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O 290640Z  
FM 6595 AEROSPACE TEST WG VAFB  
TO SPACE SYSTEM MS DIV LOSA  
BT

//SECRET//VWZD-17-4-75-5

SUBJECT 8 - HOUR LAUNCH FLASH REPORT

I. A SATELLITE VEHICLE CONSISTING OF THRO BOOSTER NO 333 AND AGENA B ORBITAL STAGE NO. 1125 WAS LAUNCHED ON THE FIRST ATTEMPT FROM VAFB COMPLEX 75-3 PAD 4 AT 1630:12.45 PST ON 28 APRIL 1962. THE PRIMARY LAUNCH OBJECTIVE, TO PLACE THE AGENA SATELLITE WITH PAYLOAD IN A NEAR-POLAR ORBIT, WAS ACCOMPLISHED. READINGS FROM THE VTS RADAR PLOTTING BOARD GAVE AN INJECTION ALTITUDE OF 136 STATUTE MILES, AN

CLASSIFICATION CHANGED TO

By Authority of *[Signature]* APR 20 1966

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INJECTION PAD REFERENCED VELOCITY OF APPROXIMATELY 25,750 FPS, AN INJECTION FLIGHT PATH ANGLE OF ABOUT 0 DEG, AND AN INITIAL DEPARTURE FLIGHT AZIMUTH OF APPROXIMATELY 172 DEG. THE INFLIGHT YAW LEFT MANEUVER DURING THE LATTER PART OF THE THOR BOOST APPEARS TO HAVE BEEN SUCCESSFULLY ACCOMPLISHED. KODIAK TRACKING STATION CONFIRMED ORBITAL STATUS THROUGH RECEPTION OF TELEMETRY, RADAR, AND ACQUISITION BEACON SIGNALS ON THE FIRST ORBITAL PASS.

THE ORBIT ATTAINED APPEARS TO BE VERY CLOSE TO NOMINAL WITH AN ORBITAL PERIOD AND ALTITUDE ONLY SLIGHTLY ABOVE PREDICTED.

A LIST OF SIGNIFICANT LAUNCH EVENTS FOLLOWS:

LIFTOFF	ZERO (1630:12.45 PST)
STEERING INITIATED	90.87 SEC
MECO (S1)	147.63 SEC
MECO	156.68 SEC
ENABLE D1 AND D2 (S2)	152.58 SEC
D1 ON	155.29 SEC

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D1 OFF	158.18 SEC
D2 ON	158.42 SEC
D2 OFF	164.43 SEC
SEPARATION COMMAND (S3)	165.09 SEC
SEPARATION COMPLETE	167.38 SEC
AGENA THRUST ATTAINMENT (90 PER CENT PC)	194.94 SEC
AGENA BURNOUT (70 PERCENT PC)	428.85 SEC
VTS VERTICAL RADAR FADE	450 SEC

ITS TELEMETRY FADE

(LINK1)

486 SEC

(I. PRELIMINARY EVALUATION INDICATES THAT LAUNCH TEST OBJECTIVES WERE ACHIEVED AS FOLLOWS (REF. DETAILED TEST OBJECTIVES, LMSC 446404, SECTION 2)

A. THRO BOOSTER-OBJECTIVE ACHIEVED  
BOOSTER IGNITION AND LIFTOFF WERE SATISFACTORY. THE THOR ROLL PROGRAM AND PITCH PROGRAM APPEAR TO HAVE BEEN PROPERLY EXECUTED.

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THE PROGRAMMED YAW-LEFT MANEUVER DURING THOR MID-BOOST WAS SATISFACTORILY ACCOMPLISHED. AT MAIN ENGINE CUTOFF, VEHICLE POSITION WAS WITHIN A SPHERE OF 5 NM RADIUS, FLIGHT PATH ANGLE WAS WITHIN PLUS OR MINUS 4 DEG, AND VELOCITY WAS WITHIN 500 FPS OF THE NOMINAL VALUE.

BOOSTER STEERING AND EVENT COMMANDS WERE GENERATED AND TRANSMITTED SATISFACTORILY BY THE GROUND GUIDANCE SYSTEM AND VEHICLE RESPONSE TO THE COMMANDS APPEARS TO HAVE BEEN PROPER. MECO OCCURED AT 147.64 SEC AS A RESULT OF COMMAND FROM GROUND GUIDANCE SYSTEM. VERNIER ENGINE SOLO OPERATION LASTED 9.0 SEC WITH MECO OCCURING AT 156.68 SEC. SEPARATION WAS INITIATED BY A GROUND GUIDANCE COMMAND AT 165.09 SEC. GROUND GUIDANCE SYSTEM PRELIMINARY EVALUATION DATA INDICATE THE BOOSTER COAST APOGEE ALTITUDE WAS 107.77 NM (NOMINAL: 107.59 NM) AND THE BOOSTER COAST APOGEE VELOCITY WAS 9959 FPS (NOMINAL: 9974FPS).  
THE THOR TELEMETRY COMMUTATED CHANNELS

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BECAME INOPERATIVE IMMEDIATELY AFTER LIFTOFF AND REMAINED OUT THROUGHOUT FLIGHT.

