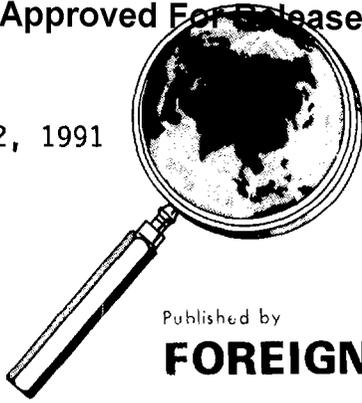


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## FOREIGN TECHNOLOGY DIVISION

**Title:** STUDIES OF SEMICONDUCTOR AND STRUCTURAL MATERIALS ON "MIR"

**Primary Source:** *Sovetskaya Moldova*, August 21, 1991, No. 163 (17417), p. 1, cols. 4-5

**Entire Text:** Flight Control Center, August 20 (TASS) -- Anatoliy Artsebarskiy and Sergey Krikalev have been working on board the "Mir" complex for three months.

In line with the space materials-science program, the crew began the latest melt in the unit "Krater-V" on August 17. The purpose of this production process, which is calculated to last 120 hours, is to obtain one more highly pure single crystal of the semiconductor material cadmium sulfide in zero gravity.

Experiments employing scientific instruments and equipment installed on the outer surface of the orbiting complex are continuing. Today, spectra of radiation of extraterrestrial origin are being measured and studies are being made of characteristics of structural materials which have been exposed in conditions of open space for a prolonged period of time.

The work in near-Earth orbit is proceeding in accordance with the designated schedule. Both cosmonauts are feeling well.

(SNAP 910912)

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**Author:** *Moskovskiy, O., correspondent*

**Title:** CHIEF OF STAFF REASSURES PUBLIC AS TO SUPERVISION OF NUCLEAR WEAPONS

**Primary Source:** *Krasnaya zvezda*, August 29, 1991, No. 196 (20583), p. 1, cols. 6-7

**Entire Text:** Moscow, August 28 -- General of the Army Vladimir Lobov, chief of the General Staff of the USSR Armed Forces, has announced: "The strategic nuclear forces of the Soviet Union (rocket troops, the nuclear fleet and strategic aviation) and

tactical nuclear weapons of the Land Forces were and are under rigid and constant supervision both during the period of the well-known events in the USSR and after them." He gave an interview to a TASS correspondent in connection with various speculation in the West regarding violation by the junta's participants of supervision of strategic nuclear weapons of the USSR in the course of the coup d'etat that failed.

V. Lobov emphasized that prevention of unsanctioned use of nuclear weapons "is ensured by suitable technical and organizational measures in the system for control of strategic nuclear forces and by reliable safeguarding and defense of nuclear warheads and means of delivering them." (SNAP 910912)

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**Author:** *Shitov, Andrey, correspondent*

**Title:** MIG-29 AND IL-76 AIRPLANES ARRIVE IN U.S. FOR AIR SHOWS

**Primary Source:** *Krasnaya zvezda*, August 29, 1991, No. 196 (20583), p. 3, cols. 7-8

**Extract:** New York, August 28 -- Two Soviet MIG-29 fighter aircraft and an IL-76 transport airplane have arrived in the United States to conduct demonstration flights. Their American tour was to have begun on August 19, but U.S. authorities canceled it as a sign of protest against the attempted coup d'etat that was perpetrated in the USSR. Now that the legitimate government has been restored in the Soviet Union, the American side has lifted this ban.

In accordance with the original program, the Soviet airplanes were to take part in seven air shows, in the cities of Westfield (Massachusetts), Cleveland (Ohio), Mankato (Minnesota), Harrisburg (Pennsylvania), Topeka (Kansas), Fort Worth (Texas) and Salinas (California). Unfortunately, they were already too late for

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the Massachusetts show, but they are being eagerly awaited in the other places.

It is proposed to arrange three or four demonstration flights during each show. Those who wish will be able to 'take a ride' in a MIG as passengers in the course of these flights.

