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Apollo 12.



JOHN F. KENNEDY
SPACE CENTER

TCP NO.	V-20060
REVISION	015
DATE	AS-507 & SUBS
EFFECTIVITY	OCTOBER 27, 1969



**RELEASED
FOR AS 507**

LAUNCH VEHICLE OPERATIONS FOR
SUPPORT OF SPACE VEHICLE COUNTDOWN
DEMONSTRATION TEST AND LAUNCH COUNTDOWN

VOLUME I OF III

ASSEMBLED FOR CD

Prepared For
LAUNCH VEHICLE OPERATIONS

Prepared By
THE BOEING COMPANY
ATLANTIC TEST CENTER
SATURN V-LAUNCH OPERATIONS

**THIS TCP CONTAINS
HAZARDOUS OPERATIONS**

TCP NO V-20060
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VOLUME I OF III

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HAZARDOUS OPERATIONS**

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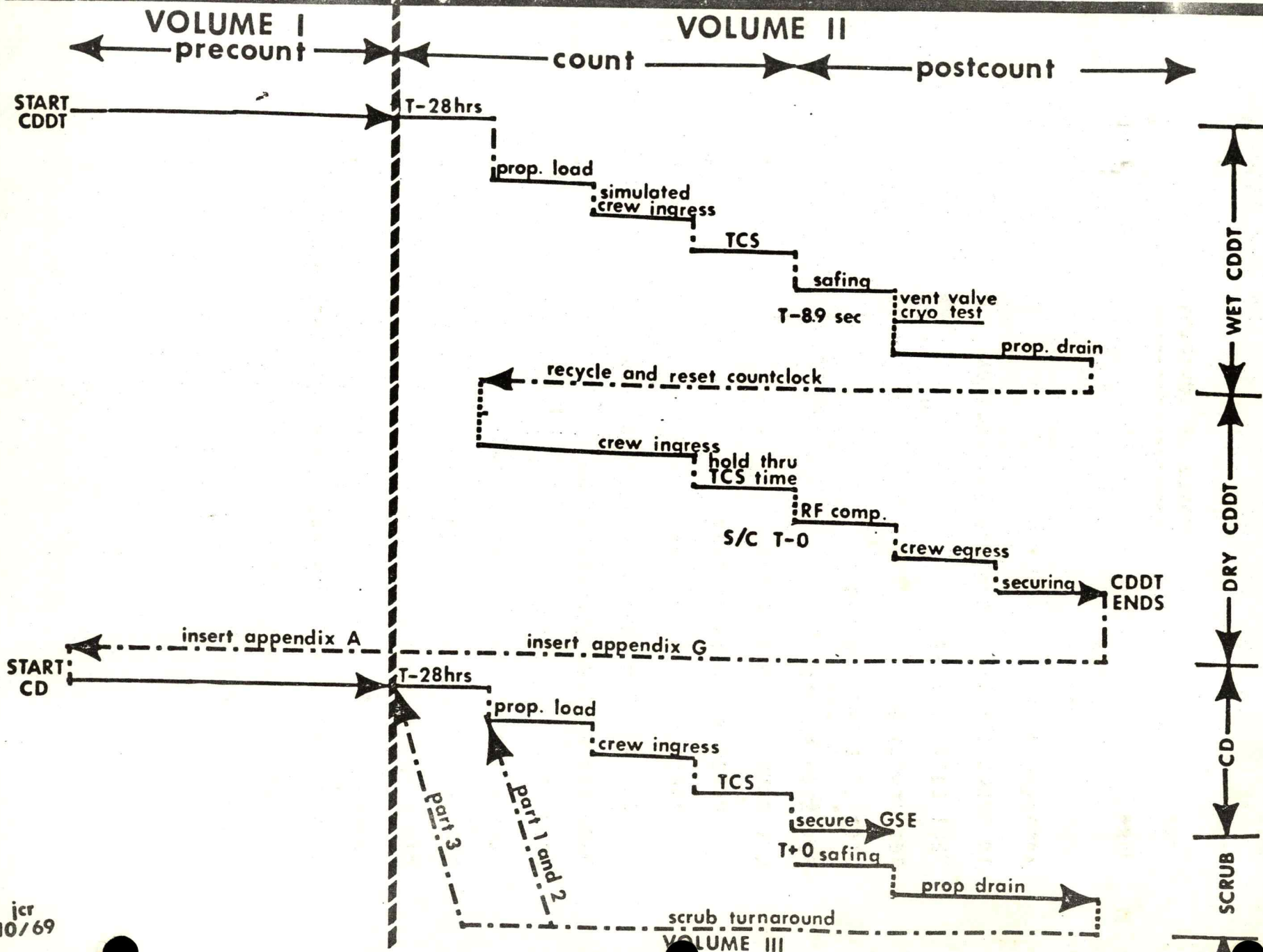
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 LVO Test Conductor

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V-20060

CDDT & COUNTDOWN PROCEDURE



LV CDDT & CD, VOL. I
DATE: OCT 13 1969
REVISION: 013

APOLLO/SATURN
LAUNCH OPERATIONS

PAGE: 5251.60
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VEHICLE: AS-507

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10/69

INTRODUCTION
COUNTDOWN DEMONSTRATION TEST & COUNTDOWN
VOLUME I OF III
PRECOUNT PROCEDURE

THIS LAUNCH VEHICLE TEST CHECKOUT PROCEDURE IS A TIME SEQUENCE OF OPERATIONS REQUIRED TO PUT THE LAUNCH VEHICLE IN APPROXIMATELY A ONE-DAY-PRIOR-TO-LAUNCH CONFIGURATION.

LAUNCH VEHICLE TEST AND CHECKOUT PERSONNEL WILL USE THIS PROCEDURE AS THE OFFICIAL DOCUMENT FOR LAUNCH VEHICLE OPERATIONS. THIS DOCUMENT IS ONE OF FIVE RELATED DOCUMENTS USED DURING LAUNCH OPERATIONS. THE OTHER FOUR DOCUMENTS ARE:

1. SPACECRAFT COUNTDOWN PROCEDURE K-0007
2. LUNAR MODULE COUNTDOWN PROCEDURE KL-007
3. SPACE VEHICLE COUNTDOWN PROCEDURE (INCLUDES INFORMATION TO DIRECT INTERFACE OPERATIONS AMONG LAUNCH VEHICLE, SPACECRAFT, SUPPORT AND RANGE),
V-40310 (CDDT ONLY)
V-40300 (CD ONLY)
4. APOLLO/SATURN V LAUNCH MISSION RULES -
AS-507 K-V-05.10/7

IN ADDITION, UNDER EMERGENCY CONDITIONS SPECIFIED THEREIN, THE SATURN V LAUNCH VEHICLE EMERGENCY PROCEDURE, V-20056, WILL BE USED.

CDDT AND COUNTDOWN PROCEDURE EXPLANATION

THE CDDT/CD WILL BE TREATED AS ONE PROCEDURE BUT WILL BE PUBLISHED SEPARATELY AS FOLLOWS:

IN THE ISSUE RELEASED FOR CDDT, THE PAGES HAVING A STEP UNIQUE TO COUNTDOWN WILL BE CONTAINED IN APPENDIX A. SUCH PAGES WILL HAVE A COUNTERPART PAGE IN THE PROCEDURE MARKED "CDDT ONLY". THIS ISSUE OF THE PROCEDURE WILL BE PROMINENTLY MARKED ON THE FRONT COVER "ASSEMBLED FOR CDDT".

FOLLOWING CDDT, THE "CDDT ONLY" PAGES WILL BE REMOVED, THE "CD ONLY" PAGES WILL BE INSERTED, ALL APPROVED PERMANENT PROCEDURE CHANGES WILL BE INCORPORATED, THE PROCEDURE REVISION NUMBER WILL BE RAISED ONE DIGIT, THE FRONT COVER WILL BE PROMINENTLY MARKED "ASSEMBLED FOR CD" AND THE PROCEDURE WILL BE REPUBLISHED AND REDISTRIBUTED.

THE "ASSEMBLED FOR CD" VERSION WILL NOT BE DISTRIBUTED UNTIL 4 CALENDER DAYS PRIOR TO THE START OF CD TO AVOID THE RISK OF HAVING THE TWO PROCEDURES CONFUSED.

PAGES WITH BLACK BARS ARE TO BE USED ONLY DURING THE COUNTDOWN DEMONSTRATION TEST.

PAGES WITH BLACK DIAMONDS ARE TO BE USED ONLY DURING THE LAUNCH COUNTDOWN.

* INDICATES INFORMATION UNIQUE TO CDDT

INDICATES INFORMATION UNIQUE TO LAUNCH CD

INTEGRATED TCP INTERFACE

THE SYMBOL TCPI FOLLOWING CERTAIN SEQUENCES IN THIS PROCEDURE, IDENTIFIES THOSE SEQUENCES AS BEING A DIRECT INTERFACE WITH OTHER TCP'S WHICH ARE USED DURING THIS TEST. BOTH THE WORDING OF THE SEQUENCE AND ITS LOCATION IN THE PROCEDURE ARE PART OF THIS INTERFACE. IF CHANGES TO THESE SEQUENCES BECOME NECESSARY, COORDINATION WITH THE ORGANIZATION WHOSE TCP IS AFFECTED IS REQUIRED.

KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEETPAGE 1 OF 4

1. TEST TITLE

Launch Vehicle Operations in Support of Space
Vehicle Countdown Demonstration and Countdown2. KSC TEST NUMBER
V-200603. EFFECTIVITY
AS-507 & Subs

4. TEST OBJECTIVES

- CDDT 1. To demonstrate the time phasing of the sequences necessary to prepare the launch vehicle for launch.
2. To verify that the launch vehicle and the ground support equipment are in launch status.
3. To demonstrate the ability to safe and drain the launch vehicle.
- CD 1. To accomplish the operations required to prepare the launch vehicle for launch.
2. To launch the space vehicle.

5. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION

THIS TEST ☒ DOES ☐ DOES NOT CONTAIN HAZARDOUS OPERATIONS.It is classified as a
test or operation.

Hazards include propellant transfer, ordnance installation and connection, equipment pressurization, hazardous environmental conditions, radiation hazard, swing arm pressurization, engine gimbaling and heavy equipment movement.

With the Space Vehicle on the pad, all tests must have been completed.

Test and Checkout Procedure Description

The basic procedure is written for CDDT. Insert pages are provided in appendicies to convert the CDDT procedure to a CD procedure. It is divided into three volumes.

Volume I operating steps will cover launch vehicle operations through spacecraft cryogenic loading.

Volume II operating steps will include launch vehicle operations from the completion of spacecraft cryogenic loading through the terminal count sequence. Appendicies will include:

- a) Safing Procedures
- b) Recycle Procedure
- c) Drain Operations
- d) Contingency Procedures
- e) Pad Access During Hazardous Operations
- f) Reconfiguration for Dry CDDT, Dry CDDT and LV Securing from Dry CDDT

Volume III operating steps will include operations necessary to prepare the launch vehicle for another window after a scrubbed launch attempt.

PRIOR REVISIONS TABULATED ON PAGE 4

H	10/6/9	VOLUME III DESCRIPTION TO INCLUDE 2 DAY SCRUB-TURNAROUND. UPDATE TEST REQUIREMENTS.		<i>John C. Doherty</i> 10/5/9	<i>Frank R. Ryan</i> 10/15
6. REV.	DATE	REASON		Contractor Approval	KSC Approval
7. CONTRACTOR APPROVAL		8. ORGANIZATION		9. DATE	
s/J. C. Doherty		BATC 5-8553		9/24/68	
10. NASA-KSC APPROVAL		11. ORGANIZATION		12. APPROVAL DATE	
s/I. A. Rigell		LV-ENG		10/28/68	

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE <u>2</u> OF <u>4</u>
1. TEST TITLE Launch Vehicle Operations in Support of Space Vehicle Countdown Demonstration and Countdown		2. KSC TEST NUMBER V-20060
		3. EFFECTIVITY AS-507 & Subs
13. LOCATION Pad 39	14. COMPUTER PROC. IDENTIFICATION BE-01, BE-02, BT-01, CTC1, CTC2, CTC3, CTC4, CTC5	15. EST. TEST TIME CDDT 138 Hrs; CD 108 Hrs
16. SUPPORT REQUIREMENTS		
SD/RD 40000 SD/RD 40001 Ground Power S-IC Stage Power S-II Stage Power S-IVB Stage Power IU Stage Power	ETR Range Safety KSC Pad Safety Security Police Fire Fighting Medical Propellants DC Power PTCS (All Systems) DTS DEE-3	RCA-110A Computers CM W-G ECS CCF Searchlights DEE-6
17. OTHER APPLICABLE REFERENCE DOCUMENTATION		
L/M Procedure KL-0007 S/V Procedure V-40310 LMRD K-V-05.10	ETR OD 40001 ETR OD 40000	S/C Procedure K-0007 S/V Procedure V-40300 S/V Scrub Turnaround V-40305
18. ITEM CONTINUATION		
(14) FE-05, FT-03, FT-04, FT-05, FT-06, FT-08, FT-10, FT-20, FT-23, FT-25, FT-33, FT-35, FT-37, FT-42, FT-43, FT-45, FT-47, FT-49, FT-55, GT-16, KAOS, KAPW, ME-01, MT-01, NT-60, NT-98, QALS, QAMS, QAPU, QASP, VAED, VALK, VALL, VAMC, VAPX, VATC, VATS, VZ33, VZEA, VZRE, VZSA, WAPO, WASL, WAST, WASV, WATL, XADS, XAPU, XASS, NT99, KAF1, KAG1, XAPS, NU-10, OAES		
(5) <u>Countdown/Countdown Demonstration Comparison</u>		
<p>The wet countdown demonstration will be performed the same as the launch countdown with the following major exceptions: Hypergol cartridges, igniters, initiators, safe and arm devices and exploding bridge wire detonators will be inert; DRSCS test code plugs will be used instead of flight code plugs; the service arm and tail service mast pressure hold test will be performed, service arms 1 & 2 will not be retracted; and astronauts will not enter the spacecraft.</p> <p>The dry countdown demonstration will be the same as the last 3 1/2 hours of the launch countdown with the following major exceptions: LV cryogenic propellants, and the radioisotope thermal generator will not be on board; the primary damper and service arms 1 through 8 will not be retracted; and service arm 9 will be extended and reconnected as soon as the system has stabilized in the park position.</p>		

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)		PAGE 3 OF 4
1. TEST TITLE		2. KSC TEST NUMBER
Launch Vehicle Operations in Support of Space Vehicle Countdown Demonstration and Countdown		V-20060
		3. EFFECTIVITY
		AS-507 & Subs
ITEM CONTINUATION		
(5) <u>Test Description</u> (Countdown Demonstration)		
<u>Volume I</u>		
<p>Launch vehicle operations will include the following major operations: Service arm and tail service mast pressure hold test, propellant tank purging, digital range safety command checks, ordnance installation and connection and functional test (with pulse sensors), propulsion system checks, and propellant utilization system calibration.</p>		
<u>Volume II</u>		
<p>Launch vehicle operations will include the following major operations: Flight battery installation and connection, launch vehicle emergency detection system checks, telemetry radio frequency checks, launch vehicle power transfer test, range safety command checks, guidance system checks, mobile service structure platform opening and move from the pad, propellant dispersion safe and arm device connection, launch vehicle closeout and access door securing and pad evacuation for launch vehicle propellant loading.</p>		
<p>Also included will be launch vehicle cryogenic propellant loading, primary damper retraction, computer programs for automated launch vehicle checks, simulated astronaut ingress and terminal count sequence up to interrupt at time for ignition.</p>		
<p>Launch vehicle safing, drain, and securing operations will be included as will reconfiguration for dry CDDT. Dry CDDT will include operations to simulate the launch vehicle launch configuration at time for closeout crew to leave the mobile service structure parksite, launch vehicle power transfer test, range safety command checks, guidance system checks, propellant dispersion receiver checks, astronaut ingress and service arm 9 disconnect and reconnect. The launch vehicle terminal count sequence will not be run. Launch vehicle securing, radio frequency compatibility test, systems securing, astronaut egress, ground support equipment and launch vehicle securing operations will conclude the CDDT.</p>		
<u>Test Description</u> (Countdown)		
<p>The sequence of operations will be the same as the wet countdown demonstration test except the terminal count will result in launch of the space vehicle. Operations to secure ground support equipment after launch will be included. In the event of a scrubbed launch, cryogenic propellants would be drained prior to use of Volume III.</p>		
<u>Volume III</u>		
<p>Launch vehicle operations for a 24 hour scrub turnaround will include: Service arm 2 and 3 tip extension and retraction, launch vehicle re-entry and closeout, propellant storage tank sampling and fill, launch vehicle tank sampling, verification of S-IC forward umbilical reconnection and preparation for propellant loading starting at T-8:59 hours in Volume II.</p>		

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)

PAGE 4 OF 4

1. TEST TITLE

Launch Vehicle Operations in Support of Space
Vehicle Countdown Demonstration and Countdown

2. KSC TEST NUMBER

V-20060

3. EFFECTIVITY

AS-507 & Subs

ITEM CONTINUATION

- (5) Launch vehicle operations for a 2 day scrub turnaround will include extension and retraction of S/A 2, 3, 6 & 7 tips, MSS move to and from the pad, launch vehicle re-entry and closeout, installation and removal of work platforms and equipment to enable SHe reservicing, propellant tank sampling and fill, launch vehicle tank sampling, verification of S-IC forward umbilical reconnection and preparation for propellant loading starting at T-8:59 hrs in Volume II.

Launch vehicle operations for a 3 day scrub turnaround will include extension of S/A tips, MSS move to pad, launch vehicle re-entry, work platform installation, disconnection of propellant dispersion detonators and confined detonating fuses, connection of pulse sensors, propellant tank sampling and fill, launch vehicle tank sampling, battery removal and systems retests in preparation for resumption of the launch vehicle countdown at the start of Volume II.

Test Requirements, MSFC

LV - TM-010-002-2H; C.2.3.1, C.2.3.2, C.2.3.3, C.2.3.4, C.2.5.1,
B.13.0.1, B.1.8.1.2, B.1.8.1.4, B.1.2.3,
B.1.9.1, B.10.0.1.3, B.10.0.1.4,
B.1.5.1.1, B.1.5.3, B.1.5.3.1, B.1.5.3.4, B.1.6.1.1,
B.1.6.1.2.1, B.1.2.1, B.1.2.2.1, B.1.2.2.2, B.1.2.2.3,
B.1.5.2, B.1.9.2, B.3.0.1, B.12.0.1, C.2.1.1, THRU
C.2.1.9.
S-IC - 66B13618A 4,4.4.3.1,
S-II - SIB 66-1465-7 2.3:3.1, 2.4.2.5.1,
S-IVB - IB 76996 None
IU - 7916404 0.3.4.1.1.1.1, 0.3.5.2.5.2

(6)	<u>Revision</u>	<u>Date</u>			
	A	12/18/68	Pad A, S-IC film camera system, appendicies, computer programs, MSFC requirements.	Doherty/Rigell	12/21/69
	B	1/29/69	Make TCP multiple effective	Doherty/Rigell	2/10/69
	C	4/01/69	Update computer programming	Doherty/ Bryan for Rigell	4/02/69
	D	4/10/69	Include programs WATL and WASL. Update MSFC requirements for AS-506 & Subs.	Doherty/Rigell	5/01/69
	E	6/02/69	Update computer programs and MSFC requirements	Doherty/Rigell	6/09/69
	F	8/06/69	Update computer programs and test description	Doherty/ Bryan for Rigell	8/13/69
	G	9/12/69	Update computer programs and test requirements	Doherty/ Bryan for Rigell	9/19/69

TEST OUTLINE

1. TCP TITLE LV Operations in Support of Manned SV CDDT & CD	2. TCP NUMBER V-20060	3. REV. 001	4. VEHICLE NUMBER AS-507	5. PAGE <u>1</u> OF <u>4</u>
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6. CONTENT:

This procedure includes launch vehicle operations for both the Countdown Demonstration Test and Countdown. It is divided into three volumes.

Volume I covers launch vehicle precount operations.

Volume II covers launch vehicle count operations as well as safing and securing operations.

Volume III includes operations necessary to recycle the launch vehicle for another launch window.

1. Radio Frequency Systems: All RF systems will be functionally checked out by ground stations and the RF checkout equipment. The MSS will be in place and passive repeaters will be connected to the various systems through antenna couplers. All stage command destruct systems will be checked. Antenna couplers will be removed prior to removal of the MSS after all systems have been validated and turned off. The C-band transponder and the CCS will be turned off after validation. All RF systems will be turned on prior to launch and will again be interrogated and performance evaluated at the ground stations, the RF checkout station, and by correlation of these sources with the digital data acquisition system.
2. Telemetry Systems: The telemetry systems will be turned on from the LCC measuring and RF panels and parameter checks conducted by the CIF ground station. Following these checks, the system will be used as required.
3. Measurement System: The measurement system will be verified after verification of the telemetry systems. The verification will primarily be performed under programmed control of the 110A computer.
4. Guidance, Control and Stabilized Platform: Functional tests of the guidance control and stabilized platform (GC&SP) system will be conducted. These tests will: (a) visually verify system configuration, (b) run automatic turn-on procedures early in the countdown and (c) verify subsystem operation.

The flight computer subsystem checks include a repeatable simulated flight sequence, system interface test sequence (discrete check), and L/V steering tests.

The control computer nulls will be checked for acceptable values during warmup before the vehicle prelaunch checks are made.

The ST-124M stabilized platform subsystem will be checked. The automatic long range theodolite true azimuth will be re-established using the reference benchmark and the theodolite system will be functionally tested before ST-124M platform tests are run.

7. PREPARED BY <i>Graham A. Darrell</i>	8. DATE 8/6/69	9. CHIEF ENGINEER <i>Frank Bryan for I. Ryell LV-ENG</i>	10. DATE 8/13/69
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TEST OUTLINE

1. TCP TITLE LV Operations in Support of Manned SV CDDT & CD	2. TCP NUMBER V-20060	3. REV. 001	4. VEHICLE NUMBER AS-507	5. PAGE <u>2</u> OF <u>4</u>
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6. CONTENT:

The combined GC & SP will be brought to an operating condition to support the space vehicle power transfer test and operation on internal power will be verified to be acceptable. A few hours before T-0, the long range theodolite system will be set up to maintain the ST-124M platform azimuth alignment. The platform will be powered-up, aligned to the launch azimuth and held there until guidance release. In the final minutes of countdown, the combined GC & SP system will be utilized in the stage steering tests. These will be run on the S-IVB stage, then the S-II stage and finally the S-IC stage just before the terminal count sequence.

