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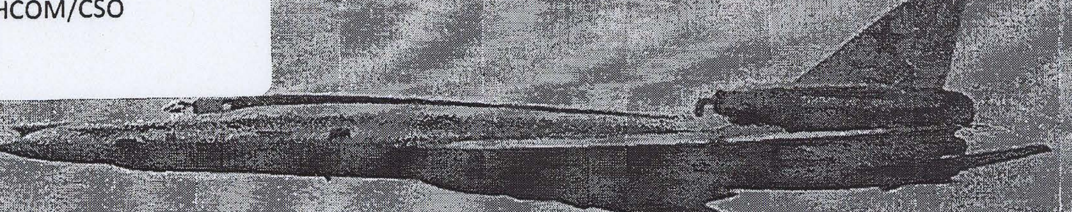

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NORAD Weekly Intelligence Review

Issue No. 42/65, 15 October 1965

K410.602-343

The WIR in Brief

Portion identified as non-responsive to the appeal

MISSILE RANGE FIRING LOG 2
For 13 September-12 October.

Portion identified as non-responsive to the appeal

Space

LUNA 7 TRAJECTORY APPARENTLY GOOD, FAILURE POSSIBLY CAUSED BY TUMBLE 7

50X1 and 3, E.O.13526

VERTICAL FIRINGS CONTINUE AT HIGH RATE 8
2 rockets fired 1 October. Some possibly associated with test of space systems.
SOVIETS SLOW IN IMPLEMENTING WEATHER SATELLITE PACT WITH U.S. 9
Low priority rather than difficulty of technical problems probably the reason.

Portion identified as non-responsive to the appeal

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COVER: BLINDER bomber (from "Aviation Week" magazine) (OFFICIAL USE ONLY)

NOTE: Pages 23, 24, 26, 27, 30, and 31 of this issue are blank.

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COMMUNIST MILITARY CAPABILITIES

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

Portion identified as non-responsive to the appeal

Missile Range Firing Log

US radar stations detected the following space/missile launches during the period 13 September to 12 October 1965:

Approximate Time & Date of Launch	Launch Vehicle	Launch Site	Range
1600Z, 17 Sep	Unknown	Kapustin Yar	Vertical
0800Z, 18 Sep	Cosmoses 86-90*	Tyuratam	Orbital
0326Z, 20 Sep	Unknown	Kapustin Yar	Vertical
2006Z, 23 Sep	Unknown	Kapustin Yar	Vertical
0900Z, 23 Sep	Cosmos 91#	Tyuratam	Orbital
0253Z, 24 Sep	SS-8 ICBM	Tyuratam	3400 n. m.
0332Z, 25 Sep	SS-7 ICBM	Tyuratam	3400 n. m.
0921Z, 28 Sep	SS-8 ICBM	Tyuratam	3400 n. m.
0747Z, 30 Sep	SS-7 ICBM	Tyuratam	3400 n. m.
0254Z, 01 Oct	SS-9 ICBM	Tyuratam	4500 n. m.
0357Z, 01 Oct	Unknown	Kapustin Yar	Vertical
2013Z, 01 Oct	Unknown	Kapustin Yar	Vertical
0406Z, 04 Oct	SS-11 ICBM	Tyuratam	3400 n. m.
0737Z, 04 Oct	Luna 7**	Tyuratam	Orbital & lunar
0401Z, 06 Oct	SS-11 ICBM	Tyuratam	3400 n. m.
0517Z, 09 Oct	SS-9 ICBM	Tyuratam	4500 n. m.

*Launched by SE-8, a 2-stage restartable rocket.
#Launched by the SS-6 ICBM, injected into orbit by the heavy Venik upper stage.
**Launched by the SS-6 ICBM, injected into parking orbit by the heavy Venik upper stage, and injected into transfer trajectory to the Moon by the Soviets' fourth (interplanetary) stage.

