SECRET

NORTH AMERICAN AIR DEFENSE COMMAND

WOR

WEEKLY INTELLIGENCE REVIEW (U)

PRIVILEGED INFORMATION

FOR OFFICIAL USE ONLY

SEE INSIDE COVER FOR SAFEGUARDING GUIDE

EXEMPTED FROM
DECLASSIFICATION IAW EO 12958
REVIEW DATE JUN 97 REVIEWER 64
REFER TO NORAD
EXEMPTION (S): 1 2 3 4 5 6 7 8 9

SPECIAL HANDLING REQUIRED
This document is releasable only to U.S. and Canadian Nationals

EXCLUDED FROM AUTOMATIC REGRADING, DOD DIRECTIVE 5200.10 DOES NOT APPLY Group 1

WIR 28/65
9 Jul 1965

SECRET

[redacted]

~~SECRET~~ ~~Secret~~ Weekly Intelligence Review

NORAD

Issue No. 28/65, 9 July 1965

The WIR in Brief

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

Space

COSMOS 70, PROBABLE RESEARCH SATELLITE, LAUNCHED FROM KAPUSTIN YAR

Very similar to last KY launch, Cosmos 53, of 30 January.

LITTLE SPACE DATA ACQUIRED SO FAR IN 1965; DATA-HANDLING SYSTEMS MAY BE UNDER IMPROVEMENT

Few research vehicles launched so far this year. Soviets may rely on US studies of Van Allen belts.

COSMOS 69 DE-ORBITED ROUTINELY ON REV. 127

Chart of Soviet photorecce vehicle flights furnished.

Portion identified as non-responsive to the appeal

COVER: Nozzles of Soviet ICBM shown in 9 May 65 parade in Moscow (from Ogonek magazine) (OFFICIAL USE ONLY)

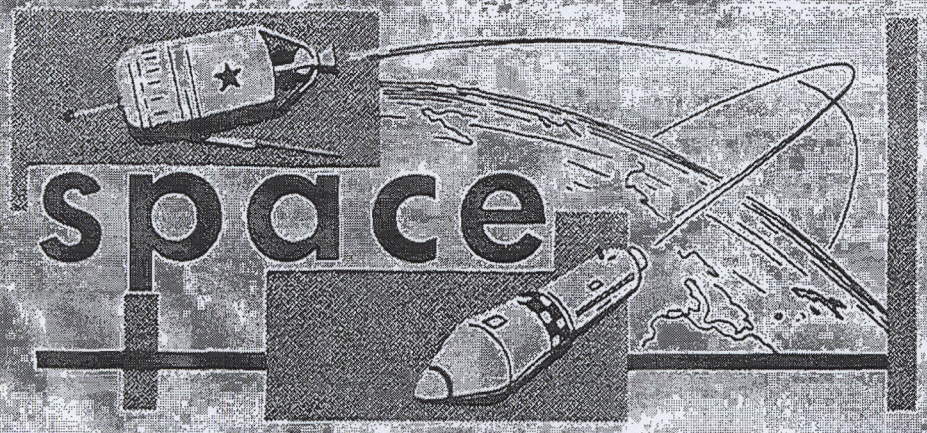
NOTES: Pages 26, 27, 30, 31, and 32 of this issue are blank.

CORRECTION TO COVER NOTE, WIR 18/65: The missiles shown on cover of WIR 18/65 were SA-2 air-defense missiles, not SANFS. (This caption ~~SECRET~~)

FOR OFFICIAL USE ONLY

[redacted]

~~SECRET~~ SECRET



significant intelligence on space developments and trends

Cosmos 70, Probable Research Satellite, Launched from Kapustin Yar

The Soviets launched Cosmos 70, apparently a research satellite, from Kapustin Yar (KY) at about 0632Z, 2 July. The new vehicle may be intended to replace Cosmos 53, which was launched from KY 30 January and went silent in mid-April. Orbital parameters and transmitting characteristics of the two vehicles are similar.

Orbital parameters of Cosmos 70 have been reported as follows:

	By SPADATS	By TASS
Inclination	48.8 degrees	48.8 degrees
Period	98.7 minutes	99.3 minutes
Apogee	1,176 Kilometers (630 n.m.)	1,154 Kilometers (620 n.m.)
Perigee	223 Kilometers (120 n.m.)	220 Kilometers (118 n.m.)

50X1 and 3, E.O.13526

50X1 and 3, E.O.13526

TASS reported that a transmitter is operating on 90.002-mc/s [redacted]

Payload weight of Cosmoses launched from KY is estimated at 300-500 pounds. Actual instrumentation weight is probably 50 pounds or less. (See p. 9, WIR 21/65.)

An unusual feature of this launch was the fact that TASS did not announce it until 6 hours later. Announcements are usually made about 3 hours after orbit is achieved. A delay may mean failure to achieve some part of the mission.

