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NORTH AMERICAN AIR DEFENSE COMMAND

WIR

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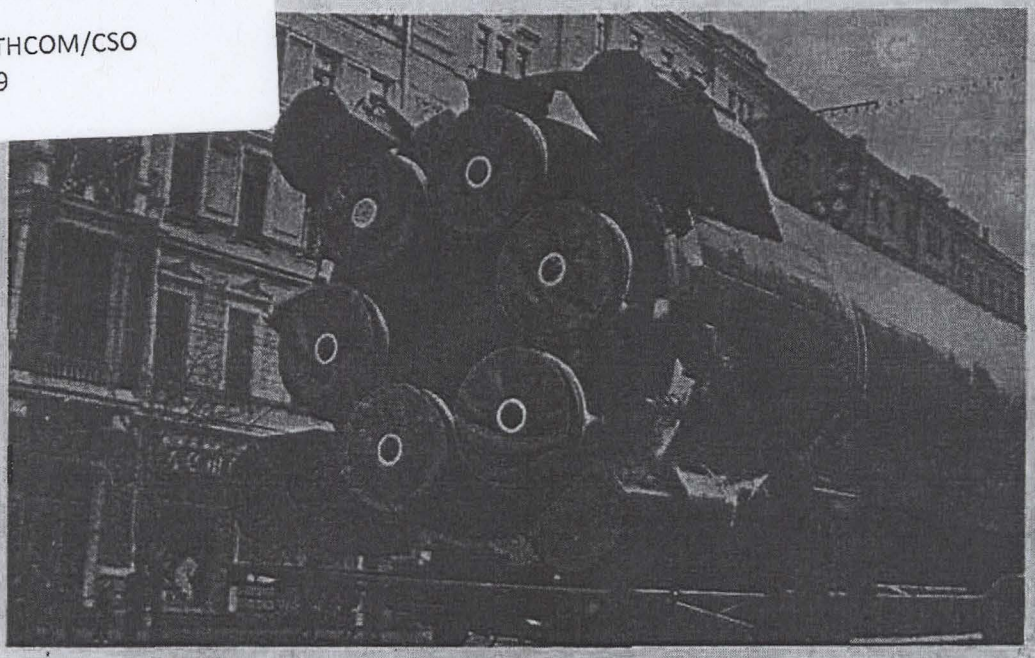

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NORAD Weekly Intelligence Review

Issue No. 3/70, 16 January 1970

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The WIR in Brief

Communist Military Capabilities

MISSILE RANGEHEAD ACTIVITY HIGHER IN DECEMBER THAN IN NOVEMBER, AS USUAL (S) 2
Nearly two thirds of missiles fired were ICBMs.

Non responsive portion

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COSMOS 316: MISSION SUCCESS IN DOUBT (S) 10
But still may have maneuvered once.
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But expected radically improved payload not observed yet.
COSMOS 318, 1st SOVIET SPACE LAUNCH OF 1970, IS A RECSAT (S) 11
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25X1 and 3, E.O.13526

COVER: Booster of SCARP SS-9 ICBM ~~(SECRET)~~ (Photo for OFFICIAL USE ONLY)

NOTE: Pages 28, 30, 31, 34, and 35 of this issue are blank.

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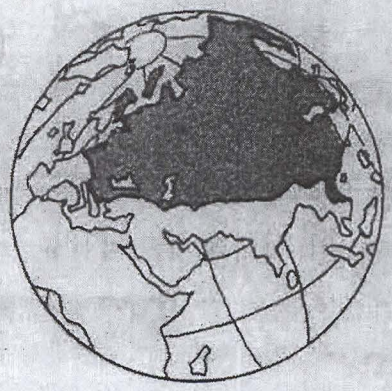
COMMUNIST MILITARY CAPABILITIES



current developments and trends in the armed forces of the Communist World

Missile Rangehead Activity Higher in December than in November, as Usual ~~(S)~~

Soviet missile/space rangeheads saw more launches in December 1969 than in November 1969: (Listing on page .)

	Last Month [Dec 69]	Previous Month [Nov 69]	1 Yr Ago [Dec 68]	2 Yrs Ago [Dec 67]
Missile launches	17	11	26	18
Vertical rocket firings	7			4
Space launches	7	7	6	5
	31	18	32	27

Most of the missiles launched were involved in troop training. But it may be noteworthy that:

- Nearly two thirds of the missiles launched were ICBMs.
- At least one of each of the Soviets' operational liquid-propellant ICBMs (SS-7, SS-8, SS-9, SS-11) was launched.
- Multiple re-entry vehicles figured in two of the three SS-9 launches.
- The SS-8 launch attempt of 15 December was unusual not only because of its failure but because SS-8 launches have been relatively rare in recent years. The SS-8, an older missile, is the only cryogenic ICBM in the Soviet operational inventory. It has been deployed in only limited numbers.

