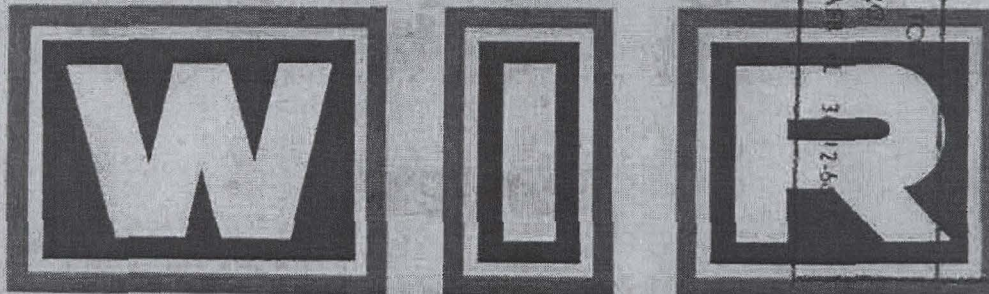




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NORTH AMERICAN AIR DEFENSE COMMAND

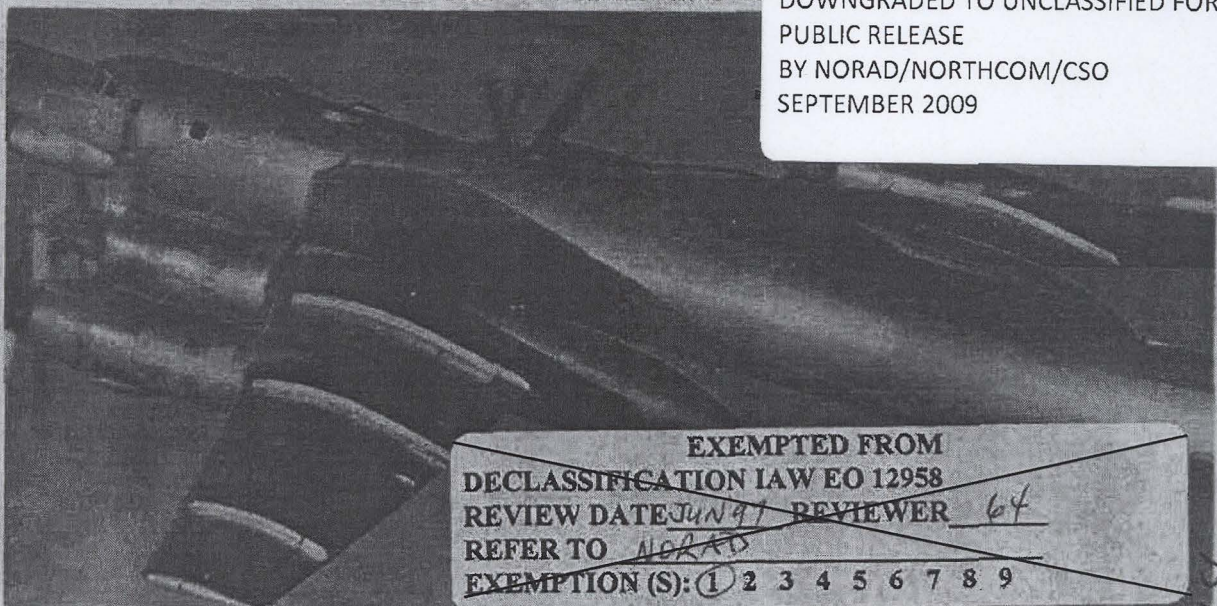


WEEKLY INTELLIGENCE REVIEW (U)

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The WIR in Brief

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MISSILE/SPACE ACTIVITY IN FEB 1968 MUCH LIKE FEB 67's, BUT MORE OPERATIONAL MISSILES FIRED

16 missile, 4 spacecraft launches in Feb.

Portion identified as non-responsive to the appeal

Space

SPACE LAUNCH OF 6 MARCH A FAILURE

Probably a small research spacecraft.

2d GENERATION RECCE SATELLITE MAY BE UNDER DEVELOPMENT IN U.S.S.R.

May be launched by SS-9.

POLES INVITED TO PLACE SCIENTIFIC GEAR ABOARD SOVIET SATELLITES, PRESS SAYS

Poles need at least a year to develop instruments.

RECCE SATELLITE COSMOS 205 DE-ORBITED ROUTINELY ON 13 MARCH

On Rev 125, after 8 days in orbit.

ZOND 4 MISSION APPARENTLY ENDED; SOVIETS MUM ON RESULTS

Voice transmissions probably replay or rebroadcast.