B. SATELLITE VEHICLE - OBJECTIVES ACHIEVED

1. AGENA AIRFRAME AND ADAPTER  
STRUCTURAL INTEGRITY WAS MAINTAINED AND NO EXCESS LOADS WERE APPLIED. THE USUAL 18-20 CPS VEHICLE LONGITUDINAL OSCILLATIONS WERE PRESENT DURING THE THOR BOOST PERIOD. ALL PYROTECHNIC FUNCTIONS OCCURRED AT APPROXIMATELY NOMINAL TIMES. THE RETRO-ROCKETS SATISFACTORILY PROVIDED THE THRUST NECESSARY FOR COMPLETE SEPARATION BY 167.38 SEC.

2. AGENA PROPULSION SYSTEM  
NULLAGE ROCKET IGNITION WAS SATISFACTORY. AGENA ENGINE IGNITION OCCURED IN A NORMAL MANNER AT T PLUS 193.73 SEC AND 90 PERCENT CHAMBER PRESSURE WAS ACHIEVED WITHIN 1.2 SEC. THE ENGINE OPERATED SATISFACTORILY FOR 233.9 SEC AND ENGINE SHUTDOWN OCCURED AT T PLUS 428.85 SEC ON INTEGRATOR COMMAND. THE INTEGRATED DATA SHOW A SENSIBLE VELOCITY GAIN OF 15 700

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IPS FIRING ORBITAL STAGE BOOST. THE IMPULSE PROVIDED BY AGENA ENGINE WAS SUFFICIENT TO GIVE THE VEHICLE ORBITAL VELOCITY AT THE FLIGHT INJECTION ALTITUDE.

3. AGENA ELECTRICAL POWER SYSTEM  
NO EVIDENCE OF AGENA ELECTRICAL POWER SYSTEM PROBLEMS HAS BEEN NOTED.

4. AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM  
THE AGENA GUIDANCE SYSTEM RESPONDED PROPERLY TO A 8.9 SEC TIME-TO-FIRE CORRECTION AND 12.9 SEC VELOCITY-TO-BE-GAINED CORRECTION COMMANDED BY THE GROUND GUIDANCE SYSTEM. VEHICLE ALTITUDE APPEARS TO HAVE BEEN CONTROLLED SATISFACTORILY DURING THE COAST PHASE AND THE ORBITAL BOOST PHASE, AND CONTROL GAS EXPENDITURE WAS NORMAL DURING BOTH OF THOSE PERIODS. ENGINE SHUT-DOWN WAS COMMANDED SATISFACTORILY BY THE INTEGRATOR, AND THE ASCENT TIMER PROPERLY CONTROLLED THE TIME AND SEQUENCE OF ALL PROGRAMMED EVENTS THAT WERE SCHEDULED TO OCCUR PRIOR TO LOSS OF TELEMETERED DATA AT VTS. HYDRAULIC

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SYSTEM PERFORMANCE WAS ADEQUATE. CONTROL GAS SUPPLY PRESSURE AT FADE WAS APPROXIMATELY 3100 PSI.

5. AGENA SPACE COMMUNICATIONS SYSTEM  
WALCOTT RADAR OPERATION WAS SATISFACTORY AND AUTO-TRACK WAS MAINTAINED ON S-BAND BEACON RESPONSE FROM LIFTOFF TO T PLUS 459 SEC. WITH A MINIMUM OF BEACON COUNTDOWN AND NO OUTSIDE RADAR INTERFERENCE.

OPERATION OF THE ACQUISITION BEACON WAS SATISFACTORY. VTS TRACKED THE ACQUISITION BEACON FROM LIFTOFF TO 484 SEC. AT 486 SEC, THE TIME OF LINK 1 TELEMETRY DATA FADE FOR VTS, ALL TELEMETRY CHANNELS WERE OPERATING. AT THIS TIME THE ORBITAL TIMER WAS SET AT STEP 19, IN THE RESET-ON POSITION, IN THE INCREASE MODE, AND ALTERNATE RE-ENTRY DISARM STATE. AGENA LINK2 WAS NOT ON DURING ASCENT NO GROUND COMMANDS WERE SENT DURING THE ASCENT PHASE. TRACKING STATION COMMUNICATIONS DURING THE LAUNCH OPERATION WERE ADEQUATE.

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THE CONTROL GAS PRESSURE (LOW RANGE) WAS READING  
DUCER. THE CONTROL GAS PRESSURE (HIGH RANGE) WAS  
READING NORMAL.

IN TASK 7 THE TELEMETRY MEASUREMENT OF TIMER  
MOTOR FREQUENCY BECAME INOPERATIVE AND REMAINED  
INOPERATIVE THROUGHOUT THE LAUNCH PHASE.

