UNCLASSIFIED

[redacted] SAMOS I

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MISSILE: AGENA #2101/ATLAS #57D

LAUNCHED: 1233 PST, 11 Oct 60

COUNTDOWN HISTORY: ~~CONFIDENTIAL~~

First Attempt: Countdown initiated at 0100, 11 Oct 60. No major technical problems encountered during the countdown; however, an additional 30 minutes of hold was required to accomplish the tower removal task. Train schedules caused two hours and three minutes additional delay in the launch.

FLIGHT PERFORMANCE:

	Event/Time	Difference
1. BECO	150.1 seconds	+150.1 booster engines
SECO	228.4 seconds	+ 78.3 sustainer
VECO	248.0 seconds	+ 19.6 vernier
D-timer start	248.9 seconds	+ 0.9 delay
Separation	249.8 seconds	+ 0.9 delay
Ignition	506.7 seconds	+256.9 coast
Burnout	629.30 seconds	+122.6 hustler

2. Atlas Airborne Systems - The track beacon was lost thus no discrete commands could be sent.

3. Agena Airborne Systems - Loss of N_2/freon due to a damaged umbilical fitting resulted in no attitude correction during the coast phase and no roll control during the injection phase. The vehicle did not achieve orbit due to errors in attitude resulting from the loss of attitude control gas.

4. SECO	Inertial velocity	18,500 ft/sec
VECO	Inertial velocity	18,340 ft/sec
Agena	Inertial velocity	unknown
Apogee		No orbit
Perigee		No orbit
Agena orbit weight		unknown (no orbit)

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13 JUL 1978
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GROUND SUPPORT EQUIPMENT PERFORMANCE:

AGENA Two GSE problems were noted. The first of these was an inaccuracy of the Oxidizer loading mechanism to shut off at the pre-determined valve. The second was the improper lanyard adjustment which caused the Agena half of the N_2/freon umbilical to be pulled out causing immediate loss of control gas.

ATLAS GSE appeared to operate normally. Pad damage was slightly less than expected.

UNCLASSIFIED

DOWNGRADE AT 12 YEAR INTERVALS
NOT DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

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SAMOS II [redacted]

13. 2355

31 Jan 61

MISSILE: AGENA #2102/ATLAS #70D

LAUNCHED: 12:21:19 PST, 31 Jan 61

COUNTDOWN HISTORY:

First Attempt: Countdown was initiated at 0100, 31 Jan for a 1000 T-0 time. The Agena portion was essentially trouble free. The booster countdown experienced holds and delays due to ground guidance, a launch control panel fault indication, a faulty engine null indication, the loss of landline indication of sustainer LOX reference regulator pressure and an umbilical mast hydraulic pressure drop. Weather was also a delaying factor.

FLIGHT PERFORMANCE:

	Event/Time	Difference
1. BECO	143.8 seconds	+143.8 booster
SECO	239.32 seconds	+95.52 sustainer
Start D-timer	244.24 seconds	+4.92 delay
Vernier Cutoff	258.03 seconds	+18.71 from SECO
Separation	260.4 seconds	+2.37 delay
Agena Ignition	497.8 seconds	+237.4 coast
Agena Burnout	614.9 seconds	+117.1 hustler

2. Atlas Airborne Systems - Functioned normally.

3. Agena Airborne Systems - Functioned normally.

	Inertial Velocities
4. BECO	10,895
SECO	18,112
VECO	18,111
Agena Ignition	16,900
Agena Burnout	25,080
Apogee	311 N.M.
Perigee	259 N.M.
Orbit Weight	4221 lbs.

13 JUL 1978

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[redacted]

5. GROUND SUPPORT EQUIPMENT:

AGENA The umbilical mast failed to lower to the 15 degree above horizontal rest position. Mast retraction from the vertical was normal. No other GSE problems.

ATLAS GSE operation was normal. Damage was less than on launch of Samos I.

[redacted]

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12 JUL 1978 ~~SECRET~~ 17, 235

MIDAS III [redacted]

MISSILE: Agena 1201/Atlas 97D UNCLASSIFIED LAUNCHED: 0811 ~~PDT, 18 Jul 61, PALC-1, Pad 2~~ ~~CONFIDENTIAL~~

COUNTDOWN HISTORY:

First Attempt - 1 Jul 61. The operation was cancelled at T-6 sec because of an Atlas liquid oxygen leak.

Second Attempt - 10 Jul 61. Aborted after booster engine ignition when the premature release of a booster umbilical caused an automatic engine shutdown.

Third Attempt - 11 Jul 61. Cancelled at inception when it became apparent that the status of the booster preparation was not compatible with the launch time restrictions.

Fourth Attempt - Because of previous countdown preparations the orbital stage nose cone was in place on the vehicle and the countdown procedures were thus modified to delete checks on exit and orbit antennas, and subsystem G payload rotation motor operation. A countdown interruption occurred during Task 13 due to a 4 sec commercial electrical power failure. However, all equipment was brought back to the proper status without necessitating a hold in the count. The first hold (8 min duration) was imposed at T-30 min to adjust the count zero-time so that it would fall within the specified launch time window. Terminal count was started at 0740 PDT and progressed normally to T-80 sec. After a 2 min hold for general readiness verification the commit sequence was initiated.

FLIGHT PERFORMANCE:

	Event	Time	Difference
1.	Booster Staging	139.4	140.6
	BECO	136.3	140.7
	SECO	269.8	261.1
	VECO	288.4	279.6
	Separation	293.8	282.1
	1st Ignition	325.9	314
	1st Burnout	548.6	530.2
	2d Ignition	Indicated nominal	4291
	2d Burnout	Indicated nominal	4312.2

2. Atlas Airborne -- Operated satisfactorily.
Agena Airborne Systems -- First pass data indicated no APL beacon operation, and faulty operation of Solar Array #2.

3.	Actual	Nominal
BECO Inertial Velocity	9050 FPS	9367 FPS
Agena Inertial Velocity	21170 (not measured)	20925 FPS
Atlas Coast Apogee Alt	93.5 NM	93.7 NM
Atlas Coast Apogee Vel	16636 FPS	16637 FPS
Coast Plane Inclination Angle	88.66°	88.66°
Mean Orbital Alt	1832 NM	1857.4 NM
Orbit Eccentricity	.01003	.00091
Orbital Period	160.05 min	160.96 min

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REMARKS: This was the third MIDAS launched and the first from PMR. The vehicle contained numerous new items; velocity meter, control moment gyros, extended solar arrays, GE horizon sensors, extended second burn, and was first Atlas/Agena B launch.