(Diyarbakir & Shemya RADINT)
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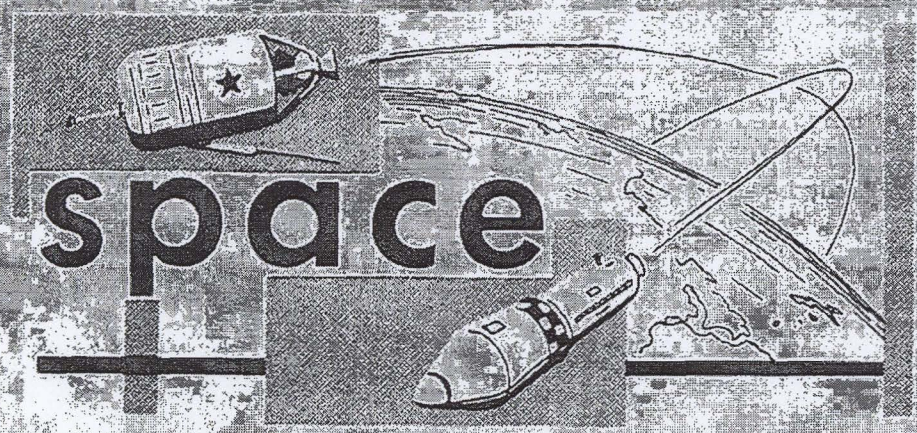

significant intelligence on space developments and trends

Luna 7 Trajectory Apparently Good, Failure Possibly Caused by Tumble

The trajectory of Luna 7, the Soviets' latest lunar probe, apparently was well managed: the vehicle seems to have hit on or very near its intended lunar target at close to the scheduled time.

A SPADATS analysis of excellent tracking data indicates that the initial trajectory was such that only a relatively minor correction was needed to bring Luna 7 on target. Without any midcourse correction at all, the probe would have missed its target by only some 4500 km(2430 n.m.) in distance or 15 minutes in time. TASS announced that Luna 7 would make contact with the Moon at 2208Z; actual contact occurred at 2208:24Z. Finally, the landing location was ideal from the standpoint of using sunlight for generating electricity for the probe's onboard systems after landing: the probe would have remained in sunlight for about 2 weeks, almost the maximum possible period.

The probe went silent after contact with the Moon. The Soviets later announced that the probe had crashed on the Moon, instead of making the desired soft landing, because of mistiming in the firing of the retrorockets. However, [redacted] from the probe about 88 minutes before impact were fluctuating in strength -- an indication that the probe may have been tumbling. Retrofire for soft landing a tumbling vehicle would have been completely useless.

This event is the Soviets' fifth failure this year to make a soft landing on the Moon, and the 10th consecutive Soviet lunar probe failure since January 1963. The Soviets will probably try again, with a launch at about 0800Z, 3 November, the next time that conditions will be optimum for the event. (For the Soviet record, see page 29.)

The US at one time planned to attempt a lunar soft landing this month, but present plans call for the first of 7 such attempts to be made several months from now, possibly in January or February 1966.

(SPADATS; cooperating sensors; press; NORAD)

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Vertical Firings Continue at High Rate

The Soviets fired two vehicles vertically from Kapustin Yar on 1 October, one at 0357Z, the other at 2013Z. These were the 8th and 9th vehicles, respectively, to be fired vertically from Kapustin Yar in a test program which began in June this year.

Seven of the 9 vehicles were fired to altitudes of 85-120 n.m.:

8 June
4 August
3 September
9 September
17 September
23 September
1 October (2013Z)

Two were fired to altitudes of 270-300 n.m.:

20 September
1 October (0357Z)

The two higher-apogee vehicles may have measured certain parameters of the upper atmosphere, in renewal of the work reportedly accomplished by a Soviet vertical-firing series of 1963. The Soviets told the 7th COSPAR (Committee on Space and Astronautics Research) Meeting at Florence, Italy, in May 1964, that the vertical firings of 6 June, 18 June, 25 October, and 24 December 1963 (all in the 250 n.m. altitude class) had measured:

Density of the atmosphere
Short-wave solar radiation
Corpuscular streams
Gamma radiation in the upper atmosphere
Radiative fields of the Earth and of the atmosphere in the visible and infrared ranges of the spectrum
Electron density
Intensity of the electrostatic field

Other test objectives reportedly concerned investigation of aerodynamic characteristics during atmospheric re-entry. The 1963 firings and the 20 September and 1 October (0357Z) 1965 firings were similar with respect to altitudes, telemetry, and time of day at which launch occurred.

