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TOT: 020748Z
CCN: 02

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VBR001
OO 020635Z
FM 6595 AEROSPACE TEST WING VAFB
TO SPACE SYSTEMS DIV LOSA

~~SECRET~~ // VWZD-1-6-133-5

SUBJECT: PROGRAM 622A 8 HOUR LAUNCH FLASH REPORT
1. A PROGRAM 622A SATELLITE VEHICLE CONSISTING OF A THOR BOOSTER NO. 335 AND AGENA-B ORBITAL STAGE NO. 1127 WAS LAUNCHED ON THE FIRST ATTEMPT FROM VAFB COMPLEX 25-3 PAD 4 AT 1731:27.75 PDT ON 1 JUNE 1962. THE PRIMARY LAUNCH OBJECTIVE, TO PLACE THE AGENA SATELLITE WITH PAYLOAD IN A NEAR-POLAR ORBIT, WAS ACCOMPLISHED. READINGS FROM VTS RADAR PLOTTING BOARD GAVE AN INJECTION ALTITUDE OF 135 STATUTE MILES, AN INJECTION PAD REFERENCED VELOCITY OF APPROXIMATELY 25,300 FPS, AN INJECTION FLIGHT PATH ANGLE OF APPROXIMATELY ZERO DEG, AND AN INITIAL DEPARTURE FLIGHT AZIMUTH OF APPROXIMATELY 172 DEG. THE INFLIGHT YAW LEFT MANEUVER

X

DURING THE LATTER PART OF THOR BOOST...
BEEN SUCCESSFULLY ACCOMPLISHED. KODIAK TRACKING
STATION HAS CONFIRMED ORBITAL STATUS THROUGH RECEP- X
TION OF TELEMETRY AND RADAR BEACON SIGNALS ON THE
FIRST ORBITAL PASS. THE ORBITAL PERIOD ATTAINED
APPEARS TO BE VERY CLOSE TO NOMINAL.

A LIST OF SIGNIFICANT LAUNCH EVENTS FOLLOWS:

LIFTOFF (1731:27.75 PDT)	ZERO
STEERING INITIATED	91.38 SEC
MECO (S1)	147.43 SEC
VECO	156.41 SEC
ENABLE D1 AND D2 (S2)	152.31 SEC
D1 ON	155.03 SEC
D1 OFF	158.02 SEC
D2 ON	158.16 SEC
D2 OFF	163.39 SEC
SEPARATION COMMAND (S3)	164.03 SEC
AGENA IGNITION (90 PER CENT PC)	195.31 SEC
AGENA BURNOUT (70 PER CENT PC)	427.78 SEC
VTS VERLORT RADAR FADE	456 SEC
VTS ACQUISITION BEACON FADE	490 SEC
VTS TELEMETRY FADE (LINK 1)	490 SEC

II. PRELIMINARY EVALUATION INDICATES THAT LAUNCH
TEST OBJECTIVES WERE ACHIEVED AS FOLLOWS: (REF. DE-
TAILED TEST OBJECTIVES, LMSC 446404, SECTION 2).

A. THOR BOOSTER-OBJECTIVE ACHIEVED

BOOSTER IGNITION AND LIFTOFF WERE SATISFACTORY X
THE THOR ROLL PROGRAM AND PITCH PROGRAM APPEAR TO
HAVE BEEN PROPERLY EXECUTED. THE PROGRAMMED YAW-
LEFT MANEUVER DURING THOR MID-BOOST WAS SATISFAC- X
TORIALLY ACCOMPLISHED. AT MAIN ENGINE CUTOFF, VEHICLE
POSITION WAS WITHIN A SPHERE OF 5 NM RADIUS, FLIGHT X
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 GEN- X
ERATED AND TRANSMITTED SATISFACTORILY BY THE GROUND
GUIDANCE SYSTEM AND VEHICLE RESPONSE TO THE COMMANDS X
APPEARS TO HAVE BEEN PROPER. MECO OCCURRED AT
147.43 SEC AS A RESULT OF COMMAND FROM GROUND GUIDANCE X
SYSTEM. VERNIER ENGINE SOLO OPERATION LASTED 8.98 SEC X
WITH VECO OCCURRING AT 156.41 SEC. SEPARATION WAS
INITIATED BY A GROUND GUIDANCE COMMANDED AT 164.03 X
SEC. GROUND GUIDANCE SYSTEM DATA INDICATE THE BOOSTER
COAST APOGEE ALTITUDE WAS 107.54 NM (NOMINAL: 107.59 NM)
AND THE BOOSTER COAST APOGEE VELOCITY WAS 9971 FPS
(NOMINAL: 9974 FPS).

B. AGENA SATELLITE VEHICLE-OBJECTIVES ACHIEVED

1. AGENA AIRFRAME AND ADAPTER

STRUCTURAL INTEGRITY WAS MAINTAINED AND NO X
EXCESS LOADS WERE APPLIED. ALL PYROTECHNIC FUNCTIONS X
OCCURRED AT APPROXIMATELY NOMINAL TIMES. THE RETRO-
ROCKETS SATISFACTORILY PROVIDED THE THRUST NECESSARY X
FOR COMPLETE SEPARATION BY 166.44 SEC.

