounds of a sector problem. For further development of the industrial-transportation specialized transshipment complexes to proceed, the combined efforts of various departments will be required, as will the development of a regional transportation-industrial program.

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## PORTS AND TRANSSHIPMENT CENTERS

### FURTHER CRITICISM OF LENA UNITED STEAMSHIP COMPANY OPERATIONS

Moscow VODNYI TRANSPORT in Russian 25 Oct 83 pp 1-2

[Article by M. Gubkin, second secretary of the Yakutsk obkom and deputy of the RSFSR Supreme Soviet, in the column "Results of the Navigation Season": "Toward a High Goal"]

[Text] The current difficult and busy navigation season in the Lena basin has ended. In looking back at it today, we can sum up some of its results and closely analyze the activity of the multithousand collective of the Lena United Steamship Company and its subcontractors. The current navigation season began in May, 12 days later than usual. By that time 140 ships were at random settling places--on the reaches of the Lena. The ice movement passed under very difficult conditions, dozens of ships, which were solidly frozen in 1-meter thick ice, were endangered. Justice must be done to Lena rivermen who displayed courage during those days in the fight against the elements and in selflessly moving the fleet from dangerous sectors.

The collective of the Osetrovo port was in a difficult situation. Some 670,000 t of national economic cargo accumulated here on instructions of the USSR Gosplan during the internavigational period. An unprecedented amount for port workers. Cargo continued to arrive by railway to Ust-Kut--the southern gates of Yakutia--and it jammed all manufacturing lines and passages to docks, but railcars still continued to arrive. Owing to the delay of the navigation season, shipments began later than the usual periods, as a matter of fact port workers of Osetrovo lost more than 10 days. All of this affected the activity of the collective during the entire course of the navigation season. Especially as regards the railcar processing periods.

Delivery of cargo to small rivers and tributaries began immediately following the movement of ice. Although the rivermen's efforts were hampered by the dragged out ship repairs, they were able to transfer hundreds of thousands of tons of cargo to Vilyuy, Amga, Lungkha, Chara, Zhuya, Markha and other rivers. The Lena United Steamship Company assigned its floating cranes and brigades of port workers to busy areas. This was of considerable help in speeding up the processing of the fleet. The navigation season staff of the Yakut obkom followed the work of the rivermen and their subcontractors in a most attentive manner and assisted them. This stage of the navigation season is of special

significance for Yakutia. Industrial enterprises, construction projects, sovkhoses and settlements are scattered all over the vast territory of the northern republic. During the brief summer they must be supplied with everything necessary for a year of life and work. This can be done only by waterways, via taiga and tundra rivers which are navigable only during high water.

It is most gratifying to note today that the Lena United Steamship Company and its ports and ship crews have met their obligations with honor and transported via small rivers and Lena tributaries more than 900,000 t of national economic cargo, or everything that was called for by the plan.

It so happens that without fully completing the navigation season on small rivers, the Lena rivermen and port workers of Osetrovo and Yakutsk must load hundreds of ships with foodstuffs and industrial and oil cargo and dispatch them to the Arctic. The rivermen become seamen and work in the Laptev and East Siberian Seas and on the Arctic rivers Yana, Indigirka, Kolyma and Anabar. I must emphasize that ship crews fight selflessly in this busy period against ice fields and endure strong storms. But they still deliver everything that is necessary to inhabitants in the Arctic.

This year, the Lena United Steamship Company has achieved a very high result by ensuring the delivery of 1.21 million t of cargo to these areas. A total of 654,000 t of coal, general cargo, timber and oil cargo was delivered to the Yana alone. The rivermen here always work in cooperation with seamen of the Northeastern Maritime Fleet Administration, and this is of great benefit.