DOWNGRADED AT 12 YEAR INTERVALS;
NOT AUTOMATICALLY DECLASSIFIED [redacted]
DOD DIR 5200.10

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6595-61-2110

SAMOS III

2355

MISSILE: Agena 2120/Atlas 106D

LAUNCHED: 1228 PDT, 9 September 1961, PALC-1, Pad 1

COUNTDOWN HISTORY:

The countdown started at 0200 PDT at T-585. The countdown proceeded normally to Task 4 where an umbilical shorting plug insertion did not permit velocity meter counter warning. A GSE voltage adjustment corrected this problem. The acid fill pump circuit breaker popped during Task 11. A reset corrected this problem. A 10 minute-38 second hold was called prior to the start of terminal count for range clearance. The second hold was called at T-11 minutes when MOD II guidance reported loss of track system motor generator power. Adjustments of the brushes returned track power. The third hold was called at T-85 seconds when the tracking station reported loss of primary instrumentation on FM/FM telemetry channels 7 and 13. Evaluation determined the required points were redundant on PAM, and a go was approved. Engine ignition was normal and lift-off was reported. The missile was observed to explode on the pad almost immediately.

FLIGHT PERFORMANCE:

Analysis of data following the explosion revealed that the missile had lifted two-to-three feet. Booster umbilicals are ejected by electrical solenoid action at 2-inch motion, with a lanyard back-up. All umbilicals except J1003 were ejected at about T+.05 seconds after 2-inch motion. J1003 was ejected at about T+.315 by lanyard pull, when the missile was at 8 inches. Loss of J1005, which is the main engine umbilical, causes a commit stop to be generated by the launch control systems. This commit stop was returned to the missile by J1003 which was still installed, causing a switch to ground power. J1003 then was ejected causing engine shutdown by disconnecting missile power. The missile settled about 3-to-4 feet, struck the launcher and exploded. Booster telemetry was lost at T+1.7 seconds after 2-inch motion. Agena telemetry was lost at Agena explosion at 2.6 seconds.

REMARKS:

This was the first E-2 payload to be launched. The booster ground system deficiency is being corrected by locking missile internal power at holddown and release vent. A missile away signal will also now require 2-inch motion, plus release of all umbilicals. Automatic commit stop is to be eliminated, and will be done by the test conductor after missile away.

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MISSILE: Agena 1202, Atlas 105D MIDAS IV
LAUNCHED: 0553:02.95 PST, 21 Oct 1961

COUNTDOWN HISTORY:

First countdown began at 1943, 18 October 1961, and was aborted at 0630, 19 Oct 61. The count was aborted because of an unknown source of UDMH leakage from Agena, which was later determined to be a faulty UDMH drain connection.

Launch countdown began at 1943, 20 Oct 61, and contained two holds. Hold 1 (5 min, 30 sec) was caused by a command system sync voltage problem at T-11 min, which was solved by command transmitter antenna realignment. Hold 2 (3 min, 25 sec) was called at T-80 sec for final checks and evaluation.

FLIGHT PERFORMANCE:

Event	T+ Time (Actual)	T+ Time (Nominal)
BECO	136 sec	140.4 sec
SECO	275 sec	269.5 sec
VECO	296 sec	288.0 sec
Separation	295 sec	290.5 sec
1st Ignition	328 sec	329.0 sec
Burnout	550 sec	548.5 sec
2d Burn	18.8 sec duration	19.7 sec duration

RBORNE SYSTEMS PERFORMANCE:

Atlas -- Booster performance was generally satisfactory except for the loss of roll control at approximately T+172 sec. This resulted in a roll rate of approximately 72 deg/sec just before vernier cutoff. This problem, which is thought to be a gyro cannister electronics malfunction, is under study.

Agena -- Although considerable guidance gas pressure (approximately 1000 psi) was required to recover from the roll imparted on Agena by Atlas, Agena attained a suitable orbit -- both engine burns were apparently normal. During Pass No. 1, a high rate of guidance gas usage was reported. During later passes it has been determined that Agena is unstable -- probably nose down with an elipitical oscillation off to one side. All command and control equipment excepting the backup PAM multiplexer is operating satisfactorily. The West Ford package was released as planned.

ORBITAL DATA:

	Nominal	Actual
Mean Orbital Altitude	2105.3 NM	Perigee 1896, Apogee 2328
Eccentricity	.00074	.01234
Period	172.74 min	166.0 min

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

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6565-61-3580

SAMOS IV

MISSILE: Agena 2202, Atlas 108D LAUNCHED: 1245:47.49 PST, 22 Nov 1961

COUNTDOWN HISTORY:

The first countdown attempt on this vehicle began at 0100 PST, 21 Nov, and was cancelled at 0713, during Task 11, when a high pressure spike was noted in the ISS (Integrated Start System). The spikes were due to a leak in the high pressure check and relief valve, which allowed flow. When the start tanks are vented, the regulator closes. The excessive flow thru caused the high pressure spikes. The launch countdown began at 0100, 22 Dec 1961. Three holds were called, for a total delay of 135 minutes. Hold #1 (30 min) at start of terminal count for trains. Hold #2 (44 min) at T-12 min 30 sec because of erratic booster guidance beacon response, and to verify booster gyro operation. Hold #3 (61 min) at T-80 sec for readiness checks during which three problems were discovered: (1) Agena battery bus voltage reported low; (2) VTS lost backup electrical power; (3) Booster beacon again erratic (determined due to multipaths).

FLIGHT PERFORMANCE:

Event	T+ Time (Actual)	T+ Time (Nominal)
BECO	133.37 sec	141.16 sec
SECO	289.73 sec	259.59 sec
VECO	309.70 sec	276.14 sec
Separation	312.19 sec	277.64 sec
Ignition	344.60 sec	333.90 sec
Burnout	Not received	565.1 sec

AIRBORNE SYSTEMS PERFORMANCE:

Atlas: The staging backup accelerometer activated prematurely at 5.5 g's (set at 6.77 g's). Missile pitch control was lost at 244 seconds and not regained. Pitch up rate was approximately 5 deg/sec at SECO. Signal was lost in servo package or gyro package. The booster had pitched upward approximately 160 degrees from nominal at time of separation.

Agena: The Agena had an imparted positive pitch rate of about 7 deg/sec at time of pneumatic system actuation. Approximately 40 degrees additional pitch occurred before stabilization. Agena thrust vector at ignition was thus downward and backward with respect to nominal. All Agena systems performed properly, with attitude obviating horizon sensor control.

ORBIT DATA:

Orbit not achieved.

SAMOS V

MISSILE: Agena 2203/Atlas 114D LAUNCHED: 11:12:33 PST, 22 Dec 1961

COUNTDOWN HISTORY:

The countdown started at 0050 PST, 22 Dec 1961. Three holds were imposed, totaling 42 minutes. Hold #1 was called at 1000 PST at T-30 minutes, to 1036 PST, for revalidation of the MOD II guidance station following a power failure. The power failure at the 65-1 launch complex generator station, caused failure of two drawers in the track subsystem and tripped a relay in the rate subsystem. Hold #2 was called at T-12 minutes and 30 seconds at 1055 PST until 1058 PST for guidance systems readiness for the start of the terminal count loop test. The loop test was satisfactory. Hold #3 was called for 3 minutes at 1108 PST for pre-launch readiness checks. In addition, the Agena test plug access cover door was lost, and another door was fabricated during countdown, without causing any delay. The only other problem was failure of the acquisition beacon to play when commanded on prior to launch. The beacon came on when the command was recyled.

