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TABLE OF CONTENTS

RETURN TO DEPARTMENTAL LIBRARY No. 1
RETOURNER A LA BIBLIOTHEQUE DU MINISTERE

	<u>Page No.</u>
<u>OIL AND GAS (Continued)</u>	
<u>AGRICULTURE</u>	
Feeding the People in the Arctic.....	1
Vegetables Which Do Not Need the Sun.....	11
<u>ANTARCTIC</u>	
Soviet Scientists Continue Studies in Antarctica.....	12
An Oasis in Antarctica.....	14
On Another Trip to the Antarctic.....	15
Arctic Research and Development.....	16
On the Very Coast of the Kara Sea.....	23
Xmas Tree Airlifted to Drifting Polar Research Station SP-30.....	29
<u>CONSTRUCTION</u>	
Improving the Housing Situation in the North.....	32
Homes for Workers in the Oil Industry.....	33
New Hospital in Surgut.....	33
Kedrovyi - A New Siberian City.....	34
<u>ENVIRONMENTAL PROTECTION</u>	
Land-Reclamation Project Ends in Disaster.....	37
<u>MINERAL RESOURCES AND MINING</u>	
At the Source of a River of Coal.....	41
The Hidden Treasure of Zelinda.....	41
<u>OIL AND GAS</u>	
How Much Does a Well Cost?.....	43
Bureaucratic Waste in the Oil & Gas Industry.....	45
Personnel Selection for Remote-Camp Crews....	48

AGRIC (ii) RE

Feeding The People In The Arctic

Page No.

OIL AND GAS (Continued)

First Ultra-Deep Well in Western Siberia.....	52
Lights Go Out on a Holiday.....	53
Gas Processing Plant Delivered to the Tundra.....	54
In Arkhangel'sk Country.....	56

POWER GENERATING STATIONS

A Chukchee Hydro Plant.....	58
-----------------------------	----

SOCIOLOGICAL ISSUES

There's Plenty for Everyone To Do.....	59
Mutual Accusations Lead Nowhere.....	61

TRANSPORT - AIR

The North Needs An Airplane.....	67
New Plane in Nadym.....	68

TRANSPORT - LAND

Results Are the Best Argument.....	69
------------------------------------	----

TRANSPORT - RAIL

New Railway Station Relieves Congestion.....	71
Health Care - Whose Responsibility Is It?....	71

MISCELLANEOUS

A Work Coverall of Basalt.....	79
Chukchee Ginseng.....	80
Attacking the Bowels of the Earth.....	81

AGRICULTURE

Feeding The People In The Arctic

If trade is an "indicator" of the state of things in the agro-industrial complex, then after a brief examination of the store shelves in Murmansk, one can see that this indicator is shining green, even though it flickers from time to time. Pork, mostly fat, sells for two rubles a kilo. Locally produced chickens, on a par with imported ones, cost at least 3.40 rubles a kilo. Beef is found only in co-operative stores, and costs at least 4.50 rubles a kilo.

Fresh and pickled cabbage, carrots, bulb and spring onions, potatoes, beets, turnips - these can all be found on the shelves. But the ration-card system is still retained in the region for butter and sausage products. There is a shortage of beef at two rubles a kilo, and nobody knows whether the potato supply will last until summer. Most likely not.

One could ask: what does the local agro-industrial business have to do with this? Where could it come from in the region located entirely beyond the Arctic Circle, in the permafrost, where there is nothing other than bogs, lakes, and rocks?

This is all true. The bogs; the rocks; the four months of polar night; and the unavoidable snowfall in the third week of June, right on the blossoming plants.

Nevertheless, in 1987, the region produced over 30,000 tonnes of meat products, 73,000 tonnes of milk, and more than 300 million eggs.

I can give you more figures: the productivity of one agricultural worker is 16,000 rubles per year (the average in the Russian Federation is about 8,000). A 15,000-head dairy herd averages 4,600 kilos of milk per cow. There is a waiting list for milkmaids at many farms. Two-shift

scheduling was introduced for milker operators as early as 1981. The housing problem has basically been solved for the people in agriculture. The local greenhouses yield 46 kilos of greens per square metre. Are there many greenhouses in the south where you can harvest that much?

Even such a brief enumeration of the achievements of arctic agro-industry makes you wonder whether there are some special work methods, or even secrets. However, we must not forget one thing: the Arctic does not stand for sloppy work. Here, for example, you would not see cow-sheds "propped up by the wind and covered by the sky". The cattle just wouldn't survive inside these.

Cattle are bred here on an industrial basis. There is a smooth organization of work, and strict control by the veterinary inspection services. The most important thing here is the very precise animal-husbandary system: in the dairy industry the method of separate feeding is strictly followed, as well as the correct, careful formation of the Kholmogory breed with the aim of changing the herd into Holsteins. There are breeding operations where a cow giving a "mere" 4,000 litres is weeded out right away, so that it will not spoil the breed.

The Murmansk records for milk yields are fairly stable. The Arctic milkmaids joke: "We like cows like this, because then we do not have to work so hard!". Actually, this is true - if, for example, there were not 6,200 kilos of milk per year from a cow, Galina N. Dement'eva's team from the Tuloma State Farm would have to take care of 600 cows instead of 200.

The main secret is "Do you job right!" However, we must mention the real desire of everyone to do an outstanding job, to do, it would seem, the impossible. Recently, a delegation of Saratov agro-industry people made a visit. They travelled around, got to know the farming operations and how their business is managed. Upon leaving, they shook their heads: "We still have a long way to go before we have a set-up like this ...".

In fact, the local people here wonder themselves: "Really, how did we live before, without our own meat or milk?"

All supplies for the population in the Arctic used to come from state-managed resources. There were enough resources, but over time the food disappeared. There are things like butter, meat and milk that you can't replace with cod or herring.

The people here decided: "We must have our own reserves!".

The government resolution regarding the development of the Central European Russia region, those investments which had already been made, were the catalyst, the life-giving force for Arctic agriculture.

It is true, however, that land improvements in the Arctic come to 10,000 rubles per hectare, three times as much in the south. It's the same with housing and commercial construction.

It's not so easy to produce things locally here.

Who needs capital investment which doesn't result in a return, in this case, products? What is the point of construction for the sake of reporting that there is construction in the North, or keeping cows only to be able to say that we have cattle in the Arctic? The particular conditions for the development of the agricultural industry in the Arctic resulted in a certain attitude towards it: don't do anything without calculations, without a feasibility study.

For example, the economics of milk production look fine: it's cheaper to produce milk locally than to bring in dried milk powder from somewhere, and then mix it here. It turned out differently with hay. Hay is brought here from the Saratov Province and from the Novgorod area. Hay shipments are another curious thing about the Arctic.

"Isn't it possible to grow it locally?", I asked the head of the Agriculture and Food Production Department of the Provincial Committee of the Communist Party, Vasillii A. Podolyak. "Is it really cheaper to bring it from Saratov?"

"Exactly," was the answer. "The economics worked out this way."

This is how a state farm with a name like "Murmanskii" appeared in the Aleksandrov-Gai Region of Saratov Province: up to 35,000 tonnes of hay are harvested annually on a 6,000 hectare area. As soon as the Saratov hay was put into the feeding-troughs of the Arctic "critters", the milk yields shot up. This is not surprising - can you really compare the nutritional value of hay grown in the irrigated meadows of Central Russia with those of hay which grows in drained peatbog?

Nevertheless, even with hay shipments you can't get by without silage or green mass, neither of which can be shipped. It becomes necessary to expand the area under green feed. Those hundred thousand or so tonnes of silage, grass meal, and granules stored today may already be insufficient tomorrow. Back to the calculator. In 1981-85, land improvement was done on 5,400 hectares, and 7,000 are being added in the current five-year planning period (1986-1990). Of course it's expensive, but what can you do?

Again, the bottom line is that it is still cheaper to have your own milk than to ship it in. These local "critters" have a social-economic origin. Careful figuring with a pocket calculator will continue to be necessary in the future, too, particularly after the economic policy of self-financing has been adopted. The programme aimed at cutting government food-production subsidies remains in effect for the region. The Province now manages to provide 20 percent of its own food requirements.

The most important thing today is lowering product cost. The production of broilers is cheaper here than in the Stavropol' area. The cost of 1,000 eggs is less than 50 rubles, which is less than the average in the Russian Federation. On the other hand, pork is 2.60 rubles per kilo, but there is hope for a decrease here, too, when the Prigorodnyi State Farm turns into a complete industrial operation with 50,000 pigs.

Here's another one. A retiree, Ms. V.S. Motorova, took on the job of fattening up of ten calves weighing about 50 kilos each at the beginning of the year. In the autumn, she returned ten bulls with an overall weight of 4 tonnes to the Tuloma

State Farm. She received 6,000 rubles for the work herself. Ms. Motorova's bulls were gaining 1,050 grams per day (the average at the state farm is 600 to 700 g). Overall, the Tuloma State Farm gave out 300 calves to the inhabitants of the village, and organized the supply of feed. Without spending a single ruble from the salary fund, or using their own production facilities, the farm will receive 448 rubles of pure profit from each bull, plus 50% bonus for a weight over 400 kg per bull. Even without the bonus, that's 130,000 rubles in profit!

About five thousand calves are born annually in the region but, until now, they have not been turned into thousands of tonnes of beef. They have been taken to the meat-processing plant at the age of two months. Veal, which is "a totally different story" from beef, was seen from time to time in the stores.

These losses have also been calculated. The Provincial Committee of the Communist Party and the Executive Committee of the Provincial Council of People's Deputies made a decision to build facilities for the feeding of 2,000 young bulls per annum and, in the future, to increase the capacity to 6,000 bulls.

It may be years before everything is completed. Why wait? While the building is going on, isn't it better to follow the example of the Tuloma farm? Unfortunately, not everyone in the province is happy with the initiative of this collective farm.

Even the officials, on whom a great deal depends in the development of individual and co-operative animal husbandry, frown and grumble: "A

bunch of fast-ruble operators...". Of course, many calls are being made from the rostra to "untie the hands of the co-operative cattle-breeders". In fact, they are not being untied at all. That's probably why only 1,300 tonnes of meat are sold by private growers. Is this the best we can do?

When the talk turns to independent growers, the following argument is put forth: the people in the North already make a lot of money; what do they need these young bulls and pigs for? By the way, the average monthly salary in Murmansk Province is 358 rubles.

The time has passed when only one direction for agricultural production in the Arctic was considered: increasing investment in the "large-scale agro-industrial complex". Today, the view of the future shows a variety of paths of development: new factors include co-operative forms of production and personal economic interests. So far, these "forms and interests" have not been evaluated or studied by anyone.

The economists should go out "to the people" and estimate, calculate, discuss: "Who is willing to lend a helping hand? How many of you are there?"

And there are those who are ready to help. Is Motorova really the only one prepared to raise a dozen small bulls to above the minimum slaughterhouse size? There are tens of thousands of retired people in the province.

The following point must also be considered: men in the Arctic retire at the age of 55, and women at 50. As the women of Murmansk joke: "I'm retired now, it's time to get married!" Many

move down south. They leave in spite of doctors' warnings that they shouldn't. After 20 or 30 years in the north, the body has changed; more specifically, it has adapted to the Arctic conditions.

They leave anyway. This is because the cost of living is twice as high here as the national average, and, unfortunately, it is the same for somebody working as it is for a retired person.

Why not use the available hands for co-operative or private animal husbandry? Has someone looked into this?

