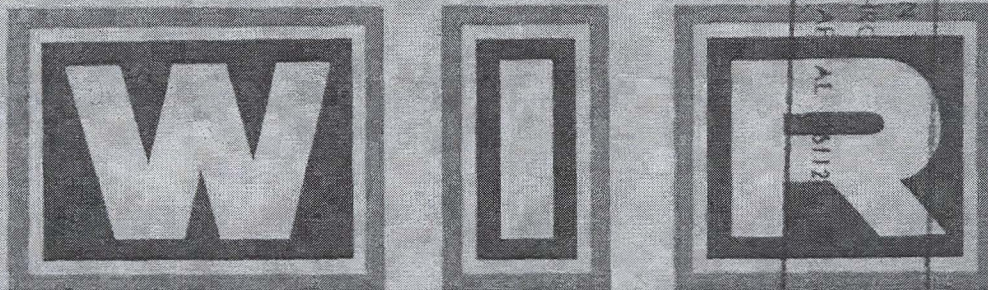




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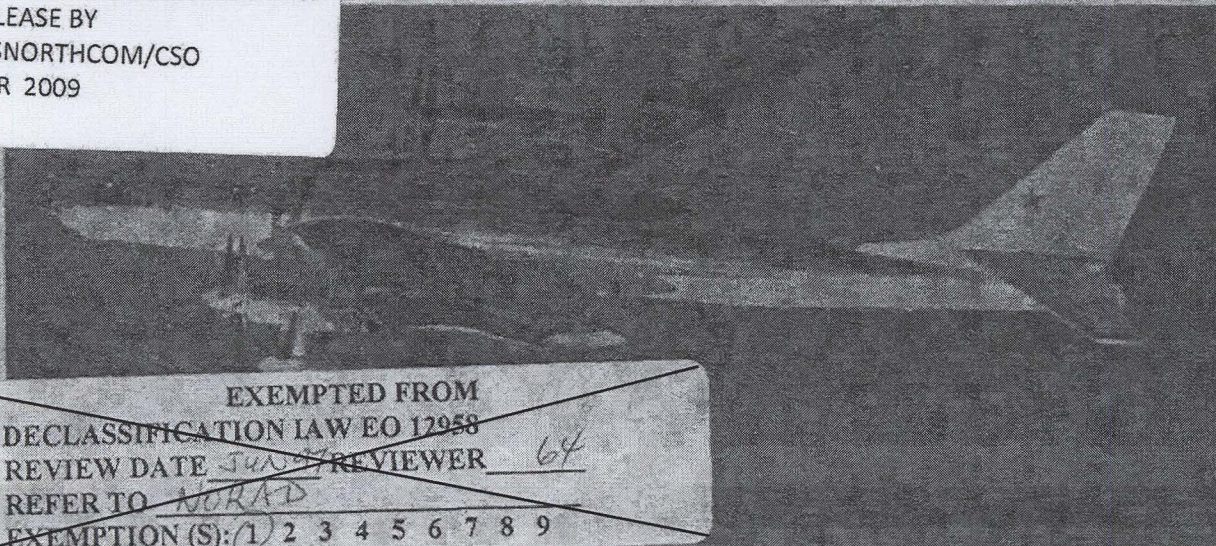


WEEKLY INTELLIGENCE REVIEW (U)

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**Weekly
Intelligence
Review**

Issue No. 4/66, 28 January 1966

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The WIR in Brief

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Space

MOLNIYA PAYLOAD WEIGHT ESTIMATED AT 1900-2250 POUNDS

Based on sketch and probable packing density.
COSMOS 105 LAUNCHED -- SECOND PHOTORECC
SATELLITE OF 1966

Probably will be de-orbited 30 Jan.
USSR GIVING BLOC NATIONS ONLY TOKEN
PARTICIPATION IN ITS SPACE PROGRAM

Will be allowed to help in optical tracking.
COSMOS 106 PROBABLY RESEARCH VEHICLE,
AS CLAIMED

Launched 25 January.

Portion identified as non-responsive to the appeal

Portion identified as non-responsive to the appeal

COVER: BEAR bomber over North Atlantic
(by ICEDEFOR) (OFFICIAL USE ONLY)

NOTE: Pages 30, 31, 32, 34, 35, 38, 39, 42, 43,
46, 47 and 48 of this issue are blank.

