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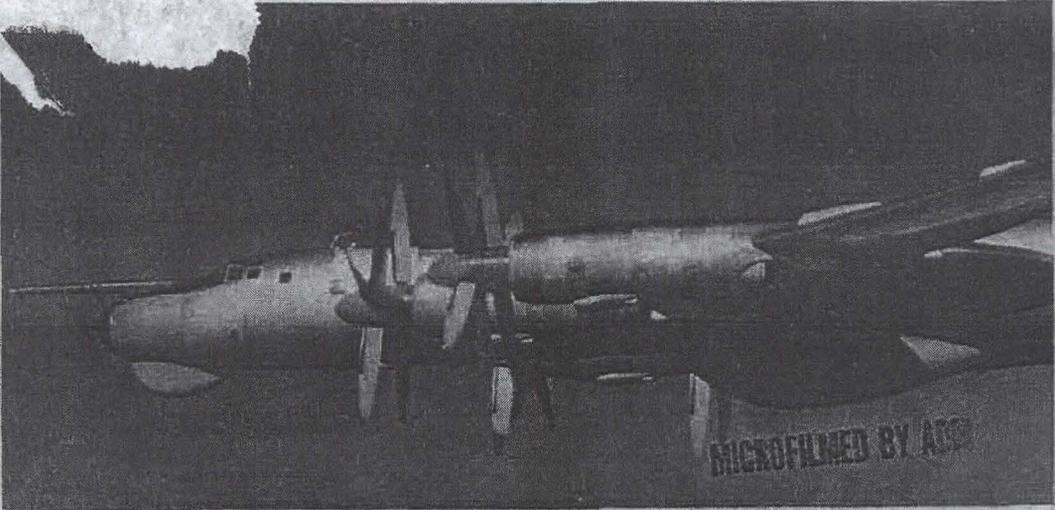
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W I R

WEEKLY INTELLIGENCE REVIEW (U)



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Weekly
Intelligence
Review

Issue No. 870, 20 February 1970

K 410.607-373

The WIR in Brief

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

Space

HYDRAZINE FUEL CELLS MAY SUPPLY ELECTRICITY FOR CERTAIN LUNAR SPACECRAFT SYSTEMS ~~(S)~~

Fuel could be taken from propulsion tanks, eliminating need for special tanks.

CORRECTION: DOT MISSING FROM CHART IN LAST WEEK'S WIR (U)

SL-9 launch shown in listing but not on chart. SOVIETS WANT INTELSAT GEAR, PROBABLY FOR THEIR PROPOSED GEOSYNCHRONOUS 'STATSIONAR' COMSAT ~~(S)~~

Interest in purchase shown. MANEUVERABLE RECSATS MAY CARRY IMPROVED PHOTOECCE PACKAGE ~~(S)~~

Has better stability during camera operation. RECSAT COSMOS 323 DEORBITED ROUTINELY ~~(S)~~

Portion identified as non-responsive to the appeal

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NOTE: Pages 26, 28, and 29 of this issue are blank.

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significant
intelligence
on space
developments
and trends

Hydrazine Fuel Cells May Supply Electricity for Certain Lunar Spacecraft Systems ~~(C)~~

The Soviets may plan to use hydrazine fuel cells to generate auxiliary electrical power for certain purposes during later lunar missions, according to a foreign expert who was invited to the USSR recently to discuss UDMH (unsymmetrical dimethyl hydrazine) fuel cells. The Soviets' interest intimated that they may want to use the UDMH fuel cells to provide auxiliary electrical power to the launch vehicle or to lunar surface experiments.

A 30- to 35-kw hydrazine fuel cell would be comparable in weight to the conventional hydrogen-oxygen cell used aboard US spacecraft, but the weight of special tankage to store fuel for the cell could be eliminated, since the hydrazine could be drawn from the propellant tanks of the launch vehicle or the descent stage of the lunar lander.

UDMH would be especially suitable in spacecraft fuel cells because it is a liquid which is stable at a wide range of temperatures.

The fuel cell developed by the foreign expert's organization reportedly uses a carbon electrode with a life of 800-1,000 hours. A service life of this duration indicates that progress is being made in reducing fragility, which has been a notorious disadvantage of carbon electrodes.

