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EXTRACTS FROM THE SOVIET PRESS ON THE SOVIET NORTH AND THE ANTARCTIC

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AGRICULTURE AND FOOD SUPPLY

Polyarnyi Dairy Farm Has a Successful Year

A State dairy farm situated in the polar region of Taymyr, to which earlier, even the hay had to be delivered by sea, has had its first year in the black. At Polyarnyi - the name of this dairy farm - feed was the main factor in the high cost of production. Last year, while preparing for the changeover to self-support cost accounting, the management decided to cut short the farm's dependence on hay deliveries from elsewhere and to make its own hay in the tundra, in the floodplain of the Yenisey river.

Farm chores had been contracted out to various gangs. There was a considerable increase in the annual milk yield - more than 4,700 kilograms per cow. The cost of a centner of milk dropped by ten rubles.

We firmly intend to become a profitable operation this year - says the director of the dairy farm, N. Maleev. From now on we shall be completely self-supporting. We have set up a land-improvement section with a view to expanding our hayfields and reclaiming certain areas of the tundra. There is reason to believe that we are on the right path. There is also a moral satisfaction in seeing fresh milk - which used to be a rarity - on the store counters in the polar region.

Pravda
8 February 1988
Page 1 (slightly abridged)

ANTARCTIC

A Voyage to Antarctica

It was during its journey from New Zealand to the ice shelves of Antarctica that the scientific expedition ship, Akademik Fedorov, marked the hundredth day of its first voyage.

The flagship delivered supplies and relief crews to the aero-meteorological centre of Molodezhnaya and to the Mirnyi observatory, as well as scientific and technical personnel to the Vostok station, the new Soviet Progress station and the seasonal base in the Oasis of Banger. Yet to be completed is its voyage to the Leningradskaya and Russkaya stations. During this section of the voyage the vessel will encounter the most difficult ice conditions of its entire trip.

Trud
7 February 1988
Page 2 (slightly abridged)

"METELITSA" Is Flying to Antarctica

Arriving from Leningrad, the Soviet Il-76TD has landed at the international airport of Mozambique's capital.

On board there is a large group of polar explorers, members of the 33rd Antarctic Expedition, who are going to relieve their colleagues on the icy continent. In two days, providing the weather along

the flying route stays good and radio-reception is normal, the plane will head to the extreme point of the transcontinental route - the station Molodezhnaya.

At the ramp of the Il-76TD I saw a group of women. I found out that they were members of the women's polar team "Metelitsa" organized by the Rabotnitsa magazine.

The team has existed for twenty years - I was told by its leader, V. Kuznetsova. In the past years, we undertook nine independent high-latitude expeditions to the Arctic. These were stages in fulfilling our cherished dream - a ski expedition to the South Pole.

Now time has come to conduct, as we say, some field tests, that is to examine the actual conditions of our future trek across the antarctic continent. Our expedition has been set for the coming autumn.

Izvestiya
17 February 1988
Page 3 (full text)

ARCTIC RESEARCH AND DEVELOPMENT

A Route Across the Pole

Half a century ago, Soviet aviators laid out a course to America over the North Pole. Today, this route has received unanticipated development.

A good deal of human effort has been associated with the inaccessible pole, as with other difficult undertakings. It was only in the middle of the 1930s that it was reached by Soviet aviators. It has been conquered several times since, but much less frequently than the Geographical Pole. It is considerable further from the coast and is appropriately named inaccessible!

Where do you think the ice floes of the Northern Ocean are strongest? Elementary logic suggests that this condition would be found in the centre of the basin. However, truth does not always lie on the surface. Often the instrument that leads science to uncover the truth is a paradox. And this is what happened at the Pole of Inaccessibility. It was Valeriy Nikolayevich Kupetskiy, chief engineer of the Pevek Hydro- Meteorological Center, who made use of the paradox.

"Above the Arctic Ocean", says Valeriy Kupetskiy, four climatic, warming systems operate throughout the whole winter: two anti-cyclones over Asia and Canada move the atmosphere in a clockwise direction; and two cyclones over the Atlantic and the northern part of the Pacific Ocean move the air masses in the opposite direction. These forces, come together in pairs over the western Soviet Arctic. Further away from the coast they drive away the ice

floes and help form the Great Siberian band of open water which remains navigable throughout the winter. But in the East, near the Chukotka coast, the opposite happens. The systems push the ice floes toward the shore creating the famous ice massifs, which have brought disaster to many ships. The corresponding area of the Arctic is structured absolutely symmetrically, with the open water along the shores of Canada, and the ice massifs opposite Greenland.

This situation has long been familiar to science. But does it only mean that these immense climatic systems in one set of circumstances create clear stretches of water and in other circumstances, ice pile-ups? Is it possible that they may also affect the central region of the Arctic?

Studying the question further, Kupetskiy came to the following conclusion. The air masses must disperse the ice flows in the area of the Pole of Inaccessibility. Then if this is so, ocean-going ships should be able to go directly over the pole from the Siberian area of open water to a similar one in Canada. And we (you should note!) are talking about the winter.

I am sure you agree that this is an attractive and courageous hypothesis. But probably it is only a hypothesis. It needs to be proven...

It appears that the first arguments in its favour already exist and should be taken seriously. The author himself brought them forward. Icebreakers, together with ships, he tells us, have already sailed into the region of the Pole several times. This happened in 1968 when the Leningrad, accompanied by the Amguema, landed the members of the

Soviet scientific research station, Severnyy Polyus-18 (North Pole-18), on the ice. It also happened in 1973 when the Vladivostok and the Kondrat'ev set up the SP-22 station. In 1977, the nuclear-powered Arktika sailed out of Siberian open water to the Geographic Pole and did so with relative ease. Ten years later the nuclear-powered Sibir' made the same trip.

A question may occur to the reader. Do we really need such a trans-polar route? Yes. While this is only theory, it is justifiable for purposes of obtaining scientific knowledge. And who knows how things will turn out in the future. Time passes and much changes. Maybe this theory will play some part in the development of that paragraph of the Joint Soviet-American Declaration signed in Washington, which recognized the necessity of "activating efforts to obtain a mutually advantageous agreement on sea commerce" including the Arctic Ocean.

Late in the autumn last year, we were fortunate to take part in an expedition to set up the SP-30 station on the ice floes. I was by that time familiar with Kupetskiy's hypothesis and was interested in directly investigating the arguments in its favour, as well as those supporting an Arctic passage. I will tell you about them now.

The diesel-electric powered Vitus Bering, on which the expedition was based, set out accompanied by a powerful ice-breaker from Pevek. We were immediately stuck in an ice massif. With great difficulty the convoy managed to round Vrangel' island from the South, and from there set out to the North. Initially we moved slowly. The ice floes were strong and the pressure considerable. However, as each day passed, their resistance diminished. As

the ship approached the landing point, which had been selected with the help of aerial reconnaissance, we saw continuous cracks in the ice floes and open water, in which sea mammals were splashing about. We had the definite impression that the closer we came to the centre of the ocean, the easier our progress became.

I compared my amateurish conclusion with the data provided by S. Rogozin, hydrologist on the ice-breaker Yermak. He was the most experienced person on the expedition, having been involved with Arctic ice-floes for more than 30 years. Rogozin confirmed my opinion in detail, illustrating it with maps of the ice conditions all along our route. So there was one more argument in Kupetskiy's "cash box" confirming his hypothesis.

Kupetskiy considered that as final proof, it would be necessary for a transport ship, assisted by an ice-breaker, to sail from Siberian open water to Canadian open water. This would demonstrate that the shortest water route from Europe to America actually passes over the Pole.

Vozdushnyi Transport
2 February 1988
Page 2 (slightly abridged)

"Khachapuri Above The Pole"

I admit, it was a bit terrifying to stand on a little folding bridge, leaning from the Tsiklon that was travelling at five hundred kilometres an hour. But then what a fantastic spectacle was opened before my eyes!

Dense inversion trails from four engines, curling in misty streams, were moving back at a great speed past the mighty, several-metres-high tail fin that rose above the smooth body of the airplane and behind which the full moon was shining with a phantasmal, greenish-blue light coloring the Tsiklon and its trails in some unreal gamut. Above, myriads of stars were glittering, and below us there was an abyss: darkness and eternal cold, where the arctic ice was in the grip of the polar night.

And suddenly, on the left along the course, high in the sky, a nacreous rain fell. The dragon tail of the aurora borealis wound above the pole like the folds of a gigantic curtain. And it was methodically pierced with short jabs by the emerald sword of the aircraft-laser. I was so fascinated by the unusual view that I forgot everything else. Too bad, because at that moment something unforeseen happened on board the Tsiklon... But let us proceed in an orderly fashion.

The preservation of the atmosphere's ozone layer is literally everybody's concern today. No wonder, life itself on earth depends on it. By screening the destructive ultraviolet radiation, the ozone prevents the sun from burning everything alive and from melting the ice. However, measurements made in recent years have shown that the amount of ozone is diminishing. In many instances, it is man's activity that is to blame. Nitrogen fertilizers and numerous household aerosols have led to the presence of a mass of so-called freons in the atmosphere - volatile compounds of nitrogen and chlorine. They are not dangerous by themselves but, reacting chemically with ozone, they destroy it.

In the opinion of a number of scientists, the stratosphere clouds recently discovered at altitudes of more than twenty kilometres consist of microscopic ice crystals upon which freons can be deposited. At the beginning of spring, when the sun gets hotter, the "conserved" freons are freed and begin to "devour" the ozone.

The expedition of scientists from the Central Aerological Observatory had the task of discovering or, more precisely, confirming the existence of stratospheric clouds and of examining their structure. This work was in preparation for a joint Soviet-American experiment in the Arctic scheduled for the end of the current and the beginning of the following year.

Already the first exploratory flight encouraged the CAO specialists. Approaching Hayes Island, they already noticed the mysterious clouds. Appearing at an altitude of about twenty-three kilometres, they would rise still higher closer to the pole.

The following day, Thursday, the Tsiklon headed straight to the pole. Again the stratosphere clouds appeared where they were expected. While the scientists continued to attend to their instruments, preparations were being made on board for the ceremony of conquering the North Pole.

Finally, at 11:37 Moscow time, the Captain, Boris Dmitrievich Grubii, honorary pilot of the USSR, announced on the plane's intercom: "The pole is below us! I salute the members of the expedition!" A few minutes later, the Tsiklon veered sharply and started a trip around the world. We apparently established a record of sorts, crossing all the meridians of the earth in some five to seven minutes.

During this trip around the world, all the members of the expedition received souvenirs from Sovetskaya Rossiya, namely 1988 wall calendars. Next we exchanged autographs on the calendars and the commander notarized them to the effect that this really happened above the North Pole.

Then a festive dinner was served. It was highlighted by an unusual dish invented by our engineer, Boris Tarasov. It is called Khachapuri - meaning summer - at the pole. It has an inexpressible taste, it possesses the flavor of fresh dill and other herbs - all that one dreams about when surrounded by ice...

The last day of the experiment dawned. After the scientists once more located their clouds - true, their number had diminished somewhat and they had moved toward the pole - the aircraft set course for Khatanga. Your correspondent occupied the seat of the radiotelegraph operator and transmitted another radiogram to the newspaper.

Having done all the chores, I climbed under the "roof" of the Tsiklon, where I witnessed the appearance of aurora bolearis, with which I began this report. The fantastic picture made me forget that I was separated from the icy air by just a thin transparent hemisphere - a glass bubble.

It was at this moment that something unexpected happened. Although the stratospheric clouds above us had disappeared, the scientists had not shut off their apparatus. And, as it turned out, they had done the right thing. Upon entering the zone of northern lights, the lidar suddenly began to pick up unidentified objects in the atmosphere. They were situated at altitudes from ten to twelve to

twenty and more kilometres. The sky above us was completely clear, but the laser stubbornly recorded the presence of objects in the sky.

What was it then? So far, there is no answer. It will be necessary to study the recordings of the mysterious reflected signals, process them on a computer, compare them with a multitude of other data and perhaps conduct many more experiments.

...A gentle touchdown, a short run, and our Tsiklon is in Sheremet'evo again, parked at its base, the State Scientific Research Institute of Civil Aviation, whose crew had taken it to the pole. It had flown there to solve a mystery but, having done that, it has brought back a new one. Nature is unfathomable. The deeper we penetrate, the more mysteries we encounter. The probing is continuing.

Sovetskaya Rossiya
9 February 1988
Page 4 (slightly abridged)

CONSTRUCTION

City With a View Of The Arctic

Recently I read in one of the central newspapers about how some architects undertook to design a city with a view of the Arctic. Everything in it is unusual and beautiful: polar houses, spacious passages between them, indoor gardens. Simply breathtaking. But how far is that from the actual life of a real city with a view of the Arctic - our Murmansk... How can you speak about public welfare and special architectural design when, for instance, the Ministry of Housing and Communal Economy of the republic bases its appropriations for these purposes on some mathematical average norms? The same ones that apply to the central zone of Russia and to the south.