5. Networks: The networks countdown activities include performance of electrical support equipment (ESE) preparation in the launch umbilical tower (LUT) and pad terminal connection room (PTCR) prior to evacuation of those areas.

Preparations of the LUT ESE will include performing bus resistance checks from the LUT power distributors to the stage bus line before applying vehicle power. The various power and control distributors will be inspected for proper cable connections and switch positions. A check will be made to ensure that all cables are clear of movable mechanisms. Final checks will be made of recorder calibration digital events evaluator (DEE) operation and sequencer operation under launch control center (LCC) control. Associated indications at the LCC will be checked against existing conditions in the LUT. Preparations of a similar nature will be given to the PTCR ESE with emphasis on propellants and gases, electrical equipment and data transmission system.

The LCC ESE preparations will be performed in conjunction with and following those in the LUT & PTCR. These will consist of visual inspection of power, instrumentation, and control distributors for proper cable connections and switch positions. Patch panel connections to the recorders and between the firing room and the PTCR will be visually inspected. Final recorder calibrations will be completed together with checks on the DEE printout devices.

Power transfer tests will be conducted early in the count with final power transfer initiated late in the count. Proper transfer and correct vehicle battery loading will be verified. Late in the count, approximately T-5 minutes, the terminal countdown and ignition sequencers will be armed in preparation for the automatic terminal sequence start of T-3 minutes 7 seconds.

6. Emergency Detection System: The EDS will be functionally tested after final power up and again shortly before T-0. The ground computer will program simulated malfunctions of input parameters and verify proper voting of the EDS logic units.

7. PREPARED BY	8. DATE	9. CHIEF ENGINEER	10. DATE
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TEST OUTLINE

1. TCP TITLE LV Operations in Support of Manned SV CDDT & CD	2. TCP NUMBER V-20060	3. REV. 001	4. VEHICLE NUMBER AS-507	5. PAGE 3 OF 4
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6. CONTENT:

7. Propellants: The LOX & LH2 systems will be prepared for tanking during precount operations. Valves will be prepositioned and electrical controls checked. Propellant loading sensors will be checked and the propellants tanking computer system tested. During CDDT, an actual cryogenic propellant loading will be performed. Following the terminal count sequence, an S-II LH2 vent valve cryogenic test will be conducted and the propellants will be drained.
8. Propulsion: The propulsion system launch countdown operations will be a direct continuation of the precount operation. The S-IC LCC propulsion panels will be continually manned and the condition of the engines monitored. During the last 10 minutes of the count, the S-IC thrust chamber fuel jacket will be topped-off with ethylene glycol. During the last minute of the count, the S-IC engine calorimeter purge will be turned on. The engine checkout valves will be sequenced to the engine position and the high LOX dome and the gas generator LOX injector purge will be initiated by the sequencer. The ignition command will be given. In the demonstration, cutoff will be indicated at T-8.9 seconds. In the countdown, the start sequence will be automatically controlled through launch.
9. Pneumatics: Pneumatics system operations will consist of a visual inspection, verification checks of critical components, pressurization of pneumatic system consoles and supply lines and support of other system preparations. Pneumatics system will supply pressure to required systems upon request or at predetermined times.
10. Hydraulics: Hydraulics system operations will consist of visual inspection, verification checks of critical ground and airborne components, system operation in support of other tests and final hydraulic system operation for terminal count and flight.

The S-IVB & S-II auxiliary hydraulic pumps will be turned on to support guidance gimbal commands. Visual inspection of the hydraulic system will be made prior to removal of the last work platforms to verify there is no leakage.

11. Air Frame: Upon completion of the precountdown operation, internal stage work platforms which are not required for the countdown operation will be removed and stored.

Prior to removal of the mobile service structure (MSS), test equipment, tools and loose items will be removed from the structure platforms. The structure clamshells will be opened from around the space vehicle, ground connections disconnected and stored and the MSS transferred to its parking area by the crawler-transporter.

7. PREPARED BY	8. DATE	9. CHIEF ENGINEER	10. DATE
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TEST OUTLINE

1. TCP TITLE LV Operations in Support of Manned SC CDDT & CD	2. TCP NUMBER V-20060	3. REV. 001	4. VEHICLE NUMBER AS-507	5. PAGE <u>4</u> OF <u>4</u>
<p>6. CONTENT:</p> <p>The remaining internal stage platforms will be removed and the access doors secured for flight upon completion of all vehicle checks and connection of the Safe and Arm devices. Stage compartments will be inspected for loose equipment or damage prior to the removal and storage of the platforms.</p> <p>12. <u>Environmental Control</u>: L/V interstage areas and various electronic cannisters will be provided with air from prior to test start. These areas will be supplied with gaseous nitrogen prior to cryogenic loading and continued for the duration cryogenics are on board. The Launch Vehicle compartments must be verified clear of personnel prior to performing air to GN2 change-over operations. The SIC, SII, SIVB, IU and SLA compartments will be provided with GN2 to maintain compartment temperature within limits and to provide for purge of any minor LOX or LH2 leaks. The ECS will function through launch. ECS will provide conditioned air to S/A 9 White Room continually through launch.</p> <p>13. <u>Water Systems</u>: The water system dry electromechanical check of critical components will be completed early in the precount. The hydro-pneumatic water tanks will be filled and pneumatically charged. All manual valves and components will be visually inspected.</p> <p>14. <u>Firing Accessories</u>: A visual inspection will be conducted during the countdown to ensure that all loose equipment has been removed from the LUT. The hammerhead crane will be secured in the launch position.</p> <p>After removal of vehicle internal work platforms and securing of all access doors the service arm extension platforms and service arm #3 will be uncoupled from the vehicle, retracted, and locked. Prior to propellant tanking, all LUT tiedowns, supports and support columns will be inspected.</p> <p>The service arms and tail service masts hydraulic and pneumatic control accumulator pressures will be verified at the pad and at the LCC control and monitor consoles.</p> <p>15. <u>Safing, Recycle to Hold and Scrub Procedures</u>: Assuming propellants are on board safing operations will be included to bring ordnance, tank and vessel pressures, and propellant flows to a safe condition quickly. A recycle procedure will be included to restore the launch vehicle to a T-22 minute configuration after a hold at any point later in the count than T-22 minutes. A drain procedure will be included to terminate the count if conditions warrant. A flow diagram will be included in the procedure to illustrate when and under what conditions the various procedures are to be utilized.</p> <p>16. <u>Recycle to Launch Procedure</u>: A recycle procedure will be included to bring all equipment to a launch condition again if the primary launch window is missed.</p>				
7. PREPARED BY	8. DATE	9. CHIEF ENGINEER	10. DATE	

LIST OF EFFECTIVE PAGES

THIS IS REVISION 015 OF THIS PROCEDURE, IT CONTAINS 123 PAGES AS FOLLOWS:

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3	013	A104 THRU A108	012
4 & 4-1	012	A109	015
5 & 5-1	H	A110 THRU A113	012
6 & 6-1	H	A114	013
7 & 7-1	001	A115 THRU A119	012
8 & 8-1	001		
9 THRU 13	015		
14	012		
15 THRU 15-2	013		
15-3 & 15-4	012		
15-5	015		
16 THRU 16-4	012		
17 THRU 18-6	012		
19 THRU 20-6	012		
21 THRU A42	012		
A43	013		
44 THRU A46	012		
A47	013		
A48 THRU A58	012		
A59	013		
A60 THRU A63	012		
A64 THRU	013		
A65	012		
66 & 67	012		
A68 THRU A71	012		
72 & 73	012		
A74 THRU A77	012		
78 & 79	012		
A80 THRU A84	012		
A85	013		
A86	015		
A87	012		
88 & 89	012		
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A91 THRU A93	012		
94	015		
95 THRU 99	012		
A100 & A101	012		

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APOLLO/SATURN
LAUNCH OPERATIONS

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REVISION RECORD PAGE (CURRENT REVISION)

PAGES AFFECTED

REV.	REVISED	ADDED	DELETED	REASON/SUPPORTING DOCUMENT
015	COVER, 1, 2, 9 THRU 13, 15-5, A86, A90, 94, A102, & A109		42, 43, 46-65, 68-71, 74-77, 80-87, 90-93, 100-121	INCORPORATED PCR'S XB-146-50, N-119-52, B-205-53, XB-148-54 & B-202-55. PCR B-201-51 HAS NOT BEEN INCLUDED IN THIS REVISION AS IT ONLY AFFECTED CDDT ONLY SEQUENCES. RELEASED FOR AS-507 CD 10/27/69.

PRIOR REVISIONS RECORDED ON
NEXT PAGE

REVISION RECORD PAGE (PRIOR REVISIONS)

PAGES AFFECTED

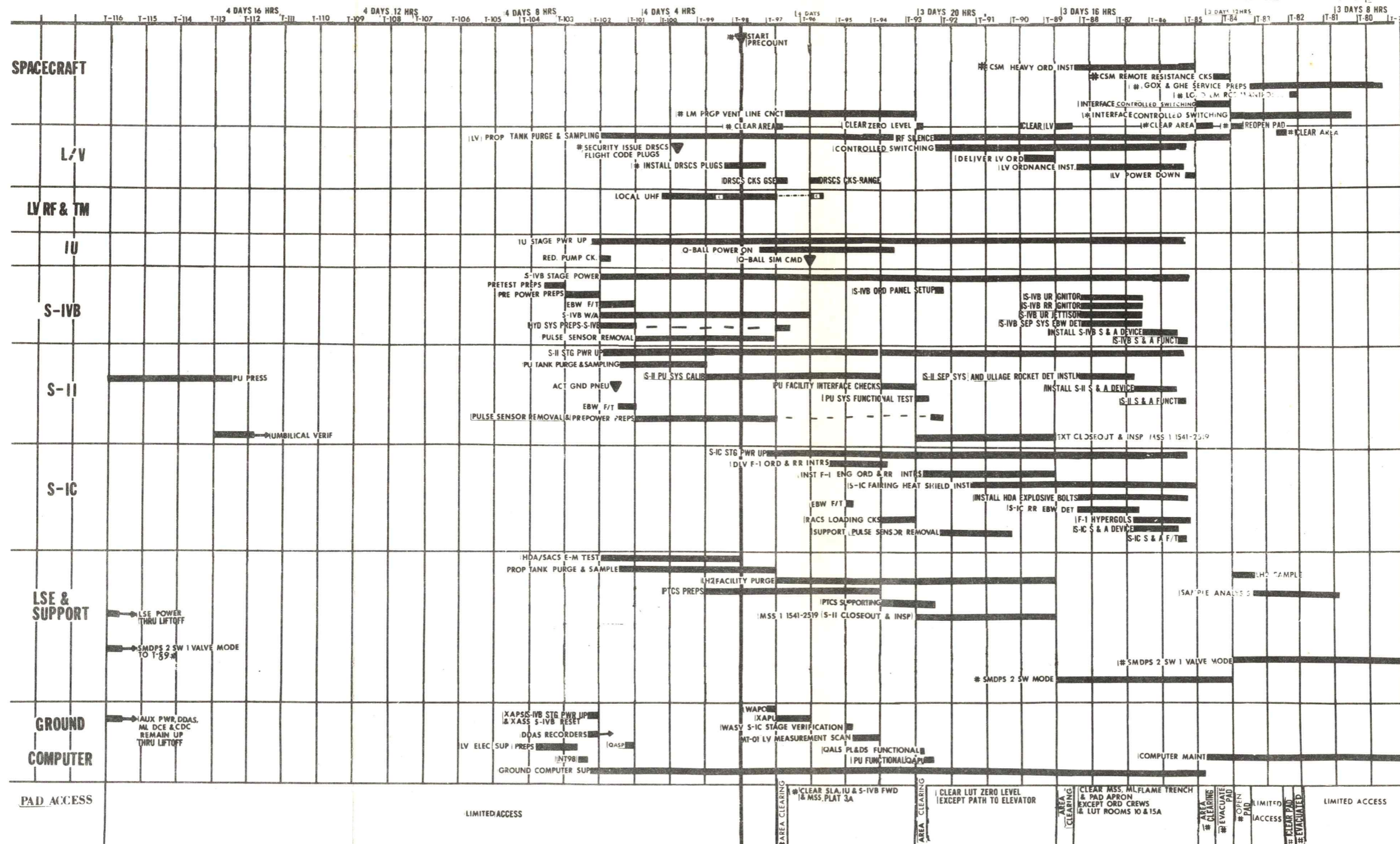
REV.	REVISED	ADDED	DELETED	REASON/SUPPORTING DOCUMENT
BASIC				RELEASED FOR AS-504 CDDT 1/13/69
001				PARTIAL REVISION RELEASED FOR AS-504 CDDT 1/31/69,
002				RELEASED FOR AS-504 CD 2/17/69,
003				PRE-RELEASE FOR AS-505 DATED 3/12/69,
004				RELEASED FOR AS-505 CDDT 4/7/69,
005				PARTIAL REVISION RELEASED FOR AS-505 CDDT 4/18/69,
006				RELEASED FOR AS-505 CD 5/2/69,
007				NOT USED
008				RELEASED FOR AS-506 CDDT 5/14/69,
009				PARTIAL REVISION RELEASED FOR AS-506 CDDT 6/18/69,
010				RELEASED FOR AS-506 CD 7/3/69,
011				PRE-RELEASE FOR AS-507 8/13/69
012				RELEASED FOR AS-507 CDDT 9/12/69,
013				PARTIAL REVISION RELEASED FOR AS-507 CDDT 10/15/69.
014				NOT USED

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PRECOUNT L/V COUNTDOWN

CD ONLY

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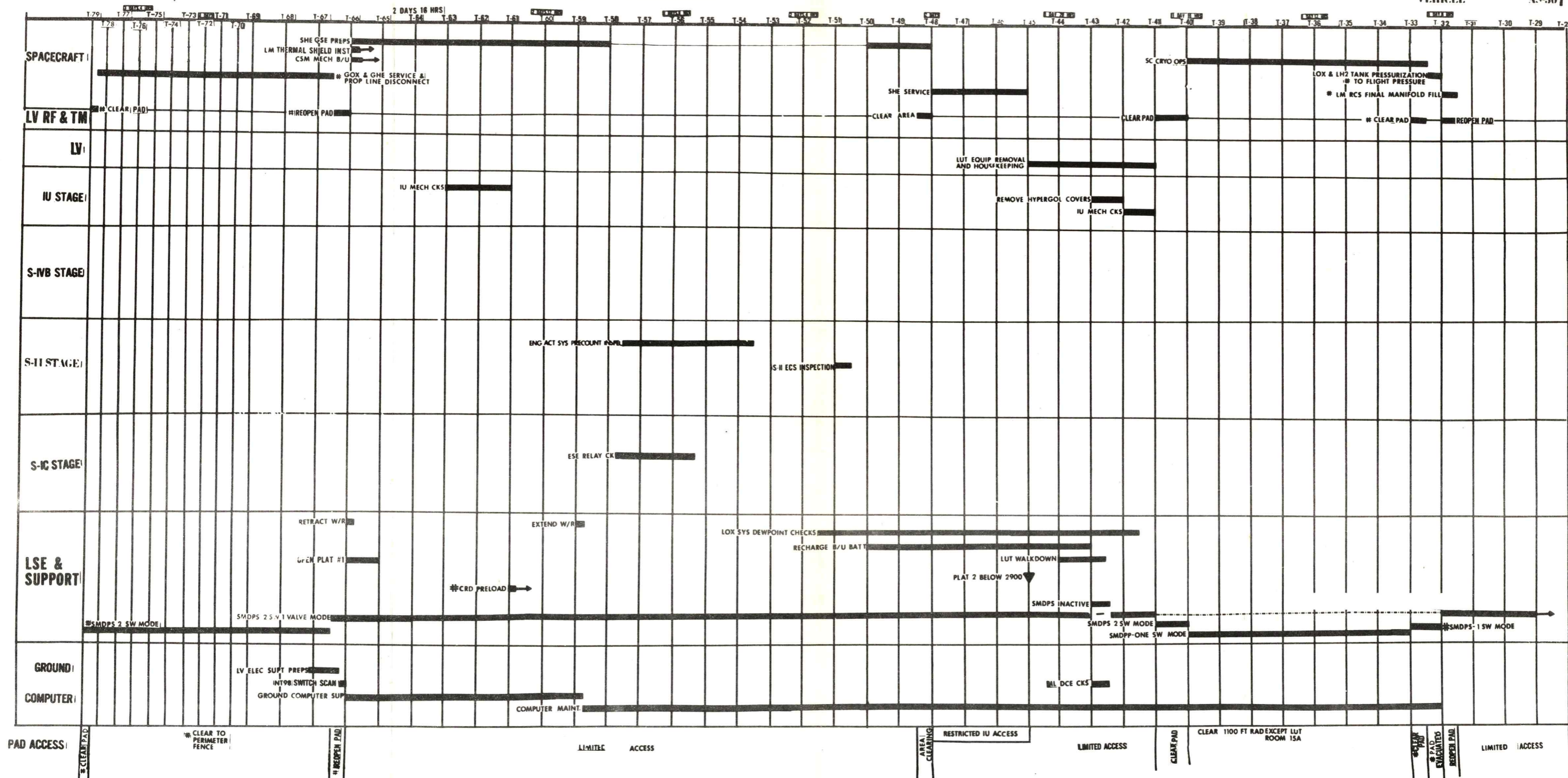
PRECOUNT

L/V COUNTDOWN

#CD ONLY

PAGE
TEST NO.
VEHICLE

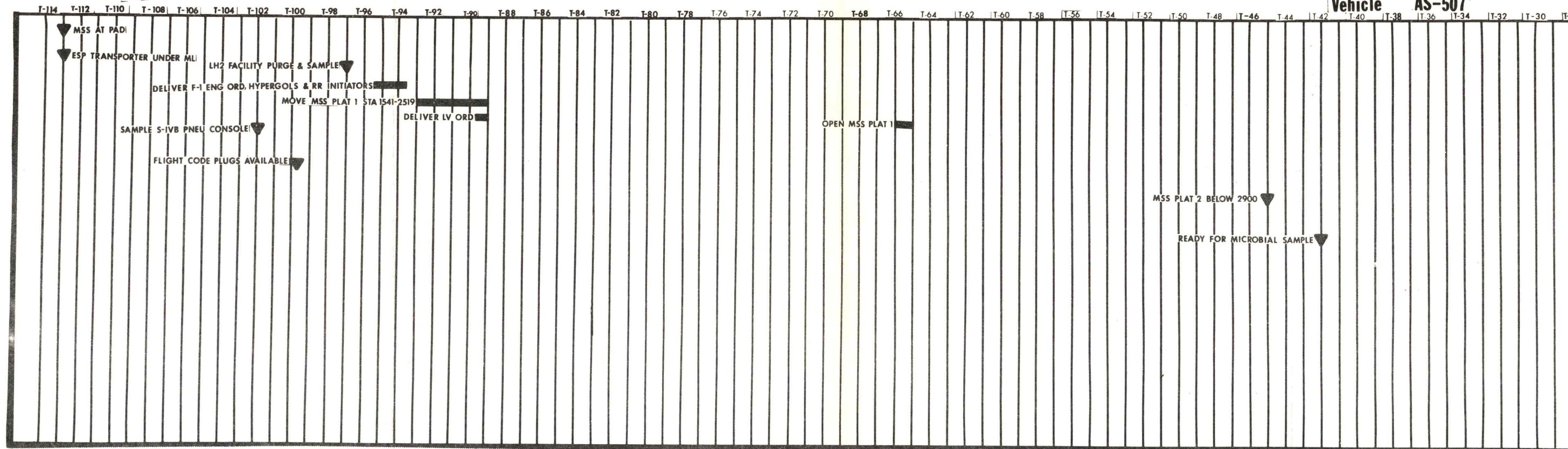
13
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LV CDDT & CD SUPPORT REQUIREMENTS

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REQUIRED SUBTASK DOCUMENTATION

THE TEST AND CHECKOUT PROCEDURES REFERENCED IN THIS DOCUMENT ARE TABULATED BELOW. THE REVISION LEVEL SHOWN IS THE ONE TO BE USED DURING THE LAUNCH VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN. CORRECTIONS AND CHANGES MUST BE PROCESSED IN ACCORDANCE WITH TI-2-17.