FLIGHT PERFORMANCE:

Event	T+Time (Actual)	T+Time (Nominal)
BECO	139.14 sec	140.93 sec
SECO	265.30 sec	267.85 sec
VECO	277.47 sec	284.94 sec
Separation	282.80 sec	288.85 sec
Ignition	335.31 sec	349.00 sec
Burnout	555.45 sec	569.73 sec

AIRBORNE SYSTEMS PERFORMANCE:

Atlas: All booster systems performed satisfactorily with the exception of the sustainer engine cutoff descrete (SECO) which was commanded by ground guidance at 264.46 sec. A thrust delay began at 265.30 seconds which slowly reduced to zero indicating a LOX depletion shutdown. The descrete was received properly but was not transmitted through the autopilot programmer. Excess velocity was thus imparted to the Agena, approximately 355 ft/sec.

Agena: All Agena systems operated satisfactorily through loss of signal.

ORBIT DATA:

Orbit was achieved, a 95 minute period, apogee approximately 350 n. m. perigee approximately 125 n. m.

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SAMOS VI

MISSILE: Agena 2204/Atlas 112D LAUNCHED: 14:10:31, 7 Mar 1962

COUNTDOWN HISTORY:

The first countdown attempt began on this vehicle at 0220 PST, 24 Feb. The count proceeded without problems until loop test start. The autopilot programmer would not start. Attempt cancelled at 0943 PST. The second countdown began at 0220 PST on 25 Feb, after programmer replacement. The Agena S-Band beacon was changed during this attempt. The countdown was cancelled during terminal count when pyro operated valves blew on the booster. These valves sequence and control the LOX tank pressure during the first 20 seconds of flight. The third countdown began at 0220 PST, 26 Feb and was again cancelled when the Conax valves again blew inadvertently due to a heavy transient generated by switching to internal power. Replacement of the switch corrected the problem. The fourth countdown was started at 0050 PST, 5 Mar and was cancelled at 0815 PST when booster gyro spin motor output was recorded below limits. The vehicle was launched on the fifth attempt which began at 0050 PST on 7 March. Winds aloft and train schedules delayed launch. The last countdown was without mechanical problems.

FLIGHT PERFORMANCE:

Event	T+ Time (Actual)	T+ Time (Nominal)
BECO	139.2 sec	140.6 sec
SECO	262.3 sec	267.9 sec
VECO	278.9 sec	284.9 sec
Separation	281.3 sec	288.9 sec
Ignition	335.3 sec	349.4 sec
Burnout	551.3 sec	569.7 sec

AIRBORNE SYSTEMS PERFORMANCE:

Performance of both the Atlas booster and the Agena vehicle were nominal through orbit injection.

ORBIT DATA:

Parameter	Actual	Predicted
Perigee Altitude, nm	127	125
Apogee Altitude, nm	205	221
Eccentricity	0.011	0.013
Period, minutes	90.6	90.9

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MIDAS V

MISSILE: Agena 1203, Atlas 110D

LAUNCHED: 0704:48 PST, 9 Apr 62

COUNTDOWN HISTORY:

The countdown began at 2040 PST, 8 April 1962 and continued with only minor difficulties causing slight delays. Hold No. 1 (22 min, 58 sec) was imposed at T-12 min, 30 sec for range clearance. Hold No. 2 (1 min, 45 sec) was imposed at T-80 sec for flight readiness checks.

FLIGHT PERFORMANCE:

Event	T+Time (Actual)	T+Time (Nominal)
BECO	139.33 sec	140.4 sec
SECO	266.8 sec	268.2 sec
VECO	286.8 sec	286.7 sec
Separation	289.1 sec	289.2 sec
1st Ignition	332.93 sec	323.6 sec
1st Shutdown	553.77 sec	544.3 sec
2nd Burn	18.0 sec duration	17.5 sec duration

AIRBORNE SYSTEMS PERFORMANCE:

Atlas -- The launch sequence proceeded normally from commit through liftoff and umbilical ejection. Pitch control was improper and resulted in an abnormal trajectory that was excessive in altitude and deficient in velocity. Because of this abnormality MOD II did not send discretes for SECO or VECO. SECO was caused by LOX depletion and VECO was effected by a backup signal from the Atlas programmer. Reasons for this excessive pitch deficiency are being extensively investigated by GDA/San Diego.

Agena -- Agena separation was effected by Atlas programmer backup and D timer start was accomplished by electrical disconnect at separation. All Agena systems appeared to function properly during the accent phase. The S Band beacon was not acquired during orbital passes, however; the reason is unknown. All other Agena systems performed normally until Pass No. 7 when one secondary battery failed resulting in a decrease in vehicle voltage which prohibited further command of the vehicle.

ORBITAL DATA:

	Nominal	Actual
Mean Orbital Altitude	1855 NM	Apogee 1839 NM, Perigee 1510 NM
Eccentricity	0.00129	0.0321
Period	160.91 min	153.04 min
Inclination	87.04 deg	87.00 deg

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PROGRAM 201 VEHICLE #1

MISSILE: PVP 851
Agena 2401
Atlas 118D

LAUNCHED: 1056:08 PST 26 Apr 62

COUNTDOWN HISTORY:

The first Program 201 vehicle was successfully launched on the first countdown, one day earlier than the date scheduled at time of MOS. The vehicle was at VAFB 90 days (69 days in MAB, 21 days on pad). The countdown started at 00:40 26 April and proceeded to lift-off without incident. There were two holds for a total of 56 minutes, 47 minutes for trains and 9 minutes for readiness checks and Range Safety radar verification at T-80 seconds.

FLIGHT PERFORMANCE:

Event	Actual Time	Nominal Time
BECO	136.64 sec	140.657 sec
SECO	266.61 sec	265.417 sec
VECO	282.36 sec	282.259 sec
Separation	284.66 sec	284.759 sec
SPS Ignition	332.76 sec	332.218 sec
Agena 90% Thrust	342.10 sec	342.218 sec
SPS Cutoff	342.76 sec	342.218 sec
Agena Cutoff	559.05 sec	556.793 sec

AIRBORNE PERFORMANCE:

All airborne systems performed as desired excepting Agena pneumatics. The SPS (secondary propulsion system) was used for the first time on this Agena, and performed properly, generating 200 pounds of thrust on each of two engines. The #4 gas valve on Agena apparently stuck slightly open during ascent and resulted in a drop of 1600 PSIG on gas pressure. Booster performance was as follows:

Event	Actual	Intended
Velocity at VECO	15,707	15,704
Angle to Equator	90.37	90.39
Apogee Radius (ft)	21,644,574	21,643,700

ORBITAL DATA:

Event	Actual	Intended
Apogee	118 N.M.	117 N.M.
Perigee	113 N.M.	108 N.M.
Eccentricity	.0009	.01+

Orbit was achieved; attitude was stable thru orbit 18. Commands were received and properly executed.

