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EXTERNAL AFFAIRS  
OTTAWA,  
CANADA

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EXTRACTS FROM THE SOVIET PRESS ON USSR FORESTRY  
AND FOREST-BASED INDUSTRIES  
MAY 1989



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According to data from the plant laboratory the physical and mechanical properties of the boards have become stronger. The improvements in their quality and reduction in toxicity are especially marked. The production process now contains less formaldehyde - the odorous, strong-swelling gas. After installing the production line the concentration of free formaldehyde dropped to 2-11 milligrammes per 100 grammes of dry board. This meets the world standard.

Another fundamental problem - variations in the thickness of the boards - was also solved. Previously they had to be calibrated by stripping the upper layers to 3 millimetres. In the new boards this defect is virtually eliminated.

Today the wholesale price of a cubic metre of these wood particle boards is 12 roubles higher than what they cost previously. But as the saying goes, you can't put a price on health.



## TIMBER AND WOODWORKING

### Imported Technology Produces Better and Safer Wood Particle Board

Needless to say, new machinery is radically altering the wood particle board production process. For instance, at the Volgodon timber - handling plant of the "Yugmebel" Territorial Scientific-Production Association, several years ago the old low-capacity equipment was replaced by imported plant manufactured by the "Bison" Company. In contrast to the previously produced multi-stage production lines the imported ones are single-stage, twinned, with large-format molds.

According to data from the plant laboratory the physical and mechanical properties of the boards have become stronger. The improvements in their quality and reduction in toxicity are especially marked. The production process now contains less formaldehyde - the colourless, strong-smelling gas. After installing the production line the concentration of free formaldehyde dropped to 8-12 milligrammes per 100 grammes of dry board. This meets the world standard.

Another fundamental problem - variations in the thickness of the boards - was also solved. Previously they had to be calibrated by stripping the upper layers to 5 millimetres. In the new boards this defect is virtually eliminated.

Today the wholesale price of a cubic metre of these wood particle boards is 22 roubles higher than what they cost previously. But as the saying goes, you can't put a price on health.

Lesnaya promyshlennost'

May 18, 1989

Page 1 (Full text)

Profile of the Kondopoga Forestry and Woodworking Establishment

The Kondopoga forest industries establishment (lespromkhoz) is a composite enterprise. It incorporates two former forest farms (leskhoz), a lespromkhoz, and a woodworking plant that was acquired during the last twelve months. Although we now have multi-plan industrial production and a vast labour collective, forestry-related problems, as before, continue to be among the most pressing. We are acting as consultant to the Forest Institute of the Karelian Branch of the USSR Academy of Sciences in matters relating to the intensification of forest management and the industrial phasing in of advanced methods of sustained forest use. Also, we are collaborating with the Petrozavodsk forest experimental station of the Leningrad-based Forestry Research Institute and are assisting with the industrial assimilation of scientific solutions relative to eight subject areas that are currently of central interest.

\* \* \*

Take, for example, the tending of forest plantations in the primary seed nursery. All of the areas there are rapidly becoming overgrown with weeds and it is very difficult to keep them down manually. In this regard also, we have received valuable help from Senior Engineer A. Krishel' of the Forest Institute and on his recommendation have begun using herbicides such as Goal, Velpar and Glifosat, with encouraging results.

Co-workers of a reforestation and forest protection laboratory have assisted us in protecting the nursery seedlings against diseases and harmful

insects. Work is also in progress with a view to selecting the most effective fungicides.

Already we are experiencing the benefits of this collaboration. In the last few years there has been no substantial exfoliation of planting material in the nursery. In 1987 we succeeded in growing there more than 16,000,000 seedlings of coniferous species as against a planned figure of 13,700,000. The lespromkhoz earned more than 150,000 roubles in net profit from sales of the seedlings in the spring of 1988. We sold our planting material to 16 enterprises of the Karelian Forest Complex.

We have been much occupied recently in establishing a permanent forest seed stock based on selection principles. In our opinion, this is the principal task facing enterprises of the Forest Complex. Without access to our own seed stock, and consequently to our own planting material, it would be impossible to achieve a dramatic increase in the productivity of newly established plantations. Selection methods open the way to substantial improvement in the quality of arboreal species and to increases in their increment per unit of area. Accordingly, in the past year we have carried out a matching of forest seed orchards in four forest districts and in certain of them have embarked on the first intensive thinning.

With the object of determining the possibility of obtaining an additional softwood increment per unit of area through the introduction of composite tending, the latter including thinning and the application of fertilisers, in 1988 an experimental stand was established in a two-storeyed

broad-leaved and spruce plantation. In it the entire complex of operations is being conducted solely with the use of wheel-based machinery.

Under the supervision of co-workers of the Petrozavodsk experimental station we are introducing a set of measures aimed at development of techniques for the accelerated production of coniferous raw material in pine stands. The purpose is the same: to obtain full-value softwood more rapidly and maximise the productivity of the stands. All this is being accomplished by carrying out various types of tendings, the use of mineral fertilisers and thinnings of differing intensities. Whereas our average increment of timber is normally about 1.6 cubic metres per hectare, in the experimental stands it is about 13 cubic metres. While the difference, as will be seen, is very appreciable, it is well worth the effort to try and achieve it.

Since 1987 our lespromkhoz has been involved in the assimilation of technology and felling methods in mixed broad-leaved and spruce stands undergoing reclamation. The first experimental fellings, performed as early as 1983 in an area of four hectares, yielded encouraging results. Surveys have indicated that in these stands, pure spruce forests in a good sanitary condition have become established. The additional increment of timber per hectare is 2.3 cubic metres.

In the lespromkhoz, new machinery and equipment, and also forestry implements, are also being systematically introduced. Examples of this are the KOK-2 roller-culture releaser, the LO-2 hole-former, and the T-16 tractor-mounted cultivator-plant feeder, manufactured to the

specifications of senior engineer V. Tychin of the Laboratory of Technical Problems at the Forest Institute.

In the complexes, however, a large number of problems continue to be unresolved. In this age of electronics, cybernetics, automation and mechanization of production processes the forestry workers are clearly not at the forefront of scientific and technical progress. The foresters are still experiencing an acute shortage of tree planting machines and soil preparation implements. No NV-1 attachments, for example, have been received during the last ten years. No wonder we have sub-standard soil preparation, breakages of implements and a sharp decline in the productivity of labour. Or consider the PLS-2 implement, which was tested as long ago as 1979 and was even mentioned for an award at the USSR Exhibition of National Economic Achievements. It has still not been tooled up for production on an industrial scale.

Also falling short of modern requirements are the "Sekor-3" motorized units produced by the "Silava" Scientific-Production Association for improvement felling of young stands. These machines ought to be more reliable, lighter and easier to operate. For the forest nurseries there is a need for combined plant feeder-cultivators, SKP-6 seeders, herbicides and fungicides.

We are not even in receipt of goniometric instruments such as the BG-1 compass. In the absence of precise attachments it is impossible to achieve the required quality in the marking out of coupes. Also unavailable are simple, inexpensive attachments and machines for the collection of cones from standing trees, and good, domestically manufactured

wheeled tractors for doing improvement fellings. Under conditions such as these, how are we to raise the standard of forest management and achieve inexhaustible, sustained forest use?

(Article signed by M. Nikolaev, Head Forester).

Lesnaya promyshlennost'

May 11, 1989

Page 2 (Full text)

Some Data on the Archangel Timber and Woodworking Association

At the very centre of Archangel, on the banks of the Severnaya Dvina, is Timber Industry House. Here will be found the headquarters of one of the largest associations of forest-based industries in the country - "Arkhangel'sklesprom". Altogether, 205 enterprises and organizations make up the territorial production association. In all, 154,000 people are employed within the complex, which brings together loggers, foresters, papermakers, woodworkers, timber floaters and representatives of a wide diversity of trades.

