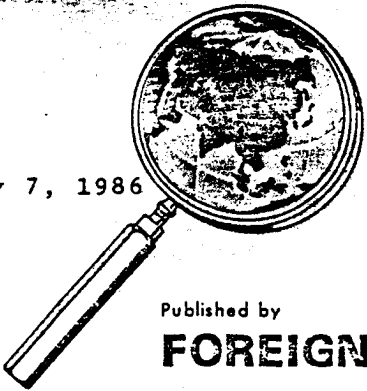


*for Dick Harrison*

Friday  
February 7, 1986



# Daily SNAP

Soviet News Abstracts Publication

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## FOREIGN TECHNOLOGY DIVISION

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**Title: RESOLUTION ON CREATION OF SCIENTIFIC-TECHNICAL COMPLEXES**

Primary source: Izvestiya, January 23, 1986, No. 23 (21465), p. 2, cols. 7-8

Abstract: The item, which appears in the newspaper's government business section, announces the adoption of the Party-government resolution "On the Creation of Inter-Industry Scientific-Technical Complexes and Measures for Supporting Their Activity".\* Main points of the resolution are described. It is said that the new complexes are to be the country's chief organizations for solving scientific and technical problems in the fields for which they are responsible. Their functions are described as follows: conduct and coordinate basic and applied research, and design, experimental and technological work for the development of highly effective types of equipment, processes and materials; build experimental prototypes and perfect them for series production jointly with ministries and agencies; draft scientific-technical programs for key economic problems, and also five-year and annual plans of research and development; assist ministries and agencies in the efficient utilization and further improvement of the equipment, processes and materials which the complexes develop; conduct and coordinate research and development in the country on tasks of the Comprehensive Program of Scientific-Technical Progress of Member Countries of the

Council for Mutual Economic Aid up to the Year 2000.

It is also mentioned that for purposes of assisting the wide-scale introduction of highly effective types of equipment, processes and materials, it is considered advisable to create engineering centers based on the experience of the Ukrainian Academy of Sciences, making these centers a part of the inter-industry scientific-technical complexes in cases where it is deemed necessary.

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Author: Belyayev, V., TASS commentator

**Title: QUALITY ASSURANCE IN MACHINE-TOOL INDUSTRY CRITICIZED**

Primary source: Kommunist, January 7, 1986, No. 5 (15684), p. 1, cols. 4-8

Extract: Experts of the State Committee on Standards (Gosstandart) have registered dozens of complaints about associations and plants of the Ministry of the Machine-Tool and Tool Industry (Minstankoprom) after studying these enterprises' product quality certification practices. It was thought up until recently that the technical standards of machine tools, other machinery and tools in this industry and the quality of their workmanship were being determined in a skilled and conscientious manner. A different opinion was formed following discussion of a report by the State Inspectorate, which was submitted to Gosstandart and Minstankoprom, and of many facts which are regrettable ones, sorry to say.

(continued next page)

\*See also the Daily SNAP, December 27, 1985, p. 4, col. 1; and January 7, 1986, p. 2, col. 1

(continued next column)

drilling in the coastal zone of Arctic seas.

Hurricane-force winds, movements of ice masses and other natural factors can cause various breakdowns of drilling mechanisms, and such breakdowns have to be eliminated at various depths. Training dives must be made constantly under careful medical observation if work is to be done in such conditions. Divers of the vessel spent several days in a pressure chamber in maximum-load conditions before making their record dive.

(The photograph shows divers under the observation of physician B. Vlasov in a pressure chamber of the "Sprut", following the record dive.)

\* \* \*

Title: ~~SECRET~~ ~~NEW SCIENTIFIC-TECHNICAL COMPLEXES AND THEIR ROLE~~

Primary source: Izvestiya, December 17, 1985, No. 351 (21428), p. 3, cols. 2-6

Abstract: The article is a lengthy interview with academician Guriy Ivanovich Marchuk, deputy chairman of the USSR Council of Ministers and chairman of the USSR State Committee for Science and Technology, regarding inter-industry scientific-technical complexes, which are being created in line with a resolution of the Communist Party Central Committee and the USSR Council of Ministers.\*

Calling the inter-industry scientific-technical complex (MNTK) a fundamentally new form of integrating science and industry, Marchuk explained that their role is to work on the realization of promising ideas of basic science and the advancement of new technologies that have applications in more than one industry. The complexes are intended to overcome difficulties with introducing new technology that are due to the fact that ministries and agencies tend to show favoritism for developments that suit the needs of only their industries. He said that although the complexes will operate within existing ministries, the majority of them will be directed by institutes of the USSR Academy of

Sciences, which will act as chief organizations. In some complexes, the chief organization may be an industry institute, and in this case the industry institute's superior ministry will be responsible for the complex. The State Committee for Science and Technology (GKNT) will coordinate the work of the Academy of Sciences, ministries and other agencies on the creation and operation of MKNT's. GKNT will determine the types of equipment, materials and technologies for which it considers it advisable to create an MKNT for their accelerated development. Officially, MKNT's are to be established or reorganized at the decision of the USSR Council of Ministers, which will approve the list of organizations of various ministries which will take part. The complexes will operate under five-year and annual plans which will be unified for all organizations of a complex. Each complex will be responsible for coordinating all work in its field in the country.

Marchuk went on to explain that on the advice of GKNT, the USSR State Planning Committee will include the products of each MNTK into the state plan of production. The products may be experimental models, or small series of new machines, equipment or materials. At the same time, industrial enterprises will be designated to make preparations for mass production of the equipment or materials if they show good results in trials of small series of them. Marchuk noted that the directors of MNTK's will possess considerable administrative authority. For example, the USSR State Supply Committee is supposed to be responsive in filling not only long-term but also short-term orders for materials and equipment received from these directors.

Among MNTK's that are being created with an institute of the Academy of Sciences as the chief organization, Marchuk named the MNTK "Svetovod" for development of fiber optics, MNTK "Biogen" for biotechnology, and ones called "Nadezhnost' mashin" (machine reliability) and "Katalizator" (catalyst). Among complexes with an industry institute at the top, he named MNTK "Robot", which is being created in the Ministry

\*See the Daily SNAP, December 27, 1985, p. 4, col. 1

of the Machine Tool and Tool Industry, with the chief organization being the ministry's Experimental Scientific Research Institute of Metal-Cutting Machines. Some MNTK's are being created by two agencies. For example, the USSR Academy of Sciences and the Ministry of the Electrical Equipment Industry are organizing MNTK "Lazernaya tekhnologiya", whose chief organization will be the academy's Scientific Research Center for Industrial Lasers and its experimental production facility. The ministry will make available an experimental plant and a design bureau. This complex is to develop robot-equipped laser technological complexes for various industries.

