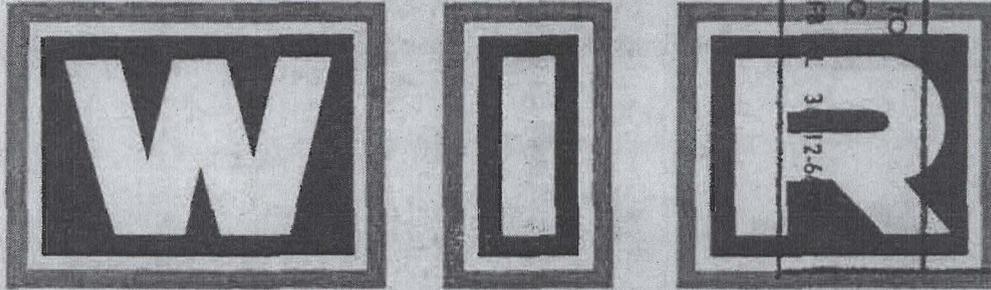




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NORTH AMERICAN AIR DEFENSE COMMAND



WEEKLY INTELLIGENCE REVIEW (U)

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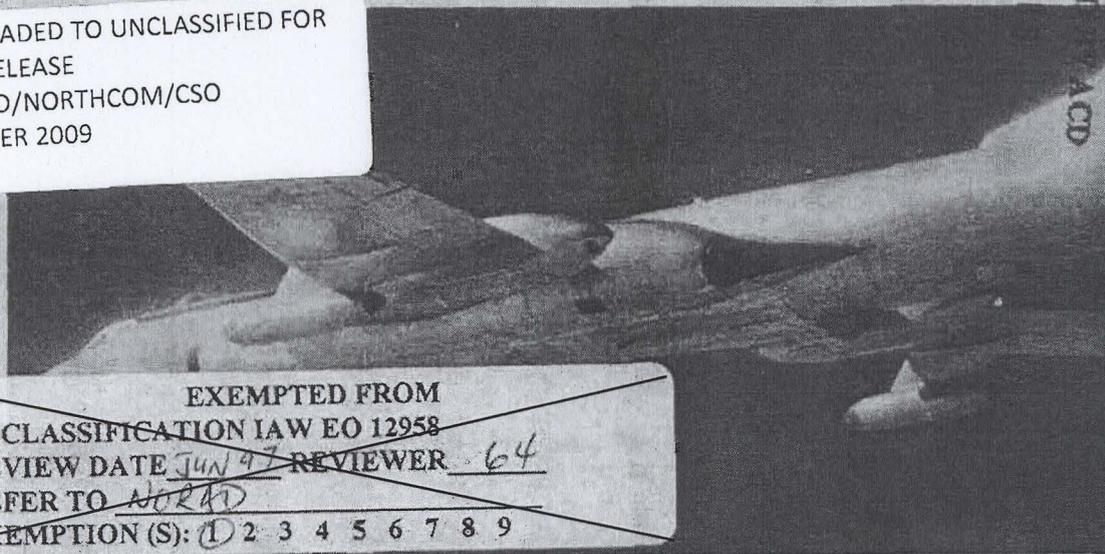
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Weekly  
Intelligence  
Review

RETURNS TO HQS AIRC MAIL ROOM APR 11 1966	K410.607-284
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Issue No. 30/66, 29 July 1966

The WIR in Brief

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

MISSILE RANGE FIRING LOG  
For 31 May-18 July.

Portion identified as non-responsive to the appeal

Space

COSMOS 125 SIMILAR TO COSMOS 102; TESTS OF ATTITUDE CONTROL SYSTEM

Both tumbled after Rev 6.

RECCE SATELLITE COSMOS 124 DE-ORBITED ROUTINELY

After nearly 8 days in orbit.