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PROGRAM 698BJ VEHICLE #2

MISSILE: PVP 852
Agena 2402
Atlas 115D

LAUNCHED: 11:14:18 PDT
17 June 1962

COUNTDOWN HISTORY:

The countdown started on schedule at 0240 PDT 17 June and proceeded to Agena tanking without incident. A loose B nut in AGE plumbing in the acid room caused an acid leak. This was located and corrected after line drain. Reloading was accomplished without any problem. A short hold during terminal count was caused by R.F. interference on Link 2 which caused the accept-reject signal to be inadequate for loading the flight load.

FLIGHT PERFORMANCE:

Event	Actual Time	Nominal Time
BECO	136.57	141.01
SECO	261.31	264.27
VECO	277.58	281.53
Separation	280.05	285.84
SPS Ignition	314.60	333.78
Agena Ignition	322.59	341.78
SPS Cutoff	324.80	343.78
Agena Cutoff	549.33	559.45

AIRBORNE PERFORMANCE:

There was intermittent loss of radar lock during ascent, believed to be due to S-Band antenna orientation. All systems performed satisfactorily, with no known Atlas discrepancies. The D-timer start discrete was transmitted 19 seconds before nominal, giving Agena ignition 19 seconds early. This is a computer function of apogee location and came as commanded.

Event	Actual	Intended
Velocity at VECO	155,555.61 fps	15,556.63 fps
Angle to Equator	94.370 degrees	94.369 degrees
Apogee Radius	21,623,859 feet	21,623,151 feet
Apogee	136 N.M.	124 N.M.
Perigee	105 N.M.	113 N.M.
Eccentricity	.004	.001

Orbit was achieved, attitude was stable and all systems performed nominally through orbit 10. All commands were received and executed.

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PROGRAM 698BJ VEHICLE #3

MISSILE: PVP 853
Agena 2403
Atlas 120D

LAUNCHED: 1351:20 PDT
18 July 1962

COUNTDOWN HISTORY:

The first countdown attempt began at 0320 PDT, 17 July. It proceeded without incident until Agena pressurization induced leakage in the secondary propulsion system (SPS) fuel-thrust chamber transducer, which was capped off due to inability to repair this non-critical instrumentation point in the mated configuration. During the Atlas commit task, an electrical breakdown in the umbilical junction box due to moisture accumulation required aborting the countdown for necessary repairs. The second attempt commenced 0220 PDT, 18 July, but was held for 92 minutes during the Agena tanking task for last minute resistivity checks in the Atlas, in order to insure that the previous umbilical failure had not damaged Phase C components. During Agena pressurization, troubleshooting and subsequent replacement a defective helium quick-disconnect coupling required a 71 minute hold. Prior to initiating terminal count, it was necessary to delay 18 minutes for crews to return to the pad and verify proper Atlas thrust section heater operation, inasmuch as defective AGE instrumentation was yielding low readings. A short, final hold was imposed at T-10 due to temporary loss of ground communications with the Tracking Station.

FLIGHT PERFORMANCE:

EVENT	ACTUAL TIME	NOMINAL TIME
BECO	136.63	140.2
SECO	261.18	266.2
VECO	277.83	283.1
Separation	283.3	288.1
SPS Ignition	Did not occur	330.6
Agena Ignition	334.15	339.9
SPS Cutoff	------	340.6
Agena Cutoff	556.4	564.3

AIRBORNE PERFORMANCE:

EVENT	ACTUAL	INTENDED
Velocity at VECO	15,782.202 fps	15,783.041 fps
Angle to Equator	94.3652 degrees	94.3686 degrees
Apogee Radius	21,628,062 ft	21,262,865 ft
Apogee	138 NM	122.8 NM
Perigee	115NM	117.0NM
Eccentricity	0.0037	0.0008

Orbit was nominal, attitude was stable, all systems performed satisfactorily, and all commands were received and executed thru Orbit 18. The SPS short circuit condition remained.

PROGRAM 698BJ VEHICLE #4

MISSILE: PVP 854
Agena 2404
Atlas 124D

LAUNCHED: 1058.59 PDT
5 August 1962

COUNTDOWN HISTORY:

The countdown started on schedule at 0150 PDT 5 August and proceeded to liftoff with only four minor incidents being encountered. Agena guidance and flight control checkout revealed that wiring to the IR test target was reversed and had to be corrected. Also, the nitrogen valve open indicator light failed response when the gyro test input (signal to close valve) was energized. After continuity checks, repeated tests were successful, however, and it was verified that the valve was in fact properly closed. At T-6 minutes the payload vehicle clock was erroneously stopped before T&T on/off cycling was complete. Subsequent proper operator sequencing was satisfactory. The only countdown hold was imposed at T-21 seconds due to a false automatic frequency control lock within the guidance station. This was quickly corrected by breaking lock and reacquiring the missileborne beacon with the MOD II tracker.

FLIGHT PERFORMANCE:

EVENT	ACTUAL TIME	NOMINAL TIME
BECO	138.77	140.2
SECO	264.4	266.2
VECO	280.56	283.1
Separation	285.6	288.1
SPS Ignition	315.7	330.6
Agena Ignition	324.9	339
SPS Cutoff	325.78	340.6
Agena Cutoff	538.9	564.3

AIRBORNE PERFORMANCE:

EVENT	ACTUAL	INTENDED
Velocity at VECO	15,562.987 fps	15,563,82 fps
Angle to Equator	96.3°	96°
Apogee Radius	21,619,472 ft	21,619,435 ft
Apogee	125.5 N.M.	123.75 N.M.
Perigee	106 N.M.	113.21 N.M.
Eccentricity	.002	.000

Orbit was nominal, attitude was stable, and all systems except payload performed satisfactorily. All other vehicle command functions were satisfactory through orbit 18.

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PROGRAM 698BJ VEHICLE #5

MISSILE: PVP 855
Agena 2405
Atlas 128D

LAUNCHED: 1217:02
11 November 1962

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COUNTDOWN HISTORY

The countdown started on schedule at 0210 PST, 11 November 1962 and proceeded to liftoff after two holds totaling 77 minutes. Hold #1 at T-30 min. (1030-1145) was due to a train and was prolonged when the GD/A Error Demodulator Output signal was reported fluctuating, and again prolonged due to a second train. Replacement of a GSE amplifier returned EDO signal to normal. Hold #2 was called at T-84 sec. (1213-15) when item verifications fell behind schedule. Other problems were: (1) A landline measurement of Agena Oxidizer tank temperature was inoperative (not mandatory). (2) A gas leak which resulted in loss of purge pressure in Agena oxidizer control console in LPB was fixed by tightening fittings. (3) Regulator failure in LMSC nitrogen source facility in LPB. Regulator was replaced.