(SPADATS; various ELINT sensors; TASS; NORAD)

(~~SECRET~~ NO FOREIGN DISSEMINATION -- Releasable to US, UK & Canada)

Little Space Data Acquired So Far in 1965; Data-Handling Systems May Be Under Improvement

Soviet collection of data on the space environment was at an unusually low level during the first half of 1965. The reason for this stand-down is not known but it may be connected with a need for improving Soviet space data-handling systems.

The Record, January-June 1965. The Soviets could not have collected very much space-environment data, comparatively speaking, during the first half of 1965, since they have launched few research satellites and none of their payloads has transmitted telemetry for very long.

- The only Soviet payloads known to be transmitting as of 30 June were Molniya 1, a communications satellite, and Cosmos 69, a photoreconnaissance vehicle.
- The Soviets apparently launched only one research satellite -- Cosmos 53 -- during the first half of 1965, and that one ceased transmitting in mid-April. Other Soviet payloads launched during this period may have gathered some scientific data as secondary missions, but most of them were in orbit 8 days or less, and the others transmitted telemetry only briefly, some of them not at all.
- The most notable gap in the Soviet record is the failure to launch a third pair of Electron-series data-collection satellites after the second pair went silent; transmissions were last intercepted from Electron 3 on 22 November 1964 and from Electron 4 on 3 February 1965. In contrast, the Soviets last year launched the second pair about a month after the last of the first pair of Electrons went off the air.

Concurrently, the launch rate of the Tyuratam-launched photoreconnaissance satellites was accelerated during the first 6 months of 1965. Some or all of these vehicles probably collect space-environment data as secondary missions, but these vehicles can fill the data gap only partially:

- All are in relatively low orbits. They lack the orbital diversity of the KY-launched Cosmoses and the Tyuratam-launched Electrons, and cannot, therefore, provide data at a variety of altitudes. Apogee of the KY Cosmoses have ranged from 190 to 865 n.m. Two of the Electrons had apogees of about 3,750 n.m., two had apogees of about 36,000 n.m. The photorecce vehicles do not even enter the Van Allen belts. Their apogees ranged from 140 to 190 n.m.

- The 65-degree orbital inclination of the photorecce vehicles is less favorable for data-taking than the 49-degree inclination of the KY Cosmoses. Precession of vehicles in the 49-degree orbit causes apogee and perigee to change positions completely once each 100 days or so, thus providing data over a wider area of the near-Earth space environment. The 65-degree inclination provides only negligible shift in the positions of apogee and perigee.
- All the photorecce vehicles launched in the first half of 1965 were de-orbited within 8 days. They could not, therefore, provide the continuity of coverage of the nonrecoverable KY Cosmoses and Electrons.

One advantage, however, of the recoverable photorecce vehicles as data collectors is that data can be obtained directly from recovered tapes. There is no need to modulate it for telemetry or to transmit and receive it.

The Need for Improvement in Data-Handling. Moscow may be deliberately standing down in launch of scientific satellites until the Soviets can significantly improve, if not completely redesign, their system of collecting, transmitting, and processing data collected in space. Their systems have been plagued by: (pp. 6-9, WIR 7/65)

- Instability or early failure of sensor mechanisms aboard the space vehicle.
- Early loss of communications.
- Incompatibility of data-transmission systems, which are analog, with data-collection and data-processing systems, both of which are digital.
- A shortage of high-capacity digital computers equipped for high-speed inputs and outputs.

More than anything else, the Soviets need an integrated system in which the flow of data from satellite sensor to digital computer in the research institute is completely automated.

Other Possibilities.

- The Soviets may be concentrating their data-collection efforts on the lower regions of near-Earth space, using the recoverable Cosmos photorecce satellites as carriers. These regions may be of more immediate interest to them. Further, some of the data-handling difficulties they have experienced in the past would not apply to a system in which data-filled tapes are physically

recovered.

- With respect to the Van Allen belts, the Soviets may intend to rely on data published in the Free World.

