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SPACE COMMUNICATIONS SERVE THE NATIONAL ECONOMY



In connection with the celebration for the observance of "Radio Day", the staff presents a series of replies to questions asked of the well-known radio-communications specialist and corresponding-member of the Academy of Sciences of the USSR, Vladimir Ivanovich Siforov.

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- 1. Is it possible to evaluate, generally, the practical benefits of utilizing AES* in long-range communications?

A technico-economic analysis indicates that it is economically practical to utilize AES communications systems to transmit information several thousands of kilometers away. This is very important for a country as large as ours whose territories are so extensive and often so thinly populated.

Imagine how difficult and expensive it is to construct long-range cable and relay communications. Each such system, containing many intermediate transmitting stations, demands receiving and transmitting equipment, buildings, power sources, and maintenance. In remote areas and those areas with small populations, this is especially difficult. After being constructed, these communications systems can only be put into operation after all the intermediate and final links have been built.

Ground receiving stations for space communications are independent of each other; e.g., as during the development of the "Orbit" system.

They are especially effective economically in so far as their construction and application to exploiting new receiving stations is not connected with increased costs for additional satellites or transmitting centers.

There is another important factor which cannot be subjected to any financial criteria but which is essential to all activities of our socialist government: the constant concern to better the existence of every Soviet citizen and to satisfy his increasing material and spiritual needs.

In order to carry out "Directive XXIII" of the KPSS** released on the eve of the 50th anniversary celebration of the "Great October (revolution)" a wide network system was constructed through the "Orbit" system throughout the distant regions of our country. As a result, 20 million more people were given access to central television.

* AES = MQ3 (artificial earth satellites)

** KPSS = KPCS (Communist Party of the Soviet Union)

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It would have been impossible to construct such vast networks in such distant parts of the Far North and Far East in so brief a period without the AES. How can we measure the joy of these people and their gratitude to the party and government.

From a large volume of telegrams, received from viewers and public organizations apropos, of the establishment of the "Orbit" station, I would like to read just one from the city of Kemerov: "The television transmission from Moscow on the occasion of the 50th anniversary of the "Great October (revolution)", once again demonstrated to all the workers at Kuzbass the invaluable contributions made by Soviet scientists. Three million workers were thrilled when they saw the grand meeting of the Central Committee of the KPSS and the Supreme Soviet of the USSR, the meets at Marx Field, the parade at Red Square, and the sports events.

"The content of the televised programs was interesting and the quality excellent because everyone felt that he was participating in events of historical importance. The Division of the KPSS here heartily congratulates the designers of "Orbit" for their magnificent gift to the workers..."

The construction and activation of 20 "Orbit" stations within a year is a monumental achievement and marks our transition to the mass utilization of space technology in our national economy and underscores the achievements of our national science, technology, and industry.

2. How will space long-range communications systems be developed in the future when the Molniya satellite is used?

Engineers and scientists of all types are working in design bureaus and scientific-research institutes to improve the economical and functional aspects of space communications systems. They develop new elements of various devices and perfect ground receiving stations.

Regular communications satellites are being prepared for orbital flight to ensure normal functioning of already existing space communications systems and to improve them. New "Orbit" stations are being built to receive programs from central television and their further expansion is being considered. Besides, the "Orbit" stations will help realize local television transmission, and telephone, telegraph, and phototelegraphic communications. Space communications systems will also be applied in transmitting weather reports and matrixes of central newspapers.

The role of space communications systems must not be underrated in the realization of widespread color transmission in our country. A decision to install the Soviet-French color TV system *Secom III* was made in July 1966 which would also ensure the reception of color programs on regular black and white TV and vice-versa. All areas receiving satellite-transmitted television will be able to receive color television.

The utilization of space systems opens up all kinds of possibilities to establish international space communications systems. Agreement between many socialist countries regarding mutual establishment of space communications systems leads to the possibility of constructing stations not only in our territory but in other countries as well.

3. What new problems in the area of communications can be made incumbent on satellites in the future?

Communications systems that utilize satellites will play a leading role in securing international communications and eventually in the establishment of global systems of radio-space communications. Not only communications between ground stations will be secured but also between moving objects ... planes and ships located anywhere.

An AES communications system will ensure reception of radio broadcasting and television directly to radio and TV receivers of viewers and listeners after certain technical problems have been solved. Any point on earth will become as assured zone of TV reception and the television receiver will become as omnipresent as is the transistor radio.