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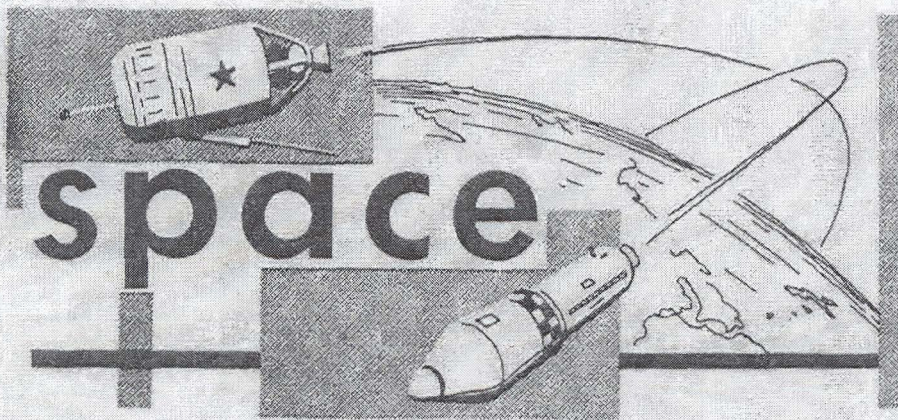


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significant
intelligence
on space
developments
and trends

Molniya Payload Weight Estimated at 1900-2250 Pounds

The Soviets have not announced the payload weight of the two Molniya-type communications relay satellites which they orbited in 1965, but an analysis by FTD indicates that their weight is probably about 1900-2250 pounds.

The analysis began with a Pravda sketch which was tentatively assumed to be a reasonable likeness of the Molniya (see page 37) since it agreed with what is known of the configurations of other Soviet space vehicles and because it would meet the needs of its announced mission. The diameter of the antenna shown in the sketch was estimated to be about 3 feet, based upon the nominal transmitting frequency of 922 mc/s and the antenna beam width of 30 degrees which would be needed for Moscow-Vladivostok relay. From this data, estimates were made of the dimensions of other components shown in the sketch including the main body. The volume of the satellite body was then estimated at about 77 cubic feet, based upon its apparent dimensions. The packing density of this body was assumed to be about the same as that of certain other Soviet space vehicles, such as Venera 1 and Mars 1, or about 25 pounds per cubic foot. These computations yielded a main-body weight of about 1,925 pounds. However, by adding an estimate of the weights of the solar cells, antennas, and mountings, and allowing for a margin of error of plus or minus 10 percent, over-all weight was estimated at 1900-2250 pounds.

This estimate is applicable to both Molnias, since there is no evidence to indicate any difference between the two.

(FTD)

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Cosmos 105 Launched -- Second Photorecce Satellite of 1966

The Soviets launched Cosmos 105, their second photoreconnaissance satellite of 1966, from Tyuratam at about 0830Z, 22 January. Injected into

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orbit by a Lunik upper stage, it probably carries a medium-resolution camera system.

Its orbital parameters -- very routine for this type mission -- have been announced as follows:

	By NORAD Space Defense Center	By TASS
Inclination	65.07 degrees	65 degrees
Period	89.8 minutes	89.7 minutes
Apogee	324 kilometers (174.9 n.m.)	324 kilometers (174.9 n.m.)
Perigee	217 kilometers (117 n.m.)	204 kilometers (110 n.m.)

Cosmos 105 will probably be de-orbited on 30 January.

The Soviets' first photorecce satellite of 1966, Cosmos 104, was launched 7 January and de-orbited 8 days later.
(NORAD)

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USSR Giving Bloc Nations Only Token Participation in its Space Program

Various Communist nations, unable to sustain space programs of their own, have become increasingly dissatisfied with their almost total exclusion from the Soviet space program, particularly in light of the high degree of foreign cooperation in the US's program. Most of their requests for some degree of participation, such as the processing of optical tracking data, have been refused, probably because of the Soviet obsession with secrecy.

In the hope of reducing the dissatisfaction but without actually providing for any significant participation, the Soviets have now organized an international satellite-tracking school. Located in Tashkent, the school will initially train 15 scientists from Rumania, Bulgaria, Hungary, East Germany, Mongolia, Czechoslovakia, and Poland, as well as 20 Soviet astronomers, in the basic techniques of photographic observation of satellites. The comparative irrelevance of this type of participation in the Soviet space effort is evident in the fact that the establishment of photographic tracking stations in Eastern Europe and Mongolia would result in an almost negligible expansion of the Soviet optical tracking net (map on page 40).

