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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 Range clearance was withdrawn before recycle was completed.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:

12.55

Flight Performance.	•	Predicted Time	Actual Time
Event		65.0	65.1
1. Solid Separation	*.*	148.8	147.7
MECO		157.8	156.7
VECO		161.8	161.1
Separation.		204.2	201.5
1st Ignition		439.8	438.1
1st Burnout		3320.2	Not Available
2nd Ignition	•	3324.3	Not Available
2nd Burnout		55= 115	

2. Both TAT and Agena Airborne Systems performed satisfactorily.

MECO Inertial Velocity Injection Inertial Velocity Apogee Perigee Period Inclination Angle	Predicted 12,373 fps 24,241 fps 508 N.M. 500.9 N.M. 103.5 Min 70.0 Deg 3,036 Lbs	Actual 12,425 fps 24,230 fps 515.9 N.M. 499.2 N.M. 103.5 Min 69.9 Deg 2,980 Lbs
Agena Orbital Weight	3,036 Lbs	2,900 100

## AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

#### REMARKS:

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

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

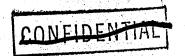
CONFIDENTIAL 1967

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.

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

2. Both Thor and Agena Airborne Systems performed satisfactorily.

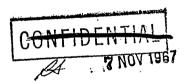
MECO Inertial Velocity Apogee Perigee Period Inclination Angle	Predicted 10,870 fps 459.5 N.M. 450.2 N.M. 101.57 min 98.8°	Actual 10,789 fps 461 N.M. 446 N.M. 101.58 min 99.04°
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### AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE Systems performed satisfactorily.

#### REMARKS:

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



6595-64-0445



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DOD DIRECTIVE S200.10

Cy# 1 of 3 Cys





#### NASA A-12

Thor 397/Agena 6301 MISSILE:

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:

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

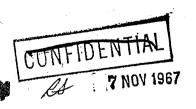
2. Both Thor and Agena Airborne Systems performed satisfactorily.

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

# AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Agena AGE performed satisfactorily.

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





DOWNGRADED AT 3 YEAR IN 6595-64-0843 DECLASSIFIED AFTER 12 YEARS DOD DIRECTIVE 5200.10

Cy#1 of 3



CONFIDENTIAL

#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 MECO VECO Separation Ignition Burnout	65.0 148.9 157.9 161.9 169.9 414.3	65.0 147.6 156.5 160.9 168.4 414.1

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

DOWNGRADED AT 3 YEAR INTERVALS,

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6595-64-1682

Cy#/0/3





Thrust Augmented Thor 396/Agena 1175

TAUNCHED: 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:

<u>Event</u>	Predicted Ti	me (sec)	Actual Time (sec)
1. Solid Separation IECO /ECO Separation Ignition Burnout	60.00 147.23 156.23 162.73 168.23 412.754		60.58 148.80 157.70 165.15 169.8 376.43 (Premature Loss of Vehicle Control)

2. Thor Airborne Systems - Performance was satisfactory.

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

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

#### 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.

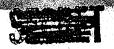
#### REMARKS:

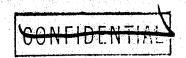
Loss of control and premature Agena burnout was indicated by data to be a short circuit originating in the Type IX dc/dc converter of the electrical subsystem.

7 NOV 196595-64-2326

DOWNGRAPED AT 3 YEAR INTERVALS, DICLASSITED AFTER 12 YEARS DOD DIRECTIVE 5200.10

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MISSILE: Thrust Augmented Thor 395/Agena 1604

#796 64-22 CORONA 78 KH-44 1005

1623 PDT, 27 April 1964, Pad 4

#### OUNTDOWN 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:

	<u>Event</u>	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

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	7 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.

#### ATROSPACE 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.

#### PEKARKS:

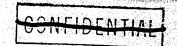
This vehicle carried two recoverable capsules. Neither capsule was ejected ive to a short of the Pyro Bus to all P/L Pyros which occurred at separations.

