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BURNER-1 (Astral Lamp)

MISSILE: Thor/MG-18 Combination

LAUNCHED: 18 January 1965 at 2103:42.1 PST, Op No. 6431, Pad 6

COUNTDOWN HISTORY:

The first in the series of Burner-1 launchings by the 4300 Support Squadron. Countdown length is 310 minutes, and was initiated to meet a window opening of 2100. The launch occurred on the first countdown attempt, which was normal in all respects except for a two minute hold to reset a circuit breaker in the EEB at key-turn.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
MECO	T+159.4 sec	T+159.5 sec
VECO	168.4	168.4
Heatshield Eject	178.4	178.4
2nd Stage Spinup	622.96	622.3
2nd Stage Separation	624.46	623.8
2nd Stage Ignition	628.96	*Nominal
2nd Stage Burnout (Injection)	642.46	*Nominal

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Normal except for circuit breaker reset in EEB at key-turn.

REMARKS:

Orbit was attained but second stage failed to separate the Payload. Exact cause is undetermined but several electrical and mechanical modifications will be made to second stage before the next launch.

*As determined from Payload T/M

VWZD 65-0007

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BURNER-1 (Astral Body)

MISSILE: Thor/MG-18 Combination

LAUNCHED: 17 March 1965 at 2043:46.8 PST, Op No. 7353, Pad 6

COUNTDOWN HISTORY:

This was the second in the series of Burner-1 launches by the 4300 Support Squadron. Countdown was initiated at 1530 on 17 March and proceeded normally up to T-90 seconds. At this point confusion resulted arising from a communications problem between the Launch Conductor and MFSO. This resulted in approximately a two minute hold. Resolution of the confusion allowed the terminal count to proceed and lift off occurred with no abnormalities.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
MECO	T+159.4 sec	T+160.5 sec
VECO	168.4	169.1
Heatshield Eject	178.4	179.7
2nd Stage Spinup	622.96	622.755
2nd Stage Separation	624.46	624.305
2nd Stage Ignition	628.96	*Nominal
2nd Stage Burnout (Injection)	642.46	*Nominal

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Normal

REMARKS:

Payload separation and orbit were attained. Orbit was more elliptical than desired but was sufficient for mission accomplishment. Payload operated as designed.

*As determined from Payload T/M.

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BURNER-I (Royal Eagle)

MISSILE: Thor/XSR-57-UT-1 Combination - Ops No. 8386

LAUNCHED: 20 May 1965 at 0930:53.76 PDT from 75-2-6

COUNTDOWN HISTORY:

The first attempt was on 5 May 1965. A short in the ignition detector link caused main and vernier engine shutdown after 2.7 seconds (period of engine cutoff timer). The payload was then removed for modification and returned. The second attempt occurred on 19 May 1965. A faulty relay in the EEB prevented completion of engine slew tests and this attempt was aborted. On 20 May the third attempt was initiated and proceeded to liftoff with no problems.

FLIGHT PERFORMANCE:

	<u>EVENT</u>	<u>PREDICTED TIME</u>	<u>ACTUAL TIME</u>
1.	MECO	T+ 160.97 sec	T+ 159.7 sec
	VECO	M+ 9	M+ 8.9
	Heatshield Eject	M+ 19	M+ 19.05
	2nd Stage Spinup	M+ 468.76	M+ 467.8
	2nd Stage Separation	M+ 470.26	M+ 469.1
	2nd Stage Ignition	M+ 474.76	*Nominal
	2nd Stage Burnout (Injection)	M+ 507.26	*Nominal

*No telemetry. Information determined from payload performance.

2. SYSTEMS COMMENTS: All flight systems were nominal in operation.

AEROSPACE GROUND EQUIPMENT PERFORMANCE: Normal during third attempt.

REMARKS: This was the third BURNER-I launch by the 4300SS(SAC) from 75-2-6. This launch vehicle used a new second stage solid motor, manufactured by UTC, for the first time. Orbit was achieved but was more elliptical than desired. This has occurred on each launch and causes are under investigation. Payload performance was not significantly degraded by the orbit, and is operating satisfactorily.

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BURNER-I (Victoria Cross)

MISSILE: Thor/XSR-57-UT-1 - Ops No. 6068 8068

LAUNCHED: 9 Sep 1965 at 2141:38.3 PDT from 75-2-6

COUNTDOWN HISTORY:

The first attempt on 8 Sep was scrubbed because of the inability of the second stage to retain the umbilical plug when the vehicle erected. This was corrected and the second attempt was initiated at 1726 PDT on 9 Sep 65. The count proceeded to liftoff with no anomalies or holds.

