PAGE TWO VAFB
INJECTION FLIGHT PATH ANGLE OF APPROXIMATELY ZERO DEG.
AND AN INITIAL DEPARTURE FLIGHT AZIMUTH OF APPROX-
IMATELY 178 DEG. THE INFLIGHT YAW LEFT MANNER
DURING THE LATTER PART OF THOR BOOST APPEARS TO HAVE
BEEN SUCCESSFULLY ACCOMPLISHED. KODIAK TRACKING
STATION HAS CONFIRMED ORBITAL STATUS THROUGH
RECEPTION OF TELEMETRY AND RADAR BEACON SIGNALS ON
THE FIRST ORBITAL PASS. THE PBITAL PERIOD ATTAINED
APPEARS TO BE APPROXIMATELY ONE MINUTE LESS THAN
PREDICTED.
A LIST OF SIGNIFICANT LAUNCH EVENTS FOLLOWS:
LIFTOFF (1700:04:08 PDT)  1700:04:08 PDT
STEERING INITIATED  1700:04:08 PDT
NECO (PROPELLANT DEPLETION)  1700:04:08 PDT
VECO  1700:04:08 PDT
ENABLE Z D1 AND D2  1700:04:08 PDT
D1 ON  155.29 SEC
D1 OFF  157.36 SEC
D2 ON  157.64 SEC
D2 OFF  161.03 SEC
III. PRELIMINARY EVALUATION INDICATES THAT LAUNCH TEST OBJECTIVES WERE ACHIEVED AS FOLLOWS: (REF.
DETAILED TEST OBJECTIVES, LMSC 446464, SECTION 2).
A. THOR BOOSTER - OBJECTIVE ACHIEVED
BOOSTER IGNITION AND LIFTOFF WERE SATISFACTORY
THE THOR ROLL PROGRAM AND PITCH PROGRAM APPEAR TO
HAVE BEEN PROPERLY EXECUTED; THE PROGRAMMED YAW-
LEFT MANEUVER DURING THOR MID-BOOST WAS SATISFAC-
TORILY 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 300 FPS OF THE NOMINAL VALUE.

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BOOSTER STEERING AND EVENT COMMANDS WERE GENER-
ATED AND TRANSMITTED SATISFACTORYLY BY THE
GROUND GUIDANCE SYSTEM AND VEHICLE RESPONSE TO THE
COMMANDS APPEARS TO HAVE BEEN PROPER. VECO
OCCURRED AT 147.45 SEC AS A RESULT OF PROPELLANT
DEPLETION, APPROXIMATELY 6.36 SEC BEFORE THE GROUND
GUIDANCE COMMAND WAS RECEIVED BY THE VEHICLE.
FERNIER ENGINE SOLO OPERATION LASTED 8.89 SEC WITH
VECO OCCURRING AT 136.37 SEC. SEPARATION WAS INITIATED
BY A GROUND GUIDANCE COMMAND AT 168.34 SEC. GROUND
GUIDANCE SYSTEM DATA INDICATE THE BOOSTER COAST APOGEE
ALTITUDE WAS 166.2 NM (NOMINAL: 167.4 NM) AND THE BOOSTER
COAST APOGEE VELOCITY WAS 2683 FPS (NOMINAL: 2977 FPS).
B. AGENA SATELLITE VEHICLE - OBJECTIVES ACHIEVED
1. AGENA AIRFRAME AND ADAPTER
STRUCTURAL INTEGRITY WAS MAINTAINED AND NO
EXCESS LOADS WERE APPLIED. THE USUAL 15-40 CPS VEHICLE
LONGITUDINAL OSCILLATIONS WERE PRESENT DURING THE
THOR BOOST PERIOD. ALL PYROTECHNIC FUNCTIONS
OCCURRED AT APPROXIMATELY NOMINAL TIMES. THE RETRO-
CONFIDENTIAL
ULLAGE ROCKET IGNITION WAS SATISFACTORY.
AGENA ENGINE IGNITION OCCURRED IN A NORMAL MANNER AT
196.3 SEC AND 90 PER CENT CHAMBER PRESSURE WAS ACHIEVED
WITHIN 1.8 SEC. THE ENGINE OPERATED SATISFACCTORILY
FOR 239.2 SEC AND ENGINE SHUTDOWN OCCURRED AT 438.9 SEC
ON INTEGRATOR COMMAND. THE INTEGRATOR DATA SHOW
A SENSIBLE VELOCITY GAIN OF 15,876 FPS DURING ORBITAL
STAGE BOOST, THE IMPULSE PROVIDED BY THE 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 AND FLIGHT CONTROL SYSTEM
PROPERLY RESPONDED TO A 3.4 SEC TIME-TO-FIRE
CORRECTION AND A 200FPS VELOCITY TO-BE-GAINED AD
JUSTMENT COMMANDED THROUGH THE FIRST STAGE GROUND

