DISCOVERER BATTERY IN SATCOM PAYLOAD INTO YEAR-POLAR ORBIT WAS ACHIEVED.

This has been achieved through first pass acquisition by the Kodak

AND HAWAIIAN SCIENTISTS.

2. THE PRIMARY TEST OBJECTIVES FOR THE DISCOVERER XVII LAUNCH AND

ACQUISITION BAYTONS CONFERENCE DETAILED TEST OBJECTIVES, AS

SHOWN, SECTION 2.

(a) DISCOVERERrated:

THE SATELLITE MUST BE MOUNTED THE DISCOVERER VEHICLE WITHIN 5

PHOTIC MEANS OF A SPECIFIED POINT AT INSERTION WITH A SIGHT PATH

ANGLE ± 6 DEGREES AND A VELOCITY WITHIN 100 FTS OF THE SPECIFIED

NORMAL VIABLE.

(b) AGERA STRUCTURE AND ADAPTOR:

THE AGERA ATTITUDE AND ADAPTOR MUST WITHSTAND THE LAUNCH

AND SATELLITE ENVIRONMENT.

(c) AGERA PROPELLANT SYSTEM:

THE AGERA HETRO-ROCKET MUST PROVIDE THE THRUST REQUIRED

TO EFFECT SEPARATION. THE AGERA PROPELLANT SYSTEM MUST PROVIDE THE

IMPULSE REQUIRED AGERA SEPARATION TO ATTAIN ORBITAL VELOCITY AT THE

INSERTION ALTITUDE.

(d) AGERA ELECTRICAL POWER SYSTEM:

THE AGERA ELECTRICAL POWER SYSTEM MUST PROVIDE THE ELECTRICAL

POWER REQUIRED FOR SATISFACTORY SYSTEM OPERATION.

(2) AGERA GUIDANCE AND FLIGHT CONTROL SYSTEM:

THE AGERA GUIDANCE AND FLIGHT CONTROL SYSTEM MUST ACHIEVE
The time necessary to initiate and terminate orbital boost and the velocity-to-be-gained during orbital boost and must initiate and terminate orbital boost in accordance with these values. The system must also maintain proper vehicle attitude after separation and must control the time and sequence of certain jettisoned operations.

(c) **Agena-Orbital Communications System**

The Agena-Orbital Communications System must provide a continuous identification signal and transmitted operation as required for tracking and command by ground stations.

(d) **Ground Support Equipment**

The ground support equipment must satisfactorily carry out the Discoverer booster and orbital stage.

(e) **Recovery System Facilities**

The Discoverer System Facilities must provide adequate data records, a satisfactory ground command capability, and necessary station communications.

3. A preliminary evaluation of the test objective achievement follows:

(a) **Discoverer Booster - Objective Achieved.**

Booster separation occurred at 1141.6 sec. and Peo at 1722.26.

(b) **Agena: Airframe and Attitude - Objective Achieved.**

No evidence of structural deficiencies has been noted.

(c) **Agena Propulsion System - Objective Achieved.**
THE AGENA ROCKETS FIRE AND ALTHOUGH SEPARATION DETONATOR DATA WERE NOT OBTAINED, THE SEPARATION AT 74-16.6 SEC. APPEARS TO HAVE BEEN SATISFACTORY. AGENA ENGINE IGNITION OCCURRED AT 74-23.3 SEC. AND SHUTDOWN OCCURRED AT 74-274.7 SEC. AFTER A BURNING TIME OF 242 SEC. CHAMBER PRESSURE DATA WERE NOT OBTAINED, BUT ENGINE OPERATION APPEARS TO HAVE BEEN SATISFACTORY. THE GROSS VELOCITY GAIN OF 15,970 FPS. DURING AGENA ENGINE OPERATION WAS SUFFICIENT FOR ORBIT ATTAINMENT AT THE INJECTION ALTITUDE.