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#### PROGRAM 241

MISSILE: Thor 403/Agena 1176

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

#802 64-27

CONONA 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	
ř.	Separation	164.67	165.46	
į.	Ignition	170.17	170.10	
1 1 1	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	Predict	<u>:ed</u>	Actual
	MECO Inertial Velocity Injection Inertial Velocity Apogee Perigee Period Inclination Angle Agena Orbital Weight	12,283 25,830 250.46 99.92 90.870 80.00 3559	fps fps n.m. n.m. min. deg. lbs.	12,237 fps 25,806 fps 259.36 n.m. 86.90 n.m. 90.626 min. 79.97 deg. 3568 lbs.

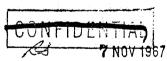
#### AEROSPACE GROUND EQUIPMENT PERFORMANCE:

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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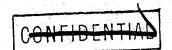
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MISSILE: Thor 410/Agena 1609

#814 64-32

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

CORONA 81/KH-4A 1007-182

#### 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:

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

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°.

MECO Inertial Velocity Injection Inertial Velocity Apogee Perigee Period Inclination Angle Agena Orbital Weight	12,070.7 fps 25,844.1 fps 259.55 n.m. 100.27 n.m. 91.06 min. 85.00 deg. 3526 lbs.	12,077.7 fps 25,836.1 fps 258.85 n.m. 99.96 n.m. 91.02 min. 85.00 deg. 3533 lbs.
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#### AEROSPACE GROUND EQUIPMENT PERFORMANCE:

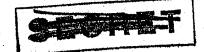
Both TAT and Agena AGE with exception of the umbilical flag performed satisfactorily.

#### 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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#### PROGRAM 698BK

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:

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

2. Both TAT and Agena Airborne Systems performed satisfactorily.

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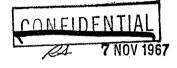
### AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both TAT and Agena AGE performed satisfactorily.

#### REMARKS:

This vehicle carried a nonrecovery payload.

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



64-3517 E CYS Cy#143



CONFIDENTIAL

1 1 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:

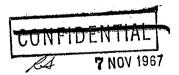
<u>Event</u>	Predicted Time	Actual Time
1. Solid Separation MECO VECO Separation Ignition Burnout	60.00 sec 146.45 155.45 161.95 167.45 413.20	60.22 147.20 156.11 163.42 168.10 412.79

2. Both Thor and Agena Airborn Systems performed satisfactory.

3.	Event	Predicted	<u>Actual</u>
	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.

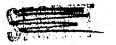




DOWNGRADED AT 3 YEAR INTERVALS, DECLASSIFIED AFTER 12 YEARS DOD DIRECTIVE 5200.10

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Cy 1 of 3 Cys)



CONFIDENTIAL

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

MISSILE: Thrust Augmented Thor 413/Agena 1605

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.

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

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 MECO VECO Separation (complete) First Ignition First Burnout	65.00 151.05 160.05 166.55 172.05 415.03	65.22 148.54 157.54 164.88 169.46 417.82

2. Both TAT and Agena Airborne Systems performed satisfactorily.

3.	<u>Event</u>	<u>Predicted</u>	<u>Actual</u>
	MECO Inertial Velocity (fps Injection Inertial Velocity Apogee (NM) Perigee (NM) Period (min) Inclination Angle (Deg)	r(fps)25,858.5 250.04 100.21 90.87 80.00	12,157.8 25,814.8 243 100 90.71 80.10
	Agena Orbital Weight (before dump)	re prop 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:

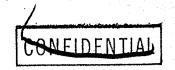
This vehicle carried two recoverable capsules. The first capsule was ejected on the 49th orbit and recovery was successful. The second capsule was ejected on the 128th orbit and aerial recovery was successful.

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TAT: 412/Agena 1603 MISSILE:

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

LAUNCH CONTROLLERS: Capt Sanders/Capt Haber

#### COUNTDOWN HISTORY:

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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:

	Event		Predicted Time	Actual Time
٦	Solid Separation	* •	65.00	65.19
1 •	MECO	•	148.21	148.28
	VECO		157.21	157.28
	Separation		162.21	164.24
			213.21	213.19
	Ignition		457.13	458.18
	Burnout		107 • 40	

2. Both TAT and Agena Airborne Systems performed satisfactorily.

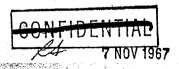
3.	Event	Predicted	Actual
•	MECO Inertial Velocity	11,189 fps	· 11,055 fps
	Injection Inertial Velocity	25,258 fps	25,246 fps
	Domicroo	192.99 N.M.	196.9 N.M.
	Apogee	200.78 N.M.	206.2 N.M.
	Period	91.79 Min	91.72 Min
	Inclination Angle	115.00 Deg	114.97 Deg
	Agena Orbital Weight	2,901 lbs	2,921 lbs
	1.501.00 01.000 1100011	•	

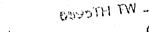
#### AEROSPACE GROUND EQUIPMENT PERFORMANCE:

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.