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GUIDANCE SYSTEM, THE ASCENT TIMER PROPERLY
PLS GIVE NEW SET
SET AT 12 RPT 2 12 12 KG NOW NOW LATE EGVN VV MRS LAST GOOD LINE
PROPERLY RESPONDED TO A 3.4 SEC TIME-TO-FIRE
FOUR TON TO A 3.4 SEC TIME-TO-FIRE
CORRECTION AND A 200FPS VELOCITY TO-BE-GAINED AD
JUSTMENT COMMANDED THROUGH THE FIRST STAGE GROUND

PAGE SIX VAFB
GUIDANCE SYSTEM, THE ASCENT TIMER PROPERLY CON-
Rolled THE TIME AND EVENT OF ALL CRITICAL EVENTS
AFTER SEPARATION. THE ATTITUDE CONTROL SYSTEM WAS
ACTIVATED AS PLANNED AFTER THE COMPLETION OF SE-
PARATION AND IN CONJUNCTION WITH INERTIAL REFERENCE
GYROS AND HORIZON SCANNER WAS SUCCESSFUL IN ATTAINING
AND MAINTAINING THE PROPER ATTITUDE DURING THE COAST
AND ORBITAL BOOST PHASES. THE CONTROL GAS EXPENDITURE
DURING LAUNCH (COMPUTED TO BE APPROXIMATELY 16 LBS)
WAS SLIGHTLY GREATER THAN NORMAL. ENGINE SHUTDOWN
WAS COMMANDED BY THE INTEGRATOR AFTER AN ADEQUATE
VELOCITY INCREMENT HAD BEEN ATTAINED. 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 481 SEC AND THE RADAR BEACON
FROM LIFTOFF TO 458 SEC. AT 481 SEC, THE TIME OF LINK
1 TELEMETRY DATA FADE FOR VTS, ALL TELEMETRY CHA-
NELS WERE OPERATING. AT THIS TIME THE ORBITAL TIMER
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was set at 5459 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, the following problems were encountered:

1. Landline measurements of Agema oxidizer pressure and nitrogen temperature became inoperative during countdown.
2. Agema air conditioning go disconnected during vehicle erection.
3. Two circuit breakers in DAC pad control box for vehicle erection disconnected during vehicle erection.
4. A slight leak occurred in Agema oxidizer fill umbilical.

D. Countdown

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This vehicle was launched on the second attempt. The final countdown was initiated at 0538 PDT, 29 May 1962 and progressed to liftoff with no hold. The following problems were encountered:

Task 3 (vehicle erection and preparation) was 48 minutes longer than scheduled due to circuit breakers disengaging in the Thor erection control box. The Agema air conditioning go also became disconnected during vehicle erection. Also during task 3 the landline measurements of Agema oxidizer tank pressure and nitrogen gas temperature became inoperative.

In task 7, it was necessary to repeat items 95 and 96 (verify RTCA and RTCB commands).

In task 13, the Agema ass umbilical line developed a slight leak in the region where the flex portion of the line joins the hardline fitting on the quick disconnect and drops of acid fell onto the skin of the Thor vehicle. When the line was depressurized, the leak stopped.

The first countdown, initiated on 28 May was ter-

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Minated during task 3 when a problem was encountered with the horizon scanner. Evaluation indicated a need for a replacement of the horizon scanner. The launch was rescheduled for the following day.

E. Pad Damage
Damage to the pad equipment and facilities was less than usual, and the rehabilitation work is expected to be similar to that after previous launches from this pad.

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Enable DI and D2 (32)

BT
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