The association is already a multimillionaire: commodity output in a single year amounted to one billion, 938 million roubles.

This is the second year that the Archangel people have been working under conditions of full profit-and-loss accounting and self-financing. This is approximately the time span since V.S. Lykhov was appointed General Director of the collective. It

would seem that he has every reason to be satisfied with the initial steps, in that the financial situation of the enterprises has improved and for the first time in many years there has been overfulfillment of the plan for profit. Also, the increase in labour productivity in relation to salaries has improved, which today is one of the most important indices of all.

But despite the successes to hand, the concerns and fears of the General Director are greater than the satisfactions.

\* \* \*

Q. "Valerii Stepanovich, at a recent plenary session of the Central Committee of the Trade Union and the Collegium of the USSR Ministry of the Timber Industry, problems relating to the social conditions in our sector were examined. "Arkhangel'sklesprom" was heavily criticised over housing, construction of pre-school institutions and the output of consumer goods. We found confirmation of this in the course of visits to a number of your enterprises. There were numerous complaints about poor working conditions, sub-standard living accommodation and food etc."

A. "Agreed. But these problems did not come into being yesterday. And I am convinced that no wave of a magic wand will make them go away tomorrow. For they are underlain by a composite of errors: economic, social, psychological and ecological. I could continue the list. The problem is, which thread should be pulled if we are to untangle this ball? Where is the main link in the chain that must be grasped? There is no single answer. One thing is clear: each of us must embark

on perestroika independently and each must answer for it, again primarily as an individual.

"Judge for yourself: the furniture manufacturers of the "Severnaya Dvina" Association may be upset over the high prices of vegetables arriving from the State farms. In turn, the rural folk have a right to criticise our workers over the fact that they are not producing modestly priced goods, and are only "pushing" expensive ones. So, if you want something "sweet tasting" you must think about what the others want. Any recipes for better living ultimately amounts to one thing: as you yourself work, so also will you live".

Q. "So, how are things working out for you?"

A. "It's difficult to say. We are still in the process of evolving. We are considering proposals from the Oblast's papermakers that an association of enterprises be formed. There is also the initial experience of the leasing arrangements. In all, 90 crews are working, as well as an entire mill which the collective "bailed out", after the Bank for Industrial Construction (Promstroibank) had declared it uncreditworthy. Fifty integrated timber industry and forestry enterprises (lespromkhozy) are in the making, bringing together under one roof both foresters and loggers.

"In short, there is plenty to do. It's not for nothing that we in the administration are working a six day week, and even so, there is only just enough time for everything."

Q. "But what are you finding most difficult just now?"

A. "It seems to me that the implementation of a radical reform amongst forest wardens is proving extremely painful on account of the aggravation of contradictions between the old chain of command system of administration that is in the process of dying out and the economic system that has come into being. Today, no one needs dependents. We are even considering a cut in the size of the headquarters staff, which would be especially helpful where there are sawmilling problems. It is too multilayered and gives rise to too many criticisms.

"Think of how much time is lost through the duplication of responsibilities, grandfather's methods of operation, and the lack of computerization? Even the children in the kindergarten at the Solombala Pulp and Paper Combine already have their first five computers. And this while adult uncles are only now being initiated into what has become the norm and a prime necessity throughout the world. I have just paid a visit to West Germany. Certainly the Germans and ourselves are oceans apart with respect to the organization of labour and production. One feels ashamed of our backwardness."

Q. "Incidentally, how are your relations with the USSR Ministry of the Timber Industry and its services?"

A. "This is a difficult question and one that has been painful to deal with. We do, of course, have a common task and are pulling in the same traces. But ...

"Here is a typical scenario. We are meeting with our sub-contractors and with officials of the Party and local council, shall we say, at the Oblast'

Committee of the CPSU, and are discussing the next directive from on-high. And we think: time is passing and perestroika, they tell us, is gathering momentum. So why aren't the ministries and departments bearing their share of responsibility for the economic consequences of the decisions taken, and why are they continually interfering with the day-to-day management of our enterprises? Isn't there something illogical about the instruction from USSR Ministry of the Timber Industry to send millions of cubic metres of timber outside the Oblast' at a time when the sawmills at Archangel are standing idle due to a shortage of raw material? We have named our northern sawmill our "hole of debt" and feel ashamed to look people in the eye when they are "burning up" over the idle power saw benches, are losing wages and losing faith in the capacity of their administrators to put things right.

"Is it not paradoxical that we are shipping out timber in all directions and bringing it in from Tyumen', Sverdlovsk and Krasnoyarsk?

"Another bitter pill is the practice of drawing up the State order (Goszakaz). ... In 1988 and 1989 we repeatedly attempted to prove at Minlesprom SSSR the unrealism of the Goszakaz. For consumer goods other than foodstuffs it was set at 161 million roubles in 1988 and 191 million in the current year. The Association considers 112 and 126 million roubles to be more realistic figures. "You are calculating on the low side", they tell us, and everything remains as before. What sort of independence is this? There are dozens of similar examples.

"We annually transfer to a centralised fund a sum of about 300 million roubles. A part of these

funds are spent on maintaining the headquarters staff. Yet they hardly help us at all now."

Q. "Let's get back to the social problems. You are now becoming (we are no longer afraid of the word) a banker and an entrepreneur, in that you are earning foreign currency. Are you able to spend it in the interests of your employees, and if so, how much could you spend?"

"The question is in the spirit of the times. But alas! the answer will be in the old style. I'm almost unable to say. Some 55 million roubles worth of foreign currency is being held to the credit of "Arkhangel'sklesprom" enterprises, which would be more than enough for us to build an up-to-date mill and purchase new production lines. This is what we have in mind.

"For the present, however, when there is nothing to buy in the shops, our first thought must be what to feed and clothe people with. It is extremely regrettable that so little is being done to meet their needs, even though we are doing what we are permitted to do. For example, we have received half a million roubles worth of confectionery from abroad. This is, of course, a drop in the bucket. It is in order to convert it into a flood that we will be expanding our coastal trade with the Scandinavian countries. Since April we have been granted the right to sell independently on world markets production that is over and above the plan. I don't think we shall let the opportunity slip."

Lesnaya promyshlennost'

May 27, 1989

Page 3 (Slightly abridged)

Unsatisfactory State of Logging Roads to be Remedied  
by New Road Design

In our sector there has been a marked decline in the volumes of timber hauled in summer. The reason? The unsatisfactory state of the logging roads. Whereas a quarter of a century ago more than 40 per cent of the annual timber haulage plan was fulfilled in the second and third quarters, latterly this has dropped to less than a third.

Two examples illustrate this. The Kordon logging enterprise of the "Permlesprom" Association uses 24 tractor-driven timber haulage 'trains' built at the Minsk motor vehicle plant to remove about 150,000 cubic metres of timber annually. Due to the poor state of the roads and the softness of the road surface the efficiency of the major logging roads in the spring and autumn and in part during the summer, is limited. It is for this reason that in comparison with the indices for the USSR as a whole, the load per 'train' has been reduced by more than half. Furthermore, the planned capacity at haulage distances of up to 55 kilometres does not exceed 12 cubic metres.

On the other hand, we have the Barguzin timber combine of the "Zabaikalles" Association which hauls out 700,000 cubic metres annually, using 39 single assembly and dual assembly 'trains' built at the Krasnoyarsk motor vehicle plant. Here, the capacity per shift of the single assembly 'train' over the distance cited for the Perm' 'trains' is 36.6 "cubes".

Such are the advantages of using good roads. Until now, however, we have paid scant attention to their quality, even though expenditures

on timber haulage are four times what is spent on procurement and skidding, taken together. Surely, in order to improve the economic performance of the enterprise and make primary conversion and extraction profitable, our prime area of concern should be to ensure that the major logging roads to the felling areas are dependable and that they are used the year round.