Is it really only pensioners who are available? There are thousands of housewives in the capital of the province itself. They aren't housewives by choice, but due to circumstances. Their husbands are at sea, and the type of work for a woman in the city is limited: all vacancies are for fishermen, dockers, ship repairers. You can't employ them all at the single garment factory.

What about Terskii Bereg? The southern edge of the Kola Peninsula, at one time abounding in fish, sea animals, meat and milk, has become empty over the years, lost its people and its former strength. There are sandbars as big as those on the Baltic Sea coast, grass as tall as a man, and amazingly big cabbages. You can get to inhabited areas only by sea or on winter roads. So far, if it had not been for the co-operation between the national association of fishing and fish-processing businesses, VRPO Sevryba, with local collective farms, the area would have been completely desolated.

It's not easy to get to this labour reserve. However, perhaps it's not necessary to count according to the usual "programmes". Perhaps

this is just the right place for enterprising people with initiative and imagination. People who, having leased a plot of fallow land, or a deserted farm, can breathe new life into them. Who knows, we might then see small reindeer-farms, and smoking-sheds for the White Sea herring, and small, automatic cheese-makers and butter-churns, so that the milk wouldn't go to waste (it's a shame to admit this, but they used to give milk to the pigs because they couldn't deliver it anywhere fresh). There are lots of things a good business person could think of!

Let's figure it out and get down to business! Only make sure you don't do it the way one of the private operations in the Kandalaksha suburbs did, where they decided to breed rabbits and, as a result, "arrived" at a cost per kilo of rabbit meat of almost one hundred rubles. It's cheaper to breed antelope. Do at least what V.A. Belozarov, President of the Prigorodnyi State Farm, does, along with those who think like him. A month ago in Murmansk, their farm opened its own specialty store with a sign which had become a rare sight: "Meat", the first of its kind in the province. There was ham, brisket, smoked ribs... Naturally, everything was gone in an instant. The farm hasn't reached full production yet. However, it does promise fresh pork daily. What's in it for them? They plan to make 1.5 million rubles per year through the store.

Who knows? Perhaps this store in the Arctic is the first timid step in creating the first agrobusiness beyond the Arctic Circle. Especially in light of the fact that the processing of food produced on northern farms is still a difficult and urgent problem.

In short, we'll turn this over to the economists again...

Sovetskaya Rossiya

27 January 1988

Page 2 (slightly abridged)

Vegetables Which Do Not Need The Sun

Fresh cucumbers appeared on the tables of the geologists of the Mid-Lena River Oil and Gas Exploration Expedition.

They grow in an experimental greenhouse with an area of 300 square metres. This is a unique place because vegetables are grown here without any sunlight.

In a two-storey building without windows, the plants grow in a material called keramzit. It seems that it is possible to use this excellent building material as the main component of artificial soil. Four times a day, it is enriched with a special fertilizer mixture which is piped in. Along the edges of the beds, special reflectors have been installed which concentrate the light from powerful electric lamps. The plants grow much faster under such conditions than in regular hothouses. According to preliminary calculations, the annual harvest will be more than 50 kilos of vegetables for each square metre under seed. In time, all large enterprises of the Far North will have such greenhouses.

Trud
28 January, 1988
Page 2 (full text)

ANTARCTIC

Soviet Scientists Continue Studies in Antarctica

"There are two convoys of sleighs pulled by tractors moving at the same time in the frozen wastes of Antarctica", radios the Mirnyi Observatory. The first is carrying cargo and fuel to the "Vostok" Station. The second is transporting a mobile drilling rig.

The study of the ice-cap, essential for long-range weather forecasting, will be continued at a testing-ground 100 kilometres from the coast. The conditions of navigation here turned out to be different from what the charts suggested.

At one time, cartographers had to correct the outlines of the Chelyuskintsy Peninsula several times. It turned into an island, and then disappeared altogether. Cape Vityaz' broke off from Enderby Land and became a floating iceberg. There are many such examples.

Careful observations of the size and conditions of the ice cover, its internal structure, the rate of movement, and the configuration of the coasts make up an important part of the research programme. According to recent calculations, there are approximately 30 million cubic kilometres of ice concentrated in Antarctica. In the central part of the continent, this enormous block of ice reaches a thickness of four kilometers.

Another problem is that the overall global atmospheric circulation, the geographic zoning of the Southern Hemisphere, the patterns of marine currents, and the level of the Pacific Ocean are all related to

the largest natural refrigerator on the planet. From time to time, discussions flare up about the strength of the Antarctic ice cap. Will it threaten us in the future with a new great flood? Such warnings were first sounded after the famous heat wave between the '20's and '40's in the Arctic. The suggestion came up that a similar process could occur in the Antarctic. The ice reserves here are so huge that, if they were melted, the level of the ocean would rise by 60-70 metres and water would cover 10 per cent of the dry land.

Soviet scientists have come to the conclusion that currently the South Polar ice is sufficiently stable. They confirm that the ice-cap in Antarctica, in contrast to its polar antipode, has never shrunk in the past, as far as we can know, and it is possible that it has even grown slightly.

Moreover, it has been established that, over the last decade, there has been more moisture falling on the Antarctic continent than previously. If this has caused an increase in the temperature of the ice itself, this was not enough to start melting. Glaciologists say that there are no reasons to suggest that, as the ice-cap grows, it will "splash" into the ocean. This was disproved by the results of Soviet-US experimental drilling through the Ross Ice Shelf.

The unpredictable consequences of the greenhouse effect, the worst of which are expected to occur around the beginning of the 22nd century, are still not understood. This greenhouse effect will

inevitably occur unless man changes from the burning of fossil fuels to alternative forms of energy by then.

Sovetskaya Rossiya

27 January 1988

Page 2 (slightly abridged)

An Oasis in Antarctica

The little house of the Soviet antarctic expedition in the stony Banger oasis, one hundred kilometres from the shore of Mawson's Sea, has again come to life. The first landing party of researchers was brought here by helicopter from the expeditionary research vessel "Akademik Fedorov". They have resumed operation of the seasonal station.

The Banger oasis is the second largest stony wasteland on the icy continent. At present, hydrological and biological observations are the first ones to be undertaken. In particular, scuba divers must collect information on the interaction between the fresh-water lakes within the oasis, and salty sea water, which are connected through a narrow bay underneath the ice shelf.

Trud

15 January 1988

Page 1 (full text)

On Another Trip To The Antarctic

The sixth and last vessel of the 33rd Soviet Antarctic Expedition has left Leningrad. The diesel-electric powered scientific research vessel Mikhail Somov is once again on its way to the Antarctic. It is its thirteenth Antarctic cruise and it will last more than five months.

More than one hundred seamen, scientists, and specialists have set off on this long journey. The crew is commanded by Captain F. Pes'-yakov, who is guiding a vessel to the white continent for the fourth time.

At the Arctic and Antarctic Scientific Research Institute, this correspondent was informed that these transport operations will involve four Soviet stations. This detachment will carry out a program of studies in the waters of the high southern latitudes. There are four specialists from Bulgaria aboard the vessel. The Soviet polar explorers are helping them to select a site for the eventual establishment of the first permanent Bulgarian scientific station on the sixth continent. A group of participants from the station of the German Democratic Republic that was recently inaugurated on Queen Maud Land is also making the transoceanic passage along with their Bulgarian colleagues.

Vodnyi transport

19 January 1988

Page 3 (full text)

Arctic Research and Development

Boris Aleksandrovich Savel'ev, doctor of geology and mineralogy, professor, winner of a USSR state prize. The interview took place in his home study, the furnishings of which suggested that the host had a chance to travel both in the Arctic and the Antarctic. A colourful diploma on the wall with an inscription in English "... to honor the Soviet scientist Savel'ev, who in one expedition, was able to cross all the meridians of the planet".

- I got this from my American colleagues after we Soviet polar researchers had completed a snowmobile expedition to the South Pole across Central Antarctica in 1959. They said then half jokingly and half seriously: "The Russians have completed the occupation of the sixth continent". But this was just the fourth Soviet expedition to Antarctica. It was led by me.

- Boris Aleksandrovich, you already have done work in glaciology for half a century and your research is highly valued by Soviet and foreign specialists alike. When did you feel that ice was your calling?

- Believe it or not, I became a glaciologist by accident. I had graduated from the faculty of chemistry of Moscow State University and I joined one of the Scientific Research Institutes in Moscow. One day I happened to walk along a street, when I saw a notice on the wall: employment available in the Arctic. How attractive this offer seemed to me! Just imagine, after noisy, busy Moscow to find oneself suddenly on the Uedinenie island. I hurried to Razin street, where the administration of the Northern Seaway was located in those years.

- I was met by Ernst Krenkel' himself, then a most popular person, who had spent a winter on a drifting station with the first expedition, the one led by Papanin. He asked me what I could do in the Arctic. I shrugged. "Will you work with ice?" "I will" - I answered hurriedly, having no idea what that work involved, just anxious to be accepted.

- This is how I became a polar researcher. I stayed on the island for two years. I became involved in the work and there was no end to my questions. Of course, one expedition proved to be too little. So after Uedinenie island, I spent a winter on Chelyuskin, then on Dikson, then on a drifting "SP-4" polar station; there followed numerous trips to the Arctic, ascending the glaciers of Zailiyskiy Alatau and the Caucasus and, finally, an expedition to Antarctica...

- And all the time you were surrounded by ice. Were you not tired of that cold, monotonous, gloomy desert?

- You are wrong. Ice is a puzzling story that never ends. For a long time it remained, as it were, outside the boundaries of the earth science. Meanwhile, it is precisely the ice that molds the currents in the world ocean, participates in the circulation of water in nature, and influences the climate. Ice is a remarkable building material. Mountain and continental glaciers are sources of pure water and the basic water resources for irrigating the lands of Central Asia and the Caucasus.

- You probably will be surprised when I say that old ice massifs are capable of undergoing a change of their strength. During my winter stay at a drifting polar research station, I once noticed that

the ice floe under our huts had sagged and began to resemble a bowl. Can you imagine, a huge three-meter monolith could not support the weight of board shacks! I began to study this problem. It turned out that ice at a certain temperature under load becomes deformed - it "flows". Once a plane fell through the ice on one of the arctic take-off strips. It happened because it stood at one spot for a long time. I determined the supporting power of the ice cover and later I mentioned this fact in one of my books.

- Your books are not for the mass reader. They are replete with demonstrations, mathematical calculations, formulas, and diagrams. However, they are highly esteemed by specialists. I read in the preface to one of these books: "The author has determined the energy of fragmentation of the ice cover. Similar computations have no analogues either in our country or abroad". What kind of computations are those? Do they have practical significance?

- Already during the war years, when we scientists were studying the ice environment in the Arctic and recommending courses to convoys among ice packs, I noticed that the ice rubbing the ship is not always capable of crushing it. I began to study this phenomenon. It turned out that the thermal expansion of sea ice depends not only on temperature but also on salinity. I was able to compile a unique table permitting one to determine dangerous and non-dangerous zones of the ice cover at different times of the year. In summer, for instance, ice lacks the property of expansion and in this respect becomes safe for ships, although it is also possible that a ship may be damaged when hit by an ice floe. In winter, however, only the upper layers of the cover are subjected to thermal expansion, which means

that the ice around the ship's hull must be broken only down to a certain depth. The table specifies that depth. I think it will be very useful both to navigators and to persons who spend the winter at arctic drifting stations.

- Ice was used a long time ago as the cheapest building material - it served to create river crossings, erect ice palaces, and even to build... cannons capable of firing one shot.