FLIGHT PERFORMANCE:

	<u>EVENT</u>	<u>PREDICTED TIME</u>	<u>ACTUAL TIME</u>
1.	MECO	T+ 160.97 sec	T+ 157.95 sec
	VECO	M+ 9.00	M+ 8.77
	Heatshield Eject	M+ 19.00	M+ 18.95
	2nd Stage Spinup	M+ 468.76	M+ 467.55
	2nd Stage Separation	M+ 470.26	M+ 468.87
	2nd Stage Ignition	M+ 474.76	*Nominal
	2nd Stage Burnout	M+ 507.26	*Nominal

*No direct telemetry. Determined from payload indications.

2. SYSTEMS COMMENTS: Guidance steering and all flight systems were nominal.

AEROSPACE GROUND EQUIPMENT PERFORMANCE: AGE performance was normal. Pad damage was very slight.

REMARKS: This was the fourth Burner-I launch by the 4300 SS(SAC) from 75-2-6. Orbit was attained with inclination and period nominal but again proved to be considerably elliptical. A circular orbit is nominal. The causes have not yet been determined. Payload performance is satisfactory.

Control No. VWZD 5-0012

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BURNER-1 (Persian Lamb)

MISSILE: Thor/XSR-57-UT-1, Op No. 2394

LAUNCHED: 7 January 1966, 20:48:23.8 PST, from 75-2-6.

COUNTDOWN HISTORY:

The countdown opened at 1633 PST on 7 January and proceeded to liftoff with no holds or anomalies occurring during the count.

FLIGHT PERFORMANCE:

1. <u>Event</u>	<u>Nominal</u>	<u>Actual</u>
Liftoff		20:48:23.8 PST
MECO	T+160.03	T+160.0
VECO	MECO + 9.0	MECO + 8.7
Heatshield Eject	M + 19.0	M + 18.8
Spinup	M + 468.76	M + 465.6
2nd Stage Separation	M + 470.26	*M + 466.95
2nd Stage Ignition	M + 474.76	
2nd Stage Burnout (Injection)	M + 507.26	

2. Systems Comments: Guidance steering and all flight systems were nominal, except for a hard roll early in the ascent phase that was corrected, up to 2nd Stage Separation. Spinup occurred (confirmed from Payload TM) but separation did not.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

All AGE performance was nominal and pad damage was slight.

REMARKS:

The payload did not attain orbit. When the stage did not separate, it evidently ignited while still attached to the Booster and probably exploded. The cause for no separation was traced to the use of larger spinup rockets that probably burned through wire bundles in close proximity, causing a short in the circuitry affecting stage separation.

*Not confirmation but indication of a signal from the first stage programmer.

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BURNER-1 (Resort Hotel)

MISSILE: Thor/XSR-57-U1, Op No. 0340

LAUNCHED: 30 March 1966 21:41:04 PST, from 75-2-6.

COUNTDOWN HISTORY:

1. 28 March 1966 - The countdown opened at 1643 hours PST, this date, and proceeded normally through terminal count. In phase five, the vernier engines failed to fire due to a bad relay #T-132 in the rocket engine relay box. The relay box was repaired and new vernier engine igniters installed.
2. 29 March 1966 - The countdown was opened at 1630 hours PST, this date, and proceeded normally through the final payload Go-No-Go test, approximately 2015 hours PST. Analysis of the final payload data showed two telemetry points were erratic. The count continued to key turn at which time the SPO scrubbed the operation on recommendation of the Payload Contractor. There was not sufficient time to determine whether the problem was in the telemetry subsystem, the spacecraft subsystem being monitored or in the ground readout equipment (AGE).
3. 30 March 1966 - The countdown was opened at 1626 hours PST, this date, after determining the payload problem was due to an AGE malfunction in Building 36. The countdown proceeded normally through liftoff.

FLIGHT PERFORMANCE:

<u>1. Event</u>	<u>Nominal</u>	<u>Actual</u>
Liftoff	21:41 - 21:43 PST	21:41:04 PST
MECO	T + 160:03	*T + 154.7
VECO	MECO + 9.0	MECO + 8.85
Heatshield Eject	M + 19.0	M + 19.0
Spinup	M + 468.76	M + 468.8
2nd Stage Separation	M + 470.26	M + 470.12
2nd Stage Ignition	M + 474.76	**Nominal
2nd Stage Burnout	M + 507.26	** Nominal

*Early fuel depletion switch actuation, cause under investigation.
**Actual TM data not available.

2. Systems Comments: Payload orbit was elliptical due to a booster energy loss, however, acceptable and payload is performance satisfactory.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

AGE performance was satisfactory except as noted above in countdown history. Pad damage was slight.

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