S-IC STAGE & GSE

TOP NO. -----	REV ---	TITLE -----	REMARKS -----
V-20072	BASIC	MOBILE LAUNCHER SLUG INSTALLATION	
V-21008	006	ELECTRICAL CONNECTION OF S-IC STAGE PROPELLANT DISPERSION BBW DETONATORS	
V-21009	005	ELECTRICAL CONNECTION OF S-IC STAGE PROPELLANT DISPERSION SAFE & ARM UNIT	
V-21012	006	ELECTRICAL CONNECTION OF S-IC STAGE RETROROCKET BBW DETONATORS	
V-21014	005	ELECTRICAL INSTALLATION AND REMOVAL PROCEDURE FOR HIGH VOLTAGE IGNITERS, S-IC ENGINE	
V-21018	006	FLIGHT BATTERY ACTIVATION AND CHECKOUT	
V-21019	005	BATTERIES, EMERGENCY BACKUP AND OAT, CLEANING AND SERVICING	
V-21021	004	EMERGENCY BACKUP BATTERIES, PEAKING AND RECHARGING TEST PROCEDURE	
V-21035	005	PREPARATIONS OF S-IC ESE TO SUPPORT LAUNCH COUNTDOWN	
V-21036	002	S-IC STAGE ESE POST LAUNCH CHECK LIST	
V-21038	006	S-IC POWER ON (COMMON STARTING CONFIGURATION)	
V-21097	004	S-IC POWER OFF	
V-21194	005	LAUNCH SUPPORT EQUIPMENT POWER ON & OFF REMOTE CONTROL (LCC)	
V-21204	004	INSTALLATION OF S-IC FLIGHT BATTERIES DELETED	
V-21321	005	ELECTRICAL INSTALLATION OF S-IC HOLDDOWN ARM ORDNANCE	
V-24010	007	S-IC INTERNAL WORK PLATFORM REMOVAL	
V-24011	005	S-IC BULKHEAD PROTECTION EQUIPMENT REMOVAL	
V-24025	003	S-IC GROUND HYD SUP & C/O UNIT SETUP	
V-24327	005	S-IC STAGE PNEUMATIC SYSTEMS CDDT AND LAUNCH PREPARATIONS	
V-25077	002	DATA TRANSMISSION SYSTEM DAILY OPERATIONS/SELF CHECK	

S-IC STAGE & GSE (CONTINUED)

TOP NO. -----	REV ----	TITLE -----	REMARKS -----
V-25003	001	RP-1 STANDBY	
V-25034	003	LH2 STORAGE TANK FILL AND DRAIN	
V-25078	002	DIGITAL EVENTS EVALUATOR (DEE-3) SELF CHECK	
V-25159	006	PROPELLANT TANKING COMPUTER SYSTEM (PTCS)	
		PREPS FOR PROPELLANT LOADING OPERATIONS	
V-25160	002	DATA TRANSMISSION SYSTEM/DIGITAL EVENTS	
		EVALUATOR SYSTEM PAD SECURING	
V-25329	001	LOX STORAGE AREA TANK FILLING/PAD A	
V-25331	BASIC	LOX TANK SAMPLING/PAD A	
V-25340	004	LOX PREPS FOR VEHICLE LOADING/PAD A	
V-25342	002	LOX SYS SECURING AFTER LOX LOADING/DRAINING/ PAD A	
V-25344	002	TOTAL LOX SYS, DEW POINT/RAD A	
V-25345	002	LOX SYS, SECURING AFTER LAUNCH/PAD A	
V-25389	006	S-IC STAGE RP-1 AUTOMATIC LEVEL ADJUST/LINE INERT	
V-26222	004	STANDARD OPERATING PROCEDURE FOR THE PNEUMATIC DISTRIBUTION SYSTEM	
V-26247	003	ENVIRONMENTAL CONTROL SYSTEM DAILY OPERATIONS/ LC-39A	
V-26329	002	HOLDDOWN ARM EXPLOSIVE RELEASE SYSTEM POWER CARTRIDGE INSTALLATION AND REMOVAL	
V-26337	002	CONTROLLED RELEASE DEVICE PRELOAD	
V-27087	002	HGD SYSTEM OPERATING PROCEDURE	
V-27093	005	S-IC LOX AND FUEL LIQUID LEVEL AND LOADING ELECTRONICS TESTS	
V-27098	006	VEHICLE MEASURING GROUND SUPPORT EQUIPMENT STATION TEST SUPPORT PREPARATIONS	
V-28009	005	TELEMETRY CHECKOUT EQUIPMENT DAILY READINESS TEST	
V-28070	004	S-IC TELEMETRY, MOBILE LAUNCHER GSE READINESS	
V-29003	003	INSTALLATION OF S-IC STAGE ORDNANCE DURING COUNTDOWN	
V-29005	004	F-1 ENGINE ORDNANCE INSTALLATION	
V-31045	004	SA/TSM/LA-ELEC SUPPORT FOR CDDT & LAUNCH	
V-33030	004	S-IC FLIGHT CONTROL SYSTEMS PREPARATIONS FOR INTEGRATED TESTS AND LAUNCH	
V-34012	004	S-IC STAGE PROPULSION SYSTEMS CDDT AND LAUNCH PREPARATIONS	
V-35004	003	LH2 SYSTEM PREP FOR VEHICLE LOADING	
V-35005	003	LH2 SYSTEM SECURING AFTER LOADING	
V-26046	003	HDA UPPER LINK PRELOADING AND RELAXING	
V-27153	007	S-IC STAGE MEASURING SCAN TEST MTO-1	
V-27175	001	LCC MEASURING STA OPS CAL & MAINTENANCE	
V-27176	001	ML MEASURING EQUIPMENT OPS CAL & MAINTENANCE	
V-31031	003	IWS ELEC PWR PREPS	

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APOLLO/SATURN
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S-IC STAGE & GSE (CONTINUED)

TCP NO. -----	REV ---	TITLE -----	REMARKS -----
V-36032	002	S-II AFT SERV ARM LOCAL CONTROL OPER PROC	
V-36039	003	TAIL SERVICE MAST SYSTEM PREPARATIONS AND OPERATIONS FOR SPACE VEHICLE CDDT AND COUNTDOWN	
V-36074	001	ECS PROPELLANT LOADING OPERATIONS/LC-39A & B	
V-36063	003	SERVICE MODULE DELUGE PURGE SYSTEM LAUNCH CONFIGURATION PREPARATIONS	
V-36064	003	PNEUMATIC DISTRIBUTION SYSTEM LAUNCH CONFIGURATION PREPARATIONS/LC-39 A & B	
V-36069	003	HDA AND SA CONTROL SWITCHES SUPPORT REQTS FOR CDDT	
V-36070	002	PLATFORMS AND TRANSPORTER LAUNCH PREPARATIONS	
V-36071	004	S-IC INTERTANK SERVICE ARM EXTENSION AND CARRIER RECONNECTION	
V-36077	002	S-IC INTERTANK SERVICE ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36078	002	S-IC FWD SERV ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36079	002	HYD DISTRIBUTION SYS PREPS FOR COUNTDOWN TST	
V-36080	002	S-II INTERMEDIATE SERV ARM SUPPORT OPS FOR CDDT & LAUNCH	
V-36081	002	S-II FWD SERV ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36082	002	S-IVB AFT SERV ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36083	002	S-IVB FWD SERV ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36084	002	SERV MODULE SERV ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36085	002	COMMAND MODULE ACCESS ARM SUPPORT OPER FOR CDDT & LAUNCH	
V-36086	002	DAMPING RETRACT/RECONNECT SYS SUPPORT OPER FOR CDDT & LAUNCH	
V-36087	002	LSE MECH OPS FOR SUPPORT OF MAJOR INTEGRATED TESTS	
V-36112	002	Q-BALL COVER REMOVAL SYSTEM CDDT AND LAUNCH PREPARATIONS/ML	
V-36113	001	INDUSTRIAL WATER SYSTEM LAUNCH PREPS	
V-38000	006	DIGITAL RANGE SAFETY COMMAND SYSTEM-PAD STAGE AND VEHICLE SUPPORT	
V-38004	006	S-IC STAGE AND GSE TELEMETRY SUPPORT PROCEDURE	
V-37038	002	HGD SYS MAINTENANCE PROCEDURES	

S-II STAGE

TCP NO. -----	REV ---	TITLE -----	REMARKS -----
V-21101	005	B012 FLIGHT BATTERY ACTIVATION FOR SATURN S-II STAGE	
V-21103	004	B011 S-II STAGE POWER APPLICATION (HIGH BAY)	
V-21111	004	B013 S-II FLIGHT STAGE BATTERY INSTALLATION	
V-21249	004	S-II BATTERY REMOVAL (B016)	
V-21253	006	G060 S-II FINAL ELECTRICAL CHECKS	
V-21348	004	H017 - PROPELLANT UTILIZATION COMPUTER PRESSURIZATION	
V-21438	BASIC	B022 FINAL STAGE ELECTRICAL CHECKS	
V-24116	002	J001 PROPELLANT FEED, RECIRCULATION LINES, AND LH2 TANK VENT LINES VACUUM CHECK	
V-24256	002	G046 S7-41/A7-71 OPERATIONS SETUP AND SECURING PROCEDURE	
V-24259	003	L011 S-II POST TANKING PURGING	
V-25151	005	H013 PROPELLANT UTILIZATION CALIBRATION AND FUNCTIONAL TEST	
V-25310	003	L008-LEAK DETECTION SYSTEM START-UP AND LH2 TANK SAMPLING; AMBIENT TEMPERATURE CONDITIONS	
V-25311	004	L009-STAGE LH2 TANK SAMPLING AND LEAK DETECTION SYS SECURING AFTER CRYOGENIC OPER; CDDT OR TANKING TEST	
V-26008	002	G042-REMOVAL AND STORAGE OF S-II STAGE ACCESS EQUIPMENT AND PLATFORMS	
V-26276	004	G058-S-II LEAK DETECTION SYSTEM SETUP AND OPERATION FOR PROPELLANT LOADING	
V-26326	001	G080 LEAK DETECTION EQUIP, C7-55, C7-56 SETUP FUNCT CHECK & SHUTDOWN PROC, (HE ANALYZERS ONLY)	
V-26348	006	Z031 S-II CLOSE OUT OF LUT 180 FT LEVEL AND MSS PLATFORM 1	
V-27154	BASIC	G031 LCC RECORDER, FUNCTIONAL SETUP AND VERIFICATION TEST	
V-27183	001	G032 MEASUREMENT STATION CHECKOUT/TEST	
V-27208	001	X044 S-II FINAL AIRBORNE MEASUREMENTS CLOSEOUT	
V-28135	001	G050 PCM - TM CHECKOUT EQUIPMENT TEST (STAGE MODULE EQUIP)	
V-28143	004	M021 S-II STAGE RF & TELEMETRY CLOSEOUT FOR LAUNCH	
V-28144	003	R014 S-II TM OPERATIONAL READINESS CHECK	
V-28181	BASIC	G125 FM/FM TELEMETRY CHECKOUT EQUIPMENT TEST (STAGE MODULE)	

S-II STAGE (CONTINUED)

TCP NO. -----	REV ---	TITLE -----	REMARKS -----
V-29023	003	Z008 - S-II EXPLODING BRIDGEWIRE (EBW)	
V-29024	002	DETONATOR INST K008 S-II SAFE AND ARM DEVICE INSTALLATION AND ELECTRICAL FUNCTIONAL CHECKOUT	
V-29038	004	S009 S-IC/S-II, S-II/S-II AND S-II/S-IVB PULSE SENSOR REMOVAL	
V-29049	002	Z030 - INERT EBW DETONATOR INSTL INTO THE S-II SEP SYS (LIVE ORD COMPONENTS)	
V-29050	003	K010 INERT SAFE/AREM/DEVICE INSTALL. INTO THE S-II PROPELLANT DISPERSION SYS (LIVE ORD COMP)	
V-30029	004	M020 S-II STAGE AND GSE PREPS FOR S/V COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN	
V-34014	003	E023 - PROPULSION SYSTEM LAUNCH PAD TEST OPERATIONS	

S-IVB STAGE

TCP NO. -----	REV ---	TITLE -----	REMARKS -----
V-21085	003	PROPELLANT UTILIZATION SUBSYSTEM TEST	
V-21322	003	FLIGHT BATTERY ACTIVATION, 1A68316 FWD NO. 2	
V-21323	003	FLIGHT BATTERY ACTIVATION, 1A68317 AFT NO. 2	
V-21324	003	FLIGHT BATTERY ACTIVATION, 1A59741	
V-21413	001	VEHICLE BATTERY MONITORING	
V-30539	004	S-IVB SUPPORT AND PREPARATIONS FOR COUNTDOWN DEMONSTRATION AND COUNTDOWN	

INSTRUMENT UNIT

TOP NO. -----	REV ---	TITLE -----	REMARKS -----
V-21222	007	AUXILIARY DAILY POWER ON PROCEDURE	
V-21223	012	IU POWER APPLICATION/REMOVAL	
V-21243	004	PRIMARY LAUNCH VEHICLE SUPPORT	
V-21249	001	IU CABLE CONDITIONING	
IV-21254	008	IU BATTERY ACTIVATION, MONITORING AND DISCHARGE PROCEDURE	
V-21274	008	COUNT CLOCK AND TIMING SYSTEM PREPARATION	
V-22006	005	GROUND COMPUTER DAILY/TEST OPERATIONS	
V-23068	007	ST-124M STABILIZED PLATFORM SLIP RING EXERCISE	
V-24899	ORIG	IU/S-IVB WATER METHANOL FILL	
IV-26178	005	IU EQUIPMENT PRESSURIZATION	
V-28069	011	IU RF SYSTEM SUPPORT	
V-28072	003	IU STAGE MODULE TCE POWER UP SEQUENCE	
V-28085	002	CHECKOUT OF DRS AND ASSOCIATED GSE	
V-31008	004	ML/DCE REMOTE OPERATING PROCEDURE	
V-31062	005	IBM SUPPLEMENTAL TO S/V CDDT AND CD	
V-33011	006	LAUNCH COUNTDOWN; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	
V-33029	004	IU FLIGHT CONTROL SYS PREP FOR OATS & LAUNCH COUNTDOWN	
V-33033	002	FLIGHT COMPUTER SYSTEM - COUNTDOWN DEMONSTRATION AND LAUNCH TEST	
V-34006	005	IU/S-IVB TCS OPERATION (CLOSED LOOP)	
IV-34046	003	IU ACCESS DOOR INSTALLATION AND REMOVAL	
IV-34047	006	IU HEAVY COMPONENT INSTALLATION & REMOVAL	
IV-36038	003	IU PNEUMATIC CONSOLE SET UP	

INTEGRATED PROCEDURES

TOP NO. -----	REV ---	TITLE -----	REMARKS -----
V-20056	005	SATURN V LAUNCH VEHICLE EMERGENCY PROCEDURE	XB-146-50
V-21096	-2	EDS OVERALL AND COUNTDOWN TEST	
V-35014	008	L/V AUTOMATIC AND MANUAL LOX/LH2 LOADING AND DRAIN OPERATIONS	XB-146-50
V-35015	006	VEHICLE LOX/LH2 TANK AND FACILITY LH2 SYSTEM PURGE	

LIST OF UNIQUE PAGES

"CDDT ONLY" AND "CD ONLY" PAGES IN THIS PROCEDURE ARE REQUIRED TO ACCOMMODATE THE FOLLOWING DIFFERENCES BETWEEN CDDT AND CD:

SECTION			DIFFERENCE
-----			-----
PAD ACCESS			PAD ACCESS RESTRICTIONS DIFFER FOR CDDT AND CD
CONDITIONS			INERT ORDNANCE USED DURING CDDT ONLY
CONDITIONS			LH2 VENT VALVE CHECKOUT EQUIPMENT INSTALLED FOR CDDT ONLY
CONDITIONS			FLAME DEFLECTOR IN LAUNCH POSITION FOR CD ONLY
PRECOUNT CHECK			FUSES REMOVED TO INHIBIT S/A 2 RETRACTION FOR CDDT ONLY
DAY	HR	MIN	DIFFERENCE
----	---	---	-----
-4	20	30	PU COMPUTER PRESSURIZED AND LEAK CHECKED DURING CDDT
-4	20	30	PU COMPUTER PRESSURE VERIFIED UP DURING CD
-4	17	0	VACUUM JACKETED LINE PRESSURE CHECKS STARTED DURING CD ONLY
-4	17	0	LH2 VENT VALVE SYSTEM RECONFIGURED DURING CD ONLY
-4	17	0	PROPELLANT TANK GAS SAMPLING STARTED DURING CD ONLY
-4	17	0	LEAK CHECKS STARTED DURING CD ONLY
-4	17	0	LEAK DETECTION SYSTEM ACTIVATION VERIFIED DURING CDDT ONLY
-4	17	0	ACTUATION PRESSURE LINE LEAK CHECKS STARTED DURING CD ONLY
-4	16	30	ACTUATION PRESSURE LINE LEAK CHECKS COMPLETED DURING CD
-4	14	30	SMDPS CONFIGURATION VERIFIED DURING CDDT
-4	14	5	SLA/LM TEMPERATURE CONTROL SETTING VERIFIED DURING CDDT
-4	9	0	SMDPS CONFIGURATION VERIFIED DURING CD

LIST OF UNIQUE PAGES (CONTINUED)

DAY	HR	MIN	DIFFERENCE
---	--	---	-----
-4	8	5	SLA/LM TEMPERATURE CONTROL VERIFIED DURING CD
-4	7	30	PU COMPUTER LEAK CHECK COMPLETED DURING CDDT ONLY
-4	6	40	INTERFACE TEST STARTED DURING CD ONLY
-4	6	30	FACILITY AIR STANDBY PANEL ACTIVATED FOR CDDT ONLY
-4	6	15	PROPELLANT TANK GAS SAMPLING COMPLETED DURING CD ONLY
-4	6	0	LEAK CHECKS COMPLETED DURING CD ONLY
-4	6	0	LH2 SYSTEMS PURGED DURING CD ONLY
-4	6	0	PROPELLANT TANKS PURGED DURING CDDT ONLY
-4	5	45	LSE INTERFACE TEST COMPLETE DURING CD ONLY
-4	5	45	LSE MECHANICAL OPERATIONS STARTED DURING CDDT ONLY
-4	5	45	HCU PREPARED DURING CDDT ONLY
-4	5	30	S/A'S 1, 5 & 7 PRESSURIZED DURING CDDT ONLY
-4	5	15	HCU SUPPORTING DURING CDDT ONLY
-4	5	15	LSE MECHANICAL OPERATIONS (S/A'S 1, 5 & 7) DONE DURING CDDT ONLY
-4	5	15	TSM E-M AND PRESSURE HOLD TEST DURING CDDT ONLY
-4	5	15	PROPELLANT TANK AND FEED SYSTEM PURGING REQUIRED DURING CDDT ONLY (UNLESS SAMPLES FAIL TO MEET REQUIREMENTS DURING CD)
-4	4	45	S/A'S 2, 4 & 6 PRESSURIZED DURING CDDT ONLY
-4	4	30	LSE MECHANICAL OPERATIONS (S/A 2) DONE DURING CDDT ONLY
-4	4	15	LSE MECHANICAL OPERATIONS (S/A'S 4 & 6) DONE DURING CDDT ONLY
-4	4	0	S/A 9 PRESSURIZED DURING CDDT ONLY

LIST OF UNIQUE PAGES (CONTINUED)

DAY	HR	MIN	DIFFERENCE
---	---	---	-----
-4	3	45	LSE MECHANICAL OPERATIONS (S/A 9) DONE DURING CDDT ONLY
-4	3	45	FLIGHT CODE PLUGS ISSUED DURING CD ONLY
-4	3	30	S/A 8 PRESSURIZED DURING CDDT ONLY
-4	3	15	LSE MECHANICAL OPERATIONS (S/A 8) DONE DURING CDDT ONLY
-4	2	30	FLIGHT CODE PLUGS INSTALLED DURING CD ONLY
-4	2	30	TEST CODE PLUGS INSTALLED FOR CDDT ONLY
-4	2	15	S/A & TSM PRESSURE HOLD TEST DONE DURING CDDT ONLY
-4	1	30	TEST CODE PLUGS INSTALLED FOR CDDT ONLY
-4	1	30	SC STRAY VOLTAGE CHECKS DURING CDDT ONLY
-4	1	15	VACUUM JACKETED LINE PRESSURE CHECKS STARTED DURING CD ONLY
-4	1	15	FLIGHT CODE PLUGS INSTALLED FOR CD ONLY
-4	1	0	FLIGHT CODE PLUG REMOVED DURING CD ONLY
-4	0	15	FLIGHT CODE PLUGS USED DURING CD ONLY
-4	0	15	TEST CODE PLUGS USED DURING CDDT ONLY
-4	0	0	FLIGHT CODE PLUGS USED DURING CD ONLY
-4	0	0	TEST CODE PLUGS USED DURING CDDT ONLY
-4	0	0	FLIGHT CODE PLUG SECURED DURING CD ONLY
-3	23	30	Q-BALL HEATER POWER OFF DURING CD ONLY
-3	22	30	ACTION LINE LEAK CHECKS COMPLETED DURING CD ONLY
-3	22	15	PRESSURE HOLD TEST COMPLETED DURING CDDT

LIST OF UNIQUE PAGES (CONTINUED)

DAY	HR	MIN	DIFFERENCE
---	---	---	-----
-3	21	30	Q-BALL HEATER POWER OFF DURING CDDT ONLY
-3	21	30	SECURING FROM PRESSURE HOLD TEST DONE DURING CDDT ONLY
-3	21	0	SC SMALL ORDNANCE INSTALLED DURING CDDT ONLY
-3	21	0	LEAK DETECTION OPERATIONS SECURED DURING CDDT ONLY
-3	18	0	LANYARD INSTALLATION STARTED DURING CDDT ONLY
-3	17	0	CSM HEAVY ORDNANCE CONNECTED DURING CD ONLY
-3	17	0	SMDPS RECONFIGURED AT THIS TIME DURING CD ONLY
-3	17	0	SC SMALL ORDNANCE OPERATIONS CONTINUE DURING CDDT ONLY
-3	13	0	CSM REMOTE RESISTANCE CHECKS RUN DURING CD ONLY
-3	13	0	CSM PROPELLANT LINE DISCONNECTED DURING CDDT ONLY
-3	12	0	CSM REMOTE RESISTANCE CHECKS COMPLETED DURING CD ONLY
-3	12	0	SMDPS RECONFIGURED DURING CD ONLY
-3	11	0	BATTERY BYPASS CABLE REMOVAL STARTED DURING CDDT
-3	9	0	BATTERY BYPASS CABLE REMOVAL COMPLETED DURING CDDT
-3	8	45	LM PROPELLANT VENT LINE CONNECTED DURING CD ONLY
-3	8	30	LM ORDNANCE OPERATIONS COMPLETED DURING CDDT
-3	7	0	SC OPERATIONS UNIQUE TO CD
-3	7	0	SMDPS RECONFIGURED DURING CD ONLY
-2	18	30	PAD REOPENED AND SMDPS RECONFIGURED DURING CD ONLY
-2	13	0	CRD'S PRELOADED DURING CD ONLY
-2	4	0	CRD PRELOAD COMPLETED DURING CD ONLY

LV CDDT & OD, VOL I
DATE: SEPTEMBER 5, 1969
REVISION 012

APOLLO/SATURN
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LIST OF UNIQUE PAGES (CONTINUED)

DAY	HR	MIN	DIFFERENCE
---	---	---	-----
-2	4	0	LANYARD INSTALLATION COMPLETED DURING CDDT ONLY
-1	21	0	OIS AND PHONES DISCONNECTED DURING CD ONLY
-1	19	0	HYPERGOL COVER CURTAINS REMOVED DURING CDDT ONLY
-1	19	0	HYPERGOL COVERS REMOVED DURING CD ONLY
-1	19	0	MICROBIAL SAMPLING DURING CD ONLY
-1	18	0	HYPERGOL COVERS REMOVED DURING CD ONLY
-1	18	0	MICROBIAL SAMPLING DURING CD ONLY
-1	7	-	CLEARING FOR GSM LOX AND LH2 TANK PRESSURIZATION (TO FLIGHT PRESSURE) REQUIRED DURING CD ONLY
-1	6	-	SLA, CM, IU & S-IVB FORWARD AREA ARE REOPENED FOR ACCESS LATER DURING CD
-1	6	-	LM RCS MANIFOLD LOADED DURING CD ONLY
-1	5	0	IU WATER DELUGE SYSTEM REMOVED DURING CDDT ONLY

LAUNCH OPERATIONS COMMUNICATIONS

COMPLEX 39 PA SYSTEM:

TO BE UTILIZED FOR ADMINISTRATIVE PHONE CALL ANNOUNCEMENTS, "TH"
COUNT ANNOUNCEMENTS, PAGING SPECIFIC PERSONNEL TO AN OIS CHANNEL,
OPERATIONAL & EMERGENCY ANNOUNCEMENTS, AND FOR PAD ACCESS
ANNOUNCEMENTS.

