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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Intersputnik: Status and Prospects

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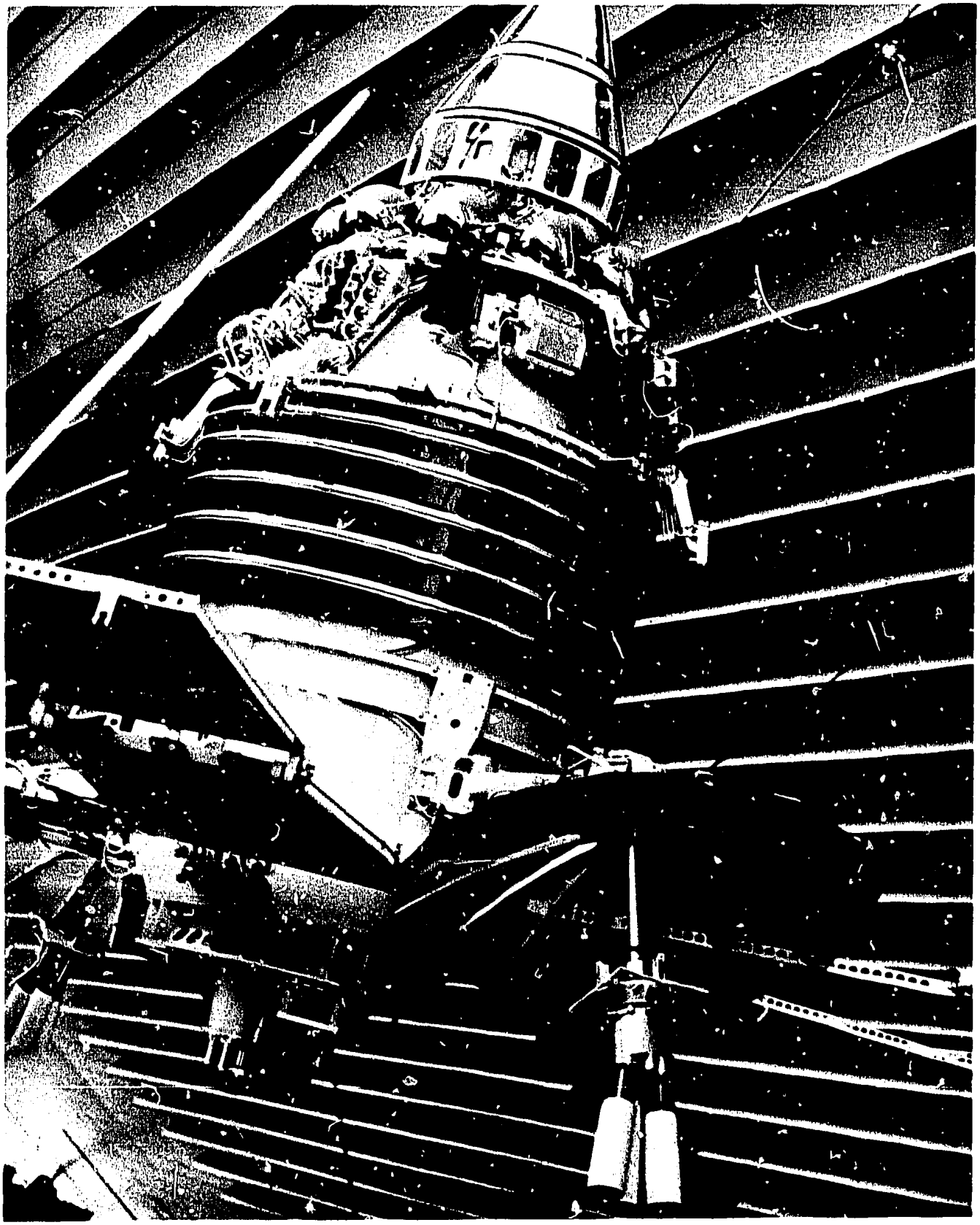
Chart



MOLNIYA-1, FIRST GENERATION SOVIET COMMUNICATIONS SATELLITE AT EXPO-67. MOLNIYA-2, THE SECOND GENERATION COMSAT TO BE USED IN THE INTERSPUTNIK SYSTEM, WILL PROBABLY BE SIMILAR IN APPEARANCE.

CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
May 1972

INTELLIGENCE MEMORANDUM

INTERSPUTNIK: STATUS AND PROSPECTS

Summary and Conclusions

1. As a counter to the US-backed Intelsat Consortium, the USSR is sponsoring formation of an independent international comsat system known as Intersputnik. Although Soviet intent to create Intersputnik was announced in early 1967, the organization did not come into formal existence until late 1971. Currently, Intersputnik has only nine members -- all Communist countries – compared with 83 member nations in Intelsat. In contrast to Intelsat's seven operable comsats and more than 50 earth stations, the USSR is only now testing a prototype Intersputnik satellite, and earth station construction has yet to begin in most of the member countries.

2. Despite Intersputnik's slow progress, Moscow appears committed to the deployment of the system. Second-generation Molniya satellites in elliptical orbit probably will reach operational status within the next one to two years, and most if not all of the current Intersputnik members probably will have at least one operational earth station by 1975. Soviet plans to use geostationary satellites in Intersputnik appear now to be much less firm than they were earlier. Because of its late start and the geographic constraints on coverage imposed by use of satellites in elliptical orbit, Intersputnik has little chance of becoming a serious competitor to the global Intelsat system. Instead it seems destined to be largely a regional system for the exchange of television programs and the bolstering of Warsaw Pact military communications.

3. In form, Intersputnik's management structure is much less complex than Intelsat's, but in both organizations the effective power for decision-making is concentrated in one body -- a governing board. In theory,

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Note: This memorandum was prepared by the Office of Economic Research and coordinated within CIA.

Intersputnik policies are to be governed by the "one nation - one vote" principle in contrast to Intelsat's weighted voting formula favoring the largest users of the system. In practice, however, Soviet monopoly over launch vehicle and space craft technology ensures that major Intersputnik policy will be formulated by the USSR.

4. The Soviet attitude toward Intelsat has metamorphosed from open Soviet hostility to a desire for at least limited accommodation. Moscow's current view appears to be that excessive US power within Intelsat prevents formal membership in the Consortium by the USSR and other Intersputnik countries but does not preclude a cooperative operational relationship with Intelsat. The Intersputnik Agreement specifies technical cooperation with other communications satellite organizations. Under a revised US-Soviet "Hot Line" arrangement, the USSR will build an Intelsat-type earth station to work with Intelsat satellites positioned over the Atlantic Ocean, and the United States will build a Molniya-type station to work with Molniya-2 satellites. In the future the USSR may seek a formal cooperative arrangement between Intersputnik as an organization and the Intelsat Consortium.

Discussion

Background

5. Soviet intent to pursue an independent course in international satellite communications became evident soon after the formation of the US-backed Intelsat Consortium in 1964. Moscow frequently denounced Intelsat as a capitalist venture under the thumb of US business interests and hinted at the formation of a separate socialist communications satellite system in which every member would have equal representation and power. Moscow voiced three main objections to Intelsat. Number one was Intelsat's decision-making arrangements under which voting strength was weighted in proportion to a country's investment in the system and utilization of its communications services. Had the USSR joined Intelsat when invited in 1964, it would have received only 0.5% of the total vote compared with 61% for the United States. Another Soviet objection was Intelsat's goal of establishing a "single global commercial communications satellite system," a provision interpreted by Soviet authorities as being hostile to the formation of other comsat systems such as their own Molniya network. The USSR also attacked Intelsat's requirement that signatories must be members of the International Telecommunication Union (ITU), on the grounds that it was obviously designed to deny membership in the Consortium to East Germany, North Vietnam, North Korea, and the People's Republic of China, which are not members of the ITU.