That ministry, by the way, lacks originality in its approach to our problem. The average-based approach is discernible in everything that has a bearing on the development of municipal infrastructure of Murmansk. This explains the poor living conditions and the acute housing problem in our city. According to statistics, the availability of housing and stores in the city amounts to only 79%, restaurants and cafeterias - 50%, schools, daycare centres and hospitals - about 75%.

The main thing, however, is housing. More than nineteen thousand families are waiting for it; in the meantime, they live in communal residences and share an apartment with another family. Some other ten thousand live in substandard buildings. For thirteen thousand families, the available space so far does not exceed six square metres per person. The total number of families on the waiting list for

housing in our city is more than forty-seven thousand, about thirteen and half thousand of that number constitute the waiting list of the executive committee.

The Capital Construction Administration of the Municipal Executive Committee, which acts as the exclusive client, provides at the present time more than eighty percent of the city's housing. We have been increasing that number year after year: in 1987 it already reached 200,000 square metres, much more than in the previous year. But it is not enough: the average annual increase in available housing must be brought to at least 236,000 square metres.

In this connection we have studied the start-up program for 1988. We have found that contractors' quotas take care of little more than half of it - twelve, seventy-two apartment buildings cannot be fitted into the plan. We will not, of course, accept any cuts in the construction program. We shall be looking for a solution. For instance, as a bonus, we will probably offer the builders 50% of the completed houses. But still, contracting out will not solve the problem. We need a self-supporting system. How many different ministries and departments do we have in Murmansk--- They should combine their efforts.

The All-Union Fish Processing Enterprise Sevryba and the Murmansk Sea Navigation Administration have been assigned a parcel of land sufficient for an entire small district - just go ahead and build. In total, thirty-five such parcels have been offered to various enterprises and organizations. So far, however, there has been no response.

The self-support system has now been applied to only two buildings in the city, i.e. 5,000 square metres. All the criticism addressed to the Ministry of Fisheries of the USSR, which is responsible for Sevryba, has been to no avail - each year the ministry has been cutting the budget for the improvement of living conditions. True, the fisheries administration completed one apartment building last year, and it is trying to get some results now by applying the self-support system. But all that is a drop in the bucket - eight or twelve apartment houses. To obtain an apartment in our city a fisherman must wait on the average 23.5 years!

The picture is not much brighter for the sailors either, even though the Ministry of the Merchant Fleet has many of its divisions in the city. Much more could be done for the city by the organizations responsible to the Ministries of Transport Construction and Communications.

What should be done to elicit the interest of these departments? We propose: if nobody can succeed in applying the self-support system on his own, let us form co-operatives. The design group at the municipal executive committee could become the organizational centre in this endeavor. Once the divisional building sectors have been merged, we shall crate a special trust for improving the city's social and living conditions. Our house-building concerns should also be included in the co-operative effort. We also need a rental centre for construction equipment. Our proposals for creating a co-operative enterprise have been transmitted to the territorial administration of the State Committee of Material and Technical Supplies. We are waiting for their answer.

Housing comfort - in its characteristically northern interpretation - is a serious problem. In the 305th micro-district, they have tried to erect houses using the principle of closed brackets to protect people from the icy winds. In some cities we are now putting up houses of the new 93rd series - with triple-glaze windows and a comfortable layout. By the end of the five-year plan, the house-building enterprise should be completing at least 280,000 square metres of such structures. But its capacity has practically been exhausted. What now? Reviving the enterprise has been hopelessly delayed by the Ministry of Construction of North-Western Regions. There is no hope that it will ever be done. There is not only a question of a lack of material but also a question of where: - 20% of the municipal area, including downtown, is occupied by warehouses and other industrial buildings.

Murmansk is loosing its architectural identity. Everywhere you see faceless, fully prefabricated houses. No matter how much you try to embellish them (and we are trying), the grayness remains. The solution resides in a harmonious combination of these houses with brick structures: brick could be used for commercial enterprises, restaurants, services... But the city's demand for brick exceeds the supply by a factor of two or three. The Ministry of Construction Materials of the RSFSR is aware that the Kildinskii brickyard must be rebuilt immediately and that another such enterprise must be put in operation. The ministry, however, tries to ignore this need.

The problem is that powerful bureaucrats at both the Republic and Union levels are still viewing the needs of the cities as none of their concern. The engineering projects - the Tulomskii water line,

and purification plant - provide a clear indication. The former is in the process of completion but progress, as in the old days, is slow. The purification plant should be ready next year but from an appropriation of 28 million rubles only a couple of millions have been used.

Last October, while awarding our city the order of Lenin and the Golden Star medal, M.S. Gorbachev remarked that the population of the arctic region is quite special. For many citizens of Murmansk, the sea is their workplace, thousands of miles away from home, and it is normal that the people here need special attention, better social and cultural facilities. We do believe that a wonderful city with a view of the Arctic is not an illusion. It is something in the realm of reality, provided we do it the right way.

Stroitel'naya Gazeta
28 February 1988
Page 2 (abridged)

Prefabricated Houses

A house-building enterprise, the largest in the Far North, has been organized in the suburbs of Yakutsk.

It will produce components for the construction of 150,000 square meters of housing annually. The materials manufactured by this concern will permit the building of apartment houses which meet the requirements of the frigid regions with increased heat insulation, three-metre-high ceilings, spacious kitchens, built-in closets and other

conveniences. Assembly of a five-story building will take about eleven months. The framework for ten such structures is being erected now.

Trud
5 February 1988
Page 2 (slightly abridged)

An Apartment For Exemplary Work

Over 43,000 square meters of housing were made ready for use in Tynda last year. The two-year quota of the five-year plan for the construction of housing and of social and cultural centres had been fulfilled ahead of schedule. Competition was a key element in it. Teams of workers from all construction subdivisions in the city participated and the winner was the team headed by S. Levchenko from the mobile construction and assembly unit No. 585 of the Tsentrobamstroi trust. In accordance with the conditions of the competition, the team was assigned a three-room apartment, which was given to the team's best assembler, V. Yakovenko, a veteran of the BAM.

Sovetskaya Rossiya
5 February 1988
Page 1 (full text)

Warm Concrete

Porous concrete, also called cellular concrete, retains heat in winter and provides cooler temperatures in summer. However, it does not always

satisfy the builders' requirements of strength. It is a well-known fact that its resistance to frost, i.e. temperature fluctuations around the freezing point, is several times lower than that of ordinary compact concrete.

The problem was studied by specialists at the All-Union Scientific Research Institute of Construction Polymers. By means of chemical additives they have been able to increase the stability of cellular concrete by a factor of four and to improve its resistance to frost.

Stroïtel'naya Gazeta
25 February 1988
Page 3 (full text)

Planned Target To Be Fulfilled Ahead of Schedule

L. Yurgelaitene's brigade from the construction and installation administration of the "Intaugol" Association has decided to fulfill the three-year production program of the five-year plan in time for the opening of the 19th All-Union Party conference. In the first days of the year the collective is working considerably ahead of schedule and is ensuring high quality of work.

This year, work collectives of construction subdivisions in Komi ASSR have strenuous assignments. Building and construction work must be increased by approximately 10% at a cost of nearly 700 million rubles. Collective contracts, which have been introduced by three quarters of all lower-level

construction subdivisions, have contributed to the successful fulfillment of plans.

Stroitel'naya Gazeta
2 February 1988
Page 1 (abridged)

For The Oil Fields of Samotlor

Niz hnevartovsk Specialized Ferro-concrete Plant has delivered up to its first batch of products. These include piles and paving slabs, of which there is a serious deficit today in the construction of oil- fields facilities and housing and cultural-communal facilities.

In addition to supplying Samotlor's capital city, the plant will send its products to the burgeoning middle-Ob' cities of Megion, Langepas and Raduzhnyi. The plant's first phase has a capacity of 80,000 cubic metres of precast, ferroncrete products per year.

Stroitel'naya Gazeta
2 February 1988
Page 1 (full text)

ENVIRONMENTAL PROTECTION

A Drilling Rig Stands In The Way Of A Reindeer

...A trusting, innocent, young reindeer fell behind the herd. He lost his way. Sensing the smell of human habitation, he rushed toward the fires that flashed momentarily above the tundra. On the approach to the drilling area, he broke a hoof on spikes protruding from the ground. Then he got his antlers entangled in an abandoned metallic structure and could not free himself from the "trap"...

Was it only imagination that drew this tragic picture? Maybe it isn't worth "raising a ruckus" about? Let us ask the indigenous peoples of the tundra. Shaking his frost-covered parka, reindeer herdsman, Aleksey Chuprov, invited me to his parents' home in the village of Krasnyy. Over a cup of tea, he lamented:

"Many reindeer are perishing needlessly. In each herding team the loss of animals is numbered in the dozens - some poisoned by chemical residues, some running afoul of metal stakes. And how much pasture has been lost since the arrival of the drill rigs!"

On the Kharp Collective Farm, where my companion works as a team leader, reindeer herding is the most profitable activity. But for some time drill rigs have occupied a third of the pasture. After they are taken away, the herdsmen have to move the reindeer trails and seek new grazing areas because many of the rivers and lakes - Lake Ostrovnoye, for example - no longer have water that is fit for drinking. They are poisoned.

In Arkhangel'sk, at the provincial agricultural office, I found out that geological expeditions have taken 5,000 hectares of reindeer pasture out of use in the past few years.

On vast stretches of the Subarctic tundra - in the Nenets Autonomous District - there is intensive prospecting and exploitation of underground resources. It is anticipated that reserves here will equal those discovered in the Tyumen region - a matter crucial to the national economy. But the interests of drillers and extractors are often put above the concerns of agronomy and ecology.

But on the other hand, what can be said for the reindeer industry? It provides the cheapest meat in the country. It costs the Kolguyevskiy State Farm 79 kopecks to product a kilogram of it. And there is no need to worry about fodder for reindeer.

Consideration is currently being given to displacing the reindeer industry in this insular economy, washed by the waves of the Barents Sea. The reason for this is the callous attitude of "intruders" toward the land and toward the preservation of pasture. On Kolguev Island, the directorate of drilling operations for Arktikmorneftegazorazvedka Industrial Group reported success in starting up oil wells but remained silent about the fact that they were operating with no facilities for water-retention. Thus with one hand we extract the riches, while with the other we destroy nature. And for its subsequent restoration, precious rubles will be needed.

It is surprising that geologists, on whom the government has placed the responsibility to protect mineral resources and underground water, have

not managed to avoid leaving a mess behind them in the tundra. Investigation by the Nar'yan-Mar Hydrochemical Laboratory of sites of the Seventh Field Expedition revealed the careless disposal of oil products, and "littering" of the territory with garbage and metal scrap.

This is what was written recently in the district newspaper, Nar'yana Vynder, by R. Neronov, head of the laboratory. "I have been involved in the preservation of nature at drilling sites since 1972", he remarked, "but have not yet solved all the problems. The main cause is the indifference of the officials, their inaction, and even their deception. This deception, in the words of the author, results in the expenditure of resources with no benefits, resulting in a waste of money. Geologists have not yet developed methods for purifying and using process water. For some reason not only do the officials need a feasibility study of the most obvious things, they need it on paper, at the level of a research institute. However, it is enough to fly over the tundra in a helicopter in the spring to see the effluent from the drilling sites flowing into the Arctic basin.

"We must set up teams, provide them with equipment to reclaim the lands, to rehabilitate the pasture," remarked V. Dostenko, chief geologist of the Khoreyversk expedition. "At the oil-patch, we must be very strict about every breach. Look, helicopters return to base empty, while metal scrap still lies about on the tundra..."

And yet one more opinion.

"Do I look like a barbarian?" asked M. Rud'ko, our best tool pusher, clearly offended. "I love the tundra. When the geese take wing, when in

the distance, like a mirage, there is a herd of reindeer... We are careful at the patch. But the preservation of nature touches all of us. They should not, in my opinion, ride across the tundra in cats during the summer. However, people do. They should only deliver supplies during the winter. But that is not how it happens; goods are brought in during the spring. All of us together must safeguard nature..."

It seems that everybody understands the severity of the problem. But who is doing something about it?

Pravda
10 February 1988
Page 3 (slightly abridged)

Tomorrow Will Be Too Late

Even through the thick blanket of snow, the tracks left by the caterpillar tracks of tractors and cross-country vehicles, the wheels of heavy vehicles, as well as the dark traces of trailer towns are clearly distinguishable from the helicopter. Everywhere, the plain is scourged with deep scars.