INTERCOMMUNICATIONS:

THE TEST AND CHECKOUT OPERATIONAL COMMUNICATIONS ARE TO BE UTILIZED
AS ASSIGNED OR INDICATED IN THE PROCEDURE. TEST SUPERVISORY
PERSONNEL MUST BE AVAILABLE AT THE FOLLOWING STATIONS.

		ACTIVE -----	MONITOR -----
S-IC TEST CONDUCTOR (BOEING)	C1TC	181	121
S-II TEST CONDUCTOR (NR)	C2TC	171	121
S-IVB TEST CONDUCTOR (DOUGLAS)	C4TC	161	121
IU TEST CONDUCTOR (IBM)	CUTC	151	121
L/V TEST CONDUCTOR (LVO)	CLTC	121	
S/V TEST SUPERVISOR (DLO)	CVTS	111	
SYSTEMS SAFETY (BENDIX)	CRSS	141	121
TEST SUPPORT CONTROLLER (TSM)	CTSC	112	

LAUNCH VEHICLE CALL STATIONS

BCBX	BENDIX SUPPORT SUPERVISOR
BCFM	FACILITY MEASUREMENTS
BCRL	RCA/LTV SUPPORT SUPERVISOR
BCSC	VEHICLE SUPPORT CONTROLLER
BCWC	WATER CONTROL (CCC-CONSOLES)
BDDS	LCC DATA DISPLAY STATION
BDTS	DATA TRANSMISSION (2P12) INFORMATION SYSTEM
BEHZ	HAZARDS MONITORING, INFORMATION SYSTEMS
BELT	LIGHTNING WARNING
BGCC	GROUND COMPUTER COMPLEX FIRING ROOM
BLTM	LVO TM ENGINEER
BOSC	SUPPORT CONTROLLER, OPERATION (AAS CUE PANEL RM 1P9)
BOTV	OTV SYSTEM CENTER
BPHO	PHOTOGRAPHY (TECHNICOLOR)
BRFS	RF GROUND STATION LCC, RF-DRSCS GND STATION - 2P10A
BTMC	TM CHECKOUT EQUIPMENT, COMMON MODULE - ROOM 2P10
BTMI	CIF INTERFACE MODULE - RM 2P10
BTTM	TEST COORDINATOR - RF & TM
BUTM	IU TM CHECKOUT EQUIPMENT
B1RF	S-IC RF SYSTEMS ENGINEER
B1TM	TM CHECKOUT EQUIPMENT
B2RF	S-II RANGE SAFETY ENGINEER
B2TM	TM CHECKOUT EQUIPMENT, S-II MODULE - ROOM 2P10
B4IE	S-IVB INSTRUMENTATION ENGINEER
B4RF	LCC RF STATIONS
B4TM	S-IVB TM CHECKOUT EQUIPMENT
CAJP	A. J. PICKETT
CGAP	AUXILIARY POWER CONSOLE
CCLH	LH2 CONTROL CONSOLE
CCLO	LOX CONTROL CONSOLE
CCPM	NETWORKS POWER MONITOR
CCRP	RP-1 CONTROL CONSOLE
CCTC	TEST SUPPORT CONTROLLER (SOP)
CECS	ECS CONTROL CONSOLE
CEDK	CRT KEYBOARD - EDS OPERATOR
CGIC	INSTRUMENTATION CONTROLLER
CHCU	HYDRAULIC CHARGING UNIT CONTROL CONSOLE
CHDA	HOLDDOWN ARMS CONTROL PANEL
CHGD	HAZARDOUS GAS DETECTION SYSTEM - LCC
CHG2	ABORT MON HAZ GAS CUE PANEL CONSOLE BE-11
CIAR	I. A. RIGELL
CLCD	LVO GROUND COMPUTER SYSTEMS ENGINEER
CLCE	LVO CHIEF ENGINEER
CLCP	LVO COMPUTER AUTOMATION PROGRAMMING ENGR
CLEG	LVO CHIEF, LV ELECTRICAL G & C SYSTEM
CLEI	LVO INTEGRATION EQUIP ELEC SYS ENGR
CLEL	LVO LAUNCH EQUIP ELEC SYST ENGR
CLEP	LVO PROPELLANTS ELEC SYST ENGR
CLES	ELECTRICAL NETWORKS SYSTEMS ENGINEER
CLEU	ELEC NETWKS SYST ENGR IU
CLEW	LVO WATER SYST ELEC SYST ENGR

CLE1	ELEC NETWKS SYST ENGR S-IC
CLE2	ELEC NETWKS SYST ENGR S-II
CLE4	ELEC NETWKS SYST ENGR S-IVB
CLFK	CRT KEYBOARD - FLIGHT CONTROL
CLFS	LVO FLIGHT CONTROL SYSTEM ENGINEER
CLGC	LVO GUIDANCE & CONTROL SYSTEM ENGINEER
CLGK	CRT KEYBOARD - GUIDANCE
CLGS	LVO GYRO AND STABILIZER SYSTEMS ENGINEER
CLIK	L/V CRT KEYBOARD - MEASURING
CLIS	LVO INSTRUMENTATION SYSTEM ENGINEER
CLMS	L/V MECHANICAL SYSTEMS ENGINEER
CLNS	FLIGHT COMPUTER SYSTEMS ENGR
CLOM	LVO OPERATIONS MANAGER
CLPS	LV PROPELLANT SYSTEMS ENGINEER
CLOO	LV QAL B/U F/R
CLQS	LV QAL CHIEF
CLSK	LSE & ECS CRT
CLTC	LAUNCH VEHICLE TEST CONDUCTOR
CLVN	VEHICLE NETWORKS PANEL
CPDC	PNEUMATIC DISTRIBUTION SYSTEM CONTROL CONSOLE
CPH1	LH2 COMPONENTS PANEL #1
CPH2	LH2 COMPONENTS PANEL #2
CPD1	LOX COMPONENTS PANEL #1
CPD2	LOX COMPONENTS PANEL #2
CPD3	LOX COMPONENTS PANEL #3
CPRK	PROPELLANTS DISPLAY COMPUTER CONSOLE
CPRP	RP-1 COMPONENTS PANEL
CPSS	SYSTEMS SAFETY
CQAA	Q-BALL PANEL
CRSS	RANGE SAFETY SUPERVISOR PANEL
CSAC	SERVICE ARMS CONTROL CONSOLE
CSAD	DRRS CONSOLE
CSAK	LSE CRT CONSOLE NO. 8
CSAM	SERVICE ARMS MEASUREMENTS PANEL
CSA1	SERVICE ARM #1 CONTROL CONSOLE (S-IC INTERTANK)
CSA2	SERVICE ARM #2 CONTROL CONSOLE (S-IC FORWARD)
CSA3	SERVICE ARM #3 CONTROL CONSOLE (S-II AFT)
CSA4	SERVICE ARM #4 CONTROL CONSOLE (S-II INTERMEDIATE)
CSA5	SERVICE ARM #5 CONTROL CONSOLE (S-II FORWARD)
CSA6	SERVICE ARM #6 CONTROL CONSOLE (S-IVB AFT)
CSA7	SERVICE ARM #7 CONTROL CONSOLE (S-IVB FORWARD)
CSA8	SERVICE ARM #8 CONTROL CONSOLE (SERVICE MODULE)
CSA9	SERVICE ARM #9 CONTROL CONSOLE (COMMAND MODULE)
CSPP	SERVICE ARMS POWER PANEL
CTSC	TEST SUPPORT CONTROLLER
CTS1	TAIL SERVICE MAST 1-2 FIRING AND MONITOR TEST CONSOLE
CTS2	TAIL SERVICE MAST 2-3 FIRING AND MONITOR TEST CONSOLE
CTS3	TAIL SERVICE MAST 3-4 FIRING AND MONITOR TEST CONSOLE
CUCP	IU COOLING CONTROL CONSOLE
CUCR	IU FLIGHT CONTROL RECORDER PANEL
CUCS	AIRBORNE COMMAND SIMULATOR
CUDE	DIGITAL EVENTS EVALUATOR PRINTER
CUEF	EDS FLIGHT MONITOR

CUES	EDS PREPARATION
CUEV	EVENTS DISPLAY PANEL
CUFE	IU FLIGHT CONTROL SYSTEMS ENGINEER
CUFS	FLIGHT CONTROL SYSTEM INTEGRATOR
CUGA	IU FLIGHT CONTROL EDS RATE GYRO/CONTROL
CUIE	INTEGRATION/AUX POWER SYSTEM ENGINEER
CUIP	IU INSTRUMENTATION PANEL
CUNE	IU GROUND NETWORKS ENGINEER
CUNP	IU NETWORKS PANEL
CUPC	ST-124M SYSTEM ENGINEER
CUPP	IU AC & DC POWER
CUSP	FLT CONT COMP INPUT SUBSTITUTE PANEL
CUSH	SWITCH SELECTOR PANEL
CUTC	IU TEST CONDUCTOR
CVTS	SPACE VEHICLE TEST SUPERVISOR
CWCP	INDUSTRIAL WATER CONTROL PANEL
C1CS	CUTOFF SENSORS PANEL
C1DE	DEE PRINTER
C1DP	PROPELLANT DISPERSION AND ORDNANCE (DESTRUCT) PANEL
C1EH	ENGINE HEATERS PANEL
C1EN	S-IC ENGINE PANEL
C1EV	EVENT DISPLAY DISCRETE READOUT PANEL
C1FC	S-IC ENGINE DEFLECTION
C1FE	FLIGHT CONTROL SYSTEM ENGINEER
C1FR	FIRING CONSOLE AND COMPONENT TEST PANEL
C1HP	HYDRAULICS PANEL
C1IP	MEASURING PANEL
C1LO	S-IC LOX CONSOLE
C1MS	MEASURING SYSTEM TEST OPERATIONS
C1NE	GROUND ELECTRICAL ENGINEER
C1NP	NETWORKS PANEL
C1OU	LOX TANKING COMPUTER
C1PC	CONTROL AND PURGE PANEL (STAGE PNEUMATICS CONTROL)
C1PE	PROPULSION AND MECHANICAL SYSTEMS ENGINEER
C1PK	CRT KEYBOARD - PROPULSION
C1PS	GROUND POWER POWER SUPPLY ENGINEER
C1PU	S-IC PREFILL PANEL
C1RP	RP-1 SYSTEM PANEL
C1RU	RP-1 TANKING COMPUTER PANEL
C1SN	S-IC STAGE NETWORKS ENGINEER
C1SP	SEQUENCER PANEL
C1TC	S-IC STAGE TEST CONDUCTOR
C2AE	ALL ENGINE PANEL
C2DP	PD AND EBW AND ORDNANCE PANELS
C2EC	ENGINE COMPONENTS PANEL
C2EV	EVENTS DISPLAY PANEL
C2FC	HYDRAULICS PANEL
C2FE	S-II ENGINE DEFLECTION PANEL
C2GP	GROUND PNEUMATICS PANEL
C2HU	LH2 TANKING COMPUTER
C2IP	MEASURING AND RF PANEL
C2LA	S-II PROPELLANT LOADING ELECT ADVISOR
C2LD	LEAK DETECTION AND PURGE PANEL

C2NK CRT KEYBOARD - NETWORKS
C2NP NETWORKS PANEL
C2OU LOX TANKING COMPUTER
C2PA S-II PRESSURIZATION ELECT ADVISOR
C2PC DC POWER CONTROL PANEL #1
C2PK CRT KEYBOARD - PROPULSION
C2PM PROPELLANT MONITOR PANEL
C2PU PROPELLANT UTILIZATION AND DEPLETION PANELS
C2RP RECIRCULATION PANEL
C2RR RELAY RACKS (#1 AND #2)
C2SI S-II ACCESS/STRUCTURES
C2SP PRESSURIZATION PANEL
C2TC S-II STAGE TEST CONDUCTOR
C2TV S-II TV CONTROLLER
C4AL APS LAUNCH & MONITOR PANEL
C4DP PROPELLANT DISPERSION AND ORDNANCE PANEL
C4EP ENGINE PREPARATION PANEL
C4ES S-IVB ELECTRONICS SYSTEM ENGINEER
C4ET ENGINE TEST PANEL
C4EV S-IVB EVENTS DISPLAY PANEL
C4FC S-IVB FLIGHT CONTROL PANEL
C4FS S-IVB FLIGHT CONTROL SYSTEM ENGINEER
C4HC S-IVB HE CONTROL PANEL
C4HN S-IVB GH2/GN2 CONTROL PANEL
C4HU LH2 TANKING COMPUTER
C4HY HYDRAULIC PANEL
C4IP S-IVB MEASURING PANEL
C4NK CRT KEYBOARD - NETWORKS
C4NP S-IVB NETWORK PANEL
C4OH O2/H2 BURNER PANEL
C4OU LOX TANKING COMPUTER
C4PK S-IVB PROP. KEYBOARD
C4PP S-IVB DC POWER SUPPLY PANELS
C4PR S-IVB PROPELLANT STATUS PANEL
C4PS S-IVB PROPULSION SYSTEM ENGINEER
C4PU S-IVB PROPELLANT UTILIZATION SYSTEMS PANEL
C4SM S-IVB MECH/STRUCTURES SYSTEM ENGINEER
C4SP S-IVB STAGE PRESSURE PANEL
C4TC S-IVB STAGE TEST CONDUCTOR
EASM CIF ANTENNA SITE
ECOM COMPUTER FACILITY
ECOP CIF COMPUTER
EDDS CIF DATA DISPLAY ROOM (307)
EDTS DATA TRANSMISSION STATION
ETMS TELEMETRY GROUND STATION (CIF)
E1EG CIF S-IC ENG GIMBAL POSITION ABORT MON.
E1EN CIF S-IC ENGINE PANEL
E1FC CIF S-IC FLIGHT CONTROL ENGINEER
E1NE CIF S-IC ELECTRICAL ENGINEER
E1NK CIF S-IC NETWORKS CRT KEYBOARD
E1PE CIF S-IC PROPULSION ENGINEER
E1PK PROPULSION CRT KEYBOARD
E1TC CIF S-IC TEST CONDUCTOR

E1TP	CIF S-IC MEASURING
E2AE	CIF S-II ENG
E2FC	CIF S-II HYDRAULICS (EAS)
E2IM	CIF S-II MEASURING
E2MI	CIF S-II ELECTRICAL
E2TM	CIF S-II TM ENGR MONITOR
GMIL	UNIFIED S BAND GROUND STATION
KSTC	SPACECRAFT TEST CONDUCTOR
LASE	LSE ELECT ENGR LUT BASE
LAS1	LSS POWER SUPPLY AND DIST. RACKS
LCDC	COUNTCLOCK (ML)
LDAS	DDAS (ML)
LEBS	EMERGENCY BACKUP BATTERIES (ML)
LESP	ENGINE SERVICE PLATFORM
LGCC	GROUND COMPUTER COMPLEX (ML)
LHDA	HOLDDOWN ARMS
LLDE	DIGITAL EVENT EVALUATOR (ML) DEE-6
LLRS	DIGITAL RANGE SAFETY COMMAND SYSTEM GSE
LPDC	PNEUMATIC DISTRIBUTION COMPLEX
LPLX	PROPELLANT LOADING COMPUTERS
LP7B	POWER SUPPLY SYSTEM RACKS, AREA 7B
LRPR	INTEGRATION NETWORKS (ML)
LSCP	LUT SIGNAL CONDITIONING TEST PANELS
LTSM	LUT TAIL SERVICE MAST ENGINEER
LUNW	IU NETWORKS
L1EP	S-IC ENGINE AREA
L1FH	HANDLING & ORDNANCE ENGINEER, FORWARD SKIRT, S-IC
L1GH	S-IC GROUND HYDRAULIC SUPPLY & CHECKOUT
L1HC	MOTOR CONTROL CENTER S-IC GRND HYD SUPPLY AND C/O
L1IC	S-IC INSTRUMENTATION ENGINEER (ML)
L1IH	HANDLING & ORDNANCE ENGINEER, INTERTANK, S-IC
L1LS	LUT SUPERVISOR
L1NE	LUT NETWORKS ENGR (S-IC STAGE)
L1OE	S-IC ORDNANCE ENGINEER
L1PS	GROUND POWER POWER SUPPLY ENGINEER
L1PU	S-IC PREFILL UNIT
L1RS	RELAY RACKS AND SEQUENCER RACK
L1SM	STAGE MONITOR/OPERATIONS COORDINATOR
L1TH	HANDLING & ORDNANCE ENGINEER, THRUST STRUCTURE, S-IC
L1TT	TM & RF THRUST STRUCTURE
L2PD	S-II POWER DISTRIBUTION RACKS - ROOM 8B
L2RR	S-II RELAY RACKS (1 THROUGH 5) (ROOM 7A)
L4JR	JUNCTION RACKS
L4PR	S-IVB POWER RACKS (ROOM 78)
MGNR	GUID & NAV RIGHT SIDE UNIT 4, S/C
MSTC	NASA S/C TEST CONDUCTOR
MTPE	TEST PROJECT ENGINEER
PEST	ENGINE SERVICE PLATFORM TRANSPORTER
PLQG	LV-QAL-35 GSE & ML
PLQU	LV-QAL-34 IU
PLQ1	LV-QAL-31 S-IC
PLQ2	LV-QAL-32 S-II
PLQ4	LV-QAL-33 S-IVB

PRF1	EMC MONITOR INFORMATION SYSTEM
PUPL	IU PAD LEADER
PUSD	IBM PAD SAFETY
PVTS	TEST SUPERVISOR, PAD
P1ES	S-IC GROUND LEVEL ENGINE SERVICING
RAS1	LSE FIRING ROOM NETWORKS ENGR
RCDC	COUNTCLOCK (LCC)
RDAS	DDAS GSE RACKS
RDSC	L/V E & I RECORDERS
RLDE	DEE 6 (LCC)
RLDR	LOX NETWORKS ENGINEER
RLSC	TSM & S/A RECORDERS
RPDC	PROPELLANTS D.C. POWER - LCC
RRSC	RANGE SAFETY OFFICER STRIP CHARTS
RUBM	IU STRIP CHARTS
R1JR	LCC RACKS PATCH DIST.
R1NE	S-IC MEASURING STRIP CHARTS
R1SC	STRIP CHARTS
R2LD	LEAK DETECTION RECORDERS
R2RL	S-II ENGINES REDLINE ENGINEER
R2SC	STRIP CHARTS
R4EI	S-IVB GROUND BUSS E & I RECORDERS
R4HY	S-IVB HYDRAULIC STRIP CHARTS
R4PS	S-IVB PROPULSION STRIP CHARTS
R4PU	S-IVB PU STRIP CHARTS
R4SC	STRIP CHART RECORDERS
SCDR	S/C COMMANDER
SRO	SUPERINTENDENT OF RANGE OPERATIONS
SUNE	IU VEHICLE NETWORKS ENGINEER
SURF	IU RF STRUCTURE
SUTM	TM IU STRUCTURE
SUVE	IU VEHICLE NETWORKS
SUVM	IU VEHICLE MECHANICAL
S4CE	S-IVB CONTROL ELECTRONICS ENGINEER
S4FC	S-IVB FLIGHT CONTROL ENGINEER
S4HY	S-IVB HYDRAULICS ENGINEER
S4IE	INSTRUMENTATION ENGINEER
S4MA	AFT STRUCTURAL/MECHANICAL ENGINEER
S4MF	FWD STRUCTURAL/MECHANICAL ENGINEER
S4ML	S-IVB STRUCTURE MEASURING STATION
S4MM	SERVICE STRUCTURE MECHANICAL ENGINEER
S4OR	S-IVB ORDNANCE ENGINEER
S4PC	S-IVB PAD CONTROL
S4PE	S-IVB PROPULSION ENGINEER
S4SY	S-IVB SAFETY ENGINEER
USAE	LSE ELECT ENGR, TOWER
USAB	SERVICE ARM #8 SYSTEM
UUCU	GROUND SUPPORT COOLING UNIT
UUPC	IU PNEUMATIC CONSOLE
UUVN	IU MECHANICAL, UMBILICAL TOWER
U1FN	FORWARD SKIRT ELECTRICAL NETWORKS
U1FT	S-IC FORWARD SKIRT TM & RF
U2AM	S-II AFT MONITOR

U2AN	AIRBORNE SYSTEMS ENGINEER
U2A1	S-II AIRBORNE NETWORKS FWD
U2A2	S-II AIRBORNE NETWORKS AFT
U2EC	ENVIRONMENTAL CONTROL ENGINEER
U2EO	S-II ELECTRICAL ORDNANCE ENGINEER
U2FE	S-II FLIGHT CONTROL
U2FM	S-II FWD MONITOR
U2HO	HANDLING AND ORDNANCE ENGINEER
U2IE	S-II INSULATION ENGINEER
U2J2	ENGINE SYSTEMS ENGINEER
U2LH	S-II HYDRAULIC LEADMAN
U2LN	S-II LUT NETWORKS ENGINEER
U2LP	S-II PRESSURIZATION LEADMAN
U2MH	MECHANICAL AND HYDRAULICS ENGINEER
U2MO	S-II MECHANICAL ORDNANCE ENGINEER
U2MU	MECH/UMBILICAL ENGINEER
U2PE	PROPELLANT/PRESSURIZATION ENGINEER
U2PF	PROPELLANT FILL ENGINEER
U2PM	PROPELLANT MANAGEMENT ENGINEER
U2SE	S-II PAD LEADER
U2SI	STRUCTURES AND INSULATION ENGINEER
U2SY	SAFETY ENGINEER
U2TM	TM ENGINEER
U245	INSULATION PURGE PNEUMATIC CONSOLE, S7-45
U4A6	S-IVB AFT MONITOR
U4A7	S-IVB FORWARD MONITOR
U4PE	PROPULSION ENGINEER
VUMS	IU MEASURING STATION
VURF	RF, "C" BAND RADAR & COS CHECKOUT
V1MS	MEASURING GSE STATION
V2EC	S-II ECS/EAS ENGINEER
V2MS	MEASURING GSE STATION
V4MS	S-IVB MEASURING STATION
Z1	ABORT MON VISUAL OBSERVER (CX20, UC4 OR UC5)
Z2	ABORT MON VISUAL OBSERVER (CX34, UC16)
Z3	ABORT MON VISUAL OBSERVER (CX37, UC17 OR UC9)

DIS - RF CHANNELIZATION LC-39
 FOR
 AS-503 & UP (MANIPED)