SPACE-DOG EXPERIMENTS USEFUL, BUT SOME DATA MAY NOT APPLY TO HUMANS

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COVER: BADGER with wing pods (from COMICEDEFOR) (OFFICIAL USE ONLY)

NOTE: Pages 32, 33, 36, 37 and 38 of this issue are blank.

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### Missile Range Firing Log

US radar stations detected the following Soviet space/missile launches during the period 31 May-18 July 1966:

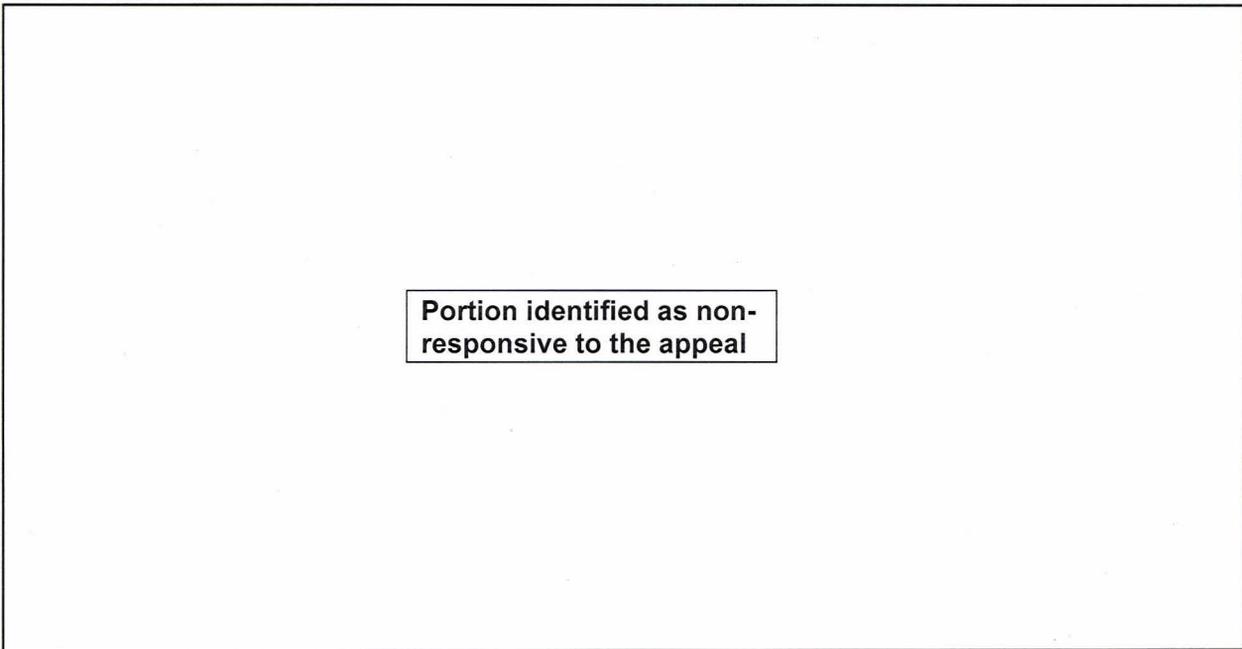
<u>Approximate Time &amp; Date of Launch</u>	<u>Propulsion System</u>	<u>Launch Site</u>	<u>Range</u>
0603Z, 31 May	SS-4 MRBM	Kapustin Yar	1050 n. m.
0502Z, 31 May	SS-5 IRBM	Kapustin Yar	2000 n. m.
0416Z, 04 Jun	SS-7 ICBM	Tyuratam	3400 n. m.
1241Z, 07 Jun	SS-4 MRBM	Kapustin Yar	1050 n. m.
0242Z, 08 Jun	SS-7 ICBM	Tyuratam	3400 n. m.
1030Z, 08 Jun	SS-4 MRBM	Kapustin Yar	950 n. m.
1100Z, 08 Jun	Cosmos 120*	Tyuratam	Orbital
0317Z, 10 Jun	SS-9 ICBM	Tyuratam	4600 n. m.
1218Z, 10 Jun	SS-4 MRBM	Kapustin Yar	1050 n. m.
1100Z, 17 Jun	Cosmos 121#	Plesetsk	Orbital
1835Z, 17 Jun	KY-6@	Kapustin Yar	1050 n. m.
0600Z, 23 Jun	SS-4 MRBM	Kapustin Yar	950 n. m.
0548Z, 25 Jun	SS-4 MRBM	Kapustin Yar	1050 n. m.
0852Z, 25 Jun	SS-7 ICBM	Tyuratam	3400 n. m.
1018Z, 25 Jun	Cosmos 122*	Tyuratam	Orbital
1300Z, 25 Jun	SS-6 ICBM	Tyuratam	3400 n. m.
1331Z, 25 Jun	SS-7 ICBM	Tyuratam	3400 n. m.
0503Z, 29 Jun	SS-11 ICBM	Tyuratam	3400 n. m.
0636Z, 29 Jun	SS-5 IRBM	Kapustin Yar	2000 n. m.
0327Z, 30 Jun	SS-9 ICBM	Tyuratam	4500 n. m.
1912Z, 30 Jun	KY-6@	Kapustin Yar	1050 n. m.
0622Z, 02 Jul	SS-7 ICBM	Tyuratam	3400 n. m.
1100Z, 02 Jul	SS-7 ICBM	Plesetsk	3100 n. m.