- But all these structures have one shortcoming in common: they thaw. I first became interested in the problem of utilizing ice for construction a long time ago, during the first winters I spent in the Arctic. How to assure a particular strength and durability of ice?

- The method of sprinkling water under pressure first permitted me to obtain a stronger surface, whereas the addition of a mixture of sand and clay to the water further increased the strength of ice. It was still dependent, however, on temperature. It was a refrigerating chamber that helped me and my students to create an "eternal", non-thawing structure.

- As often happens in science, the solution proved to be quite simple. The method of volume freezing - this is the name we gave to it - permits one to build on shelves ice structures of most varied forms, dimensions, and functions. This requires no great expense or special equipment. One has to build only a structure of metal tubes in the form of a multi-layer lattice. The latter is lowered into the sea and cold arctic air is blown through the tubes. The tubes immediately become covered with an ice crust, and within one and a half or two months a

powerful block is formed in the water. It will survive even in summer, provided a mixture of air and nitrogen is blown through the upper layer of tubes. Such a non-thawing ice block may be firmly attached to the sea bottom by freezing, so that no drifting ice hummocks will be able to move it. It may also be very easily repaired by sprinkling it with water or pouring water on it in layers.

- Has such an ice island been build already?

- My students have constructed a model for full-scale tests in Amderma, but there has been no further progress so far, although the construction met with interest at the State Planning Commission, the Ministry of Navy, and the Ministry of Gas Industry of the USSR. There were many positive responses and even an offer to create an ice platform at Cape Kharasavei on the Yamal peninsula in the gas-rich region of the Arctic. But suddenly they cooled off. Why? Apparently, because somebody is reluctant to expend the effort. It is much more simple to buy abroad a ready-made metal drilling platform - no special worries, no problems, just pay, and a pretty high price at that! The money is not his, earned by the sweat of his brow, it is the state's, so why should he worry?

- Often I think about the following: ,in order to prove his theory, the scientist conducts hundreds of experiments and organizes, often dangerous, expeditions to faraway places. During my first winter in the Arctic, I witnessed a terrible drama when a polar bear attacked one of our co-workers and mauled him to death. In Antarctica, during an expedition to the center of the mainland, I lost my student and friend, the young scientist

Valerii Sudakov - his lungs froze. Tell me, do we need research at that price? Is it worth risking one's life?

- My answer is: in order to understand, to unravel a secret of nature, in order to offer it to one's people, to one's country, to humanity at large, one must knowingly face the risk and the sacrifice. One must renounce comfort, one's circumstances, distractions, even sleep. Sometimes the price to be paid is even higher.

- And so much more painful - after the expressions of recognition and enthusiastic articles in the newspapers - is the realization that perhaps your work was not necessary. Whomever you approach, nobody is interested in it. What stamina and what nerves are needed at times to see one's project implemented and one's invention put into practice!

Why does that happen? Apparently, because among the people who preside over the fate of the inventions there are many indifferent individuals. It is for the same reason that my ice structures are not being put to use, although everybody understands that we must accelerate the exploitation of the Arctic's riches. But shipping goods and building materials to those areas has so far proved to be an arduous task. It means that utilizing ice is simply unavoidable. The non-thawing structure may become a mooring for ships, an ice landing strip, a dike or a drilling platform.

- Boris Aleksandrovich, I have been told that you also are interested in the problem of utilizing ice in outer space.

- Yes. In outer space, thanks to low temperature, any structure - of concrete or metal - can be "welded" with the help of ice.

- Now, for instance, I am considering a way to lift sunken ships by means of ice. Refrigerating chambers must be installed in the ship's compartments to freeze the water. Ice is lighter than water, and the ship will rise. I hope that this will be of interest to specialists.

- Boris Aleksandrovich, they say that ice by itself can somehow "squeeze out" objects lying on the bottom. Have you heard by chance about the miraculous stone at Lake Pleshcheev? In olden times, it was idolized by pagans, so Christians decided to drown it by throwing it into the lake. But soon the ice lifted the stone, and now it is lying on the shore again.

- Have you seen it? Have you noticed the inscription it bears? It says that the method by which the stone was lifted has been explained by professor Savel'ev.

- So you are that same professor?! Well, really, the inscrutable ways...

- This stone was lifted because, due to its irregular configuration, its center of gravity had shifted. And the waves and ice just rolled it along the bottom until it reached the shore.

Toward Ice Airfields

As the waterway navigation on the Onega, the Ladoga, and other lakes of Karelia comes to a close, flights are inaugurated to transport passengers,

mail, and goods to the islands of Kizhi, Valaam, and Bol'shoi Zhuzhmoi, to difficult-to-reach settlements. In most cases, these flights use ice landing strips.

The flight schedule for airplanes and helicopters includes about 10 new routes. Thus, the seasonal tourist flight Petrozovodsk - Kizhi island has been a successful operation. Thousands of excursionists from various cities of our country are transported by air to the ice airfield of this island preserve. Travelers are attracted by the originality of this tourist airline.

Sotsialisticheskaya Industriya
5 January 1988
P.4 (full text)

On The Very Coast Of The Kara Sea

The "academician" had just turned twenty and his name was Viktor Pinigin. There was nothing facetious about it: indeed, a year earlier Viktor had graduated from the Academy of Civil Aviation. Its graduates are jokingly nicknamed "academicians" in Amderma.

Viktor's parents were astounded: academy graduate and - a simple air traffic controller. Just ask an experienced passenger what air traffic controller means and you will probably hear the following answer: it is a person who announces the delayed flights... And there is nothing you can do about it; over the years, the stereo-type has taken root according to which aviation is equated with the pilots and, well, perhaps still with the smiling

stewardesses. Few of those sitting in the cabin of a modern airliner realize that, in addition to the crew, the air traffic controllers lead the plane along the airways and are responsible for safety.

Pinigin graduated from the academy with distinction. He could have returned to his home town, Sverdlovsk, or he could have established himself in Moscow or Leningrad, but he followed the call of polar regions. He wanted to prove himself and he knew that the north was a good "school". But when he went to get his assignment, he found that all the positions in the north had been taken by his classmates. Still, he was lucky: a representative of the civil aviation administration from Arkhangelsk happened to be in Leningrad and he offered him a job in Amderma.

"We arrived in Amderma in summer, in August" - Viktor says. "The first thing that struck me in the settlement was the neglect, the sensation of bleakness exuding from the dilapidated houses, the roads ripped up by all-terrain vehicles, the shore of the Kara Sea strewn with scrap. But I liked the residence to which I was assigned. A new, well-appointed building, nice rooms. Very well equipped kitchens."

The room is cozy, indeed. They have a television, a record player, and their most precious possession in Amderma is a unique collection of recordings of Vladimar Vysotskii's concerts.

"The greatest advantage of Amderma" - Viktor said - "is its people. They are more kind here, more human. Maybe because the settlement is small and they all know each other, and maybe because idleness and disrespect for people do not take root in the

north. You don't feel lonely here like in a big city, you know that they will always help you and support you. Moreover, the young people in the north mature faster, they become independent sooner than their peers on the mainland...

"In the tundra, under permafrost conditions, grow only dwarf trees that resemble brushwood more than trees. But even those cannot be found in the settlement, and this is why the latter makes a strong impression. At first you don't realize what is the matter, and then it dawns on you that something is missing in the streets... What is missing are our habitual lindens, poplars and lilacs.

"We once felt such a urge to see a tree, to touch one, that we could not resist it, and my friend and I went to a hothouse - there was some green grass in it. We looked at it, we caressed it... No, he who has never been here and has always lived on the mainland will never understand it" - said Viktor.

For two months in a year, the tundra takes revenge for the severe winter, the half-year-long polar night, and the barrenness of its soil. It is then that these regions are ruled by the goddess of spring, Flora, who generously bestows upon the north all the colors, all the tints and shades. And then the glades of Central Russia envy the tundra with which they can not compare - on one square meter of the awakened tundra you find up to 40 species of various blossoming plants. And this is permafrost.

"I am not bored in the north" - Viktor Pinigin admitted - "the books come to my rescue. My neighbor, Viktor Yakimov, also an academician, has fitted out an exercise room in the residence. It is small and crowded, but it is there. Of course, it

would be nice to have our own swimming pool, our own gymnasium, a cultural center, and a cafe for young people..."

The settlement of Amderma is joined to the airport by three kilometers of road running along the shore of the Kara Sea. The airport is the only connection to the "world" during the winter months when there is no navigation. Up to thirty airplanes take off from here daily. Helicopters, ice scouts, passenger and freight aircraft are served by the airport of a small polar settlement. On the round radar screen in the air-traffic control room, one or even several luminous dots can be seen moving either away from the center of the screen - that means they have just taken off, or toward the center - it means they are making an approach, or they are simply moving within the space served by the air traffic controllers of Amderma.

Usually, the air controller pours out a stream of figures and words, incomprehensible to an uninitiated visitor, when he talks to some aircraft, or he transmits the latest weather report. Speaking about the weather. In the north, it changes almost every half-hour, that means that visibility and flying conditions also change. It seems a minute ago that the sky was clear, and some twenty minutes later there is fog, thick like cotton, and wind. Air traffic controllers and helicopter pilots say that these extreme weather conditions are "for the amateurs" - jokingly, of course.

So that all these - weather "for the amateurs", high number of take-offs, intensive traffic along the northern airways - are the components of the specific working conditions of polar air traffic controllers. But the main thing in

their work, like in the work of any air traffic engineer anywhere in our country, is the quick reaction, the quick appraisal of the situation, and the need for instantaneous correct decisions. The pilots trust the controllers and rely on them like on gods.

If you look out from the enormous - the length of the entire wall - windows of the control room, you see the whole airport like on the palm of your hand. They say that sometimes the Kara Sea shore, in spite of being part of the airport territory, is the playground of polar bears. But the bears are but a small lyrical digression from the strenuous work of the air traffic controllers.

"What makes up our workday?" - the controllers repeated the question. "Solving problems. For instance, we had been asked to move some medical personnel from Ust'-Kara to Amderma. A helicopter could have been sent on a special assignment directly from Amderma to pick them up, or we could have asked that the Mi-8 helicopter, assigned to the nearby drilling operations of the expedition prospecting for oil and gas, be sent to pick up the doctors. One has to figure what would be faster, more convenient, more practical..."

"What do you think, how many minutes were needed to solve this problem? Three! And how many such problems do we face in a workday: ten, twenty, hundred?"

"We have not counted them - the controllers admitted. There is no time for calculations. And besides - this is our usual work."

Viktor Pinigin was filling the cups with coffee and reminiscing on his home, his parents, the years he spent studying in Leningrad, his recent vacation - the first in his life. And the expression "in our north..." slipped into his conversation. Our north. Well, Amderma became home for still another person.

Vozdushnyi transport

23 January 1988

Page 3 (slightly abridged)

Xmas Tree Airlifted to Drifting Polar Research
Station SP-30

The Arctic played an unexpected New Year's trick on the staff of station SP-30 and prevented them getting their mail from the mainland in time. But the mobile propaganda team of TASS and Goskomgidromet came to the rescue. Travelling on an An-72 they brought the polar research workers New Year's trees and presents from Moscow, Kiev and Leningrad.

Everything seemed to be going according to plan and we would shortly be arriving at our destination - station SP-30 - with New Year's gifts for the researchers there. It was good flying weather and the pilot already had experience in landing an An-72 on drifting ice. Readers will recall that on December 26, the pilot S. Gorbik and his crew made a record landing at this station using the same aircraft. He managed to land within a distance of 330 metres, whereas preliminary data indicated that the station had a landing strip 400 metres in length.