Initially, 16 MNTK's are being created. Among others mentioned by Marchuk are MNTK "Personal'nyye EVM" (personal computers), MNTK "Rotor", which will work on rotary and rotary-conveyor production lines, and the MNTK based at the Ukrainian Academy of Sciences' Institute of Electric Welding imeni Paton, which will develop equipment and processes for welding, soldering, applying coatings, and special electrometallurgy.

\* \* \*

Author: Sidorov, M.

Title: SYSTEM FOR CONTINUOUS MONITORING OF STEEL-MELTING PARAMETERS

Primary source: NTR: problemy i resheniya, December 3-16, 1985, No. 14, p. 2, cols. 1-3

Extract: The first system for precise, continuous monitoring of steel-melting parameters has been introduced at the "Azovstal'" complex.

This system, the "FTIAN-3", was developed and produced at the special design bureau of the USSR Academy of Sciences' Physical-Technical Institute imeni Lofe. The system continuously determines the carbon content in melts of metal and the metal's temperature at the completion of melting, with high precision.

This has been a problem up until now. Its solution promises the successful elimination of one of the main technological difficulties for converter operators: melting steel of a prescribed chemical composition and temperature in the time allotted by the process.

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...It was October of 1985. In the oxygen-converter shop of the "Azovstal'" metallurgical complex, all was in readiness for industrial trials of the "FTIAN-3" system. Present in the shop were academician V. M. Tuchkevich, head of the group of scientists which developed the system; Doctor of Technical Sciences P. I. Yugov, representing a group of metallurgy researchers; and personnel of the complex.

The melt was finished. "They passed the analysis," said the operator, glancing at the screen of a video terminal. This meant that the chemical composition and temperature of the melted steel met the specifications of the brand that had been ordered.

Petr Ivanovich Yugov, head of a laboratory of the Central Scientific Research Institute of Ferrous Metallurgy, commented briefly:

"By facilitating the work of operators, the system permits considerable savings of energy resources, more precise observance of the composition of brands of steel, and more complete filling of metal users' orders."

Enterprises of the Ministry of Instrument Building, Means of Automation and Control Systems which have received the assignment of producing the "FTIAN-3" system will begin supplying the systems to converter shops of ferrous- and nonferrous-metallurgy enterprises early in the next 5-year plan.

\* \* \*

Author: Rasskazov, V., Candidate of Biological Sciences, deputy director of the Pacific Institute of Bioorganic Chemistry

Title: WORK ON OBTAINING MEDICAL PREPARATIONS FROM MARINE LIFE

Primary source: NTR: problemy i resheniya, December 3-16, 1985, No. 14, p. 4, cols. 2-4

Extract: The Pacific Institute of Bioorganic Chemistry (TIBOKH) of the USSR Academy of Sciences' Far East Research Center is one of the institutions in whose laboratories studies are being made of compounds obtained from marine animals and plants.

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COMMITTEE CREATES SCIENTIFIC COMPLEXESTAKE 1 OF 3 -- IZVESTIYA CITES VARIOUS GOVERNMENT RESOLUTIONS  
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MOSCOW IZVESTIYA IN RUSSIAN 23 JAN 86 MORNING EDITION P 2

((TASS REPORT: "OFFICIAL SECTION"))

((TEXT)) INTERSECTOR SCIENTIFIC AND TECHNICAL COMPLEXES

((SUBHEAD))

THE CPSU CENTRAL COMMITTEE AND THE USSR COUNCIL OF MINISTERS  
HAVE ADOPTED A RESOLUTION "ON THE CREATION OF INTERSECTOR  
SCIENTIFIC AND TECHNICAL COMPLEXES AND MEASURES TO BACK UP THEIR  
ACTIVITY."

THE RESOLUTION DEEMS IT NECESSARY TO CREATE INTERSECTOR  
SCIENTIFIC AND TECHNICAL COMPLEXES IN THE MAIN AVENUES OF  
SCIENTIFIC AND TECHNICAL PROGRESS ORIENTED TOWARD THE PERFORMANCE  
OF THE ENTIRE CYCLE OF WORK ON THE CREATION AND THE ASSIMILATION IN  
PRODUCTION OF HIGHLY EFFICIENT TYPES OF EQUIPMENT AND NEW  
GENERATIONS OF TECHNOLOGY AND MATERIALS. THESE COMPLEXES SHOULD  
CONSIST OF SCIENTIFIC RESEARCH INSTITUTIONS, DESIGN AND TECHNOLOGY  
ORGANIZATIONS, AND EXPERIMENTAL ENTERPRISES.

IT IS DETERMINED THAT THE INTERSECTOR SCIENTIFIC AND TECHNICAL  
COMPLEXES ARE NATIONAL UMBRELLA ORGANIZATIONS FOR THE RESOLUTION OF  
SCIENTIFIC AND TECHNICAL TASKS ASSIGNED TO THESE COMPLEXES. THEY  
ENSURE: THE IMPLEMENTATION AND COORDINATION OF NATIONAL  
FUNDAMENTAL AND APPLIED RESEARCH, EXPERIMENTAL DESIGN, AND  
TECHNOLOGICAL WORK ON THE CREATION OF HIGHLY EFFICIENT TYPES OF

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EQUIPMENT, TECHNOLOGY, AND MATERIALS; THE MANUFACTURE OF EXPERIMENTAL PROTOTYPES AND THE DEVELOPMENT OF THEIR SERIES PRODUCTION JOINTLY WITH MINISTRIES AND DEPARTMENTS; THE PREPARATION OF DRAFT SCIENTIFIC AND TECHNICAL PROGRAMS FOR THE MOST IMPORTANT NATIONAL ECONOMIC PROBLEMS AND ALSO OF 5-YEAR AND ANNUAL PLANS FOR THE CONDUCT OF RESEARCH, DEVELOPMENT, AND EXPERIMENTAL WORK; COOPERATION BY MINISTRIES AND DEPARTMENTS IN THE HIGHLY EFFICIENT UTILIZATION AND FURTHER IMPROVEMENT OF THE TYPES OF EQUIPMENT, TECHNOLOGY, AND MATERIALS DEVELOPED BY THE COMPLEXES; AND THE IMPLEMENTATION AND COORDINATION OF NATIONAL RESEARCH AND DEVELOPMENT ON RELEVANT TARGETS SET BY THE COMPREHENSIVE PROGRAM FOR CEMA COUNTRIES' SCIENTIFIC AND TECHNICAL PROGRESS THROUGH THE YEAR 2000.