Rangehead activity in December 1969 was remarkably similar to that of December 1968 in several ways:

- The total number of launches was nearly the same.
- Rangehead activity in December each year considerably exceeded activity of the preceding November.
- At least half of the missiles launched were ICBMs.

- At least one of each type of the Soviets' operational liquid-propellant missiles was launched during the month.

Some of these similarities, particularly the greater number of launches in December than in November, would suggest that the Soviets were trying to meet some type of commitment before the end of the calendar year, which, in the USSR, coincides with the end of both the armed forces' training year and budget (fiscal) year.
(NORAD)
~~(SECRET)~~

Portion identified as non-responsive to the appeal

significant intelligence on space developments and trends

25X1 and 3, E.O.13526

[redacted] from

Cosmos 316; Mission Success in Doubt (Ø)

[redacted] Cosmos 316 since the launch phase tends to cast doubt on the success of its mission. Cosmos 316 is the latest in a series of maneuverable Soviet satellites launched by the SL-11 propulsion system (a modified SS-9 ICBM), the same system which launches the Soviets' fractional-orbit bombardment systems. However, the satellite is believed to have executed a change of orbit (p. 9, WIR 1/70).

Cosmos 316 is unusual in that it is the only member of its series to be launched into an orbit with an inclination of about 49 degrees. Its successfully launched predecessors had orbital inclinations of 62 to 65 degrees.

The exact mission of this series of maneuverable satellites, believed to be still in a testing phase, is not known.

(NORAD)

~~(SECRET)~~

Metsat Program Apparently Being Upgraded Somewhat (U)

Although the Soviets launched only two meteorological satellites in 1969 (Meteor 1 on 25 March, Meteor 2 on 6 October), indications are that the USSR has been trying to upgrade its metsat program, one which has never enjoyed a very high priority.

- The change in name of Soviet metsats (once named "Cosmoses," the new ones are called "Meteors") suggests a change in status, perhaps from experimental to operational.
- The metsats launched in 1969 transmitted video on 462 mhz, which is within the 460- to 470-mhz band allocated internationally to metsats, instead of on the 167-mhz link used by the Cosmos metsats.
- The newer Soviet metsats apparently are sending more IR-

sensor and/or 25X1 and 3, E.O.13526 were active on the 1969 Meteors than on their Cosmos predecessors.

- The Soviets may now be planning to use 3 rather than 2 metsats in their operational system. This is suggested by the fact that the orbits of the 1969 Meteors were 60 degrees apart in plane, compared to about 90 degrees for their Cosmos predecessors.
- Meteor 1 may have carried a system similar to the US's APT (automatic picture transmission), which will send real-time cloud-cover video on command from the ground. The head of Moscow's World Meteorological Center has said that Meteor 1 carried a real-time "TV" system, but the type of system actually meant is not clear since the Soviets have used the word "TV" to mean either a vidicon tube system or a mechanically scanning IR point detector. A commanded real-time IR scanner output would not be new for Soviet satellites, whereas a real-time vidicon tube output would. If Meteor 1 carries real-time video, it is probably a commanded readout rather than a continuously operating system.
- The Soviets are tripling the number of ground stations which will receive data from their metsats. The single station operating in the past at Obninsk (near Moscow) can receive data dumps during a maximum of 6 of a metsat's daily 14.7 orbits. A station recently built at Novosibirsk, Siveria, is already receiving IR data and should soon receive video through a 348-element steerable array (antenna shown on page 36). The use of these two stations would allow reception of up to 9 data dumps per day. A third station is to be built at Khabarovsk, in the Soviet Far East; use of all three stations will enable reception of at least 13 dumps per day per metsat.

Though the Soviets' weather-satellite system is probably being upgraded, the radically improved metsats expected from the USSR still have not appeared.
(Various)
~~(SECRET~~ NFD/Releasable to NATO, Aus & NZ)

Cosmos 318, 1st Soviet Space Launch of 1970, is a Recsat (S)

Cosmos 318, the Soviets' first space event of 1970, was launched from Tyuratam at about 0920Z, 9 January 1970. A recoverable military reconnaissance satellite, it carries a low-resolution camera system and an ELINT package.