(D) AGENA ELECTRICAL POWER SYSTEM - OBJECTIVE ACHIEVED. NO EVIDENCE OF ELECTRICAL POWER SYSTEM MALFUNCTION HAS BEEN NOTED.

(E) AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM - OBJECTIVE ACHIEVED.

THE TIME FOR INITIATION OF ORBITAL STAGE BOOST AND THE REQUIRED VELOCITY TO BE GAINED WERE OBTAINED FROM THE LAST MU6 VIHARD TRACKING DATA. A SEC. OF COMMAND 5 AND 8 SEC. OF COMMAND 6 WERE TRANSMITTED AND RECEIVED BY THE VEHICLE. THE VELOCITY GAIN OF 26, 769 FPS. CORRESPONDING TO THE INTEGRATOR SETTINGS AS ADJUSTED BY COMMAND 6, AND THE ENGINE SHUTDOWN APPEARS TO HAVE BEEN COMMANDED BY THE INTEGRATOR - PROPER VEHICLE ATTITUDE WAS MAINTAINED DURING BOTH THE COAST AND THE ORBITAL STAGE BOOST PHASES OF THE FLIGHT.

(F) AGENA SPACE COMMUNICATIONS SYSTEM - OBJECTIVE ACHIEVED.

OPERATION OF THE ACQUISITION BEACON AND THE S-BAND TRANSPONDER WERE SATISFACTORY. THE ACQUISITION BEACON WAS TRACKED.
FOR A TOTAL OF 600.0 SEC AND THE TRANSPONDER FOR A TOTAL OF 900.0 SEC.

(c) GROUND SUPPORT EQUIPMENT - OBJECTIVE ACHIEVED.

THE DISCOVERER BOOSTER AND ORIGANAL STAGE MAIN INJECTION

TIMED CHECKOUT DURING THE COUNTDOWN BY THE GROUND SUPPORT EQUIPMENT.

THE 24V BATTERIES WERE COMBINED TO THE 6-TIME PULSING NETWORK TO

RAISE THE VOLTAGE TO THE LEVEL NECESSARY TO START THE D-TIME. GSE

OPERATION OTHERWISE NORMAL.

(d) DISCOVERER SYSTEM FACILITIES - OBJECTIVE ACHIEVED.

MONITORING DATA WERE RECEIVED AT VAPE FROM 11:00 TO

2:11 GMT AND THE RECORDS ARE OF GOOD QUALITY. GROUND COMMANDS

WERE SATISFACTORY TRANSMITTED. STATION COMMUNICATIONS WERE

ADEQUATE.

ADDITIONAL INFO:

(1) DEPARTURE AZIMUTH OF THE VEHICLE FROM THE LAUNCH PAD WAS

APPROXIMATELY DEGREE TO THE RIGHT OF NOMINAL. THE TRAJECTORY

WAS SLIGHTLY BELOW THE PREDICTED. INJECTION ALTITUDE WAS 120 ST.

ML, INJECTION VELOCITY WAS 26,000 FPS, AND INJECTION FLIGHT PATH

ANGLE WAS 0 DEGREES AS DETERMINED FROM THE VEHICLE PULSING BOARD

CHARTS.

(2) HOPS DURING THE COUNTDOWN WERE REQUIRED TO INSTALL THE

BATTERIES IN THE D-TIME PULSING NETWORK AND FOR COMBINED NECESSITY

FOR RECHARGING THE MAIN SATCOM SATELLITE, WAITING THE RESULTS

OF WIND-SPEED CALCULATIONS, AND WAITING AREA CLEARANCE (STAIRS).

TOTAL HOLD TIME WAS 30 MINUTES.
(a) The telemeter ship received the telemetry signal from T-126 145 to T-168 655 sec.

(b) Damage was slight, recovery time estimated to be 8-10 hr.

Five days or less.

(c) Launch was accomplished on second attempt. Previous countdown on 21 November 1960 was terminated because N-200 (nitrogen) was inadvertently pulled out of the vehicle regressor when the Thrae transportor rocket was lowered.