WITH A VIEW TO PROMOTING THE LARGE-SCALE INTRODUCTION OF HIGHLY EFFICIENT TYPES OF EQUIPMENT, TECHNOLOGY, AND MATERIALS IN THE NATIONAL ECONOMY, IT HAS BEEN DEEMED EXPEDIENT TO SET UP ENGINEERING CENTERS AS DONE BY THE UKRAINIAN SSR ACADEMY OF SCIENCES, INCLUDING, WHENEVER NECESSARY, AS PART OF INTERSECTOR SCIENTIFIC AND TECHNICAL COMPLEXES.

THE USSR GOSPLAN, USSR MINISTRIES AND DEPARTMENTS, AND UNION REPUBLIC COUNCILS OF MINISTERS HAVE BEEN INSTRUCTED WHEN DRAWING UP 5-YEAR AND ANNUAL PLANS TO MAKE PROVISION FOR THE BROAD UTILIZATION OF NEW TYPES OF EQUIPMENT, TECHNOLOGY, AND MATERIALS DEVELOPED BY INTERSECTOR SCIENTIFIC AND TECHNICAL COMPLEXES IN THE NATIONAL ECONOMY.

ON MEASURES TO RETAIN CADRES IN LIGHT INDUSTRY ENTERPRISES  
((SUBHEAD))

THE USSR COUNCIL OF MINISTERS HAS ADOPTED A RESOLUTION ON ADDITIONAL MEASURES FOR THE RETENTION OF CADRES IN PRODUCTION ASSOCIATIONS AND ENTERPRISES OF THE TAILORING, FOOTWEAR, LEATHER, AND KNITWEAR INDUSTRIES WITHIN THE USSR MINISTRY OF LIGHT INDUSTRY SYSTEM.

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## ECONOMIC DEVELOPMENTS

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been timidly carried out in the field.

The new, more sophisticated management methods tested in industry have helped to improve the economic indicators of the sectors' work, particularly in the second half of this year. The question of making the transition from the experiment to the extensive practical application of the new management methods, which have justified themselves in practice, is now on the agenda. From as early as 1987, the whole of the country's industry will operate under the new conditions, and during the 12th 5-Year Plan period other sectors of the economy will join in.

Resolving the socioeconomic tasks that the party has assigned to the Soviet people requires of every Communist and every Soviet person a thorough, thoughtful approach to economic matters, a new perception of problems, and an awareness of his great personal responsibility for the sector entrusted to him. Party organizations are expected to cultivate in economic leaders such qualities as competence and the ability to truthfully and critically evaluate what has been achieved, fulfill plans not at any price but with the least possible expenditure of resources, everywhere inculcate the Leninist style of economic management, and reorient economic thinking.

The CPSU Central Committee April (1985) Plenum noted the necessity to introduce the financial autonomy system more widely and to bring it to all primary work cells and every work place. It is important to work out effective measures to purge the distributive mechanism of wage-levelling, unearned income, and everything at variance with the economic norms and moral ideals of our society, and also to ensure the direct dependence of every worker's and every collective's material position on the results of their work.

During the nationwide discussion of pre-congress documents, with every passing day socialist competition to speed up production growth rates and to worthily greet the 27th CPSU congress is spreading. In the conditions of able management and its constant, rapid improvement, Soviet people will achieve new success in economic development and further growth in their well-being.

**Marchuk Describes New Intersector Complexes**  
PM181241 Moscow IZVESTIYA in Russian 17 Dec 85  
Morning Edition p 3

[Interview with Academician Guriy Ivanovich Marchuk, deputy chairman of the USSR Council of Ministers and chairman of the USSR State Committee for Science and technology, by B. Kononov, under the rubric "IZVESTIYA interview": "Highways of Progress" — date, place of interview not given]

[Text] [Kononov] The CPSU Central Committee and USSR Council of Ministers have adopted a resolution on creating intersector scientific and technical complexes and on measures to provide for their activity. Guriy Ivanovich, what has given rise to the need to create this new form of scientific and technical organizations? What is their main task?

[Marchuk] Attention to scientific and technical progress is now becoming increasingly keen. This progress must be the main

"motive force" along the path of intensification. At the same time we often see how the implementation of promising ideas from fundamental science and the development of fundamentally new avenues give rise to technology which does not fit comfortably into the established framework of ministries and departments. This causes tremendous difficulties in the development of new avenues, because ministries devote most attention to those developments which entirely serve only their own sectors. And the state suffers major losses because of delays in the development of operations which could produce huge savings in many sectors of the national economy. Intersector scientific and technical complexes (ISTV's) are intended to eliminate these difficulties and ensure accelerated development of the most important avenues at a leading world level.

In the first instance, 16 intersector scientific and technical complexes have been set up. Thus, for instance, an ISTC has been organized based on the well-known Ye.O. Paton Electric Welding Institute of the Ukrainian SSR Academy of Sciences. It is set the task of developing technology and equipment for welding, surfacing, soldering, the application of coatings, and specialized electrometallurgy. As early as the 12th 5-Year Plan, the country should see a saving of millions of tons of ferrous metals and the national release of tens of thousands of workers through the introduction of developments.

Our country's own inventions of rotary and rotary conveyor production lines created under the leadership of Academician L.N. Koshkin are very promising for the mass production of many types of output by automated methods. Rotary lines ensure the comprehensive mechanization of manufacturing processes. By this means at least half the production area is saved compared with conventional technology, while labor productivity increases at least fourfold. And the creation of the "Toro" ISTC will give a powerful impetus to the development of technology which is important for many sectors.

There are avenues which need special attention and the speedy unification of the separate efforts of individual institutes and design bureaus. This task, for instance, is set for the "Personal Computers" ISTC. It is necessary rapidly to create a range of modern microcomputers up to a high world standard so that industry can begin producing them for mass use in the 12th 5-Year Plan.

These examples show that the first 16 ISTC's cover a relatively wide range of problems. The most important thing is that the priority avenues are being signaled out, avenues where a "breakthrough" should ensure a rapid advance along the entire national economic "front."

[Kononov] Will the ISTC'd be autonomous organizations, or will they form part of some department? Who is to monitor their activity and who will determine the need for the creation of new organizations of this kind?

[Marchuk] The new organizations are to operate within the established framework of ministries and departments. The nuclei of the majority of them — or more precisely the organizations in charge [golovnyye], — will be institutes of the USSR Academy of Sciences, because it is here that new intersector avenues which

need to be accelerated most frequently arise. ISTC's being set up under the USSR Academy of Sciences include, for instance, the "Svetovod" for the rapid development of fiber optics, "Biogen," which is to deal with the problems of bioengineering, "Machine Reliability," "Catalyst," and others.