"The tundra is dying," M. Tusida (delegate to the 27th Congress of the CPSU, member of the Tyumen provincial Party committee and hereditary reindeer breeder from "Yamalskii" state farm) tells us with a grief almost indicative of someone near and dear. "It is often explained that this is an unavoidable process and that immense gas fields cannot be opened up without sacrifice. Yet we see that our environment is very often victimized by the most elementary mismanagement."

The experience of many generations of native inhabitants has formed what we today call an elevated ecological culture. This culture has almost to this day preserved the nesting grounds of waterfowl, the "commercial fishing waters", rich in valuable fish species, the thousands of deer, and the many fur-bearing animals and seals.

Yamalians are not the only ones to make use of the natural resources of the Arctic peninsula. The delicacies produced by three state farms and fish factories situated on its territory have traditionally been delivered to the European part of the country, as well as abroad. And in recent five-year periods it has been an important element in the provision of workers for the burgeoning oil-and-gas complex in the Tyumen North.

But now the leading detachments of the industrial complex have reached Yamal: three large oil-and-gas prospecting expeditions have settled on the peninsula and the first landing parties of construction workers have arrived.

"The problem is that we were technically unprepared to take on the Arctic", explains Yu. Loganov, head of "Glavtyumengeologiya". "Clearly, heavy tractors and cross-country vehicles, no matter how much one tries to prevent it, do harm to the tundra; we only have experimental models of the long-promised air cushion vehicles. Traditional construction and drilling methods have been mechanically transferred to Yamal without being adapted to local natural conditions."

However, geologists and builders have turned out to be not just technically, but, let us not mince words, morally unprepared for work in Yamal.

"In the seven years which I have been flying over these areas, I have observed how the environment is being disfigured," we were told by V. Slipchenko, an Mi-8 helicopter commander. "For some reason, the most beautiful spots, those with greenery and lakes nearby, are always selected for drilling purposes. Fly by a couple of months later and you see that the vegetation has been trampled down and oil slicks have formed on the water. Fish and animals are not to be seen. Cross-country vehicles are used not only to go to the drill site, but also to go berry-picking and fishing (which, we will add in parenthesis, is most often illegal). They do not use existing roads; each beats his own path."

And we consider it necessary to add that there would have been much less damage had it not been for the passivity of Yamal district authorities. In the face of authoritative organizations and important national tasks fulfilled by said organizations, the interests of the district and its native inhabitants were not upheld persistently enough by the Party district committee and the Executive Committee of the District Soviet of People's Deputies. Rather than creating a system of rigid environmental control and an atmosphere of intolerance to violators of environmental protection legislation, local authorities are principally concerned with bringing down one-time lawsuits, transferring public funds from the sectoral pocket to the district's budget.

This attitude to the peninsula's environment has borne its "fruit". According to data furnished by the provincial commercial hunting administration, during the last five-year period, polar fox, wolverine, waterfowl and wild deer populations have fallen by factors of 3, 4, and 10, respectively;

seals have almost disappeared; the red-breasted goose, which has been entered in the Red Book [a list of endangered plant and animal species - tr.], is on the edge of extinction. Water bodies have become substantially depleted. Tens of thousands of hectares of deer pasture lands have been destroyed. Today, the 150,000 head herd of domestic deer must feed off land which, according to the calculations of experts, can sustain only 100,000 head.

Judging from documents from the USSR State Planning Committee and the ministries involved in the development of Yamal, higher authorities would appear to have not remained indifferent to this problem. Although late in coming, many important steps, in our view, have been taken to minimize the negative impact on the ecology of the peninsula. Specialized environmental protection departments and construction and installation administrations are being formed in central directorates and trusts; they are charged with the responsibility of healing the wounds inflicted on the tundra and of recovering losses to agriculture. Many millions in capital investment are being planned for relief construction.

"We just do not know what in fact to build with these resources", says V. Nak, head of "Yamaltransstroi", which is directing the construction of a railway line to the Bovanenkovo gas-condensate field. "Our line passes through deer pasture lands. According to modest estimates, just two state farms will be inflicted with damages of approximately 50 million rubles. Furthermore, there are lakes and spawning rivers along the line. We have long been ready to set about the task of making up for these unavoidable losses. However, the line has already been under construction for over a year, the 70th kilometre has been reached, and we still have not received orders for relief projects.

Complete bewilderment also reigns at "Urengoigazpromstroi" Trust, which is directing the construction of the field itself. Several days ago, this trust was assigned the first relief project. Only the proposal is that it be built not in the tundra, but in the district centre.

Yu. Vakuyev, First Secretary of the Yamal District Committee of the CPSU, explains this unexpected proposal: "We have a long waiting list for housing, and so we decided to exploit this opportunity to improve the situation."

Vakuyev's plans are expansive. In addition to apartment houses, he is pushing for the construction of a sport centre and a whole series of other projects. There's no denying that these facilities are of need to the district settlement of Yar Sale, where cultural and communal facilities have for many years been in a state of neglect. But what connection does this have with the restoration of agricultural lands, hunting grounds, and fishing waters?

"None whatsoever," agrees Yurii Iosifovich, "but to this day we still do not know how to restore them."

It turns out that no one in the district knows what will become of the hundreds of families of reindeer herders, hunters and fishermen, who will be forced from their homes because of the construction. At this time in Yar Sale, the destruction of 24,000 deer is seen as one option. The individuals concerned could be asked to resettle in the district centre, but it is acknowledged that both reindeer herders and hunters would have nothing with which to occupy themselves in the village and that they would probably not be amenable to such a proposal.

"Simplistic" is what a state commission of experts from the USSR State Planning Committee termed such an approach to the solution of this difficult problem. In the commission's opinion, the measures advanced by the local government bodies to guarantee the necessary economic and social standard of living of the native population - "on its historic homeland, having furthermore the status of a constitutional, political and administrative unit of the country" - are obviously inadequate.

But Yuri Iosifovich is not prepared to accept this criticism only at the expense of the district leadership.

"Science is letting us down", he complains. "Each year, expeditions from various institutes of our country roam Yamal, studying everything there is to know about our environment. But where are the practical results? In any case, we have no precise recommendations on how to recultivate the tundra cover, renew areas grown over with reindeer moss, and replenish fish reserves.

Complaints were voiced against scientists in the Yamal-Nenets Area Party committee as well. Criticism was first of all directed against an academic institute appropriately called the Institute of Problems in the Development of the North, which was formed two years ago in Tyumen. And understandably so: it's from here that answers to the serious questions posed by Yamal are anxiously awaited.

Grasping the topic of our interest, V. Mel'nikov, the institute's director and corresponding member of the USSR Academy of Sciences, immediately took the lead in the conversation:

"Have we not learnt enough lessons from [lakes] Baikal and Ladoga? And Yamal is, from a scientific standpoint, of no less importance. It is a real crime to manage the resources of this unique region from positions of departmentalism and present advantage. What is needed is urgent humanization and ecologization of the industrial development of Yamal..."

Vladimir Petrovich certainly expressed many more correct and important ideas vis-a-vis the state of affairs on the Arctic peninsula. But what concrete steps have already been taken by the institute to correct the situation? This question forced an embarrassing pause in our conversation.

"Our plans do not include specific recommendations with respect to Yamal. I think it would be advisable to set this task before the Siberian Department of the USSR Academy of Sciences."

We heard the following in "Glavtyumengazprom": "We do not think that it is necessary to enhance scientific support for the Yamal Program. This would result in unnecessary expenditures and, more importantly, another delay in resolving urgent problems. The potential of Tyumen science is not wanting. Someone must simply display initiative and take on a co-ordinator's role. And this must obviously be accomplished by the district and area bodies of power."

And so what happens as a result? Everyone would seem to be concerned with the fate of the Yamal Peninsula and its native population. Yet everyone tries to shift the burden of responsibility onto

someone else. And so the problem rides a merry-go-round of interdepartmental red tape. If we do not stop it today, tomorrow will be too late!

Sotsialisticheskaya Industriya
6 February 1988
Page 1 (full text)

MINERAL RESOURCES

Diamond Mine Drilling Ahead of Schedule

The shaft at the Internatsionalnyi diamond mine has been drilled down to 1,000 metres by the team of L. Usachev from the Yakutsk mining division of the Shakhtospetsstroi trust. In spite of unfavourable conditions, the drilling is ahead of schedule. This is accounted for by the application of modern work methods and strict technological measures. The projected depth of the mine is about 1,070 metres. The miners intend to reach it before the opening of the 19th party conference.

Ahead of the schedule are also the stripping operations at the Yubileinaya shaft, not far from which Aikhal, the town of diamond miners, is being built.

Sotsialisticheskaya Industriya
24 February 1988
Page 1 (slightly abridged)

OIL AND GAS

Arctic Landing

To demonstrate his point, Yu. Topchev, chief engineer of "Glavtyumengazprom" draws a yield curve for West Siberian natural gas fields. "Of what importance is Yamal to the national economy today? The Urengoi and Nadym fields have already reached designed capacity, to be followed soon by Yamburg. After that an inevitable drop in yield will occur. We are committed to ensuring a substantial growth in yield. In the next five-year plan period, Tyumen must account for 90% of All-Union natural gas production. This can only be achieved through the exploitation of the fields in the arctic peninsula."

And so, Yamal. According to geologist's estimates, the world's largest reserves of hydrocarbon raw materials lie hidden in the interior of this arctic peninsula. But their development is a unique task for designers, builders and gas producers alike. It's not by accident that Yamal is considered to be a "hard nut to crack". Extreme climatic conditions, such as strong winds, continuous snowstorms and frost, make it impossible to work for two out of every three winter days. Labour productivity is almost half as much as that for the same work performed on the mainland. Add to this the surprises of permafrost and the humidity of the soil, 60-70% of which consists of ice. It's under such conditions that work must quickly proceed on a colossal construction project which, as pointed out in the executive directives of the USSR State Planning Committee [Gosplan], will yield Yamal gas to consumers in the first quarter of 1991.

We were advised at the USSR Ministry for the Construction of Oil and Gas Production Industry Installations [Minneftegazstroi] and the USSR Ministry of the Gas Industry [Mingazprom] that a planned preparation was under way for a decisive assault. The immense resources of two construction departments, and a powerful contingent of drillers from the "Severgazprom" Association from Komi ASSR have been sent to open up Yamal. Their first contingents have already set foot on the peninsula. And, judging from operations summaries, work is proceeding on an even keel.

...Our helicopter fought its way with difficulty through the breaking snowstorm en route to the coastal settlement of Sabetta. The lights of human habitation seemed a real marvel amidst the blizzardy tundra. Also akin to a marvel was what the collective of construction administration no. 33 of the "Urengoigazpromstroi" Trust accomplished here in a few months time.

"The best work brigades which have gained experience from arctic construction projects have been sent here," explains V. Bart, the trust's deputy manager. "We learned to work here in freezing weather and squalls; and we mastered a reliable construction strategy, i.e., that of beginning not with industrial projects, as used to be the case, but with well-equipped living quarters which have paid for themselves many times over. The well-organized daily life of shift teams has ensured a high work pace at major projects. We were to have used up about a million rubles in 1987 as planned; we fulfilled the program by a factor of more than 5. In addition to a housing estate, we are building an industrial base, and we are in the process of building a winter road to the Bovanenkovo gas field...

But along with notes of pride, we sensed dismay and disappointment in Victor Albertovich's words:

"You must understand that we cannot give any sort of assurance that this selfless labour of many people will not be in vain. Today it's still not clear where and, most importantly, how we are to build."

...We caught V. Filin, Deputy Director of "Yamalgazprom", engaged in a curious pastime. In a smoke-filled room of the dormitory he was drawing a bridge on an ordinary sheet of paper from a pupil's notebook.

Valery Yakovlevich throws up his hands: "Here's the sort of creative activity which one ends up pursuing. but what's to be done? Contractors want working drawings of some sort. Now the bridge will not be built; impassable roads will prevent us from reaching loading terminals; consignments will not be delivered to their destinations. Of course I understand that I have no right to take the place of the design institutes, but I see no other alternative. And now that my bridge is done, I'll start on the dining hall..."

It's surprising, but true: builders, as it turns out, still do not have the required design documents at their disposal. There were stormy debates in the USSR Ministry of the Gas Industry when the question of which institute was to take on the difficult and honourable responsibility of general designer of the Bovanenkovo gas field. Tyumen gas producers and builders had expected to open up Yamal on the basis of formulations from their long-standing partner, "Yuzhniigiprogaz" in Donetsk, whose

specialists designed most of the northern gas fields. However, for reasons which to many have remained incomprehensible, "Vniigazdobych", Saratov, was charged with the design. It soon became clear that this collective, which had no experience in large-scale modular (now prevalent in the Arctic) construction, was not capable of undertaking the project. Representatives of the directorate of "Yamalgazprom" communicated their concerns to the ministry and the central directorate, in addition to official written appeals, but to no avail. And when the time came to commission the project, it was discovered that the institute had nicely botched the assignment: it had not even prepared a technical an economic feasibility study.