Meanwhile, the current navigation season mustered strength. The cargo flow proceeded to Yakutsk, Lensk, Peleduy and other places in the Far North. Despite the late start, collectives of the steamship company in the main were coping with their monthly cargo delivery plans, and little by little they were able to make up for lost time in May. This was particularly noticeable in the work of the Osetrovo port. It fulfilled its June, July and August plans and reduced its spring lag, but the situation was very difficult there. There was a threat that a considerable quantity of important cargo, especially food, vegetables and oil cargo will be unable to reach the Far North and Yakutia. The USSR Council of Ministers set the task before the Lena United Steamship Company and the Osetrovo port to ship 320,000 t of cargo in September. So much cargo was never shipped before from the docks of the port in autumn. Nevertheless, port workers and ship crews fulfilled the government's important assignment despite an extremely difficult situation. The steamship company and the port were able to meet their 9-month plan and began working according to their cargo shipment schedule. Osetrovo port workers achieved a record index of their collective. They were able to dispatch 1.85 million t of general cargo for the first time. This is a great victory of the collective.

The Lena United Steamship Company fulfilled the navigation season plan and its pledges for tons. Nearly 13 million t of cargo was transported, or everything that was presented for shipping. The collectives of Yakutia's enterprises received practically everything that is necessary for normal operations.

At first glance, it was good. But no haste should be made in congratulating. It turns out that after fulfilling their pledges to consignees of the basin and exceeding their plan for the volume of shipments, the Lena rivermen are still among the lagging ones. The ton-kilometers had the last word here: the cargo turnover plan was underfulfilled by 400 million ton-kilometers.

In our opinion, the matter is in the miscalculations in planning by the RSFSR Ministry of the River Fleet [MRF], which without justification has been setting cargo turnover too high already for several years. The Lena United Steamship Company is forced to regard itself as lagging, which sharply reflects on the entire activity of its large collective who work with much effort under the conditions of the Far North.

However, it was not only the failure to fulfill the cargo turnover plan that had an adverse effect on some economic indicators and efficiency in utilization of the transportation fleet. During the past several years, it was replenished with powerful modern vessels. Currently, 15 "Sibirskiy"-type motorships and many large-capacity barges are used in shipping. The icebreaker "Kapitan Babichev" is spending its first navigation season in the basin. But as indicated by analysis, the fleet's carrying capacity is being used far from completely. In 1983, the above-plan layovers of vessels under processing amounted to 3.5 million tonnage-days, which is equivalent to additionally transporting 140,000 t of cargo from Osetrovo to Yakutsk. An enormous sum of losses in a single navigation season.

There are many reasons here. First of all, it is poor use of internal reserves and low efficiency on the part of the steamship company in organization of shipments. The collective realizes this and its leadership and public organizations are adopting measures aimed at improving operations and raising labor productivity and performance discipline. But these measures alone are not enough. A comprehensive approach is needed to solving the acute problems which did not arise in the Lena basin today and which reflect on the entire activity not only of rivermen but their subcontractors as well and on the stability in transporting cargo to the Yakutsk ASSR. I would like to dwell in particular on some of the problems.

Yakutiya is one of the largest and the northernmost autonomous republics in the country. In the all-union division of labor, it occupies an important place as regards the extraction of diamonds, gold, tin, coal, mica and other minerals and the delivery of furs.

Up to 80 percent of national economic cargo is shipped to Yakutia via the Lena, other rivers and via the sea. The obkom is naturally alerted and concerned by the erratic work of rivermen and by the considerable dependence of national economy on the whims of nature and all kinds of obstacles of which there are many along the coasts and on the main waterways. These obstacles--poor use of reserves and many other problems which hamper the development of river transportation--were also seriously considered at party accountability and election meetings in the steamship company's subdivisions. Communists are worried by the delay in solving many questions.

It is known that the resolution of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Developing River Transportation in 1981-85" provides a number of important directions for improving the work of the fleet, ports and industrial enterprises. It also proposes to some union ministries and departments to actively participate in the implementation of this important document. But, unfortunately, some of its points are still not being fulfilled. The government, for example, set the task of creating departmental docks in the Lena basin for speeding up the processing of ships. Time passes but the majority of ministries have done little in fulfilling the responsible assignment. This practice contradicts the decisions of the November (1982) plenum of the CPSU Central Committee. Let me give a characteristic example. The Deputatskiy Mining and Concentrating Combine is under construction in Ust-Yanskiy Rayon. The periods for its construction have been reduced, and this project has become especially important. Hundreds of thousands of tons of cargo must be delivered there by sea and rivers, but there is nowhere to process the fleet. During a navigation season a stream of vessels forms up near the unadapted coast, and unloading progresses very slowly.