But sector institutes could also serve as the nuclei of ISTC's: In that case not the Academy of Sciences, but the relevant ministry would be responsible for the complex, although, of course, work would be done in the interests of all sectors. For instance, the "Robot" ISTC is being set up under the Ministry of the Machine Tool and Tool Building Industry. The organization in charge of this ISTC will be the Ministry of the Machine Tool and Tool Building Industry's Experimental Scientific Research Institute of Metal-Cutting Machine Tools. It is to head all work in the country on the creation of robotized complexes and flexible automated systems for the modernization of mechanical processing and assembly, work which promises a 50-150 percent increase in labor productivity. The possibility is also opened up, on the basis of this technology, of changing rapidly from the production of one type of output to another, which is of tremendous significance today.

An ISTC organized by a ministry will have its own specific features as compared with an "academy" ISTC. For instance, the "Nefteodacha" ISTC of the Ministry of the Petroleum Industry must not only create improved systems for the exploitation of oil deposits and efficient techniques for working productive deposits so as to ensure the fuller recovery of oil and gas; it must also make use of them immediately in experiments at existing oilfields.

Certain ISTC's are being set up by two departments. For instance, the USSR Academy of Sciences and the Ministry of the Electrical Equipment Industry are together organizing the "Laser Technology" ISTC. The organization in charge will be the USSR Academy of Sciences scientific research center for industrial lasers with experimental production facilities, while the Ministry of the Electrical Equipment Industry will be represented by an experimental plant with a design bureau. Their joint task is the creation of laser robotized manufacturing complexes and processes and their application in the processing of materials in various sectors of industry.

Coordination of the work of the USSR Academy of Sciences and ministries and departments in the creation and effective activity of ISTC's is entrusted to the USSR State Committee for Science and Technology. It must define those highly efficient types of technology, processes, and materials whose creation could be accelerated through the formation of an ISTC.

It has been determined that ISTC's are to be created and reorganized by the USSR Council of Ministers. They are to work to 5-year and 1-year plans which will be integrated for all the organizations belonging to an ISTC. Every year they will report to the government.

The ISTC is entrusted with the coordination of all work in its sphere in the country, and it will fulfill the role of organization in charge. In addition, the ISTC is to carry out and coordinate fundamental research and development work in accordance with

the relevant targets of the comprehensive program for scientific and technical progress of the CEMA countries.

Other very important innovations are also planned, which will be given their final, detailed form in the standard provisions governing ISTC's. All the departments concerned will begin work on this at once.

[Kononov] All the same, one of the chief bottlenecks for existing scientific research organizations is the weakness of the experimental base. Because of this, they are often unable to bring their developments up to a standard acceptable to industry. That is why the June conference at the CPSU Central Committee on questions of accelerating scientific and technical progress raised the question of merging institutes which industrial enterprises. How is this problem resolved within the framework of ISTC's? What will their structure be?

[Marchuk] There is no single, standard solution. In the first instance we tried to select as the organization in charge a sufficiently powerful institute with its own design bureau and experimental production facilities. To some extent the prototype ISTC was the Ye.O. Paton Electric Welding Institute. In essence, it had already become an intersector complex. In addition to its scientific subunits, it had an experimental design and technological bureau, an experimental production facility, trial plants for welding equipment and specialized metallurgy, and also a specialized design and technological bureau for metalworking by explosives, with an experimental production facility. This institute complex will now be reinforced by the fact that a whole series of additional scientific and production subunits of various ministries and departments will be taking part in its work.

We tried to form other ISTC's on the same principle. In principle, the complexes must without fail include scientific research, planning, and design organizations and experimental production facilities (which will be strengthened in every way). The ISTC is permitted to organize engineering centers for preparing the models of machinery which are being developed for mass introduction, as well as regional scientific and technical centers.

Certain academic institutes have raised the question of the transfer to their jurisdiction of existing mass production plants to carry out experimental work and organize not only small series, but mass production of new technology. After discussions, it was deemed inexpedient to entrust to the Academy of Sciences economic tasks not appropriate to it associated with the organization of mass production and the fulfillment of the national economic plan for series production and with the complex restructuring of enterprises to produce new output.

[Kononov] Guriy Ivanovich, there are many examples where intersector academic developments have been brought up to a good standard; but nevertheless, industry does not take them up for mass production. If ministries display such inertia now, why should they suddenly lose it and start actively taking up the developments put forward by the ISTC's?

[Marchuk] Intersector complexes are a fundamentally new form of integration of science and industry. The process of their interaction will be placed on a compulsory basis. The USSR

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Council of Ministers not only determines, but also approves the list of organizations of various ministries and departments taking part in the work of the ISTC's on a compulsory basis.

On the submission of the State Committee for Science and Technology, the USSR Gosplan will incorporate in the state plan for those organizations the production of output on the basis of the documentation of the ISTC's. This could mean experimental models or small series of new machines, equipment, or materials. At the same time, industrial enterprises will prepare for the mass production of new technology or materials if they do well in the tests on the small series.

The USSR Gosplan, receiving annual information on the degree of readiness of a new development of importance to the country, will determine which enterprises will take the "baton of introduction into practice" from the ISTC's and start mass production on the scale the country needs.

We are aware that not everything will go smoothly at once. But this way of organizing intersector developments, whereby the coworkers remain, so to speak, where they are, is simpler than a complicated organizational restructuring. For instance, the development of new, highly selective polymer membranes which filter new types of elements and of technologies for the membrane separation of liquid and gaseous media is entrusted to the "Membranes" ISTC of the Ministry of the Chemical Industry. This is a progressive new avenue; and its successful development requires the involvement of organizations of the Ministry of Chemical and Petroleum Machine Building, the Ministry of the Timber, Pulp and Paper, and Wood processing Industry, the Ministry of Light Industry, and the Ministry of Higher and Secondary Specialized Education. If they were all to be assembled under "one roof," it would take a great deal of time and effort. But with the help of the ISTC, it will be possible even without that to carry out work relatively efficiently, in coordination.

Let us add that the director of the ISTC will have considerable administrative rights. It is envisaged, for instance, that the USSR Gosplan will receive from him not only long-term, but also immediate claims for the provision of the necessary material and technical resources for the ISTC.

[Konovalov] One last question. New technology needs trained cadres; otherwise the most sophisticated machine can be discredited because of unskilled use. And the specialist training cycle in VUZes take 5-6 years. How can this contradiction be eliminated?

[Marchuk] VUZes are already becoming part of many ISTC's. They will certainly train specialists for new scientific and technical avenues. The ISTC itself, as the main coordinator of work in its sphere, is to define the demands which will be made on the specialists who will have to work with the new technology. Its task is to work out a kind of "profile" of the necessary specialists. On the basis of this, the USSR Ministry of Higher and Secondary Specialized Education will organize new student training specialities.

