5595TH AEROSPACE TEST WING, VANDENBERG AFB, CALIF., VWZD

TO: SPACE SYSTEMS DIV, LOSA CALIF.

SUBJECT: EIGHT-HOUR FLASH REPORT

I. SUMMARY

A Vehicle consisting of SLV-2 Booster No. 388 and S-01A Orbital Stage No. 1412 was launched on the second attempt from VAFB Complex 75-1, Pad 1, at 17:00:10.58 PDT on 18 July 1963. The primary launch objective, to place the S-01A satellite with payload in a near-polar orbit, was accomplished. The VTS radar plotboard indicated the following approximate injection conditions: Altitude 137 statute miles; Pad referenced velocity, 25,580 fps; Path elevation flight angle, approximately +1.0 deg; azimuth flight path angle, approximately 174.5 deg. The orbital period appears to be near-nominal, based on first pass acquisition.

DQ 19 7 1963

CLASSIFICATION OF REFERENCE

FROM:

ACTION: INFO

TYPE MSG (Block)

ACCOUNTING SYMBOL

ORIG. OR REFERS TO:

CLASSIFICATION

OF REFERENCE

SPECIAL INSTRUCTIONS

DOWNSTAIR AT 5 YEAR RECLASS;

DECLASSIFIED AFTER 12 YEARS

DD FORM 173 REPLACES DD FORM 173, 1 OCT 48, WHICH WILL BE USED UNTIL EXHAUSTED
69TH AEROSPACE TEST WQ, VANDENBERG AFB, CALIF.

DURING ASCENT, THE FOLLOWING WERE OBSERVED FROM TELEMETRY DATA.

DURING THE LATTER PART OF THE S-IV-B THRUST INTERVAL, DURING SEPARATION, AN ELECTRICAL DISTURBANCE (HIGH CURRENT DRAIN) WITHIN THE S-01A PERSISTED FOR 3.4 SEC, AND LINK SIGNAL WAS LOST FOR THE REMAINDER OF THE ASCENT.

II. SIGNIFICANT EVENTS

PRELIMINARY VALUES OF SIGNIFICANT LAUNCH EVENTS ARE:

<table>
<thead>
<tr>
<th>EVENT</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFT-OFF (1700.10.58 PDT)</td>
<td>00.00</td>
</tr>
<tr>
<td>STEERING INITIATED</td>
<td>52.00</td>
</tr>
<tr>
<td>MECO (S1)</td>
<td>145.32</td>
</tr>
<tr>
<td>VEKO</td>
<td>154.19</td>
</tr>
<tr>
<td>ENABLE D1 AND D2 (S2)</td>
<td>150.59</td>
</tr>
<tr>
<td>D1 ON</td>
<td>153.31</td>
</tr>
<tr>
<td>D1 OFF</td>
<td>154.75</td>
</tr>
<tr>
<td>S2 ON</td>
<td>154.77</td>
</tr>
<tr>
<td>S2 OFF</td>
<td>159.93</td>
</tr>
<tr>
<td>SEPARATION COMMAND (S3)</td>
<td>160.35</td>
</tr>
<tr>
<td>SEPARATION COMPLETE</td>
<td>162.6</td>
</tr>
<tr>
<td>ULLAGE ROCKET IGNITION</td>
<td>178.8</td>
</tr>
<tr>
<td>S-01A ENGINE IGNITION</td>
<td>188.8</td>
</tr>
</tbody>
</table>
JOINT MESSAGEFORM - CONTINUATION SHEET

6595TH AEROSPACE TEST WING, VANDENBERG AFB, CALIF.

<table>
<thead>
<tr>
<th>Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-01A EMBRUST ATTAINMENT (90 PER CENT PC)</td>
<td>189.9 SEC</td>
</tr>
<tr>
<td>S-01A BURNOUT (70 PER CENT PC) (S. T. = 437.25)</td>
<td>426.7 SEC</td>
</tr>
<tr>
<td>S-01A LINK 2 TELEMETRY LOSS</td>
<td>560.4 SEC</td>
</tr>
<tr>
<td>VTS VERLORT RADAR FADE</td>
<td>448.0 SEC</td>
</tr>
<tr>
<td>VTS ACQUISITION BEACON FADE</td>
<td>468.0 SEC</td>
</tr>
<tr>
<td>VTS TELEMETRY DATA FADE (LINK 1)</td>
<td>475.0 SEC</td>
</tr>
</tbody>
</table>

III. SLV-2 PERFORMANCE

ALL SLV-2 SUB-SYSTEMS PERFORMED ADEQUATELY FOR

ACHIEVEMENT OF THE PRIMARY TEST OBJECTIVES; HOWEVER

CERTAIN UNUSUAL CHARACTERISTICS WERE OBSERVED DURING

THE LATTER PORTION OF THE BOOSTER THRUST PERIOD.

(a) FUEL AND LOX FLOAT SWITCH ACTUATIONS WERE OSCILLATORY

RATHER THAN EXHIBITING THE USUAL SINGLE ACTUATION.

(b) Y AXIS ACCELEROMETER INDICATED LARGER AMPLITUDE

OSCILLATIONS DURING THE 20 CYCLE OSCILLATORY PERIOD.

AS COMPARED WITH PREVIOUS LAUNCHES.

QUICK-LOOK DATA INDICATE THAT ACCEPTABLE BOOSTER

COAST APOGEE CONDITIONS WERE ATTAINED AND APPROPRIATE

COMMANDS WERE PROVIDED TO THE S-01A. THE TENTATIVE

EVALUATION OF COAST APOGEE VS. CITY WAS 19971 FPS

(NOMINAL: 9934 FPS) AND OF ALTITUDE WAS 106.65 NM (NOMINAL:

106.26 NM).
These nominals, based on TAG engine data, anticipated MECO due to propellant depletion. Ground guidance system target was coast, apogee velocity of 9971 FPS and altitude of 106.85 NM.