There are two ways of improving matters. The first is the traditional way: construction and reconstruction of roads, using improved light and heavy-duty types of road surfacings. This would impose a heavy burden on the sector costing four to six billion roubles annually. It is not easy to find scarce road-building materials, asphalt and cement. Nor would this be feasible without additional road-building machinery and labour. The second way is to use all the potentialities of the road structures, reduce the widths of the roadways so as to economise on the use of expensive and scarce stone materials, and employ flexible interlayers and bearing components in the construction of major logging roads.

This is precisely what is being done in the more progressive foreign countries. In the USA, for example, about 10,000 kilometres of logging roads are built annually. The width of their roadways is 3.5 metres. Earth works are reduced to a minimum in order to preserve the surface vegetation and avoid interference with the drainage and the resulting soil erosion.

The environmental protection requirements are also very stringent in Canada. There, any activities conflicting with ecological requirements are ruled out. Road surfaces are mainly of the

gravel (macadam) type, providing for a traffic density of up to 300 motor vehicles at speeds of up to 100 kilometres per hour.

The state of the roads is also adversely affected by such factors as lack of dependable drainage, weak compaction of the earth materials and an elevated moisture content of the latter. Unfortunately, this was not given full consideration when formulating the prevailing "Technical and Economic Factors for the Planning of Logging Enterprises".

Analyses and experience in the operation of roads with flexible interlayers in the Archangel, Kalinin and Tyumen' Oblasts and the Krasnoyarsk Krai indicate that the new design is conducive to the preservation of a smooth surface and improves the quality of the road. In our sector, there is currently a cautious approach to the use of interlayers made of woven and non-woven synthetic materials in the form of used cloth and metal gauze, and also of the burlap-lined paper developed by the Segezha Pulp and Paper Combine which could be produced in large quantities.

The new design for logging roads includes a gravel (macadam) surface and flexible interlayers. Additional sub-surface "support" is obtainable by using synthetic gauze with a mesh ranging from 0.05 to 0.4 metres, felling residues etc. Depending on the actual conditions prevailing, the use of such designs will make it possible to curtail earth works by 20 to 60 per cent, decrease timber consumption to between a half and a third, and what is most important, lengthen by 1.5- to 2-fold the service life of major logging roads without disturbing the ecology, while preserving the surface vegetation over an area of about two hectares per kilometre of road.

The new design was developed at the Central Scientific Research Institute for Mechanization and Power Engineering in the Timber Industry (TsNIIME). It is classed as an invention and is therefore protected by an inventor's certificate. The "Orgtekhlesstroi" Trust and TsNIIME can provide assistance in the introduction of flexible interlayers when road building is in progress. We are assuming responsibility for road design development and provision of engineering consultation in the building of dependable major roads. The intention is to establish a specialized road building sub-unit with new designs to meet orders placed by enterprises.

(Signed by the Director of "Orgtekhlesstroi and a co-worker of TsNIIME).

Lesnaya promyshlennost'  
May 6, 1989  
Page 2 (Full text)

Boundaries of Planned Coupes to be Determined for Integrated Enterprises Rather Than Administrative Districts

The editors have received from the USSR Ministry of the Timber Industry an official reply to an article published in this newspaper on March 28, 1989 under the heading "How to Divide the Coupe". It reads as follows: "The article correctly points out that no formal approach to the determination of the boundaries of integrated forest enterprises and consequently, of the planned coupe for the entities being formed, is possible. Here, all of the factors influencing the scope of forest use and the

administration of territories should be taken into account. It is necessary to point out that the proposals regarding the boundaries of integrated forest enterprises were drawn up at the "Permlesprom" Association, with the participation of the author.

The decisions taken earlier with respect to the boundaries of integrated timber industry enterprises and the dimensions of planned coupes have now been reviewed and corrected to conform to the available timber resources and the capacities of the integrated enterprises."

It is impossible to agree with the suggestion that a calculated coupe be determined for the administrative district rather than for the enterprises. There is no justification whatsoever for the statement that in this way "the ecological requirements of regions and the capacities for satisfying local requirements for wood in the long term will be taken into consideration". On the contrary, the suggestion that there should be a calculated coupe for the administrative district where there are two or more integrated enterprises will lead to the enterprises being relieved of responsibility for forest resource utilization and for implementation of reforestation and forest protection and conservation programmes.

The formation of integrated forest enterprises has provided for the most efficient and rational use of all of the benefits of the forest in the consolidated forest area assigned to the enterprise.

This applies not only to forest use, but also to the improvement of forests and the strengthening of their protective and other useful properties.

When determining a calculated coupe for an administrative district with logging to be conducted outside the boundaries of the particular integrated enterprise, the latter would be deprived of the opportunity of executing the indicated tasks to the fullest extent possible.

(Signed by the Deputy Head of the Chief Directorate for Forestry of the USSR Ministry of the Timber Industry).

Lesnaya promyshlennost'  
May 23, 1989  
Page 3 (Full text)

Omsk Timber Industry Association Linked by Fax

In a matter of minutes it will now be possible for the "Omsklesprom" Association to transmit a written communication or graphic material to any point in the country by means of the "Okifax" computerised system installed at its on-line technical communications centre.

The new communications facility has already linked the Association with all of its enterprises, the Ministry and many sub-contracting plants in other cities. And this is only the beginning. For the capabilities of the system are such that by means of an encoded signal it can also communicate with other countries, while its computer memory bank can store and systematize collected information.

The telexes installed at "Omsklesprom" were manufactured and supplied to the Siberians by the Japanese firm "Oki".

Lesnaya promyshlennost'

May 11, 1989

Page 1 (Full text)

Statistics on Time Lost Due to Industrial Illness and the Housing Shortage

In his speech, the Chairman of the Central Committee of the Trade Union paid special attention to the status of health promotion work and the realization of the "Health" programme. Last year, sickness resulted in a loss to the sector of more than 31 million working days, with about 120,000 people failing to report for work on an average day. More than 232 million roubles were paid out on medical certificates, which was 38 per cent of all the disbursements under the social insurance budget. An analysis indicates that up to 70 per cent of the losses of working time are a consequence of sicknesses related to the working conditions, technology or production processes, level of mechanization, automation and industrial hygiene.

\* \* \*

In critically evaluating the work done by enterprises of the USSR Ministry of the Timber Industry (Minlesprom SSSR) and the USSR State Committee for Forestry (Goskomles SSSR) since the start of the Five-Year Plan with respect to development in the social sphere, we are bound to say that the solution of the main task - ensuring that by

the year 2000 every family will have a self-contained apartment or house - gives cause for well founded alarm. Despite the fact that, for Minlesprom SSSR and Goskomles SSSR as a whole the three-year plan for the commissioning of new housing has been fulfilled, more than 310,000 people, including more than 50,000 forestry workers, are waiting in line for improved living quarters, and about 800,000 people are living in dilapidated houses. It is because of unsatisfactory living conditions that more than 12 per cent of the total number of employees who leave of their own choosing are quitting their jobs in the sector. (Excerpt from an article by the Chairman of the Central Committee of the Trade Union.)

Lesnaya promyshlennost'

May 18, 1989

Page 1 (Abridged)

Lesnaya promyshlennost'  
May 2, 1989  
Page 1 (Full text)

PULP AND PAPER

Deliveries of Waste Paper to Ministry of Timber Industry to be Stepped Up

The Department of Paper Production and the Department of Secondary Resources of USSR Gosplan (State Planning Commission) have reviewed the article "The Machines Have Stopped" which appeared in the January 28, 1989 edition of "Lesnaya Promyshlennost'", and report that the supplying of pulp to enterprises of the USSR Ministry of the Timber Industry is being handled by the Ministry's Glavnab (Chief Directorate for Supply). The 1989 requirement of its enterprises for imported pulp was determined after taking the needs of the economy into consideration and was ratified on January 23 by Deputy Minister Guskov.

