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PROGRAM 698BK

MISSILE: Thrust Augmented Thor 390/Agena 2354

LAUNCHED: 1207 PST, 11 January 1964, Pad 5

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0115 PST on 11 Jan 64 and progressed to liftoff with 2 holds totaling 100 minutes. Hold No. 1 was imposed for 45 minutes due to range clearance. Hold No. 2 was imposed in Terminal Count due to a faulty indication on a mandatory telemetry point. Range clearance was withdrawn before recycle was completed.

Flight Performance:

Event	Predicted Time	Actual Time
1. Solid Separation	65.0	65.1
MECO	148.8	147.7
VECO	157.8	156.7
Separation	161.8	161.1
1st Ignition	204.2	201.5
1st Burnout	439.8	438.1
2nd Ignition	3320.2	Not Available
2nd Burnout	3324.3	Not Available

2. Both TAT and Agena Airborne Systems performed satisfactorily.

3.

	Predicted	Actual
MECO Inertial Velocity	12,373 fps	12,425 fps
Injection Inertial Velocity	24,241 fps	24,230 fps
Apogee	508 N.M.	515.9 N.M.
Perigee	500.9 N.M.	499.2 N.M.
Period	103.5 Min	103.5 Min
Inclination Angle	70.0 Deg	69.9 Deg
Agena Orbital Weight	3,036 Lbs	2,980 Lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

REMARKS:

This vehicle carried three detachable nonrecoverable payloads for the Naval Research Labs.

6595-64-0416

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PROGRAM 698BK

MISSILE: Thor 384/Agena 2303

LAUNCHED: 0259:54, 19 January 1964, 75-1 Pad 2

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 1840 on 18 January 1964 and proceeded to liftoff with no holds.

Flight Performance Event	Predicted Time(Sec)	Actual Time (Sec)
1. MECO	147.16	147.01
VECO	156.16	155.99
Separation	162.02	162.37
1st Burn Engine Ignition	205.44	206.02
1st Engine Shutdown	439.21	439.89
2nd Burn Engine Ignition	3220.44	Not available
2nd Engine Shutdown	3223.09	

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3.	Predicted	Actual
MECO Inertial Velocity	10,870 fps	10,789 fps
Apogee	459.5 N.M.	461 N.M.
Perigee	450.2 N.M.	446 N.M.
Period	101.57 min	101.58 min
Inclination Angle	98.8°	99.04°

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE Systems performed satisfactorily.

REMARKS:

Second burn was achieved and both payloads were ejected as planned.

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[illegible] INTERVALS;
[illegible] AUTOMATICALLY DOWNGRADED AT 12 YEARS
DOD DIRECTIVE 5200.10

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NASA A-12

MISSILE: Thor 397/Agena 6301

LAUNCHED: 0559 PDT, 25 January 1964, 75-1 Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 2200 on 24 January 1964 and proceeded to liftoff with one hold of 51 minutes for range clearance and resolution of an instrumentation problem.

FLIGHT PERFORMANCE:

1.

Event	Predicted Time	Actual Time
MECO	147.58	155.63
VECO	156.58	164.55
Separation	162.41	174.7
1st Ignition	184.34	189.7
1st Shutdown	419.62	427.77
2nd Ignition	2,977.34	2,984.26
2nd Shutdown	2,981.01	2,987.95

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3.

	Predicted	Actual
MECO Inertial Velocity	11,094 fps	11,065 fps
Injection Inertial Velocity	26,495 fps	26,482 fps
Apogee	695.3 n.m.	709 n.m.
Perigee	703.2 n.m.	558 n.m.
Period	111.3 min.	108.2 min.
Inclination Angle	81.85 deg.	81.6 deg.
Orbital Wt.	2,380 lbs.	2,322 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

REMARKS:

This was the second NASA Thor/Agena launch from the PMR. The payload was Echo II, a passive COMSAT.

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Cy # 1 of 3

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PROGRAM 162

#752 64-8
CORONA 76 / KH-4A 1004-182

MISSILE: Thrust Augmented Thor 389/Agena 1174

LAUNCHED: 1338 PST, 15 February 1964, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0355 PST on 15 February 1964 and progressed to liftoff after one eight-minutes hold imposed because of trains in the hazard area.

Flight Performance:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.0	65.0
	MECO	148.9	147.6
	VECO	157.9	156.5
	Separation	161.9	160.9
	Ignition	169.9	168.4
	Burnout	414.3	414.1

2. Both TAT and Agena Airborne Systems performed satisfactorily; however, because slow shutdown of th SS-01A engine, the injection velocity was slightly greater than that required for specific orbit.