As developments come closer to series production, since they will always be under the control of state organs, it is relatively easy to provide for the reorientation of the relevant VUZes, technical colleges, and vocational and technical schools.

It is clear that the chain must be complete: scientific research, experimental design development, testing, mass production, and cadre training. We can and must make full use of the advantages of the planning system to ensure the rapid introduction into practice of technology, techniques, and materials of an intersector nature which are important to the country.



III. 24 Feb 86

## SCIENTIFIC AFFAIRS

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No. 036 Supplement 039

**Maneuver Corrects Orbit of 'Mir' Station***LD241106 Moscow TASS in English 1103 GMT 24 Feb 86*

[Text] Moscow, February 24 TASS — The flight of the scientific station "Mir" is going on. The station was launched into a near-earth orbit on February 20, 1986.

In accordance with the planned program, control check-ups of on-board systems and plants are being carried out in various conditions of controlled flight.

A maneuver to correct the orbit of the station "Mir" was effected in the past days. The parameters of the orbit after the maneuver are as follows: the maximum distance from the earth's surface — 352 km, the minimum distance from the earth's surface — 324 km, orbital period — 91.6 minutes, inclination — 51.6 degrees.

According to telemetric data, the on-board systems of the orbital station "Mir" are functioning normally.

**Velikhov Opens New Laser Research Center***LD230250 Moscow Television Service in Russian 1530 GMT 22 Feb 86*

[T. Komarova report; from the "Vremya" newscast]

[Excerpts] The first scientific research center for technological lasers belonging to the USSR Academy of Sciences has opened in the town of Shatura in Moscow Oblast.

The laser easily cuts out sheet steel. It performs precision operations on the eyes. It works on atoms and molecules, and it is moving out of the field of scientific instruments and into the field of production tools.

"Laser" is the name of the scientific and technical complex which has just opened. The builders hand over the key to Comrade Velikhov, vice president of the USSR Academy of Sciences. He, in turn, hands it over to those who are to master production that is new in principle. [Video shows opening ceremony with Velikhov passing over a large imitation key]

[Begin Velikhov recording] This center is the main part of an interdepartmental complex dealing with technological lasers. Works, institutes, and design bureaus of the Ministry of the

Electrical Equipment Industry are participating in it. The center is our center. We feel that through setting up of this kind of complex we can increase the program for the output of lasers 1.5-2 times over the 5-year plan period. But, at the same time, we also must immediately achieve progress both in the technology and in the science: We must, therefore, develop a new generation of lasers. [end recording]

**Briefs**

**Soil Probing Equipment** — Odessa, February 19 TASS — The builders of port and harbour facilities in the Soviet Yuzhnyy port on the Black Sea will not have to as a research laboratory for services. The necessary data about soil characteristics at a depth of about 50 metres in the area of quays under construction is given by statistic probing equipment designed by Soviet Ukrainian scientists. The name of the equipment "Iglia-1" (Needle-1) corresponds to its appearance. A steel tip packed with sensitive pick-ups goes down into the bottom of the shelf under the pressure of a hydraulic press. When sinking, it sends signals to registering instruments. Using that information, an expert calculates the resistance of the soil and its ability to withstand loads weighing many tons, gives recommendations about the depth and design of the foundation. The small compact device considerably accelerates and cuts the cost of research. It can be speedily installed in any craft. [Text] [*Moscow TASS in English 1034 GMT 19 Feb 86 LD*]

**Atomic Cargo Ship Launched** — Kiev, February 20 TASS — The world's first ocean-going lighter- and container-carrier with an atomic power plant was launched today at a shipyard in Kerch, a port in southern Ukraine. The first of a series of ships intended for service in Arctic seas, it was named *Sevmorput*. This atomic-powered ship has a specially reinforced hull and a ram to cope with ice fields a metre thick. It will take on deck and into its holds more than 70 lighters — barges without an engine having a draught of up to 1.5 metres and capable of carrying 500 tons. The ship's crane will lower them overboard or lift them out of the water at any point of the Siberian and Far Eastern coast. The final construction stage of the ship has begun. After a shakedown cruise *Sevmorput* will be handed over to the USSR Ministry of the Merchant Marine already this year. [Text] [*Moscow TASS in English 2017 GMT 20 Feb 86 LD*]

III. 14 Feb 86

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SCIENTIFIC AFFAIRS

No. 631 Supplement 032

**AES, GES Units Built at 'Priority Rates'**  
 LD131022 Moscow TASS in English 1001 GMT 13 Feb 86

[Text] Moscow, February 13 TASS — The bulk of the increment in the Soviet Union's electricity generation this year will be yielded by atomic and hydro-power stations, which are being built at priority rates. While previously atomic power stations were built from individual projects, now standardized designs are used and serial equipment is installed. This helps to contract considerably construction schedules.

Commenting on these trends, Stanislav Sadovskiy, first deputy minister of power engineering and electrification, told TASS that the total electricity generation of the USSR last year grew by four per cent to reach 1,545 billion kilowatt hours. The share of atomic power stations was 10 per cent and kept rapidly growing as a 1,000,000 kw reactor was put into operation at the Balakovo atomic power station on the Volga river and new generating units went on stream at the Zaporozhye station in the Ukraine and at the Smolensk atomic power plant in central Russia. The Chernobyl and Kursk atomic power stations reached the capacity of 4 million kw each.

Six nuclear generating units with a capacity of 1,000,000 kw each will go into operation this year. All in all, electricity generation by the atomic power stations will grow by 19 per cent this year.

As for the construction of hydro-power stations, they are now getting large 640,000 kw generating units. The Sayano-Shushenskoye hydro-power station, the largest in Eurasia, has reached its full capacity of 6.4 million kw. The energy generating potential of the country has grown considerably as a result.

The guidelines for the economic and social development of the USSR to the end of the century also attach priority to atomic power and hydro-power stations. Electricity generation by the atomic power stations alone is to grow by at least 400-600 per cent by the year 2000.

The Soviet Union will save 80 million tons of valuable fossil fuel thanks to the growth of power generation by the atomic and hydro-power plants in the next five years. This is 20 per cent more than the entire increment in oil and coal production in the country during the period.

**Fiber Optics Department Research Work Reported**

LD121402 [Editorial Report] Moscow Television Service in Russian at 1530 GMT on 9 February carries a 1.5 minute T. Komarova video report from the USSR Academy of Sciences General Physics Institute Fiber Optics Department. Komarova opens her report by saying that the department is conducting research work into improving the quality of glass fibers, with the video showing a metal ring being held by a thin glass thread, and a glass fiber being immersed in a vat of liquid nitrogen. Komarova points out that glass fibers can retain their properties at low temperatures, such as in liquid nitrogen, at a temperature of minus 70 degrees, and that they retain their durability under stress. The video shows a fiber conducting red light, and also fiber being wound onto a drum. Komarova says that such qualities are

those demanded of glass fiber by industry so they can be laid underground in cables to transmit a flow of information.