C. AEROSPACE GROUND EQUIPMENT - OBJECTIVE  
ACHIEVED

BOOSTER AND ORBITAL STAGE CHECKOUT WAS  
SATISFACTORILY ACCOMPLISHED DURING THE PRE-LAUNCH  
COUNTDOWN BY THE AEROSPACE GROUND EQUIPMENT  
HOWEVER, THE FOLLOWING PROBLEMS WERE ENCOUNTERED:

1. IN TASK 7. A 10 MINUTE DELAY RESULTED WHEN  
VERLORT ENCOUNTERED PROBLEMS IN ACQUIRING THE  
BEACON SIGNAL. THE PROBLEM WAS ELIMINATED BY  
SHIFTING THE VERLORT ANTENNA ANGLE.
2. IN TASK 13 THE AGENA UNBILICAL LINES BECAME EN-  
TANGLED AND PROBLEMS WERE ENCOUNTERED IN  
REMOVING THE AGENA TEST PLUGS USING A PERSONNEL

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"HI LIFT" BECAUSE OF HIGH SURFACE WINDS.

E. IN TASK 14 THE LAUNCHES AND BASE OF THE MISSILE AS  
WELL AS PERSONNEL ON THE PAD WERE FLOODED WHEN  
THE THRO AGE DELUGE SYSTEM CAME ON. THE PROBLEM  
WAS DETERMINED TO BE DUE TO FAILURE OF A BATTERY  
IN THE AGE. THE BATTERY WAS REPLACED WITH A  
BATTERY FROM PAD NO. 5. AFTER LIFTOFF THE DELUGE  
SYSTEM FAILED TO SHUT OFF ON COMMAND FROM THE  
BLOCKHOUSE. SHUT-OFF WAS ACCOMPLISHED BY HAND  
VALVES AT THE PAD.

4. IN TASK 15, THE FIRE TRUCK BROKE DOWN WHILE RETURN-  
ING TO THE BLOCKHOUSE AND WAS LEFT IN THE PAD AREA  
UNTIL AFTER LIFTOFF.

5. DURING AGENA GUIDANCE GAS PRESSURIZATION IT WAS  
NECESSARY TO SEND PERSONNEL TO THE PAD TO ADJUST  
A REGULATOR IN THE GUIDANCE GAS AGE.

6. IN PHASE III OF THE TERMINAL COUNTDOWN THE THOR  
AGE LOX FINE LOAD VALVE MALFUNCTIONED. TWO  
MICROSWITCHES THAT CONTROL THE VALVES WERE  
ADJUSTED AND NORMAL OPERATION RETURNED

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7. ALSO IN TASK 14 THE AGENA MEASUREMENT OF AIR CONDITIONIER TEMPERATURE WAS LOST AND REMAINED INOPERATIVE THROUGHOUT LAUNCH.

8. COUNTDOWN

THE COUNTDOWN STARTED AT 0830 PST ON 28 APRIL 1962 AND PROGRESSED TO LIFTOFF WITH 1 HOLD TOTALING 31 MIN. AN AUTOMATIC TECHNICAL HOLD WAS IMPOSED DURING PHASE III OF THE TERMINAL COUNTDOWN WHEN THE LOX FINE LOAD VALVE IN THE THOR AGE MALFUNCTIONED. NORMAL OPERATION WAS RESTORED WHEN THE TWO MICROSWITCHES THAT CONTROL THE VALVE WERE MANUALLY ACTUATED.

9. PAD DAMAGE

DAMAGE TO THE PAD EQUIPMENT AND FACILITIES WAS NORMAL, AND THE REHABILITATION WORK IS EXPECTED TO BE SIMILAR TO THAT AFTER PREVIOUS LAUNCHES FROM THIS PAD.

MESSAGE CORRECTION PAGE NINE LINE 4

THE THOR AGE DELUGE SYSTEM CAME ON. THE PROBLEM IT

19/0730Z APR VAFB



DOWNGRADED AT 3 YEAR INTERVAL /  
DECLASSIFIED AFTER 12 YEARS  
DOD DIRECTIVE 5200.10

THE FOLLOWING INFORMATION WAS RECEIVED FROM THE  
NORAD: THE RADAR TRACKS OF THE MISSILE WERE CORRELATED  
DURING THE COUNTDOWN AND THE VELOCITY SOUND EQUIPMENT  
WAS OPERATIONAL DURING THE LAUNCH AND THE LAUNCH  
WAS SUCCESSFUL. THE FOLLOWING CHECKS WERE  
PERFORMED:  
1. VELOCITY SOUND EQUIPMENT - DETECTING  
INCREASING LONGITUDE OF THE FUSION BURN.  
2. THE RANGE SOUND EQUIPMENT WAS OPERATIONAL  
IN OVER THE RANGE OF THE MISSILE.  
3. THE CONTROL OF THE MISSILE WAS SUCCESSFUL AND  
THE MISSILE WAS LAUNCHED SUCCESSFULLY.  
4. THE RANGE SOUND EQUIPMENT WAS OPERATIONAL  
DURING THE LAUNCH.