TO: CONDR, 2D AFWD; LOS ANGELES AFB, Calif. ATT: WIDEY

FROM: 1ST MISSILE DIVISION (COMMAND POST), VAFB, CALIF (COURIER)

SUBJECT: FOLLOW-UP REPORT TO FLARE REPORT OF LAUNCH OF DISCOVERER 25 (NIGHT SHIFTS-PROTO).

I. PRE-LAUNCH PHASE

1.1. DISCOVERER II COUNTDOWN WAS INITIATED AT 0600 PST ON 15 APRIL 1960. THE COUNTDOWN PROCEEDED NORMALLY FOR A LIFT-OFF AT 1230 PST. HIGH WINDS WITH GUSTS AT THE PAD CAUSED WORK REQUIREMENTS THE HI-LIFT TO PROCEED SLOWER THAN NORMAL DUE TO THE EXTRAORDINARY CAUTION REQUIRED. A DIFFICULT MAST-BOOM SETTING IN TASK 3 CAUSED A TEN-MINUTE DELAY. THERE WERE NO TECHNICAL HOLD IMPOSED. THE ACID FEED LINE FROM THE ACID TRUCK TO THE REHEATMENT DEVELOPED A
LEAK AND WAS REPLACED. THIS REPLACEMENT CAUSED NO DELAY. AN
OPERATIONAL HOLD WAS IMPOSED AT 1005 PST AT T-55 TO PERMIT TRAINS
TO CLEAR THE AREA. THIS HOLD WAS IMPOSED DURING TASK 15. DURING
THE HOLD, WORK ON THE PAD PROGRESSSED THROUGH TASKS 15 AND 16. THE
HOLD WAS RELEASED AT 1125 PST AT T-55 WITH WORK BEGINNING ON TASK
17. A SECOND OPERATIONAL HOLD FOR TRAINS WAS IMPOSED AT 11:58
PST AT T-15 WHICH WAS RELEASED AT 1215 PST. TRAFFIC WAS TURNED AT
1217:51. AN 18-SECOND OPERATIONAL HOLD WAS IMPOSED BETWEEN PHASE
2 AND PHASE 3 OF THE TERMINAL COUNT. THE TOTAL TERMINAL COUNTDOWN
TIME WAS 12 MINUTES AND 45.73 SECONDS INCLUDING THE 18-SECOND
OPERATIONAL HOLD IMPOSED BETWEEN PHASES 2 AND 3.

2. EXIT PHASE

2.1. DURING THE FIRST PART OF THE LAUNCH PHASE THE SEQUENCE
OF EVENTS OCCURRED AS FOLLOWS:

LIFTOFF --------------- 1230:36.73
MECO ------------------- 1233:19.40
VECO ------------------- 1233:29.32
SEPARATION -------------- 1233:42.23
ORBITAL STAGE IGNITION --- 1234:51.68
ORBITAL STAGE BURNOUT --- 1236:47.17

2.2. ALL ENGINE PARAMETERS FUNCTIONED NORMALLY. HIGH WINDS
AT 70 SECONDS REQUIRED 2 DEGREES OF THOR ENGINN DEFLECTION IN
PITCH TO MAINTAIN CONTROL.

2.3. COMMAND 5 (DELAY IGNITION) WAS SENT AND RECEIVED FOR A
DURATION OF 1.8 SECONDS. HOWEVER, THERE WAS AN ADDITIONAL DELAY.
IN IGNITION DUE TO ACTION OF THE FAIRCHILD TBF TIME FOR 2.2 SECONDS.
FOR A TOTAL EFFECTIVE DELAY OF IGNITION OF 4.0 SECONDS. COMMAND 6
(REDUCTION IN VELOCITY TO BE GAINED) WAS SENT AND RECEIVED FOR A
DURATION OF 14.0 SECONDS. ORBITAL STAGE SHUT-DOWN OCCURRED BY
COMMAND FROM THE GUIDANCE AND CONTROL SYSTEM.

2.4. ORBITAL INJECTION VELOCITY WAS 25,770 FPS REFERRED TO
THE PAD. THE 0.8 INDICATED HORIZONTAL VELOCITY GAINED WAS 22,900
FPS. INJECTION ALTITUDE ALONG THE LOCAL VERTICAL WAS APPROXIMATELY
110 STATUTE MILES BASED ON THE LMSD PT MUGU POLAR RADAR DATA
(PUNCHED TAPE). THE FLIGHT PATH DEPARTURE ANGLE WAS APPROXIMATELY
173.5 DEGREES BASED ON THE PT MUGU RADAR FLAT BOARD CHARTS.

2.5. THE INJECTION ANGLE WAS APPROXIMATELY 0.0 DEGREES BASED
ON THE LMSD PT MUGU RADAR CHART.

3. RADAR AND TELEMETRY

3.1. GOOD TRACK WAS ACHIEVED BY THE LMSD PT MUGU RADAR FROM
ACQUISITION UNTIL ABOUT T+390 SECONDS WITH FINAL LOSS OCCURRING AT
T+470 SECONDS. THE LMSD VAFB RADAR HAD GOOD TRACK UNTIL T+164
SECONDS, AT WHICH TIME IT WENT PASSIVE BY A PRE-ARRANGED PROCEDURE.

3.2. TELEMETRY RECEIPT AND RECORDING WERE SATISFACTORY AT
BOTH VAFB AND PT MUGU. THE DOWN RANGE T/M SATELLITE HAD A SIGNAL
RECEPTION FOR APPROXIMATELY 130 SECONDS WHICH IS NORMAL.

4. FOLLOW ON TO PRIMARY OBJECTIVES

4.1. ALL PRIMARY OBJECTIVES OF THE LAUNCH PHASE WERE ACHIEVED.

5. PAD DAMAGE

5.1. THIS WAS THE FIFTH LAUNCH FROM PAD 5. PAD DAMAGE WAS
SLIGHT INDICATING GOOD CONTINUING RESULTS OF PAST PAD HARDENING PROCEDURES. COMPLETE PAD RECOVERY TIME IS ESTIMATED AT 4 TO 5 DAYS. LOSSES INCLUDED THE AIR CONDITIONING DUCTS, THE MISSILE HYDRAULIC FLEX LINE ON LEG #1, AND THE MISSILE BOTTLE PRESSURIZING LINE ON LEG #2. THE ACTUATOR ROD ON LEG #2 WAS ALSO BROKEN.