In the course of the last few years the paper processing plants of the USSR Ministry of the Timber Industry have planned deliveries of 1,250,000 tonnes of waste paper. For 1989, contracts have been concluded for deliveries of 1,300,000 tonnes of waste paper. But new capacities for converting it have not been introduced. Currently, steps are being taken to increase the volumes of waste paper procured and delivered. By a decision of the collegium of USSR Gosplan dated December 6, 1988 an additional assignment for procurement and delivery of waste paper has been given to the procurement enterprises of USSR Gosplan.

Lesnaya promyshlennost'

May 9, 1989

Page 2 (Full text)

Expansion of Paper Production Capacity at Svetogorsk

A new plant in the Leningrad Oblast to be incorporated in the fourth stage of the Svetogorsk Pulp-and-Paper Combine, now under construction, will provide for an annual output of 40,000 tonnes of various kinds of paper. The plant was built by a Finnish firm and the equipment assembled by Soviet organizations. The partners adhered strictly to the work schedule in order that production would begin on time. The joint venture will further reinforce the mutually advantageous contacts between the Soviet Union and Finland.

Lesnaya promyshlennost'

May 25, 1989

Page 1 (Full text)

## FORESTRY

### The Urals - Increased Emphasis on Mechanized Planting

The Uralians are waiting for warm spring weather in order to begin the sowing and planting out of new trees. During the current year the Sverdlovsk Forestry Association must plant out 12,000 hectares. A third of the work will be done mechanically.

The Uralian foresters are actively promoting the use of industrial technology for planting out large timber trees (by means of the LMD-81 machine). The new technology is more efficient. The forest farms have received eight more Davidenko machines this year, as well as six MUP-4 units for sawing up stumps.

In order to have sufficient large-diameter planting material, there has been a twofold increase in the number of transplant nurseries. Whereas last year 8 million "large trees" were grown, this year there are to be 15 million.

Lesnaya promyshlennost'

May 6, 1989

Page 1 (Full text)

### Large-Scale Plantings in the Mugan' Steppe Region

The foresters of the Mugan' are reviving the beauty of the riparian forests at the confluence of the Kura and Araks rivers. The collective of the local forest farm, which is engaged in large-scale plantings of acclimatized species of trees, has already planted out about 50,000 saplings.

Riparian forests grow predominantly along river banks and are highly resistant to the unfavourable conditions resulting from the hot climate here. Long-time residents recall that in the middle and lower course of the Kura the banks were covered with dense thickets of trees. However, human economic activity has been exceedingly harmful to them.

The first thing the foresters did was to establish some small seed orchards, where they concentrated on growing saplings and cuttings of undemanding trees such as oleaster, ash and pine. In a single year, more than 100,000 cuttings and hundreds of kilogrammes of seed material have been obtained.

Lesnaya promyshlennost'

May 6, 1989

Page 1 (Full text)

### Major Shortcomings in the Arrangements for Combatting Forest Fires

Every year, between 12,000 and 30,000 forest fires are recorded in our country. Fire envelops up to two million hectares of forest lands. This is commensurate with the area of principal felling and the volumes of reforestation work. What is the situation today among those who are responsible for fighting forest fires and minimizing the resulting losses? This problem was the subject of a "round table," organized by our editorial staff at the offices of the Production Association for Aerial Protection of Forests in Pushkino, Moscow Oblast'.

Participating were G. Korovin, the Deputy Chairman of the USSR State Committee for Forestry (Goskomles); P. Barsukov, Deputy Minister of Forestry for the RSFSR; N. Pavlinov, Head of the Department of Forest Protection and Conservation, RSFSR Ministry of Forestry; M. Afrin, Chief Forester of the USSR Ministry of the Timber Industry (Minlesprom SSSR); I. Shelkan, Deputy Head of the Main Control and Inspection Directorate of the State Committee for the Environment (Goskompriroda); N. Andreev, General Director of the Association for Aerial Protection of Forests (Avialesokhrana); A. Spiridonov, a smoke-jumper of the Suoyarvskii Air Detachment; Yu. Golubev, Senior Air Observer of the Ukhta Air Detachment; I. Plaksin, Senior Instructor of the Syktyvkar' Air Base; and G. Shchedrin, Chief of the Northwestern Air Base.

\* \* \*

Korovin. "Today, as never before, forest fires are giving cause for anxiety among specialists and the general public alike. This stems from the fact that the ecological and socioeconomic requirements for the conservation of all kinds of natural resources are becoming increasingly urgent. At best, the most that we have been able to do is to stabilize the danger of forest fires. We are not in a position to lessen it.

"What is the principal cause of this situation? I would single out two main factors. Firstly, the shortage of trained specialists, financial and material resources. Secondly, imperfections in the organizational structure and operational machinery of the protection system. This is a consequence of the prevailing notion that natural resource use is cost-free and that, arising

from the lack of a cadastral assessment of the forests, forest resources are inexhaustible. The estimated loss due to fires is little more than symbolic. Until now, air protection has been financed on the residual principle. Hence the shortages of materials, equipment and trained personnel. The situation is further aggravated by shortcomings in the system of remuneration. Until now our workers have had no material interest in the end result of their efforts to put out fires. We are in the midst of the situation typical our times, in which administrative - command methods are being outmoded and no effective economic methods have as yet been devised."

Q. "The land areas of our country are enormous and the danger of forest fires varies sharply, both regionally and seasonally. Every year we are confronted with anomalous weather phenomena in at least two or three areas of the country, where forest fires are virtually a natural calamity. What kind of administrative system do you envisage with respect to fire prevention and control under these conditions?"

Korovin. "It must be sufficiently flexible and capable of augmenting the facilities for extinguishing fires as the situation changes. To this end it is necessary above all else to have a centralised on-line operations service. Today, several ministries and departments are concerned with fire prevention and control and when the need arises, local resources are also made available. But so far, no centralised on-line operations service has been established. We need to solve this problem as soon as possible. The task is one of considerable magnitude. As a first priority we need to set up a well defined communications system. The one we have at present has many shortcomings. The administration

of the air and ground services should be unified, a regular timetable worked out, and additional expenditures budgeted. This work has already begun."

Q. "Last year a whole series of forestry enterprises were placed under the jurisdiction of the USSR Ministry of the Timber Industry. Accordingly, the question that arises is "Was the department sufficiently prepared for solving problems pertaining to protecting the forests against fires?"

Afrin. "Currently, about a hundred integrated enterprises are operating in our system. A special department has been formed within the USSR Ministry of the Timber Industry, which will be concerned with forest protection and conservation. A whole series of measures have already been instituted with a view to strengthening our links with the USSR State Committee for Forests, the Ministry of Internal Affairs and local bodies in matters to do with fire control. On the eve of the forest fires season, jointly with the foresters, exercises were held in Sverdlovsk, where the most efficient methods to date of combatting the fire hazard were worked out."

Q. "In the mail reaching the editors a fair number of letters refer to the staff cuts that are occurring on account of the transition to self-financing and the profit-and-loss system of accounting. Does this apply to forestry workers?"

Afrin. "We have been given a clear directive: in any reorganization, all possible steps must be taken to retain this category of employees. But for the sake of objectivity we have to acknowledge that there is a negative bias towards staff cuts."

Andreev. "We have already approached the government on two occasions with a request that additional funds be allocated for the purpose of retaining a nucleus of specialists and increasing the material incentives offered to them. Until now, however, we have not received any support. Although a salary increase from 90 to 120-130 roubles has been authorized, this is unfortunately because of a staff cut."

