

Duck Tail
75-1-1
28 Sept 63

Cy # 1

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PROGRAM 435/II

MISSILE: Thor 375/AbleStar 013

LAUNCHED: 1322 PDT, 28 September 1963, 75-1 Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0240 PDT on 28 September 1963. Two holds totaling 92 minutes duration were imposed for trains in the hazard area.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO	149.5	148.2
1st Ignition, Stage II	152.5	151.6
Separation	153.4	152.3
VECO	158.5	160.9
1st Burnout, Stage II	453.0	443.2
2nd Ignition, Stage II	2304.6	2302.8
2nd Burnout, Stage II	2312.0	2310.9
Payload Separation	2412.0	Not Available

2. Both Thor and AbleStar airborne systems performed satisfactorily.

3.	<u>Predicted</u>	<u>Actual</u>
MECO Inertial Velocity	12,904 fps.	13,129 fps
Final Inertial Injection Velocity	23,971 fps	24,034 fps
Apogee	599.6 n.m.	609.3 n.m.
Perigee	599.5 n.m.	579.2 n.m.
Period	107 min	107 min
Inclination Angle	89.9 deg	89.9 deg

AEROSPACE GROUND EQUIPMENT PERFORMANCE

Both Thor and AbleStar AGE performed satisfactorily.

REMARKS

This was the first AbleStar to be launched at PMR and the first known use of a nuclear power supply as a primary power source for a satellite.

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6595-63-4776

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PROGRAM 435/II

MISSILE: Thor 385/Able Star 015

LAUNCHED: 1351 PST, 5 December 1963, 75-1, Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0225 PST on 5 December 1963. A hold of ten minutes was preplanned for terminal count. The first hold of five minute duration occurred at the beginning of Phase 1 when the input circuit breaker to the missile and GSE power supply failed to lock in. The second hold of five minutes occurred at the beginning of Phase 5 when personnel were sent to the pad to insure that the launch pins were retracted.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO	146.38	145.37
1st Ignition, Stage II	149.40	148.36
Separation	150.34	149.25
VECO	155.38	158.75
1st burnout, Stage II	453.375	449.30
2nd ignition, Stage II	2324.2	Nominal
2nd burnout, Stage II	2331.6	Nominal
Payload separation	2432.4	Not Available

2. Both Thor and Ablestar Airborne Systems performed satisfactorily.

	<u>Predicted</u>	<u>Actual</u>
3. MECO inertial velocity	12,900 fps	13,017 fps
Apogee	600± 50 n.m.	601 n.m.
Perigee	600± 50 n.m.	574 n.m.
Period	107 min	107 min
Inclination angle	90.0±0.50°	89.96°

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Both Thor and Ablestar AGE performed satisfactorily.

REMARKS:

This was the second Ablestar to be launched at PMR. The nuclear power supply and all orbital systems are operating satisfactorily.

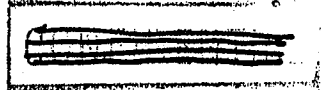
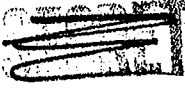
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PROGRAM 435/II

MISSILE: Thor 379/Able Star 014

LAUNCHED: 1050 21 April 1964, 75-1, Pad 1

COUNTDOWN HISTORY:

First Attempt: The countdown was initiated at 0025 PST on 21 April 1964. A three minute hold was initiated at T-2 minutes to evaluate Ablestar batteries. After release of the hold the countdown proceeded normally to liftoff.

FLIGHT PERFORMANCE:

	<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1.	MECO	146.55	147.27
	1st Ignition, Stage II	150.53	151.23
	Separation	150.59	151.31
	VECO	159.55	160.17
	1st burnout, Stage II	453.94	456.10
	2nd ignition, Stage II	2324.5	Not Available
	2nd burnout, Stage II	2332.0	Not Available
	Payload separation	2432.5	Not Available

2. The Thor Airborne System performed satisfactorily. Ablestar Airborne Systems performed satisfactorily.

After liftoff the WECO Guidance Station lost lock due to a procedure error. The Guidance Exerciser normal switch was left in the "normal" position. This resulted in erroneous guidance commands being transmitted to the Thor. Orbit was not attained.