3. Event	Predicted	Actual
MECO Inertial Velocity	12,250 fps.	12,248 fps.
Injection Inertial Velocity	25,811 fps.	25,815 fps.
Apogee	234.65 n.m.	250.00 n.m.
Perigee	100.50 n.m.	100.30 n.m.
Period	90.67 min.	90.42 min.
Inclination Angle	75.00 deg.	75.03 deg.
Agena Orbital Weight	3,585 lbs.	3,579 lbs.

AEROSPACE GROUND EQUIPMENT

A leak was discovered in the Agena Control Gas Supply Trailer regulator. A backup trailer was used to complete the mission. Thor AGE performance was satisfactory.

REMARKS

This vehicle carried two recoverable capsules. The first capsule was ejected on the 49th orbit and aerial recovery on 19 February 1964 was successful. The second capsule was ejected on the 112th orbit and aerial recovery on 22 February 1964 was successful.

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6595-64-1682

Cy # 1 of 3

PROGRAM 162 [redacted] CONFIDENTIAL

MISSILE: Thrust Augmented Thor 396/Agena 1175

LAUNCHED: 1422 PST, 24 March 1964, PALC I-1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0335 PST 24 March 1964, and progressed to liftoff with three holds imposed. Hold No. 1 was imposed at T-14 to increase electrical power to provide proper Thor gyro heater cycling. Hold No. 2 was imposed in Phase III of terminal countdown to recycle BTL guidance loop checks. Hold No. 3 was imposed in Phase V when the Agena fuel sniffer indicated a leak. Evaluation determined that no significant leak existed and that the indication was apparently erroneous.

FLIGHT PERFORMANCE:

	Event	Predicted Time (sec)	Actual Time (sec)
1.	Solid Separation	60.00	60.58
	MECO	147.23	148.80
	VECO	156.23	157.70
	Separation	162.73	165.15
	Ignition	168.23	169.8
	Burnout	412.754	376.43 (Premature Loss of Vehicle Control)

2. Thor Airborne Systems - Performance was satisfactory.

Agena Airborne Systems - The Agena performed normally until VECO when an apparent electrical power problem developed and resulted in complete loss of control during thrust interval. This loss of control brought about premature engine shutdown causing failure of the Agena to obtain orbit.

3.		Predicted	Actual
	MECO inertial velocity	12,347.141 f/s	11,819 f/s
	Injection inertial velocity	25, 818.085 f/s	(failed
	Apogee	236.81 nau. mil	to
	Perigee	100.19 nau. mil	obtain
	Period	90.67 min	orbit)
	Inclination Angle	75° degrees	
	Agena Orbital Wt.	3,643 #	

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily with the exception that the mast failed to retract at liftoff. However this did not have any detrimental effect upon the vehicle or the flight.

REMARKS:

Loss of control and premature Agena burnout was indicated by data to be a short circuit originating in the Type IX dc/dc converter of the electrical subsystem.

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PROGRAM 162

#796 64-22
CORONA 78 / KH-4A 1005

MISSILE: Thrust Augmented Thor 395/Agena 1604

LAUNCHED: 1623 PDT, 27 April 1964, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0625 PDT on 27 April 1964 and progressed to liftoff after two holds. Hold No. 1 was imposed at T-60 minutes for 23 minutes to finish replacing a leaking oxidizer fill line. Hold No. 2 was imposed at T-15 minutes for 8 minutes to allow the pad crew to return to the pad to adjust the pneumatic regulators.

FLIGHT PERFORMANCE:

	Event	Predicted Time (Sec)	Actual Time
1.	Solid Separation	65.0	65.1
	MECO	147.4	145.1
	VECO	156.4	155.1
	Separation	160.4	159.9
	Ignition	168.4	167.0
	Burnout	408.8	407.0

2. Both TAT and Agena Airborne Systems performed satisfactorily to achieve orbital injection; however shortly after separation command large current surges exceeding 50 amperes were noted in the Agena system. Also at separation the Pyro Bus voltage indicated zero, but all Pyro functions appear to have functioned and Pyro current remained at 9 amperes indicating Pyro Bus voltage monitor failure.

Event	Predicted	Actual
MECO Inertial Velocity	12,219.9 FPS.	12,054 FPS.
Injection Inertial Velocity	25,830.7 FPS	25,816.6 FPS.
Apogee	250.5 N.M.	251.4 N.M.
Perogee	99.9 N.M.	99.1 N.M.
Period	90.8 Min.	90.9 Min.
Inclination Angle	80.0 Deg.	79.9 Deg.
Agena Orbital Weight	3549 Lbs.	3578 Lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

A leak was discovered in the Agena oxidizer fill line during 10% tanking. Replacement of the fill line was necessary. Thor AGE functioned satisfactorily.

REMARKS:

This vehicle carried two recoverable capsules. Neither capsule was ejected due to a short of the Pyro Bus to all P/L Pyros which occurred at separations.