But the Arctic is the Arctic, and just before we took off from Cherskii the station commander Vasilii Piguzov telegraphed that the airstrip was damaged. We therefore decided to drop the New Year's gifts by parachute.

Normally such an operation would be carried out by experts of the "Sever" high-latitude, air-borne expedition using an Il-14 or an Il-76, but this doesn't always guarantee a precision drop. Last year, for example, I watched from an ice floe as DOSAAF experts from the "Ekspark-86" Arctic parachute expedition attempted to drop New Year's gifts from an

Il-76. It was not until the early hours of the morning that the fir tree was found on a nearby ice floe. The apples were badly crushed in the impact and the potatoes were frozen. Hence there were grounds for anxiety right now.

Boris Pokatilo, division chief at the Antonov Bureau of Experimental Design, is a highly experienced specialist who has been involved in experimental parachute drops from twenty different kinds of aircraft. Yet neither he nor any of his colleagues from the bureau have ever tried dropping cargo by parachute from an An-72 in the Arctic. Aircraft engineers S. Zadirin and N. Klyuza wrapped boxes of Kiev cakes in a blanket and placed fur cushions under them. For the fir-tree they selected a small pilot parachute.

And now, after passing to the west of Wrangel Island, we are approaching our target.

"I can see bright lights," reports co-pilot A. Galunenko.

The plane begins its descent and circles above the square marked out by the beacon fires.

"Stand by!" orders the captain, Sergei Gorbik.

We take one last look at make sure the pallets are secure.

The ramp of the An-72 opens. Cold air burns our faces. The aircraft turns once more and then the pallets bearing the New Year's gifts disappear into the pitch darkness of the polar night. The parachute drop is controlled automatically from the pilot's cabin.

"We cleared an area some 200 metres long to receive the drop," radios the commander of research station, "and you dropped them in area one-tenth the size. The fir-tree landed almost spot-on near the main hut. The cakes are okay. Thanks!"

Our aircraft turns away and heads back to Moscow.

Izvestiya
3 January 1988
Page 6 (full text)

More than two dozen industrial enterprises
under its aegis will be up holding the flag of the
their employees. However, the City Council Executive
Committee managed to find the right way which could
have arisen with the involvement of a wide variety
agencies, by spreading it as a co-ordinated effort to
different housing projects.

"We believe that the responsibility should
be divided equally between the construction people
and the clients," says V. Radach, Chairman of the
City Council Executive Committee. "After all, so
of an only the builders are blamed for missed
completion deadlines. This way the clients never
take responsibility for anything. The city council
with the help of its deputies was able to convince
the business community of the necessity of helping
one another. It was worked for several years. This is
Sverdlov located in the city. Several years ago
where the builders were doing splendidly. In
entire city came to their aid. They were able to
Sverdlov."

Sverdlovskaya Pravda
31 January 1988
Page 1 (full text)

CONSTRUCTION

Improving The Housing Situation In The North

It is not the number of square metres, but the number of apartments completed which now serves as the main indicator in evaluating the progress of the comprehensive housing construction programme in Lesosibirsk, Krasnoyarsk Territory. In one year in this northern city, which is located near the confluence of the Angara and Yenisey Rivers, more than one thousand families moved into new homes, almost 25 per cent more than planned.

More than two dozen industrial enterprises under 13 ministries will put up housing here for their employees. However, the City Council Executive Committee managed to avoid the problems which could have arisen with the involvement of so many different agencies, by stepping in as a co-ordinator of different housing projects.

"We believe that the responsibility should be divided equally between the construction people and the clients", says V. Kadach, Chairman of the City Council Executive Committee. "After all, so often only the builders are blamed for missed completion deadlines. This way the clients never take responsibility for anything. The City Council, with the help of its deputies, was able to convince the business community of the necessity of helping one another. This worked, for example, when the Severnyi Housing Project was under construction, where the builders were falling behind schedule. The entire city came to their assistance."

Sovetskaya Rossiya

27 January 1988

Page 1 (full text)

Homes For Workers In The Oil Industry

In the young oil town of Usinsk, construction has begun on a plant for the manufacture of large panels for apartment blocks. These availability of these panels will make it possible to assemble eighteen 100-unit apartment buildings, providing a total living area of 100,000 square metres. In addition, the plant will have an annual output of some 20,000 cubic metres of prefabricated ferroconcrete structures for the building of standard facilities such as schools, polyclinics, kindergartens and day nurseries.

Next summer the plant is planning to start up the first cassette-type assembly line in the Komi republic, for the manufacture of interior wall panels, which will make things easier for the workers, improve manufacturing standards and increase the degree of prefabrication of the product.

Sovetskaya Rossiya

23 January 1988

Page 1 (full text)

New Hospital in Surgut

Several new projects of considerable importance to the public have just been completed in the big oil center of Surgut. A large polyclinic and a traumatologic hospital with 200 beds have been inaugurated. Patients will receive treatment here according to the system of the well-known physician G. Ilizarov.

This city on the banks of the Ob River, whose population has surpassed the 230,000 mark and continues to grow is systematically putting into effect the "Health Care" program.

Izvestiya

20 January 1988

Page 1 (full text)

Kedrovyy - A New Siberian City

On New Year's Eve, the settlement of Kedrovyy in the Parabel'skii district of the Tomsk region was given urban status by decree of the Presidium of the Supreme Soviet of the RSFSR. This is only the fifth town in the region. Paradoxically, the region is one of the ten largest in the country and at the same time has the tenth lowest population.

Kedrovyy is an oil town. It is situated in the taiga since that is where the roads bring oil from the Tomsk fields lead. Industrial exploitation of the many deposits here is only just beginning. It is a well known fact that oil is produced mainly by the extended shift (vakhta) shift method in Siberia. But is this always economically justified? It means transporting workers from the far corners of the country! And it is not only transport problems that have to be overcome when permanent workers are brought in to replace "migrant" workers.

When a major construction program got under way at the former shiftworkers settlement, not everyone believed that it had a future. There were those who grumbled about the difficulties that lay ahead, and indeed there were many. Building

materials, including the heavy panels needs for the new house-building program, had to be shipped in during the cold season along the winter route. And yet the number of houses grew. And not only houses. Alongside the first five-storey building a kindergarten sprung up. A club was built and the finishing touches are being put to the construction of a polyclinic, a bakery and a shopping centre. but the inhabitants of Kedrovi finally began to believe in their own future when the authorities started to build a school with places for 1500 children.

Even today there are not many people here - a few thousand in fact. But the city already has its own newspaper in the form of a special edition of the regional paper "Krasnoe znamya".

And what about food? The oil industry workers get their food from the "Pudinskii" state farm. Last year this farm fulfilled its quota for milk and meat sales ahead of schedule. But the secretary of the amalgamated Party committee, V. Kurbatov, considers that agricultural development here should be speeded up.

Roads are one of the main problems in Siberia. Essential supplies cannot be brought in by "winter road" indefinitely.

As if in acknowledgement of this, the first aircraft landed at the newly built airport just before New Year. Thus, although it will be some time before regular passenger flights take place, the way is clear.

So far the country doesn't seem to be getting very much oil from the Pudinskii region - no more than several hundred thousand tonnes. But the

significance of kedrovyi is that it points towards the future. You don't build a town when oil production is already declining; you build it earlier so that there is a living and working environment ready for the future. New places need to be not only developed but also made comfortable for people to live in. The experts say that the region will soon be producing more than half of the oil coming out of Tomsk. And production will no longer be reckoned in the hundreds of thousands of tonnes but in millions.

Izvestiya

3 January 1988

Page 1 (full text)

ENVIRONMENTAL PROTECTION

Land-Reclamation Project Ends in Disaster

How deplorable are the results of the poorly-conceived development projects aimed at drying the thermal karst lakes of Chukotka.

How well everything had started! Almost twenty years ago the young scientists at the Chukotka geocryological station noticed the peculiar ability of some thermokarst lakes to become self-dried. A year or two later, an arctic miracle occurred. The dried bottom of the lake turned into a green oasis of lush grass.

And what if we were to help the lakes get rid of their water and thus create artificial meadows? This idea was quickly gaining supporters and it seemed as though it was being confirmed by practice. Soon three water basins were dried for the Chukotka state farm Severniy. And already in the first year, each of the 900-hectare units produced three hundred centners of green mass. Then the haying areas was increased by the large Lake Aleksandra. Still other additions were made until the fodder area reached five thousand hectares. The sovkhos began to supply hay, not only for its own livestock operation, but was also able to sell feed to other farms in the region. The young scientists became Candidates and Doctors of science. In their reports they maintained that meadows of this type would provide a feed base for Chukotka for the next 25-30 years and, after a secondary flooding, for another period of the same length.

However, within a few short years, the situation changed drastically. The permafrost refused to comply with the scientists

recommendations. The arctic meadows began to deteriorate rapidly, crops diminished, the bottoms of the dried lakes changed into marshes and became overgrown with moss. The sovkhos Severnyi has already lost more than half of its hayfields, the creation of which cost millions of rubles.

It is now impossible to recognize Lake Aleksandra, once noted for its surprising beauty and the richness of its flora and fauna. Previously, large flocks of geese and ducks had their feeding grounds here, the salmon gained rapidly in weight, the inconnus and the broad white-fishes were in abundance, and its shores were inhabited by all kinds of animals. All that is gone. And so is the hay.

In 1983-84, according to the already well-documented Dalgiprovidkhoz Institute project, teams of workers of the Magadanvodstroi trust set about drying the lakes in the valley of the spawning-ground rivers Kanchalan and Uglovaya in order to create new hayfields for the Severnyi state farm.

The Magadan (land development specialists) proceeded with callous disregard for the recommendations and the project. They "invented" their own method of constructing canals, which permitted them to fulfill the plan in a short time and obtain a bonus: without giving it much thought they dug deep canals. The water from the lakes emptied into the rivers in torrents. The huge bulk of water washed away thousands of tonnes of silt and sand, which were deposited in a thick layer on the river bottom reservoirs, destroying the plankton - the feeding base for chum salmon, pink salmon, broad whitefish, inconnu and other delicacy-type northern fishes.

These discharges on the rivers of Chukotka become the object of keen attention of agents at the prosecuting attorney's office of the Magadan region, especially of the investigating magistrate for cases of particular importance, V. Skryagin. A judiciary and ecological commission, which included scientists and experts, visited the places in question and studied in detail the circumstances under which this tragedy had occurred. Its conclusion, namely that the contamination of rivers rich in fish has caused a considerable loss for the state, has been supported, not only by documents, but also by the testimony of eyewitnesses. There were many such testimonies and the witnesses were unanimous: the developers have destroyed the river spawning-grounds, large reserves of fish and extensive hayfields.

But then, where were the members of the state commission who accepted and put into service the dried lakes and canal system? They limited themselves to the papers. Many of them did not even visit the site and signed the document with their eyes closed.

However, the decisive action by the prosecuting attorney's office, and then also by the district committee of the Party, forced many individuals to examine more soberly the situation existing in the Chukotka tundra. This, among other things, was also the case with the applied sciences conference that took place in Anadyr. It was attended by representatives of various scientific, industrial, and social organizations from Moscow, Leningrad, Vladivosktok, Magadan, Yakutsk, and Anadyr. Even one of the project authors - S.V. Tomirdiario, presently a department head at the Leningrad Agricultural Institute - was compelled to admit that the arctic meadows were degenerating. But he blamed the planners and the developers for it.

There was no unanimity of opinion on this topic among those attending the conference. Some participants supported the drying of the lakes, others were categorically against it. However, everybody agreed on the main issue: a most serious ecological expertise is required before work on similar projects is started.