This satellite may also carry an infrared photography system. This conjecture is based on similarities in 25X1 and 3, E.O.13526

25X1 and 3, E.O.13526

[redacted] Each member of this series performed missions of about 12 days. If Cosmos 318 is a member, as seems to be the case, then it will probably be deorbited on 21 January. (NORAD)
~~(SECRET)~~

Ground Terminal for Communications Via Satellite to be Set Up in Cuba (U)

Moscow has agreed to assist in building a ground station in Cuba for communications via satellite under the terms of an agreement signed on 9 January. The station will afford direct multichannel telegraph and telephone links between the USSR and Cuba and enable an exchange of TV programs between the two countries, according to press reports. This will apparently be the first Soviet ground station which the USSR will have set up outside its borders which will allow two-way communications via satellite. An Orbita station being established in Mongolia will be capable only of receiving.

Cuba and the USSR in 1966 and 1967 had announced their intention to proceed with such a project. The decision to move forward at this time may result from a recent warming in political relations between the two countries. (CIA)
~~(CONFIDENTIAL)~~

Portion identified as non-responsive to the appeal

More Details on Intercosmos 2, Joint Research Satellite, Given by TASS (U)

TASS broadcasts of late December 1969 gave added details about Intercosmos 2, a satellite which is supporting joint space research by the Soviet

Union and several other Communist countries on the characteristics of the Earth's ionosphere.

Intercosmos 2 carries two spherical ion traps to measure the concentration of positive ions in space, in a joint experiment conducted by Bulgarian and Soviet scientists. Readings are being taken along the craft's "entire orbit," said TASS.

In a joint Soviet-Czechoslovak experiment, a high-frequency probe is measuring the temperature of ionospheric electrons which, study has shown, are much "hotter" than the ions.

Information on the physical properties of the ionosphere is expected from Langmuir cylindrical probes aboard the satellite, in a joint Soviet-East German experiment.

The satellite also carries a transmitter operating on frequencies of 20.005 and 30.0075 mhz. This radio, built by East Germany, measures the quantity of electrons, to give a vertical profile of the atmosphere.

Intercosmos 2 is being tracked, said TASS, by ground stations set up in 7 Soviet cities, 2 Polish cities, and in 1 city in each of the other participating nations -- Bulgaria, Hungary, East Germany, Cuba, Romania, and Czechoslovakia.

Spacecraft gear and systems were packed inside the spacecraft to the maximum extent in order to minimize interference with the data being taken outside the spacecraft by sensors. For this reason, said TASS, Intercosmos 2 was powered by chemical batteries, not solar batteries (as was the case with Intercosmos 1), since solar battery panels have to be mounted outside the vehicle.

(Intercosmos 1 decayed into the Earth's atmosphere on 2 January. Also supporting joint Soviet-Eastern Europe research, it was said to have collected data for solar research.)
(FBIS)
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~~SECRET~~

Soviet Missile/Rocket/Space Launches, December 1969 (U)