LO 111 TEST SUPER. R U	LV 121 L/V TEST COND. R U	IN 131 DATA DISPLAY (CIF)	SF 141 PAD SAFETY	LV 151 IU TEST COND.	LV 161 S-IVR TEST COND.	LV 171 S-II TEST COND.	LV 181 S-IC TEST COND.	LS 211 CHIEF S/C TEST COND. II	LS 221 CSM PAD LEADER	LS 231 LM PAD LEADER	IN 241 ODOP	IN 251 INST. CONTROLLER	SO 261 SUPPORT CONTROLLER
TS 112 TEST SUPPORT CONTROLLER R	IN 122 FAC & ENVIRON. MEAS.	LV 132 LAUNCHER SYSTEMS	LV 142 S/V PNEU. ECS	LV 152 IU MECH.	LV 162 S-IVR MECH. & ORD.	LV 172 S-II GND & STAGE PNEUM.	LV 182 S-IC MECH. & OPD.	LS 212 CSM STC II	LS 222 CSM TPF	LS 232 LM STF	LS 242 LM STC U	IN 252 LM TROUBLE SHOOTING	IS 262 INSL SUPPORT CONTROLLER
SG 113 OTV CONTROL ENG.	LV 123 L/V FLIGHT CONTROL	LV 133 L/V OXIDIZER	LV 143 L/V FUEL	LV 153 IU FLIGHT COMP.	LV 163 S-IVB PROP. (STAGE)	LV 173 S-II PROP.	LV 183 S-IC PROP.	LS 213 CSM INST. U	LS 223 CSM FPS	LS 233 LM EPS	LS 243 LM INST. U	IN 253 FACILITY & ENVIRON. MEAS.	SO 263 HPG GN 2 & HE PURGING
LV 114 L/V STAB. & LAYING	LV 124 LSE ELECT.	LV 134 L/V PROP. ELEC.	LV 144 S-IC MEAS. & HGD	LV 154 IU ELECT. (STAGE)	LV 164 S-IVB GND. PNEUMATICS	LV 174 S-II ELECT. (STAGE)	LV 184 S-IC ELECT. (STAGE)	LS 214 CSM COMM. R U	LS 224 CSM F/C CRYO	LS 234 LM RADAR	LS 244 LM COMM. R U	IN 254 FACILITY & ENVIRON. MEAS.	SO 264 HPG MON. SYS.
SO 115 CRAWLER OP'S	LV 125 L/V TROUBLE SHOOTING	LV 135 L/V TROUBLE SHOOTING	LV 145 L/V DDAS	LV 155 RCA 110A GND COMP.	LV 165 S-IVB ELEC. SYSTEM	LV 175 S-II GND ELECT.	LV 185 S-IC GND ELECT.	LS 215 CSM G&N	LS 225 CSM SCS	LS 235 LM SCS	LS 245 LM G&N	IN 255 FACILITY & ENVIRON. MEAS.	SO 265 HPG ELECT. CONT'S
LV 116 S-IC MEAS.	LV 126 S-II LEAK DETECT.	LV 136 SERVICE ARM (MECH)	LV 146 IU MEAS. (GND)	LV 156 IU TM	LV 166 S-IVB STATUS MONITORING	LV 176 S-II TM	LV 186 S-IC TM	LS 216 CSM RCS SA	LS 226 CSM SPS SA	LS 236 LM RCS SA	LS 246 LFM PROP.	IN 256 CIF TELEM. GND STA.	SO 266 O2 FAC OPNS
SO 117 OIS CONTROL ENG	LV 127 L/V TM R U	LV 137 L/V RF R U	LV 147 CNTD'N CLOCK & DEE 6	LV 157 IU RF	TS 167 SUPPORT TROUBLE SHOOTING	LV 177 LV QAL	LV 187 S-IC RF	LS 217 CSM AERO- MED	LS 227 CSM ECS	LS 237 LM ECS	LS 247 SC Q/C	IN 257 CIF TELEM. GND STA.	SO 267 KSC TIMING
LV 118 SERVICE ARM MECH.	LV 128 S-II MEAS.	LV 138 S-IVB DDAS & MEAS.	LV 148 IU MEAS.	LV 158 IU GND ELECT.	LV 168 S-IVB RF & TM	LV 178 S-II FLIGHT CONTROL & HYDRAULICS	LV 188 PAGING	LS 218 CSM GSF	LS 228 CSM ACE	LS 238 LM ACF	LS 248 LM GSF	LO 258 TEST SUPER (BACK-UP)	LS 268 CSM TROUBLE SHOOTING

R = AVAILABLE TO ETR
 U = AVAILABLE TO USB - MILA
 SA = FOR TEMPORARY USE DURING SERVICE ARM OPERATIONS

APPROVAL *R.E. Moser*
 R.E. Moser, LO-PLN 6/27/68
 DATE

ABBREVIATIONS

A/B	AIRBORNE
AC	ALTERNATING CURRENT
ACCEL	ACCELERATING
ACE	AUTOMATIC CHECKOUT EQUIPMENT
ACS	AIRBORNE COMMAND SYSTEM
ALSEP	APOLLO LUNAR SCIENTIFIC EXPERIMENTAL PACKAGE
ALT	ALTERNATE
AM	AMPLITUDE MODULATION
AMB	AMBIENT
AOA	ANGLE OF ATTACK
APS	AUXILIARY PROPULSION SYSTEM
A/S	LM ASCENT STAGE
AS	APOLLO/SATURN
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVP	ACCEPTANCE VERIFICATION PULSE
BATT	BATTERY
BPC	BOOST PROTECTIVE COVER
CALIPS	SWITCH TRADE NAME
CAL	CALIBRATION
CAM	PERFORM
CB	CIRCUIT BREAKER
CCMKB	SWITCH SELECTOR MALFUNCTION COMMAND BOXES
CCR	COMMAND COMMUNICATIONS RECEIVER
CCS	COMMAND COMMUNICATIONS SYSTEM
ODF	CONFINED DETONATING FUSE
CDDT	COUNTDOWN DEMONSTRATION TEST
CHE	COMPONENT HANDLING EQUIPMENT
CIF	CENTRAL INSTRUMENTATION FACILITY
CKT	CIRCUIT
CL	CLOSED LOOP
CM	COMMAND MODULE
CMD	COMMAND
COAX	COAXIAL
COMP	COMPUTER
CONT	CONTINUOUS
C/O	CHECKOUT, CUTOFF
COORD	COORDINATION
CRD	CONTROLLED RELEASE DEVICE
CRG	CONTROL RATE GYRO
CRP	COMMAND READ PULSE
CRT	CATHODE RAY TUBE
CRYO	CRYOGENIC
CSM	COMMAND SERVICE MODULE
CT	COMPONENT TEST
CVS	CONTINUOUS VENT SYSTEM

DAC DIGITAL TO ANALOG CONVERTER
DBM DECIBELS ABOVE ONE MILLIWATT
DC DIRECT CURRENT
DDAS DIGITAL DATA ACQUISITION SYSTEM
DEE DIGITAL EVENTS EVALUATOR
DEG DEGREE
DIN DIGITAL INPUT
DIR DIRECTIONAL
DISC DISCONNECT
DIST DISTRIBUTION
DTS DATA TRANSMISSION SYSTEM
DRSCS DIGITAL RANGE SAFETY COMMAND SYSTEM
DRRS DAMPER RETRACT RECONNECT SYSTEM
D/S LM DESCENT STAGE

EAS ENGINE ACTUATION SYSTEM
EBW EXPLOSIVE BRIDGE WIRE
EC ENVIRONMENTAL CHAMBER
ECS ENVIRONMENTAL CONTROL SYSTEM
EDS EMERGENCY DETECTION SYSTEM
EMC ELECTRO-MAGNETIC COMPATIBILITY
EMI ELECTROMAGNETIC INTERFERENCE
E-M ELECTRO-MECHANICAL
ENG ENGINE
ENGR ENGINEER
ESE ELECTRICAL SUPPORT EQUIPMENT
ESP ENGINE SERVICE PLATFORM
ETR EASTERN TEST RANGE
ELEC ELECTRICAL

FCA FUEL CASK ASSEMBLY
FCC FLIGHT CONTROL COMPUTER
F/C FLIGHT CONTROL
FDS FUEL DISTRIBUTION SYSTEM
F & D FILL AND DRAIN
FM FREQUENCY MODULATION
FLT FLIGHT
FPI FUEL PRESSURE INDICATOR
FREQ FREQUENCY
FT, F/T FUNCTIONAL TEST, FOOT
FWD FORWARD
F/R FIRING ROOM
F. U. FIRING UNIT

G&C	GUIDANCE AND CONTROL
GEN	GENERATOR, GENERALIZED
GG	GAS GENERATOR
GHE	GASEOUS HELIUM
GH2	GASEOUS HYDROGEN
GMT	GREENWICH MEAN TIME
GN2	GASEOUS NITROGEN
GND	GROUND
GRR	GUIDANCE REFERENCE RELEASE
GRRR	GUIDANCE REFERENCE RELEASE ALERT
GSE	GROUND SUPPORT EQUIPMENT
GSFC	GODDARD SPACE FLIGHT CENTER
GUID	GUIDANCE
HE	HELIUM
HCU	HYDRAULIC CHARGING UNIT
HDA	HOLD DOWN ARMS
HGD	HAZARDOUS GAS DETECTION
H/H	HAMMERHEAD
HI	HIGH
HP	HIGH PRESSURE
HRS, HR	HOURS
HYD	HYDRAULIC
HZ	HERTZ (ONE CYCLE PER SECOND)
IBM	INTERNATIONAL BUSINESS MACHINES
IGN	IGNITION
IMU	INERTIAL MEASUREMENT UNIT
INFLT	INFLIGHT
IND	INDICATION
INJ	INJECTOR OR INJECTION
INS	INSTRUMENTATION SYSTEMS DIVISION
INSP	INSPECTION
INSTR	INSTRUMENTATION
IU	INSTRUMENT UNIT
IWS	INDUSTRIAL WATER SYSTEM
KHZ	KILO-HERTZ
KSC	KENNEDY SPACE CENTER

LAB	LABORATORY
LC	LAUNCH COMPLEX
LCC	LAUNCH CONTROL CENTER
LES	LAUNCH ESCAPE SYSTEM
LH2	LIQUID HYDROGEN
LLP	ML ZERO LEVEL PLATFORM
LM	LUNAR MODULE
LO	LIFT OFF
LOM	LAUNCH OPERATIONS MANAGER
LOS	LOSS OF SIGNAL, LINE OF SIGHT
LOX	LIQUID OXYGEN
LSE	LAUNCH SUPPORT EQUIPMENT
LUT	LAUNCH UMBILICAL TOWER
LV	LAUNCH VEHICLE
LVDA	LAUNCH VEHICLE DATA ADAPTER
LVDC	LAUNCH VEHICLE DIGITAL COMPUTER
LVO	LAUNCH VEHICLE OPERATIONS
MALF	MALFUNCTION
MAP	MESSAGE ACCEPTANCE PULSE
MAX	MAXIMUM
MCC-H	MISSION CONTROL CENTER - HOUSTON
MDC	MCDONNELLDUGLAS
MDO	MOBILE LAUNCHER COMPUTER DIGITAL OUTPUT
MEAS	MEASURE
MECH	MECHANICAL
MHZ	MEGA-HERTZ
MILA	MERRITT ISLAND LAUNCH AREA
MIN	MINUTE
ML	MOBILE LAUNCHER
MON	MONITOR
MSS	MOBILE SERVICE STRUCTURE
MUDL	MODULE
MUX	MULTIPLEXER
NAV	NAVIGATION
NO	NUMBER
NPV	NON PROPULSIVE VENT
NR	NORTH AMERICAN ROCKWELL
OAT	OVERALL TEST
OIS	OPERATIONAL INTERCOMMUNICATIONS SYSTEM
OMNI	OMNI-DIRECTIONAL
OPS	OPERATIONS
ORD	ORDNANCE
OTV	OPERATIONAL TELEVISION

PA	PUBLIC ADDRESS SYSTEM
PCM	PULSE CODE MODULATION
PCMU	PROPELLANT CALIBRATION MEASURING UNIT
PD	PROPELLANT DISPERSION
PM	PROPELLANT MONITOR
PNEU	PNEUMATIC
POGO	LONGITUDINAL VIBRATION SUPPRESSION SYSTEM
POS	POSITIVE
POSN	POSITION
PRA	PROPELLANT RECORDER AMPLIFIERS
PREFLT	PREFLIGHT
PREPS	PREPARATIONS
PREPRESS	PREPRESSURIZATION
PRESS	PRESSURE
PROP	PROPULSION, PROPELLANT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSV	PRESSURE SUPPLY VALVE
PTCR	PAD TERMINAL CONNECTION ROOM
PTCS	PROPELLANT TANKING COMPUTER SYSTEM
PU	PROPELLANT UTILIZATION
PWR	POWER
QC	QUALITY CONTROL
RACS	REMOTE AUTOMATIC CALIBRATION SYSTEM
RCA	RADIO CORPORATION OF AMERICA
RCS	REACTION CONTROL SYSTEM
RECIRC	RECIRCULATION
RECVR	RECEIVER
REF	REFERENCE
REG	REGULATOR
REPRESS	REPRESSURIZATION
RF	RADIO FREQUENCY
RFI	RADIO FREQUENCY INTERFERENCE
RM	ROOM
RP-1	REFINED KEROSENE
REQD	REQUIRED
RR	RETRO ROCKET
RS	RANGE SAFETY
RSCR	RANGE SAFETY COMMAND RECEIVER
RSO	RANGE SAFETY OFFICER
RTG	RADIOISOTOPE THERMOELECTRIC GENERATOR

SA	SATURN APOLLO
S/A	SERVICE ARMS
SACS	SERVICE ARM CONTROL SWITCHES
S&A	SAFE AND ARM
SC	SPACECRAFT
SCO	SPACECRAFT OPERATIONS
SEC	SECOND
SEL	SELECT
SEP	SEPARATION
SEQ	SEQUENCE
SHE	SUPERCritical HELIUM
SIG	SIGNAL
SIM	SIMULATE
SIU	SEQUENCE INITIATE UPDATE
SLA	SC LUNAR ADAPTER
SM	SERVICE MODULE
SMDPS	SERVICE MODULE DELUGE PURGE SYSTEM
SP	STABILIZED PLATFORM
SPEC	SPECIAL
SRO	SECURE RANGE SAFETY OFFICER
SSB	SINGLE SIDE BAND
STA	STATION
STG	STAGE
S/V	SPACE VEHICLE
SW	SWITCH
SS	SWITCH SELECTOR
SYS	SYSTEM
SYNC	SYNCHRONIZE
S-IC	SATURN V 1ST STAGE
S-II	SATURN V 2ND STAGE
S-IVB	SATURN V 3RD STAGE

T	TIME
T-O	NOMINAL LIFTOFF
TB	TIME BASE
TBC	THE BOEING COMPANY
TC	TEST CONDUCTOR
TCE	TELEMETRY CHECKOUT EQUIPMENT
TCH	THRUST CHAMBER
TCS	TERMINAL COUNTDOWN SEQUENCER
TEMP	TEMPERATURE
THEOD	THEODOLITE
TM	TELEMETRY
TSM	TAIL SERVICE MAST
TV	TELEVISION

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UCS	UNIVERSAL CAMERA SITE
UHF	ULTRA-HIGH FREQUENCY
UMB	UMBILICAL
UR	ULLAGE ROCKET
USB	UNIFIED S-BAND FACILITY
VAB	VEHICLE ASSEMBLY BUILDING
VLA	VARIABLE LAUNCH AZIMUTH
VT	VENT
W/R	WHITE ROOM (S/A 9 ENVIRONMENTAL CHAMBER)
XMITER,	
XMTR	TRANSMITTER

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CD ONLY

LAUNCH PAD ACCESS CONTROL

DUE TO HAZARDS WHICH EXIST DURING THIS TEST, CONTROL OF PERSONNEL IN THE PAD AREA IS MANDATORY. THE FOLLOWING IS A SUMMARY OF SYSTEMS SAFETY ITEMS RELATING TO THE LAUNCH VEHICLE PORTION OF THE COUNTDOWN.

DEFINITION:

LAUNCH PAD:

THE AREA WITHIN THE SECURITY FENCE SURROUNDING THE LAUNCH SITE.

WARNING LIGHTS:

RED:

PAD CLOSED

CONDITION 1

THIS CONDITION WILL EXIST DURING EXTREMELY HAZARDOUS OPERATIONS. ACCESS TO THE PAD AREA DURING THIS PERIOD OF TIME SHALL BE PROHIBITED OR SHALL BE RIGIDLY CONTROLLED BY THE TEST SUPERVISOR AND SAFETY. ACCESS SHALL BE BY SPECIAL PERMISSION ONLY.

FLASHING AMBER:

HAZARDOUS ACCESS

CONDITION 2

THIS CONDITION SHALL EXIST DURING HAZARDOUS OPERATIONS ON THE PAD WHEN ONLY SPECIFIED TASKS MAY BE WORKED.

AMBER:

LIMITED ACCESS

CONDITION 3

THIS CONDITION SHALL EXIST DURING HAZARDOUS OPERATIONS IN THE PAD AREA WHEN ACCESS TO THE IMMEDIATE AREA MUST BE CONTROLLED. PERSONNEL ENTERING THE PAD AND/OR CONTROLLED ACCESS AREA MUST OBSERVE THE PRECAUTIONS ESTABLISHED FOR THE AREA.

GREEN:

PAD OPEN

CONDITION 4

THIS CONDITION EXISTS WHEN THE PAD AREA IS OPEN FOR NORMAL WORK. PAD ACCESS BADGES WILL BE REQUIRED AND PAD SECURITY WILL BE IN EFFECT.

CD ONLY

CD CONTROLLED AREA RESTRICTIONS

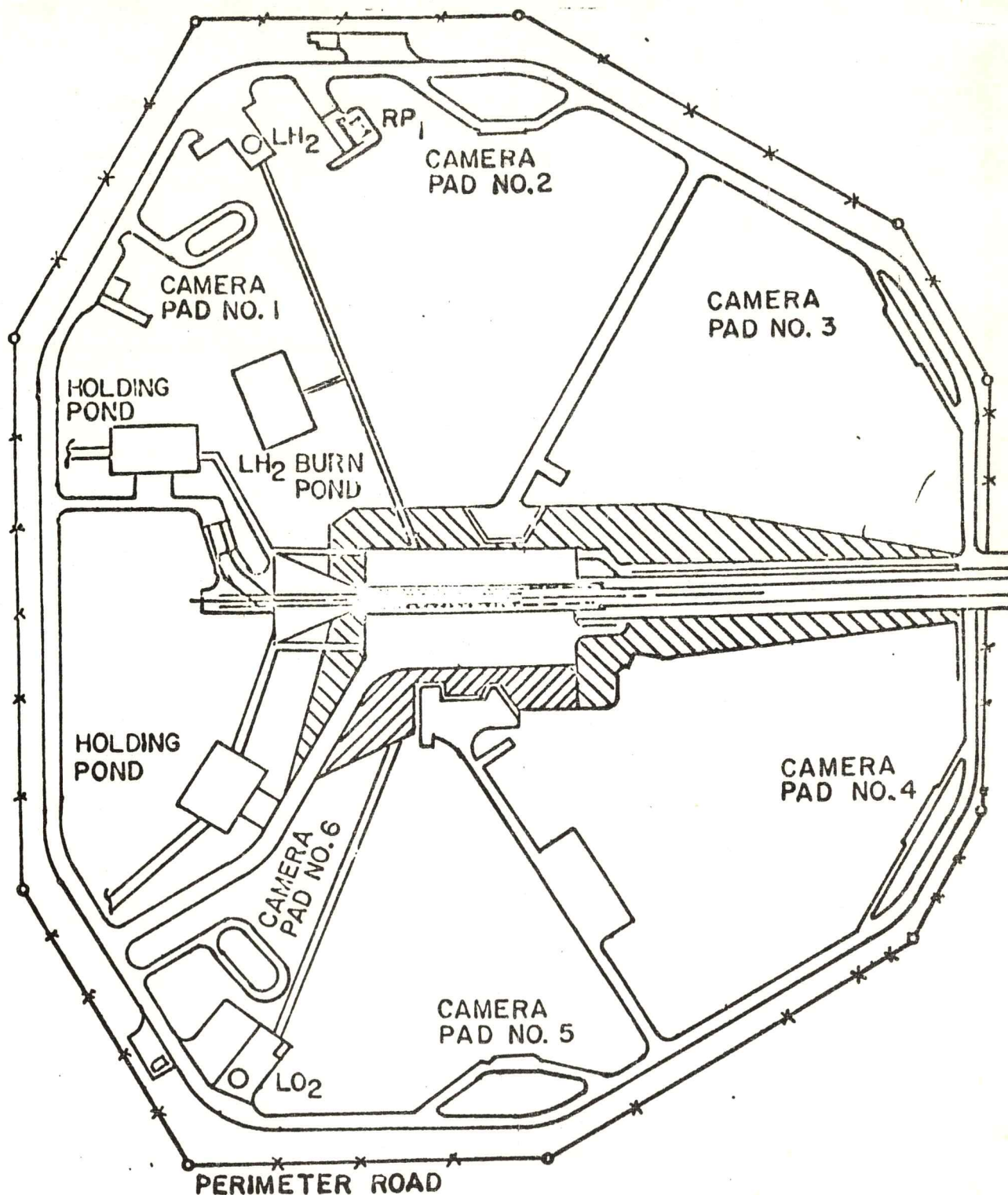
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1. T-4 DAYS 45 MIN TO T-3 DAYS 21 HRS: THE SLA INTERIOR, IU & S-IVB FORWARD AREAS WILL BE CLEARED FOR LM PROPELLANT LINE ROUTING, CONNECTION AND LEAK CHECK.
2. T-3 DAYS 20:30 HRS TO T-3 DAYS 17 HRS: THE ML ZERO LEVEL (EXCEPT PATH TO ELEVATOR) WILL BE CLEARED FOR LV ORDNANCE OPERATIONS.
3. T-3 DAYS 16:30 HRS TO T-3 DAYS 13 HRS: THE MSS, PAD APRON, FLAME TRENCH AND ML (EXCEPT ROOMS 10 & 15A) WILL BE CLEARED FOR LV INITIATOR DETONATOR HOOKUP AND CSM HEAVY ORDNANCE HOOKUP
4. T-3 DAYS 12:30 HRS TO T-3 DAYS 12 HRS: THE AREA INSIDE THE PAD PERIMETER FENCE WILL BE CLEARED FOR CSM REMOTE RESISTANCE CHECKS.
5. T-3 DAYS 12 HRS TO T-3 DAYS 10 HRS: THE SLA INTERIOR IU & S-IVB FORWARD AREA WILL BE RESTRICTED TO PERSONNEL ESSENTIAL FOR LM PROPELLANT VENT LINE QD HV OPENING AND WILL BE CLEARED FOR LM RCS MANIFOLD LOAD
6. T-3 DAYS 6:30 HRS TO T-2 DAYS 18:30 HRS: THE AREA INSIDE THE PERIMETER FENCE WILL BE CLEARED FOR LM CSM GHE GOX SERVICING AND PROPELLANT LINE DISCONNECT
7. T-2 DAYS TO T-1 DAY 21 HRS: THE LM DESCENT AREA INTERNAL TO THE SLA, IU & S-IVB FORWARD AREA WILL BE CLEARED FOR LM SHE SERVICING.
8. T-1 DAY 16 HRS TO T-1 DAY 9 HRS: AN 1100 FOOT RADIUS AROUND THE SV WILL BE CLEARED (EXCEPT ML ROOMS 10 AND 15A) FOR CSM LOX AND LH2 TANKING.
9. T-1 DAY 8:30 HRS TO T-1 DAY 8 HRS: THE AREA INSIDE THE PAD PERIMETER FENCE WILL BE CLEARED FOR CSM LOX & LH2 TANK PRESSURIZATION.
10. T-1 DAY 8 HRS TO T-1 DAY 7:30 HRS: THE SLA INTERIOR, IU & S-IVB FORWARD AREA WILL REMAIN CLEAR FOR LM RCS FINAL MANIFOLD LOADING.