The USSR Gossnab and the USSR Ministry of Nonferrous Metallurgy [Mintsvetmet] have done nothing for the construction of docks in Deputatskiy. The obkom believes that the docks should be constructed in 1984, otherwise transportation of cargo and acceleration of construction will be delayed. Little attention is being devoted to construction and expansion of their own docks by the USSR Ministry of the Construction Materials Industry, the USSR Ministry of the Coal Industry, the RSFSR State Committee for the Supply of Petroleum Products [Goskomnefteprodukt] and others. We have repeatedly raised the question about stepping up the work, but have not achieved anything with the exception of assurances and promises.

The losses of the refrigerator fleet are especially extensive because of layovers. Every refrigerator ship spends 10-15 days in unloading in Yakutsk alone. There is no port cold storage facility of sufficient capacity here. As a result, offloading is conducted only at night for 4-5 hours. There is an urgent necessity for prompt construction of a cold storage facility in Yakutsk. The RSFSR Ministry of Trade has promised a long time ago to design and construct it. But has not done anything about it so far.

The figures describing the losses caused by the delays of the fleet under ship repairs and maintenance repairs are very great. Analysis indicates that this is, first of all, a consequence of the lag in developing the base of the steamship company's industrial enterprises, their old-fashioned technical equipment, the shortage of ship-raising facilities and the unsatisfactory supply of spare parts, units and mechanisms. This restrains the development of the contract brigade method and does not allow proper organization of repairs by replacement of units. We believe that the RSFSR Ministry of the River Fleet and the steamship company should develop and implement in 1984-90 a program for retooling and developing industrial enterprises.

The obkom and the Yakutsk ASSR Council of Ministers are especially alarmed by the problem of providing the transportation fleet with personnel, port workers,

and acceptance and transfer personnel. Owing to the shortage of personnel, the steamship company is forced to invite up to 5,000 people from other regions of the country every year. The situation has been especially aggravated lately with regards to the staffing of the fleet's command personnel, which has a negative effect on the preparation and making ships available for operation after winter repairs as well as on the accident rate and the level of labor and production discipline. Along with other reasons, the shortage of skilled personnel is explained mainly by the lag in construction of housing and cultural and personal service facilities. More than 70 percent of the available housing in the steamship company are wooden houses without modern conveniences. A total of 6,500 families are in need of housing and improved living conditions. This is 30 percent of personnel. There is a shortage of 800 places in children's preschool institutions.

Under such conditions, and also taking into account the territorial scattering of rivermen's settlements, it is necessary to intensively develop construction with our own resources. But this is hampered by the extremely low level of the steamship company's supply of construction machines and mechanisms and unsatisfactory supply of materials. We have a right to expect that the necessary equipment and materials will be allocated by the USSR Gosstnab and the capital investments by the Ministry of the River Fleet.

It is especially worthwhile to dwell on the problems of the Osetrovo port. Smooth operation of the entire Lena United Steamship Company wholly depends on this transportation center, which is the basin's main cargo formation center and the only port for transferring cargo from railway to water transportation. The Osetrovo-Lena transportation center is of constant concern to the USSR Gosstnab, the Ministry of Railways [MPS], the Ministry of the River Fleet and the Yakutsk and Irkutsk obkoms. Many serious decisions have been adopted, but so far there have been no clear changes for the better despite the efforts by the steamship company, by the port itself and the Ust-Kut gorkom. This indicates that stable operations of the port can be ensured only through a comprehensive solution of the transportation center's acute problems. Six years ago, the USSR Council of Ministers made it incumbent upon corresponding departments to increase in 1980 the volume of general cargo shipments from the Osetrovo port to 2.1 million t. Such are the needs of the republic. The USSR Gosstnab has been planning annually since 1979 to ship 1.83 million t of general cargo, and this figure was finally achieved for the first time during the current navigation season.