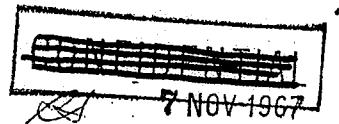
	<u>Predicted</u>	<u>Actual</u>	
3.	MECO inertial velocity	12,823	12,470
	Apogee	599.96	N/A
	Perigee	599.96	N/A
	Period	107.04	N/A
	Inclination Angle	90.00	N/A

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

Thor AGE performed satisfactorily. The Fuel Safety Pressure switch in the Ablestar AGE opened at 125 psi instead of 165 psi which necessitated tanking at a lower pressure and thus increasing tanking time. Other Ablestar AGE performed satisfactorily.

REMARKS:

This was the third Ablestar to be launched at PMR.



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MISSILE: SILV-2 No. 423 and SS-03 No. 016

LAUNCHED: 1004:21.25 PDT, 6 October 1964, Complex 75-1-2

LAUNCH CONTROLLERS: Capt Haber and Capt Sanders

COUNTDOWN HISTORY: The countdown was initiated at 2344 PIT on 5 Oct 1964, and proceeded to liftoff with no holds.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO (Fuel Depletion)	146.29	146.94
Separation Command (TVS)	150.21	150.76
SS-03 Engine Ignition (10% Pc)	150.36	150.87
Engine Shutdown Command	450.63	454.73

2. Both Thor and Able Star Airborne Systems performed satisfactorily.

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
3. MECO Inertial Velocity (fps)	12,711	12,935
1st Injection Inertial Velocity (fps)	25,661	25,821
2nd Injection Inertial Velocity (fps)	23,969	Not Available
Apogee (nm)	600.65	590
Perigee (nm)	599.66	580
Period (nm)	107.05	106.6
Inclination Angle (deg)	90.00	89.97
Agena Orbital Weight (lbs)	1766	1778

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

1. During Task 7 (Guidance, Flight Control, and RF Checks) the S2 and S3 monitors remained on after NSC (No Sequence Command) was sent. This was caused by a DAC cable malfunction.

2. In Task 11 (Able Pressurization System Checks) the nitrogen checkout tube trailer was low in pressure. The trailer was replaced without any difficulty.

3. During Task 13 (Terminal Countdown) after caging the Able Star gyros and depressing the "Switch the Steering To Thor" light, the DAC launch monitor console light "Steering to Booster" did not light. Phases II proved that the steering was in the correct position (Thor Mode).

REMARKS: This is the fourth Able Star launch from the AF Western Test Range and the first launch from Complex 75-1, Pad 2.

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Control No. WZDE 4-6

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PROGRAM 435/II

MISSILE: SLV-2 No. 427 and SS-03 No. 017

LAUNCHED: 1608:10.21 PST, 12 Dec 1964, Complex 75-1, Pad 2

LAUNCH CONTROLLERS: Capt Sanders and Lt Franklin

COUNTDOWN HISTORY:

First Countdown: The first countdown was initiated at 1800 PST on 9 December 1964 but was cancelled at 0427 PST on 10 December 1964 due to trains in the launch hazard corridor during the entire scheduled launch window.

Second Countdown: The second countdown was initiated at 0548 PST on 12 December 1964 and proceeded to liftoff with no holds being imposed.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO(LOX Depletion)	147.92	148.41
Separation Command (TVS)	151.87	152.30
SS-03 Engine Ignition (Pc=20 psi)	151.99	152.42
Engine Shutdown Command	449.83	446.32
2. Both Thor and Able Star Airborne Systems performed satisfactorily.		

<u>Event</u>	<u>Predicted</u>	<u>Actual</u>
3. MECO Inertial Velocity (fps)	12795	12775
1st Injection Inertial Velocity (fps)	25489	25691
Apogee (nm)	570 ±50	582.9
Perigee (nm)	570 ±50	557.2
Period (min)	105.85	106.32
Inclination Angle (deg)	90.0 ±.5	89.99
Eccentricity	0	.0032

AEROSPACE GROUND EQUIPMENT PERFORMANCE: There were no AGE problems encountered during the countdown.

REMARKS: This is the fifth Able Star launch from the AF Western Test Range and the second from Complex 75-1, Pad 2.

Control No. WZDF 5-12

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PROGRAM 783/II

MISSILE: SLV-2 No. 440 and SS-03 No. 018

LAUNCHED: 0539:59.46 PST, 11 March 1965, Complex 75-1, pad 1

LAUNCH CONTROLLERS: Capt Haber & Lt. Franklin

COUNTDOWN HISTORY: The countdown was initiated at 1955 PST on 10 March 1965 and proceeded to liftoff with no holds being imposed.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO (Lox Depletion)	149.80	149.67
Separation Command (TVS)	153.75	153.52
SS-03 Engine Ignition (20 psi)	153.85	153.65
Engine Shutdown Command	452.92	447.69

2. Both Thor and Ablestar airborne systems performed satisfactorily through first injection. However, a malfunction in the Ablestar resulted in an unspecified orbit.