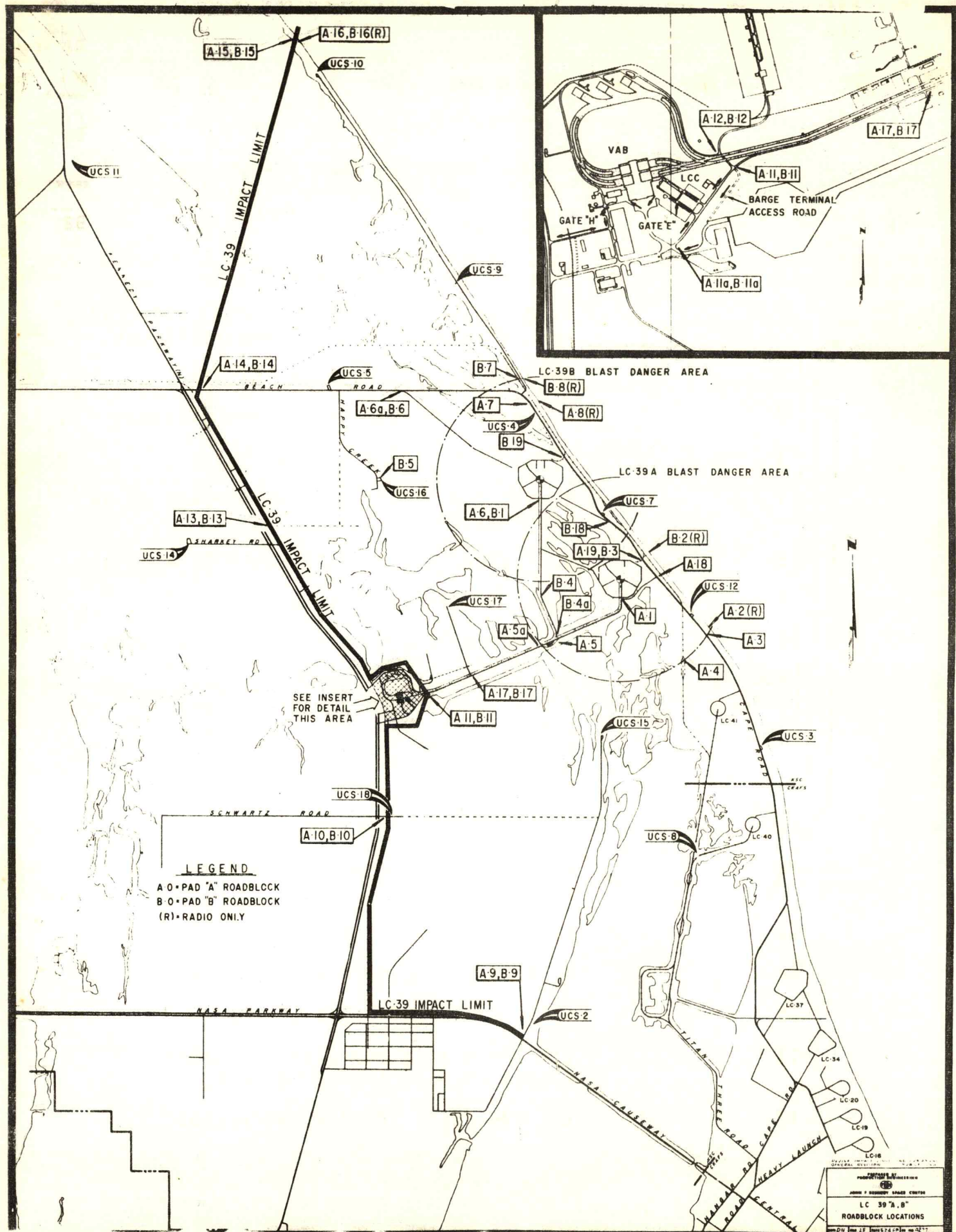
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LC-39 PAD MAP



TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
					PRECOUNT TEST CONDITIONS	
		1			RP-1 LOADED	
		2			S/V ECS AIR ON PER V-26247.	
		3			S-IC LOX TANK BULKHEAD COVERS INSTALLED AND INTERNAL WORK PLATFORMS INSTALLED.	
		4			ESP AND ML ZERO PLATFORM RAISED.	
		5			ALL S/A'S IN PLACE WITH TIPS EXTENDED.	
		6			MSS AT PAD WITH PLATFORMS CLOSED.	
		7			50 PSI GN2 DISTRIBUTION BOX PURGE IS ON PER V-36064.	
		8			DTS SUPPORTING & PROPELLANTS DC POWER ON	
		9			DEE-3 SYSTEM SUPPORTING.	
		10			LSE MECHANICAL PRELIMINARY TOWER PREPS IN PROGRESS PER LISTED PROCEDURES. S/A 1 V-36077 S/A 7 V-36083 S/A 2 V-36078 S/A 8 V-36084 S/A 3 V-36032 S/A 9 V-36085 S/A 4 V-36080 DRRS V-36086 S/A 5 V-36081 HDA V-36069 S/A 6 V-36082 TSM V-36039	
		11			ML ELEC PREPS IN PROGRESS PER V-31045	
		12			S-IC ESE LAUNCH PREPS IN PROGRESS PER V-21035.	
		13			LSE 42D100 POWER ON	
		14			ML SLUG INST COMPLETE PER V-20072.	
		15			S-IVB APS HYPERGOLICS LOADED.	
		16			LIFTOFF ENABLE AND DESTRUCT SYSTEM ENABLE KEYS DELIVERED TO CPSS.	
		17			ALL EBW PULSE SENSORS INSTALLED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
		18			REQ PNEU DISTSYS ARE PRESSURIZED.	
		19			COUNTCLOCK SUPPORTING PER V-21274.	
		20			DDAS SUPPORTING PER V-28085.	
		20			DDAS SUPPORTING PER V-28085.	
		21			AUXILIARY POWER SUPPORTING PER V-21222 WITH ML DCE POWERED ON (MANUAL MODE) AND 400 HZ POWER ON.	
		22			IU THERMAL CONDITIONING SYSTEM CONFIGURED PER V-24399 (CLOSED LOOP) WITH FLIGHT TUBE INSTALLED.	
		23			SMDPS IN 2 SWITCH - 1 VALVE MODE.	TCPI
		24			READY TO SUPPORT MANDATORY MEASUREMENTS SPECIFIED IN THE LAUNCH MISSION RULES K-V-05.10/5.	
		25			DELETED CDDT ONLY	
		26			DELETED CDDT ONLY	
		27			FLAME DEFLECTOR IN LAUNCH POSITION.	#
		28			ECS E-M COMPONENT CHECKOUT COMPLETE.	
		29			ESP TRANSPORTER LOCATED UNDER ML.	
		30			HDA'S PRELOADED PER V-26046.	
		31			IWS E-M TEST V-26472 IS COMPLETE.	
		32			SLA/LM ECS AIR TEMPERATURE CONTROLS ARE SET TO 67 DEG. F.	TCPI
		33			ALL GN2 ELEC ENCLOSURES ARE VALIDATED.	
		34			S-IC, S-II, S-IVB AND IU STAGE POWER OFF	
		35			S-IC 118 SECTION CLOSED OUT AND SECURED FOR LAUNCH	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
					VOLUME 1	
					----- PRECOUNT -----	
121		1	CLTC	C1TC	DELETED GDDT ONLY	
					RETRACTION:	
					9082 A10 J1/F2	
					9082 A10 J1/F43	
					9082 A10 J2/F27	
					9082 A10 J2/F32	
121		2	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY TO PROCEED WITH SCHEDULED PRECOUNT OPERATIONS PER V-20060.	
111		3	CLTC	CVTS	LV IS PROCEEDING WITH PRECOUNT OPERATIONS.	TCP1
- 4 DAY 20 HRS 30' 0"						
171		1	C2TC	U2PM	DELETED GDDT ONLY	
171		2	C2TC	U2PM	VERIFY PRESSURE IN PU COMPUTER IS 10 +/- 1.0 PSIG. IF PRESSURE IS NOT WITHIN THE SPECIFIED TOLERANCE, PRESSURIZE COMPUTER PER V-30029 (M020) SECTION VI, TASK 93. REPORT WHEN COMPLETE.	#
- 4 DAY 17 HRS 0' 0"						
171		1	C2TC	U2J2	START PROPELLANT FEED SYSTEM VACUUM JACKETED LINE PRESSURE CHECKS PER V-24116 (J001); REPORT WHEN COMPLETE.	#

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
- 4 DAY 17 HRS 01 0"						
171		2	C2TC	C2SP	RECONFIGURE LH2 VENT VALVE SYSTEM TO SUPPORT LAUNCH COUNTDOWN PER V-30029 (M020) TASK 81. REPORT WHEN COMPLETE.	#
171		3	C2TC	C2SP	START PROPELLANT TANK GAS SAMPLING PER V-30029 (M020) TASK 82. REPORT WHEN COMPLETE.	#
171		4	C2TC	C2SP	START 7 PSIG LEAK CHECKS PER V-30029 (M020) TASK 83. REPORT WHEN COMPLETE.	#
171		5	C2TC	C2LD	DELETED GDDT ONLY	*
171		6	C2TC	C2SP	START PRESSURIZATION UMBILICAL VERIFICATION PER V-30029 (M020) TASK 1. REPORT WHEN COMPLETE.	
171		7	C2TC	U2J2	START ENGINE/RECIRC UMBILICAL VERIFICATION PER V-30029 (M020) TASK 2. REPORT WHEN COMPLETE.	
171		8	C2TC	U2QC	START CLOSEOUT INSPECTION PER ITI LS008.	
171		9	C2TC	R2SC	SETUP LCC MEASURING STATION PER V-27154 (G031).	
171		10	C2TC	V2MS	SETUP VAB MEASURING STATION PER V-27183 (G032).	
171		11	C2TC	C2SP	START ACTUATION PRESSURE LINE LEAK CHECKS PER V-30029 (M020) TASK 84. REPORT WHEN COMPLETE.	#
- 4 DAY 16 HRS 30 0"						
171		1	C2TC	U2LN	START LUT ELEC INSP PER V-21253 (G060).	
171		2	C2TC	U2AN	START STAGE ELEC INSP PER V-21438 (B022)	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 16 HRS 30' 0"	171	3	C2SP	C2TC	ACTUATION PRESSURE LINE LEAK CHECKS ARE COMPLETE.	#
4 DAY 14 HRS 30' 0"	121	1	CVTS	CLTC	DELETED CDDT ONLY	* TCP
4 DAY 14 HRS 5' 0"	121	1	CVTS	CLTC	DELETED CDDT ONLY	* TCP
4 DAY 9 HRS 0' 0"	121	1	CVTS	CLTC	VERIFY THE SMDPS IS IN THE 2 SWITCH 1 VALVE MODE	# TCP
4 DAY 8 HRS 30' 0"	171	1	C2TC	B2TM	SETUP TCE GROUND STATION PER V-28135 (G050). REPORT WHEN COMPLETE.	
4 DAY 8 HRS 5' 0"	121	1	CVTS	CLTC	VERIFY SLA/LM ECS AIR TEMPERATURE CONTROLS ARE SET TO 67 DEG. F.	# TCP

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 7 HRS 50' 0"		121	1	CUTC	CLTC LV ELECT SUPPORT PREPS PER V-31062, APPENDIX B ARE IN PROGRESS.	
4 DAY 7 HRS 30' 0"		171	1	C2TC	U2PM VERIFY C7-84 PREPS PER SECTION D OF V-25151 (H013).	
		171	2	U2PM	C2TC DELETED CDDT ONLY	
		171	3	C2TC	U2PM START MEGGER CHECKS/C7-84 HOOKUP PER SECTIONS D2 AND D3 OF V-25151 (H013).	
		171	4	C2TC	U2J2 START ENGINE/RECIRC SYSTEMS INSPECTION AND ENGINE COVER REMOVAL PER V-34014 (E023). REPORT WHEN COMPLETE.	
		161	5	C4TC	L4CE START PRETEST PREPS PER V-30539, SECT A. REPORT WHEN COMPLETE.	
4 DAY 7 HRS 0' 0"		161	1	C4TC	C4ES START S-IVB PRE-POWER PREPS PER V-30539, APPENDIX A.	
		161	2	C4TC	C4PS START PROPULSION SYSTEM POWER OFF PREPS PER V-35015.	
4 DAY 6 HRS 40' 0"		121	1	CUTC	CLTC SUPPORT PREPS ARE COMPLETE - READY TO APPLY LSE, S-II AND S-IVB SWITCH POWER.	
		121	2	CLTC	C1TC C2TC C4TC APPLY SWITCH POWER AND VERIFY.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 6 HRS 40' 0"						
121		3	CLTC	CUTC	SWITCH POWER IS ON - INITIALIZE DISCRETES	
151		4	CUTC	BGCC	INITIALIZE DISCRETES PER V-22006. (PROGRAMS NT99 AND NT98). REPORT WHEN SWITCH SCAN IS BEING DISPLAYED.	
151		5	CUTC	RLDE	LOAD AND INITIATE SEQUENCE COMPARE TABLES AS REQUIRED FOR THIS TEST.	
181		6	C1TC	CSPP L1RS	START INTERFACE TEST PER V-31045 ON CH 124; REPORT WHEN COMPLETE.	#
121		7	C1TC	CLTC	LV ECS SUPPORTING PER V-26247.	
4 DAY 6 HRS 30' 0"						
121		1	CUTC	CLTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION,	
121		2	CLTC	C1TC C2TC C4TC CUTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION. REPORT WHEN SATISFACTORY.	
151		3	CUTC	CLVN	ML COMPUTER INHIBIT - AUTO	
151		4	CUTC	CLVN	COMPUTER TEST SWITCH ON AND VERIFY DISCRETE CYCLING.	
151		5	CUTC	CCPM	APPLY 400 HERTZ POWER AND START REDUNDANT POWER SUPPLY PER PROCEDURE V-21222. REPORT WHEN COMPLETE.	
121		6	C1TC	CLTC	DELETED CDDT ONLY	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 6 HRS 30' 0"	181	7	C1TC	CPDC	DELETED CDDT ONLY	*
4 DAY 6 HRS 15' 0"	121	1	CLTC	CUTC	SWITCH SCAN IS SATISFACTORY. BRING UP COMPUTER.	
	151	2	CUTC	BGCC	ENTER S GO AND PERFORM DATA LINK SWITCH OVER PER V-22006, REPORT WHEN COMPLETE.	
	121	3	CUTC	CLTC	GROUND COMPUTER IS SUPPORTING.	
	188	4	CLTC	ALL	GROUND COMPUTER IS SUPPORTING.	
		4-1			***NOTE: ALL DISPLAY CONSOLE OPERATORS PRIOR TO SELECTING ANY COMPUTER PROGRAM, ACCOMPLISH THE FOLLOWING: 1. MOMENTARILY DEPRESS TV TRANSMIT. 2. TYPE "1". 3. MOMENTARILY DEPRESS EXECUTE. 4. MOMENTARILY DEPRESS CLEAR	
	121	5	CLTC	RDAS	RECORDERS ON	
		5-1		RDAS	*** NOTE DDAS RECORDERS MUST BE ON WHENEVER ANY STAGE IS POWERED ON.	
	111	6	CLTC	CVTS	LV APPLYING STAGE POWER.	TOP!
	121	7	CLTC	CUTC	APPLY IU STAGE POWER.	
	151	8	CUTC	CUNP	APPLY IU STAGE PWR, PER V-21223. REPORT WHEN COMPLETE.	
	171	9	C2SP	C2TC	PROPELLANT TANK GAS SAMPLING COMPLETE.	#

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 6 HRS 15' 0"						
161		10	C4TC	C4ES	VERIFY PRE-POWER PREPS COMPLETE.	
161		11	C4TC	C4ES	APPLY S-IVB GROUND POWER PER V-30539 APPENDIX B, REPORT WHEN COMPLETE.	
4 DAY 6 HRS 0' 0"						
171		1	C2SP	C2TC	7 PSIG LEAK CHECKS ARE COMPLETE.	#
171		2	R2SC	C2TC	LCC MEASURING STATION SETUP IS COMPLETE.	
171		3	V2MS	C2TC	VAB MEASURING STATION SETUP IS COMPLETE.	
181		4	C1TC	CSPP	VERIFY LSE POWER ON AND START BATTERY SWITCHOVER TEST PER V-21194. REPORT WHEN COMPLETE.	
121		5	CUTC	CLTC	STAGE POWER ON AND COOLING IS SUPPORTING.	
151		6	CUTC	CUCP	START REDUNDANT COOLANT PUMP CHECK WITH RUBM ON CHANNEL 152 PER V-31062, PART II, REPORT WHEN COMPLETE.	
161		7	C4TC	S4PC	START S-IVB ENGINEERING WALK AROUND PER V-30539, SECT B.	
121		8	CLTC	C4TC	APPLY S-IVB STAGE POWER AND RUN EBW FUNCTIONAL TEST.	
161		9	C4TC	C4ES	APPLY S-IVB STAGE POWER PER V-30539, APPENDIX B, REPORT WHEN COMPLETE.	
161		10	C4TC	C4PS	START PROPULSION SYSTEM POWER ON PREPS PER V-35015.	
121		11	C4TC	CLTC	S-IVB STAGE POWER HAS BEEN APPLIED.	
161		12	C4TC	C4ES	START EBW FUNCTIONAL TEST PER V-30539 SECT C.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					GD ONLY	
4 DAY 6 HRS 0' 0"						
	121	13	CLTC	C2TC	APPLY S-II STAGE POWER.	
	171	14	C2TC	U2PM	VERIFY PREPS COMPLETE AND READY FOR STAGE POWER.	
	171	15	C2TC	R2SC	VERIFY READY FOR STAGE POWER.	
	171	16	C2TC	C2NP	APPLY S-II STAGE POWER PER V-21103 (8011).	
	171	17	C2TC	C2IP	GROUND POWER TO ON.	
	171	18	C2TC	B2TM	START PCM/DDAS CHECKS PER V-28144 (R014) MODE 1, REPORT WHEN COMPLETE.	
	171	19	C2SP	C2TC	PRESS UMBILICAL VERIFICATION IS COMPLETE	
	171	20	U2J2	C2TC	ENG/RECIRC UMBILICAL VERIFICATION IS COMPLETE.	
	171	21	C2TC	C2GP	ACTIVATE GROUND PNEUMATICS PER V-24256 (Q046) WHEN REQUIRED TO SUPPORT LH2 SYSTEMS PURGE (V-35015).	#
	171	22	C2TC	C2GP	DELETED GDDT ONLY	*
	121	23	C2TC	CLTC	S-II STAGE POWER IS ON.	
	171	24	C2TC	C2NP	PLACE PM POWER ON AND VERIFY.	
	171	25	C2TC	C2PM	START INITIAL PANEL STATUS CHECK PER V-30029 (M020) TASK 6. REPORT WHEN COMPLETE.	
	181	26	C1TC	CCLH	STANDBY TO SUPPORT S-II/S-IVB LH2 TANK PURGING & SAMPLING PER V-35015.	
	181	27	C1TC	CCLO	STANDBY TO SUPPORT S-II/S-IVB LOX TANK PURGING AND SAMPLING PER V-35015.	

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

4251.60
 TEST NO. A 36
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 6 HRS 01' 0"						
171		28	CZTC	C2NK	START S-II SYSTEM BYPASS/BYPASS INHIBIT CHECKS PER V-30029 (M020) TASK 3. REPORT WHEN COMPLETE.	
121		29	C1TC	CLTC	LHX AND LH2 PROPELLANTS SUPPORTING FOR S-II AND S-IVB TANK PURGE AND SAMPLING.	
181		30	C1TC	CHDA	START HDA/SACS ELECTRO-MECHANICAL TESTS PER V-36069.	
171		31	CZTC	B2TM	START S-II STAGE RF & TM CLOSEOUT FOR LAUNCH PER V-28143 (M021).	
161		32	C4TC	C4HY	START S-IVB HYDRAULIC SYSTEM PREPARATION AND FUNCTIONAL PER V-30339, SECT D.	
4 DAY 5 HRS 45' 0"						
181		1	CSPP	C1TC	LSE INTERFACE TEST COMPLETE	*
181		2	C1TC	CSAC	DELETED CDDT ONLY	*
118		3	CSAC	CHCU	DELETED CDDT ONLY	*
4 DAY 5 HRS 30' 0"						
188		1	CLTC	ALL	DELETED CDDT ONLY	*
111		2	CLTC	CVTS	DELETED CDDT ONLY	* TCP
161		3	C4TC	C4PS	START PROPULSION SYSTEM PURGES PER V-35015.	

