AIR FORCE BALLISTIC MISSILE DIVISION
HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
UNITED STATES AIR FORCE
Air Force Unit Post Office
Los Angeles 45, California

WDPCR 10 February 1959

SUBJECT: Military Satellite Program Status Report for the Month ending 31 January 1959

TO: Director
Advanced Research Projects Agency
Washington 25, D. C.

1. The development plans for the realigned DISCOVERER, SENTRY and MIDAS programs have been completed.

2. DISCOVERER PROGRAM

a. An unsuccessful attempt to launch the first DISCOVERER satellite took place on 21 January. The ullage rockets accidentally fired during the countdown, causing a short circuit which started the guidance timer. The timer caused the separation bolts, retro rockets, and nose cone pin pullers to fire. The DISCOVERER vehicle and THOR booster suffered damage. An incident investigation committee has been established to determine the cause of the malfunction and recommend corrective action.

b. THOR 163 and the DISCOVERER vehicle scheduled for the second flight will be used for the next launch attempt in late February.

c. System checkout of flight test vehicle #3 has been accomplished, with the biomedical recovery capsule installed.

d. Biomedical capsule separation was tested, with excellent results.

e. A radiation test package will be incorporated in the payload of the third flight.

f. The Hawaiian biomedical recovery control center is now operational. A successful training exercise was carried out on 23 January. Two capsules were dropped from B-47 aircraft; both were air recovered.

g. The UDMH engine test program is progressing in a satisfactory manner. Several technical problems were encountered, but solutions should be obtained without delay to the program.

h. All DISCOVERER ground stations were in readiness for the 21 January launch.

3. SENTRY PROGRAM

a. Visual subsystem components were tested as a unit. Output of the entire chain resulted in resolution of 80 lines per millimeter. The data link did not degrade the end result at this level of resolution. Moderate design changes are planned to obtain the desired resolution of 100 lines per millimeter.

b. Ferret equipment deliveries are on schedule. Flight tests of the Ferret-1 equipment yielded satisfactory results.

c. A preliminary study defined the facilities, ground support equipment and operating procedures required for nuclear auxiliary power-equipped vehicles. Maximum use of existing equipment was stressed.

d. Plans and specifications for SENTRY launch complex #1, Vandenberg Air Force Base, were completed and construction bids received.

4. MIDAS PROGRAM

a. The proposed MIDAS program will be undertaken in three phases:

(1) Phase I: Four ATLAS-boosted flights from the Air Force Missile Test Center (AFMTC).

(2) Phase II: Six ATLAS-boosted flights from Vandenberg Air Force Base.

(3) Phase III: Operational Missile Defense Alarm System flights from Vandenberg Air Force Base.

b. Phase I flights are planned as follows:

FLIGHT	LAUNCH DATE	ORBIT WEIGHT
1	November 1959	5,295 lbs*
2	January 1960	5,295 lbs*
3	March 1960	4,902 lbs*
4	May 1960	4,902 lbs*

* Includes 69 lb nose cap jettisoned after satellite is in orbit.

c. A schedule for modification of Pad 14 at the Air Force Missile Test Center (AFMTC), to meet MIDAS requirements, has been established.

d. A development contract was let with Baird-Atomic, Inc., for a second source, and approach for infrared payload components. This will not duplicate the Aerojet-General program.

e. Site selection criteria for MIDAS ground stations has been established.

5. Several problems have continued to hamper progress in the Military Satellite Program, as follows:

a. Program Instability. Lack of clear-cut program direction and timely decisions have caused serious program instability. This instability culminated in reorientation of the program in December 1958. This problem can be alleviated by early coordinated Air Force and ARPA approval of the reoriented programs.

b. Funding. This program has been largely funded on almost a month-to-month basis. This situation has resulted in considerable contractor dissatisfaction, has forced inefficient practices, and has created difficulty in financial management of the program. This problem can be alleviated by funding on a programmed basis, at least quarterly.

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