The next round of stormy negotiations resulted in the Saratov people agreeing to deliver up the technical and economic substantiation without delay, and in the project being entrusted to "Yuzhniigiprogaz." But no sooner had the ink on this order had a chance to dry than new problems sprang up: the Donetsk designers proposed a fundamentally different method of gas collection and transportation. Their solution is advanced and much more economical than the preceding one, but it cancels the existing formulations and calls for more research.

Thus, according to the most optimistic forecasts, the project will not be ready before the end of 1988, not to mention the ensuing time required for its co-ordination, elaboration and approval by various authorities... Strictly speaking, builders will only then be able to proceed with the project, in which case it will be impossible to commission the fields in 1991.

This is why, while realizing the full responsibility placed on themselves, the heads of trusts and associations are running risks in having a contingent blindly and guessingly set foot on the Yamal tundra. And the tally of serious errors and losses engendered by such a method of developing the arctic peninsula has already begun.

So the group of drillers establishing a base on the western shore of Yamal found themselves in a difficult situation. They started construction without the aid of geological surveys and geocryological findings. As is the "practice", they smoothed out the site with bulldozers and... ended up in a swamp. With the onset of the first warm days, the permafrost, deprived of protection, started to flow, forming a sea of mash. There were similar occurrences at other projects, where traditional construction methods were used in haste. Having met with failure at one site, builders are now selecting another site, once more at random.

Contributing to the confusion are the often half-baked ministerial instructions and urgent directives. For example, according to one of the latter, an unnecessary and hence currently unpopulated settlement had, in the opinion of some, sprung up at the mouth of Seyakha River.

The simplest calculations would seemingly suggest that the most effective and economical alternative would be to set up a large settlement for shift teams with a unified system of power and heat supply and with common cultural and communal facilities. It was this solution which builders awaited from designers. With this in mind, they set about the construction of a settlement in Sabetta. But the project was forestalled by a stern

ministerial telegram directing the settlement be built at Seyakha. Why did the choice fall on a spot with no suitable site for loading terminals, no sources of electric power, and no existing gas wells, as in Sabetta, for example? In our attempt to find an answer to this question, we heard the following startling explanation: a legend served as the starting point for the idea... It is said that since time immemorial, coastal dwellers passed through here on their way to the west coast, portaging the necks of land. And so in the silence of an office the idea was hatched of creating a beachhead from where it would be possible for caravans of large-tonnage superblocks to start out over an ancient route...

A tempting idea to be sure, but impractical. This is the unanimous, admittedly belated, conclusion reached by experts in command of survey findings. The idea was buried, but the settlement and base, where a few guards live today, stayed behind. Pending better times, so to speak.

For a construction project of such a huge scale, the costs born from the first "attack" might not appear to be very high. But how can we not ponder the fact that today the scope of work for each of these sections is growing by leaps and bounds. And so it is impossible to work as in the past, without clear-cut plans.

We asked naive questions: could design work not be accelerated?, couldn't group experts be quickly dispatched to Yamal?, could the efforts of surveyors be combined?, could bureaucratic obstacles on the road to agreement on and issuance of working drawings be avoided?

"Perhaps," was the answer at "Vniigazdobych" in Saratov. "But why do you address these questions to us? We are no longer the general designers; Yamal is not ours now."

"We would only be too glad," said V. Cherevatenko, head of the integrated designing department at "Yuzhniigiprogaz", "but we have still not even signed an official contract with the client, and we are awaiting a technical and economic substantiation from Saratov.

Our disturbing questions were greeted with composure in both ministries. We were assured that there was nothing to be alarmed about. Sure, designers are lagging behind, but there is nothing new about this. When the time comes, we'll turn up the heat, fling in all our reserves, etc.

"What is most frightening is that we have gotten used to working in this matter, and what is more, we quite often flaunt our "omnipotence", we were told by M. Sukholutskii, manager of "Urengoigazpromstroi" Trust. We arrogantly parade about declaring that our "porridge is cooked with an axe." I don't deny that there is no lack of enthusiasm and courage in the Tyumen North. But why is the cart put before the horse at all our construction projects?"

Such a style is completely unacceptable for Yamal. Cardinal, nonstandard solutions are needed to change the situation. For the present, the matter has not gone beyond the discussion stage.

Sotsialisticheskaya Industriya
4 February 1988
Page 1 (full text)

The Idea Wasn't Bad, But...

The Pravda correspondents' office in Tyumen' has received an alarming letter from a group of drilling specialists employed by the Tyumen' Main Geological Surveys Administration. It has been signed by the well-known drilling experts N. Glebov, hero of socialist labour, V. Vdovichev, T. Gubaev, S. Shibakin, Z. Gafinets, and V. Tartaro who, through Pravda, wish to transmit their heartfelt concerns to the Minister of Machine Building for Chemical and Oil Industries, V. Luk'yanenko. What are the concerns of these surveyors of mineral deposits?

Starting on January 1st, the subdivisions of the Tyumen' Main Geological Surveys Administration, including all the one hundred and forty drilling teams, switched fully to self-sufficient cost accounting. This was expected to foster a more effective increase in the surveyed reserves of oil and gas and an expansion of survey drilling in the regions of main operations - Surgut, Nizhnevartovsk, Urengoi, Tarko-Sale, and Yamburg. The current year's plan calls for the drilling of 2,500,000 metres of oil wells, which exceeds last year's quota by 250,000.

The drilling teams started switching to self-sufficiency in an elevated mood. Unfortunately, no matter how hard they tried, they failed to fulfill the plan for January. Paradoxically, one of the main reasons for that failure was not the remoteness, or the Siberian cold, or the impassable roads but... the new technology in which they placed all their trust at the beginning.

The chief engineer of the Tyumen' Main Geological Surveys Administration, A. Grigor'ev, told us:

For the drilling of boreholes we use mechanisms and equipment manufactured by the plants of the Ministry of Machine Building for the Chemical Industry. Those comprise first of all drill bits and ramming motors. As far as the drill bits are concerned, some encouraging developments took place recently and we receive regular supplies of these parts. But the situation with ramming motors leaves much to be desired. And it is not because we lack good designs. These are well designed, high quality motors which are in mass production. But we are not given a chance to fully utilize this Soviet-made equipment.

As early as 1979, the All-Union Scientific Research Institute of Drilling Technology developed a fundamentally new turbine drill, the TPS-172. Already the first experimental models demonstrated their high efficiency. The manufacturing monopoly was given to the Kungur machine-building plant, district of Perm'.

Last year, the Tyumen' geologists received 180 such turbine drills, the current year's plan calls for the delivery of 288. It seemed that a time of abundance had come. Not so. The drillers' situation became even more difficult. The problem is that the new turbine drill can work for 1,200 - 1,300 hours before it is written off, longer if the norm is set at 900 hours. After 400 hours of operation, however, the fast-wearing parts - vanes, bearings, etc. - must be changed. To the chagrin of the geologists, less than twenty percent of their orders for kits with these parts are filled. At the present time, some 200 turbine drills, representing an expenditure of more than two and half million rubles, have been collected and are waiting for repairs at expedition bases.

For the current year, for instance, the plan calls for the delivery of 288 new turbine drills. The kits, however, contain enough spare parts for only 50 repairs, whereas logically there should be sufficient parts for 600 repairs.

For several years we have been trying to convince our suppliers, says A. Griegoriev, to include two kits of fast-wearing parts with each turbine drill.

So again delight in the achievements of Soviet technology is spoiled. According to the regulations, the DZ-172 motor should be accompanied by a kit of spare parts for the boring bar and a spare universal joint. But the factory does not fulfill these conditions. The same applies to the turbine KTDCH-172 drill bits. The geologists have approached the various departments and the Ministry of Machine Building for Chemical Industry, a dozen times. Unsuccessfully, so far.

Pravda
29 February 1988
Page 3 (slightly abridged)

For Gas Producers

"Tomorrow's enterprise" has been added to the list of industrial complexes of Tyumen'. A new plant manufacturing superblocks (modular units) has started production in the district's capital. The first production batch now being assembled at the factory will be shipped to the gas producers of Yamburg as soon as spring navigation opens.

The block method is being more widely used by the West Siberian oil and gas complex - says V. Kel', director of the Sibgazkomplektmontazh concern. This is understandable. It is the thing of the future. It is much simpler and cheaper to assemble complete outfits here for industries and other projects and then, in a ready-for-use condition, ship them to the north.

We have also gained initial experience in assembling the superblocks, transporting them by water route, and in equipping the Yamburg gas-condensing site. But there is an urgency, more and more "supers" are needed. This is why five new shipbuilding berths have appeared on the bank of the Tura river plus a huge shop in which the assembly of these mini factories is taking place. In view of the fact that the enterprise has decided to reduce to a minimum the costly assembly work in the north, its products become more compact but heavier. At the present time the blocks weigh from 200-400 tonnes, but by the end of the year the first 1000 tonne block will hit the water.

For now, the factory will manufacture 50 superblocks, but once projected capacity is attained, production will increase fourfold.

Stroitel'naya Gazeta
13 February 1988
Page 1 (full text)

There Will Be More Subarctic Oil

The drilling team of Komineft' Oil Group have drilled through 10 million metres of rock since the oil-bearing regions of the European North were first exploited.

About 60 years ago, the first exploratory drill hole No. 5, located in what is now the centre of Ukhta, began producing oil. This hole, which is now marked with an historic plaque, was drilled by master-driller, communist I. Koslapkin, after whom one of the city streets is now named.

With the departure of the autonomous republic's oil-drillers to the Subarctic regions, the pace of drilling increased immediately. Since 1986, 840 holes have been drilled - 90 of which were in excess of the plan. During the past year, the net cost of drilling one metre was reduced by 15 rubles. As a result of the reduction in the cost of sinking development holes, more than 13 million rubles were saved. Thanks to the superior work of the drillers, the workers of Komineft' obtained more than a million and a half tonnes of liquid fuel above the plan.

Pravda
26 February 1986
Page 1 (slightly abridged)

The Testing of Excavators Has Begun

In Nadym, Novyi Urengoi, and Yamburg tests are being conducted on an experimental group of rotary ditch excavators, ETP-307s, built by the Moscow experimental machine-building plant of the Ministry of Oil and Gas Industry. The capacity of the new machine is 1,200 horsepower. It is capable of digging one kilometre of full-sized ditch in a day. Another experimental group of these excavators will be completed this year.

Sotsialisticheskaya Industriya
17 February 1988
Page 2 (full text)

"Surgutneftgaz" Increases Production

Collectives of the "Surgutneftegaz" Production Association have decided to produce half a million tons of oil in excess of the plan in the third year of the five-year-plan period. Of this amount, no less than 200,000 tons will be produced in time for the opening of the 19th All-Union Party conference.

Pravda
5 February 1988
Page 1 (abridged)

Searching For Secrets In The Earth's Interior

An unusual operation was carried out at the Timan-Pechora ultra-deep well: at the 4,020 metre depth mark a casing 340 mm in diameter was run into a steel shaft 394 mm in diameter.

This year the ultra-deep well with a final depth target of 7,000 metres will begin to yield information and will give answers apropos the oil and gas content of the lower beds.

Pravda
7 February 1988
Page 2 (full text)

The Flares Have Been Extinguished

No more flares are burning at the oil fields of Tala. The by-product gas, which was simply burned earlier, is now supplied to the Urengoi-Tsentr main.

This comes as a result of the completion of the Krasnoleninskii gas reprocessing plant which began its first workweek yesterday.

Under the present conditions of self-sufficiency, the TASS correspondent was told by G. Yasaveev, assistant director of the Glavtyumenneftegas - we cannot afford not to utilize petroleum gas. This is an obvious additional income. Thus far, we cannot boast about success in this field. There are still many flares in the oil fields. As they say here, "cash" is burning. You can judge for yourself: the annual program of the Krasnoleninskii plant, for example, foresees a yield of a billion cubic metres of gas. This equals an addition of sixteen million rubles. Soon a plant having a capacity equal to that of Krasnoleninskii will be completed in Noyabr'sk. The plant in Purpa will also start production this year. But this is just the first stage.

Sotsialisticheskaya Industriya
2 February 1988
Page 1 (full text)

PIPELINES

SEVER - I Welding Equipment Proves Its Worth

We are approaching - the helicopter pilot shouts from his cabin - get ready!

Below us is a small, remote-shift settlement comprising about twenty trailers and beside it, like a meridian on a map, runs the straight contour of a pipeline.