(SNAP 910912)

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**Author:** *Bystrov, M.*

**Title:** PROGRESS IN CREATING SPACE SYSTEM FOR TRANSMITTING MEDICAL INFORMATION

**Primary Source:** *Sovetskaya Rossiya, May 22, 1991, No. 100 (10551), p. 4, col. 1*

**Extract:** The idea of creating an international emergency satellite system has been maturing for a long time. This system would supply rescuers with medical information quickly.

A program called "Outer Space for Health" has come into being. The scientific production association "All-Union Medical Information" (Soyuzmedinform) of the USSR Ministry of Health is directing work in line with this program and coordinating operations of all concerned organizations.

In organizing such a service, it is important that it be linked to international systems. This refers in particular to so-called "satellites of life" which form a network of the "Helsnet" type. Work on creating such a network has advanced further abroad than in our country. It is proposed to launch the first satellite of this series with an "Ariane" rocket in May of this year.

In the space system in question, it is most convenient to use satellites placed into low orbits. From 24 to 30 spacecraft are required. They would be capable of supporting communications among medical centers within the limits of practically the entire planet. An association called SMOLSAT has been created for the purpose of carrying out these plans in the USSR. Three large firms -- "Soyuzmedinform," "Applied Mechanics" and "Precision Instrument" -- have become members of this association.

It is proposed that the system will serve not only needs inside the Union but also foreign organizations on a commercial basis. The World Health Organization, the

International Red Cross, the U.N. Committee on Natural and Industrial Disasters and other organizations have already shown interest in the system.

"One feature of this humanitarian project is that it is financed by bank credit and not from the state budget," related A. Kiselev, general director of the "Soyuzmedinform" firm. "I am sure that the system will become self-supporting through collection of fees from potential users. The participation of such large Soviet space firms as 'Applied Mechanics' and 'Precision Instrument' in this work will serve as a guarantee that, from the technical standpoint, the system will meet the highest world standard. The first satellites will begin to operate by 1993. The system is supposed to be fully operational by 1994." (SNAP 910912)

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**Author:** *Davidyants, Aleksandr (Moscow)*

**Title:** USES OF ELECTRONIC-WAVE RESEARCH IN POWER ENGINEERING, DECONTAMINATION

**Primary Source:** *Gudok, August 23, 1991, No. 161 (19996), p. 4, cols. 5-8*

**Abstract:** The article is an interview with academician Rimiliy Fedorovich Avramenko, head of research at the central scientific production association "Vympel" of the USSR Ministry of the Radio Industry. Avramenko comments on studies of the properties of electronic waves and on prospective fields for employing results of this research.\*

Avramenko relates that a large group of scientists of the "Vympel" association and colleagues from other organizations have been engaged in research of electronic waves for more than 20 years. It is noted that information about this work was classified up until recently. Among the project's results are hypotheses regarding the origin of ordinary lightning, ball lightning and tornadoes. It has been demonstrated that these and other natural phenomena are connected with the accumulation of a huge mass of highly concentrated electronic waves over the earth's surface. This mass discharges periodically, giving rise to lightning and thunder. The scientists have concluded that electronic waves not only constitute a large portion of the

mass of the universe but represent a completely new and essentially inexhaustible source of energy. Avramenko and his associates also discovered that electronic waves can form a Bose condensate (paired electronic waves). This property enabled the scientists to observe high-temperature superconductivity in dielectrics for the first time.

Avramenko showed the author of the article an instrument which is said to demonstrate processes that the scientists are studying. Avramenko flipped a switch of this instrument, which is housed in a small plastic box, and barely audible explosions were soon heard. A thin, shining jet of plasma burst from a small hole in the instrument. The scientist then placed an ordinary steel safety-razor blade over this hole. Another jet emerged from the instrument and pierced the blade. Avramenko explains that his group has succeeded in recreating plasma-like formations in laboratory conditions and demonstrating that these objects possess quite unusual physical properties, including high specific energy content, and nonlocalization -- the ability to interact remotely with their environment. Such interaction makes it possible to obtain additional energy.

