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APR 26 1958
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OFFICE OF THE ASSISTANT SECRETARY FOR PLANNING AND POLICY
DEFENSE RESEARCH AGENCY WASHINGTON DC

ATTENTION: MR. J. W. PATEL/DC/PLANNING

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UNCLASSIFIED COPY

REPT TWO PARAGRAPHS APR CALIF
STAFF AIRBORNE INF FOR COMMAND POST AND EDGEH HUNTER
SQUAD FOR WYLE /MR. FRENCH/ HUNTER SQUAD FOR COL WENALL.
REPT ONE BLANK REPORT ON THE LAUNCHING OF DISCOVERER
(BY THE WYLE PERIOD)

1. DISCOVERER IS ROCKET NO. 28 AND
MODEL SERIAL STAGE NO. 1111. WAS LAUNCHED FROM VANG
COMPLEX 75-764-4-1111 ON 28 AUGUST 1961. THE
PRIMARY LAUNCH OBJECTIVE, TO PLACE THE DISCOVERER SATEL-
LITE WITH PASIRAB IN A NEAR-SOLAR ORBIT, WAS ACCOMPLISHED.
THE VIB PLATED AND PRESENTATION OF ASCENT TRACKING DATA
SHOWED THE ROCKET'S ALTITUDE TO BE 155 STATUTE MILES, THE
BURSTING VELOCITY TO BE 24,000 FT/S, AND THE BURSTING FLIGHT
PATH ANGLE TO BE 1.1 DEGREE. THE TRACKING STATIONS AT
KODIAK AND MAWAS RECEIVED THE SATELLITE TELEMETRY AND
RADAR RANGE SIGNALS ON THE FIRST ORBIT PASS.

2. PRELIMINARY EVALUATION INDICATES THAT LAUNCH TEST
OBJECTIVE WERE ACHIEVED AS FOLLOWS /REFERENCE DETAILED
TEST OBJECTIVE, LMS 44-04, SECTION 2/CIA

A. DISCOVERER ROCKET - OBJECTIVE ACHIEVED.
/1/ VEHICLE POSITION WAS WITHIN 5 NAUTICAL MILES,
FLIGHT PATH ANGLE WAS WITHIN 4 DEGREE, AND VELOCITY WAS

REPORT W/ VIBRATION ANALYSIS
WITHIN 50% OF THE NOMINAL VALUE AT BOOSTER SEPARATION CUT-
OFF. ACCELERATIONS AND HYDRO DYNAMICS APPEAR TO HAVE
BEEN SIGNIFICANTLY REDUCED AND TRANSMITTED BY THE
STRUCTURAL SYSTEMS. AND TRENDS RELATIVE TO THE
COMPARISON APPEAR TO HAVE BEEN PROPER. ALSO OCCURRED AT
T PLUS 14.5 SECONDS ON COMMAND FROM GROUND CONTROL.
TRENDS OCCURRED AT T PLUS 14.5 SECONDS AFTER 9.0 SECONDS OF
TRENDS SOLO OPERATION. SEPARATION OF THE ORBITAL STAGE
FROM THE BOOSTER WAS INITIATED AT T PLUS 14.5 SECONDS BY A
GROUND CONTROL COMMAND.

17. NO OSCILLATIONS WERE APPARENT IN THE AERIAL
LONGITUDINAL ACCELEROMETER DATA INTERMITTENTLY AND WITH
LOW AMPLITUDE FROM LIFTOFF TO T PLUS 127 SECONDS. THE
AMPLITUDE OF THE OSCILLATIONS INCREASED AFTER T PLUS 127
SECONDS TO A MAXIMUM PEAK TO PEAK VALUE OF APPROXIMATELY
2.5 G AT T PLUS 145 SECONDS. THE AMPLITUDE DECREASED THERE-
AFTER UNTIL 1500. LOW AMPLITUDE OSCILLATIONS WERE ALSO
APPARENT IN THE TRENDS MAN ENGINE CHAMBER PRESSURE DATA
BETWEEN T PLUS 145 SECONDS AND T PLUS 146.5 SECONDS.

18. AERIAL AIRPLANE AND ADAPTER. OBJECTIVE ACHIEVED
NO EVIDENCE OF STRUCTURAL PROBLEMS IN THE AERIAL AIR-
FRAME OR ADAPTER HAS BEEN NOTED.