Korovin. "The way out of this situation seems to be to include aerial protection of the forests in the State Order (Goszakaz) and resort to State budgetary norms for its funding. It cannot be made dependent on the profitability of forestry enterprises and the day-to-day results of their economic activity. It is another thing altogether that the State, in allocating funds for forest protection, should receive compensation in the form of a payment for forest use."

Barsukov. "Fire protection of the forests might also be financed from a special fund, although at present this doesn't exist. It could be variously named, for example, an Insurance Fund or a Reserve Fund. There are also the widely levied fines and penalties for starting forest fires. These monies are currently escaping into the budget and it is as if we have been disinherited of them. It would be much more beneficial to channel them into such a Fund, organized on a District, Oblast, Republic, or perhaps even an All-Union scale. In the RSFSR alone, fines and penalties annually amount to between 45 and 50 million roubles. Yet for aerial protection in the current year it is planned to allocate about 89 million roubles from the budget. If only half of the monies being received from fines were placed in the Fund and the promotion of fire protection activity

were financed in this way, we would solve many problems."

Korovin. "There is already a fair number of candidates for these monies. The USSR State Committee for the Environment, for example, and the local authorities. A battle is in progress among the higher authorities. At USSR Gosplan it is not only the creation of such a fund that is being discussed, but also the question of whether the extinguishing of major fires should be financed from the State budget. Incidentally, the practice of creating insurance funds exists in most civilised countries throughout the world."

Q. "How do things stand with respect to the extinguishing of fires in the industrially advanced forest States?"

Korovin. "Let us compare the situation in the USSR with that of the USA and Canada. Although in principle they are on a level with us, they are outpacing us in the extent to which they are mechanized. For instance, until now we have no airborne tankers or facilities for delivering heavy machinery. We are somewhat better off in the matter of controlled scorching. This is of very great importance, for today it is generally acknowledged that what we should be talking about is not so much a system for protecting forests against fires as controlling the fires once they have started."

Barsukov. "Just now a great deal of work is being done with respect to the devising of controlled scorching techniques. There is already the experience of the Baikal forest experimental station, in which scorching is organized in February and March to coincide with a low level of snow cover. We are

intending to disseminate these findings widely.

"We are often asked, 'What is the main cause of forest fires?' Here are some figures. In the Tyumen' Oblast' more than three thousand foci embracing an area exceeding two thousand hectares were eliminated last year. Approximately 80 per cent of fires are due to a careless attitude towards fire. The main culprits are local inhabitants, members of expeditions, loggers and oilmen. Very many major fires are caused by delays in responding. I will be frank: we are not at all comfortable about the transfer of our enterprises to Minlesprom SSSR. A paradoxical situation has arisen: some of them have yet to understand that combatting fires is their responsibility, while others have decided that this is no longer a matter for them. Consequently, instead of immediate intervention, consensus are being initiated and precious time is lost. Here is a concrete example: last year at Sverdlovsk, almost four days were needed in order to get such a consensus. But the fire had already done its work."

Q. "It was stated earlier that we are trailing the developed countries in the level of mechanization. In particular, an airborne tanker was mentioned...."

Andreev. "This question was one of the items recently discussed at the Technical Council of Goskomles SSSR. In due course, they reached the conclusion that such an aircraft is needed. The sticking point is expenditures. But, I am convinced that the expenditures will pay for themselves. There is no reason to doubt the effectiveness of this machine. No wonder tankers have been placed in service by our colleagues in Roumania and Communist China. In the last year we have fitted two tanks to

an AN-2 that has a cargo capacity of give tonnes and will be running some experiments. Numerous design bureaus and factories are offering to help us just now. As for the expenditures, they should not be so heavy as it is mainly a question of making improvements to existing designs. The design bureaus are also offering to create a special 15-seat light aircraft, for which there is a pressing need. The AN-2 has now been in service for more than 40 years. It is time to send this lumbering old crate to a well deserved rest, the more so since there are aircraft with speeds ranging from 150 to 450 kilometres per hour. There is also a need for a staff version of the aircraft, since the helicopters currently employed are expensive to operate. The staff aircraft should be equipped with both radio communications and video. All in all, much is needed and as soon as possible. What in fact is happening? We are installing five of those television towers in one year and seven in another. The requirement for them is in the hundreds".

Q. "Much is being printed in the press about the need to use dirigibles...."

Andreev. "Much is being printed but little is being done. The apparatus being suggested to us has a cargo capacity of 600 kilogrammes and is economically unsuitable."

Spiridonov. "Aircraft, helicopters and dirigibles all have an important role to play. But consider how the smoke-jumper is equipped at the moment. Here there has been no progress at all. While it is true that we do have some portable sprinklers, the high-pressure motor pumps that were tested and found highly satisfactory three years ago are nowhere to be seen. We don't even know where

they are. And look at our special clothing. Why does a smoke-jumper need a greatcoat, when there are the cheap and practical Lesnik jackets?"

Plaksin. "I fully concur and would add that we arrive at a fire wearing clothing that is unsuitable. We have heard rumours of fire-resistant suits, but that is all."

Barsukov. "The criticisms are valid and we will be addressing these problems. As regards technical supplies, I want to say that we are placing orders for the manufacture of equipment at our enterprises, including small tanks and high-pressure pumps."

Shchedrin. "I would like to touch upon another matter. Karelia is one of the first regions where a merging of enterprises in the timber industry and forestry occurred. When the integration took place the danger from forest fires was not great. But what happens if it increases? The financing problem is totally unclear. Minlesprom SSSR is allocating money to us from the fund for development of enterprises. If fires threaten to get out of hand, we shall overspend. This question has still to be resolved at the Ministry. We are paying out over a million for salaries, building maintenance, fuels and lubricants, etc. Yet our contract with the forestry association amounts to no more than 950,000 roubles, which means that we are unable to fly one additional hour, even if the situation demands it."

Pavlinov. "We have had a frank discussion and each of us has touched on the aspects that troubles him the most. I, for instance, am uneasy over the fact that we still haven't resolved the problem of mechanizing the extinguishing of forest

fires. We are currently in receipt of ATs-30 fire-fighting machines which fall short of our requirements in a number of parameters. There is only room in the cabin for one person besides the driver. As far back as 1979, however, another machine with two cabins for six occupants was designed. This is the ATs-10. It is a very good machine but has been supplied to us in very small numbers which in no way meet our requirements. The Ministry of Road-Building Machinery has unfortunately suspended production of it. Goskomles SSSR is unable to resolve this matter. The example, of course, is a personal one, but it is typical."

Shelkan. "Forest fires wreak enormous harm, not only on the economy but also on the country's ecological situation. The first thing we have to do is to teach prevention among the population. This work has been started, but as was acknowledged by the participants in the "round table", it is not enough. We must therefore combine our efforts in propagating ecological knowledge and arranging for effective control over the state of the natural resources. We are no longer able or willing to tolerate the irresponsible actions of those whose fault it is that fire is destroying our national wealth - the forest."

Lesnaya promyshlennost'

May 23, 1989

Page 2 (Abridged)

Chita Forestry Association Acts to Preserve Siberian Nut Pines

I think the time has come for all of the country's forestry workers to collectively ponder the

fate of our Pinus sibirica forests and draw up a programme for their preservation and rational use. Obviously, it is not only the bitter lessons of the past that will be of value here, but also the fragments of experience gained in those regions where the situation is more or less favourable.

It is among the latter that I place our Chita Oblast'. It is now seven years since the allowable cut in the Trans-Baikal was extended to include the Siberian nut pines. Which means, of course, that the loggers were fully entitled to enter the Pinus sibirica forests and cut, cut.... But not a single felling gang has worked in these forests, either prior to 1982 or since. Why is this?