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PROGRAM 241

MISSILE: Thor 403/Agena 1176

LAUNCHED: 1559 PDT 4 June 1964, PALC 1-1

#802 64-27
CORONA 79 / KH-4A 1006-182

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0535 PDT on 4 June 1964 and proceeded to lift off with no holds imposed.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	60.00	60.38
	MECO	149.17	149.18
	VECO	158.17	158.05
	Separation	164.67	165.46
	Ignition	170.17	170.10
	Burnout	413.04	414.48

2. Both TAT and Agena Airborne Systems performed satisfactorily. Low perigee was caused by WECO Ground Guidance. Refracted wave input due to atmospheric conditions to the WECO antenna sensed a pitch high attitude and erroneously corrected the Agena to a pitch down condition.

3.

Event	Predicted		Actual	
MECO Inertial Velocity	12,283	fps	12,237	fps
Injection Inertial Velocity	25,830	fps	25,806	fps
Apogee	250.46	n.m.	259.36	n.m.
Perigee	99.92	n.m.	86.90	n.m.
Period	90.870	min.	90.626	min.
Inclination Angle	80.00	deg.	79.97	deg.
Agena Orbital Weight	3559	lbs.	3568	lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

REMARKS:

This vehicle carried two recoverable capsules. The first capsule was ejected on the 66th orbit and aerial recovery on 8 June 1964 was successful. The second capsule was ejected on the 128th orbit and aerial recovery on 12 June 1964 was successful.

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PROGRAM 241

#814 64-32
CORONA 81/KH-4A 1007-182

MISSILE: Thor 410/Agena 1609

LAUNCHED: 1618 PDT, 19 June 1964, 75-1 Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0625 PDT on 19 June 1964 and proceeded to lift-off with two holds imposed. The first hold was imposed at T-15 minutes for 5 minutes for range clearance (trains). The second hold was imposed at T-10 minutes for 12 minutes because of a premature disconnection of an electrical umbilical.

FLIGHT PERFORMANCE:

	EVENT	PREDICTED TIME	ACTUAL TIME
1.	Solid Separation	65.00	65.76
	MECO	150.96	154.03
	VECO	159.96	162.93
	Separation	163.96	167.96
	Ignition	173.26	176.12
	Burnout	419.22	419.23

2. Both TAT and Agena Systems performed satisfactorily. Due to misalignment of solids, vernier engines had to increase deflection to produce counter torque of 30°.

3. EVENT	PREDICTED	ACTUAL
MECO Inertial Velocity	12,070.7 fps	12,077.7 fps
Injection Inertial Velocity	25,844.1 fps	25,836.1 fps
Apogee	259.55 n.m.	258.85 n.m.
Perigee	100.27 n.m.	99.96 n.m.
Period	91.06 min.	91.02 min.
Inclination Angle	85.00 deg.	85.00 deg.
Agena Orbital Weight	3526 lbs.	3533 lbs.

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE with exception of the umbilical flag performed satisfactorily.

REMARKS:

This vehicle carried two recoverable capsules. The first capsule was ejected on the 65th orbit and aerial recovery on 23 June 1964 was successful. The second capsule was ejected on the 128th orbit and aerial recovery on 27 June 1964 was successful.

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"Ferret 6" (P4).

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PROGRAM 698BK

MISSILE: Thrust Augmented Thor 409/Agena 2315

LAUNCHED: 1659:56.47, 2 July 1964, Pad 5

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0710, 26 June 1964. During terminal countdown launch was terminated due to S-Band Beacon problems and a missile lox tank pressurizing malfunction. The launch was rescheduled for 2 July 1964.
Second Attempt: The countdown was initiated at 0630, 2 July 1964 and proceeded to liftoff with no holds.

FLIGHT PERFORMANCE:

1.

Event	Predicted Time	Actual Time
Solid Separation	65.0	66.1
MECO	148.6	150.78
VECO	157.6	159.6
Separation	161.9	164.3
1st Ignition	203.6	205.6
1st Burnout	437.6	439.8

2. Both TAT and Agena Airborne Systems performed satisfactorily.

3.

Event	Predicted	Actual
MECO Inertial Velocity	12,180.5 FPS	12,065 FPS
Injection Inertial Velocity	25,961.1 FPS	Not Available
Apogee	283.3 N.M.	285.3 N.M.
Perigee	275.6 N.M.	277.3 N.M.
Period	94.8 Min	94.9 Min
Inclination Angle	82.0 Deg	82.1 Deg
Agena Orbital Weight	3094 LBS	3081 LBS

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

REMARKS:

This vehicle carried a nonrecovery payload.