Those who took the floor reminded the participants that today's ecological concerns are essentially equated with the style of management. Meanwhile, our past projects regarding the drying of lakes were carried on, from the very beginning, almost spontaneously, without thorough ecological preparation and without consideration for their negative impact on the environment. Many serious mistakes were made by the planners and the developer. The responsibility that the scientists bear is a separate question. We must decide whether we are dealing here with an idea that has proved to be unrealistic, or that the idea is rational but requires serious corrections. It is up to the science to answer this question.

Chukotka has paid a high price for the mistakes of the planners and the developers. It seems, however, that no lesson has been learned from it. The region is putting forth plans to create new arctic meadows by means of drying thermokarst lakes. But perhaps it would be better to weigh it carefully in accordance with the spirit and the letter of the recently published decision of the Central Committee of the CPSU and the Council of Ministers of the USSR entitled The Radical Restructuring of Environment Protection in the Country.

Izvestiya

20 January 1988

Page 3 (slightly abridged)

MINERAL RESOURCES AND MINING

At The Source Of A River Of Coal

The miners of the Neryungri Mineral Resources and Mining Section are laboring intensively, turning out a considerable output.

Here the coal is moving in an unending flow. Many of the excavator operators and dump truck drivers are welcoming in the New Year in the cabs of their giant machines, decorated with New Year's trees.

In just the first three days of the year a little more than 74,000 tonnes of coal have been extracted and about 600,000 cubic metres of barren rock have been cast aside. The best results were achieved during the first shift on the first day of the New Year.

Seventeen trainloads of coal, weighing a total of 60,000 tonnes, were dispatched in the first three days of the new year to the eastern districts of the USSR and abroad.

Pravda

6 January 1988

Page 1 (full text)

The Hidden Treasure Of Zelinda

Ust'Ilimsk, January 8 (A. Shafranovskii, Pravda Non-staff Correspondent). Until a short time ago this name on the map was associated with a small taiga stream, a tributary of the Angara. Then

geological prospectors arrived in the area and discovered that Zelinda is one huge multilayered deposit of hard coal.

The Zheron deposit was discovered not far away (only 40 kilometers) from a major coal-consumer, the Ust'-Ilimsk Heat and Electric Power Plant. An open pit name is planned for the Zheron deposit with a capacity of five million tonnes of energy-supplying coal per year.

The drilling teams of master specialists, M. Filimonov and N. Afanas'ev, are currently engaged in prospecting at Zelinda. Their efforts in the northern portion of the Angara region are providing the geological evidence required for developing an industry that will eliminate the need to ship fuel from Krasnoyarsk Kray.

Pravda

8 January 1988

(full text)

OIL AND GAS

How Much Does A Well Cost?

Nizhnevartovsk drilling operations directorate No. 1 was once a leader in the drilling sector. It gave birth to daring engineering solutions and originated new equipment and technologies that were first tried out and then made available to the rest of Tyumen. The traditions of the directorate, which was the first to open up the celebrated Samotlor field some 20 years ago and established some impressive records, looked as though they would last forever. But one by one the legendary experts departed and the young people who replaced them proved ill-equipped to carry on the traditions.

"And then," relates Party committee secretary Yu. Gan'kovsky, "we were compelled to stop talking and act to focus all the efforts of the Party organization on the lower and middle echelons - on the brigade and department... We improved the brigade contract and the cost accounting system (khozaschet). We expanded it to encompass not only the drillers but also our colleagues working in allied fields - tower hands, pluggers, geophysicists... The system that the directorate operates under at present entails working on a group of wells simultaneously, i.e., there is a single, integral work order for each assignment. An incentive scheme to improve work quality has been put in place. The god of drilling footage has been toppled from his pedestal. Our aim is to produce wells of high quality. They have a saying in Uyuman: oil comes out of the tip of a drilling bit. On average throughout the industry the drill is in use for less than 16% of the work-day, i.e. for less than

10 minutes in every hour. For the remainder of the time the crew is either making preparations for that ten minute period of drilling or simply standing around doing nothing. But things should be different. Even with today's fairly primitive equipment and technology, the drill should be in use 35% of the time. In drilling test wells, when conditions are close to ideal, drillers reach speeds which, if recalculated in terms of the whole year, would be equivalent to drilling 200 thousand metres. But here some thirty crews can barely manage 100,000 metres. The average is much lower.

The drillers of the Nizhnevartovsk directorate are lagging behind their neighbours as regards retooling. Well construction is being held up by the weaknesses of others. The drillers have many grievances against science and the mechanical engineering industry.

But for the time being all these problems are secondary. The greatest problem right now is the switch to self-financing. Drillers are making thorough preparations for the change. However, by no means all workers are sold on the idea of cost accounting (khozraschet). In the words of crew boss V. Kazakov, the whole thing is up in the air right now and there is no point in getting worked up about it. Some of the difficulties have already become apparent. For example, when representatives of the directorate approached the corporation to defend their annual plan - with facts and figures - they couldn't get a hearing. The plan was drawn up as before, in terms of production quotas.

The cost mechanism is still very much alive and well. The directorate has been set the task of

reducing the estimated cost per well by six percent. Yet the size of the wage fund depends on how much money the directorate spends!

The largest oil and gas-producing corporation in the country can boldly affirm that it will exceed its oil delivery quota. The country will get an extra three million tonnes of crude. But there is still much untapped potential in this group of employees. Drilling is only one of several sectors, albeit the most important. The production side also has successes and achievements to its credit. But how much more could be achieved! Will khozraschet bring out the hidden potential?

Sovetskaya Rossiya

20 January 1988

Page 1 (full text)

Bureaucratic Waste In The Oil & Gas Industry

Cost accounting and cost recovery, which were once a matter of theoretical dispute, are now beginning to be practised. In this connection I want to relate a story that is both entertaining and sad in equal measure. It concerns waste petroleum products.

For many years, we in the Tyumen' region always handled these products in the same way: they were collected and then recycled - as additives in drilling fluids, as lubricants of various assemblies and mechanisms, as a means of eliminating complications when drilling wells, and so on.

However, for some time now, a different procedure has been followed: currently waste petroleum products have to be collected and delivered every quarter to the directorate of Goskomnefteprodukt products. (The Presidium of the Supreme Soviet of the USSR recently abolished the Union-Republican State Committee of the USSR for the Supply of Petroleum Products, i.e. Goskomnefteprodukt - Ed.). This is an absurd requirement: the drilling crews and seismic sounding detachments are scattered all over the Far North. And yet, four times a year the specialists of the 34 expeditions and 75 seismic sounding parties and other groups must now collect waste petroleum products, put them in containers and dispatch them by air to at least the closest river for transshipment to their destination by water. By the same route they receive in return fresh crude and lubricants. The entire arrangement makes no economic sense of course.

Protracted negotiations were entered into with the Tyumen' directorate of Goskomnefteprodukt and the Ministries of Geology of the USSR and RSFSR. They made no attempt to understand our position. Not only that, they increased the delivery quota for 1986 - fivefold, and that for 1987 by another 60%!

Let's take a pencil and work it out. One tonne of recycled raw material is worth from 16 to 30 rubles, but when delivery costs are added it works out to about 300 rubles. The central board makes 90,000 rubles by fulfilling the sales plan for waste petroleum products and at the same time loses 1,082,000 rubles in transport costs. In other words, nearly a million rubles is squandered!

So that's what happens to the waste petroleum products collected with immense effort and sold to other central boards throughout the region.

And it is not only the geologists who are affected by it. Of the 19.2 thousand tonnes of raw material stockpiled at the oil dumps, only 4.5 thousand went for processing. And what happened to the remaining 15 thousand tonnes or so? Why, that was sent back where it came from, believe it or not. Due to transportation costs, the waste petroleum products become twice and sometimes even ten times as expensive.

For two years we have been sending our ministries - both those of the republic and union - requests, complaints, explanations, calculations and statistics. The Ministry of Geology of the USSR answered only once, stating that experts at Kaluga had been set the task of working out realistic quotas for the shipment of the ill-fated raw material. They sent someone to see us, but he never went any further than Tyumen'; he familiarized himself with the relevant documents at the central board, and then left never to return. Roughly a year and a half passed and there was still no word of the new quotas. While they were trying to solve the problem in Moscow and Kaluga, the experts in Tyumen' concluded that it was better to use the old lubricants instead of reprocessed oil to prevent snagging of drilling tools in wells.

I fall to thinking sometimes. Plans are drawn up by people, so how is it that a manifest absurdity can be elevated into a necessity? Why not take the trouble to find out whether North Tyumen' has properly equipped reception centres? Why not try to work out whether it is worthwhile shipping raw materials out from the back of beyond if they then have to be purchased and shipped somewhere else at much higher cost.

The higher echelons of the Ministry must be aware that 1988 marks the beginning of a new system of management for the central board. The million rubles lost every year will not longer be of purely symbolic significance but become a real and tangible loss. Those engaged in mineral prospecting and exploration cannot view this prospect with equanimity.

Izvestiya

3 January 1988

Page 2 (Slightly Abridged)

Personnel Selection For Remote-Camp Crews

It has been more than six months since the publication of the article "Yamburg in a 'Trap of Promises'" (Trud, 9 June 1987). The story was about the fact that the USSR Ministry of Gas Industry, the USSR Ministry of Oil and Gas Construction, together with their subdivisions which are participating in the opening up of the Yamburg Arctic gas giant, permitted serious errors in introducing the crew-rotation method here.

The answers received by the editor indicate that during a series of meetings held by management and trade-unions "a serious assessment of the people responsible for the mistakes was made, as well as the ways of correcting these mistakes". But have the gas-field workers felt any improvement in reality?

In some ways, yes. Thirteen hundred rig workers and construction people moved into new, comfortable hostels. The residential complex being built boasts, besides the hostels, a complete range

of community facilities. It is designed for nine thousand people, which makes the future of the crew accommodation situation look good.

The re-settlement of the permanent inhabitants of Yamburg to Nadym and Novyi Urengoi continues. The Central Directorate for the Yamburg Oil and Gas Construction Works started building a small community especially for the crews, with a large agricultural facility. A medical examination has been introduced for the construction workers prior to their airlift to Yamburg. Rotation schedules, the most appropriate for today's conditions, have been determined. For those who fly outside the Tyumen' Province, two months in the field with a 10-hour work-day and a month off. For those living within the Province, 20 days of work and 10 days off.

However, the problem is far from being solved. That was the conclusion of the participants in a recent plenary session of the Tyumen' Provincial Council of Trade Unions. The reports by I. Shapovalov, heading the Central Directorate for Yamburg Oil and Gas Construction Works, and V. Nak, Head of the Yamal Transportaton Facilities Construction Works, were discussed at the session.

The newspaper story told about the hardships of the remote-camp shift workers at the Nadym and Novyi Urengoi airports. Not much has changed there. There aren't enough helicopters. Not many aircraft crews have permission to fly at night, although in the Arctic, daylight lasts only two or three hours in winter. There are no hotels for remote-camp shift workers. Yamburg still doesn't take airplanes. In building the airport here, only 19 million rubles of

the 95 million ruble budget have been used. There are ongoing debates about who doesn't "deliver" to whom and doesn't "supply enough"...

Legal counselling for crews working in the Arctic is still an unsolved problem. For example, what can be the reasons for including a crew-worker in the waiting list for an apartment in a northern city which is his base, if he officially resides far to the south? This is not provided for by housing legislation, and life urgently demands that the expensive airlifting of remote camp shift workers from one region of the country to another be reduced. Or there is this incomprehensible case: a sickness leave during an off-duty period between two work periods, which was earned by a longer work-day, is not paid. Why? People are exasperated.