FLIGHT PERFORMANCE EVENT	ACTUAL TIME Command Sent	NOMINAL
BECO	137.56	143.4
SECO	264.27	266.3
VECO	279.56	283.14
Separation	281.92	285.64
SPS Ignition	319.2	325.7
Agena Ignition	327.2	333.7
SPS Cutoff	329.2	335.7
Agena Cutoff	554.6	561.1

NOTE: Tracking station experienced Verlort fade at T plus 134. MOD II ground guidance received intermittant signals until T plus 15 seconds at which time tracking was re-acquired by slaving to the optical tracker. Link 2 data was received until T+100 sec. Link 3 until T+350 sec. Telemetry verification of Hatch Cut was not received, although vibration data indicates the MDF did fire at proper time.

AIRBORNE PERFORMANCE EVENT	ACTUAL	NOMINAL
Velocity at VECO	15,551.786 fps	15,556.62 fps
Atlas inclination.	94.362°	94.369°
Agena inclination.	96.11°	96.0
Apogee Radius (Atlas)	21,624,069 ft	21,623,151 ft
Apogee (Agena)	126.8 NM	118.5 NM
Perigee	116.8 NM	118.5 NM
Eccentricity	0.001363	0.0008
Period	88.78 min.	88.72 min.

Orbit was nominal, attitude exceptionally stable and all systems performed nominally through orbit 18.

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The contents of this document are classified as SECRET because disclosure of its contents to unauthorized individuals could harm national defense.

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DOWNGRADED AT 12 YEAR INTERVALS; NOT AUTOMATICALLY DECLASSIFIED

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PROGRAM 461

MISSILE: Agena 1205/Atlas 131D
LAUNCHED: 1236.23 PST, 17 December 1962, PALC-1, Pad 2
COUNTDOWN HISTORY:

The countdown was initiated at 2354 PST on 16 December 1962. Two holds were imposed for a total of 42 minutes. Hold No. 1 was imposed at T-100 minutes from 1014 to 1024 PST. Hold No. 2 was imposed at T-25 minutes from 1139 to 1211 PST. Both holds were imposed to complete work in the countdown which had fallen behind schedule.

FLIGHT PERFORMANCE:

The primary launch objective, to place the Agena satellite in a polar-circular orbit approximately 2000 n.m. above the earth, was not accomplished due to an unresolved malfunction of the booster approximately 80 seconds after liftoff.

A table of significant events follows:

SLV-3 T/M signal strength drop reported	T-225 sec
SLV-3 T/M signal lost	T-37 sec
LOB notified by VTS of T/M failure	T-14 sec
Liftoff (1236.23 PST)	0
White puff of smoke evident on photos	T+64 sec
First evidence of erratic control	T+77.5 sec
Pitch change discernable	T+79.5 sec
MOD II guidance track lost	T+80.16 sec
Final loss of Agena T/M signal	T+287 sec

In general, the available information indicates that the critical sub-systems of the booster and the status of the Agena were normal until 77.5 sec; however, a transient in the character of the thrust plume was noted at approximately T+64 sec. At T+77.5 sec. the Agena attitude gyros evidenced a loss of control - first in roll, followed shortly by pitch and yaw. Photo data also confirms a large change in pitch attitude before a definite breakup was discernable. Observations lead to a no more definite conclusion than that flight control loss permitted the vehicle to acquire a negative angle of attack which resulted in aerodynamic loading to the extent that structural failure occurred at approximately T+80.2 sec. in the forward section of the vehicle - probably in the adapter-lox dome area. Although Agena telemetry data was lost at T+80.52 sec., just subsequent to the breakup, high strength signals were intermittantly received between T+85 sec. and final signal fade at T+285 sec. The quality of the signal and data subsequent to breakup generally indicates that a large part of the Agena was intact after the initial breakup.

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PROGRAM 461

MISSILE: Agena 1206/Atlas 119D

LAUNCHED: 1306:16 PDT, 9 MAY 1963, PALC-1, Pad 2

COUNTDOWN HISTORY:

The first countdown began at 0055 PDT on 6 May 1963. The countdown proceeded normally until approximately T-1 second. At this point an emergency hold was called by ground guidance because of a complete loss of guidance lock. The launch attempt was aborted because the vernier and booster engines had ignited prior to the commit stop.

The second countdown was attempted on 8 May 1963. This attempt was cancelled at 1041 PDT because high upper level winds caused a safety hazard resulting in a Range NO-GO.

The third and final launch countdown was initiated at 0155 on 9 May 1963. This countdown proceeded normally until T-10 minutes 40 seconds. At this time a planned hold of 10 minutes duration was imposed for range clearance. No further difficulties were encountered through lift-off at 1306:16 PDT.

FLIGHT PERFORMANCE:

The primary launch objective, to place the Agena satellite in a polar-circular orbit approximately 2000 n.m. above the earth, was accomplished.

A table of significant events follows:

EVENT	T+TIME (ACTUAL)	T+TIME (NOMINAL)
BECO	139.77	139.2
SECO	268.36	269.4
VECO	285.29	286.5
Separation	287.77	287.3
1st Ignition	348.22	360.7
1st Cutoff	569.1	581.2
2nd Burn	19.5 sec duration	19.9 sec duration

AIRBORNE SYSTEMS PERFORMANCE:

Atlas - The booster performance was very satisfactory. All systems functioned normally and the telemetry quality was excellent.

Agena - All S-01 systems performed as planned through most of pass 1. However, during the pass, the link 1 telemetry transmitter failed. All other data links are transmitting excellent data. The payload is rotating and is operating as expected. The vehicle is in a stable nose down attitude with a very minor oscillation about the yaw axis. This attitude was verified by the Vehicle Stability Monitor on passes 1 and 5. On pass 9 the number one solar array quit tracking the sun. The number two array was still charging at an 8 ampere rate on pass 49. The telemetry and payload analysis indicates that the vehicle lifetime should be much greater than that expected before launch.

ORBITAL DATA:

	ACTUAL	NOMINAL
Orbital Altitude	Perigee 1940 Appogee 2001	2000 N.M.
Orbital Eccentricity	.006	.00046
Orbital Period	166.5	167.81
Inclination	87.27	88.31

6595-63-1968

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

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PALC 2-3.

PROGRAM 206

MISSILE: SV951/SOIA 4702/SLV III 201D
LAUNCHED: 1345:59 PDT, 12 July 1963

COUNTDOWN HISTORY:
The countdown was initiated at 0110 PDT on 12 July 1963. There were three holds imposed before liftoff. Hold No. 1 was at 1007 PDT to await Air Force approval of the non-modified booster boot, and replacement of the main missile battery. Hold No. 2 was called at 1249 PDT to allow procedures to catch up to the count-down clock. Its duration was 20 minutes. Hold No. 3, imposed at 1324 PDT, was due to a ship on the range. During this hold, abnormalities were experienced and corrected in the 400 cycle inverter output and SLV III magnetron current. The hold was released at 1341 PDT with normal liftoff occurring 4 minutes later.