Planning for an Independent System

6. Concrete evidence of Soviet plans to sponsor an international comsat system independent of Intelsat surfaced in April 1967 at a conference called by the USSR to discuss space cooperation among the socialist countries. The Soviet hosts presented a draft proposal to establish an international comsat organization to be known as "Intersputnik." This proposal was initialed by Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, Cuba, and Mongolia. Working groups met on Intersputnik in Sofia in October 1967 and again in Budapest in June 1968, when a draft Intersputnik Agreement was approved as a working document for further study.

7. An advance planning paper submitted by the USSR to the Budapest conference revealed that Intersputnik was still little more than a concept at that time and that much groundwork needed to be done before it could become a reality. The paper proposed that Intersputnik should evolve in three stages. The first stage was to be devoted to planning, research, and design. In the second (experimental) stage, planning would be completed and a limited number of ground stations would be built and tested, utilizing Molniya satellites in elliptical orbits. Intersputnik would become operational in the third stage, employing satellites in geostationary orbits and possibly some in elliptical orbits. Ground stations begun in the second stage would be completed and new ones started. The Soviet planning paper failed, however, to provide a timetable for implementing the three Intersputnik stages, leaving this question for a later meeting.

USSR Proposes an Independent International System

8. In August 1968, representatives of the USSR, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Cuba, and Mongolia presented the Intersputnik draft proposal to the Secretary General of the United Nations for publication and distribution at the UN Conference on Exploration and Peaceful Uses of Outer Space, then in session at Vienna. The key provision of the Intersputnik proposal – obviously intended by the USSR as an eyecatcher – was its "one nation - one vote" principle of representation in the organization's governing body. The proposal invited all nations to become members of the Intersputnik system, but its sponsors were almost immediately embarrassed in the United Nations by the Soviet invasion of Czechoslovakia.

9. Between December 1968 and June 1971 a round of Intersputnik working group meetings convened in Czechoslovakia, East Germany, Romania, and Poland -- a cycle evidently intended to emphasize the egalitarian nature of the organization (meetings having already been held

in Bulgaria and Hungary). These meetings produced little new information for public consumption, but the protracted absence of ground station construction in Eastern Europe and Cuba suggested that Intersputnik was having difficulty in progressing beyond the first stage and remained essentially a paper organization.

The Definitive Intersputnik Agreement

10. In November 1971, some four and one-half years after initial promulgation of the Intersputnik concept, the participating Communist countries met in Moscow for the signing of the definitive Intersputnik agreement. Although it differs little from the earlier proposal to the United Nations, the agreement formally signed provided Intersputnik with a juridical personality -- an important concept in international law. Intersputnik now has the capacity to conclude contracts and other agreements, to acquire and dispose of property, and to be a party to legal proceedings. The signing further legitimized Moscow's claim of an alternative for those countries interested in international satellite communications but dissatisfied with US domination of Intelsat, even though the hardware for an operational system is still conspicuously absent.

11. Intersputnik is basically a two-tier organization consisting of a Board and a Directorate. (The Agreement also provides for a three-man Auditing Commission, but its members can hold no office in the organization and it has no operational responsibilities.) The Board is the governing body, in which each signatory nation has one representative and one vote; decisions of the Board have the force of intergovernmental agreements. The Board's most important responsibilities are to approve plans for the development of the system as a whole, to approve means for establishing the space segment, to determine specifications for comsats and earth stations, to approve channel allocations, and to set rates for channel usage.

12. The Directorate -- consisting of a Director General, his deputy, and a multinational staff -- is responsible for handling the day-to-day operations of Intersputnik. The Director General implements the decisions of the Board and, subject to Board approval, draws up plans for the organization's activities; prepares budget estimates; projects ahead for the development and improvement of the communications system; and negotiates for the design, manufacture, and delivery of space segment hardware and satellite launch services. As chief executive, the Director General represents Intersputnik in relations with member states, non-member states, and other international organizations. Under delegated authority from the Board, he is also empowered to conclude international agreements.