There are many arguments and much dissatisfaction caused by the current system of hardship bonuses for work in the Arctic. Airlifted rig workers, for an equal amount of time worked, get less than those who live in the Arctic permanently.

The problem of medical-biological service remains unsolved. For work in the Arctic, especially when you work on the crew-rotation system, when an individual must periodically adjust to harsh conditions, frequent changes in climatic zones, alternating long periods of work and rest, and physical and mental overwork, it is essential to choose completely healthy people who are capable of adapting. However, according to data from scientists at the Tyumen' Medical Institute, about 13 per cent of those flown in as crews are seriously ill, and only a third of them are healthy.

The result? Almost 90 per cent of those being injured represent the so-called risk group (decreased ability to work, poor adaptation) and people with obvious health disorders. Our scientists haven't worked out a system of selection. There have long been discussions about the necessity of setting up specialised medical centres which would take on the serious study of the functioning of the human body under conditions of rotation schedules in the Arctic, and develop the necessary recommendations. Unfortunately, things have not gone beyond the discussion stage.

It seems that the following suggestion deserves attention: train remote-camp shift workers in special technical schools from childhood according to the appropriate methods; develop the body's capabilities of adapting.

As we can see, there are lots of ideas around. Of course, it will take efforts and resources to bring them about, but we are talking about something very important here: people's health. We mustn't "cut corners" in things like this, or put off a solution to the problem "until later". The losses may be irreplaceable. It was no accident that the plenary session of the Provincial Council of Trade Unions, where these matters were all discussed in detail, demanded that the management and trade union leaders improve the work in a fundamental way in order to preserve the health of people coping with the Arctic.

It is easy to demand. But what next? So far, the positive changes in Yamburg are taking a

usual, natural, if I may say so, course. The Arctic needs strong, radical measures.

Trud

28 January 1988

Page 2 (slightly abridged)

First Ultra-Deep Well In Western Siberia

An unusual type of drilling equipment has been set up 170 kilometres from the Arctic Circle, south of the Novyi Urengoi condensed gas deposit. Drilling of the first ultra-deep well in Western Siberia has been started here, within the framework of the "Nedra" comprehensive programme developed by the Ministry of Geology of USSR.

V. Golovachev, the chief geologist of the Tyumen' geological prospecting expedition said, - "Our goal is to drill to the depth of eight kilometres. The time has come to "peek" into the concealed depths, to evaluate their prospects and to work out the technology of boring".

Having selected an area free of permafrost, the tunnelers poured a three-metre concrete base and set up the equipment. The 72-metre drilling rig, manufactured at the "Uralmashe" plant, is equipped with modern instrumentation.

Sovetskaya Rossiya

16 January 1988

Page 1 (full text)

Lights go out on a holiday

The subdivisions of Glavyumenneftegazstroï (Main Tyumen' Petroleum and Gas Construction) based in Noyabr'sk and Nyagan' have marked the beginning of the year by an important event, - completing construction of the first phases of high-capacity plants for the processing of casing-head petroleum gas. This means that the wasteful flares, visible throughout this enormous territory, and which until recently burned large amounts of highly valuable chemical raw material uselessly, polluting the atmosphere, will finally go out.

A. Mukhametzyanov, deputy-chief of Glavyumenneftegazstroy, said: - "The building of plants at the sites of intensive extraction of oil will not only signal the successful fulfillment of an important governmental assignment, but also the practical beginning of a careful approach to the rich natural resources. After the initial complexes of the Muravlenkovskoe and Krasnoleninskii gas processing plants are completed, several other phases of these plants, which are sorely needed in the oil-producing region, will be built. The ultimate aim is to extinguish all the flares which have become a symbol of poor management, and to utilize all the casing-head gas, whose volume is increasing with the increased extraction of hydrocarbon raw material from the northern wells."

Izvestiya

2 January 1988

Page 1 (slightly abridged)

Gas processing Plant Delivered to the Tundra

Preliminary test operations have been completed on the third complex gas-processing installation at the Yamburg gas deposit. An entire plant, made up of completely assembled superunits, has been delivered to the Arctic tundra.

The records achieved by the construction and gasfield workers of Western Siberia should not come as a surprise, but the recent victory is particularly impressive. The new plant began producing gas in January instead of at the end of March, as had been anticipated.

Is it really necessary to erect huge plants on the very threshold of the Arctic, to expend so much labor and resources, to open up a region that is so unsuitable for human beings? These are questions that our readers bring up now and again. Yes, these measures cannot be avoided. The gas that is extracted from wells put down through the permafrost is quite different from the gas that heats the burners on your stove or that powers the furnaces of our hydro stations. Before it begins its long journey it must be cleansed of particles of sand and clay and, most important of all, all water must be separated from it -- down to the smallest droplet -- otherwise plugs of ice will tightly seal off the river of gas in the pipelines and will cause serious damage. Everyday, hundreds of tonnes of water are extracted from the stream of hydrocarbons in the installations in which the gas is dried out.

The first Urengoi gas plants were brought into operation over a two-year period, while the final plant -- that at Yamburg -- required one quarter less time.

"Yamburg has become a testing ground for what are essentially new methods of equipping northern gas fields," commented R. Suleimanov, General manager of the "Urengoigazdobycha" (Urengoi Gas Extraction) Combine. "This field has no equal in terms of the technology that has been employed."

In contrast to Urengoi and Medvezhye, where the "gas factories" were constructed on the spot, at Yamburg the main emphasis was on huge assembly units, which consisted of energy and gas equipment, instruments and automated machinery. These units were put together at the facilities of "Sibkomplektmontazh" (Siberian Equipment Supply and Assembly) in Tyumen. The gas-processing plant, which was erected on pontoons, had to be towed over a distance of 2600 kilometers along the Tura, Tabola, Irtysh, and Ob rivers, and across Ob Bay. The sailors had experience in this kind of water marathon. The first two Yamburg plants had covered the distance without any complications at the peak of summer. But then it was necessary to wait, while the cold transformed the swampy tundra into a hard shell of ice, across which the 300-ton monsters could be dragged.

"We figured it out this way. A caravan of fifteen superunits would set out along the river behind the shore - ice, receding towards the ocean in Ob Bay, which was not yet open to navigation. Three icebreakers came to assist. The goal was to shorten the construction of the northern plants by one year." The decision was taken after consultation with the river sailors.

The step that the river sailors and the construction workers decided upon -- not without some hesitation -- was accompanied by a certain risk. No

similar shipment of superunits had ever been attempted in the USSR. The main difficulty awaited the caravan at the Salekhard crossing. The northwest wind increased the compression of the ice. But the skillful and selfless actions of the icebreaker captains -- Yu. Shul'man, N. Karnaukh, and V. Budovskii -- guaranteed success. Channels were broken through the solid mass of ice, along which two or three pontoons could be conducted before the ice corridors had to be made anew. A large barge loaded down with reinforced concrete served as a "battering ram."

The caravan waiting on the shore did not just sit there with folded arms. During the night they renewed the surface over the entire length of the 40-kilometer winter road from the moorage to the gas field by pouring water and spreading moss and sawdust. The first dry-land ship crossed the winter road in one day; the others crossed even more quickly.

"By reducing the number of construction and assembly operations to be performed at the plant to a minimum, it was possible to reduce the work force by one quarter and to reduce the estimated costs of construction by 18 percent", pointed out Yu. Topchev, Chief Engineer of the "Glavtyumengazprom" (Tyumen Main Administration for the Gas Industry) Combine.

Izvestiya

23 January 1988

Page 1 (slightly abridged)

In Arkhangel'sk Country

For the first time in its centuries-old history, Arkhangel'sk Oblast has acquired a new occupation, that of petroleum extraction. Geologists

have discovered a huge deposit of valuable raw material in the Nenets tundra, hundreds of kilometers from Nar'yan-Mar.

The honor of the discovery belongs not only to the geologists, but also to the work team headed by Mikhail Gavrilovich Rud'ko, a master specialist in drilling from the Khoreiver Petroleum and Gas Prospecting Expedition.

He has been working in the Arctic for more than twelve years and he has completely mastered his profession. We found Ruk'ko and his comrades in high spirits. They had just completed their annual work plan two months ahead of schedule and had already begun drilling the next well. And these drillers are clearly convinced that the deposit that they found in the spring will not be the last one that fate has in store for them.

Pravda

2 January 1988

Page 2 (full text)

Having familiarized herself with the results of the survey, the chairman of the local chapter of NVSFS at the steamship line, Ms. Galina V.

POWER GENERATING STATIONS

A Chukchee Hydro Plant

Heavy equipment has been delivered to Egvekinot: four-wheel drive vehicles, bulldozers, and heavy trucks.

From this point the equipment moved north beyond the Arctic Circle along the Iul'tina route and then along the winter road that penetrates the snowy wastes to the lower reaches of the river Amguema -- to the site of what will be the northernmost hydro power station in the USSR on that ice-cold river.

The Amguema will be spanned by a dam approximately 100 meters long and about 70 meters high.

Stroitel'naya Gazeta

5 January 1988

Page 2 (full text)

Inventory

23 January 1988

Page 1 (slightly abridged)

In Arkhangel'sk Country

For the first time in its centuries-old history, Arkhangel'sk Oblast has acquired a new occupation, that of petroleum extraction. Geologists

SOCIOLOGICAL ISSUES

There's Plenty For Everyone To Do

The Sobriety Society of the Northern Marine Steamship Line, with the help of psychologist Dr. Sergei Yu. Sobolev, has done a sociological survey. The object was to clarify the attitude of various social groups towards the problems of drunkenness and alcoholism.

"Almost half", Dr. Sobolev tells us, "consider that there is currently no groundwork for a widespread battle with alcoholic habits. The prohibitions and restrictions which deflected the wave of mass drunkenness have, at the same time, given rise to indifference and unwillingness by wide sections of the population to willingly and actively participate in overcoming the disease. Oh well, the government will manage, you would hear them say."

Only 18 per cent of the participants in the survey agreed that restricting the sale of liquor was an effective method in the campaign for a sober lifestyle. The majority suggests that this has led to an even worse phenomenon: moonshine and bootlegging. Half of those surveyed said that the main reasons for drunkenness were badly organized recreation programmes and the poor social standards of the population. In answer to the question of what the main activity of the National Voluntary Society For Sobriety (NVSFS) should be, the vast majority said: its members should use persuasive methods, help in offering programmes to fill in leisure-time, and in creating an entertainment industry.

Having familiarized herself with the results of the survey, the chairman of the local chapter of NVSFS at the steamship line, Ms. Galina V.

Tishchenko, agreed that they reflect the actual situation and the psychology that has taken shape among the workers of the basin.

"It is true", explains Ms. Tishchenko, "that administrative measures were strong enough to remove drunkenness from the workplace. For example, two or three years ago, you would still often find people working at the Krasnaya Kuznitsa Plant after a few drinks. That is a rare occurrence now. People quickly understood that indisputable rule which they should have learned way-back in school: drinking at the workplace is not permitted or legal. Actually, employees who were laid back and drank a lot were never accepted by their fellow workers. This was the result of a stagnant period when order and discipline were very shaky.

However, having accepted this rule at work, the same workers forget about it as soon as they punch out. To prevent this from happening so frequently, we have new ways of organizing free time, together with the community workers of the basin. Joint programmes are being developed between the Sailors' Club and the Chaika Cafe on a non-alcoholic basis. Amateur associations are being formed, as well as special-interest clubs. A recently organized Sunday Reading Club attracted many people to the crews' library. The Vodnik Swimming Pool has started to offer more services.