Here, at the construction site of the Yamburg-Elets gas pipeline, they are using the automatic contact welding equipment for large-diameter pipes Sever (North)-1. The mass production of these machines was undertaken four years ago by the Pskov factory of heavy electric welding equipment.

In the settlement, they are already waiting for us. A powerful all-terrain vehicle takes us to the line where the Sever installation is located. Having no counterpart anywhere in the world, even its appearance resembles a bizarre cosmic apparatus rather than a machine for pipe welding.

The Sever-1 has introduced a radical change in the technology of pipeline construction. The welding is automatic, it does not require special electrodes or propane for heating the joints, it works at low temperatures, in blizzards, there is no need for a whole team of flaw detection workers because the quality of the same is determined during the welding process by automatic recorders, which are part and parcel of the equipment. The team servicing the Sever is just one third of the number of workers needed for manual welders.

While it is performing, the machine itself is invisible - it is inside the pipe. It finishes welding one joint and it moves along the pipe to the next: it completes five to six joints an hour by producing a high-quality seam. The foreman from Nadym, N. Martynov, is satisfied: everything works fine.

The builders of the pipeline have placed their trust in the Sever. But there was a time when its introduction was opposed both by the welders and some supervisors. Now that the conversation has touched upon past difficulties, it must be said that the burden of introducing this machine was put on the shoulders of the engineers from Pskov. The North needed new equipment. The factory manufactured it. A number of design flaws were detected at the pipeline, which was quite a normal - it was a basically new design and more complicated than any other welding equipment manufactured in our country. Not waiting for instructions from above, the management of the factory took the risk of putting together a group of top specialists for the purpose of modernizing the installation. Now the Sever is more reliable, simpler to build and work with, it weighs 5 tonnes less and is smaller in size.

The factory shops are already putting into effect a new design at the E.O. Paton Institute of Electric Welding - an internal machine for contact welding of pipes with half the diameter of those welded by the Sever.

Pravda
28 February 1988
Page (full text)

POWER GENERATING STATIONS

Subarctic Regions Are Getting Better Hydro Service

The crews of the Heavy Hydro Installation Brigade 101 of the Zapsel'elektroset'stroy Trust, an electrical contractor for Western USSR rural areas, began construction of one of the most important construction projects included in the 1988 production plan - a power transmission line from Usogorsk to Chernut'yevo.

The transmission line extends for a distance of 110 km. The Brigade is scheduled to erect a distribution line and a power network three times as long to serve the villages of the Komi ASSR.

Much is planned to improve the provision of electrical power to various branches of the Autonomous Republic's economy in the current year. This includes the construction of a fifth power unit at the Pechera Regional Hydro and the construction of a 500 kV transmission line from Ukhta to Mikun' - the first in the republic - as well as the construction of a transmission line from Syktyvkar to Mikun'.

Stroitel'naya Gazeta
9 February 1988
Page 1 (full text)

SOCIOLOGICAL ISSUES

Heartlessness Is More Terrifying Than Cold

The day I arrived in Bogotol the temperature was nearing the -40 mark. The city was submerged in a frosty haze. I walked into a railway station office to warm up and heard a conversation about the unexpectedly early cold:

It is only seven degrees in our apartment - said a woman, shivering. My daughter sleeps with her felt boots on.

And we are warming ours with electric heaters - joined in another.

...A hoarse female voice replies from the hotel that there are vacancies, but if I don't have a fur coat, I better not take the risk, the temperature in the room is zero.

One of the authors of collective letters to the editor, N. Mikeshin, assistant engineer on an electric locomotive of the Bogotol locomotive depot, swore that the walls of his apartment in a multi-storied brick house at 2, Kirov Street were translucent.

Inside them there is a vacuum. There is no filler between the outer and the inner layers. That is if you don't consider the vodka bottles, a goodly number of which have been hidden there by the builders. Which means that even the electric heater is not much help in our case!

My visit to Mikeshin's apartment convinced me that its occupant had not exaggerated at all. A depressing picture: ceilings and walls covered with moisture, an oppressive smell of wet, peeling plaster, a heavy stagnant odor of rotting carpets and furniture.

It is the same in all the apartments - complained the neighbors that had gathered.

The apartment house was almost new. The builders from Construction and Assembly Enterprise 378 (CAE-378) had completed it four years earlier with so many flaws that criminal proceedings were instituted against the management of that organization. However, the flaws have not been corrected and the tenants do not feel any warmer.

The occupants of an old house in Sibirskaya Street found themselves in a similarly desperate situation.

"In our apartments no repairs have been made in eighteen years - wrote M. Fedchenko, a veteran of the Great Patriotic War, and other correspondents in letters to GUDOK. The pipes have rusted through - only some of the occupants get water and sewer service. The ceilings are leaking, the stoves are falling apart, the cellars are flooded and even in the winter there is ice on the floor. Every occupant burns up to seven buckets of coal each day and the result is still negligible".

The cold temperatures have prompted a real avalanche of complaints about the poor preparation for winter in Bogotol. There are twelve railroad boiler rooms in the city. Their boilers have aged morally and physically, but under the circumstances

they could generate twice as much heat as they do now. The heat engineering laboratory told the Bogotol locomotive depot what had to be done to increase the heat output, but the managers of the heating plants not only did not put the simple technical recommendations into effect, they did not even care to remove the scale from the boilers.

An extensive heat loss takes place during the heat transfer. The ducts have been laid in swampy ground; with freezing temperatures they become torn and twisted. But this is considered to be a matter of course.

The reasons for such indifferent attitudes toward the city's neglected heat engineering must be sought partly in the expectations that the Bogotol leaders associate with the projected powerful railroad heating plant.

Once it is in operation, it will be warm everywhere - says the first secretary of the District Committee of the CPSS, N. Ozeredenko. It will have sufficient capacity for about six years, and then we'll see.

However, it is imperative to attend to the problem right now.

The new heat plant is being built by the same CAE-378 team which is to blame for the suffering of innocent people in apartments full of holes. Expecting to complete this project in 1988, the district authorities and the client - locomotive service administration - are relying on the method of collective involvement, in other words, hoping that the entire town will pitch in...

Pitching in is fine but beware of the pitfalls! Taking the railroad-car crews, the locomotive engineers and the traffic personnel away from their daily tasks may result in serious difficulties for these services. There are no redundant people anywhere. Moreover, the construction project requires highly specialized personnel, not just labour.

But let us assume that the heating plant will be put into service on schedule. Will the apartments on Kirov, Sibirskaya, and other streets be any warmer? We doubt it. In many instances it will heat the sky. The buildings must be prepared for the winter! The one in which Mikeshin lives could have been at least stuccoed long ago, so that the light would not shine through. The tenants do not stop reminding the administration of it. However, the department of civil structures, headed by V. Rezanov, did not consider it necessary to wash the bank of boilers last summer, even though the heating system in this habitually cold building fails quite often.

And how many years have the occupants of the house on Sibirskaya waited for the promised repairs! The complainants quite rightly point to the huge economic losses caused by this situation. Hundreds of tons of coal are purposelessly burnt in the furnaces of buildings in poor repair and in those of the heating plants. The electric heaters, on every windowsill in some apartments, consume large amounts of electricity.

The economic losses can be computed, but who is going to estimate the moral damage caused by such thoughtless managerial practices? "There is no such thing as perestroika in Bogotol - our readers write to us. The same old irresponsibility in housing

management, the same bureaucratic callousness in dealing with the people's needs and suffering. The head of the department of civil structures, V. Rezanov, treats our requests as a personal insult. At least he should not be rude! The leader's heartlessness is worse than the cold."

No matter how sad, one has to agree with this opinion.

Gudok
13 February 1988
Page 3 (slightly abridged)

Herdsmen For The Arctic Recruited In The South

In preparation for the coming plenary session of the trade unions dealing with the restructuring of the work of trade unions under the activists and our foremost production workers to tell us what is holding back restructuring in the Chukchi Peninsula agriculture industry and what problems, from their point of view, need to be resolved by the district trade unions. Their replies were most varied. But what remains with me more than anything else was what was said by D. Khod'yalo, a knowledgeable reindeer herdsman from the Omolon State Farm, Hero of Socialist Labour, and member of the District Agricultural Workers' Trade Union Committee.

"We've had enough of bringing reindeer herdsmen from the mainland. A man born on the tundra should not have to seek his happiness on the asphalt".

I can feel the pain and concern contained in the words of the team leader. I think that our veteran has hit the nail on the head. There is no more serious and painful problem in our district, or one that is more deserving of the persistent attention of our trade union workers. We have long spoken with excessive optimism about the achievements of our nationalities policy. We have written (incidentally, quite justifiably) of the renaissance of the small nationalities of the Far North, or the creation of an ethnic intelligentsia. We have produced an impressive increase in the number of university graduates among the children and grandchildren of the illiterate and forgotten inhabitants of the tundra and from its indigenous peoples. But we have not paid attention to the serious shortcomings in this area.

Look, we can say, we have established residential schools for the children of reindeer herdsmen in regional centres. The pupils attending them are fully supported by the government. It would seem that these schools provide ideal conditions for a labour-oriented education. But what kind of education are the pupils getting? Frequently, the only reindeer they ever see are in pictures. In a class purporting to deal with reindeer herding, only theory is taught. Can the two month's vacation, which the adolescents spend in the pastures, a form of practical experience, be considered as serious labour education? It is not surprising that our children have not only not mastered the traditional skills, but have also forgotten their native language and have no wish to follow in their father's footsteps. The universal striving for higher education (and our secondary school graduates have preferential treatment in admissions to universities) has made meeting a reindeer herdsman under 40 years

of age on the tundra as unlikely as encountering a Polar bear. The shortage of qualified personnel is particularly acute in the Bilibinskiy, Chaunskiy and Beringovskiy regions.

In order to solve this personnel problem, it has been necessary to bring people in from all over the country. Judge for yourself: in only one of the 28 state farms in the district is the director a local person. Of the eight regional agro-industrial leaders, only three are from the area. We import our chief engineers, mechanics and zoological technicians from the mainland. And now we are looking for ordinary reindeer herdsmen there. The specialists we have invited do not stay with us for long.

We have begun a restructuring, in co-operation with the agricultural committee and educational authorities, of the basic terms of reference of those specifically responsible for the work. We have given priority to the reorientation of our schools. We have decided to relate job training closely to the economy. A program has been worked out to construct residential schools at state farm administrative centres. The District Trade Union Committee has taken on the responsibility of putting this program into effect. The first of the schools was built in the settlement of Amguema last year and it is expected that the next one will be built in the village of Ul'kal'. Naturally, we do not expect immediate results, but a start has been made.

Now about specialists. Have you noticed a paradox? Every year we fulfill and overfulfill our plans for the enrolment of our school graduates in universities and technical colleges, but we still have a chronic shortage of the specialists we need locally. It is no secret that privileged access is

an "admission ticket" to university, but it never occurs to those taking advantage of it to return home to work in their local economy. That is why we are strongly recommending to the professional committees and the councils of workers' collectives that there be more openness in the selection of candidates for further education. And in addition, when it is planned to send a candidate away to study at government expense, this fact should be noted in a collective agreement and its fulfillment supervised.

The extremely weak influence of our trade union locals on the intensification of the social and economic development of our workers' collectives also worries us. This issue should be a matter of particular concern for trade unions if restructuring is to succeed. At a recent plenum of the All-Union Central Council of Professional Unions this matter was discussed. One could not say that we have not, in the past, thought about the construction of living accommodation, social and cultural facilities in our district. Now there is once more a special program, deadlines and responsible officials. But if we are being completely frank with respect to the establishment of acceptable living conditions for reindeer herdsmen, we would have to admit that there has been more talk than action. Can we really talk about a flow of young people into the occupation, or about raising its prestige when 516 families of reindeer herdsmen in our district literally do not have roofs over their heads, and wander like nomads over the tundra.

That is why we are so strongly advocating the construction of standard housing complexes with services at the work sites, where the reindeer herding teams are located. The first such complex was built for the team of N. Khod'yalo, a store and a

power station. Necessary equipment - tractors, Buran snowmobiles - has been provided. Regular communication has been established with the state farm administration centre and work sites. And it is not unusual now to come upon comfortable homes along reindeer migration routes.

After studying our initial experience, the district trade union and agricultural committees have set the following goal; establish complexes like these in all 203 team sites in the district by 1995. It was decided that those who could build them on their own should be authorised to go ahead. Those who could not should be provided with portable Geolog-3 huts, which are built on a production line. They are not expensive, up to 9,000 rubles, and can be easily put in place on the tundra by helicopter or transported there by tractor.

But few of our local professional organisations and workers' collective councils have learned to work independently and to show creative initiative. Most often, out of habit, we wait for instructions "from above" or recommendations "from the centre". Need it be so?