Continuing her report, Komarova says that the research department team, led by Professor (Dianin), the head of department, has been testing the strength of glass fiber. It can take a strain of 6 kilograms. The video shows Professor (Dianin) talking to research workers, and a glass fiber being stretched, with a scale showing a reading of 7.5 kilograms. Komarova says that a quartz glass fiber thread with a diameter of 125 microns has been installed in a multistorey building at a temperature chosen to preserve the sterility of the installation, and that the light tube [svetovod] satisfies the demands of industry. The video shows pipes and tubes, followed by a brief shot of glass fiber thread being installed, cutting to a visual display unit displaying the word 'Svetovod' in green letters.

Komarova then conducts a video interview with Academician A.M. Prokhorov, the institute director. Komarova first notes that 'Svetovod' applies to an interindustrial complex which aims to create a chain linking scientific processes from the basic research stage down to the introduction of achievements into production. She then asks Prokhorov why the institute's program falls outside this complex, to which Prokhorov answers that the creation of forefront technology is a complex process, with many ways to solve it. Prokhorov goes on to say: We have our own ideas of how this should be done. In the process of our work we are creating optic fibers, which we pass to various establishments making systems based on optic fibers — communication systems, information systems, televisual systems. Prokhorov touches on the links between research departments and industrial enterprises, pointing out that there is no real form of scientific competition, and that competition such as it is, is minimal. Prokhorov concludes by saying: There is no particularly acute competition, we simply go different ways. This is important in solving problems to the maximum degree.

**Comparison of Report on Tajik Earthquake**

Comparison of the item "Force 3-4 Earthquake Registered in Tadzhikistan" which appeared in the Soviet Union *DAILY REPORT* National Affairs Supplement on 12 February on page U1 with an unnamed TASS correspondent report carried by Moscow *KOMSOMOLSKAYA PRAVDA* in Russian on 12 February on page 4 under the headline "Underground Tremor" reveals the following variation:

Penultimate line, *KOMSOMOLSKAYA PRAVDA* reads "...was at a depth of 180 km." (changing "distance" to "depth" and deleting editorial notation)

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REF PMO41616 MOSCOW PRAVDA RUSSIAN 3 MAR///HAS NOT HAPPENED.

TAKE 2 OF 4 -- USSR: NOVOSIBIRSK'S FILATOV ADDRESSES CPSU CONGRESS  
PMO61618

((TEXT)) AT THE END OF LAST YEAR THE SCIENTISTS OF THE USSR ACADEMY OF SCIENCES SIBERIAN DEPARTMENT SUCCEEDED, AS A RESULT OF GREAT PERSISTENCE, IN SECURING AN AGREEMENT ON THE INCLUSION IN THE STATE AND SECTORIAL PLANS OF ABOUT 130 MAJOR COMPLETED PIECES OF WORK WHICH, GIVEN WIDESPREAD INTRODUCTION, COULD ANNUALLY YIELD SAVINGS OF HUNDREDS OF MILLIONS OF RUBLES. BUT FOR APPROXIMATELY A SIMILAR NUMBER OF DEVELOPMENTS THE QUESTIONS OF THEIR IMPLEMENTATION IN THE 12TH 5-YEAR PLAN PERIOD REMAIN FOR THE TIME BEING ALTOGETHER OPEN.

SUCH INSTANCES MUST MAKE US SEEK WAYS MORE PERSISTENTLY FOR THE EFFICIENT COOPERATION OF CENTRAL AND LOCAL ORGANS OF MANGEMENT, ESPECIALLY ON QUESTIONS OF ACCELERATING SCIENTIFIC AND TECHNICAL PROGRESS AND OF ENHANCING THE ROLE OF PLANNING ORGANS. AT THE SAME TIME NEW AND MORE EFFECTIVE METHODS OF COOPERATION BETWEEN SCIENCE AND PRACTICAL WORK MUST BE SOUGHT AND FOUND. AND ALTHOUGH THE OBLAST PARTY ORGANIZATION HAS ALREADY DISCOVERED MANY ORGANIZATIONAL FORMS FOR IMPROVING THE MACHINERY OF LINKS BETWEEN SCIENCE AND PRODUCTION WHICH HAVE PROVED THEIR WORTH, MANY PROBLEMS REMAIN HERE. ABOVE ALL, NOT ALL SCIENTIFIC COLLECTIVES AND THEIR PARTY ORGANIZATIONS ARE YET OPERATING WITH THE NECESSARY EFFECTIVENESS NOR ARE THEY STRUGGLING SUFFICIENTLY PERSISTENTLY FOR THE IMPLEMENTATION OF THEIR PROPOSALS. THE DESIGN AND EXPERIMENTAL PRODUCTION BASE -- AN IMPORTANT ELEMENT OF THE MATERIALIZATION OF IDEAS AND FOR THE ACCELARATION OF THE INTRODUCTION OF SCIENTISTS'

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DEVELOPMENTS, ALL THE WAY THROUGH TO THEIR MASS DISSEMINATION -- IS BEING BUILT UP ONLY SLOWLY.

THE EXPERIENCE OF MANY OF THE COUNTRY'S COLLECTIVES, AND ABOVE ALL OF THE UKRAINIAN SSR ACADEMY OF SCIENCES, ATTESTS TO THE HIGH EFFECTIVENESS OF UNIFYING SUBDIVISIONS WHICH CARRY OUT FUNDAMENTAL SCIENTIFIC RESEARCH, THE DESIGN ANALYSIS OF NEW SOLUTIONS, AND THE PRODUCTION OF EXPERIMENTAL BATCHES OF MATERIALS, INSTRUMENTS, AND MACHINES. SUCH EXPERIENCE ALSO EXISTS IN NOVOSIBIRSK.

THE UTILIZATION IN NEW FLOWLINES AT ENTERPRISES OF THE ELECTRICAL EQUIPMENT INDUSTRY OF POWERFUL ELECTRON ACCELERATORS AND OTHER UNIQUE ELECTROPHYSICAL EQUIPMENT DEVELOPED AND BUILT BY THE USSR ACADEMY OF SCIENCES SIBERIAN DEPARTMENT INSTITUTE OF NUCLEAR PHYSICS HAS YIELDED DURING THE YEARS OF THE 11TH 5-YEAR PLAN AN ECONOMIC SAVING TOTALING MORE THAN R250 MILLION. BUT THIS SAVING WOULD BE IMMEASURABLY GREATER IF THE AFOREMENTIONED EQUIPMENT WERE TO BE PUT INTO SERIES PRODUCTION AND USED IN MANY SECTORS.