Avramenko claims that development of electric power stations of a new type which is ecologically clean has become possible in practice, thanks to advances in electronic power engineering. The small instrument which he demonstrated is characterized as a power station in miniature. Avramenko foresees the possibility of using electronic energy also in transport, including space flight. He thinks that unidentified flying objects may be extraterrestrial spacecraft powered by electronic-wave energy which these objects obtain directly from their environment. The use of electronic waves for combating radiocontamination is mentioned as still another important direction of research. Experiments reportedly have demonstrated that treatment of radioactive substances with such waves can accelerate these substances' process of decay by a million times. This opens up unique possibilities for eliminating consequences of the Chernobyl disaster, for example.

Avramenko thinks that the Soviet Union

has the scientific potential to put his group's ideas into practice. He reports that the group is ready to develop decontamination equipment utilizing electronic waves and plans to conduct field trials of such equipment in three years. A proposal submitted recently to the RSFSR Supreme Soviet calls for more than 4 million rubles to be allocated for this purpose.

\*See also the *Daily SNAP*, August 22, 1991, p. 3, col. 1 (SNAP 910912)

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**Author:** *Prisyazhnyy, A. (Helsinki)*  
**Title:** *BALTIC SEABED TO BE STUDIED FROM FORMERLY SECRET MINISUBMARINE*  
**Primary Source:** *Vodnyy transport*, August 17, 1991, No. 97 (9809), p. 2, col. 5

**Entire Text:** On board the vessel "Akademik Aleksey Krylov," the first Soviet-Finnish scientific expedition has begun joint studies of the seabed, flora and fauna of the Baltic Sea. The scientists intend to conduct geological studies in the Gulf of Finland and to study the mechanism of the spread of heavy metals, organic substances and other results of human activity in it, and their effect on the marine environment.

The scientists will take samples of seabed soil from a small submarine, which is submerged from the vessel. It is capable of operating with a crew at a depth of up to 500 meters, and its hydraulic 'arms' can collect samples into special 2-meter capsules.

The Finnish press, which is giving high praise to the organization of such an expedition, notes that Finnish scientists will for the first time be able to descend to the seabed in a secret Soviet minisubmarine. Not long ago, the Finnish research vessel "Armanda" visited the eastern waters of the Gulf of Finland, also for the first time in 50 years. This shows that radical changes have taken place in the area of the exchange of scientific information with the Soviet Union.

(SNAP 910912)

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**Author:** *Musafirova, O., correspondent (Kiev)*

**Title:** USE OF PSYCHOTROPIC BIOGENERATORS DURING AUGUST PUTSCH CLAIMED

**Primary Source:** *Komsomolskaya pravda, August 27, 1991, No. 194-195 (20194-20195), p. 6, cols. 2-3*

**Extract:** Who could have thought that the unsuccessful attempt of a coup d'etat would give impetus to our investigation of modern methods for control of the human psyche?

Viktor Sedletskiy, vice-president of the USSR League of Independent Scientists and head and chief designer of the center "Forma" of the USSR Association of Machine-Building Technologists of the international consortium "Ekoprom," related:

"As a specialist and a legal person, I contend that production in quantity (which is fundamentally important) and testing of psychotropic biogenerators has begun in Kiev. I cannot assert that it was Kiev generators which were used during the putsch. For such a statement to be made, the generators' specifications would have to be known. The fact of their employment is evident to me, however.

"What are psychotropic biogenerators? They are electronic equipment, which produces the effect of control in the human organism. Specifically, the left and right hemispheres of the cerebral cortex are affected. The so-called project 'Zombie-5' of the United States is based on this.