The performance of the Soviet phototracking net is substantially below that of the US net operated by the Smithsonian Astrophysical Observatory,



~~secret~~



and increased Bloc participation probably will do little to close the gap. The two nets are comparable in that both observe satellites mostly to solve geodetic and atmospheric structure problems. The tracking cameras available to the Soviets, however, are deficient in optical speed and positional accuracy, although they can photograph most low-altitude satellites. Also, the timing accuracy of Soviet satellite observations is below that which the current state-of-the-art allows.

(CIA)

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Cosmos 106 Probably a Scientific Research Vehicle

The Soviets launched Cosmos 106 from Kapustin Yar at about 1235Z, 25 January 1966. Orbital parameters have been reported as follows:

Inclination	48.4 degrees
Period	92.8 minutes
Apogee	564.0 kilometers (304 n.m.)
Perigee	290.0 kilometers (156 n.m.)

This vehicle is probably a research vehicle, as claimed by TASS.

(NORAD)

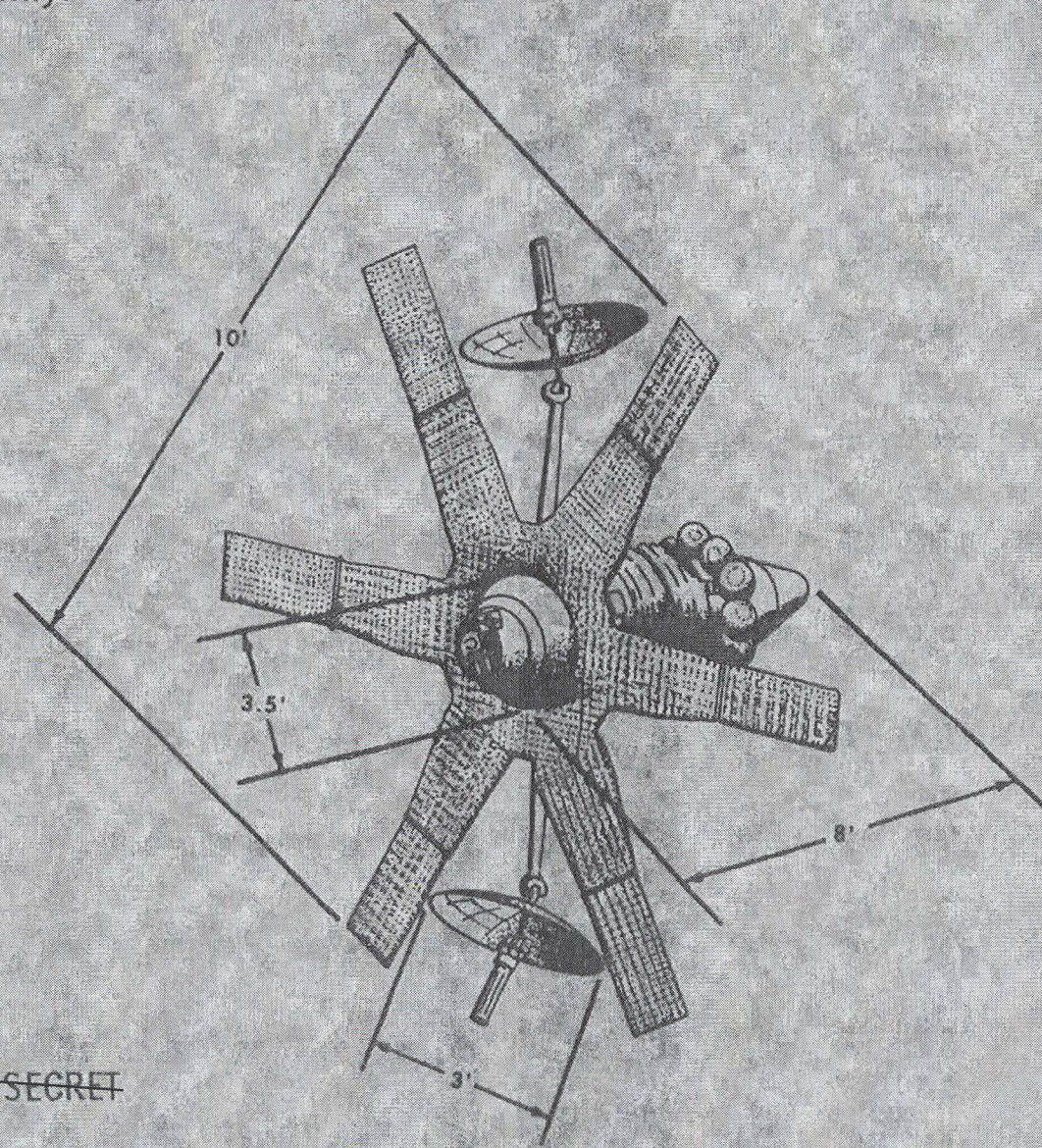
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Molniya -- Estimated Dimensions