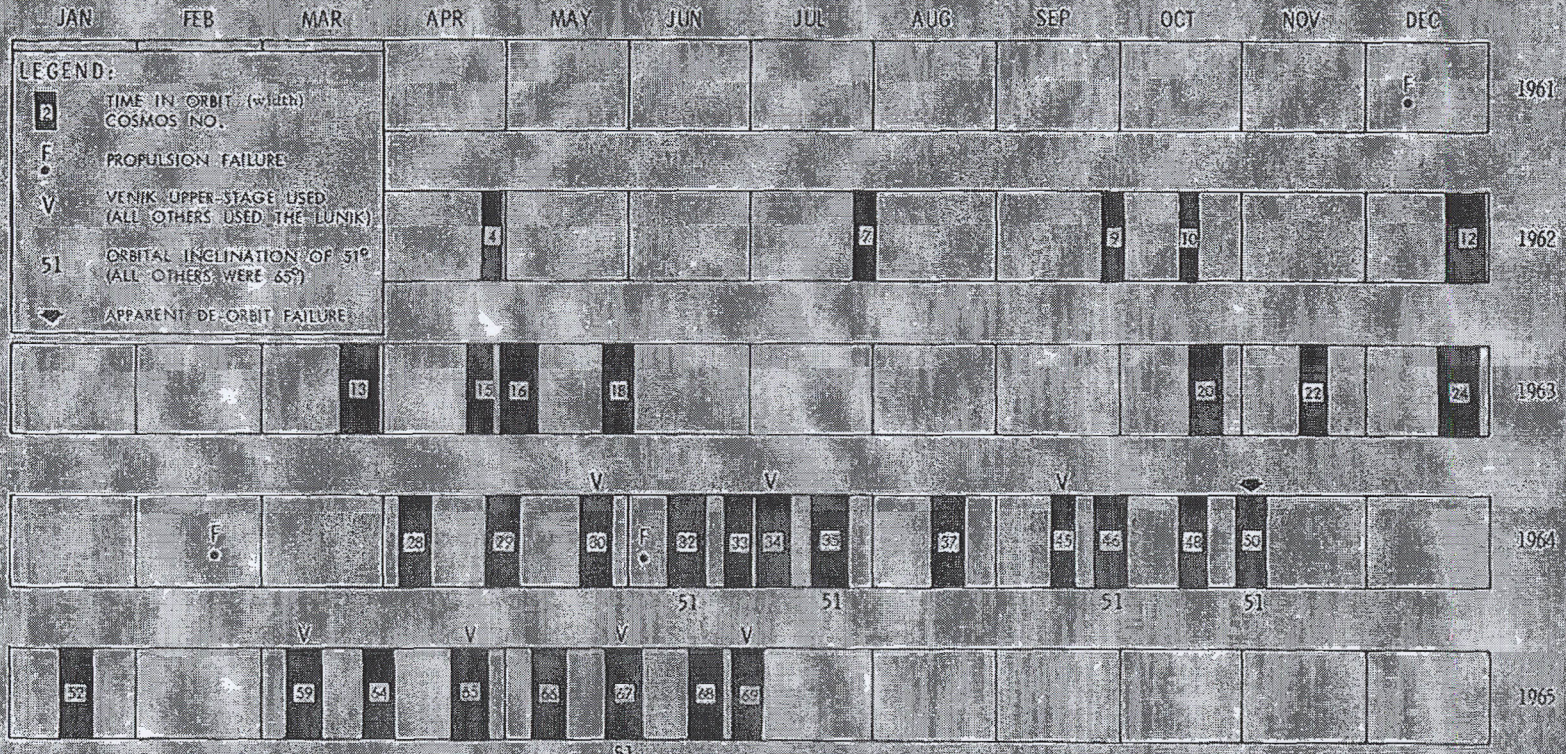
(CIA; SPADATS; various ELINT sensors; NORAD)
(~~SECRET~~ NO FOREIGN DISSEMINATION -- Releasable to US, UK and Canada)

Cosmos 69 De-Orbited Routinely on Rev 127

Cosmos 69, which the Soviets launched from Tyuratam at about 0945Z, 25 June, was de-orbited on Revolution 127 and it probably impacted in the USSR some time during the period 0736-0741Z, 3 July. It spent nearly 8 days in orbit. It was the 8th Soviet photoreconnaissance launch of 1965. Another one should be launched shortly, to take advantage of the longer daylight hours at this time of year, if the timing of Cosmos 69 and the record of last year (see chart on page 29) are any criteria.
(SPADATS; NORAD)
(~~SECRET~~ NO FOREIGN DISSEMINATION -- Releasable to US, UK & Canada)

Portion identified as non-responsive to the appeal

Soviet Photoreconnaissance Satellites (most recoverable Cosmoses launched from Tyuratam)



All these vehicles were launched by the SS-6/ICBM booster-sustainer and injected into orbit by an upper stage. Launchings were timed for optimum conditions for photography when passing over the US and southern Canada. Perigees were relatively low. Payloads were horizon-oriented.

All vehicles were de-orbited successfully (and film presumably recovered) except for Cosmos 50. Resolution of camera systems believed to be 20-30 for Lunik-injected payloads, which weigh about 10,000 pounds, and 5-8 for Venik injected payloads, which could weigh up to 15,000 pounds. Camera systems would occupy only fraction of payload, hence equipment for other missions could be carried. Soviets claim all Cosmoses are "scientific research" vehicles. Some have gathered radiation data.

Note infrequency and short duration of early launches and 4-5-month gap in mid-1963, after which system probably became operational. Most 1964 and 1965 missions have lasted 8 days.

SECRET

SECRET

SECRET

50X1 and 3, E.O.13526

NORAD

WIR 28/65