UNFORTUNATELY NEGOTIATIONS OVER MANY YEARS WITH THE MINISTRY OF THE ELECTRICAL EQUIPMENT INDUSTRY CONCERNING THE ORGANIZATION OF THE SERIES PRODUCTION OF INDUSTRIAL ELECTRON ACCELERATORS AT ITS ENTERPRISES LOCATED IN NOVOSIBIRSK HAVE SO FAR LED TO NOTHING.

SURELY THE DISCUSSION OF THE IMPERFECTION OF LINKS BETWEEN SCIENCE AND PRODUCTION CANNOT BE CONDUCTED AD INFINITUM? AFTER ALL, BECUASE OF A LACK OF VESTED INTEREST AND SOMETIMES BECAUSE OF THE INDIFFERENCE OF CERTAIN ECONOMIC LEADERS AND PASSIVITY ON THE PART OF SPECIALISTS, TOO MUCH EFFORT HAS TO BE SPENT ON "PUSHING THROUGH" TECHNICAL AND TECHNOLOGICAL SOLUTIONS WHICH HAVE BEEN BROUGHT INTO BEING AND PROVEN IN PRACTICE.

WHILE INCREASING THE PARTY'S DEMANDS ON THE LEADERS OF SCIENTIFIC RESEARCH INSTITUTES AND DESIGN ORGANIZATIONS REGARDING THE FRUITFULNESS OF THEIR WORK, IT IS , AT THE SAME TIME, OUR TASK TO NURTURE A SENSE OF VERY GREAT RESPONSIBILITY FOR THE UTILIZATION OF THE LATEST ACHIEVEMENTS OF SOVIET SCIENCE AMONG LEADERS OF ALL RANKS.

THE PARTY CENTRAL COMMITTEE DECISION ON THE CREATION OF INTERSECTORIAL SCIENTIFIC AND TECHNICAL COMPLEXES, WHICH WAS MENTIONED IN THE CPSU CENTRAL COMMITTEE POLITICAL REPORT, IS AN IMPORTANT STEP ALONG THE PATH OF INTEGRATING SCIENCE AND PRODUCTION. ONE SUCH COMPLEX -- "KATALIZATOR" -- IS HEADED BY OUR USSR ACADEMY OF SCIENCES SIBERIAN DEPARTMENT INSTITUTE OF CATALYSIS. AS APPLIED TO NOVOSIBIRSK, THIS FORM REVEALS THE OPPORTUNITY TO SET UP INTERSECTORIAL SCIENTIFIC AND TECHNICAL COMPLEXES SUCH AS "RADIATSIYA," "MIKROFOTOELEKTRONIKA," "IMPULSNIYYE MASHINY," AND "AVTOMATIKA," FOR WHICH THE APPROPRIATE PROPOSALS HAVE ALREADY BEEN SUBMITTED TO THE USSR STATE COMMITTEE FOR SCIENCE AND TECHNOLOGY, ON THE BASIS OF THE ACADEMY INSTITUTES AND WITH THE INCLUSION IN THEM OF SCIENTIFIC RESEARCH INSTITUTES AND DESIGN BUREAUS OF THE SO-CALLED PRACTICAL APPLICATIONS "ZONE" ("POYAS" VNEDRENIYA)) WHICH EXISTS HERE, AND ON THE BASIS OF CERTAIN ENTERPRISES.

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SPEAKING OF THE PROBLEMS OF ACCELERATING SCIENTIFIC AND TECHNICAL PROGRESS WE, OF COURSE, ARE IN NO WAY INCLINED TO MINIMIZE OUR SHORTCOMINGS AND OUR ROLE IN OVERCOMING SHORTCOMINGS. WE FULLY SUPPORT THE CPSU CENTRAL COMMITTEE POLITICAL REPORT'S PROPOSITONS THAT SUCCESS IN THE IMPLEMENTATION OF THE PROGRAMS OUTLINED, AND ABOVE ALL THE PROGRAM FOR SCIENTIFIC AND TECHNICAL PROGRESS, WILL LARGELY DEPEND ON THE CREATION OF AN ATMOSPHERE OF CREATIVITY, DEMANDINGNESS, THE IMPROVEMENT OF CADRE TRAINING, AND THE FURTHER ENHANCEMENT OF THE STANDARD OF LIVING AND OF THE EVERYDAY LIFE OF OUR PEOPLE.

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MOSCOW: ACADEMY OF SCIENCES VICE PRESIDENT ADDRESSES CONGRESS

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MOSCOW DOMESTIC SERVICE IN RUSSIAN 1030 GMT 3 MAR 86

((SPEECH BY K.V. FROLOV, VICE PRESIDENT OF THE USSR ACADEMY OF SCIENCES, TO 27TH CPSU CONGRESS IN MOSCOW -- DATE NOT SPECIFIED; RECORDED))

((TEXT)) A KEY ROLE IN FULFILLING THE TASK SET BY THE PARTY -- TO INCREASE NATIONAL INCOME ALMOST TWOFOLD IN THE NEXT 15 YEARS -- BELONGS TO SCIENCE AND SCIENTIFIC-TECHNICAL PROGRESS. NEVER BEFORE HAS THE ROLE OF SCIENCE BEEN SO PROMINENT AND RESPONSIBLE AS TODAY. THE PRESTIGE OF SOVIET SCIENCE NOT ONLY HELPS TO RAISE OUR COUNTRY'S INTERNATIONAL AUTHORITY AND ITS ECONOMIC MIGHT, BUT DEMONSTRATES IN PRACTICE THE ADVANTAGES OF SOCIALISM AS THE MOST PROGRESSIVE SOCIAL SYSTEM.

THE CPSU CENTRAL COMMITTEE DEVOTES PARTICULAR ATTENTION IN PRESENT-DAY CONDITIONS TO THE PRIORITY DEVELOPMENT OF THE FUNDAMENTAL SCIENCES, WHICH PLAY A LEADING ROLE IN ELABORATING GENERAL CONCEPTS, DETERMINING COMMON LAWS AND DEFINING PHENOMENA OF THE MATERIAL WORLD. THE RESULTS OF FUNDAMENTAL RESEARCH SHOULD BE EMBODIED MOST EFFICIENTLY IN THE ENGINEERING COMPLEX, SINCE, AS THE REPORT NOTED, THIS COMPLEX PLAYS A DEFINITIVE ROLE IN RAISING THE PRODUCTIVITY AND QUALITY OF SOCIAL LABOR.