<u>Approximate Time &amp; Date of Launch</u>	<u>Propulsion System</u>	<u>Launch Site</u>	<u>Range</u>
0403Z, 05 Jul	SS-11 ICBM	Tyuratam	3400 n. m.
1700Z, 05 Jul	SS-4 MRBM	Kapustin Yar	950 n. m.
0407Z, 06 Jul	SS-5 IRBM	Kapustin Yar	2000 n. m.
1250Z, 06 Jul	Proton 3**	Tyuratam	Orbital
0536Z, 08 Jul	Cosmos 123##	Kapustin Yar	Orbital
0320Z, 11 Jul	SS-8 ICBM	Tyuratam	3400 n. m.
1140Z, 12 Jul	SS-4 MRBM	Kapustin Yar	950 n. m.
0728Z, 13 Jul	SS-4 MRBM	Kapustin Yar	1050 n. m.
1025Z, 14 Jul	Cosmos 124#	Tyuratam	Orbital
1200Z, 15 Jul	SS-4 MRBM	Kapustin Yar	1050 n. m.
1506Z, 15 Jul	SS-12 MRBM	Kapustin Yar	450 n. m.
1635Z, 15 Jul	KY-6@	Kapustin Yar	1050 n. m.
2028Z, 16 Jul	(SS-8) ICBM	Omsk	2700 n. m.
0403Z, 18 Jul	SS-11 ICBM	Tyuratam	3400 n. m.

\*Launched by SS-6 ICBM, injected into orbit by Lunik upper stage.  
 #Launched by SS-6 ICBM, injected into orbit by Venik upper stage.  
 \*\*Launched by large 2-stage vehicle.  
 ##Launched by small 2-stage vehicle.  
 @Solid-propellant missile.  
 (Diyarbakir & Shemya RADINT)  
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significant  
intelligence  
on space  
developments  
and trends

### Cosmos 125 Similar to Cosmos 102; Tests of Attitude-Control System

Cosmos 125, which the Soviets launched from Tyuratam at about 0859Z, 20 July, is believed to be similar in mission, and probably in design, to Cosmos 102, which the Soviets launched at about 2225Z, 27 December 1965. The two vehicles show significant similarities in orbital parameters and telemetry:

	<u>Cosmos 125</u>	<u>Cosmos 102</u>
Inclination	64.95 degrees	64.95 degrees
Period	89.42 minutes	89.13 minutes
Apogee	263.44 kilometers	271.6 kilometers
Perigee	231.79 kilometers	195.4 kilometers
Intercepted trans- missions		

50X1 and 3, E.O.13526

Both vehicles were probably launched by the SS-6 ICBM booster-sustainer and injected into orbit by the light Lunik upper stage, which can inject a payload of about 10,000 pounds into the orbits shown above.