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

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Missile/Space Activity in Feb 68 Much Like Feb 67's, But More Operational Missiles Fired

Numerically, firing activity at the USSR's missile/space rangeheads during February 1968 was only slightly heavier than during February 1967: (See listing on page 27.)

	<u>Feb 1968</u>	<u>Feb 1967</u>
Missile/rocket launches	16	13
Spacecraft launches	4	5

This year's activity, however, was marked by more firings of operational missiles than last year:

	<u>Feb 1968</u>	<u>Feb 1967</u>
Operational-type missiles	13	5
Probable R&D type missiles	3	2
Vertically fired rockets	-	6

The most unusual firings of February 1968 were:

- Launch of an unidentified missile from Plesetsk on 12 February.
- Failure of a spacecraft launched on 7 February by the SL-12, the Soviets' largest known propulsion system.

Kapustin Yar was the busiest of the 3 principal rangeheads in both February 1968 and February 1967.

(NORAD)

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significant
intelligence
on space
developments
and trends

Space Launch of 6 March a Failure

An intended Earth satellite -- probably a small space-research vehicle -- lifted off from Kapustin Yar at about 1102Z, 6 March, but failed to go into orbit when the upper stage of the SL-7 launch system (comprising the SS-4 MRBM plus an upper stage) malfunctioned.

This was the fourth Soviet space launch undertaken in the 5-day period 2-6 March, inclusive. It was the Soviets' second space-launch failure of the year, the first being an SL-6 vehicle on 7 February, probably intended for lunar flight.

(NORAD)

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Second Generation Recce Satellite May be Under Development in USSR

Recent Soviet spacecraft experiments suggest that a new-generation of Soviet reconnaissance satellites is being developed. The new series would probably be more economical because, having a longer flight life, fewer launches would be required to provide a given amount of reconnaissance coverage.

Soviet recce satellites of the first generation are now being launched on nominal 8-day missions at the rate of about 24 per year. They are orbited by the SL-4 propulsion system, which consists of the SS-6 ICBM booster (the most-used launch vehicle in the Soviet space program) and the heavy Venik upper stage (the light Lunik upper stage has not been used in the recce program since last May). Their useful flight time is limited by:

- The use of gas jets for attitude control: the spacecraft carries only a limited amount of the gas fuel.
- The lack of a propulsion system for station-keeping: such a system is needed by high-resolution satellites which fly in low orbits (about 100 n.m.), where drag of the upper atmosphere

-10-

WIR 11/68 15 Mar 1968

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causes early orbital decay.

Soviet development of a second-generation system is suggested by the flights of:

- Cosmos 182 (launched 16 Oct 67), a recce satellite which also flight-tested an attitude-control system that probably employs reaction wheels. The latter are heavy metal discs which, when spun at varying speeds, change the orientation of the spacecraft. Such systems can operate for longer periods than gas jet systems, since the electric motors which actuate them are powered by solar cells. If Cosmos 182 used reaction wheels, as appears to be the case, it would be the first Soviet recce satellite to do so, although several scientific satellites have been stabilized in attitude by this system.
- Cosmos 198 and Cosmos 185 (launched 27 Dec and 27 Oct 67), which flight tested a restartable propulsion system. Such a system could supply the small amounts of thrust needed for station-keeping at relatively low altitudes.

This new series satellites might be launched by the SS-9 ICBM, which heretofore has been used in space launches only for flight testing the Soviets' FOBS (fractional orbit bombardment system) and for the Cosmos 198 and 185 launches referred to in the preceding paragraph.

The new payload might be specially designed for its mission of photo-reconnaissance and collection of electronic intelligence, in contrast to the presently used recce payload, which is the same basic capsule that was used in the Vostok manned flights. With the longer mission life afforded by reaction-wheel orientation and by thrusters for stationkeeping, the new payloads would probably carry more film and ELINT tape and would also be able to aim their cameras more precisely.

The Economy Factor. It is estimated that current reconnaissance satellites cost the Soviets about \$20 million per launch (in equivalent US cost terms). The new system, using the SS-9, would probably be slightly less expensive per mission. In any event, the longer-duration missions would permit collection of a given amount of photorecce and ELINT "take" with fewer missions. The savings thus accrued could be substantial, since the recce satellite program is the most intensive of all Soviet space programs. The launch rate of 24 per year which has been maintained since 1966, despite shift of much of the program from Tyuratam to Plesetsk, exceeds by far the launch rate for any other Soviet program.

(CIA; NORAD)

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WIR 11/68 15 Mar 1968

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Poles Invited to Place Scientific Gear Aboard Soviet Satellites, Press Says

Soviet specialists on radioastronomy have suggested to Polish scientists that they place Polish research and measurement devices on Soviet-launched satellites, according to the Polish press. This offer was immediately accepted, and scientists from the Radioastronomy Institute of the M. Kopernik University of Torun have included participation in space-probe research in their work plans for the year.