IV. 9-31A PERFORMANCE

All 9-31A vehicle sub-systems performed satisfactorily during launch to provide adequate trajectory conditions for central injection at engine shutdown.

The 28 VDC current and unregulated voltage monitors indicate the existence of an electrical short for 3.42 sec from 160.39 sec to 163.81 sec. The initiation of the short closely coincides with the start of separation. However, the short extends for 1.21 sec beyond separation complete. The current monitor indicates a rise from 19 AMPS to 41 AMPS for 0.2 sec at the start of the short and then goes out of band (greater than 50 AMPS) followed by an abrupt recovery to 21 AMPS at the end of the short. The plus 28 VDC unregulated bus shows a drop of approximately 4.0 VDC from 26.3 VDC to 22.3 VDC followed by a gradual increase to 23.3 VDC just before recovery. Power conversion and regulation equipment disturbances were minor.
THE SHORT DOES NOT APPEAR TO HAVE AFFECTED ANY
OF THE BASIC VEHICLE SUBSYSTEMS, HOWEVER, LINK 2 TELEMETER
WAS LOST AT THE START OF THE SHORT, INITIATION OF
PNEUMATIC CONTROL AND OPERATION DURING AND FOLLOWING THE
SHORT APPEARS NORMAL. ALSO
NOTE WAS A BRIEF CURRENT SUGGESTED AT T+22 SEC WHICH APPEARS
UNRELATED TO ANY KNOWN EVENT AND THE USUAL ELEVATED
CURRENT VALUES FROM THRUST ATTAINMENT TO ULLAGE
EXCEPT FOR A FEW PERIODS
ROCKET BURNOUT. ALL ELECTRICAL SUBSYSTEM EQUIPMENT
APPEARS TO HAVE OPERATED SATELLITELY THROUGH
SIGNAL FADE.

AT THE TIME OF TELEMETRY SIGNAL FADE AT T+22, THE
ORBITAL TIMER WAS SET AT 5450 SEC (STEP 20) IN THE RESET-ON
POSITION, IN THE INCREASE MODE, AND ALTERNATE RE-ENTRY
DISARM STATE.

V. SPACE-GROUND COMMUNICATIONS

TELEMETRY DATA FROM LINK 1 WAS SATISFACTORY
RECEIVED AND RECORDED.

LINK 2 SIGNAL STRENGTH WAS NOMINAL FROM LIFTOFF
TO T+160.6 SEC AT WHICH TIME A COMPLETE LOSS OF SIGNAL
WAS EXPERIENCED. LINK 2 WAS NOT RECEIVED AT ANY TIME.
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THEREAFTER DURING ASCENT, AND WAS CONFIRMED BY KOMI AS BEING INACTIVE ON PASS 1.

VI. COUNTROWN

LAUNCH WAS ACCOMPLISHED ON THE SECOND ATTEMPT. THE FINAL COUNTDOWN WAS INITIATED AT 0840 PDT ON 18 JULY 1963 AND PROCEEDED TO LIFTOFF AT THE BEGINNING OF THE SCHEDULED LAUNCH TIME "WINDOW" NO ROLES WERE IMPOSED.

A MODIFIED TASK 2 OPERATION WAS PERFORMED BECAUSE THE VEHICLE WAS VERTICAL AT THE BEGINNING OF THE COUNTDOWN.

5-01A POWER CHECKS WHICH ARE NORMALLY CONDUCTED IN TASK 2 WERE PERFORMED IN TASK 6.

FOLLOWING THE NORMAL CHECKS OF TASK 10 A SPECIAL PAYLOAD CHECK WAS PERFORMED FOR ADDITIONAL VERIFICATION OF THE INTEGRITY OF THE PAYLOAD.

THE FIRST COUNTDOWN WAS INITIATED AT 0840 PDT ON 17 JULY 1963 AND WAS ABORTED IN TASK 9 AT 1445 DUE TO A FAILURE OF THE SLY-2 NUMBER 2 DESTRUCT RECEIVER TO FUNCTION PROPERLY. A SATISFACTORY REPLACEMENT WAS INSTALLED PRIOR TO THE FINAL COUNTDOWN. ALSO IN TASK 9, THE 5-01A GUIDANCE GAS HIGH-RANGE PRESSURE
J-295TH AEROSPACE TEST WING, VANDENBERG AFB, CALIF.

TRANSDUCER WAS REPORTED TO BE INOPERATIVE. THE
REQUIREMENT FOR THIS MANDATORY MEASUREMENT WAS
WAIVED BY THE AIR FORCE. THE TRANSDUCER WAS NOT
REPAIRED BEFORE START OF THE FINAL COUNTDOWN. NO
PROPELLANTS HAD BEEN LOADED ABOARD THE VEHICLE AT
TIME OF THE ABORT. THE VEHICLE WAS MAINTAINED IN
VERTICAL POSITION OVERNIGHT.

VII. AEROSPACE GROUND EQUIPMENT

THE AEROSPACE GROUND EQUIPMENT PERFORMED
SATISFACTORILY TO SUPPORT CHECKOUT AND LAUNCH OF THE
VEHICLE. NO SIGNIFICANT PROBLEMS WERE ENCOUNTERED.

VIII. PAD DAMAGE

PAD DAMAGE WAS NORMAL AND THE PAD TURNAROUND
SCHEDULE CAN BE MAINTAINED.