<u>Event</u>	<u>Predicted</u>	<u>Actual</u>
3. MECO Inertial Velocity (fps)	12,818	13,131
Injection Inertial Velocity (fps)	24,034	Not Available
Apogee (nm)	578	562
Perigee (nm)	578	108
Period (min)	106.00	97.07
Inclination Angle (deg)	90.00	90.07
Eccentricity	Circular	.06008

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

1. Task 5 (Booster destruct checks) was extended 30 minutes due to and indicated low SLV-2/SS-03 destruct battery voltage. A replacement battery also gave abnormally low readings. The problem was attributed to an erroneous battery voltage reading at the O & C (Operations & Control) console.

2. In Task 12 noise developed on the terminal countdown net. ITT/Kellogg repaired the system sufficiently to allow use of the net during the terminal countdown.

REMARKS: This is the sixth Ablestar launched from Vandenberg Air Force Base and the fourth launch from Complex 75-1, Pad 1.

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Control No. VWZDE 5-24

~~CONFIDENTIAL~~MISSILE: SLV-2 No. 447 and SS-03 No. 019LAUNCHED: 1535:29.41 PDT, 24 June 1965, Complex 75-1, pad 1LAUNCH CONTROLLER: Capt HaberCOUNTDOWN HISTORY: The countdown was initiated at 0533 PDT on 24 June 1965 and proceeded to liftoff with one hold imposed at T-16 minutes for seven minutes to adjust the countdown to launch at optimum liftoff time.FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO (Lox Depletion)	148.77	150.34
SS-03 Engine Start Signal (FS-1)	151.80	153.26
Separation Complete	152.70	154.40
Engine Shutdown (SECO I)	457.50	450.22
2. Both Thor and Ablestar airborne systems performed satisfactorily.		

<u>Event</u>	<u>Predicted</u>	<u>Actual</u>
3. MECO Inertial Velocity (fps)	12,777	13,078
1st Injection Inertial Velocity (fps)	25,581	25,580
Apogee (nm)	622	612
Perigee (nm)	581	558
Period (min)	107	105.3
Inclination Angle (deg)	90	89.29

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

1. In task 8, Douglas was unable to zero the temperature readout meter on the fuel storage tank. Temperature readings were taken with a thermometer.
2. In task 10, a Space General flowmeter malfunction was experienced.

REMARKS: This is the seventh Ablestar launched from Vandenberg Air Force Base and the fifth launch from Complex 75-1, Pad 1.

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Control No. VWZDE 5-47

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Program 783/II - Launch Summary

27 AUG 1965

MISSILE: SLV-2 No. 455 and SS-03 No. 020

LAUNCHED: 1511:24.24 PDT, 13 August 1965, Complex 75-1, Pad 1

COUNTDOWN HISTORY: The countdown was initiated at 0510 PDT on 13 August 1965 and proceeded to liftoff with no holds imposed. However, the countdown clock was held for one minute to adjust the scheduled launch time to the optimum time requested by the mission director.

FLIGHT PERFORMANCE:

<u>Event</u>	<u>Predicted Time</u>	<u>Actual Time</u>
1. MECO (lox Depletion)	149.38	149.39
SS-03 Engine Start Signal (FS-1)	152.4	152.37
Separation Complete	153.99	154.08
Engine Shutdown Command	453.56	442.70
2. Both Thor and Ablestar airborne systems performed satisfactorily.		
3. Apogee (nm)	641	642
Perigee (nm)	590	601
Eccentricity	.006	.005
Inclination Angle (Deg)	90.01	90.00

AEROSPACE GROUND EQUIPMENT PERFORMANCE:

1. Reception of a test liftoff signal was not verified at payload Building 51. After repairs were made by Federal Electric, proper reception of the signal was verified by all stations.

2. VCO calibration data was erroneously reported as not received at the Point Arguello Telemetry Station. Proper reception was later verified.

REMARKS: This is the eighth Ablestar launched from Vandenberg Air Force Base and the sixth launch from Complex 75-1, Pad 1.

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Control No. VWZDE 5-5