For example, there have been discussions for many years by activists at plenums of the need to manufacture finished items from the skins of sea mammals on Chukotka. The age-old craft is now practically forgotten. In the places where these animals are taken, there is an abundance of seal skins. But in the neighbouring areas you could look all day without finding national clothing made from these skins. An attempt was made to establish a co-operative for trapping and processing sea mammals in the settlement at Lavrentiya. It went quite well. One co-operative does not, however, establish

a trend. The state farm professional committee stood aside, as if to say, it is not our business. The result is that we who live by the ocean, and who have the capability of producing many of the things desperately needed by the local population, wait for the container ships bringing these very items from the mainland. And we even complain: there is not the selection we want, nor the quality... Who is preventing our trade unions from showing initiative and enterprise?

The conversion of our industry to new management practices demands that our trade union committees strongly advocate the economic interests of our workers' collectives. But the difficulty is that our suggestions, coming from below, are simply ignored at the upper echelons. The following is a typical example.

At the present time it is usual for six to eight people, with substitutions, to work on a reindeer herding team. One herdsmen is responsible for 320 - 340 animals. The norm is 150 - 200, depending on the terrain. The suggestion to subdivide the herds has often been made. With their present size it is impossible to maintain adequate control and pastures are quickly overgrazed. As a result, they have to be taken out of use, with the resultant loss of many animals. Moreover, the people do not have normal conditions for rest. In support of our suggestion it can be said that conversion to the new approach would reduce production losses by 30 - 35%. This means that we could produce an additional 22,000 centers (100 kg.) of meat. At the district and regional agricultural committees they just wring their hands; it is not within our jurisdiction; take the matter higher up. The Republic State Agricultural Committee is also

silent. When I was in Moscow I put my views to M. Ryzhkov, president of the Central Committee of our trade union. And nothing has yet happened.

How can we teach our reindeer herdsmen to work under the new economic conditions when opinions "from below" are disregarded? It turns out that concern about people and their working and living conditions has once more been put on the back burner. Is it realistic then, when this is the case, to count on including young people in our isolated teams? It will be necessary, apparently, to once more recruit reindeer herdsmen in Ryazan...

Trud
5 February 1988
Page 2 (slightly abridged)

TRANSPORT AIR

Politics and Commercial Initiative A Good Mix at Magadan Airport

The North is a severe place. Fifty degrees of frost, thick fogs and blizzards. Ice-covered landing strips, frequently closed airports, and exhausting, long waits in airport waiting rooms...

Magadan airport is almost indistinguishable from its northern brothers. Almost...

The loud voice of the dispatcher over the loudspeaker disrupted the sleepy quiet of the waiting room:

"Esteemed passengers! In a few minutes, at 23:00 hours, in the video-salon of the airport, we will be showing the film 'Ivan Vasil'evich Changes His Profession'. Tickets are being sold at the video-salon."

The loudspeaker crackled and went silent. The passengers rushed to the second floor where the billboard attractively flashed "Video-Salon". The small hall with only 35 places filled up in the first minute. But after that, throughout the whole film, passengers knocked on the door, sighing despondently and asking, "Will there be other showings?"

"The idea of opening such a salon occurred to us only recently, just after self-financing became a tangible reality," said Viktor Sidorenko, the secretary of the Magadan Combined Avia-Detachment's Komsomol Committee. "Our objective was quite simple: to provide the Komsomol with a concrete and

serious business involving the improvement of cultural service to our airport's passengers. And we got a practical push to get it established from K. Skornyakov, First Secretary of the Oblast' Komsomol Committee, assisted by Anatoliy Kozlov, Chief of the Political Section of the Magadan Civil Aviation Komsomol.

The idea which appealed to the Komsomol members was not in essence a new one. Self-financing in the sense that the salon had to be paid for; that the service staff are workers from the Detachment, chosen from the best Komsomol members; that profit from the operation of the salon (less a payment to the Avia-Enterprise) must be credited to the account of the Komsomol Committee.

"There were no insoluble problems in getting the salon established," continued Viktor. "In any case, there were none with our administration. A. Bashlachev, Commander of the Avia-Detachment, having a positive attitude to our project, conferred with A. Yegerovich, First Secretary of the Party Committee, and with I. Blinov, President of the Professional Committee, and it was decided to allot an area in the airport building for the video-salon."

The Magadan Komsomol members are probably fortunate to have such co-operative senior comrades.

"Yes, here we have a very healthy psychological atmosphere," smiled Viktor. "People are involved in their work. And they don't have time for personal ambition... But let's return to the video-salon. After the space had been arranged, we calculated our anticipated expenses for its organisation and determined the ticket price - one ruble. At that price, income from the video-salon

should be 50,000 rubles a year and profit, 20,000 rubles. It is true that the profit is not yet in "our" pocket since we must share it with the Avia-Detachment (rent and an assessment to cover the enterprise's supplementary services to the population) and with the city Komsomol Committee, whose video-equipment we are using. There was also a problem in that the Komsomol Committee doesn't yet have its own bank account. But it will have one in the next couple of weeks.

To some people Viktor's words may seem commercial and mercenary. Yes, that is so! But who said that this is bad? Can it be bad that Komsomol members are beginning to learn the basics of management and commerce in a practical way? Or is it bad that they are looking at their lives and at their work from an economic point of view? It is apparent that they have learned something during the two months spent in establishing the salon. Having met "silent" resistance from the Magadan Film-Distributing Administration (which refused to sell them ticket blanks) the Komsomol members solved the problem by using slips from ordinary cash registers found in any store.

"And there remained only two things to resolve - by way of summarising the conversation with Viktor - the provision of staff and control over its operations. But these were internal questions which were resolved in a few days. The salon began with four people to service it - avia-technicians and engineers - all members of our Komsomol section. Control was assigned to a disinterested party, the staff of Komsomol Projector. So that's it. And what about prospects? They are always good when there is concrete business to do. We are making money and that means we can buy better quality equipment and

increase services to passengers during flights: arrange for the ordering of taxis from on board aircraft, rent hand-held electronic games and sell newspapers and magazines. And soon we will approach the question of putting video-equipment in the planes themselves...

I listened to Viktor and really didn't believe that all had gone so well. Was it possible that the administration of the Avia-Enterprise had shown confidence in the Komsomol, not only in words, but also in deeds?

"The Komsomol is our partner, our colleague! How could we not trust them?" said B. Kirillov, Political Deputy of the Magadan Combined Aiva-Detachment. "What's wrong with the young people doing some real work? And what's wrong with their having some honestly-earned money to meet their own needs? But is not just a matter of money! The main thing is that only now has the Komsomol become an independent organisation, making its own decisions and taking responsibility for these decisions. And their ability to manage, their independence - that is the greatest profit!

Vozdushnyi Transport
2 February 1988
Page 2 (full text)

Skycrane Picks Up Record Load Of Hydro Towers

Only a real superman has the strength equal to the transportation operation assigned to an Mi-26, the most powerful helicopter in the country. The crew, commanded by Pilot First Class V. Sindeyev,

began the transfer of the 30-metre towers for the 500 kV power line from the Surgut-2 Regional Hydro Plant to Kholmogory.

"It is the first time that we have transported such a large and heavy load through the air," explained V. Chistyakov, commander of the Tyumen Combined Air Transport Operations. "Four towers, with an overall weight of 13 tonnes, were fastened at the same time to the helicopter's external sling, transported a distance of 120 km, and successfully put in place.

Vozdushniy Transport
13 February 1988
Page 1 (full text)

AN-28 Aircraft In Regular Service

Five AN-28 aircraft are being "broken in" on Chukchi air routes. Now we can call this aircraft, which was only recently considered a newcomer, the shuttle of the Arctic.

The AN-28, which made its first trip from Pevek to the settlement of Baranikha in November of last year, is now familiar to passengers from the miners' settlements of Leningradskiy and Keperveem.

Your correspondent was informed by V. Martasov, Chief Engineer in the Operations Department of the Chaunskaya Guba Air Transport Authority, that, after approval of the runway at Mayskii, it will also be regularly served by AN-28's. The certifying

commission is already on the way. And an air route Pevek - Cape Schmidt - Somnitel'naya (Wrangel Island) will be opened by the end of May.

Vozdushniy Transport
3 February 1988
Page 1 (full text)

Arctic Air Facilities: New Terminal And Strip

The airport of Svetlogorsk in the Arctic has moved from crowded mobile trailers into a modern building. A wide ferroconcrete landing strip has been laid out adjacent to it. It is now possible to fly AN-26 transport aircraft and Yak-40 passenger aircraft into this settlement of construction workers and miners, who are building the Kureyka Hydro Plant on the Taymyr.

Pravda
15 February 1988
Page 3 (full text)

Air Bridge

An air bridge now connects the diamond-mining city of Mirnyi with the arctic Anabar district of Saskylakh. "AN-24" aircraft are serving the new route. Up to now, district residents were forced to fly through Yakutsk, which meant a detour of almost 3,000 kilometres.

Sotsialisticheskaya Industriya
2 February 1988
Page 1 (full text)

TRANSPORT LAND

The "Yamal" Can Carry 70 Tonnes

The Soviet and Canadian flags are crossed under the picture showing the snow/swamp-buggy "Yamal". The sub-assemblies and the units of two samples of this huge machine - creation of a joint venture of the All-Union industrial complex Soyuztransprogress and the Canadian firm Foremost - have been delivered to our country from the Olympic city of Calgary.

The first "Yamal" will be assembled in the North, in the area of Labytnangi, the second one will be subjected to exhaustive tests on the complex's testing grounds in the vicinity of Moscow.

We have been in close contact with Foremost - says E. Kovalev, director of the special design office of Gazstroimashina, since the early seventies, when we bought the first snow/swamp buggies in Canada. A few years ago, that firm suggested a joint venture in developing an unusual machine with a cargo capacity of 70 tonnes for the swampy tundra. The Soviet side accepted the offer, and three years after the signing of the contract the "Yamal" took its "first steps". It happened on Canadian soil last summer.

The partners had divided the work as follows: Soviet engineers designed the running mechanism - caterpillars, tracks and supporting wheels, whereas the "top" i.e. the platform with the cabin, the power unit, and the hinge-joints tying the front and rear trains of the all-terrain vehicle were designed by Canadians.

The manufacture of the running gear - continues E. Kovalev - required the efforts of two plants. Our order was treated with due understanding by the metallurgists who rolled a width of special steel for the tracks. When working on the "Yamal", we often took advantage of the experience we gained in building the 36-tonne swamp buggies "Tyumen", although the "Yamal" required a number of basically new technical solutions. For instance, in conjunction with the very wide (about two metres) caterpillar tracks, twinned supporting wheels with standard treadless tires, similar to those used in road rollers, were employed. The caterpillar turned out to be very strong with extremely small specific pressure exerted on the ground.

...One is truly surprised when becoming acquainted with the technical data of the machine. Weighing more than a hundred tonnes, it exerts a pressure two and half times less than that of a person of an average build. Even with a 70-tonne load on its platform, the specific weight does not exceed 0.35 kg per square centimetre (that of a person amounts to 0.48-0.50 kilograms). It means that the machine meets the ecological requirements: a few repeated runs of the "Yamal" in its tracks do not disturb the vulnerable cover of the tundra.

The design of all the sub-assemblies, the insulation and heating of the cabin permit the use of the vehicle at temperatures of up to -60 degrees. The main engine of the "Yamal" is a 710-horsepower diesel. There also is a spare engine which, in case of a breakdown, will run a power station with sufficient energy for heating, the preparation of food, and communication.

The vehicle's tanks have a capacity of 2,120 litres of diesel fuel. However, this does not mean that this machine will be used to transport cargos over thousands of kilometres. Its optimal operating range is 50-100 kilometres: from the post (or airport) to some inaccessible sector of the route. The "Yamal" can transport large-diameter pipes for gas and oil mains, residential trailers and drilling equipment. A sufficiently powerful mobile power station can be mounted on it.

After the vehicle has been tested in the USSR, its joint production with the Foremost firm will begin. The proposal to subsequently set up a joint production enterprise in the Soviet Union is being studied. It will be based at the Kropotkin experimental mechanical plant of the Ministry of Oil and Gas Production in the Krasnodar region. One of the main difficulties encountered in building such huge machines is the absolute necessity to have an enterprise with high-quality technical equipment and spacious testing grounds nearby. In the region of Kropotkin, the Kuban' everglades will serve as testing grounds.

Izvestiya
29 February 1988
Page 1 (slightly abridged)

Winter Routes

Chukotka truck drivers have already delivered 150,000 tonnes of fuel, coal, foodstuffs and other consumer goods to the most remote, populated localities in the Autonomous Okrug.

The winter roads built with snow and ice over extensive tracts of the region are being used day and night.