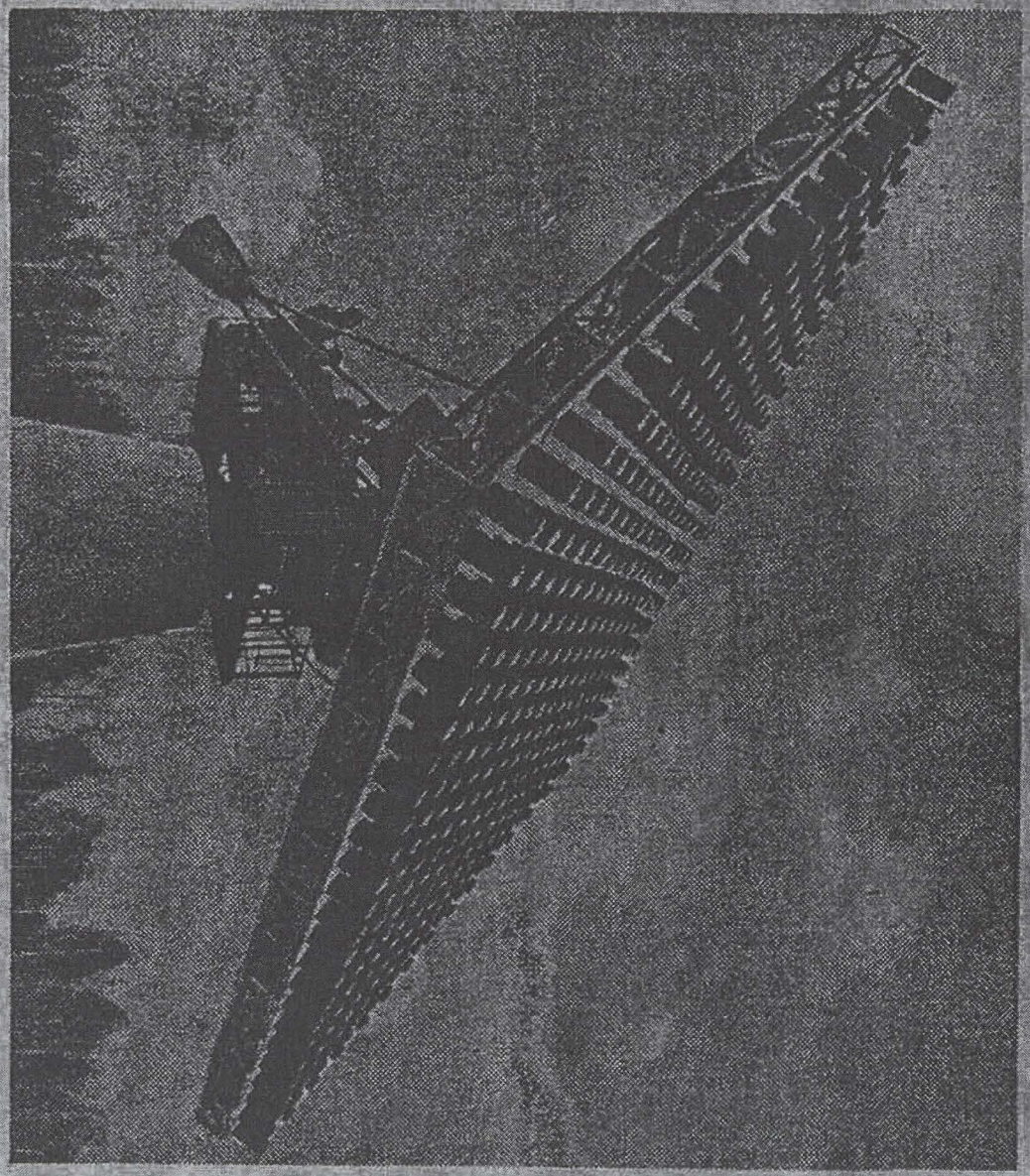
NORAD
WIR 3/70
16 Jan 70

~~SECRET~~

Launch Date & Time (Z)	Vehicle	Rangehead
01 Dec 0606	SS-7 ICBM	Tyuratam
02 Dec 0004	SS-9 ICBM	Tyuratam
02 Dec 0603	SS-4 MRBM	Kapustin Yar
02 Dec 0910	SS-4 MRBM	Kapustin Yar
03 Dec 1320	Cosmos 313 (SL-4)	Plesetsk
04 Dec 0408	SS-11 ICBM	Tyuratam
04 Dec 0849	SS-4 MRBM	Kapustin Yar
06 Dec 0600	SS-4 MRBM	Kapustin Yar
10 Dec 1112	Vertical rocket firing	Kapustin Yar
11 Dec 1300	Cosmos 314 (SL-7)	Plesetsk
12 Dec 0142	SS-9 ICBM	Tyuratam
13 Dec 0402	SS-7 ICBM	Tyuratam
15 Dec 0700	SS-8 ICBM (failure)	Tyuratam
15 Dec 2106	SS-7 ICBM	Plesetsk
16 Dec 0800	Vertical rocket firing	Kapustin Yar
18 Dec 0014	Vertical rocket firing	Kapustin Yar
18 Dec 1150	Vertical rocket firing	Kapustin Yar
19 Dec 0132	SS-9 ICBM	Tyuratam
19 Dec 1117	Vertical rocket firing	Kapustin Yar
20 Dec 0327	Cosmos 315 (SL-8)	Plesetsk
20 Dec 0405	SS-7 ICBM	Tyuratam
20 Dec 0833	Vertical rocket firing	Kapustin Yar
23 Dec 0925	Cosmos 316 (SL-11)	Tyuratam
23 Dec 1350	Cosmos 317 (SL-4)	Plesetsk
24 Dec 0805	Vertical rocket firing	Kapustin Yar
24 Dec 1410	SS-4 MRBM	Kapustin Yar
25 Dec 1000	Intercosmos 2 (SL-7)	Kapustin Yar
25 Dec 1049	SS-14 MRBM	Kapustin Yar
26 Dec 2100	SS-7 ICBM	Plesetsk
27 Dec 1422	Space-event failure (SL-8)	Plesetsk
30 Dec 0403	SS-7 ICBM	Tyuratam

~~SECRET~~

Antenna at Novosibirsk, to Receive Metsat Video (from Pravda) (U)



This array of 384 antenna elements, probably helices, may yield gain of nearly 40 db when operating in 460- to 470-mhz band. ~~(SECRET)~~

NORAD