The press has given no information regarding the type of experiments to be undertaken or when the experiments would be ready. However, it is likely to take the Poles a year or longer to develop the instruments.

A Czechoslovak scientist told the press recently that he believed his nation soon would participate in space research with its own scientific program, possibly on a Soviet satellite.

These two items comprise the first press reaction from any East European countries to the recent Soviet agreement (WIR 2/68) to allow these countries to place experiments aboard Soviet satellites.

(Press; CIA)

~~(CONFIDENTIAL)~~

Recce Satellite Cosmos 205 De-Orbited Routinely on 13 March

Cosmos 205, the medium-resolution photoreconnaissance/ELINT-collection satellite launched 5 March from Plesetsk, was de-orbited routinely on 13 March on Revolution 125, impacting in the USSR at about 0643Z.

This vehicle was the Soviets' 3d recce satellite of the year. The pace of this program this year appears to be close to that of last year.

(NORAD)

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Zond 4 Mission Apparently Ended; Soviets Mum on Results

Zond 4, a spacecraft which the Soviets launched from Tyuratam at about 1830Z, 2 March, into a highly elliptical orbit, apparently has returned to the Earth, where the Soviets probably tried to recover it. Its payload signals ceased on 9 March at a time propitious for a de-orbit attempt.

The Soviets have not yet (as of 13 March) made any announcement about the end of the mission or its success.

The missions of this operation are believed to have included:

- Test of the 4-stage SL-12 propulsion system, the largest known to have been used to date by the Soviets. The Zond-4 event represents the first apparently completely successful launch of the



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SL-12; all three previous attempts have suffered a failure of some type.

- Test of the ability of a Soyuz-type payload of Zond 4 to withstand the heat of high-speed re-entry of the Earth's atmosphere from a lunar trajectory. (The Soyuz capsule was designed for manned flight; however, Zond 4 is not believed to have carried a passenger.)
- Test of spacecraft equipment of the Soyuz-type payload for suitability for a lunar mission.

These tests, if successful, will permit the Soviets to move ahead with plans for an unmanned circumlunar flight -- around the Moon and back to Earth -- probably within the next few months, to be followed still later, possibly late this year, by a manned flight around the Moon. This particular part of the Soviet lunar program was set back last November when an unmanned circumlunar attempt failed because of SL-12 propulsion difficulties.

Zond 4 was originally injected into a low (129-n. m. -altitude) parking orbit of the Earth and was later injected into an orbit with an apogee of 160,000 n. m., a perigee of 139 n. m., and a period of 7 days, 1 hour, 34 minutes. These parameters are rather rough, since no tracking beacon has been observed. The 4th stage apparently remained attached to the payload, probably to take part in de-orbit and reentry of the craft;

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(NORAD; FTD; DIA; CIA)

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WIR 11/68 15 Mar 1968

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Soviet Missile and Space Launches, February 1968

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Launch Date
& Time (Z)

Vehicle

Rangehead

01 Feb, 0703	SS-5 IRBM	Kapustin Yar
02 Feb, 0800	KY-5 R&D missile	Kapustin Yar
06 Feb, 0742	SS-5 IRBM	Kapustin Yar
06 Feb, 0800	Cosmos 201 (SL-4)	Tyuratam
07 Feb, 0449	SS-11 ICBM (low-apogee)	Tyuratam
07 Feb, 1044	Space-launch failure (SL-12)	Tyuratam
12 Feb, 0300	Unidentified missile	Plesetsk
13 Feb, 0345	SS-11 ICBM (low-apogee)	Tyuratam
15 Feb, 0856	SS-4 MRBM	Kapustin Yar
16 Feb, 0814	SS-4 MRBM	Kapustin Yar
20 Feb, 1003	Cosmos 202 (SL-7)	Kapustin Yar
20 Feb, 1356	SS-4 MRBM	Kapustin Yar
20 Feb, 1600	Cosmos 203 (SL-8)	Plesetsk
20 Feb, 1709	SS-4 MRBM	Kapustin Yar
27 Feb, 1412	SS-4 MRBM	Kapustin Yar
28 Feb, 0609	SS-5 IRBM	Kapustin Yar
28 Feb, 0813	SS-4 MRBM	Kapustin Yar
28 Feb, 1222	SS-12 SRBM	Kapustin Yar
29 Feb, 0330	SS-9 ICBM	Tyuratam
29 Feb, 1640	KY-5/6 R&D missile	Kapustin Yar

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-27-



WIR 11/68
15 Mar 68

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