The tension on the winter routes is quite understandable. Chukotka practically has no roads in the common sense of the word. Columns of all-terrain vehicles leave during the polar night for the tundra and taiga, where only watch towers mark the direction to be taken by the traffic. And all the deliveries - hundreds of tonnes of cargo, essential to national economy and to the life and work of miners, geologists, builders, reindeer breeders and hunters in numerous remote settlements - must be made immediately, before the snow bridges start "flowing" under the spring sun.

Izvestiya
27 February 1988
Page 1 (full text)

TRANSPORT RAIL

Testing The BAM Railway

At the 7th All-Union Congress of Scientific and Technical Railroad Societies, the Baikal-Amur Railroad is represented by V. Kornilov, chief engineer of the Tynda division of BARR and chairman of the District Scientific and Technical Society. Our correspondent T. Andreeva has asked him to answer a few questions.

- Vladimir Nikolaevich, the new railroad is at the same time the testing ground for new technologies. Do they pass your test?

- Unfortunately, so far we have quite a few complaints against their inventors. For instance, they have sent us a group of new 4 TELOS diesel locomotives. Our specialists realized immediately that the cooling system was far from perfect. They addressed their remarks to the designers. And what do you think? As in the past, the Voroshilov locomotive plant continues to manufacture locomotives that break down under our conditions. In spite of the fact that interesting projects do exist with regard to these cooling systems at the Moscow Institute of Transport Engineering.

- In connection with switching over to new methods of management, the railroad scientific and technical community must also be confronted with special challenges?

- Right now, our main problem is learning. The railroad division organizes production and economic seminars on a monthly basis. Here, the

engineering and technical personnel master the principles of cost accounting, the basic laws of economics and their impact on production. Each time, new topics related to specific problems of one of the enterprises of our railroad are discussed. We are applying such interesting teaching methods as business games.

- Thinking and acting - these attributes are required from every person by the new system of management. How do the BAM people react to these requirements?

The following fact speaks about creative initiative. During the past two years, the number of innovators at the railroad increased to two thousand persons. The suggested improvements resulted in savings of more than two million rubles. The most active innovators are found at the locomotive depot of the power sectors of Urgal, Tynda and North Baikal. A designers' office has been set up in the power sector of Tynda. It is headed by the director of the repair and inspection department, Aleksandr Tyrtsev, one of the BAM's best innovators.

- I think that the creative potential of the scientific and technical community could be used more productively. The goals that the Scientific and Technical Society and the All-Union Association of Inventors and Innovators have set for themselves are practically identical, their statutes are similar. Most people hold membership in both organizations, and quite often they are responsible for the same decisions. Why don't we join our efforts then in organizing, say, a creative association of scientific and technical employees?

- About what would you like to speak at the congress?

- About our most heartfelt concern. BAM's technical equipment, painful as this admission may be, is far from meeting present-day standards. In some points, during the many years that the railroad has been under construction, its design has become outdated. In the Bamovskaya-Tynda-Berkakit sector, the plan called for laying rails of the lighter type R-50 on sand and gravel ballast. The use of new, powerful diesel locomotives and the passage of heavy rolling stock have increased the load on the road, especially on small radius curves. This has resulted in intensive lateral wear of the rails.

- And another thing: the little BAM has already exceeded its carrying capacity and it is necessary to build a second road. The blueprints are ready, but there is nobody willing to undertake construction work - there is no general contractor. In addition, acting on the request of the Moscow State Institute of Transport Planning, the ministry has cut the project's budget by approximately 50 million, excluding the devices of automatic blocking and centralized dispatching presumably for the time being - until the 13th five-year plan, when electrification of this sector will begin. How then can we increase the railroad's capacity? Remember that by 1990 the demand will increase by 40%.

- Our relations with the designers are far from what one would expect from business partners. For instance, the engineers of the Tynda car depot had asked the designers to develop a system of centralized supply of oxygen and propane/butane required for cutting torches. The deputy to the chief engineer of the Moscow State Institute of

Transport Planning, V. Skornyakov, replied that "supplying the depot with oxygen and propane/butane, according to the plan, will be carried out from the central warehouse... with the cylinders being delivered to the work place in manual carts." An impressive example of scientific and technical progress!

It seems to me that once we have declared to the world that BAM will be the railroad of the century, we must keep our word, because it is the common cause for all of us - designers, builders, and railroaders.

Gudok
3 February 1988
Page 1 (slightly abridged)

TRANSPORT WATER

An Icy Test For Three Departments

Having undertaken an unusually early expedition, a convoy of the ships of the Far Eastern Steamship Enterprise, found itself in a difficult situation; it is now trying to force its way to Anadyr (Chukotka). Ermak, the organization's most powerful icebreaker is leading the Aleksei Chirikov, a modern icebreaker- cargo vessel carrying a load of cement and empty barrels. It seems that everything had been taken into account when this voyage was being planned: scientific and operative support from the Pevek administration, while ice reconnaissance was provided by the pilots of the Kolyma and Indigirka aviation service. The icebreaker has its own helicopter and the expedition personnel includes S. Ragozin, an experienced polar hydrologist.

The Isvestiya office in Vladivostok conducted an interview by satellite with Yu. Tilichev, captain of the icebreaker Yermak:

We knew, of course, that the recent cyclones had packed the Anadyr' estuary with ice. By itself it is light - some seventy centimetres. But the eastern winds had piled it three or four stories high. The ice hummocks reached five marks. Twenty miles from the designated point a surprise awaited us: the icebreaker began to be wedged in. After each impact, we had difficulty in moving back again. And then came a second surprise. A strong icing all around. In the western sector of the Arctic, where I used to participate in drawn-out operations, this happened from time to time. But here, in the East, Ermak had never experienced anything of this kind.

From a professional point of view, the situation was interesting but alarming. Moving bow first, we barely advanced a couple of cable lengths a day. We had to consider the shoals at the approaches to the estuary, the numerous banks, and the limited choice of routes. We decided to move stern first. We were more successful. But to twice break a twenty-mile channel with the stern at a temperature of minus thirty-five, which freezes the open water, posed a danger to the screw and rudder assembly. Furthermore, it was contrary to operating instructions.

Meanwhile, the Chutkotka enterprises were waiting for the cement that they had ordered. The navigators suggested that at least part of the cargo should be transported to Cape Nikolai by helicopter. In support of their argument, they cite the experience of a similar operation during the last season of arctic navigation at Cape Billings and at other points of the northern coast. Furthermore, the Aleksei Chirikov is especially equipped for helicopter use. But the shore authorities do not agree: it would be too costly.

Your correspondent reached the supervisor of Anadyr' port, V. Matveev, by radiotelephone. He said:

In the clients' opinion, the helicopter scenario is not realistic. According to their calculations, the additional cost would amount to three hundred rubles per tonne. That cement would be as expensive as gold. The shipping officials are prepared to share the cost of unloading but they do not agree with the clients on the estimation of the cost. There are suggestions to continue the attempts to reach Cape Nikolai, to summon the help of the icebreaker Kapitan Khlebnikov whose draft is less...

Well, the situation at the coast of Chukotka toward the end of February is not simple. Navigation specialists admit that the ice is stronger than the "Yermak", let alone the "Khlebnikov" whose power is about half that of the "Yermak".

Three departments are implicated in this situation: the Ministry of Sea Navigation, the Department of Farm Industries, and the Ministry of Power Engineering of the USSR. Different methods of unloading are being studied, there is a suggestion to direct the convoy to Magadan or some other convenient port.

Now we have to wait and see whether the three departments can reach a compromise which will meet-not-only their needs, but also those of the nation.

Izvestiya
29 February 1988
Page 1 (abridged)

Ice And Cold Are Of Great Help

The arctic cold and ice may become helpers of seamen at high latitudes. More than ten years of experience by the ship crews of Northern Sea Navigation is a proof to that effect.

Today, led by an icebreaker, the diesel powered Pavel Korchagin approached the very edge of a land floe near the geologists' base at Varandei. The ice moorage and the ice roads leading to it from the shore are so strong that they easily permit the passage of tractors and automobiles. The holds of

the freighter contain drilling equipment, building materials, fuel, and huts for the first explorers of the new oil field discovered in the north and named after the 70th anniversary of the October Revolution. These cargos have been expected by the geologists of the Varandei and Khoreiver expeditions and the Nar'yanmar derrick-assembling crew. Travelling along winter routes in the tundra, truck convoys will transport these cargoes to their destination.

Pravda
29 February 1988
Page 3 (abridged)

The Guides Of Arctic Convoys

The ice floe found for the new drifting station SP-30 suddenly became lost: the radio buoy, which had been dropped on it from an airplane a few days earlier became silent. Either it had been made inoperative by the minus-fifty-degree temperatures, or the drift had changed. In brief, it became impossible to locate that platform in the Arctic Ocean. The ice-breaker Ermak and the diesel-electric ship Vitus Bering with polar expedition personnel and cargoes on board were forced to make an urgent change of course. But which of the reserve ice floes was the most convenient for the scientists' work? In what direction should the ships head? These questions were soon answered by the pilots of polar aviation.

For several days, the Il-14 ice-scout circled above the ocean and the Mi-2 helicopter frequently took off from the deck of the Ermak. The

Il-14 pointed out the general direction, while the helicopter led the boats through the areas of open water and conducted tactical reconnaissance. Soon the polar explorers were settling down on an ice island in the ocean. The pilots also helped with the unloading. In five days, they made almost three hundred trips transporting 762 tons of cargos.

...A look at the pilot's operating map in an ice reconnaissance plane reveals that the course traced upon it is similar, in configuration, to a multi-mile comb. Its teeth - the tacks - span enormous areas. An aerial photographic survey, in combination with radiolocation (radar), yields data on the ice cover that lies under the aircraft's wings. The standard of the survey is unusually high.

The electronic instruments of the reconnaissance airplanes - the unique aircraft systems "Led" and "Toros" - are capable of "seeing" not only the operative picture of ice over large areas, they can also measure the thickness of ice and do it with precision of up to several centimetres. All this is helping the crews of icebreakers and ships to plot the ice conditions ahead of the ships. The information received from above is arranged in computation columns for the ships' pilots. The ships are guided by it along the most favorable course. This facilitates the transportation of thousands of tonnes of cargo along the Northern Seaway, as well as the location of ice fields for drifting polar research stations. Moreover, many captains have to thank the pilots of reconnaissance airplanes for freeing them from "icy captivity"...

There was a time, for instance, when navigation was practically closed in La Perouse Strait. Heavy ice had immobilized several diesel-powered ships. They were waiting for an

icebreaker that would help them to force their way to moorage in a port. But the icebreaker Khariton Laptev itself got caught in an ice trap. To get out from it, a map showing the ice situation was urgently needed. For five hours the crew of an Il-14 circled above the sea. The pilots prepared a detailed ice distribution chart and set the course for the ships. The information was dropped on the icebreaker's deck in a special package. The dropped message bag, containing a map drawn by air-hydrologists and some recommendations for the convoy's passage, landed with precision on the ship's deck. Soon the ships in the ocean started moving.

Long-term forecasts received from "flying laboratories" kept the diesel ships from drifting off course in the Tartar Strait, where the ice reached more than ten metres in thickness. Aviators guided the ocean ferryboat Sakhalin-6 to Magadan. It was carrying a huge transformer for the construction of the Kolyma hydroelectric power plant. The water was blocked with ice but the delivery of an important cargo could not be delayed. Without this unit, work on the assembly of the power plant could not have continued.

The polar flyers also like to reminisce about the time when the ice scouts on the Northern sea route discovered a mine embedded in ice - a left-over from the war. Convoys of ships were passing nearby and the mine was in their way. A helicopter took off from the deck of the icebreaker Kiev. The location was marked. Explosives experts were brought in. As soon as the Bickford fuse ignited, the helicopter flew up and away from the dangerous platform. The passage was free for the ships to go through...

Ice reconnaissance is nothing new today. However, flying along such routes is not easy. Nowadays the best pilots are assigned to ice reconnaissance. Their first names and their flying style are recognized by ship captains, by the scientists at the research stations scattered along the gigantic perimeter of the arctic seaway, by the radio operators and by all those who, together with the aviation, provide guidance for high latitude convoys and expeditions. One day in the '30s, M. Sorokin, captain of the icebreaker Krasin, picked up a stranded flyer from the ocean. "How difficult a sailor's life is - remarked Sorokin then - the fog, the sandbanks, the reefs... And now there are airplanes - they fly above the sea, they land on water. Now we have to look for them." Soon, however, all the captains in the north began refusing to sail without air reconnaissance. And so it has been up to date.

Ice reconnaissance systems are being perfected continually. For this purpose, a new aircraft, the Il-24N, is undergoing tests. A modern radiolocation system "Nit'" has been tried out. Now it is possible under any weather conditions to receive information about the ice conditions covering a broad zone and to transmit it rapidly to the icebreaker. The distance to the ship may be quite considerable. Specialists on board of the "flying laboratory" produce maps which are speedily transmitted to the ship by phototelegraphy.