(CIA)

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CORRECTION: Dot Missing from Chart in Last Week's WIR (U)

A dot fell off the time-scale chart on the right-hand side of page 32 of last week's WIR while it was on its way to the printer. This black dot represented a successful SL-9 launch (Proton 2) on 02 November 1965.

(NORAD)

~~(SECRET)~~

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WIR 8/70 20 Feb 70

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Soviets Want Intelsat Gear, Probably for Their Proposed Geosynchronous 'Statsionar' Comsat (S)

Soviet trade officials have expressed interest several times in recent months in obtaining equipment used by Intelsat ground stations. (Intelsat is an international consortium of about 70 nations which was formed to operate an international communication-relay satellite system. The satellites, sent into geosynchronous orbit (appearing to be stationary over one point on the Equator) are launched by the US. Member nations operate their own ground stations (of US design), although only 25 were operational in mid-1969.)

The Soviets' exact purpose in wanting to buy Intelsat ground-station gear is not known but it is probably related to their own stationary-orbit comsat system, Statsionar, which will operate on many of the same frequencies as Intelsat. The Soviets may want to use Intelsat equipment bodily in their own program, or copy it for use in their program, or test it for compatibility with their ground stations.

Plans for Statsionar were announced about a year ago. The first satellite was scheduled to be launched and in operation by December 1970. There may be delays, however, because the SL-12, with which the Soviets will probably launch Statsionar, has suffered numerous failures, mainly in lunar launch attempts. Eleven of 18 SL-12 launches have failed. (See pp. 11 and 32, WIR 7/70.) Interest in buying Intelsat ground-station equipment also suggests some indecision or shortage of suitable equipment which could operate to delay fuller implementation of the Statsionar program but probably would not delay launch of the first Statsionar.

The Soviets' interest in using Intelsat-type gear in their own program or in insuring compatibility of their own stations with Intelsat gear could indicate a desire to cooperate with Intelsat, despite their numerous denunciations of it.

Use of Intelsat-type gear could also save the Soviets the engineering effort involved in designing their own gear.

(CIA;NORAD)

~~(SECRET)~~

Maneuverable Recsats May Carry Improved Photorecce Package (S)

Cosmoses 251, 264, and 280, Soviet maneuverable reconnaissance satellites, may have carried improved photoreconnaissance gear, [redacted]

- A new film-takeup mechanism which does not disturb spacecraft attitude apparently has been installed. [redacted]

25X1 and 3, E.O.13526





25X1 and 3, E.O.13526

- The payload weight of these spacecraft (14,000 pounds) is 2,300 pounds heavier than the previous standard payloads. Although most of the added weight represents propulsion requirements for executing maneuvers, plus stabilization and other requirements, part of it could relate to larger, heavier optical components yielding higher camera resolution and to the additional film required for the 13-day missions flown by these satellites. (Normal mission duration for Soviet recsats is 8 days.)

These two features could be interrelated, that is, installation of a camera system of higher resolution could have required development and installation of a film-takeup mechanism that would allow better spacecraft stability during camera operations.

This new series of spacecraft could improve the Soviet reconnaissance program in several ways:

- Photography produced by higher-resolution cameras and by a spacecraft whose stability is not disturbed by film feeding would be more useful because it would show greater detail.
- Maneuverability would afford better coverage of desired targets.
- Extending mission duration from 8 days to 13 days and carrying additional film would reduce launch costs because of the greater amount of work done per mission.

The Soviet recce program has also been improved recently by the appearance of another series of recsats which fly 12-day missions and apparently carry IR cameras in addition to the regular cameras which operate in the visible portion of the spectrum (WIR 51/69).

(Various)

~~(SECRET NFD/Releasable to US, UK & Canada)~~

Recsat Cosmos 323
Deorbited Routinely ~~(S)~~

Cosmos 323, a military reconnaissance satellite which the Soviets launched from Plesetsk at about 1200Z, 10 February, was deorbited early on Revolution 125 on 18 February after a mission of the normal 8 days. Impact is estimated to have occurred at about 0649Z, 18 February, in the area of 5425N-6410E, about 75 n. m. northeast of Kustanay.

(NORAD)

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