The Oblast' Forestry Directorate (now Association) was categorically opposed to this. Despite the existence of an allowable cut, we did not mark out any coupes. We were authorized to take Siberian nut pine, but took the risk of prohibiting it. I am not saying that this was easy. The directors of the "Chitales" Association, the fuel industry directorates and the other forest users exerted pressure from all sides, and the more they did, the greater the resistance. It was after that that we took the final, decisive step: we appealed to the Oblast' Executive Committee of the Party for a ban on industrial fellings of Siberian pine, and our appeal was upheld. In July of 1982 the requisite decision was taken by the Oblast' Executive Committee.

Make no mistake: the campaign was not in vain. Superb stands of pine have been preserved along the Chikoi, Khilka and Ingol' rivers (the basin of Lake Baikal). Moreover, they have increased in area. The Chita Oblast' is the easternmost limit of the range of the Siberian pine. Here it lives, as

they say, at the limit of its biological capabilities, having found a narrow ecological niche in the harsh Transbaikalian climate. Fortunately, this niche exists in places that are fairly inaccessible, mainly in mountains at altitudes of 1,200 to 2,000 metres above sea level. All the same, the loggers were prepared to take the pine even under these conditions.

I will cite some precise data. In 1983 Pinus sibirica stands encompassed an area of 846,300 hectares. In 1988 this had grown to 956,300 hectares. It is good to know that we foresters had contributed to this increase. In Transbaikalia, regrowth of Siberian pine frequently occurs in the forests of larch and pine surrounding the Pinus sibirica forests. This is the "handiwork" of the tireless natural seed scatterer - the nutcracker. We are keeping a special inventory of such forests. In allowing the loggers in, we are strictly adhering to the felling procedure where there is maximum preservation of regrowth.

There is another, equally important side of the problem. While we have succeeded in preserving the Siberian pine forests, we have not yet learned how to use them correctly. Take the main wealth of these forests - the pine nut. Today, unfortunately, we are harvesting it in minute quantities. There is a whole mass of reasons for this, the first being that these nut harvesting zones are poorly served by roads. It is true that roads are costly under these conditions, but has anyone ever estimated their possible effectiveness or unprofitableness? Or recommended any other method of harvesting the nuts, for instance, by using horses? The answer is, no one has.

Then too, there is the fact that the forest farms are preoccupied with timber fellings. This is where the root of the trouble lies. Fellings on a small scale are unprofitable and merely prevent us from concentrating on solving our immediate problems - reforestation and forest protection. It is an open secret that today, it is only "between times" that we occupy ourselves with these tasks. And what is this leading to? A simple illustration is that not a few of our Siberian pine forests in Trans-Baikal have been destroyed by fire. Small wonder that even in the most dangerous period for forest fires - early summer - the managers of the forest farms have other things on their minds. How could it be otherwise, for the financial wellbeing of their enterprises depends on the fulfillment of logging plans.

The existence of these plans is also preventing the forest farms from making a rapid and painless transition to profit-and-loss (self-financing) principles of operation. If this were not so, we would already have been able to put all our efforts into industrial expansion. The Transbaikalian taiga is not only richly endowed with nut-bearers, but also with valuable medicinal grasses, animals and birds. We have the resources and we have the capacity to earn a profit from them. There are some interesting proposals along these lines. Recently, for example, a Statute on the leasing of forests was drafted in our association. What is happening at present? The best Pinus sibirica forests have been assessed by the Oblast' Consumers' Union and hunting industry administration. Although these departments don't invest a penny in reforestation and conservation (which is what we are concerned with) they are "cracking the nuts". From now on the approach will be different: take the nut trees in accessible

places and pay extra for them. The Statute on leasing has already been ratified by the Chita Oblast' Executive Committee. This means that we shall have additional funds with which to compensate for (if only in part) our expenditures on sanitary and tending fellings, as well as other forest regeneration measures.

(Article signed by the Head Forester of the Chita Forestry Association).

Lesnaya promyshlennost'  
May 25, 1989  
Page 1 (Slightly Abridged)

### Satellite Scanning of Forests Yielding Valuable Information

(Editorial preface)

One of the most remarkable developments just now is undoubtedly the destruction of stereotypes. Everything that only yesterday was unreservedly regarded as an object of legitimate pride is today subject to analysis.

This also applies to the space programmes, which up to now have only given cause for delight but are already being regarded by some as a burden on the economy. This is primarily the fault of those who, for many years, wrapped an impenetrable curtain around everything connected with space research. Journalists are well aware of the difficulty involved in extracting each fragment of information from the competent bodies, of how many authorizing (or rather, prohibiting) levels had to be "cleared" before it

could be published. Smoothly written articles and broadcasts presented such one-sided "pictures from outer space" that in broad segments of the public the impression was formed that space is above all else, prestige. Prestige is fine, but a balanced budget is better. While the next success is assured, the shortage of consumer goods continues. The articles in the special journals which somehow contain a sprinkling of economic information on space matters have only a limited readership. Yet even though the message is late, it has, it would appear, found its way to the Main Space Administration (Glavkosmos). For at last we have managed to get some figures. And what do they tell us? That space is bringing in revenue. Last year the disbursements on the entire programme of space research for non-military purposes amounted to 1.3 billion roubles, but the income from the same programme exceeded the disbursements and reached two billion roubles. Glasnost', disliked by the bureaucrats, is becoming an ally of the researchers.

While the non-military space programme is vast and multisided, there is also a place in it for research in support of forestry. It is on this question that, at our request, the Deputy Chairman of the USSR State Committee for Forestry (Goskomles), Doctor of Agricultural Sciences V.I. Sukhikh, has prepared the following article.

\* \* \*

(Article)

Because of the sharp intensification of man's multiple impact on the environment and the shrinking of the forested areas on the Earth's

surface, the importance of our forests is outgrowing the traditional economic frames of reference and taking on the dimensions of a key component of the biosphere, exerting as it does a stabilizing influence on natural conditions throughout the entire northern hemisphere. On the correct exploitation of the forests depends the solution of such important problems as raising the productivity of the biosphere, the intelligent use of land and water resources, achieving high crop yields in agriculture, and providing favourable conditions for human habitation.

Implementation of the tasks confronting forestry necessitates having access to a vast, all encompassing and constantly self-renewing body of information on the total forest area (lesfond). It is on the basis of this information that optimal solutions relative to the multipurpose use of forest resources ought to be worked out and adopted. Currently, however, the supply of information on the state of the total forest area is far from adequate, especially in the taiga regions. In almost half of the territories the total forest area has been inadequately studied. There is an almost total lack of small-scale special purpose maps. Today, the traditional equipment and methods no longer provide for rapid surveillance of the state of the forests, the dynamics of the total forest area, and logging activities. For problem solving, new scientific and technical data bases, founded on the latest methods of remote sensing, are needed. It was in order to solve this important national economic problem that beginning in the early seventies a multidisciplinary, special purpose programme of scientific research to develop methods of remote sensing of the forests was instituted in the USSR. Forest use and nature conservation problems have been the main areas of concentration.

Parallel with the work on the methodological aspects of remote sensing of forests, a great deal of attention has been devoted to solving practical problems in forestry, using new techniques and equipment.

The most obvious advances in applying these approaches are in the compiling of inventories and special purpose mapping of forest resources, protecting forests from fires, and identifying and recording day to day changes in the land categories of the total forest area, caused by natural disasters, forest fires and felling.

Remote techniques are being used over hundreds of millions of hectares for recording day to day changes in the land categories of the total forest area caused by human activity (felling, industrial and urban construction, mineral workings and so on), and by forest fires and other unfavourable factors.