This is fine, but the over-zealous pursuit of rubles is a pitfall. The same Sunday Reading Club started to charge admittance after a few meetings, although education of the masses has never been a profit-oriented activity. Furthermore, in October of last year, classes requiring fees were set up at the Severnyi Vodnik Sports Arena. Forty people pay 120

rubles per month, but the hall costs 144. In order to make a profit from the classes, it is necessary to raise the fees. That is what the management of the arena believes. Making programmes pay for themselves is a good thing, but in doing so, aren't we making it difficult for many people who use the stadiums and the gyms?

To be honest, we have some serious problems closer to home. Having created a sober society, many trade-union and Young Communist League members think that their mission is over.

At a time when we are trying to increase our efforts in creating local chapters at the workplace, we are already being bogged down by various reports required by higher authorities.

Obviously, you can't conquer drunkenness all at once. Therefore, it is necessary to seriously and painstakingly create a united front of fighters for sobriety. We must do this without a big fuss, relying on and co-operating with the administration and public organizations. In this fight, we must use to the fullest everything which restores our entire social and communal life.

Vodnyi Transport

28 January 1988

Page 3 (full text)

Mutual Accusations Lead Nowhere

Characteristic of the Tyumen' North are the numerous trailer-camps. They are there together with the derricks and the scars of the pipe-lines.

Naturally, you can't get by without them on the construction sites. However, the trailers, or shacks, as the roughnecks often call them, are a home for people who have lived here for dozens of years.

There is such a camp at the Nadym Air Transport Authority. It was from there that the editorial office received a letter with over thirty signatures. "The administration is not interested in the life of its employees," the letter stated. "The trailers in which we live have long ago rotted from the dampness; mice and rats run about in them. The camp is in an unsanitary condition, surrounded by rubbish heaps and dumps. There is nothing in the settlement for the children. Our water is trucked in and, since there are no access roads, trucks break down frequently. In the winter, the light is often turned off in the settlement. Everyone has children, and there is nothing to cook their food on. The heating is bad. However, the administration has never got the people in the settlement together to find out how we live..."

I should say right off that almost all the facts of the letter turned out to be true. There are frequent disruptions in the supply of electricity. It is cold in many of the trailers. There are problems with trucking in water and removing rubbish. Quite obviously, neither the administration nor the union local are doing their job, although sometimes even they don't have the power to do anything. We set up a meeting with the people of the camp in the auditorium of the Air Transport Authority's headquarters. We sat in coats: the small temporary boiler-house clearly was not big enough for what the people working here expect these days.

Nevertheless, I will not try to defend the administration. Was it really necessary to delay the issue of spreading sand for such a long time when it would have made it possible to pull the trailer-camp out of the bog where it has been for at least ten years? Couldn't they have agreed, without going to court, to sort out openly and in a definitive manner the utility payments which many consider to be inflated, but which, nevertheless, correspond to the current rates for the province? Why couldn't they organise two water-truck runs when it's so obvious that one tankful is not nearly enough for the settlement?

Today I want to talk about something else, about something which wasn't in the letter, but which could be read between every line. I want to talk about the comment that sounded a note of discord throughout the conversation:

"Why should be worry about it? Let the administration worry about it..."

Sure, let the administration worry. But I would like to repeat the words of someone carrying out the duties of manager of the residential maintenance office, Ms. N. Kalinina, who, by the way, lives in that very trailer-camp:

"In the summer we shipped in sand. Of course, it has to be raked and levelled. So, I put up a notice and went around the trailers - useless, the vast majority did not respond. Five people maximum showed up, but the rest said: you're the administration, you do it.

Together with the chairman of the territorial committee, we visited a number of apartments in the building which uses electricity and

heating from the same sources as the trailer-camp. The first householder demonstrated indignantly: "Look at those cracks!" And in the neighbouring apartment we were told: "It's cold in the kitchen; they say the riser's blocked. But it's possible to live in the other room, after the cracks have been caulked".

Remember the few words in the letter about rubbish heaps and dumps? Who produces them? The administration? Maybe the residents of the neighbouring, well-cared-for trailer-camp of Unit 40 of the nadym Highway Works? Could it be one of the people who signed that letter?

I think that the answer is self-evident. A great deal of what was described in the letter depends on the inhabitants of the settlement themselves. More precisely, it depends on their attitude. For example, the letter notes that there is "nothing for the children in the camp". There is, in fact, little concern for them. However, there is a court with a hockey team, and two "Young Designer" clubs. Quite recently, classes for mothers were also organized: clothing design and sewing, as well as knitting. For some reason, however, nobody seems in a hurry to sign up for them.

In talking with people, the question of the distribution of housing also arose. Although neither we, nor the previous commissions, found anything illegal, the question remains: how come people do not know why some Sidorov got an apartment this time, and not some Petrov.

"That's true, we don't shine when it comes to glasnost", agreed I. Filippov, steward of the trade-union local. "We'll do what we can right now.

Soon we'll have a radio station at the camp, and then the problem will solve itself.

However, there are two sides to every coin. As we have found out, the activists of the trade-union local, the deputy of the City Council, and dozens of others who actively take the initiative at work, all live in the camp. Why can't they take on at least part of the organization? The trailer-camp has been in existence for more than ten years, but the community council was only set up at the very end of last year. Now the ball is in its court. Let the Council, and not just a correspondent, ask P. Kamyshev, deputy commander of the Air Transport Authority's ground support services, what to do about housing repairs when there aren't even any nails at the maintenance supplies warehouse. Let him write to the Nadym City council of People's Deputies and ask why there is nothing in the local store other than tinned goods which were produced, it would seem, before the town even appeared. And let him ask at the same time those who refuse to help out in community improvement projects, who don't care about the mountains of sand, frozen solid since last autumn. His opinion, in today's conditions of democratization and openness, will hold more weight than that of a person who flew into Nadym for three or four days.

"It isn't enough to just criticize nowadays", said S. Efremov, Commander of the Air Transport Authority, at a meeting. "Put your money where your mouth is."

This is probably the only solution which will help to set things straight. As everyone knows, you've got to make things happen.

Vozdushnyi Transport
30 January 1988
Page 4 (slightly abridged)

TRANSPORT AIR

The North Needs An Airplane

A TASS and Goskomgidromet SSSR promotional demonstration flight was made on the eve of the New Year. The flight was made on the aircraft developed at the Antonov OKB (Special/Experimental Design Bureau). It was demonstrated again that such aircraft are very much needed in the North.

As early as June 1983, the Ministry of Civil Aviation and the Ministry of the Aviation Industry of USSR came to a decision regarding work on the production and testing of the An-74 aircraft. The entire programme was scheduled to be completed in 1987. This, however, was not accomplished.

Responsible personnel at the Ministry of the Aviation Industry of USSR first flatly refused to make any comments. Later, they offered us the explanation that, as the level of requirements for the aircraft at delivery was raised, corresponding new tests became necessary.

But here is the opinion of I. Mulkidzhanov, Vice-Chairman of Gosavianadzor SSSR (State Aviation Inspectorate of USSR) and chief of Gasaviaregistr SSSR (State Aviation Registry of USSR); - "The higher, so-called third-level standards of airworthiness are applicable to only some of the features of the aircraft. This could not have been the reason for the extension of deadlines". The chief designer at OKB, P. Balabuev, stated: - "It is necessary to shorten the interval between the production of experimental models and assembly-line production".

The Ministries of Civil Aviation and Aviation Industry have initiated joint test flights.

The assembly-line production of the An-74 aircraft is scheduled to begin in the fourth quarter of 1989. However, we were informed by the Ministry of Civil Aviation that the new schedule is already not being maintained.

Sovetskaya Rossiya
7 January 1988
Page 1 (full text)

New Plane In Nadym

The first An-28 airplane has been registered at the nadym Airport. It was delivered here by I. Kofel', pilot-instructor from the Ukhta Civil Aviation Administration, and co-pilot A. Gubkin.

The air transport people of Nadym prepared long and hard for this machine's arrival. They have great hopes for it. Soon training will be over for an entire group of six pilots who will begin flying this new plane aircraft.

Over the coming months, the people of Nadym will receive two more new airplanes. This will significantly increase the level of service to passengers on local air routes and, first and foremost, to the remote-camp shift workers airlifted to Yamburg.

Vozdushnyi Transport
30 January 1988
Page 1 (full text)

TRANSPORT LAND

Results Are The Best Argument

In this oblast they are calling the workers of Freight Motor Transport Enterprise No. 2 of the "Magadanavtotrans" (Magadan Motor Transport) Combine trailblazers. Last year they had already shifted to complete khozraschet (profit and loss accounting) and to self-financing on an experimental basis. How are these transport workers doing at present?

The collective concentrated its efforts on team contracting, on interchangeability and doubling-up in qualifications, on expanding the areas being served, and on introducing an automated control system.

They did not have to wait very long for the results. In a relatively short time labor productivity increased by twenty percent, considerably outstripping the cost of increased wages. The profit of this enterprise -- which was operating at a loss not too long ago -- amounted to almost half a million rubles. This enabled them to turn their attention to matters of social concern. Specifically, they began to equip a sports and health complex, started to organize a building co-operative, and to equip a parking lot for their own personal vehicles.

"Now," insists A. Tuaeov, the director of the enterprise, "our workers no longer require urging in order to search out their potentials (for improving performance). As the saying goes, the results of

their efforts are there for everyone to see. And that is the best argument in favour of the new system of self-amortization and self-financing."

Pravda

14 January 1988

Page 1 (slightly abridged)

TRANSPORT RAIL

New Railway Station Relieves Congestion

The new railway station at Surgut has had its first passengers. A grand glass and concrete building has replaced the cramped, wooden temporary structure.

"Numerous hardships befell those living in the young city who were travelling on business or vacation", says the manager of the Surgut Division of the Sverdlochk Railway, A. Bokov. Now the modern equipment at the ticket booths will eliminate the long, exhausting queues for tickets. The well-planned station will comfortably welcome more than four thousand passengers at the same time.

Sotsialisticheskaya Industriya

26 January 1988

Page 2 (full text)

Health Care - Whose Responsibility Is It?

When we read in the newspapers about the courage of the builders of the Baikal-Amur Railroad that extends across mountains, rivers, and untrodden taiga, those are not simply beautiful words. To work here, one really needs both considerable courage and excellent health. You, Viktor Nikolaevich, have been with the BAR from the first day and, of course, you remember the time when the screening for work on the BAR was almost as strict as for joining the cosmonauts. How do you explain that?

"The living conditions here are extreme. First of all, the temperature range is wide: from minus 60° in winter to plus 40° in summer. Within just 24 hours the temperature fluctuates on the average up to 20 degrees. Secondly, as the northerners say, we have ten months of winter here, all the rest is summer. And thirdly, we are rather high above sea level, hence the rarefied air and oxygen deficiency. A person coming from the country's western regions feels as if he has ascended a mountain. His body is under constant stress and, at times, a small jolt is sufficient to cause a breakdown."

I assume, the health of the BAR personnel is also affected by the social and living conditions?

"Of course. We have been aware for some time that people get sick less frequently where there is concern about their well-being and at least some comfort. In Urgal and Severomuisk there are good comfortable settlements, in Kicher even the ordinary panel residences have water and sewage service, but here, in the BAR capital, we still have many unheated railroad cars and panel structures with the "facilities" at times hundreds of meters away. In the temporary buildings, as a rule, there is dirt, lack of sanitation. No wonder that people get sick."