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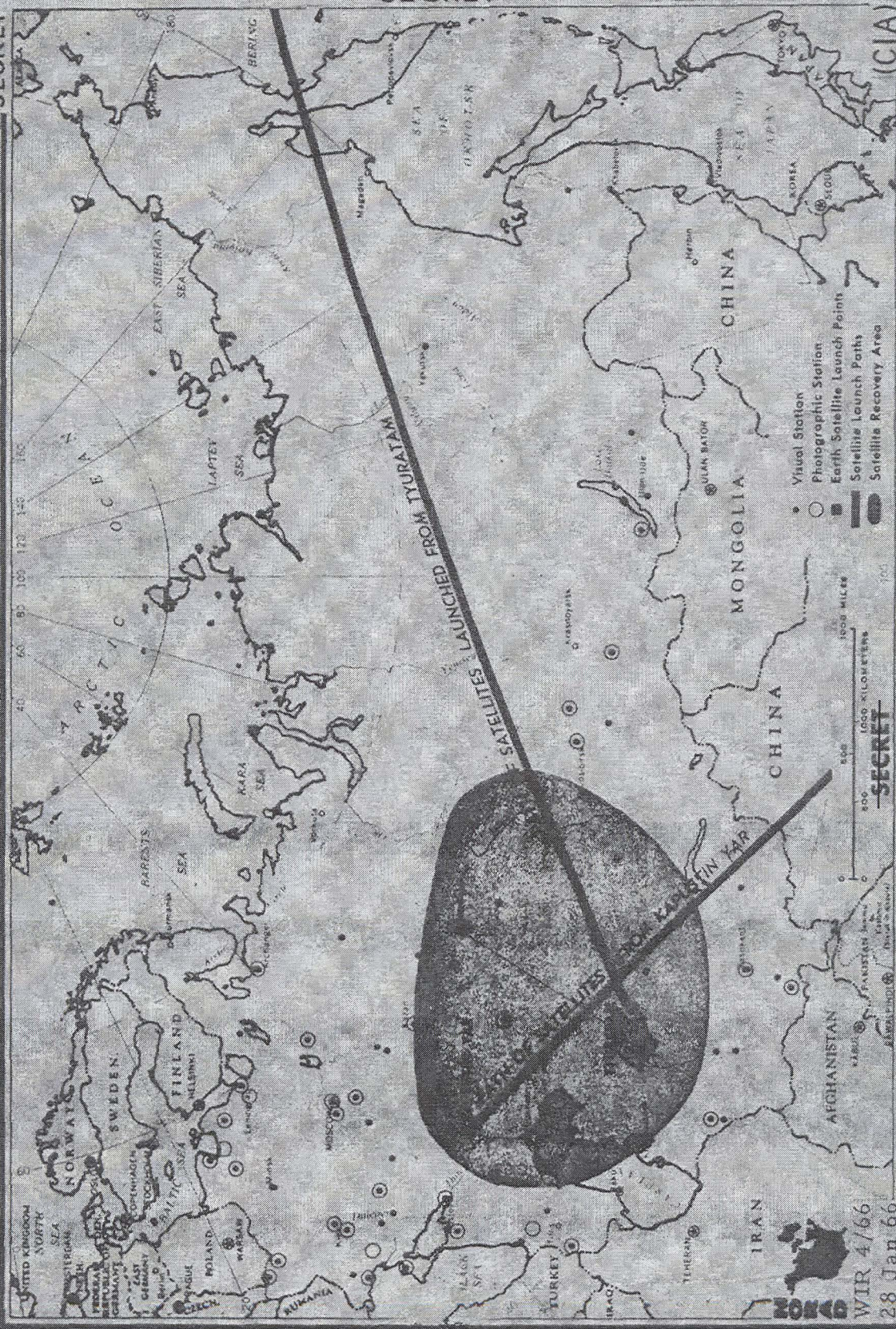
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Optical Space Tracking Stations, USSR

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(CIA)

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