LIFTOFF:
At liftoff, an electrical power line adjacent to the Pad, was broken, causing power loss to all PALC support facilities.

FLIGHT PERFORMANCE:
All primary and secondary launch objectives were met.

A table of significant events is as follows:

EVENT	T+TIME (NOMINAL)	T+TIME (ACTUAL)
BECO	138.1 SEC	134.60 SEC
SECO	277.6 SEC	276.67 SEC
VECO	294.6 SEC	291.23 SEC
Separation	299.6 SEC	296.39 SEC
SOIA Ignition	351.1 SEC	340.51 SEC
SOIA Cutoff	579.2 SEC	568.6 SEC

AIRBORNE SYSTEMS PERFORMANCE:
SLV III - Booster Performance was satisfactory in all respects. Telemetry data was obtained to verify all events. All guidance commands were received and properly acted upon.
SOIA - Agena performance was satisfactory. Except for two minor telemetry discrepancies, all subsystems functioned normally.
Satellite Vehicle - Vibration data from SV telemetry was unusable. Deficiencies existed in the S Band beacon and stabilization systems at time of launch countdown, and were waived. With these exceptions, the SV met all launch objectives.

ORBITAL DATA:

	NOMINAL	ACTUAL
Perigee Altitude	112.10 nm	112.1 nm
Apogee Altitude	115.61 nm	114.9 nm
Eccentricity	0.00049	0.00039
Period	88.573 nm	88.51 min
Inclination	94.959 Deg	95.35 Deg

Control No.---6595-63-3291

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PROGRAM 461

MISSILE: Agena 1207/Atlas 75D
LAUNCHED: 2051:17.93 PDT, 18 July 1963, PALC-1, Pad 2
COUNTDOWN HISTORY:

The countdown was initiated at 0740 on 18 July 1963. A dual countdown was conducted with vehicle 1412 being launched at 1700. No serious interference problems were encountered. The 1207 countdown proceeded smoothly until T-50 seconds. At this time the operation was recycled to the beginning of the commit sequence (T-84 seconds) because the SLV-3 vehicle was not ready for commit start. No further problems were encountered. Lift-off was 1 minute and 18 seconds after the opening of the window.

FLIGHT PERFORMANCE:

The primary launch objective, to place the Agena S-01 satellite in a polar circular orbit 2000 n.m. above the earth, was accomplished.

A table of significant events follows:

EVENT	T+TIME (ACTUAL)	T+TIME (NOMINAL)
BECO	137.52 SEC.	138.8
SECO	266.95 SEC.	269.2
VECO	283.84 SEC.	286.5
Separation	289.00 SEC.	288.3
1st Ignition	346.27 SEC	360.2
1st Cutoff	566.00	579.4
2nd Burn Duration	18.5	18.9

AIRBORNE SYSTEMS PERFORMANCE:

Atlas - The booster performance was very satisfactory. All systems functioned normally and the telemetry was excellent. All ground guidance discrete commands were properly transmitted and executed.
Agena - Except for an abnormal expenditure of control gas during the boost phase, all S-01 vehicle systems performed satisfactorily through second burn. The loss of gas occurred due to premature activation of the pneumatic control system during the boost phase. On pass 1 the vehicle was nose down and stable. The payload was scanning and the vehicle accepted all commands. The number two solar array was charging at a 14 ampere rate but the telemetry indicated the number one array was still folded on the vehicle. Link 2 (SAPUT) did not turn on. The expected vehicle lifetime is in excess of 60 days.

ORBITAL DATA:

	Nominal	Flight
Mean Altitude (NM)	2002	2007
Eccentricity	.00020	.00083
Period (Min)	167.78	167.89
Inclination Angle (Deg)	88.33	88.27

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PROGRAM 206

[redacted]

MISSILE: SV 952/SO1A 4701/SLV III/212D
LAUNCHED: 1230:18 PDT, 6 September 1963
COUNTDOWN HISTORY:
The countdown was initiated at 0055 PDT, 6 September 1963. There were two holds imposed. Hold No. 1 was called during Task 16 due to an SO1A AGE helium leak. The leak was repaired and duration of hold was 22 minutes. Hold No. 2, during Task 19, was called to allow horizon sensor targets to cool. Its duration was 21 minutes. Other problems were:

a. Countdown loop communications system between ground guidance station and blockhouse was intermittent.
b. Delay was encountered to allow cooling of SO1A helium and guidance gas spheres
c. Mechanical difficulties installing an SLV III battery.
d. During SLV III commit test an out of spec. voltage transient was experienced on transfer to internal power.

LIFTOFF:
Liftoff was normal, but pad flame bucket received excessive erosion damage. Other pad damage was nominal.

FLIGHT PERFORMANCE:
All primary and secondary launch objectives were met. A table of significant events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	138.61	135.80
SECO	270.29	266.24
VECO	287.61	285.12
Separation	290.11	287.68
SO1A Ignition	367.84	362.57
SO1A Cutoff	606.98	605.0

AIRBORNE SYSTEMS PERFORMANCE:
SLV-III - All booster functions were successfully executed. Loss of sustainer control bottle pressure caused decay of engine tank pneumatic regulator pressure 8.1 seconds after SECO. This pressure decay caused vernier engine thrust chamber pressure decay over final 11 seconds of vernier solo. Cause of this performance is under investigation.
SO1A - Agena performance was satisfactory in all systems.
SATELLITE VEHICLE - All systems functioned normally to separation. 11.8 seconds after separation the OCV developed a severe guidance gas leak. The stabilization system was able to maintain stability, in spite of the leak, until gas depletion.

ORBITAL DATA:

	NOMINAL	ACTUAL
Perigee	95.3 nm	102.0 nm
Apogee	165.2 nm	165.0 nm
Eccentricity	.00978	.0089
Period	89.186 min	89.17 min
Inclination	94.212°	94.36°

CONTROL NO: 6595-63-3901

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PROGRAM 206
FTV #3

[redacted]

MISSILE: SV 953/S-01A 4703/SLV III 224D
LAUNCHED: 1159:27 PDT, 25 October 1963

COUNTDOWN HISTORY:
Launch was accomplished on the first attempt. The countdown was initiated at 0110 PDT, 25 October 1963 and proceeded to liftoff with no holds or delays. The following minor problems occurred:

a. In Task 4, it was necessary to rewind the S-01A orbital programmer.
b. Pad AGE developed a guidance gas leak in Task 16.
c. During the count, Southern Pacific Railroad derailed some cars at Lompoc spur causing some concern about railroad traffic.

LIFTOFF:
Liftoff was normal. Pad damage nominal.