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DOWNGRADE AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

64-3517

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PROGRAM 241

11 SEP 1964

MISSILE: Thor 404/Agena 1177

LAUNCHED: 1615 PDT, 10 July 1964

LAUNCH CONTROLLERS: Capt MacNab/2Lt Franklin

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0535 PDT on 10 Jul 1964 and proceeded to liftoff with one hold imposed at T-13 minutes from 1547 to 1601 for range clearance (trains).

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	60.00 sec	60.22
	MECO	146.45	147.20
	VECO	155.45	156.11
	Separation	161.95	163.42
	Ignition	167.45	168.10
	Burnout	413.20	412.79

2. Both Thor and Agena Airborn Systems performed satisfactory.

3.	Event	Predicted	Actual
	MECO Inertial Velocity	12,180 fps	12,113
	Injection Inertial Vel.	25,843 fps	25,841.2
	Apogee	260.27 n.m.	260.6
	Perigee	100.01 n.m.	98.6
	Period	91.06 min	91.04
	Inclination Angle	85.00 degrees	84.983
	Agena Orbital Weight	3593 lbs	3593

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

This vehicle carried two recoverable capsules. The first capsule was ejected on the 49th orbit and recovery was successful. The second capsule was ejected on the 112th orbit and the recovery was also successful.

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PROGRAM 241

#846 64-43
CORONA 83/KH-4A 1009-182

MISSILE: Thrust Augmented Thor 413/Agena 1605

LAUNCHED: 1615: 35.66 PDT, 5 August 1964, 75-3, Pad 4

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0625, 4 August 1964. During WECO Phasing and Polarity the countdown was terminated due to failure of the Thor to complete an automatic external slew caused by slippage of the linkage of a yaw potentiometer on the Thor left Vernier engine.

Second Attempt: The countdown was initiated at 0625, 5 August 1964 and proceeded to Phase 5, terminal countdown, at which time a technical hold was imposed apparently due to slow retraction of launch pins. The terminal countdown was recycled to T-5 minutes and proceeded to liftoff.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.22
	MECO	151.05	148.54
	VECO	160.05	157.54
	Separation (complete)	166.55	164.88
	First Ignition	172.05	169.46
	First Burnout	415.03	417.82

2. Both TAT and Agena Airborne Systems performed satisfactorily.

3. Event	Predicted	Actual
MECO Inertial Velocity (fps)	12,209.065	12,157.8
Injection Inertial Velocity(fps)	25,858.5	25,814.8
Apogee (NM)	250.04	243
Perigee (NM)	100.21	100
Period (min)	90.87	90.71
Inclination Angle (Deg)	80.00	80.10
Agena Orbital Weight (before prop dump)	3704 lbs	3683 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily except for the slow retraction of launch pins, and the change of a missile bottle hand loader pneumatic valve.

REMARKS:

This vehicle carried two recoverable capsules. The first capsule was ejected on the 49th orbit and recovery was successful. The second capsule was ejected on the 128th orbit and aerial recovery was successful.

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PROGRAM 241

MISSILE: TAT 412/Agena 1603

LAUNCHED: 0845 PDT, 21 August 1964, 75-1-2

LAUNCH CONTROLLERS: Capt Sanders/Capt Haber

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 2250 PDT on 18 Aug 64 and was terminated at 0845 on 19 Aug 64 due to lack of confidence in the interface connector plug for solid motor number one.
Second Attempt: The countdown was initiated at 2250 PDT on 19 Aug 64 and was terminated at 0830 on 20 August when the magnetron tube in the WECO Command Guidance Transmitter operated intermittently.
Third Attempt: The countdown was initiated at 2250 PDT on 20 Aug 64 and proceeded to liftoff with one hold imposed for 15 min at T-30 to adjust the countdown and achieve liftoff at the optimum time of 0845.

FLIGHT PERFORMANCE:

1.

Event	Predicted Time	Actual Time
Solid Separation	65.00	65.19
MECO	148.21	148.28
VECO	157.21	157.28
Separation	162.21	164.24
Ignition	213.21	213.19
Burnout	457.13	458.18

2. Both TAT and Agena Airborne Systems performed satisfactorily.

3.

Event	Predicted	Actual
MECO Inertial Velocity	11,189 fps	11,055 fps
Injection Inertial Velocity	25,258 fps	25,246 fps
Perigee	192.99 N.M.	196.9 N.M.
Apogee	200.78 N.M.	206.2 N.M.
Period	91.79 Min	91.72 Min
Inclination Angle	115.00 Deg	114.97 Deg
Agena Orbital Weight	2,901 lbs	2,921 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

REMARKS

The capsule was ejected on the 96th orbit and a successful aerial recovery was accomplished on 19 June 1964.

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

CY #1 OF 3

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NASA A3222

MISSILE: Thor 399/Agena 6201

LAUNCHED: 0056:57.76, 28 August 1964, 75-1, Pad 1

LAUNCH CONTROLLERS: Capt Haber/Capt Sanders

COUNTDOWN HISTORY:

The countdown was initiated at 1508 PDT, 27 August 1964 and proceeded to liftoff with no holds.

