SECRET FROM VWZ-12-51-C

TOAA FOR DEPT 644 TEST NO. FOR GOL: MOORE; LMED/VAFB
SUNNYVALE FOR DEPT 644 (R. W. MARSH; LMED/VAFB
FOR DEPT 644 ZEN, DAC FOR MR. HECKMAN ZEN. INFO:

VWZ
The following is the 11th MERCURY REPORT on the
classic MERCURY vehicle, EBR-11 (Model A, 1956),
used for the first successful mission to utilize the
first MERCURY vehicle with 150,000 lb thrust and an
automatic launch system (Ivan Firestone MMS expansion system),
a full-driver hydraulic system, and increased
electrical power supply.

3. PRE-LAUNCH OPERATIONS
A. THE LAUNCH Countdown Operations were
started at 8:00 PM on December 20th. The first
Countdown arresting was called at 7:15 minutes to allow a
train to clear the launch hazard area. The duration
of this hazard was 15 minutes.

B. Terminal Countdown was initiated at 8:15 minutes.
During phases of the terminal countdown, a receiptance
in the main re-entry load computer rectified.
The second hold which lasted for approximately 10.5
minutes. This problem was satisfactorily overcome
and the terminal cover was completed without
VNX.
1. The towing vessel was not at the mooring, but at a distance of about 500 meters. The service temperature of the towing vessel was about 30 degrees Celsius.

2. The towing vessel was at the mooring and the temperature of the towing vessel was about 20 degrees Celsius.

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The vehicle was programmed to perform a 42.3 sec duration parabola burn to adjust the time to initiate the second stage and a 14.9 sec duration burn to complete the velocity-to-be-gained during parabolic boost based on the burn trajectory as determined by the point mass trajectory model. These commands were satisfactorily executed and responded to by the vehicle.

C. The reentry phase

A. The reentry operation started at 7:08 AM and continued at 7:09 AM through the main separation burn at 7:08 AM. During operation the normal attitude centering was commanded by the astronaut. The velocity gain during normal boost as determined from reentry data was 14.84 m/s. The calculated peak reentry dynamic pressure was 35 (pressure accelerometer data was not available).

B. The ascent attitude was controlled satisfactorily during the terminal phase.

C. After separation, the acceleration altitude of 187 statute miles at which time the vehicle was an inertial velocity of 21,400 fps and a vehicle path elevation 32°.
The tracking station received the initial beacon signal from lift-off to 8500 sec.

The VAF1300 radar tracked the beacon signal from lift-off to 10,400 sec at which time the radar switched to the beacon beacon signal as planned.

The VAF1300 radar tracked the beacon signal from 8500 sec to 10,400 sec and the acquisition beacon signal from 10,400 sec to 11,000 sec. The 1700 XSR VAF1300 radar acquired the beacon signal at 10,400 sec, locked on at 10,400 sec, and tracked until 11,000 sec. The beacon signal data are of good quality.

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