FLIGHT PERFORMANCE:
All primary and secondary launch objectives were met. A table of significant events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	138.851	135.52
SECO	276.587	273.48
VECO	292.879	290.6
Separation	295.436	293.6
S-01A Ignition	376.744	368.2*
S-01A Cutoff	617.772	610.5*

* D Timer started 8 seconds early by SLV III discrete.

AIRBORNE SYSTEMS PERFORMANCE:
SLV-III: All booster functions were accomplished successfully. Discrete and guidance steering commands were received and properly executed. Phase I steering commands were transmitted, but intentionally inhibited in the SLV programmer.
S-01A: All S-01A subsystems performed normally during launch and ascent to yield a nominal orbit injection and satisfactory orbital behavior.
SV: TM data showed the SV to be operating properly throughout the launch and ascent phase. The SV orbital behavior after separation was entirely as planned.

ORBITAL DATA AT INJECTION:

	NOMINAL	ACTUAL
PERIGEE	87.72	78.2 nm
APOGEE	175.61	183 nm
ECCENTRICITY	0.0123	0.0147
PERIOD	89.24	88.97 min
INCLINATION	98.95 deg	99.1 deg

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CONTROL NO. 6595-63-4736

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Downgraded At Three Year Intervals;
Declassified After Twelve Years,
DOD Directive 5200.10

Atlas Agena. [redacted] Copy #3

PROGRAM 206
FTV #4

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MISSILE: SV 954/SOLA 4802/LV3 227D
LAUNCHED: 1345:30.65 PST, 18 December 1963
COUNTDOWN HISTORY:
Launch was accomplished on the third attempt. Two attempts were aborted on preceding two days. STC called the first abort after an SV TLM anomaly. The second abort was called due to a suspected LV3 vernier bleed valve open condition. On the third attempt, a hold was called when the LV3 developed a LOX leak in the supply line in the Vernier #1 engine system. An emergency crew went to the pad after LOX was drained and retorqued a fitting, after which the leak was not detected. The countdown then was continued to liftoff.
LIFTOFF:
Normal liftoff and pad damage.
FLIGHT PERFORMANCE:
All primary and secondary launch objectives were met, with the exception of those noted hereafter. A table of events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	138.06	138.05
[illegible] TIMER START	268.22	272.34
SECO	274.11	271.17
FECO	290.21	286.93
SEPARATION	292.78	290.46
SOLA IGNITION	363.5	367.44
SOLA CUT OFF	602.5	608.33

[illegible] SYSTEMS PERFORMANCE:
SLV-III: No booster anomalies were noted. Steering was enabled during booster [illegible] for the first time. A limited number of steering commands were observed. [illegible] were generated by MRK II Guidance properly.
SOLA: All functions were performed normally with the exception of achieving a [illegible] approximately 17 N.M. lower than predicted.
ST: The SV lifted off with the following TM measurements not functioning:
2-14-27 YAW ACA Output
2-16-8 Temperature liner
SCO bases 7 and 8, all BUSS TM
ST/Agena separation occurred nominally and all subsystems were operational [illegible] from VTS, with the exception of that portion of the TM subsystem noted.
ORBITAL DATA AT INJECTION:

	NOMINAL	ACTUAL
PERIGEE (N.M.)	91.8	[illegible]
APOGEE (N.M.)	151.3	151.[illegible]
ECCENTRICITY	0.00835	0.[illegible]
PERIOD (MIN)	88.86	88.33
INCLINATION ANGLE (DEG)	97.71	97.83

Control No. 6595-63-5786

Downgraded At [illegible] Year Intervals
Declassified After Twelve Years,
DOD Directive 5200.10

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PROGRAM 206
FTV #5

MISSILE: SV 955/SOLA-4803/LV3A-285D
LAUNCHED: 1059:47 PST, 25 February 1964
COUNTDOWN HISTORY:
First attempt to launch this vehicle on 30 January 1964 was aborted at T-10 minutes because of an intermittent pitch gyro fine rate TLM signal. Post abort testing revealed an intermittent functional failure in this circuit. The SV and SOLA were both recycled to the MAB. The launch countdown on 25 February 1964 proceeded with no serious delays. Improper operation of the velocity meter counter AGE and an additional warm up time requirement by the SOLA V/M oven were responsible for a 65 minute extension to Task 5. Proper V/M readings were obtained after executing AGE repair.

LIFTOFF:
The liftoff was normal. The pad damage was nominal.
FLIGHT PERFORMANCE:
All primary and secondary launch objectives were met. A table of events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
SECO	138.15	135.5
D TIMER DISCRETE	265.00	264.9
SECO	271.37	268.5
VECO	288.30	282.8
SEPARATION	293.40	288.8
S-01A IGNITION	359.01	359.0
S-01A ENGINE CUTOFF	599.22	601

AIRBORNE SYSTEMS PERFORMANCE:
LV3A: No booster anomalies were noted. Discrete and guidance steering commands were received and properly executed.
SOLA: All SOLA subsystems functioned normally with the following exceptions:
Fuel Tank Pressure was 25 psig high.
Magnetometer temperature was 26° low.
Battery consumption was 47 amp hours high.
These measurements were considered acceptable for launch. The systems operated properly on orbit.

ORBITAL DATA:

	NOMINAL	ACTUAL
APOGEE (N.M.)	126.639	122.4
PERIGEE (N.M.)	95.632	95.1
ECCENTRICITY	0.00437	0.0039
PERIOD (MIN)	88.471	88.33
INCLINATION ANGLE (DEG)	95.795	95.6

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DOWNGRADED AT 12 YEAR INTERVALS; [redacted] DECLASSIFIED. DOD DIR 5200.10

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6595-64-1067

PROGRAM 206
FTV No. 6

MISSILE: SV 956/SO1A-4804/LV IIIA 296D
LAUNCHED: 1214:24 PST, 11 March 1964
COUNTDOWN HISTORY:
The countdown was initiated at 0400 PST. All tasks proceeded normally except Task 19, which imposed an hour and fourteen minutes hold. The hold, initiated at T-10 minutes was due to the inability of VTS to load commands into the SV. It was found to be a VTS problem, was corrected and the countdown proceeded to liftoff without further incident.

LIFTOFF: The liftoff was normal. The pad damage was light.

FLIGHT PERFORMANCE: All primary and secondary launch objectives were met. A table of events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	138.21	137.56
D TIMER DISCRETE	266.51	267.23
SECO	271.53	269.69
VECO	288.31	288.46
SEPARATION	290.91	288.92
SO1A IGNITION	360.51	361.30
SO1A ENGINE CUTOFF	604.89	*

*Data not yet available.

AIRBORNE SYSTEMS PERFORMANCE:
LV 3A - All systems performed normally and all discrete and steering commands were received and properly executed. There were two anomalies that could have been catastrophic. They were:

a. Out of band high temperature readings in B1 area of booster thrust section.
b. Sharp drop in control Helium bottle pressure at a time corresponding to Agena separation.