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. A 97
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 5 HRS 30' 0"	171	4	C2TC	C2DP C2NK	START SEPARATION SYSTEM CHECKOUT PER V-30029 (M020) TASK 4, REPORT WHEN COMPLETE.	
4 DAY 5 HRS 15' 0"	181	1	C1TC	CHCU	DELETED CDDT ONLY	*
	118	2	CSAC	CSAD	DELETED CDDT ONLY	*
	118	3	CSAC	CSA1	DELETED CDDT ONLY	*
	118	4	CSAC	CSA5	DELETED CDDT ONLY	*
	118	5	CSAC	CSA7	DELETED CDDT ONLY	*
	181	6	C1TC	CTS1	DELETED CDDT ONLY	*
		6-1			DELETED CDDT ONLY	*
	171	7	C2GP	C2TC	GROUND PNEUMATICS ACTIVATED.	
	121	8	CLTC	C2TC	LOX & LH2 PROPELLANTS SUPPORTING FOR S-II TANK PURGES AND SAMPLING.	
	171	9	C2TC	C2SP C2RP	DELETED CDDT ONLY	*
	171	10	C2TC	C2SP C2RP	IF PROPELLANT TANK GAS SAMPLES FAIL TO MEET SPECIFIED REQUIREMENTS (REF. V-30029 (M020) TASK 82), START S-II PROPELLANT TANK AND FEED SYSTEM PURGES PER V-35015.	#

LV CDDT & CD, VOL 1

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APOLLO/SATURN LAUNCH OPERATIONS

3251.60

TEST NO.

V-20060, VOL 1

VEHICLE

AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 5 HRS 15' 0"						
	171	11	C2TC	U2PE	START CLOSEOUT OF ML LEVEL 180 PER V-30029 (M020) TASK 64.	
4 DAY 5 HRS 0' 0"						
	161	1	C4ES	C4TC	EBW FUNCTIONAL TEST COMPLETE.	
	121	2	C4TC	CLTC	EBW FUNCTIONAL TEST COMPLETE	
	171	3	C2TC	U2EO	REMOVE ALL PULSE SENSORS EXCEPT PD PER V-29038 (S009).	
	161	4	C4TC	C4ES	START REMOVAL OF PULSE SENSORS AND BRACKETS PER V-30539, SECT C.	
	171	5	C4TC	C2TC	VERIFY SEPARATION AND RETRO ROCKET PULSE SENSORS ARE DISCONNECTED AND READY FOR REMOVAL.	
4 DAY 4 HRS 45' 0"						
	188	1	CLTC	ALL	DELETED CDDT ONLY	*
4 DAY 4 HRS 30' 0"						
	118	1	CSAC	CSA2	DELETED CDDT ONLY	*

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APOLLO/SATURN LAUNCH OPERATIONS

4251.60
 TEST NO. 159
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 4 HRS 15' 0"						
	121	1	C1TC	CLTC	OBTAIN CLOSED LOOP CLEARANCE FOR 450 MHZ FOR DRSCR PREPS. (PROTECTION NOT REQUIRED).	
	111	2	CLTC	CVTS	OBTAIN CLOSED LOOP CLEARANCE FOR 450 MHZ FOR DRSCR PREPS. (PROTECTION NOT REQUIRED).	TCP!
	118	3	CSAC	CSA4	DELETED CDDT ONLY	*
	118	4	CSAC	CSA6	DELETED CDDT ONLY	*
4 DAY 4 HRS 0' 0"						
	181	1	C1TC	BRFS	START DRSCR/GSE PREPS PER V-38000 SECTIONS 1 THRU 11,	
	111	2	CLTC	CVTS	DELETED CDDT ONLY	* TCP!
4 DAY 3 HRS 45' 0"						
	118	1	CSAC	CSA9	DELETED CDDT ONLY	*
	121	2	CVTS	CLTC	FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8	* TCP!
	121	3	CLTC	C1TC C2TC C4TC	FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8	*

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. 60
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 3 HRS 30' 0"						
171		1	C2NK	C2TC	BYPASS/BYPASS INHIBIT CHECKS ARE COMPLETE.	
111		2	CLTC	CVTS	DELETED CDDT ONLY	* TCP
4 DAY 3 HRS 15' 0"						
181		1	C1TC	B1TM	PREPARE TM GSE PER V-38004. REPORT WHEN COMPLETE.	
181		2	C1TC	BTMC	PREPARE TCE PER V-28009. REPORT WHEN COMPLETE.	
118		3	CSAC	CSAB	DELETED CDDT ONLY	*
4 DAY 3 HRS 0' 0"						
171		1	U2J2	C2TC	ENGINE/RECIRC SYSTEMS INSPECTION COMPLETE.	
171		2	C2SP	C2TC	S-II PROPELLANT TANKS READY FOR PU CALIBRATION	
121		3	C2TC	CLTC	S-II PROPELLANT TANK PURGE AND SAMPLING COMPLETE FOR PU CALIBRATION. STARTING PU CALIBRATION.	
171		4	C2TC	U2PM	START FINAL PU CALIBRATION PER V-25151 (H013)	
181		5	C1TC	LPLX	START PTCS PREPS FOR S-II PU CALS PER V-25159.	

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APOLLO/SATURN LAUNCH OPERATIONS

2251.60

TEST NO.

V-20060, VOL I

VEHICLE

AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
GD ONLY						
4 DAY 2 HRS 30' 0"						
121		1	CLTC	C1TC C2TC C4TC	INSTALL DRSCS FLIGHT CODE PLUGS IN LV	#
181		2	C1TC	LLRS	INSTALL DRSCS FLIGHT CODE PLUG IN ML CODER, REPORT WHEN COMPLETE.	#
181		3	C1TC	B1RF	INSTALL DRSCS FLIGHT CODE PLUGS IN STAGE DECODERS, REPORT WHEN COMPLETE.	#
		3-1			VERIFICATION BY LV-GAL	#
171		4	C2TC	B2RF	INSTALL DRSCS FLIGHT CODE PLUGS PER V-30029 (M020) TASK 92. REPORT WHEN COMPLETE.	#
161		5	C4TC	S4CE	INSTALL DRSCS FLIGHT CODE PLUGS PER V-30539, SECT E.	#
181		6	C1TC	LLRS	DELETED CDDT ONLY	*
181		7	C1TC	B1RF	DELETED CDDT ONLY	*
161		8	C4TC	S4CE	DELETED CDDT ONLY	*
171		9	C2TC	B2TM	DELETED CDDT ONLY	*
4 DAY 2 HRS 15' 0"						
181		1	C1TC	V1MS	DELETED CDDT ONLY	*
181		2	CSAC	C1TC	DELETED CDDT ONLY	*
121		3	C1TC	CLTC	DELETED CDDT ONLY	*

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APOLLO/SATURN LAUNCH OPERATIONS

5251.60

TEST NO. 62
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 2 HRS 15' 0"	118	4	CSAC		DELETED GDDT ONLY	
	181	5	C1TC	CTS1	DELETED GDDT ONLY	
	181	6	C1TC	C1NE	VERIFY PULSE SENSORS CONNECTED. START S-IC PREPOWER CHECKS PER V-21038.	
	181	7	C1TC	C1MS	START RECORDER PREPS FOR S-IC POWER ON. REPORT WHEN COMPLETE.	
4 DAY 2 HRS 0' 0"	171	1	C2TC	C2DP	VERIFY PD PULSE SENSORS CONNECTED.	
	161	2	C4TC	R4PU	PU STRIP CHARTS TO ON.	
	161	3	C4TC	C4PU	PU OVEN AND INVERTER POWER ON	
	161	4	C4TC	S4CE	VERIFY PD PULSE SENSORS CONNECTED	
4 DAY 1 HRS 35' 0"	121	1	CLTC	C1TC C2TC C4TC	VERIFY PROPELLANT DISPERSION PULSE SENSORS UNITS CONNECTED.	
	171	2	C2TC	R2SC	VERIFY LCC MEASURING STATION SETUP COMPLETE PER V-27154 (G031).	

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APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. A63
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 1 HRS 39' 0"						
	171	3	C2TC	V2MS	VERIFY VAB MEASURING STATION SETUP COMPLETE PER V-27183 (G032).	
	111	4	CLTC	CVTS	ADVISE SGO PERSONNEL THAT Q-BALL POWER IS COMING ON IN APPROXIMATELY FIVE MINUTES.	TCP!
4 DAY 1 HRS 30' 0"						
	121	1	CLTC	C1TC C2TC C4TC	DELETED CDDT ONLY	*
	121	2	CVTS	CLTC	DELETED CDDT ONLY	* TCP!
	121	3	CLTC	CGAA	Q-BALL HEATER POWER ON Q-BALL POWER ON THEN AUTO	TCP!
	181	4	C1TC	CHDA	VERIFY HDA SACS ELECTRO-MECHANICAL TESTS COMPLETE AND SECURE SYSTEM.	
4 DAY 1 HRS 15' 0"						
	171	1	C2TC	U2J2	START PROPELLANT FEED SYSTEM VACUUM JACKETED LINE PRESSURE CHECKS PER V-24116 (J001), REPORT WHEN COMPLETE.	#
	181	2	B1RF	C1TC	DRSCS FLIGHT CODE PLUG INSTALLATION COMPLETE ON STAGE	#
	181	3	LLRS	C1TC	DRSCS FLIGHT CODE PLUG INSTALLATION COMPLETED IN ML ENCODER	#
	171	4	B2RF	C2TC	FLIGHT CODE PLUGS INSTALLED	#
	161	5	S4CE	C4TC	FLIGHT CODE PLUGS INSTALLED	#

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APOLLO/SATURN LAUNCH OPERATIONS

3251.00
 TEST NO. A64
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 1 HRS 15' 0"						
	121	6	CLTC	C1TC C2TC C4TC	VERIFY LV FLIGHT CODE PLUGS INSTALLED	#
	181	7	B1TM	C1TC	TM GSE PREPS COMPLETE.	
	181	8	BTMC	C1TC	TOE PREPS COMPLETE.	
	181	9	C1TC	C1NE	APPLY S-IC POWER PER V-21038. REPORT WHEN COMPLETE.	
	121	10	C1TC	CLTC	S-IC STAGE POWER IS ON.	
	181	11	C1TC	B1TM	START S-IC PCM DDAS CHECKS PER V-38004.	
4 DAY 1 HRS 0' 0"	188	0	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM PROPELLANT LINE ROUTING, CONNECTION AND LEAK CHECK.	#TCPI
		0-1			* * * * * WARNING * * * * * * THE CONTROL AREA FOR LM PROPELLANT * * LINE ROUTING, CONNECTION AND LEAK * * CHECK CONSISTS OF THE SLA INTERIOR, * * IU, S-IVB FORWARD AND A 10 FT RADIUS * * AROUND THE PURGE ADAPTER ON MSS * * LEVEL 3A * * * * * *	#TCPI
	161	1	C4TC	C4ES	VERIFY PULSE SENSOR BRACKET REMOVAL COMPLETE	
	171	2	C2TC	U250	VERIFY PULSE SENSOR REMOVAL COMPLETE.	
	161	3	C4TC	C4PS	VERIFY TANK PURGE & SAMPLING COMPLETE AND PROPULSION SYSTEMS ARE READY FOR PU CALIBRATION CHECKS.	
	161	4	C4TC	C4ES	START PU CALIBRATION CHECK PER V-21085 (XAPU).	
	121	5	C4TC	CLTC	S-IVB TANK PURGE AND SAMPLING IS COMPLETE. STARTING PU CALIBRATIONS.	
	181	6	COLO	C1TC	SUPPORT OF S-II/S-IVB LOX TANK PURGING AND SAMPLING IS COMPLETE.	
	181	7	CCLH	C1TC	SUPPORT OF S-II/S-IVB LH2 TANK PURGING AND SAMPLING IS COMPLETE.	
	171	8	C2SP	C2TC	S-II PROPELLANT TANK AND FEED SYSTEM PURGE COMPLETE	

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APOLLO/SATURN LAUNCH OPERATIONS

5251.50
TEST NO. A 65
V-20060, VOL I
VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 1 HRS 0' 0"						
	121	9	C2TC	CLTC	S-II TANK PURGE AND SAMPLING COMPLETE.	
	121	10	CLTC	C1TC	S-II AND S-IVB ARE READY TO SUPPORT LH2 FACILITY SYSTEM PURGE.	
	181	11	C1TC	CCLH	START LH2 FACILITY SYSTEM PURGE PER V-35015.	
	121	12	C1TC	CLTC	BENDIX SAMPLING IS REQUIRED TO SUPPORT LH2 FACILITY PURGE AND SAMPLING PER V-35015 (RD 41081 ANNEX R)	
	112	13	CLTC	CTSC	BENDIX SAMPLING CREW IS REQUIRED TO SUPPORT LH2 FACILITY PURGE & SAMPLING PER V-35015 (RD 41081 ANNEX R)	TCPI
	181	14	C1TC	C1PE	START THRUST CHAMBER PREPARATIONS PER V-34012	
	181	15	C1TC	B1TM	VERIFY S-IC PCM DDAS PREPS COMPLETE. L/V DRSCS TEST - GSE (CLOSED LOOP) -----	
	181	16	C1TC	BRFS	VERIFY ML-DRSCS/GSE PREPARED TO SUPPORT THE L/V DRSCS TEST.	
	181	17	C1TC	RRSC	VERIFY READY TO SUPPORT DRSCS TEST.	
	121	18	C1TC	CLTC	DRSCS-GSE READY TO SUPPORT CLOSED LOOP TEST.	
	111	19	CLTC	CVTS	L/V PROCEEDING WITH L/V DRSCS GSE TEST. VERIFY CLEARANCE TO BRING UP LOCAL COMMAND CARRIER (PROTECTION REQUIRED). CPSS RELEASE DESTRUCT SYSTEM KEY TO CLVN	TCPI
	121	20	CLTC	CLVN	OBTAIN DESTRUCT SYSTEM KEY FROM CPSS.	
	188	21	CLTC	ALL	ALL PERSONNEL SUPPORTING L/V DRSCS TEST GO TO CHANNEL 121 ACTIVE & MONITOR STAGE TC CHANNEL.	
	121	22	CLTC	C1DP C2DP C4DP	VERIFY ALL SWITCHES AUTO EXCEPT: PD RSOR ENABLE - OFF. SYSTEMS STATUS SWITCH OFF. S & A SWITCH SAFE.	

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APOLLO/SATURN LAUNCH OPERATIONS

5251.60
TEST NO. 66
V-20060, VOL I
VEHICLE AS-307

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 1 HRS 0' 0"						
121		23	CLTC	C4DP	PULSE SENSOR POWER ON.	
121		24	CLTC	RRSC	RECORDERS - ON.	
121		25	CLTC	CLVN	DESTRUCT SYSTEM TO ENABLE.	
		25-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS ON.	
121		26	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 TRANSFER - EXTERNAL, THEN AUTO.	
121		27	CLTC	C1DP C2DP C4DP	VERIFY RSCR'S 1 & 2 PD BLOCKED ON.	
		27-1		CRSS	*** NOTE ALL RSCR'S PD BLOCKED ON	
121		28	CLTC	BRFS	SIG GEN SELECT - #1 AUDIO SELECT - POS, OFF VERIFY REMOTE MONITOR TO HYBRID	
121		29	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - ON.	
121		30	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK	
		30-1		CRSS	*** NOTE LIMITER VOLTAGES RECEIVED.	
121		31	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		32	CLTC	LLRS	ON YOUR MARK SEND CUTOFF COMMAND FOR 3 SEC.	
121		33	LLRS		3-2-1-MARK	

LY-ODDT & CD, VOL 1
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 67
 Y-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 1 HRS 0' 0"						
121		34	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		35	CLTC	BRFS	VERIFY CUTOFF RECEIVED.	
		35-1		C1DP C2DP C4DP CRSS LLRS	*** NOTE CUTOFF RECEIVED.	
		35-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
121		36	CLTC	C1DP C2DP C4DP	VERIFY EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER.	
		36-1		CRSS	*** NOTE ALL EBW'S CHARGED.	
121		37	CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
		37-1		CRSS	*** NOTE ALL EBW'S NOT CHARGED.	
121		38	CLTC	BRFS	SIGNAL GENERATOR SELECT - POS #2	
121		39	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK	
		39-1		CRSS	*** NOTE ALL LIMITER VOLTAGES RECEIVED.	
121		40	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		41	CLTC	LLRS	ON YOUR MARK SEND CUTOFF COMMAND FOR 3 SEC.	
121		42	LLRS		3-2-1-MARK	
121		43	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		44	CLTC	BRFS	VERIFY CUTOFF RECEIVED	

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APOLLO/SATURN LAUNCH OPERATIONS

3254.60
 TEST NO. 68
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 1 HRS 0' 0"						
		44-1		CRSS C1DP C2DP C4DP	*** NOTE CUTOFF RECEIVED.	
		44-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
121	45	CLTC		C1DP C2DP C4DP	VERIFY EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER	
		45-1		CRSS	*** NOTE ALL EBW'S CHARGED.	
121	46	CLTC		C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
		46-1		CRSS	*** NOTE ALL EBW'S NOT CHARGED.	
121	47	CLTC		C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - OFF, THEN AUTO AND VERIFY RSCR'S 1 AND 2 OFF.	
		47-1		CRSS	*** NOTE ALL RSCR'S OFF.	
121	48	CLTC		BRFS	SIGNAL GENERATOR SELECT -- STANDBY	
121	49	CLTC		CLVN	DESTRUCT SYSTEM - OFF. DELIVER DESRUCT SYSTEM KEY TO CPSS AND VERIFY.	
121	50	CLTC		C1DP C2DP C4DP	VERIFY SAFETY BUS - OFF	
111	51	CLTC		CVTS	L/V DRSCS GSE TEST COMPLETE. DESTRUCT SYSTEM KEY DELIVERED TO CPSS AND LOCAL COMMAND CARRIER IS OFF.	TCPI
121	52	CLTC		LLRS	PATCH RANGE AUDIO LINKS ON DRSCS/GSE TO SUPPORT CLOSED LOOP TEST PER V-38000, SECTION 12.	

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 5251.60
 TEST NO. 69
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 1 HRS 0' 0"	121	53	CLTC	LLRS	REMOVE DRSCS FLIGHT CODE PLUG AND DELIVER TO BRFS.	#
	111	54	CLTC	CVTS	REQUEST RANGE TO SUPPORT DRSCS PREPS ON CHANNEL 137	TCPI
	188	55	CLTC	ALL	ALL PERSONNEL WHO SUPPORTED L/V DRSCS CHECKS RETURN TO ASSIGNED CHANNELS	
4 DAY 30' 0"	161	1	C4TC	C4HY	VERIFY S-IVB HYDRAULIC SYSTEM PREPARATIONS AND FUNCTIONAL COMPLETE.	
4 DAY 15' 0"	111	1	CLTC	CVTS	DELETED GDDT ONLY	* TCPI
	111	2	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL COMMAND CARRIER. VERIFY RANGE IS READY TO SUPPORT DRSCS CLOSED LOOP TEST WITH FLIGHT CODE PLUGS ON CHANNEL 121 (450 MHZ OPEN LOOP PROTECTION REQUIRED)	* TCPI
	121	3	CLTC	BRFS	VERIFY DRSCS FLIGHT CODE PLUG INSTALLED IN LCC DECODER AND DRSCS GSE READY FOR RANGE TEST.	#
	121	4	CLTC	BRFS	DELETED GDDT ONLY	*