On the practical side, multizonal scanning information received from the "Meteor" earth satellite is being used for protecting the forests against fires, monitoring the dynamics of the snow cover, ascertaining the synoptic situation and storm and convection cloud conditions, and monitoring the dynamics of major forest fires. This information makes it possible to plan and implement more purposefully the tactics and strategy of the entire complex of measures for protecting the forests against fires.

A number of other methods and technologies for studying forests and assessing their state which are based on the use of satellite information are in the experimental and industrial evaluation stage.

They include a procedure for updating information on forest management in the taiga regions, evaluating the course of natural regeneration of the forests in burnt over and felled areas and at felling sites, compiling inventories of windbreak forests and the planning of drainage improvement measures. A list of the main problems in forestry, the solving of which is both desirable and possible through the use of remote sensing data, primarily from satellites, has been compiled and validated.

Assessments based on predictions and experience in the industrial application of aerial and satellite survey data compiled when studying forests and monitoring their state have led to the conclusion that multidisciplinary solutions to the main forestry problems are both necessary and possible within the framework of specialised aerospace monitoring, initially on a regional level and subsequently for the Union as a whole.

We regard forest monitoring as the sum total of remote and terrestrial methods and facilities for obtaining information on the state of the forests and their ecological and resource related functions. The technical foundation for the monitoring is the aerospace survey utilising optical and computerised electronic equipment which is capable of deriving and converting task-oriented information and documenting the results of it. Thus, in the monitoring process it is necessary to collect, transmit, process and analyse information on the total forest area and selectively bring it to the attention of users at various administrative levels in forestry and the national economy, ranging all the way from enterprises to ministries (State committees).

Since it takes into account the state of the total forest area and the ecological and economic characteristics of dissimilar regions, monitoring is called upon to solve a wide range of problems.

In the first phase of implementing forest monitoring it is necessary to decide upon the most important tasks ensuring the rational use and reproduction of the valuable resources and properties of the forest. For example, insofar as our taiga zone is concerned, this means protection of the forests from fires, insect pests and other unfavourable influences, and arranging for the rational use of forest resources and for timely reforestation with economically valuable arboreal species. Forest monitoring must function in such a way that an important environmental and national economic benefit is conferred.

Naturally, a full treatment of all aspects of the work being carried out in space for the benefit of our forests is impossible within the limitations imposed by a newspaper article. However, even the facts presented here will serve to convince the reader in some measure of the advantageousness of the programme.

Lesnaya promyshlennost'

May 27, 1989

Page 3 (Slightly abridged)

## ENVIRONMENT

### Critical Situation at Svetogorsk Pulp and Paper Combine Requires Immediate Infusion of Currency to Import Machinery and Combat Pollution

"Seventeen years ago, when the rebuilding of the Svetogorsk Combine began, pines and birches were to be seen on Budenny Street and swallows were singing.... Noone had any inkling that after the commissioning of the new factories, not only would the birches and the swallows disappear, but even the mosquitoes". (Excerpt from a letter to the newspaper "Vyborgskii Kommunist" by the townsfolk of Svetogorsk).

Indeed, the residents of present-day Svetogorsk are not to be envied. The authors of the plan for rebuilding the Combine have made sure of that. The expanding industrial complex has advanced in the direction of the town and having "swallowed up" the health protection zone, is about to encroach upon the residential sections. While it may be that the planners had counted on ideal operating conditions from the ecological point of view (although the likelihood is that they simply had not even given a thought to this aspect), only now are the housing units being literally bathed in the clouds of dust and gas emanating from the pulp and paper mills. Moreover, some of these emissions are exceeding the maximum permissible concentrations by tens and even hundreds of times.

Methylmercaptan, hydrogen sulphide, caustic soda - this is by no means the entire atmospheric "bouquet" that the Svetogorsk residents are breathing. Also, liquid effluents from the enterprise are entering the Vuoksi River and from there, Lake Ladoga.

A resolution adopted by the residents of Svetogorsk and published in "Vyborgskii Kommunist" contains the following statement:

"We are proposing that an enquiry be conducted by competent bodies with the object of ascertaining the names of the authors of the ecologically ill-considered design plan of the pulp and paper combine, of those who, in reducing the cost of it, turned their backs on nature preservation systems and the resulting enhanced reliability of the production lines. We need this information in order to institute criminal proceedings against them."

Alas, this demand by the townsfolk amounts to no more than an emotional outburst. Twenty years have gone by and it is quite understandable that people are now venting their anger against the administrators of the Combine.

With the arrival at the "Svetogorsk" Production Association eighteen months ago of a new director in the person of G.I. Kaluga the ecological situation, both at the mill and in the town, became somewhat better. The emissions of methylmercaptan and hydrogen sulphide were reduced. But all of this had only a local impact. The Association still has a long way to go before a radical solution to the environmental protection problems is found. After 17 years of continuous operation the machinery, which is mostly imported, has become worn out. Spare parts are needed, which means that there is a requirement for foreign currency. If it were not for the fact that all of it is already spoken for by the State order and contractual deliveries, it would be possible to earn this by selling paper abroad.

Some 224,500 tonnes of paper are produced at Svetogorsk every year. A tenth of it needs to be sold for foreign currency in order to purchase what is required to bring the worn out machinery into running order. But who will allow us to do this, given the present dearth of paper in the country.

"In the extremely difficult situation in which our combine finds itself is mirrored the classical growth pattern of the domestic pulp and paper industry", says the Association's General Director, G. Kaluga. "We build an enormous enterprise, invest in a billion roubles worth of fixed assets and only then do we begin to think about the ecological consequences. We are making a scapegoat out of the administrators. Public opinion and the sanitary-epidemiological services are getting the better of us. We may be on the brink of shutting down."

The situation is indeed, as described. The townsfolk have joined the campaign for cleaning up the atmosphere and bodies of water. Failing immediate action to secure the necessary funds for bringing the combine into a state of ecological normalcy, much more may be lost in the very near future.

This is in terms of the economy. But what of the health of the people, the residents of Svetogorsk and the workers of the combine?

Lesnaya promyshlennost'

May 6, 1989

Page 1 (Full text)

Archangel Oblast: Northern Dvina System Heavily Polluted

The summer of 1988 proved to be warm and sunny in the North. Thousands of city dwellers languished on sandy beaches, which at times were as crowded as the Crimea or the Caucasus. But only a few ventured into the water, for on the local radio came warnings from the sanitation department: "The state of the water in the river is dangerous to health".

Archangel obtains its water supply from the Northern Dvina. After proper filtration it is again fit for drinking. The local authorities, however, foreseeing the inevitable, are already thinking of building an aqueduct, which will bring moisture from subterranean lakes over a distance of hundreds of kilometres. So it won't be long before the deep, but heavily muddied river will be intersected by another major waterway - one that is artificial and enclosed in a thick steel pipe, but on the other hand, as clean as tears.

For the moment, however, from all sides are heard the doleful complaints of residents about the lawless activities of various departments: "Stop, once and for all, destroying the Northern Dvina".

\* \* \*

WHO CRACKS THE WHIP?

Last year, navigation on the Dvina had ceased by mid-summer. Deep-draught passenger and cargo ships could no longer proceed upstream to Kotlas. The passengers were brought there by light, jet-driven motor vessels. For some time, the river

has been getting shallower every year. Specialists link this process with the long-standing and increasingly intensive timber fellings and the drying out of the marshes. The water balance of the North has been disturbed by enterprises of various departments, chief among which is the USSR Ministry of the Timber Industry.

At an expanded session of the public association known as "Ecology of the North", which was carried on local television, there were calls such as "Wrench from the hands of the USSR Ministry of the Timber Industry (Minlesprom SSSR) the whip which is driving on our timber enterprises (lespromkhozy)", and "Save the Northern Dvina for our children"! Many participants in the meeting, among them environmental conservationists, jurists, medical doctors and simple city dwellers, labelled the northern activities of our Ministry an ecological crime.