What is the matter? It is quite difficult to give a simple answer to this question. The obkom believes that the carrying capacity of the transportation center is restrained mainly by the chronic shortage of skilled manpower. Against the planned number of 1,265 port workers, the enterprise has only 465. A similar situation exists with regards to the acceptance and transfer personnel, who are staffed only by one half. The shortage of manpower is covered through organized employment of students and assignment of people from the Yakutsk ASSR and Irkutsk Oblast. Their lack of skill along with the failure by the supplying enterprises to fulfill their tasks for shipping small-unit cargo in containers and packages has resulted in the fact that the

port has been failing its monthly railcar processing plans. For the current navigation season the USSR Gossnab has given instructions to dispatch 430,000 t of cargo in packages to the Osetrovo port, but only 165,000 t was received. Included in it was only 10 percent of such labor-consuming cargo as cement, mixed feed, flour and sugar.

To ensure intensive loading of the fleet when there is a considerable quantity of small-unit cargo, Osetrovo port workers are forced to fill containers and package them by themselves. The volume of such work reaches 500,000 t every year. Of course, this approach yields positive results in the processing of the fleet. But this good work is often hampered owing to the poor supply to the port of packing materials, especially of wire. At the same time, on assignment of the USSR Gossnab the Osetrovo port is forced to accept and accumulate up to 700,000 t of cargo, but its warehouse capacities equal 150,000 t. This has an adverse effect on the quality of cargo storage and sharply reduces the level of labor safety. There is obviously no necessity for accumulating such a quantity of cargo, the shipment schedule should be developed more accurately and competently by the quarter.

The uncoordinated activity of subcontractors--the collectives of the Lena station and the Ust'-Kutskoye Motor Transport Enterprise--also contributes to the erratic operations of the port. Poor development of track facilities of port stations and low level of train routing make it necessary to perform a large volume of work in sorting railcars and in forming deliveries to loading and unloading points, lead to frequent violations of the periods for railcar positioning in the port and considerably reduce the possibility for using the direct railcar-ship method. There is also a substantial shortcoming in the system of information on the availability and approach of railcars, which arrives late.

We believe that existing relations between the Osetrovo port, the Lena railway station and the Ust'-Kutskoye Motor Transport Enterprise do not ensure coordinated work of the transportation center. Departmental barriers and differing practices in planning and stimulating the activity of subcontractors and in accounting of completed work lead to an overall reduction of efficiency in the utilization of the river fleet and the rolling stock of the railway.

The increased carrying capacity of the fleet and increased speeds and intensiveness of traffic advance new requirements for a considerable improvement of waterway conditions on Lena, its tributaries and bar sectors of the Yana, Indigirka and Kolyma. The traffic capacity of the upper navigable sector of the Lena River (Osetrovo--the mouth of Vitim) is nearing its limit. Experience proves that during arid years the large-capacity fleet cannot reach Osetrovo and the republic then finds itself in a difficult situation as regards ensuring the national economy and the population with cargoes. A large quantity of cargo remains in the river port and considerable funds are expended on delivering it by motor vehicles or aviation. The obkom believes that for substantial improvement of navigable conditions and creation of necessary depths on river bars it is necessary to considerably renew and replenish the technical base of the Lena Basin Administration of Waterways [BUP], to allocate maritime suction dredges, rock removing equipment, highly productive soil removing

machines, dredging vessels and equipment for coastal and floating navigation signs.

The withdrawal of the fleet is nearing completion in the Lena basin. Hundreds of vessels have already returned after the navigation season to their permanent places of registry and backwaters of ship repair enterprises. Active preparations for the 1984 navigation season are underway. We are convinced that collectives of the steamship company will thoroughly analyze their activity, eliminate many miscalculations and unfinished work and raise the efficiency and quality of work. At the same time, the Lena rivermen need assistance in the comprehensive solution of the most acute problems.

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