FLIGHT PERFORMANCE:

	Event	Predicted Time (Sec)	Actual Time (Sec)
1.	MECO	149.38	148.37
	VECO	158.38	157.37
	Separation	166.40	165.94
	Ignition	187.84	188.59
	Burnout	426.56	427.16

2. The Thor Airborne System performed satisfactorily. The Agena system performed satisfactorily with the exception of the second burn time which was 2.08 seconds short due to fuel depletion.

3. Event	Predicted	Actual
MECO Inertial Velocity (fps)	10,608	10,726
2d Injection Inertial Velocity (fps)	24,206	23,803
Apogee (NM)	498.8	503.74
Perigee (NM)	508.0	228.66
Period (Min)	103.48	98.32
Inclination Angle (Deg)	99.07	98.66
Agena Orbital Wt (Lbs)	2572	2572

AEROSPACE GROUND EQUIPMENT PERFORMANCE

The Thor AGE performed satisfactorily. The following problems were encountered with Agena AGE:

A faulty test cable required monitoring of the #2 DC/DC converter with a voltmeter at the vehicle.

The VP-45 air conditioner "pre-cool" module was replaced.

The Propellent Transfer Sets overtanked fuel 26 lbs and Oxidizer 11 lbs requiring a manual drain of excess.

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DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIRECTIVE 5200.10

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6595TH TW

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Cy 1 of 3 Cys

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PROGRAM 241

MISSILE: Thor 405/Agena 1178

LAUNCHED: 1553 PDT, 14 Sep 1964 PALC 1-1

LAUNCH CONTROLLER: Lt Cook

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0420 PDT on 14 Sep 64 and proceeded to liftoff with one hold imposed at 1459 PDT (T-20 seconds) because of failure to receive "launcher clear to fire light" indicating launcher pins had failed to come out. Technicians adjusted the pins so that the limit switch was actuated and the proper signal received. The hold was extended one minute for Range Safety (ships).

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.34
	MECO	148.60	152.33
	VECO	157.60	161.24
	Separation Command (S-2)	161.60	166.16
	Separation Complete	164.10	168.44
	Ignition	169.60	173.20
	Burnout	413.50	417.36

2. Both Thor and Agena Airborne Systems performed satisfactorily.

3. Event	Predicted	Actual
MECO Inertial Velocity	12,250.12	12,170
Injection Inertial Vel.	25,833.78	
Perigee	99.97	99.30
Apogee	245.6	242.49
Period	90.87	90.81
Inclination Angle	80.0	79.94
Agena Orbital Wt.	3541 lbs	3541 lbs

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Launcher pin motor #3 leg 5 failed to retract far enough to actuate the limit switch. The pin was manually retracted to the limit during the countdown. The oxidizer transfer set fast close valve failed to operate and loaded an additional 22 lbs of acid during 10% tanking. The flight load was reduced by 22 lbs to compensate for this malfunction.

REMARKS:

This vehicle carried two recoverable capsules. The first capsule was ejected on the 65th orbit and recovery was successful. The second capsule was ejected on the 144th orbit and recovery was also successful.

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Cy 1 of 3 Cys

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PROGRAM 241

MISSILE: LV-2A No. 421 and SS-01A No. 1170

LAUNCHED: 1450:14.88 PDT, 5 October 1964, Complex 75-3, Pad 4

LAUNCH CONTROLLERS: Maj Pate & Capt Sefton

COUNTDOWN HISTORY:

First Countdown: The first countdown was conducted on 20 January 1964. During final countdown evaluation, prior to initiation of the terminal count, the SS-01A umbilicals and payload blanket were prematurely ejected from the vehicle by high surface winds.

Second Countdown: The countdown was initiated at 0435 PDT on 5 October 1964 and proceeded to liftoff with one hold being imposed from 1325 to 1355 PDT to complete work in the countdown which was behind schedule.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.34
	MECO (Command For)	148.60	152.33
	VECO	157.60	161.24
	Separation	164.10	168.44
	Ignition	169.60	173.20
	Burnout (Shutdown by VM)	413.50	417.36

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps)	12,250.12	12,221
	Injection Inertial Velocity (fps)	25,833.78	25,831.7
	Perigee (nm)	99.97	99.28
	Apogee (nm)	245.6	242.96
	Period (min)	90.87	90.81
	Inclination Angle (deg)	80.0	79.99
	Agena Orbital Weight (lbs)	3571	3571

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AEROSPACE GROUND EQUIPMENT PERFORMANCE: The following AGE problems were encountered during the second countdown:

1. Task 10 was delayed [illegible] of [illegible] igniter test set and solid motor test coil (AGE [illegible]).

2. The pad deluge water (fire) system failed "wet" and caused water on the pad. The difficulty was attributed to an open circuit breaker on the pad J-box. (AGE [illegible]).

