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THE SECRETARY OF DEFENSE
WASHINGTON

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OCT 24 1960

Dear Mr. President:

A summary of progress on the Military Space Projects during June, July, and August 1960 is attached.

A brief review of some events of interest that have occurred subsequently is included in this letter.

DISCOVERER XV was launched from Vandenberg Air Force Base and successfully placed into orbit on 13 September 1960. On the 17th pass, the capsule was separated but, because of an abnormally fast consumption of control gas, the capsule landed in the water some 900 miles south of the intended impact point. Recovery was prevented by a storm. Launch of DISCOVERER XVI is planned during the last week in October 1960.

The launch of the first SAMOS reconnaissance vehicle on 11 October 1960 was unsuccessful as orbit was not achieved. ATLAS booster performance was normal, but, as a result of loss of control gas pressure during launch, the second-stage AGENA vehicle performed abnormally. The next launch of a SAMOS vehicle is scheduled during November 1960.

The TRANSIT 2A navigation satellite, launched into orbit 22 June is performing well. All satellite and ground station systems are performing satisfactorily.

COURIER 1B was launched successfully into a satisfactory near-circular orbit of approximately 635 nautical miles altitude on 4 October 1960. This is the first active delayed repeater communications satellite to be placed into orbit for research and development purposes. All functions of instrumentation are operating satisfactorily.

With great respect, I am

Faithfully yours,

Thomas S. Gates

Attachment

The President

The White House

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SUMMARY

June, July, August 1960

DISCOVERER PROJECT (Research and Development Satellites)

DISCOVERER XIII and XIV were launched into polar orbits on the 10th and 18th of August, respectively. After orbiting the earth for over 26 hours both capsules were recovered. DISCOVERER XIII was recovered from the sea and DISCOVERER XIV was snatched from the air by an Air Force C-119. These events marked the first time in history man-made objects which had been in orbit around the earth were returned and recovered.

Extensive recovery system component system drop tests were conducted at Holloman Air Force Base, New Mexico. The capsules containing diagnostic payloads were carried by balloons to 100,000 feet altitude and released. They then went through a normal ejection sequence while the payload transmitted valuable data to the ground station. A full-scale mockup of a biomedical capsule designed to maintain a chimpanzee in orbit for two days was completed in June.

Van type telemetry readout and recording equipment has been installed on Christmas Island to monitor all orbital passes within range of the station and record all telemetry data during re-entry.

SAMOS PROJECT (Reconnaissance Satellites)

The AGENA "A" vehicle for the first SAMOS flight completed system tests at Vandenberg Air Force Base on 17 August. The ATLAS booster flight readiness firing was successfully completed on 23 August. The launch of this vehicle is scheduled for 11 October. The two remaining AGENA "A" vehicles are in the modification and checkout phases in the systems test area. The premating of major components for the first AGENA "B" vehicle was completed on 23 August. Delivery of the XLR-81Ba-9 engine was made in mid-August.

Checkout and testing of the visual (photographic) and ferret (electromagnetic) first flight payloads is proceeding on schedule at Vandenberg Air Force Base. Final assembly of the visual (photographic) with steerable reconnaissance payload for the fourth SAMOS flight was completed during August. A thermal model of the visual (photographic) high resolution, steerable, recoverable (E-5) payload was completed during August, with delivery programmed for early September. A mid-February 1961 date has been established for delivery of the first E-5 flight payload.

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Installation of the visual reconnaissance system operating console, the second set of visual reconnaissance ground construction electronics equipment and two primary record cameras in the Vandenberg Air Force Base data acquisition and processing building was completed in July. Installation of the UHF (ultra high frequency) equipment and the Model 1604 computer at this station was also completed.

Construction of all launch facilities for the first SAMOS flight is complete, and support equipment checkout is proceeding at a rate compatible with the 11 October scheduled launch date.

MIDAS PROJECT (Very Early Warning Satellites)

In July, the Air Force Ballistic Missile Committee authorized two MIDAS flights using THOR/AGENA "B" vehicles from the DISCOVERER Program. These flights will carry a background radiometer rather than an infrared missile detection payload. The vehicles are scheduled to be launched in November and December.

Assembly of the AGENA "B" vehicle for the third MIDAS flight is proceeding on schedule. This will be the first MIDAS vehicle to utilize the full dual-burn capability of the AGENA engine. A definitive contract for the advanced infrared detection payload is being developed by Aerojet-General.

A government-to-government agreement is being drafted for the United Kingdom readout station in anticipation of approval of the MIDAS operational program. Authorization has been granted to proceed with the establishment of the Southeast Africa station. Construction of the Donnelly Flats, Alaska, technical facilities is proceeding on schedule.

TRANSIT PROJECT (Navigation Satellites)

TRANSIT 2A satellite was successfully launched into orbit about the earth on 22 June 1960 by a THOR-ABLE STAR launching vehicle at Cape Canaveral, Florida. Telemetered and tracking data received indicate that all components of the satellite are functioning normally.

TRANSIT 2A carried pick-a-back fashion an auxiliary satellite, GREB to determine effects of the ionosphere in a study of solar radiation. Separation of the satellite successfully occurred at time of injection into orbit.

From the tracking data of TRANSIT 2A, excellent orbits have been determined and studies of geodetic problems are continuing with favorable results.

Analysis of the excellent data received from the TRANSIT 1B satellite, which was launched 13 April 1960, is being made in developing procedures for predicting accurate orbits for 30 to 90 days ahead. Also with the TRANSIT 1B data, active investigation of the gravitational field of the earth and geodetic studies are being pursued.

Detailed design of TRANSIT 3A is virtually complete, and fabrication of the satellite is in progress.

NOTUS PROJECT (Communications Satellite)

The two launchings for COURIER, the delayed repeater satellite, originally scheduled for 19 July and 1 September 1960 were rescheduled for 16 August and 4 October because of needed modifications in the second stage of the THOR-ABLE STAR launch vehicle. The launching of COURIER 1A on 18 August was unsuccessful. (COURIER 1B was launched successfully into a satisfactory near-circular orbit of approximately 635 nautical miles altitude on 4 October. This is the first active delayed repeater communications satellite to be placed into orbit for research and development purposes. All functions of instrumentation have been tested and are operating perfectly).

The technical scope of the ADVENT Project, was defined as a 5-year research and development program. Ten launches are programmed from the Atlantic Missile Range. Contracts for ground station, tracking, and microwave communications equipment have been awarded.

On 15 September, the over-all technical and management responsibility for the COURIER and ADVENT Projects was transferred from the Advanced Research Projects Agency to the Department of the Army.

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