From the inventory of the Main Administration of the BAR construction:

Total housing - 1.670.000 square metres.
Occupied by 143,000 persons. Temporary dwellings included in the above figure - one million square metres, or four thousand residential railroad cars occupied by 100,000 people.

(Statistics of December 15, 1987).

A person working at the BAR must be particularly fitness conscious. He lives in a severe climate and more than anybody else, he needs hardening, beginning with the most simple thing - rubbing himself with a wet towel in the morning - and finishing with a workout in a gymnasium with swimming pools. A strange thing: employees of hydroelectric developments in Zeya and coal miners of Neryungri have built them, but the BAR workers have been unable to do so. Only Urgal has a swimming pool but even that one is not operational. The construction of a sport complex in Tynda did not include a swimming pool. Only this year we got our first kindergarten with a pool for the children. The State Planning Commission apparently approves the cost-cutting policy of the Ministry of Transport and the Ministry of Transport Construction, but is this the right place for cost cutting? Especially when one considers that people in the north suffer from a shortage of sunlight and vitamins...

Speaking about vitamins, do our commerce people take into account the specifics of the north when supplying groceries to the BAR?

"They do not. Our biggest problem is the lack of vegetable from approximately midwinter till almost the end of summer. Everybody, except us, are already eating fresh greens in June. Here, however, they appear only in August and in such meager quantities that kilometer-long lines appear in front of the stores. One can quote numerous other examples of the ineptness of our suppliers. There is no wide assortment of baby foods in BAR stores. Fruit and vegetable purées have become unavailable. There are few juices, and those that are unavailable come mostly in three-liter cans, whereas smaller containers would be more convenient for the buyers.

"From a report of the supply department of the BAR construction administration:

Fruit and vegetable preparations for children. The order for 1987 specified 1,700 conventional tubes. Funds were assigned for 610 tubes, 200 tubes were received.

Potatoes. Requirements - 17,000 tonnes, funds assigned for 8,250 tonnes, received 8,403 tonnes. Due to insufficient storage capacity only 6,000 tonnes of vegetables were stocked for the winter.

Other vegetables. Requirements - 12,000 tonnes, received 1,600 tonnes.

(Statistics of December 15th)

"And there is another problem: the water and soil here are poor in trace elements, for instance in fluorine. As a result tooth decay is rampant. People need fluorine-containing tablets but the funds set aside for this purpose are scanty. The stores should carry tooth paste containing this element but in fact they do not even have the simple hygienic variety.

From a letter to the editor: "We are writing you to ask for help. For some time, the dairy kitchen in Tynda has been serving powdered milk instead of natural milk, with the result that most children are suffering from diathesis. Meanwhile, we read in the newspaper that the dairy farms in our district are overfulfilling the milk-delivery quotas to the state. Where is that milk? Moreover, our stores do not have any preserved foods produced especially for children during the first year of their lives.

T. ROGACHEVA, E. GORDIENKO and others"
(altogether 30 signatures).

"Apparently, a special system is needed for northern regions, wherein everything should be taken into account - from the food a person eats to the place where he spends his summer vacation"?

Such a system is necessary indeed, but it will require considerable expenditure, which the ministries and other agencies in the BAR zone have so far tried to avoid. Caring for the population's health is for some reason considered an exclusive prerogative of the medical personnel. Besides, there are not too many of them at the construction sites or on the railroad. Our demands are not heeded when we ask that new production buildings should not be used before the ventilation system and the lighting are up to par, and that residential rooms should not be put to use as offices or for storage. "Imagine - they say - they don't like dust! We have to build the railroad, make trains run, and you come with your petty complaints..." We have become accustomed to fulfill the plan at any price, without stopping to think about the consequences, we have gotten used, as they say on the BAR, to living on a "temporary schedule". This is why there is a shortage of housing, schools, nursery schools, and why there are no country homes or parks for children, no resorts or sanatoriums.

And what was the impression gained by the Minister of Public Health of the USSR, E.I. CHAZOV, and the Minister of Public Health of the RSFSR, A.I. POTAPOV, who recently visited the BAR?

During the thirteen years of BAR's existence, the completion of health-related projects has just barely exceeded the 50% mark. The hope that

the remaining ones will be finished in the two years separating us from the scheduled completion of the entire railroad seems unrealistic to me. Especially if one considers the speed at which work is progressing, for instance, in Fevral'sk, where the bureaucrats from Krasnoyarsk supervising the construction of a hospital complex have in two years utilized only 500,000 rubles from an appropriation in excess of three millions. As for the hospital complex in Zeisk, which is supposed to be erected by Bashkir builders, even the preliminary designs are not ready.

The ministers have noted the insufficient resources and technology at the disposal of regional public health agencies. But here is a curious fact: the construction of various projects in the BAR zone has cost millions of rubles. When inquiries were made about the location of these projects, it turned out that they were rather far from the railroad: in Komsomolsk on the Amur, Blagoveshchensk, Ulan-Ude, and so on. It means that these departments are solving their problems at the BAR's expense, apparently assuming that the rich ministries of transport and transport construction themselves will provide for the population's needs. Most likely, this is why the construction of a hospital in Ust' Kut has experienced prolonged delays, and the maternity ward built in the BAR capital has only 60 beds even though the demand is twice as large. Moreover, the maternity ward lacks water and sewage service.

From a letter addressed to BAR's medico-sanitary service by P. Us, resident physician of the hospital in the settlement of Taksimo:

"The creation of the new district of Muiszk with the administrative center in Taksimo, and the transfer to this area of subdivisions of the ministries of nonferrous metallurgy, power engineering, geology, mining and others, have put us in a very difficult situation. The settlement's population is growing. To provide medical care, we shall soon need a hospital with 280 beds and a polyclinic capable of handling 400 patients per shift, with a chance for further expansion. Meanwhile, the local health-care agencies here have not completed a single project and, realistically, will be unable to do it before 1993-1995. Consequently, the onus will be on the railroad hospital of Taksimo. The latter, however, will have only 50 beds, a polyclinic capable of attending to 150 patients, and a maternity ward with 8 beds..."

The situation at the Taksimo hospital is a graphic illustration of the deplorable results of the lack of co-ordination between the various departments. It seems that the Ministry of Transport and the local health-care agencies are each defending their own interests, and the patients will be the chief losers. It is unfortunate when disagreements appear between builders and railroad men but it is worse when those responsible for public health heap accusations on each other. The damage done can be unpredictable.

I agree with you. In our railroad hospital in Tynda, the newest equipment stands unused: the Soviet-made thermovisor and the four Hungarian therapeutic diagnostic complexes do not work, the "artificial kidney", the cardio-complex, and the x-ray equipment are often out of order. The specialists from the Department of Medical Technology barely do any preventive maintenance, they work like

firemen, that is when there is a breakdown. Our remarks and requests are disregarded by the Amur regional administration of the Department of Medical Technology; we do not come under its jurisdiction. The same lack of co-ordination, in my opinion, also prevents the creation of a reliable and efficient "life security" system in the BAR zone. True, a program dubbed "Health" has been developed for builders and railroad men but it has elicited no interest on the part of enterprise managers. This is understandable - they are responsible for fulfilling the plan and not for the health of their workers. So until this policy changes, we shall not progress beyond wishful thinking. However, it is time that we all realized that health is a national asset and that it must not be squandered so thoughtlessly.

Gudok

21 January 1988

Page 3 (slightly abridged)

MISCELLANEOUS

A Work Coverall Of Basalt

N. Manzhury, manager of the division of building materials of the "Orgtekhstroi" trust is holding in his hands a seemingly ordinary-looking work coverall with a hood. Nevertheless, this is an experimental model manufactured at the Nadym mining service plant.

The designers have suggested the garment be used by construction workers at the Yamburg and Yamal arctic gas fields.

The manager says: - "This is not any worse than a sheepskin coat. For the first time in the practice of manufacture of work clothes, superfine basalt fibre fabric, an excellent insulator, was used here for padding.

It is true that only a single sample of the outfit was made. At present the padding layer is ten millimetres thick, each basalt fibre being 1 micron in thickness. The specialists at the plant believe that the thermoinsulation effect can be increased considerably if the fibre thickness can be reduced by half. This is currently being pursued simultaneously in three places, Nadym, Yamburg and Labytnangi, where basalt fibre manufacturing equipment is in operation.

The new material is said to be superfine and is very inexpensive to produce. However, there are still reasons for concern.

For instance, who would set up the mass production of this garment, considering that the light industry sector, as in the past, will stay

away? Nevertheless, the participation of the Ministry of Light Industry would not be amiss. It must be remembered that about twenty thousand such outfits would be needed just for Glavyamburgneftegazstroi (Main Yamburg Petroleum Gas Construction).

Trud

8 January, 1988

Page 4 (full text)

Chukchee Ginseng

Rantarin -- that is the name that Far Eastern specialists have given to a compound that acts as a general tonic, which they have obtained from the antlers of the domestic northern reindeer. By virtue of its medicinal properties, rantarin can successfully compete with the famous ginseng.

We know that in earlier days people utilized horns primarily from the axis deer and from the Manchurian wapiti for medicinal purposes. The demands of the pharmaceutical industry are constantly increasing, now specialists have developed a compound equal in value to pantocrin (which is also obtained from reindeer horns).

The sovkhoses of the Far North, particularly those of the Chukchee peninsula -- where the largest herds of domestic reindeer in the Soviet Union graze -- have prepared a record quantity of valuable pharmaceutical raw material for the coming season.

Izvestiya

18 January 1988

Page 2 (full text)

Attacking The Bowels Of The Earth

The collective of the Kola Expedition for Super Deep Drilling from the USSR Ministry of Geology, has completed preparations for a new phase in the deepest drilling project in the world. Geologists are planning to reach the fourteen-kilometer mark during the current five-year plan.

Everyone is aware that the drillers have broken a passageway down to a depth of 12,066 meters. To do this required a considerable amount of scientific research, a partial upgrading of equipment, and the refinement and specialization of drilling technology to enable it to function at a new level. The borehole itself also required servicing, even though it has been put down in hard crystalline rock.

This is why at a depth of 8,770 meters they lowered steel pipe with a diameter of 245 mm into the shaft. Nowhere else in the world has it been possible, before now, to successfully reinforce a borehole with a well casing of such diameter and length. This operation in itself is already an important achievement on the part of the geologists. But most important of all, the assault on the bowels of the earth can now continue.

"Naturally, it is an extremely complex matter to reach a depth of fourteen kilometers," said D. Guberman, Director of the Kola Expedition, "but the collective is counting on success. We possess

excellent domestic equipment, while the people involved have acquired outstanding experience during the previous phases of the ultradeep drilling."

Sotsialisticheskaya Industriya

20 January 1988

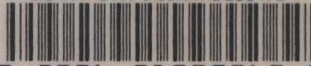
Page 1 (slightly abridged)

Attacking the
Super Deep Drilling
Geology
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Geologists
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plan.
(text full) 2 pages
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equipment, and the refinement and specialization of
drilling technology. Research is continuing at a new
level. The scientists are working to improve the
even though the downward movement of the drill bit
rock. The scientists are working to improve the
nascent technology. The scientists are working to improve the
This technology is being used to improve the
lowered steel pipe with a diameter of 345 mm into the
shaft. The scientists are working to improve the
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important part of the shaft. The scientists are working to improve the
But most of all, the scientists are working to improve the
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18 January 1988
Page 1 (text full) 2 pages



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