3. During Task 12 (Agena Propellant Tanking), the oxidizer line pressure relief valve on the oxidizer transfer set malfunctioned. It was necessary to relieve the line pressure from the blockhouse (AGE [illegible]).

4. During Phase IV of the Terminal Countdown, the 97 and 100 percent fuel signals (AV-2? tanking) were manually actuated. This was necessary because erratic operation of the Berkeley fuel counter [illegible] during the dual propellant loading exercise.

[illegible]: This vehicle carried two recoverable capsules. The first capsule was ejected on the 85th orbit and recovery was successful. The second capsule was not ejected.

↑ the second capsule was not ejected.

PH Note: this is Page 2 of CORONA 86 /KH-4A 1011-1&2

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MISSILE: LV-2A No. 418 and SS-01A No. 1179

LAUNCHED: 1502:23.16

LAUNCH CONTROLLERS: Capt McNab and 1Lt Cook DATE: 17 OCT 64

COUNTDOWN HISTORY:

First Countdown: The first countdown was initiated at 0420 PDT on 16 October 1964 and proceeded to Phase IV of terminal countdown when the launch was cancelled at 1551 PDT. This was due to a problem in the first stage (DAC) automatic propellant tanking equipment. Three technical holds were imposed totaling 51 minutes before cancellation.

Second Countdown: The countdown was initiated at 0420 PDT on 17 October 1964, and proceeded to liftoff with two holds being imposed. The holds delayed the countdown for 17 minutes. Hold No. 1 was imposed at the start of Phase V when VTS reported an intermittent SS-01A S-Band beacon return signal. Hold No. 2 was imposed at T-57 seconds when the blockhouse failed to receive a "Launcher clear to Fire" signal.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.36
	MECO (Command for)	148.10	149.01
	VECO	157.10	157.09
	Separation Complete	164.30	165.21
	Ignition	169.10	169.95
	Burnout (Shutdown by VM)	408.49	407.70

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted Time	Actual Time
3.	MECO Inertial Velocity (fps)	12,337	12,338
	Injection Inertial Velocity (fps)	25,820	25,810
	Apogee (nm)	236.6	235.6
	Perigee (nm)	99.8	99.8
	Period (min)	90.67	90.62
	Eccentricity	.0190	.0189
	Inclination Angle (deg)	75.0	74.99
	Agena Orbital Weight (empty)	3,714	3,676

AEROSPACE GROUND EQUIPMENT PERFORMANCE: The AGE functioned satisfactorily with the exceptions listed under "Countdown"

REMARKS: This vehicle carried two recoverable capsules. The first capsule was ejected on the 49th orbit and the second on the 81st orbit. Both recoveries were successful.

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PROGRAM 241

MISSILE: LV-2A No. 420 and SS-01A No. 1173

LAUNCHED: 1330:20.45, 2 November 1964, Complex 75-3, Pad 4

LAUNCH CONTROLLERS: Maj Pate and Capt Dellia

#921 64-71
CORONA 88/KH-4A 1013-1&2

COUNTDOWN HISTORY:

The countdown was initiated at 0300 PST on 2 November 1964 and proceeded to liftoff with no holds being imposed. The countdown was initiated 35 minutes ahead of schedule to provide time to perform special SS-01A S-Band beacon tests.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	64.79
	MECO (Command for)	148.01	146.12
	VECO	157.01	155.05
	Separation Complete	163.51	162.29
	Ignition	169.01	167.03
	Burnout (Shutdown by VH)	411.17	409.26

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps)	12,162	12,208
	Injection Inertial Velocity (fps)	25,830	25,838
	Apogee (nm)	244.8	245.8
	Perigee (nm)	99.8	99.4
	Period (min)	90.87	90.85
	Inclination Angle (deg)	80.00	79.98
	Agena Orbital Weight (empty)	3,665	3,700

AEROSPACE GROUND EQUIPMENT PERFORMANCE: The following AGE problems were encountered during the countdown:

1. The special checks conducted in task 2 (orbital stage RF checkout), actually caused the task to be extended 105 minutes.

2. During the first three tasks, two of the solid motor erectors were removed from the pad. This is normally a R-1 day activity.

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Control No. WZDE 4-12

DOWNGRADED AT 3 YEAR INTERVALS; DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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3. In task 2, SS-01A telemetry measurement C-1 (+28 V unregulated voltage) indicated abnormal fluctuations. Evaluation showed the problem was due to a defect in the monitoring system only. The measurement functioned normally during the terminal countdown.