13. The Intersputnik organizational structure, almost certainly shaped mainly by the USSR, is much less complex than that of Intelsat, which is the product of hard-won compromises among a welter of contending national and regional interests.* (For a comparison of the Intersputnik and Intelsat organizational structures, see the chart.) In effect, the functions assigned to the three top bodies of Intelsat are consolidated within Intersputnik's Board, and the Director General of Intersputnik has the combined responsibilities of Intelsat's Secretary General and the Communications Satellite Corporation (COMSAT), the operational and technical manager of Intelsat.

14. Intersputnik's "one nation - one vote" principle for substantive decision-making contrasts sharply with Intelsat, where "one nation - one vote" governs only the Assembly of Parties (which represents governments and has primarily recommendatory powers) and the Meeting of Signatories (which represents telecommunications administrations and sets general rules on earth station access to the system, rates, and allotment of the space segment). In the Board of Governors -- the true locus of decision-making in Intelsat -- voting power is weighted according to a member nation's use of and investment in the system. The egalitarian character of Intersputnik, however, is likely to prove more apparent than real. The permanent seat of Intersputnik is in Moscow and it will be surprising if anyone but a Soviet official is "elected" Director General. More important, the USSR alone among Intersputnik members controls the satellite technology and launching facilities necessary for the organization to function. Acknowledgement of this fact of life is reflected diplomatically but unmistakably in the language of the Intersputnik Agreement.

15. The definitive Agreement is notably guarded concerning the timing, deployment, and technical parameters of the Intersputnik system but does provide a few new details. In the current, or experimental, stage -- scheduled to last until the end of 1973 -- members' earth stations will conduct communications tests using comsat channels provided free by the USSR. In the next stage, for which no terminal date is given, one or more Intersputnik satellites will be qualified as operational and channels will be made available to members on a lease basis. In the final stage, the Intersputnik system will be declared in full "commercial operation" at a time "considered economically advisable" by the membership. The Agreement provides no hint as to when the crossover to commercial status for Intersputnik is likely to be reached.

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ORGANIZATIONAL STRUCTURE OF INTERSPUTNIK AND INTELSAT

Intersputnik-9 Members

BOARD
Full Membership
"One Nation-One Vote"
Governing Body

AUDITING COMMISSION
3 Members

DIRECTORATE
Headed by Director General
Executive, Operational, Technical, and Administrative Management

Intelsat-83 Members

ASSEMBLY of PARTIES
Full Membership
"One Nation-One Vote"
Recommendatory Powers on Matters of Interest to Parties as Sovereign States

BOARD of GOVERNORS
Approximately 20 Members
"Weighted Voting"
(Based on Member's Investment Share)
Sets General Policy on Development and Operation of Space Segment

MEETING of SIGNATORIES
Full Membership
"One Nation-One Vote"
Establishes General Rules for Approval of Earth Stations, Allotment of Space Segment Capacity, and Establishment of Rates

SECRETARY GENERAL*
Executive, Financial, and Administrative Management

COMMUNICATIONS SATELLITE CORPORATION*
Operational and Technical Management

**Following transitional period, functions to be assumed by a Director General. COMSAT Corporation may or may not be retained on contract basis to provide operational and technical services.*