TESTING OF VARIOUS AIR CALIB

C. AREA POWER SYSTEM - OBJECTIVE ACHIEVED

THE AREA POWER PROVIDED THE THRUST NECESSARY FOR ORBITAL STAGE SEPARATION. AREA POWER SYSTEMS CONTROLLED A. 1. SEPARATION AT T PLUS 20.1 SECONDS. ENGINE OPERATION APPEARS TO HAVE BEEN IN FACTORY DESIGN PARAMETERS WHICH WAS CONFIRMED BY THE OPERATOR AT T PLUS 20.1 SECONDS. THE ENGINE VELOCITY WAS REPORTED BY THE OPERATOR DURING SEPARATION PHASE WAS 24,200 FPS. THE REFUSE PRO-VIDED BY THE AREA ENGINE WAS SUFFICIENT TO GIVE THE VEHICLE ORBITAL VELOCITY AT THE FRONT BOOSTER ALTITUDE.

D. AREA ELECTRICAL POWER SYSTEM - OBJECTIVE ACHIEVED.

NO EVIDENCE OF AREA ELECTRICAL POWER SYSTEM PROBLEMS HAS BEEN NOTED.

E. AREA GUIDANCE AND FLIGHT CONTROL SYSTEM - OBJECTIVE ACHIEVED.

/1/ THE AREA GUIDANCE SYSTEM PROPERLY RESPONDED TO A 1.25 SECOND TIME TO FIRE CORRECTION AND A 1.25 SECOND VELOCITY TO BE GAINED CORRECTION AS COMMANDED BY THE GROUND GUIDANCE SYSTEM. VEHICLE ATTITUDE WAS APPARENTLY CONTROLLED SATISFACTORILY DURING THE COAST PHASE AND DURING THE ORBITAL BOOST PHASE, AND ORBITAL GAS EXHAUSTION WAS

SECRET

[REDACTED]

OBJECTIVE OF THE PROGRAM AND CASE

GENERAL PURPOSE OF THIS PROGRAM. DURING SHUTDOWN WAS PRE-
LIMINARILY CONSIDERED BY THE OPERATOR, AND THE TIME AND
SEQUENCE OF ALL PROGRAMMED EVENTS THAT OCCUR DURING
LAUNCH DATA ACQUISITION WERE PRECISELY CONTROLLED BY THE
SYSTEM.

A. INSTRUMENTATION CONTINUING TO INTERFERE THE
TRACKER FOR THE HIGH POSITION ALTITUDE AND FLIGHT PATH
ANGLE.

B. AIRBORNE SPACE DIRECTIONAL INDEX SYSTEM - OBJECTIVE
ACHIEVED.

OPERATION OF BOTH THE RADAR TRACKER AND THE ACQUI-
SITION TRACKER WAS SATISFACTORY. THE TRACKER THE RADAR
TRACKER FROM LIFTOFF TO T PLUS 60 SECONDS AND THE ACQUI-
SITION TRACKER FROM LIFTOFF TO T PLUS 60 SECONDS.

C. AIRBORNE SENSING EQUIPMENT - OBJECTIVE ACHIEVED.
BOOSTER AND ORBITAL STAGE CURRENT WAS SATISFACTORILY
ACCOMPLISHED DURING THE COUNTDOWN BY THE AIRSPACE
GROUND EQUIPMENT, AND NO SIGNIFICANT AIR PROBLEMS WERE
ENCOUNTERED.

D. INSTRUMENT SYSTEM FACILITY - OBJECTIVE ACHIEVED.

THE LAUNCH TELEMETRY SIGNAL WAS RECEIVED AND

[REDACTED]

[REDACTED]



[REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]

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1. SYSTEM DOWNTIME

THE SYSTEM DOWNTIME WAS ACCOMPANIED WITH NO
 SIGNIFICANT DAMAGE AND NO LOSS. THE DOWNTIME STARTED
 AT 10:00 AM LOCAL TIME ON [REDACTED]

2. DATA DAMAGE

NO DATA WAS LOST AND A NORMAL RECOVERY SCHEDULE
 IS EXPECTED.

END

[REDACTED]
 [REDACTED]