The purpose of the 7 lower-apogee launches is not known but may be related to test of equipment for the Soviet space program.
(FTD; NORAD)
~~(SECRET)~~

Soviets Slow in Implementing Weather Satellite Pact with US

The Soviets, as part of the 1962 US-USSR bilateral agreement on scientific cooperation in space, agreed to exchange with the US meteorological data and cloud pictures obtained by weather satellites. The cooperative program was to be divided into two stages: an experimental stage scheduled for 1963-1964, and an operational stage -- to include coordinated launches and exchange of weather satellite data -- to begin in the period 1964-1965.

The Soviets have not, as of this writing (12 October) orbited a weather satellite. On the contrary, they have repeatedly asked for amendments to their agreement with the US and for postponements in implementing it. The Soviets' failure to hold up their end of the original agreement does not necessarily mean, however, that the difficulties in developing weather satellites are too formidable for them. It is more likely that their program is lagging simply because they have placed much higher priorities on other space programs -- those of high military value and those which pay off most generously in prestige.

Four early Soviet photoreconnaissance satellites (Cosmoses Nos. 4, 7, 9, and 15) transmitted pictures from orbit -- a prime feature of a weather satellite. This activity probably was part of an effort to develop a system for lunar photography. The system used would have placed severe limitations on the operating lifetime of a meteorological satellite, because it depended on chemical-battery power and used the cumbersome technique of transmitting video images of photographic film developed in orbit. The system could be refined, however, by using solar cells for power and reusable magnetic tape for storing pictures until they could be broadcast to Earth.

A number of Soviet satellites have also carried infrared and ultraviolet instrumentation which could be of use on weather satellites.

The Soviets now seem to be a little concerned over their shortcomings in this area. After refusing in May to discuss the weather satellite program in the UN, they have agreed to do so in October. They may be fearful that if Soviet weather satellite data is not forthcoming, the US will cease its exchange of surface weather observation data over the Moscow-Washington "weather hot line." US surface weather reports -- and weather satellite data -- are already available to the Soviets from US world-wide broadcasts. These reports are, however, less timely than "hot line" data. The Soviets probably hope to persuade the US to continue the surface weather exchange even in the absence of an exchange of satellite data. (The 1962 agreement stipulates that satellite data exchanges may be suspended temporarily when one side has no data to offer.)

(CIA, NORAD)

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The Soviet Lunar Record

(Does not include Zond 3, a test probe which photographed back side of Moon.)

Date of Launch	Soviet Designations	Achievements, or Reasons for Failure
04 Dec 58	*	Direct ascent failed -- sustainer failure.
02 Jan 59	Luna 1	Probably an attempt to hit the Moon. Missed, went into orbit around the Sun. First man-made vehicle to escape Earth's gravitational field. Telemetered some data about Van Allen belt radiation.
18 Jun 59	*	Direct ascent failed -- sustainer failure.
12 Sep 59	Luna 2	Impacted on Moon, its apparent mission. Telemetry from magnetometer indicated that Moon has little or no magnetic field.
04 Oct 59	Luna 3	Flew around Moon and returned to vicinity of Earth, suffering orbital decay about 6 months later. Photographed far (unseen) side of Moon and sent video pictures to Earth.
15 Apr 60	*	Direct ascent failed -- 3d stage failure.
04 Jan 63	*	Did not achieve transfer trajectory -- 4th stage failure.
03 Feb 63	*	Did not achieve parking orbit -- 3d stage failure.
02 Apr 63	Luna 4	Missed Moon by about 8500 km (4560 n. m.), according to TASS. Midcourse guidance maneuver may have failed. Went into barycentric (Earth-Moon) orbit. Soviets claim it is now in heliocentric (Sun) orbit. Probably an attempt to soft-land an instrumented payload on Moon.
21 Mar 64	*	Did not achieve parking orbit -- 3d stage failure.
20 Apr 64	*	Did not achieve parking orbit -- 3d stage failure.
12 Mar 65	Cosmos 60	Did not achieve transfer trajectory -- 4th stage failure. Launch announced to comply with UN Resolution, but true mission concealed by Cosmos designation.
10 Apr 65	*	Did not achieve parking orbit -- 3d stage failure.
09 May 65	Luna 5	Crashed on Moon when retrorockets failed to slow it for its scheduled soft landing.
08 Jun 65	Luna 6	Missed Moon by 160,000 km (86,000 n. m.) when midcourse guidance engine failed to turn itself off on command.
04 Oct 65	Luna 7	Crashed on Moon. Soviets said firing of retrorockets was mistimed. However, probe may have been tumbling, in which case retrofire would have been useless.

*Not named

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