Prospects

16. On 24 November 1971 the Soviet Union launched a second generation comsat called Molniya-2 – the first major advance in Soviet comsat technology since the first Molniya-1 was successfully orbited in April 1965. Little is known about the new satellite except that it operates in a higher frequency band than the Molniya-1 series (4 gigahertz to 6 gigahertz compared with 800 megahertz to 1,000 megahertz). Use of this higher band of frequencies (the same as that used for Intelsat satellites) probably reflects the Soviet desire for a satellite that provides greater channel capacity and expanded multiple access – necessary features for an international system with a relatively large number of subscribers. However, Molniya-2, using the same highly elliptical orbit as Molniya-1, gives good coverage only of the northern hemisphere. Coverage of most of Asia, Africa, and South America would require a satellite in stationary orbit over the equator. The USSR first revealed firm planning for a geostationary comsat (called Statsionar) in 1969, citing December 1970 as a probable initial launch date. Although the initial Statsionar launch could take place at any time, satellites of the Molniya-2 type will probably be used by Intersputnik when the system becomes operational, but even this comsat must still undergo a lengthy period of Soviet testing and checkout.

17. Although the USSR built an Orbita-type earth station in 1969 at Ulaan Baatar in Mongolia, no evidence is available thus far of earth station construction in the other Intersputnik countries. Soviet authorities have stated in private discussions with US officials that the first East European country to have an operational Intersputnik earth station probably will be East Germany. Press releases have indicated that Intersputnik earth stations also are to be completed in Bulgaria, Czechoslovakia, Cuba, and possibly Poland during the 1971-75 plan period, but no such plans have yet been announced for Hungary and Romania. Earth station construction in Eastern Europe and Cuba possibly is being held up pending thorough checkout of prototype stations in the USSR working with the Molniya-2 satellite. It is difficult to justify the construction of so many earth stations in Eastern Europe on economic grounds, given the limited international traffic requirements that exist there. The primary civilian use of these stations will probably be for the exchange of black and white and color television programs. An important bonus, however, will be improved Warsaw Pact military communications with dedicated satellite circuits available for use by Soviet command elements in Eastern Europe.

18. An article in a recent Soviet technical journal (**Radio**) confirms earlier plans for Intersputnik's development and provides additional details. The first stage of Intersputnik will make exclusive use of Molniya-2 satellites whose highly elliptical orbits are capable of providing service to all the

present members of Intersputnik, including Cuba. At some future date, when Intersputnik membership has expanded to include countries in more southerly latitudes, a Soviet stationary satellite will be used, from which Intersputnik will lease the necessary radio frequency trunks. The stationary satellite will be located over the Indian Ocean at 60° E longitude. Revised from the previously announced location of 75° to 85° E longitude, this location provides coverage of all of Western Europe, Africa, and Asia, except for Japan and a portion of the Soviet Far East. Service to Cuba will continue to be maintained via Molniya-2 satellites. Provision is made for a variant to this stage which would use two stationary satellites, located over different spots above the equator, when membership expands significantly and would include countries on different continents. These geographical and technical constraints, combined with its late start, indicate that Intersputnik will be essentially a regional rather than global system and cannot hope to compete commercially with Intelsat.

19. Intersputnik's ultimate role is likely to be strongly conditioned by its relationship with Intelsat. The Soviet attitude toward Intelsat has metamorphosed over the years from open hostility to a desire for at least limited cooperation. For example, under terms of the new US-Soviet Hot Line agreement, communications satellites are to be used to upgrade the Direct Communications Link (DCL) between the Soviet Union and the United States. The USSR will provide DCL circuits via its Molniya-2 satellites and a Molniya-type earth station to be built in the United States. It has also agreed to parallel DCL channels via Intelsat satellites and an Intelsat-type earth station on Soviet territory. The new Hot Line agreement was drafted in such a way that the USSR, although using Intelsat facilities, will not have to deal formally with Intelsat as an organization.

20. The USSR apparently is interested in taking advantage of Intelsat's impressive technical facilities. Soviet officials have inquired about the commercial use of Intelsat earth station capacity not reserved for the Hot Line and have asked for a clarification of Intelsat policy on the use of its system by non-members. Moreover, the Intersputnik agreement contains a provision for cooperation with "other organizations concerned with the use of communications satellites." In the future the USSR may seek a formal cooperation arrangement between Intersputnik as an organization and the Intelsat Consortium.