SO1A - Data from downrange ship is not available to analyse Agena systems at this time. Rev 1 ephemeris and SV guidance gas, however, indicate normal Agena operation and SV/SO1A separation.
SV - All SV systems operated in an outstanding manner.

ORBITAL DATA:

	NOMINAL	ACTUAL
APOGEE (N.M.)	126.635	126.2
PERIGEE (N.M.)	95.59	99.6
ECCENTRICITY	.0043	.0050
PERIOD (MIN)	88.47	88.41
INCLINATION ANGLE (DEG)	95.646	95.689

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DOWNGRADED AT 12 YEAR INTERVALS; [redacted] DECLASSIFIED.

PROGRAM 206
FTV No. 8

ISSILE: SV 958/SO1A-4806/LV III 350D
LAUNCHED: 1221:14 PDT, 19 May 1964, PALC II, Pad 3
COUNTDOWN HISTORY:
The countdown was initiated at 0515 PDT and was interrupted during LV III loop test for replacement of the rate beacon cannister. Two holds were imposed. The first was to allow some back work to catch up; the second was a Range Safety hold for anticipated trains between 1145 and 1206 hours. During the second hold, a reverification of the SV command acceptance and a dry LV III loop test were conducted.

LIFTOFF: The liftoff was normal and pad damage was nominal.

FLIGHT PERFORMANCE: All LV III and SV primary launch objectives were met. All secondary objectives were met. The SO1A failed to maintain the SO1A/SV attitude through SV separation and failed to place the SO1A/SV combination in a specified orbit. A table of events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	137.9	136.1
D TIMER DISCRETE	272.1	273.1
SECO	275.7	274.1
VECO	293.0	291.1
SEPARATION	295.5	293.3
SO1A IGNITION	351.2	352.1
SO1A ENGINE CUTOFF	592.3	594.7

AIRBORNE SYSTEMS PERFORMANCE:
LV III - Nominal coast ellipse parameters were obtained. All systems performed normally and all steering commands and discretes were properly acted upon.
SO1A - Engine operation and burn time was normal. Attitude control valve 5 remained open during engine burn, thus depleting the gas supply. The vehicle rolled during engine burn and could not be corrected since the gas was exhausted. Vehicle roll caused the engine to respond improperly to pitch and yaw signals, thus yielding a bad orbit.
SV - All systems were functioning normally at separation. Shortly thereafter, however, the stabilization system and command system experienced intermittent malfunctioning.

ORBITAL DATA:

	NOMINAL	ACTUAL
APOGEE (NM)	240.4	190.3
PERIGEE (NM)	82.2	57.3
ECCENTRICITY	.0177	.0192
PERIOD (MINUTES)	89.9	88.2
INCLINATION (DEGREES)	100.94	101.0

PROGRAM 206
FTV No. 9

MISSILE: LV III 352D/SOLA-4807/SV 959
LAUNCHED: 1151:18 PDT, 6 July 1964, PALC II Pad 3
COUNTDOWN HISTORY:
The countdown was initiated at 0510 PDT and proceeded to liftoff with no serious discrepancies. Some time delays were encountered when Vandenberg Tracking Station was unable to support the operation at the prescribed time, and difficulty was experienced while loading the SV BUSS gas. These time delays ultimately caused a 40 minute hold at T-15 minutes and a 2 minute hold at T-5 minutes to allow tasks to be completed.

The BUSS gas loading was not accomplished to the desired mass. The desired tank pressure was attained, but landlines indicated 42°F above ambient, resulting in less mass being loaded. The parameter was waived by the Program Director.

LIFTOFF: The liftoff was normal and pad damage was nominal.

FLIGHT PERFORMANCE: All primary and secondary launch objectives were met. A table of contents is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	137.99	137.23
D TIMER DISCRETE	264.70	266.53
SECO	273.54	273.5
VECO	290.90	289.0
SEPARATION	293.76	291.0
SOLA IGNITION	337.7	339.5
SOLA ENGINE CUTOFF		581.1

AIRBORNE SYSTEMS PERFORMANCE:
LV III - All systems performed normally. Specified coast ellipse parameters were achieved.
SOLA - The SOLA performance was nominal for all systems. The selected orbit was achieved.
SV - All SV Systems operated normally through the ascent phase.

ORBITAL DATA:

	NOMINAL	ACTUAL
APOGEE (NM)	85.0	84.2
PERIGEE (NM)	179.18	179.7
ECCENTRICITY	.0133	.0133
PERIOD (MINUTES)	89.25	89.30
INCLINATION ANGEL (DEG)	93.00	93.06

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PROGRAM 206
FTV NO. 10

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MISSILE: SLV III 7101/SO1A 4608/SV 960/P-11 #4202
LAUNCHED: 1500:13.53 PDT, 14 August 1964, PALC II, Pad 4

COUNTDOWN HISTORY:

The countdown was initiated at 0515 PDT. Difficulty in loading green messages extended Task 5 until 0740 PDT, at which time the countdown was scrubbed. Subsequent trouble-shooting indicated a multipath transmission problem and ACE operating errors. The vehicle integrity was verified and the countdown was re-opened at 0843 PDT. Three holds were imposed. The first, at T-15, was to allow work to catch up, and was 28 minutes in duration. The second hold, at T-10 lasted 39 minutes and was called to allow a power line to be disconnected that runs adjacent to the flame bucket. The third hold, at T-4, was to allow behind work to be completed and lasted only 2 minutes.

LIFTOFF:

The liftoff was normal. This was the first launch from this pad, and pad damage was nominal.

FLIGHT PERFORMANCE:

All primary and secondary launch objectives were met. A table of ascent events is as follows:

EVENT	T+SECONDS (NOMINAL)	T+SECONDS (ACTUAL)
BECO	133.2	132.3
D TIMER DISCRETE	264.5	268.0
SECO	269.9	273.2
VECO	288.7	287.3
SEPARATION	291.5	290.3
SO1A IGNITION	337.5	341.3
SO1A ENGINE CUTOFF	590.9	

AIRBORNE SYSTEMS PERFORMANCE:

SLV III - All systems operated satisfactorily. Specified coast ellipse parameters were achieved. This was the first SLV III space booster launch.

SO1/A - All subsystems functioned normally and yielded the desired orbit.

SV - An ascent discrepancy was noted in the closure time of the barometric switch, but it did not effect the mission or any other systems. All SV systems functioned normally through ascent.

P-11 - The unit performed satisfactorily.

ORBITAL DATA:

	NOMINAL	ACTUAL
PERIGEE (NM)	84.2	84.9
APOGEE (NM)	171.3	175.1
INCLINATION ANGLE (DEG)	95.5	95.5
ECCENTRICITY	.0122	.0126
PERIOD (MIN)	89.04	89.16

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DOWNGRADED AT 12 YEAR INTERVALS: [redacted]
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