So let us try to understand this complicated situation. We will begin with logging. The areas currently involved in clear fellings are where the sources of many of the small rivers and streams emptying into the Northern Dvina are situated. The result is that the natural water balance is being disrupted to the fullest extent possible. And this is contrary to the will of the local administrators who are being pushed into doing this by the excessively large calculated coupe, as determined "from above". In the Oblast' today it is close to 29 million cubic metres, even though, according to scientists' calculations, it ought to be 22.4 million.

Certainly, in an approach such as this no thought is given to sparing the forests, or to

preserving the water- and fish spawning protection zones along the banks of rivulets, in water-meadows and near the sources of streams.

In the Vinogradov district alone, in 39 small rivers with an overall length of 1,265 kilometres these zones have been completely destroyed. Beds of rivers formerly used for logging are choked with trees. To facilitate fording them, birches by the hundred are being dumped there. The banks have been damaged by caterpillar tractors, which is leading to erosion and soil ablation.

We have become accustomed to saying, in justification of just about anything, "Whatever you do, it's the elements". But it is precisely the unsystematic fellings that are giving rise to the "elements". In spring they lead to rapid melting of the snow and frequent ruinous floods, in summer - to the shallowing of rivers and their transformation into pitiful little streams.

Unless immediate and urgent steps are taken, the prospect is that in 40 to 50 years the region's raw material resource bases for the lespromkhoz will be exhausted, which means that there will be an interruption in forest use with all of the ensuing economic and ecological consequences. The resulting catastrophe will prove to be a major disaster for the northerners.

To avert this, the combined efforts of all interested parties, including scientists, will be needed. Their debt to the ecology is enormous. Until now the question of the effect of selective logging on the state of the water resources has remained unexplained. There are no scientifically validated norms for determining the width of

prohibited zones and the optimal relationship in them between the species composition and the age structure of the stands. The reason for this, of course, is that the Archangel Institute of Forests and Wood Chemistry is solely concerned with "cubes" and industrial raw material. Nature conservation factors and the effect of the stands on the air and water are of little interest to it.

The citizens of Archangel and their neighbours from the Vologda and Yaroslavl' Oblasts and Komi ASSR, through which the Northern Dvina flows, are planning to appeal to Gosplan and the USSR State Committee for Forestry and demand an immediate reduction in the sizes of the calculated coupes, pursuant to the recommendations of the All-Union Association for Aerial Photography, Forest Resource Inventory and Forest Regulation (Lesproekt) and the local authorities. It is on this that the fate of the fourth largest river in the European part of the USSR will largely depend.

#### THE DIRTY FOAM OF A BRIGHT RIVER

The basin of the Northern Dvina numbers 62 thousand tributaries with a overall length of 206 thousand kilometres. Among them is the Pinega. The meaning of this word, when translated from the Finno-Ugrian is "bright river". In recent years, however, the Pinega has become noticeably darker. Littered with logging debris, petroleum products and the like, the river has been converted into a fish cemetery and goodness knows what else! For almost half of the Northern Dvianian salmon and whitefish spawn here.

One of the visitors at the expanded session of the "Ecology of the North" association, convened

in Archangel on May 7, was a scientist from Moscow who is Co-Chairman of a public committee to save the Volga. S.A. Shakhotin shared with us the picture he had glimpsed from the window of an aircraft: "Clearly visible in the delta of the Dvina, in all of its branches, on the water and indeed, on the sandy banks and shoals, are the flocculent masses of a sinister, whitish film, a dirty foam". Even visitors to the health resort at Sol'vychevodsk, situated on the Vychegda some 1,500 kilometres away from Archangel, often find themselves in this turbid zone when bathing. That is not to be wondered at, for two wood chemistry giants: the Syktyvkar Timber Industry Complex and the Kotlas Pulp and Paper Combine, are in operation there.

The waters of another major tributary of the Dvina - the Sukhona - are subject to the influence of the Sokol Pulp and Paper Combine. And in the estuary of the great northern river, on a line joining Novodvinsk, Severodvinsk and Archangel, where in all, about 800,000 people live, almost a million cubic metres of water pass through the Archangel Pulp and Paper Combine and the Solombala Pulp and Paper Combine every day.

The latter's mills have almost ruined the Puksa, Voloshka, Kodino and other rivers. This is readily understandable, for there are no efficient purification plants there. A total of almost 300 million cubic metres of effluents are discharged into the small rivers of the basin. Some 34 per cent of these are classed as inadequately purified.

The environment is not only being attacked by mills of the USSR Ministry of the Timber Industry but also by enterprises of other departments. Workers of the Kuznechevskii sawmill recently had an

opportunity to witness this. A geological expedition there had so heavily polluted the River Izhma with petroleum products that it proved necessary to shut down the intake works serving the foresters and curtail the supply of drinking water. Eye-witnesses say "Strike a match and set fire to the water, start to fill a bottle and all but a quarter will be fuel oil".

The Oblast' Committee for Nature Conservation presented the geologists with a bill for 70,000 roubles. Are fines really the answer?

#### BY WATER... ON A TRACTOR

They say that the Pinega can be forded by tractor, with the entire crossing made on logs. Indeed, by autumn, when the river empties into the Dvina near Kholmogor, the timber floaters have spanned it with a continuous log boom, and timber accumulates in its estuary from shore to shore over a distance of several kilometres.

In the fall of 1987 a log jam occurred there. It was formed by a "plug" of timber reaching all the way to the river bottom over a distance of five kilometres upstream. With the help of neighbouring enterprises, the timber floaters of the Kholmogor rafting office worked heroically for several days and nights, with the result that they eliminated the damage and saved costly floatation gear and indeed, even the Pinega itself from catastrophe. But disasters, as they say, do not come singly. It was precisely at that moment that a shoal of Atlantic salmon came to spawn. The valuable fish were unable to get to their spawning grounds in the fast-flowing and clear waters of the Upper Pinega and there was virtually nowhere else to return to...

In the Archangel Oblast, free floating is done on 36 rivers and three lakes with the total length of the waterways being 4,300 kilometres. The resulting losses of valuable fish species exceed 400,000 roubles annually.

Noone has made a full count of the other losses. How much timber floats past the log booms and traps, and how much is escaping due to poorly lashed bundles? How much is slipping off rafts damaged in accidents or stranded on shoals, and how much is sinking in the roadsteads of sawmills in Archangel? Fairly accurate data ought to be obtainable by using electronic equipment designed to investigate the river bottom. Such apparatus, as reported at a scientific and practical conference on the Northern Dvina, is available in Japan. It is true that the General Director of "Arkhangel'sklesprom", V.S. Lykhov, cast doubt on the validity of this report when we met with him, saying that he had not found such information in the advertising literature available to him.

Certainly, instruments for investigating the river bottom are needed. Even they, however, would not give a final picture of the losses, since special teams from "Dvina Floating" (Dvinosplay) are discovering accumulations of logs along the shores of the White Sea far from the Northern Dvina. Wave-driven logs can be sighted in the Solovetskii Islands and, reportedly, even in Norway.

Given the impossibility of turning back the clock, by 1990 free floating should be restricted to a maximum of 15 rivers. For the moment, however, it is necessary to deal strictly with violators of technological discipline, and with irresponsible workers who, in the pursuit of cheapness, are prepared to ruin forest, land and water.

It is high time to exert some economic leverage. A "Small Rivers Fund" should be established, to consist of monies received as fines for environmental pollution, voluntary contributions by organizations and cooperatives, and donations from citizens and other sources. A fee should be set for the floating and rafting of timber, to be measured in cubic kilometres.

(Originally published under the heading "The Northern Dvina is Dangerously Ill").

Lesnaya promyshlennost'

May 30, 1989

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