Gudok
14 February 1988
Page 4 (slightly abridged)

At Southern Latitudes

Leaving behind its stern the rocky shores and fragments of icebergs at the oasis of Larseman, the diesel-electric ship Vitus Bering left the new antarctic station Progress yesterday. The Far Eastern seamen had worked in the Sodruzhestvo Sea delivering cargos to the wintering members of the 33rd Soviet antarctic expedition. For the first time, Vitus Bering probed the ice at southern latitudes confirming the possibility of supplying the shore stations by this type of ship, which carry Mi-8 helicopters and power-driven barges on their deck.

The cargo operations, under the command of the young captain, S. Sakhnov, were carried out in little known navigational zones. The most difficult stop proved to be the Progress station, the last of the voyage. As yet the navigational charts do not indicate the approaches to it and the sailors were put through a serious professional test. The wintering personnel were supplied with prefabricated barracks, building materials, technical equipment, and fuel. The unloading was carried out by a helicopter. The pilots had to make up to fifty trips with cargo a day.

The all-terrain vehicles weighing seven tonnes were transported by a power-driven barge.

The crew had utilized all the advantages offered by their unique supply ship especially built for work in the extreme conditions of the North and South Poles. Besides participating in setting up the new antarctic station, Vitus Bering conducted full-scale geophysical and hydrological studies.

At present, the diesel-electric ship is heading toward the shores of Odessa.

Sovetskaya Rossiya
19 February 1988
Page 4 (slightly abridged)

Supplies Are Getting To Yamal's Oil Fields Earlier

The sailors of the Northern Basin began the sea-lift to Yamal Peninsula today, almost three weeks earlier than usual this year.

They expect to deliver from Murmansk, Arkhangel'sk and other ports more than three times the supplies provided last year to the gas and oil prospectors of Western Siberia at Yamal.

"This is a very crucial and demanding task," said V. Shestopalov, Deputy Chief of the Murmansk Sea Shipping Service. "The construction of a new ice moorage will help us cope with it."

Up to the present, almost all the flow of supplies to Yamal went over the ice moorage at Kharasavey Cape. This year we found a location where the ice becomes sufficiently solid to support transport operations much sooner than near Kharasavey. And today we dispatched the MS Monchegorsk there.

A new loading/unloading procedure will help speed up operations. The handling of the MS Monchegorsk, both in Murmansk and at the ice moorage,

for example, will be by the same team of longshoremen. The MS Tiksi, which sets out next, will be handled in the same way.

Pravda
11 February 1988
Page 1 (slightly abridged)

MISCELLANEOUS

Coal And Tulips Of Spitsbergen

Spitsbergen is a land of steep mountains. This archipelago was so described by Willem Barents, the well-known Dutch navigator of the 16th century. Our contemporary might add that "it is also a land of thick glaciers and burning stone," - and he would be right. The point is that over 60% of the surface of Spitsbergen is fettered by an icy armour, and local coal deposits are estimated by some scientists to be in the order of 8 billion tonnes...

Soviet miners from "Arktikugol'" Trust, USSR Ministry of the Coal Industry, have been working here, on the 78th parallel, for almost 60 years. They work under arctic conditions. For almost 100 days of the year the sun does not appear on the horizon and a harsh winter reigns for nine months.

Our interview with N.A. Gnilorybov, general director of "Arktikugol'" Trust and candidate of technical sciences, focuses on the life of Soviet settlements on Spitsbergen, the problems of their provision with public services and amenities, and the role of the human factor in the development of the natural resources of the Far North.

V.L.: Nikolai Aleksandrovich, let us begin with a necessary clarification. It is known that this archipelago belongs to Norway, and so could you please explain on what grounds the trust headed by you is carrying out economic activity there.

N.G.: The story of man's penetration into Spitsbergen is an extremely interesting one and merits a separate discussion. I will only say that

W. Barents was one of the first to plot the contours of individual sections of this archipelago onto a map of the Arctic. As recently as the last century, however, many arctic researchers, including, for example, the Scandinavians B.M. Keilhau (a Norwegian) and A. Nordenskjold (a Swede), while studying archeological data, came to the conclusion that Russian coast-dwellers arrived on Spitsbergen sooner than others and began opening it up to hunting and fishing activity.

For centuries the archipelago was a "no-man's-land"; it was only at the beginning of the present century that European, including Russian, industrialists were drawn here. Unwholesome wrangling vis-a-vis the coal deposits called for a solution to the question of Spitsbergen's status. Russia actively participated in the working out of the convention draft apropos the administration of the archipelago, but World War I interrupted this process. And only in 1920, during the Paris Conference, was a treaty signed whereby sovereignty over Spitsbergen was passed to Norway. The member-countries of the treaty were granted permission to prospect for, acquire and work mineral deposits on the archipelago.

In the 1930s the Soviet Union joined the treaty. And so our activity there is conducted on lawful grounds and is in strict accordance with this document. Today "Arktikugol'" is in control of a total area of 260 square kilometres of territory on the archipelago.

We have established good relations with Norwegian miners working on Spitsbergen.

V.L.: As far as I am aware, Spitsbergen coal comprises a modest share in the total volume of coal output in the USSR. And so the question unwittingly crops up: is the game worth the candle, is "Arktikugol's" activity economically advantageous to the State? In addition to the cost of mining and transporting coal to the mainland, there are also considerable expenditures on the supply of materials, machinery, and provisions to the settlements...

N.G.: I don't think I need to hurry with an unequivocal answer to this question. The point is that the archipelago has still not been sufficiently investigated by geologists, and from the standpoint of its economic development it is too early to make a final judgement as to its likely prospects.

What is more, the capacity of the principal mines in our settlements of Barentsburg and Pyramid is 500,000 tonnes of coal per year. This represents a rich energy source for Murmansk and Arkhangelsk. The mines are operating smoothly; almost all above-plan output is effected by an increase in labour productivity, the level of which, incidentally, exceeds the industry's average rate by a factor of 1.4. As of today, mines are supplied with more than two years worth of mineable coal. We are prospecting for new deposits. In accordance with a program for the development of mines up to the year 2000, other measures are being carried out, which will ensure the stable functioning of enterprises.

I would particularly like to remark on the following feature. Arctic mines, unlike their "colleagues" on the mainland, are diversified enterprises. Coal mining is "Arktikugol's" principal, but not sole, activity. We must guarantee the normal life of mining settlements, engage the

work of geologists and various Soviet scientific expeditions, as well as provide for the operation of sea ports, power plants, land and helicopter transportation, and subsidiary holdings. In short, by making wise and creative use of the trust's economic potential, losses will be out of the question.

V.L.: This would just be the time to turn the reader's attention to a few details concerning the so-called "secondary" concerns of "Arktikugol's" director. Prior to my meeting with Gnilorybov, I learned of Nikolai Aleksandrovich's passion for... agriculture from a friend working in a geological field party on Spitsbergen. I must confess my surprise: a mining engineer with a solid record of service, a "technical man", and suddenly this. Judge for yourself. A radical restructuring of subsidiary holdings (farms) - cow barns, pig-breeding farms, poultry houses - was carried out on his initiative. The results are impressive, especially when one bears in mind that they were not obtained somewhere, let's say, near Ryazan, but in the high-altitude Arctic. Annual meat-pork, milk and egg production comprises 100 tonnes, 200 tonnes and 400,000 eggs respectively. The average milk yields per cow have reached 4,400 litres, while the annual yield per bird is 155 eggs. Subsidiary holdings satisfy the requirements of arctic workers (of whom there are over 2,000 in Barentsburg and Pyramid) for these products and for fresh fish.

"You're quite right, the figures are accurate," my collocutor answered in response to my question "did I get anything mixed up," and added smilingly: "We grow pickles, tomatoes, onions and even tulips in our hothouses".

N.G.: Subsidiary holdings are not concessions to fashion, but a necessity dictated by isolation from the mainland. And it would be an impermissible luxury, under our conditions, to bring in everything from the mainland. This applies to other goods, for example, certain building materials.

V.L.: As I understand, there is no problem with basic foodstuffs. But as the saying goes, "not by bread alone...", especially since home and hearth are so distant.

N.G.: As an arctic worker with a record of service I can state that the moral and psychological climate in arctic shift-team settlements depends much on how well people are provided with services and amenities. More than 50 years ago, when "Arktikugol'" was established, the first miners on Spitsbergen worked under extremely difficult conditions. They started from zero and did without much.

Today the available housing space in Barentsburg and Pyramid consists mainly of four-story homes constructed from locally-produced cinder blocks. We build using our own resources; we use furnace cinder, blocks of which are faced with special brick for durability. Naturally, housing projects are designed for northern, permafrost conditions. This year we will finish construction on three 300-unit apartment houses. By the end of the five-year plan, all arctic workers will be supplied with housing with all conveniences.

The settlements have Palaces of Culture, libraries with a total of 50,000 volumes, and sports centres with swimming pools. We plan to build

enclosed skating rinks in the near future. Good medical services have been set up. Much more could be said, but I fear to be incorrectly understood.

V.L.: In listening to you, one really does get the impression that there are no problems in the miners' settlements...

N.G.: There are of course problems, but they are, if you like, of a different nature. There is a shortage of efficient mechanical equipment along the technological chain from stope to coal dump; there is no technology for the recycling of industrial and domestic waste; we need special all-terrain vehicles, as the arctic tundra environment is easily damaged. However these and other problems cannot be resolved solely with the resources of our trust.

I am sure that the long experience of human activity in our settlements on Spitsbergen will be food for thought for scientists on the topics of man's adaptation under such difficult conditions, the effect on man of prolonged absence of sunlight, etc. In my view, it would be advisable to form a permanently active expedition from the USSR Academy of Medical Sciences.

V.L.: In the search for new raw-materials resources, we are more actively beginning to develop almost inaccessible regions, including the Arctic, where base settlements for shift teams are being built. How useful, Nikolai Aleksandrovich, has the experience of your trust been in the formation of their infrastructure?

N.G.: Almost one year ago, I read an interesting article in one of the central newspapers. I liked it for its keen portrayal of

problems surrounding our solicitous relationship to nature in the course of economic activity. Various approaches to the optimum layout of settlements were "played out" in the article. But... there was not even a hint as regards the experience of Barentsburg and Pyramid. And yet for decades many hints have accumulated as regards the organization of human life support in the Polar Regions, the unique solutions to transportation problems, water, heat and power supply, the construction of homes and roads in the permafrost zone, the provision of cultural and community facilities, labour relations...

In conclusion I wish to remark that Barentsburg and Pyramid are settlements not without their problems. But if yonder, beneath the Earth's icy surface coal rises upwards and tulips boldly bloom, then man's arrival here has not been in vain - why, these are the work of his hands and soul.

Pravda
6 February 1988
Page 3 (full text)

When The Snowmobiles Stop Roaring

Many northern hunters who, not long ago, were still enthusiastically buying Buran snowmobiles are switching back to dog sleds... Why?

In a relatively small sector of the arctic coast - the Nenets tundra - there were more than two thousand snowmobiles in operation. Now more than half of them are permanently out of order. They break down at the most inconvenient time, and there are no spare parts...

Today dog sleds are again being used to transport provisions for the wintering personnel, fish, reindeer meat, furs and fuel for hunters' and fishermen's huts. At airports and landing strips, they are used to take cargos to airplanes. Having at one time considered the snowmobiles as a panacea - a magical wand - the forerunners of the present-day farm and industrial aggregates, those organizations which were responsible for polar animal husbandry, totally eliminated the use of dog sleds. As a result, securing a good dog team nowadays is a real problem.

Indeed, do the dogs deserve our attention? Perhaps we should perfect our technical facilities? Organize unfailing fuel supplies? Of course, perfecting the technical facilities and securing regular fuel supplies is something the northerners will readily subscribe to. But, at the same time, it is doubtful that they will put their signature to the death sentence for the dogs. They may quote the examples of Alaska and arctic Canada. We shall not deny it - their snowmobiles are more reliable, more comfortable, lighter and they have no problem with fuel. Still, their dogs get proper consideration too.

Many things speak in favour of a dog-sled renaissance. In the north, food for the dogs is plentiful and cheap, almost free. The concern for the ecology also is an important factor in our times, something for which the Buran snowmobiles receives no credit. Moreover, the light sled tracks do not disturb the moss cover even when travelling in summer over a wet tundra.

A proposal had been put forward to establish a dog breeding kennel on Vaigach island. But the district executive committee of the Nenets Soviet of

People's Deputies gave the idea a cold shoulder saying that they already had enough problems.

Izvestiya
1 February 1988
Page 2 (slightly abridged)