2. AGENA PROPULSION SYSTEM

ULLAGE ROCKET IGNITION WAS SATISFACTORY. X
AGENA ENGINE IGNITION OCCURRED IN A NORMAL MANNER AT X
194.06 SEC. AND 90 PER CENT CHAMBER PRESSURE WAS X
ACHIEVED WITHIN 1.25 SEC. THE ENGINE OPERATED SATIS- X
FACTORILY FOR 232.47 SEC AND ENGINE SHUTDOWN OCCURRED X
AT T PLUS 427.78 SEC ON INTEGRATOR COMMAND. THE INTEGRATOR X
DATA SHOW A SENSIBLE VELOCITY GAIN OF 15,770 FPS DURING X
ORBITAL STAGE BOOST. THE IMPULSE PROVIDED BY THE X
AGENA ENGINE WAS SUFFICIENT TO GIVE THE VEHICLE X
ORBITAL VELOCITY AT THE FLIGHT INJECTION ALTITUDE.

3. AGENA ELECTRICAL POWER SYSTEM

CLASSIFICATION CHANGED TO

Authority of
AFR 205-2
7 APR 1966

4. AGENA GUIDANCE AND FLIGHT CONTROL SYSTEM

THE AGENA GUIDANCE SYSTEM RESPONDED PROPERLY TO A 8.2 SEC TIME-TO-FIRE CORRECTION AND A 300 FPS VELOCITY-TO-BE-GAINED CORRECTION COMMANDED BY THE GROUND GUIDANCE SYSTEM. VEHICLE ATTITUDE WAS 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 SYSTEM PERFORMANCE WAS ADEQUATE.

5. AGENA SPACE COMMUNICATIONS SYSTEM

OPERATION OF THE ACQUISITION BEACON AND THE RADAR BEACON WAS SATISFACTORY. VTS TRACKED THE ACQUISITION BEACON FROM LIFTOFF TO 490 SEC AND THE RADAR BEACON FROM LIFTOFF TO 456 SEC. AT 490 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 4536 SEC (STEP 19), IN THE RESET-ON POSITION, IN THE INCREASE MODE, AND ALTERNATE RE-ENTRY DISARM STATE. NO GROUND COMMANDS WERE SENT DURING THE ASCENT PHASE. TRACKING STATION COMMUNICATIONS DURING THE LAUNCH OPERATION WERE ADEQUATE.

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, PROBLEMS WERE ENCOUNTERED WITH FUEL LEAKAGE IN THE AGENA FUEL LOADING EQUIPMENT, AND WITH AN INDICATED SUBNORMAL THOR PROPELLANT LOADING RATE.

D. COUNTDOWN

THE COUNTDOWN WAS INITIATED AT 1000 PDT ON 1 JUNE 1962 AND PROGRESSED TO LIFTOFF WITH NO HOLDS. DURING THE COUNTDOWN THE FOLLOWING PROBLEMS OCCURRED:

1. HYDRAULIC FLUID LEAKED FROM THE POWER PACK LOCATED IN THE THOR BOAT TAIL. LEAKAGE WAS STOPPED BY TORQUING A BULKHEAD FITTING. COMPLETION OF TASKS 5 AND 6 WAS DELAYED.
2. IN TASK 7, AGENA H-TIMER MOTOR FREQUENCY (ITEM 37) COULD NOT BE VERIFIED. EVALUATION INDICATED THE TIMER TO BE IN ASCENT MODE. A SWITCH TO ORBITAL MODE RESULTED IN A NORMAL READING. ALSO IN SAME TASK, WHEN A COMMAND 4 SIGNAL WAS SENT, TWO COMMAND 4'S WERE INDICATED AS BEING RECEIVED.
3. THE AGENA PAYLOAD AIR CONDITIONER WAS NOT TURNED ON AS SCHEDULED. PAYLOAD TEMPERATURES HAD REACHED 62 DEG. F WHEN AIR CONDITIONER WAS TURNED ON.
4. IN TASK 14 (ORBITAL STAGE PROPELLANT TANKING) A LEAK OCCURRED IN THE AGENA FUEL LOADING (AGE). THE LEAK WAS ELIMINATED BY TORQUING AN ANNIN VALVE FITTING.
5. WORK IN TASK 16 (ORBITAL STAGE PRESSURIZATION) WAS DELAYED 11 MINUTES DUE TO AN ORBITAL PASS OF VEHICLE 1123. EVALUATION OF THE PAYLOAD DURING THIS TASK WAS DELAYED BY RF INTERFERENCE IN THE S-BAND FREQUENCY. THE INTERFERENCE CLEARED ITSELF WITH NO EXPLANATION AS TO ITS CAUSE.
6. IN PHASE IV THE THOR YAW RATE GRRO SPIN MOTOR SIGNAL WAS NOISY. IN PHASE V (TRANSFER TO INTERNAL POWER) THE SIGNAL HAD AN ABNORMAL FOR 10 SEC

problems
yes

ONDS. NO DELAY WAS CAUSED.

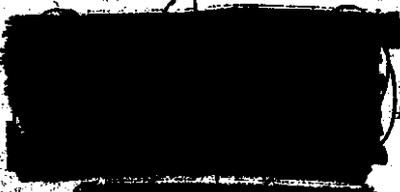
7. PHASES IV AND V WERE LONGER THAN SCHEDULED DUE TO AN APPARENT ABNORMAL RATE OF PROPELLANT LOADING OR OTHER MALFUNCTION IN THE THOR AGE. THE OPERATION WAS NOT INTERRUPTED TO EVALUATE THE PROBLEM.

E. 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.

BT

02/0714Z JUN VAFB



DOWNGRADED AT 3 YEAR INTERVALS,
D CLASSIFIED AFTER 12 YEARS
DOD DIRECTIVE 5200.10

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