The two vehicles are believed to have tested a satellite attitude-control system. Both Cosmos 102 and Cosmos 125 were very stable through Revolution 6, after which each began to tumble at an accelerating rate.

(NORAD)

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## Recce Satellite Cosmos 124 De-orbited Routinely on Rev 128

Cosmos 124, which the Soviets launched from Tyuratam at about 1025Z, 14 July, was de-orbited during Revolution 128 on 22 July, probably impacting in the USSR at about 0908-0913Z.

(NORAD)

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## Space-Dog Experiments Useful, but Some Data May Not Apply to Humans

The 22-day space flight of two Soviet "sobakonauts" -- the dogs Ugolek and Veterok -- aboard Cosmos 110 produced some useful results, but the question of the degree to which the results of the experiments apply to humans is still moot.

The experiments indicated that certain functional and weight changes which were noted during exposure to weightlessness for one week also continued through three weeks' exposure, continued to increase for a period after the flight, and then -- the most important finding of all -- disappeared.

The following phenomena were noted:

- A reduction in muscle mass.
- A reduction in body weight.
- A reduction in bone calcium.
- Dehydration.
- Probable cardiac deconditioning.
- A decreased rate of sedimentation of red blood cells.
- A reduction in the number of white blood cells.
- A decrease in body orientation to gravity.

The experiment also indicated that disturbances in body orientation and in the circulatory system are responsive to the decreased sensory input incident to weightlessness, as suggested earlier by the Soviets.

It is not known to what degree the observed data apply to humans, particularly because the dogs were not permitted to exercise. They were held in a rigid harness which permitted them only to stand, sit, or lie down. Food and water were injected directly into the dogs' stomachs through a fistula, and pharmaceuticals were administered into their blood streams through a tube inserted into the carotid artery (p 37, WIR 10/66): these arrangements dictated that the dogs' motions be restrained. US astronauts, on the other hand, are not only given some freedom of movement but are required to exercise in flight, and the same is probably also true for Soviet cosmonauts.

Thus, though Cosmos 110 performed a useful function, the concern which Soviet scientists have been expressing since Titov's flight of August 1961 about the effects of prolonged weightlessness on human performance





in space flight will continue.

This concern presumably could be dissipated should the Soviets pursue what seemed to be their original practice -- that of gradually increasing the duration of their manned flights. But the Soviets unaccountably seem to be reluctant to follow this course, despite the assurances of safety which seem implicit in the 14-day flight last year by US astronauts Borman and Lovell. The Soviets' longest manned space flight was that of Lt Col Bykovsky, who remained in orbit about 5 days in 1963. Since then, the Soviets have made only two manned flights, both of them multimanned, of about one day's duration each.

The Soviets may believe that more rigorous selection criteria would have averted the undesirable symptoms reportedly experienced by several of their cosmonauts. If this is the case, then the Soviets may have since adopted new selection criteria and used them to choose a completely new crop of cosmonaut candidates. The extended training program which follows selection might then explain the delay in Soviet conduct of prolonged manned space flights.

The Soviets may also hope to get useful information from the US concerning methods of avoiding undesirable symptoms during extended space flight. But even in this case, the Soviets would most probably want to verify US results with flights of their own.

The least likely explanation of all is a lack of Soviet interest. The Soviets are very much interested in space flights much longer than any undertaken to date. They claim that they have already conducted certain experiments which relate to interplanetary flights, which could last much more than a year.

The next Soviet manned flights might well involve 5 or 6 cosmonauts riding a space station launched by the propulsion unit used to launch the 12.2-metric-ton-payload Protons. The first such flight might occur within the next 12 months.

(CIA; NORAD)

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