"Similar work is also being conducted in the Soviet Union (specifically, in Kiev, at the Institute of Materials-Science Problems, in one of the departments, the laboratory of which is located in a residential district of the city, there are biogenerators that were produced at the 'Oktava' plant). Let me say on the basis of my personal experience that I am also the author of a prototype of such a generator. I completed the work in August of 1990. The experiments were conducted on animals. We did not conduct experiments on humans. Now, however, as I have learned, such experiments are under way on highly-paid volunteer testers.

"One month ago, I officially informed Ye. K. Marchuk, Ukrainian SSR state minister for problems of defense, national se-

curity and emergency situations, of my views regarding this matter (psychotropic biogenerators are real and their use for evil purposes is possible). I did not, however, get a reply.

"Why did the system fail during the days of the coup? Lacking experience, the putschists did not know that, in order to achieve the intended response, the 'influenced' soldiers must not be allowed to merge with the people on the streets." (SNAP 910912)

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**Title:** SORBENT FOR TREATMENT OF POST-RADIATION SYNDROMES IN PRODUCTION

**Primary Source:** *Sovetskaya Belorussiya, May 28, 1991, No. 102 (18183), p. 2, cols. 2-6*

**Extract:** Production of a truly miraculous material, which came into being through the cooperation of scientists of the Ukrainian Academy of Sciences and industrial specialists of the Gomel region, has begun at the Svetlogorsk production association "Khimvolokno" (man-made fiber). Its prosaic name -- carbon fabric sorbent brand AUT-m -- can be understood only by specialists. But one probably couldn't find anyone who at some time or other wouldn't want to use an AUT preparation. The sorbent's characteristics make it possible to use it in the form of tablets, granules, dressings or suspensions in the treatment of the most diverse human diseases and pathologic conditions. Burns and trophic ulcers, viral hepatitis and cirrhosis of the liver, allergic and skin diseases, psychoneurological disorders -- this is a far from complete list of ailments which AUT helps to overcome. But most importantly -- it has been shown to have high activity in the treatment of post-radiation syndromes and in accelerating the elimination of radio-nuclides from the organism. (SNAP 910912)

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**Title:** Ya. S. BUGROV (obituary)

**Primary Source:** *Vechernyaya Moskva, July 1, 1991, No. 130 (20514), p. 4, col. 7*

**Entire Text:** Doctor of Physical-Mathematical Sciences, Professor Yakov Stepanovich Bugrov, a laureate of the USSR State Prize, died on June 24 of this year, following a grave illness. He was the former dean of the applied-physics department of the Moscow Institute of Electronic Engineering and head of the chair of higher mathematics.

The death announcement is made with deep regret by the institute, and sincere condolences are expressed to the family and friends of the deceased.  
(SNAP 910912)

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**Title:** *A. L. MIKAYELIAN (obituary)*  
**Primary Source:** *Meditsinskaya gazeta, August 23, 1991, No. 34 (5207), p. 5, cols. 1-2*

**Extract:** Professor Aleksandr Lvovich Mikayelyan, an eminent Soviet heart surgeon, died on August 18 at the age of 62. He was a corresponding member of the Armenian Academy of Sciences and director of the Yerevan affiliate of the USSR Academy of Medical Sciences' All-Union Research Center of Surgery (VNTsKh).

From 1974 until the last day of his life, A. L. Mikayelyan was director of VNTsKh's Yerevan affiliate. He put much effort and energy into the development of

surgery in Armenia, and this became especially apparent during the difficult days of the Armenian earthquake.

His publications on surgery and cardiology are widely known in the world. He was elected a member of the International Society of Surgeons and the board of the All-Union Scientific Society of Surgeons and Cardiologists, and a member of the USSR Academy of Medical Sciences' Scientific Council for Surgery and Scientific Council for Organ and Tissue Transplantation and the Development of Prostheses and Artificial Organs.

(The obituary is submitted by the USSR Ministry of Health; the presidium of the USSR Academy of Medical Sciences; and the academy's All-Union Research Center of Surgery and Institute of Cardiovascular Surgery imeni Bakulev. A photograph of A. L. Mikayelyan is given.)  
(SNAP 910912)

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