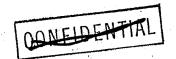




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CY# OF





#### NASA A3222

MISSILE: Thor 399/Agena 6201

<u>LAUNCHED</u>: 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:

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

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) 2d Injection Inertial	10,608 24,206	10,726 23,803
	Velocity (fps) Apogee (NM) Perigee (NM) Period (Min) Inclination Angle (Deg) Agena Orbital Wt (Lbs)	498.8 508.0 103.48 99.07 2572	503.74 228.66 98.32 98.66 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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pod directive 5200.10

Cy 1 of 3 Cyo

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CONFIDENTIAL

MISSILE: Thor 405/Agena 1178

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

<u>IAUNCH CONTROLLER</u>: 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:

	<u>Event</u> <u>F</u>	redicted Time	Actual Time
1.	Solid Separation	65.00	65.34
	MECO	148.60	152 <b>.</b> 33
	VECO	157.60	161.24
	Separation Command (S-2)		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.	<u>Event</u> <u>Pre</u>	<u>edicted</u>	Actual
	MECO Inertial Velocity	12,250.12	12,170
	Injection Inertial Vel. Perigee	25,833.78 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.

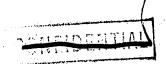
REMARKS:

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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# SECRET

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 MECO (Command For) VECO Separation Ignition Burnout (Shutdown by VM)	65.00 148.60 157.60 164.10 169.60 413.50	65.34 152.33 161.24 168.44 173.20 417.36

2. Both Thor and Agena Airborne Systems performed satisfactorily.

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

DOWNGRADED AT 3 YEAR INTER-VALS; DECLASSIFIED AFTER 12 YEARS DOD DIR 5200.10

CONFIDENTIAL 7 NOV 1967



Control No. WZDE-4-2

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- 1. Task 10 tes deleyed we calified Library Turiby of a secondical niter test set and selle otto test seal (6.8% 5).
- 2. The pad delaws water (time)) system is the Wight passe pares water on the pad. The difficulty was attributed form over election breaker on the pad debos. (rif 1940).
- 3. Auring Test 12 (Fone Propellant Subing), the exister line pressure relief valve on the existent temperature for althoughtened. It was necessary to relieve the line propens the blockhouse (H. C. 2017).
- u. Tapele First IV estatus Servinas Remattion, Prof. 27 and 1400 (reject) fuel cionals (UV-2/ tapkin ) mary manually actuation. This is a common service common of the exteller fuel common less each characteristic of the exteller fuel common less each characteristic characters the chall propediant backing observing.

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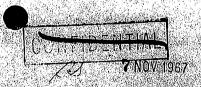
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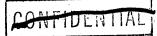
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#890 64-61









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	6 g. 4	Predicted Time	Actual Time
1.	Solid Separation MECO (Command for) VECO Separation Complete Ignition Burnout (Shutdown by VM)		65.00 148.10 157.10 164.30 169.10 408.49	65.36 149.01 157.09 165.21 169.95 407.70

2. Both Thor and Agena Airborne Systems performed satisfactorily.

	Event	Predicted Time	Actual Time
3.	MECO Inertial Velocity (fps) Injection Inertial Velocity (fps) Apogee (nm) Perigee (nm) Period (min) Eccentricity Inclination Angle (deg) Agena Orbital Weight (empty)	12,337 25,820 236.6 99.8 90.67 .0190 75.0 3,714	12,338 25,810 235.6 99.8 90.62 .0189 74.99 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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#### PROCEAM 241

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

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

LAUMCI COMTROLLERS: Faj Fate and Capt Bellia

#921 64-71

CORONA 88/KH-4A 1013-182

COUNTROWN WISTORY:

The countdown was initiated at 0300 PST on 2 Movember 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 MECO (Command for) VLCO Separation Complete Ignition Burnout (Shutdown by VM)	65.00 148.01 157.01 163.51 169.01 411.17	64.79 146.12 155.05 162.29 167.03 400.28

2. Both Thor and Agena Airborne Systems performed satisfactorily.

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

AEROSPACE CROUND 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

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- 3. In task 2, SS-QlA 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 reasurement functioned normally during the terminal countdown.
- 4. LV-2/ 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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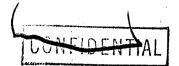
"This material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Socs. 793 and 794, the transmission or revolution of which in any menner to an unauthorized person is prohibited by law.".

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"Ferret 7" (P4).

# SI



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 lLt Johnston

#### COUNTDOWN HISTORY:

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

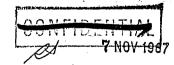
2. Both Thor and Agena Airborne Systems performed satisfactorily.

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

Control No. WWZDE 4-13

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ALPOSPACE GROUND EQUIRITY PEFFORMACE: (Final Countdown): In task 14 (Orbital Stage Pressurization) it was necessary to adjust a LYSC regulator for controlling SS-OLA fuel tank pressure. The vehicle fuel tank pressure was below SS-OLA specifications.

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

PH Note: This is Page 2 of #922 64-72 (Fernet 7).

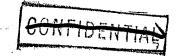
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PROGRAM 241

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

1 0 DEC 1964

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 MECO (Command for) VECO Separation Complete Ignition Burnout (Shutdown by	(MV	65.00 149.00 158.00 164.50 170.00 414.70	65.14 152.79 161.66 168.84 173.68 416.38

2. Both Thor and Agena Airborne Systems performed satisfactorily.

*	Event	Predicted	Actual
3.	MECO Inertial Velocity (fps) Injection Inertial Velocity (fps) Apogee (nm)	12,225 25,632 196.2 +20 -17	12,221 25,624 199.5
	Perigee (nm)	104.9 +10 -17	102.0
	Period (min) Inclination Angle (deg) Agena Orbital Weight (empty)	89.77 ±0.15 70.02± 0.15 3742	89.773 70.04 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 (ACE) 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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Control No. WZDE 4-15

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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 (ACE). The problem was eliminated by torquing the fittings.
- 6. During Task 9, WECO 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 LASC oxidizer transfer set (ACE). 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.

PH Note: this is Page 2 of #930 64-75 CORWA 89/KH-4A 1014-182

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#### PROGRAM 241

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

1.8 JAN 1965

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:

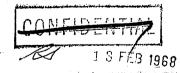
	Event		Predicted Time	Actual Time
1.	Solid Separation MECO (Command for) VECO Separation Complete Ignition Burnout (Shutdown by VM)	**	65.00 146.87 155.87 162.37 167.87 406.05	65.08 151.94 160.89 168.12 172.83 412.59

2. Both Thor and Agena Airborne Systems performed satisfactorily.

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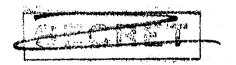
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	Event	Predicted	Actual
3.	ELCO Inertial Velocity (fps)	12,313	12,317
	Injection Inertial Valocity (fps)	25,821	25,822
	Apogee (nm)	235.5	231.2
	Perigee (m.i)	99.3	97.6
	Period (min)	90.7	30.6
	Eccentricity	.01095	.0186
	Inclination Angle (dc)	75.C	74.08

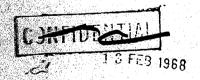
ALPOSPACE CROUND EQUIPMENT PERFORMANCE: High surface winds during the entire countdown caused numerous minor problems with ACL.

EDMANCS: This vehicle carried two recoverable capsules. The first capsule was ejected on the 31st orbit and the second on the 175th orbit. Both air recoveries were successful.

PH Note: this is Page 2 of #961 64-85 CORENA 90/KH-4A 1015-182

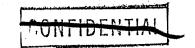


Control No. WIZDE 5-4





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
ı.	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 Engine Shutdown by VM	189.61	191.40
	Eligine Surrown by M	428.68	432.72

2. Both Thor and Agena Airborne Systems performed satisfactorily.

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

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