4. LV-2A telemetry measurement E-10 was noisy in task 10. Redundant instrumentation showed that the measurement was operating normally. The measurement indicated normal operation during the terminal countdown.

REMARKS: This vehicle carried 2 recoverable capsules. The first was ejected on the 65th orbit and the second on the 81st orbit. Both were recovered.

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"Ferret 7" (PM).

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PROGRAM 698BK

MISSILE: LV-2A No. 430 and SS-01A No. 2317

LAUNCHED: 1812:10.99 PST, 3 November 1964, Complex 75-3, Pad 5

LAUNCH CONTROLLERS: Capt Bellia and 1Lt Johnston

COUNTDOWN HISTORY:

1st Attempt: During repeated tests, the LV-2A external slew continued to be longer than normal. Evaluation indicated that the problem was due to a sticking pitch HIG gyro in the Control Electronics Assembly. The launch was cancelled at T-304 minutes 15 October 1964.

2nd Attempt: The second countdown was initiated at 0742 PST on 31 Oct 64 and proceeded to Task 15 (Countdown Evaluation) when it was cancelled at 1952 PST due to the failure of the SS-01A telemetry commutator for channels 11 and 12.

3rd Attempt: The third and final countdown was initiated at 0742 PST on 3 November 1964 and proceeded to liftoff with no holds being imposed.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.15
	S-1 Command for MECO	147.29	147.73
	VECO	156.29	156.72
	Separation Complete	162.79	163.62
	SS-01A Engine Ignition	202.29	202.66
	Engine Shutdown by VM	437.44	438.52

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps)	12,342	12,332
	Apogee (nm)	277.1	280.0
	Perigee (nm)	282.05	289.3
	Period (min)	94.77	95.03
	Inclination Angle (deg)	82.16	82.04
	Eccentricity	.000531	.00029
	Agena Orbital Weight (empty) (lbs)	3368	3365

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AEROSPACE GROUND EQUIPMENT PERFORMANCE: (Final Countdown): In task 14 (Orbital Stage Pressurization) it was necessary to adjust a LMSC regulator for controlling SS-01A fuel tank pressure. The vehicle fuel tank pressure was below SS-01A specifications.

REMARKS: There were no recoverable capsules in the payload of this vehicle.

PH Note = this is Page 2 of #922 64-72 (Fenet 7).

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PROGRAM 241

10 DEC 1964

MISSILE: LV-2A No. 416 and SS-01A No. 1180

LAUNCHED: 1235:54.53 PST, 18 November 1964, Complex 75-1, Pad 1

LAUNCH CONTROLLERS: Capt Haber and Lt Franklin

COUNTDOWN HISTORY:

The countdown was initiated at 0150 PST on 18 November 1964, and proceeded to liftoff with one hold imposed at T-16 minutes from 1129 to 1219 for range safety (trains in the area).

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.14
	MECO (Command for)	149.00	152.79
	VECO	158.00	161.66
	Separation Complete	164.50	168.84
	Ignition	170.00	173.68
	Burnout (Shutdown by VM)	414.70	416.38

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps)	12,225	12,221
	Injection Inertial Velocity (fps)	25,632	25,624
	Apogee (nm)	196.2 +20 -17	199.5
	Perigee (nm)	104.9 +10 -17	102.0
	Period (min)	89.77 ±0.15	89.773
	Inclination Angle (deg)	70.02± 0.15	70.04
	Agena Orbital Weight (empty)	3742	3758

AEROSPACE GROUND EQUIPMENT PERFORMANCE: The following AGE problems were encountered during the countdown.

1. During the first nine tasks, LMSC type 45 air conditioning unit (AGE) was marginal for maintaining payload temperature. After sunrise, however, temperatures were maintained well within limits.

2. During the first nine tasks, fuel and oxidizer temperatures in the LMSC transfer sets (AGE) were below the 35 degree fahrenheit lower limit. At the time of propellant tanking, however, temperatures were at the lower limit of specifications.

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3. In task 3, payload checks, one improper punched card caused an error in the orbital programmer because of improper labeling. This difficulty was corrected by manually sending brush command 19.

4. In task 3, payload checks, abnormal indications were observed. Special checks made in task 9 and in task 15 verified payload system integrity.

5. In task 3, payload checks, a leak occurred at a fitting on the LMSC freon trailer (AGE). The problem was eliminated by torquing the fittings.

6. During Task 9, MECO Phasing and Polarity checks and first stage telemetry checks; one of the generator vans which supply primary pad power, dropped from the line. The droppage was caused by a malfunction of a relay in the governor circuitry. Allowing the generator speed to vary and causing frequency drift. The frequency drift caused the generator to be automatically dropped from the line. Replacement of the relay cleared the malfunction.