UNFORTUNATELY, IT HAS TO BE ADMITTED THAT THE LEADING POSITIONS OF OUR SCIENCE IN THE FIELD OF FUNDAMENTAL RESEARCH ARE FAR FROM ALWAYS BEING USED EFFECTIVELY IN PRACTICAL WORK. THE REASON FOR THIS LIES, ABOVE ALL, IN THE ABSENCE OF A PRECISE SYSTEM AND FLEXIBILITY OF ORGANIZATIONAL MECHANISMS AND STRUCTURES, WHICH COULD LINK SCIENTIFIC AND PRACTICAL ACTIVITY AND ENSURE EFFECTIVE

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MUTUAL INFLUENCE OF SCIENCE AND PRACTICE. RECENTLY A NUMBER OF SPECIFIC MEASURES WERE ADOPTED WITH THE AIM OF IMPROVING THE ASSIMILATION AND UTILIZATION OF SCIENTIFIC ACHIEVEMENTS. THE USSR ACADEMY OF SCIENCES HEADS ██████████ IN SUCH PROMISING DIRECTIONS AS PERSONAL COMPUTERS, FIBEROPTICS, RELIABILITY OF MACHINERY, TECHNOLOGICAL LASERS AND BIOTECHNOLOGY. THE DISTINCTIVE FEATURE OF THE WORK OF THE COMPLEXES CONSISTS IN UNITING LEADING ACADEMIC AND INDUSTRIAL INSTITUTES, SPECIAL CONSTRUCTION BUREAUS AND FACTORIES AND ATTRACTING HIGHER EDUCATION DEPARTMENTS. THIS IS A NEW IMPROVED FORM OF ORGANIZING THE COLLECTIVE LABOR OF SCIENTISTS ACCORDING TO SINGLE, SPECIAL PURPOSE PRIORITY DIRECTIONS.

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14 Feb 86

## I - THE USSR

**Explosive forming of aircraft components** According to Kiev radio, the Aviation Institute in Kharkov has developed a method of making aircraft components from metal sheet by an explosive forming technique which replaces the conventional cutting procedure.\*

**New icebreaking technique** According to a home service report, the icebreaker Mudyug of the Northern Shipping Line is to be fitted with equipment which will cut the ice into two broad strips which will then be pushed under the surrounding ice, leaving a clear navigation channel. Trials have shown that a third less engine power is required for cutting than for breaking ice, so the new technique brings considerable fuel savings.\*

**Personal computer studies** In a home service report on work being done at the Institute of Information Science Problems under the USSR Academy of Sciences, Academician Boris Naumov, its head, said that it is working on personal computers. It has set up an ~~inter-industrial scientific and technical complex~~ to carry out research into the mass development and application of personal computers in various spheres of the national economy.

**Laser-beam record player** On 2nd and 3rd February, Tass and the home service reported that the RET radioelectronics production association in Tallinn had developed a stereo record player which employed a laser beam instead of the traditional stylus. Series production would be started next year.

\* For details see Sections



SWB

SU/W1377/A/20

14 Feb 86

**NEW AIRPORT FACILITIES** Leningrad. [SU/W1376/A/21] Pulkovo international airport in Leningrad can now operate under practically all weather conditions and has been certificated to receive and dispatch aircraft when the weather falls under so-called low meteorological minima, as provided for by the ICAO Category-2. This means that planes will now land at Pulkovo even at times when the cloud is at an altitude of only 30 m and when visibility is no more than 400 m. This results from the latest phase of modernisation, according to Yuriy Balakin, the airport manager. An automatic air traffic control system and an electronic system operating the runway lights have gone into operation. Experts from Aeroflot have already installed computer facilities in the control towers at Moscow, Kiev, Mineralnyye Vody and other major airports. (Tass in English 0925 gmt 6 Feb 86)

Minsk. A new runway has gone into service at Minsk and an Il-76 has made a test landing on it. (Moscow 0004 gmt 10 Feb 86)

**NEW AIRCRAFT COMPONENT MANUFACTURING METHOD** Scientists at the Aviation Institute in Kharkov have introduced a new method for manufacturing aircraft components. In line with their invention, components, instead of being cut out of metal sheets, are shaped by explosive forming. The aim was not only to reduce the amount of metal used, but also to improve labour productivity and working conditions. (Kiev in Ukrainian for abroad 2200 gmt 31 Jan 86)

#### SCIENCE AND TECHNOLOGY

**KARA-BOGAZ-GOL PROBLEMS** According to Babayev, President of the Turkmen Academy of Sciences, the very valuable stores of salts on the bed of the Kara-Bogaz-Gol became threatened after it dried up as a result of the dam, completed in March 1980, sealing it off from the Caspian. The dam had been built to prevent the Caspian becoming more shallow. Almost 20 organisations have been given the task of examining the Kara-Bogaz-Gol problems but in practice only a few members of a local geological team are working there. There is no organisation in charge there even though a lot of organisations are involved on paper. Somebody must be put in charge before it is too late. (Moscow 0600 gmt 10 Feb 86)

**ARCTIC SEVER-38 EXPEDITION** The high-altitude Sever-38 airborne expedition will soon begin work. According to Vladimir Kiselev, its leader, the expedition has three tasks this year: (1) ensuring the change-over of personnel of the SP-27 drifting station which is now 900 km from Zhukov base and is continuing to drift; (2) closing the SP-26 drifting station, which has been operating for three years but its ice-flow has been reduced to a size when it is not suitable for continued operation; and (3) setting up a new drifting station, SP-28. The setting up of the expedition is now being completed, the personnel have been selected and a research programme has been drawn up for all the stations. (Moscow 1600 gmt 4 Feb 86)

**FIBRE OPTICS RESEARCH** The fibre optics department of the Institute of General Physics of the USSR Academy of Sciences has been carrying out research into improving the quality of glass fibres. Glass fibres can retain their properties at low temperatures, for example in liquid nitrogen at minus 70 deg.C, and are durable. At the institute, glass fibres have been obtained which can bear a stress of 7.5 kg. A glass fibre thread with a diameter of 125 microns and made from quartz glass has been laid through several storeys of a building. According to Academician A.M. Prokhorov, director of the institute, the **Svetovod (light guide) inter-industry complex**, which aims to create a link between basic research and production, lies outside the institute's research programme because there are many ways of solving the problems of advanced technology and too many organisations involved in fibre optics to link them all under one complex. This is not a form of scientific competition since the latter is minimal, there is an exchange of results between all organisations involved in work on fibre optics and they all assist each other. (Soviet television 1530 gmt 9 Feb 86)