7. During task 10, solid motor arming, a DAC igniter test set (AGE) failed. It was replaced by the spare test set on hand at the pad.

8. In Task 12, orbital stage propellant tanking, a small leak occurred at a fitting on the filter in the LMSC oxidizer transfer set (AGE). Torquing of fittings removed the problem.

10. During task 14, orbital stage pressurization, a guidance gas leak occurred at a plug fitting at the freon filter on the mast and at a "B" nut fitting on the guidance gas fill umbilical. The leaks were eliminated by torquing of fittings. In order to make repairs it was necessary to vent the guidance gas.

REMARKS: This vehicle carried 2 recoverable capsules. The first was ejected on the 65th orbit and the second on the 145th orbit. Both were recovered.

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PROGRAM 241

18 JAN 1965

MISSILE: LV-2A No. 424 and SS-01A No. 1607

LAUNCHED: 1310:16.73 PST 19 Dec 64, Complex 75-3, Pad 4

LAUNCH CONTROLLERS: Capt Bellia & Lt Senko

COUNTDOWN HISTORY:

First Countdown: The first countdown was initiated at 0315 PST on 15 December 1964 but was aborted at 1336 PST due to expiration of the scheduled launch window. Two holds were imposed for range clearance and one when DAC failed to receive lox transfer resume which was a result of the failure of launcher pin number one to retract.

Second Countdown: The second countdown was initiated at 0315 PST on 16 December 1964 but was aborted at the end of phase IV at 1355 PST due to expiration of the launch window, after a drift in yaw position of vernier engine number two was seen to be questionable.

Third Countdown: The third countdown was initiated at 0315 PST on 17 December 1964 but was aborted at 1345 PST after a premature LV-2A engine shutdown signal had been received just prior to vernier engine ignition. Two holds for range clearance (trains) were imposed during the countdown.

Fourth Countdown: The fourth and final countdown was initiated at 0315 PST on 19 December 1964 and proceeded to liftoff with one hold being imposed at T-16 minutes from 1229 to 1254 for range clearance.

FLIGHT PERFORMANCE:

Event	Predicted Time	Actual Time
1. Solid Separation	65.00	65.08
MECO (Command for)	146.87	151.94
VECO	155.87	160.89
Separation Complete	162.37	168.12
Ignition	167.87	172.83
Burnout (Shutdown by VM)	406.05	412.59

2. Both Thor and Agena Airborne Systems performed satisfactorily.

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Control No. WZDE 5-4

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19 Dec 64

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Event		Predicted	Actual
3.	SECO Inertial Velocity (fps)	12,318	12,317
	Injection Inertial Velocity (fps)	25,821	25,822
	Apogee (nm)	235.5	231.2
	Perigee (nm)	99.3	97.6
	Period (min)	90.7	90.6
	Eccentricity	.01035	.0160
	Inclination Angle (deg)	75.0	74.96

AEROSPACE GROUND EQUIPMENT PERFORMANCE: High surface winds during the entire countdown caused numerous minor problems with AGE.

REMARKS: This vehicle carried two recoverable capsules. The first capsule was ejected on the 81st orbit and the second on the 175th orbit. Both air recoveries were successful.

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Control No. VWEEE 5-4

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PROGRAM 698BK

MISSILE: LV-2A No. 425 and SS-01A No. 2355

LAUNCHED: 1108:55.90 PST, 21 December 1964, Complex 75-1, Pad 1

LAUNCH CONTROLLERS: Capt Haber and Lt Franklin

COUNTDOWN HISTORY: The countdown was initiated at 0120 PST on 21 December, 1964 and proceeded to liftoff with three holds imposed for a total of 40 minutes. Hold number one was imposed to await an Air Force decision on an acceptable launch time. Hold number two was imposed for Range Clearance. Hold number 3 was imposed to await an acceptable launch time.

FLIGHT PERFORMANCE:

	Event	Predicted Time	Actual Time
1.	Solid Separation	65.00	65.07
	S-1 Command for MECO	148.61	150.49
	VECO	157.61	159.44
	Separation Complete	165.21	167.42
	SS-01A Engine Ignition	189.61	191.40
	Engine Shutdown by VM	428.68	432.72

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps)	11,970	11,966
	Injection Inertial Velocity	25,486	25,511
	Apogee (nm)	153.93	158.00
	Perigee (nm)	131.10	132.00
	Period (min)	89.44	89.56
	Inclination Angle (deg)	70.06	70.11

AEROSPACE GROUND EQUIPMENT PERFORMANCE: The communications system on one personnel high-lift malfunctioned and the boom control system on another high-lift functioned abnormally during the countdown. In addition, the liftoff signal was not received by LMSC analog ground station and had to be repaired.

REMARKS: There was one recoverable capsule in the payload of this vehicle.

Control No. VWZDE 5-11