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 5: 0"	111	1	CLTC	CVTS	REQUEST MTPE MONITOR CH 121 FOR Q-BALL SIM COMMAND IN APPROXIMATELY 5 MINUTES. REQUEST MTPE SUPPLY Q-BALL SIM COMMAND READINGS TO VUMS ON CH. 148.	TCPI
4 DAY 0: 0"	121	1	CLTC	CQAA	Q-BALL SIM COMMAND ON FOR 10 SECONDS ON YOUR MARK	TCPI
	121	2	CQAA		3-2-1, MARK	TCPI
	161	3	C4ES	C4TC	PU CAL CHECKS COMPLETE.	
	161	4	C4TC	C4PU	PU AND INVERTER POWER - ON	
	161	5	C4TC	S4PC	VERIFY ENGINEERING WALK AROUND COMPLETE.	
					DRSCS TEST - RANGE (CLOSED ----- LOOP - FLIGHT CODE) -----	#
	111	6	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM KEY TO CLVN.	TCPI
	121	7	CLTC	CLVN	OBTAIN DESTRUCT SYSTEM KEY FROM CPSS	
	188	8	CLTC	ALL	ALL PERSONNEL SUPPORTING DRSCS TEST GO TO CHANNEL 121 ACTIVE AND MONITOR STAGE TC CHANNEL.	
	121	9	CLTC	C1DP C2DP C4DP	VERIFY ALL SWITCHES AUTO EXCEPT; PD RSOR ENABLE - OFF SYSTEMS STATUS SWITCH - OFF S & A SWITCH - SAFE	
	121	10	CLTC	C4DP	VERIFY PULSE SENSOR POWER - ON	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
4 DAY 01 00						
	121	11	CLTC	CLVN	DESTRUCT SYSTEM TO ENABLE.	
		11-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS ON	
		11-2		C1DP C2DP C4DP	*** NOTE RSCR'S 1 & 2 PD BLOCKED,	
		11-3		CRSS	*** NOTE ALL RSCR'S PD BLOCKED ON	
	121	12	CLTC	BTMC	TELEMETRY TAPE RECORDER - ON	
	121	13	CLTC	BRFS	SIGNAL GENERATOR-SELECT #1. VERIFY REMOTE MONITOR TO HYBRID,	
	121	14	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 TRANSFER EXTERNAL THEN AUTO,	
	121	15	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - ON,	
		15-1		C1DP C2DP C4DP	*** NOTE RSCR'S 1 AND 2 POWER ON,	
	121	16	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK,	
		16-1		CRSS	*** NOTE ALL LIMITER VOLTAGES RECEIVED,	
	121	17	CLTC	RRSC	RECORDERS - FAST SPEED,	
	121	18	CLTC	SRO	ON YOUR MARK SEND CUTOFF ON CLOSED LOOP LINKS WITH CODER #1 FOR 3 SECONDS,	
	121	19	SRO		3-2-1-MARK	
	121	20	CLTC	RRSC	RECORDERS - SLOW SPEED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 01 00						
121		21	CLTC	CRSS	VERIFY CUTOFF RECEIVED AND ALL EBW'S CHARGED.	
		21-1		BRFS LLRS C1DP C2DP C4DP	*** NOTE CUTOFF RECEIVED	
		21-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
		21-3		C1DP C2DP C4DP	*** NOTE EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER	
121		22	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		23	CLTC	SRO	ON YOUR MARK SEND PD ON CLOSED LOOP LINKS WITH CODER #1 FOR 3 SECONDS,	
121		23-1	SRO		3-2-1-MARK	
121		24	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		25	CLTC	CRSS	VERIFY PD RECEIVED AND EBW'S NOT FIRED	
		25-1		C1DP C2DP C4DP	*** NOTE PD RECEIVED AND EBW'S NOT FIRED	
		25-2		BRFS LLRS	*** NOTE PD RECEIVED	
121		26	CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
		26-1		CRSS	*** NOTE EBW'S NOT CHARGED.	
121		27	CLTC	SRO	CONFIGURE RANGE STATION FOR CLOSED LOOP LINKS WITH CODER #2 OPERATION.	
121		28	CLTC	BRFS	SIGNAL GENERATOR SELECT #2	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 DAY 01 00						
	121	29	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK.	
		29-1		CRSS	*** NOTE RSCR LIMITER VOLTAGES RECEIVED.	
	121	30	CLTC	RRSC	RECORDERS - FAST SPEED.	
	121	31	CLTC	SRO	ON YOUR MARK SEND CUTOFF COMMAND ON CLOSED LOOP LINKS WITH CODER #2, FOR 3 SECONDS.	
	121	32	SRO		3-2-1-MARK	
	121	33	CLTC	RRSC	RECORDERS - SLOW SPEED.	
	121	34	CLTC	CRSS	VERIFY CUTOFF RECEIVED AND ALL EBW'S CHARGED.	
	121	34-1	CLTC	C1DP C2DP C4DP BRFS LLRS	*** NOTE CUTOFF RECEIVED.	
		34-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
		34-3		C1DP C2DP C4DP	*** NOTE EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER.	
	121	35	CLTC	RRSC	RECORDERS - FAST SPEED.	
	121	36	CLTC	SRO	ON YOUR MARK SEND PD ON CLOSED LOOP LINKS WITH CODER #2, FOR 3 SECONDS.	
	121	37	SRO		3-2-1-MARK	
	121	38	CLTC	RRSC	RECORDERS - SLOW SPEED.	
	121	39	CLTC	CRSS	VERIFY PD RECEIVED AND EBW'S NOT FIRED	
		39-1		C1DP C2DP C4DP	*** NOTE PD RECEIVED AND EBW'S NOT FIRED.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 01 00		39-2		LLRS BRFS	*** NOTE PD RECEIVED,	
121	40	CLTC		C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED,	
		40-1		CRSS	*** NOTE EBW'S NOT CHARGED,	
121	41	CLTC		RRSC	RECORDERS-FAST SPEED,	
121	42	CLTC		SRO	ON YOUR MARK SEND SAFE COMMAND FOR 3 SECONDS ON CLOSED LOOP LINKS,	
121	43	SRO			3, 2, 1, MARK	
121	44	CLTC		RRSC	RECORDERS-SLOW SPEED,	
121	45	CLTC		CRSS	VERIFY S-II AND S-IVB SAFE COMMAND RECEIVED,	
		45-1		BRFS	*** NOTE S-II AND S-IVB SAFE COMMAND RECEIVED,	
		45-2		C2DP C4DP	*** NOTE RSCR'S 1 & 2 SAFE COMMAND RECEIVED	
		45-3		C1DP C2DP C4DP	*** NOTE RSCR'S 1 AND 2 REMAIN ON,	
		45-4		CRSS	*** NOTE ALL RSCR'S REMAIN ON,	
121	46	CLTC		C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - OFF AND VERIFY,	
		46-1		CRSS	*** NOTE ALL RSCR'S OFF,	
121	47	CLTC		CLVN	DESTRUCT SYSTEM - OFF. DELIVER DESTRUCT SYSTEM KEY TO CPSS. REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
4 DAY 01 00		47-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS OFF.	
	121	48	CLTC	C1DP C2DP C4DP	SYSTEMS STATUS SWITCH - SAFE.	
	121	49	CLTC	BRFS	SIGNAL GENERATOR SELECT - STANDBY.	
	121	50	CLTC	BTMC	TM TAPE RECORDING - OFF AND RELOAD.	
		50-1		BTMC	*** NOTE DELIVER TAPE TO SECURITY OFFICER (COUNTDOWN ONLY)	
	121	51	CLTC	RRSC	RECORDERS - OFF	
	121	52	CLTC	BRFS	LUT & LCC/GSE POWER - OFF	
	121	53	CLTC	BRFS	SECURE DRSCS FLIGHT CODE PLUG	#
	121	54	CLTC	C4DP	PULSE SENSOR POWER OFF	
	188	55	CLTC	ALL	ALL PERSONNEL WHO SUPPORTED DRSCS TEST RETURN TO ASSIGNED CHANNELS	
	111	56	CLTC	CVTS	L/V DRSCS TEST COMPLETED. DESTRUCT SYSTEM KEY RETURNED TO CPSS. LOCAL COMMAND CARRIER IS OFF	TCPI
3 DAY 23 HRS 35 00						
	111	1	CLTC	CVTS	ADVISE SCO PERSONNEL THAT Q-BALL POWER IS GOING OFF IN APPROXIMATELY FIVE MINUTES.	TCPI

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 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
ONLY						
3 DAY 23 HRS 30' 0"	121	1	C1TC	CLTC	REQUEST F-1 ENGINE HIGH VOLTAGE IGNITORS, HYPERGOLS AND S-IC RETROROCKET PYROGEN INITIATORS BE DELIVERED TO PAD LEVEL, EAST ELEVATOR	
	111	2	CLTC	CVTS	REQUEST CTSC DELIVER F-1 ENGINE HIGH VOLTAGE IGNITORS AND HYPERGOLS AND S-IC RETROROCKET PYROGEN INITIATORS TO PAD LEVEL, EAST LOW RISE ELEVATOR.	TCP1
	121	3	CVTS	CLTC	REQUEST Q-BALL HEATER POWER OFF	# TCP1
	121	4	CLTC	CQAA	Q-BALL POWER - OFF Q-BALL HEATER POWER - OFF	# TCP1
	121	5	CLTC	CQAA	DELETED CDDT ONLY	* TCP1
3 DAY 23 HRS 0' 0"	121	1	C1TC	CLTC	REQUEST CLEARANCE TO PROCEED WITH S-IC EBW FUNCTIONAL TEST.	
		2		C1TC	NOTE ----- PRIOR TO OPERATION OF THESE SEQUENCES, VERIFY S-IC PULSE SENSORS ARE CONNECTED & LIVE DETONATORS ARE NOT INSTALLED.	
	181	3	C1TC	C1NE	PROCEED WITH EBW FUNCTIONAL ON CHANNEL 185.	
	185	4	C1NE	L1RS	VERIFY/INSTALL JUMPER PLUG J2 IN X02-121A2 (OAT PLUGS IN/OUT TEST).	
	185	5	C1NE	C1NP	SET PLUGS IN OAT SWITCH TO ON. VERIFY INDICATION ON.	
	185	6	C1NE	C1NP	SET SWITCH SELECTOR INHIBIT SWITCH TO AUTO.	

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 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 23 HRS 0' 0"		6-1		C1EV	*** NOTE SWITCH SELECTOR INHIBIT - OFF.	
185		7	C1NE	C1NP	SET EMERGENCY POWER TRANSFER EXTERNAL SWITCH TO EXTERNAL.	
185		8	C1NE	C1NP	SET S-IC LIFTOFF ENABLE SWITCH TO ON. VERIFY INDICATION ON.	
181		9	C1NE	C1TC	REQUEST CLVN TO SWITCH VEHICLE LIFTOFF ENABLE TO ON.	
121		10	C1TC	CLTC	REQUEST VEHICLE LIFTOFF ENABLE TO ON	
111		11	CLTC	CVTS	REQUEST CPSS RELEASE LIFTOFF ENABLE KEY TO CLVN.	TCPI
121		12	CLTC	CLVN	OBTAIN LIFTOFF ENABLE KEY FROM CPSS.	
121		13	CLTC	C2TC C4TC CUTC	VEHICLE LIFTOFF ENABLE WILL BE TURNED ON VERIFY THIS SWITCH ACTION ACCEPTABLE AT THIS TIME. (S-II & S-IVB WILL NOT BE AFFECTED).	
121		14	CLTC	CLVN	SIMULATE LIFTOFF ENABLE ON	
181		15	C1TC	C1NE	VEHICLE LIFTOFF ENABLE IS ON	
185		16	C1NE	C1NP	VERIFY VEHICLE LIFTOFF ENABLE ON.	
		16-1		C1NP	*** NOTE LIFTOFF INDICATION REMAINS OFF	
185		17	C1NE	C1NK	REQUEST WASV AND PERFORM SEPARATION AND RETROROCKET EBW TEST AND SWITCH SELECTOR REGISTER TEST.	
		18		C1NE	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF WASV CANNOT BE REQUESTED.	

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5451.60
 TEST NO. 78
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 23 HRS 0' 0"						
185		18-1	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 10 (ARM SEP. #1 AND RR #1 EBW FU).	
185		18-2	C1NE	C1DP	VERIFY SEP F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC	
185		18-3	C1NE	C1DP	VERIFY RR F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	
		18-4		C1NP	*** NOTE STAGE LOGIC ZERO - OFF.	
185		18-5	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 15. (S-IC/S-II SEP. #1).	
185		18-6	C1NE	C1DP	VERIFY RR#1 & SEP #1 EBW FIRED INDICATIONS ON.	
185		18-7	C1NE	C1DP	VERIFY RR #2 & SEP. #2 EBW FIRED INDICATIONS REMAIN OFF.	
185		18-8	C1NE	C1DP	VERIFY RR #1 AND SEP. #1 METERS FLUCTUATE TOWARD ZERO VOLTS.	
185		18-9	C1NE	C1DP	VERIFY RR #2 SEP. #2 METERS REMAIN CHARGED.	
185		18-10	C1NE	C1NP	SET STAGE LOGIC SWITCH TO RESET MOMENTARILY. VERIFY STAGE LOGIC ZERO INDICATION ON.	
185		18-11	C1NE	C1DP	VERIFY RR #1 & #2 AND SEP #1 & #2 METERS INDICATE ZERO VOLTS	
185		18-12	C1NE	C1DP	SET PULSE SENSOR SWITCH TO RESET MOMENTARILY. VERIFY RR AND SEP #1 EBW FIRED INDICATION OFF.	
185		18-13	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 20, (ARM SEP #2 AND RR #2 EBW FU).	
185		18-14	C1NE	C1DP	VERIFY RR F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	
185		18-15	C1NE	C1DP	VERIFY SEP. F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 23 HRS 0' 0"						
185		18-16	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 19 (S-IC/S-II SEPARATION #2).	
185		18-17	C1NE	C1DP	VERIFY RR #2 & SEP #2 EBW FIRED INDICATIONS ON.	
185		18-18	C1NE	C1DP	VERIFY RR #1 & SEP #1 EBW FIRED INDICATIONS REMAIN OFF.	
185		18-19	C1NE	C1DP	VERIFY RR #2 AND SEP. #2 METERS FLUCTUATE TOWARD ZERO VOLTS.	
185		18-20	C1NE	C1DP	VERIFY RR #1 AND SEP #1 METER REMAIN CHARGED.	
185		18-21	C1NE	C1NP	SET STAGE LOGIC SWITCH TO RESET MOMENTARILY. VERIFY STAGE LOGIC ZERO INDICATION ON.	
185		18-22	C1NE	C1DP	VERIFY RR #1 & #2 AND SEP #1 & #2 METERS INDICATE ZERO VOLTS	
185		18-23	C1NE	C1DP	SET PULSE SENSOR SWITCH TO RESET MOMENTARILY. VERIFY RR #2 AND SEP. #2 EBW FIRED INDICATIONS OFF.	
185		19	C1NE	C1NP	SET PLUGS IN OAT - OFF THEN AUTO. VERIFY INDICATION OFF.	
185		20	C1NE	C1NP	SET SWITCH SELECTOR INHIBIT SWITCH TO INHIBIT.	
		20-1		C1EV	*** NOTE SWITCH SELECTOR INHIBIT - ON.	
185		21	C1NE	C1NP	SET S-IC LIFTOFF ENABLE SWITCH TO - OFF. VERIFY INDICATION OFF.	
185		22	C1NE	C1NP	EMERGENCY POWER TRANSFER TO OFF.	
181		23	C1NE	C1TC	REQUEST CLVN TO SWITCH VEHICLE LIFTOFF ENABLE TO - OFF.	
121		24	C1TC	CLTC	REQUEST VEHICLE LIFTOFF ENABLE TO OFF	

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V-20060, VOL I
VEHICLE AS-307

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
3 DAY 23 HRS 0' 0"						
121		25	CLTC	CLVN	LIFTOFF ENABLE OFF, DELIVER LIFTOFF ENABLE KEY TO CPSS, REPORT WHEN COMPLETE.	
121		26	CLTC	C1TC C2TC C4TC CUTC	VEHICLE LIFTOFF ENABLE IS OFF	
181		27	C1TC	C1NE	VEHICLE LIFTOFF ENABLE IS OFF	
185		28	C1NE	C1NP	VERIFY VEHICLE LIFTOFF INDICATION OFF.	
185		29	C1NE	C1NK	REQUEST WASV AND RUN SWITCH SELECTOR REGISTER TEST IF SEPARATION AND RETROCKET BBW TEST WAS NOT RUN.	
181		30	C1NE	C1TC	BBW FUNCTIONAL TEST COMPLETE.	
121		31	C1TC	CLTC	S-IC BBW FUNCTIONAL TEST COMPLETE.	
3 DAY 22 HRS 45' 0"						
181		1	C1TC	C1IP	LOX & FUEL RACKS PWR ON, 400 HZ CAL PWR ON AND 28V RACS PWR ON.	
151		2	CUTC	CUIP	MEASUREMENT TRANSFER AUTO, S-11 BURN TEST & S-IVB COAST TEST - AUTO. (60X-607A6 - CCIS PANEL)	
151		3	CUTC	BGCC	VERIFY/MOUNT MT01 TAPE.	
121		4	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MT-01 (LV MEASUREMENT SCAN)	
121		5	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP - ON	
121		6	CLTC	CLIK	ISSUE S-IVB ALL RACS RUN.	

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TEST NO. 7

V-20060, VOL I

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 22 HRS 49' 0"						
	121	7	CLTC	C2NP	RACS POWER - ON.	
	121	8	CLTC	CLIK	COMMAND RACS S-II ALL - ALL RUN.	
	188	9	CLTC	ALL	STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT-01	
	121	10	CLTC	CLIK	REQUEST & EXECUTE MT-01 (LV MEASUREMENT SCAN VEHICLE OPTION)	
		10-1			NOTE SWITCH ACTION IN NEXT STEP TO BE ACCOMPLISHED JUST PRIOR TO S-1C PORTION OF MT01 SCAN.	
	121	10-2	CLIK	C1IP	HARDWIRE SWITCH TO TELEMETER.	
3 DAY 22 HRS 15' 0"						
	118	1	CSAC	CSAD	DELETED CDDT ONLY	
	181	2	C1TC	CTS1	DELETED CDDT ONLY	
	118	3	CSAC	CSA1 CSA2 CSA4 CSA5 CSA6 CSA7 CSA8 CSA9	DELETED CDDT ONLY	
	181	4	CSAC	C1TC	DELETED CDDT ONLY	

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TEST NO. A83
 V-20060, VOL 1
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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
GD ONLY						
3 DAY 22 HRS 0' 0"						
171		15	C2TC	U2PM	WHEN STAGE AND PTCS POWER HAVE BEEN REMOVED, CONFIGURE PU SYSTEM FOR PU FACILITY INTERFACE CHECKS PER V-30029 (M020) TASK 8. REPORT WHEN COMPLETE.	
171		16	U2PM	C2TC	PU SYSTEM CONFIGURED FOR PU FACILITY INTERFACE CHECKS.	
171		17	C2TC	R2SC	VERIFY READY FOR STAGE POWER.	
171		18	C2TC	C2NP	APPLY S-II STAGE POWER PER V-21103 (B011) INCLUDING PM POWER.	
181		19	C2TC	C1TC	REAPPLY PTCS POWER & VERIFY PTCS READY TO SUPPORT S-II PU FACILITY INTERFACE CHECKS.	
171		20	C2TC	U2PM	START S-II PU FACILITY INTERFACE CHECKS PER V-30029 (M020) TASK 8.	
161		21	C4TC	C4PU	PU OVEN AND INVERTER POWER OFF	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
3 DAY 22 HRS 0' 0"	181	22	C4TC	R4PU	PU STRIPCHARTS OFF	
3 DAY 21 HRS 30' 0"	181	1	C1TC	C1PE	START LEG STAT CHECKS.	
	121	2	CVTS	CLTC	DELETED CDDT ONLY	• TOP1
	121	3	CLTC	CGAA	DELETED GDDT ONLY	• TOP1
	181	4	CTS1	C1TC	DELETED GDDT ONLY	•
	118	5	CSAC	CSA1 CSA2 CSA4 CSA5 CSA6 CSA7 CSA8 CSA9 CSAD	DELETED CDDT ONLY	•
	118	6	CSAC	CHCU	DELETED GDDT ONLY	•
	181	7	CSAC	C1TC	DELETED CDDT ONLY	•
	181	8	C1TC	CPDC	DELETED GDDT ONLY	•
	121	9	CLTC	C1TC C2TC C4TC CUTC	LUT LEVEL ZERO WILL BE CLEARED FOR ORDNANCE INSTALLATION IN 30 MIN. A PATHWAY FROM THE ELEVATORS WILL BE PROVIDED FOR ACCESS.	
	181	10	C1TC	C1PE	VERIFY ORDNANCE TRUCK HAS ARRIVED AT EAST SIDE OF PAD AND MOVE F-1 ENGINE IGNITORS AND RR PYROGEN INITIATORS TO ML ZERO LEVEL AS SOON AS ZERO LEVEL HAS BEEN CLEARED.	

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5254.60
 TEST NO. A85
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 21 HRS 0' 0"	188	1	CVTS	PA	LM PROPELLANT LINE ROUTING CONNECTION AND LEAK CHECK IS COMPLETE. THE CONTROL AREA IS OPEN FOR NORMAL WORK.	#TCPI
	171	1-1	U2PM	C2TC	S-II PU FACILITY INTERFACE CHECKS ARE COMPLETE	
	171	2	C2TC	C2NP	REMOVE PM POWER	
	171	3	C2TC	U2PM	RECONNECT PU SYSTEM TO FLIGHT CONFIGURATION PER TCP V-30029 (M020), TASK 8	
	171	4	U2PM	C2TC	THE PU SYSTEM IS CONFIGURED FOR FLIGHT	
	171	5	C2TC	C2NP	APPLY PM POWER	
	181	6	L1IC	C1TC	RACS LOADING SYSTEM CHECKS ARE COMPLETE	
	181	7	C1TC	C1TP	28 VOLT RACS, 400 HERTZ GAL POWER AND LOX AND FUEL RACS OFF	
	111	8	CLTC	CVTS	CLEAR ML ZERO LEVEL FOR S-IC ORDNANCE OPERATIONS.	TCPI
	188	9	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREAS FOR SPACE VEHICLE ORDNANCE OPERATIONS	TCPI
		9-1			*****WARNING***** * THE CONTROL AREA FOR LV * * ORDNANCE OPERATIONS * * CONSISTS OF ML ZERO * * LEVEL, A CONTROLLED * * WALKWAY WILL BE KEPT * * OPEN TO THE ELEVATORS * *****	# TCPI
		9-2			DELETED GDDT ONLY	* TCPI

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 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
<div> <div>3 DAY</div> <div>21 HRS</div> <div>0' 0"</div> </div> <div>CD ONLY</div>						
171	10	C2TC	C2LD	DELETED	CDDT ONLY	*
121	11	CVTS	CLTC	CSTC	IS READY TO SUPPORT S-II CLOSEOUT AND INSPECTION WITH MSS PLATFORM #1.	TCP1
121	12	C2TC	CLTC	MSS PLATFORM #1 WILL BE REQUIRED BETWEEN STA 1541 & 2519 FOR THE NEXT 4 HRS TO SUPPORT S-II STAGE EXTERIOR INSPECTION/CLOSEOUT.		
171	13	C2TC	U21E	CLOSEOUT MSS PLATFORM #1 PER V-30029 (M020) TASK 9. REPORT WHEN COMPLETE.		
171	14	C2TC	U2SE	START FINAL INSPECTION/CLOSEOUT OF S-II STAGE EXTERIOR PER V-30029 (M020) TASK 9. REPORT WHEN COMPLETE. (REQUIRES MSS PLATFORM #1 TO TRAVERSE FROM STA 1541 THROUGH 2519)		
171	15	C2TC	U2QC	START REMOVAL OF ALL NON-FLIGHT HARDWARE FROM STAGE EXTERIOR PER V-30029 (M020) TASK 47.		
	16			DELETED	GDDT ONLY	B-205-53
	17			DELETED	GDDT ONLY	B-205-53
	18			DELETED	GDDT ONLY	B-205-53

LY CDDT & CD, VOL 1
 DATE: SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 87
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
- 3 DAY 20 HRS 50' 0"	181	1	C2TC	C1TC	VERIFY S-II PTCS PRA'S ARE ON.	
	181	2	C1TC	C2OU C2HU	VERIFY S-II PRA'S ARE ON.	
	171	3	C2TC	C2NK	START PROPELLANT SYSTEM FUNCTIONAL PER V-30029 (M020), TASK 10 (TEST PROGRAM GALS & QAPU WILL BE EXECUTED,) REPORT WHEN COMPLETE.	
- 3 DAY 20 HRS 45' 0"	111	1	CLTC	CVTS	REQUEST CPSS VERIFY ML LEVEL ZERO IS CLEAR FOR S-IC ORDNANCE OPERATIONS.	TCPI
	181	2	C1TC	L1SM	VERIFY ORDNANCE HAS BEEN DELIVERED TO ML ZERO LEVEL. (S-IC ENG IGNITORS AND RR PYROGEN INITIATORS)	
	121	3	CLTC	C1TC	START MECHANICAL INSTALLATION OF S-IC ENGINE HIGH VOLTAGE IGNITORS AND RETROROCKET PYROGEN INITIATORS	
	181	4	C1TC	C1PE	VERIFY LEG STAT CHECKS COMPLETE.	
	181	5	C1TC	C1PE	INSTALL RETROROCKET PYROGEN INITIATORS PER V-29003.	
	181	6	C1TC	C1PE	INSTALL S-IC ENGINE HIGH VOLTAGE IGNITORS PER V-29005.	
	181	7	C1TC	RRSC	RECORDERS - ON - SLOW SPEED.	
- 3 DAY 20 HRS 30' 0"	171	1	C2NK	C2TC	PU SYS TEST PROGRAMS HAVE COMPLETED EXECUTION	

LY CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 88
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 20 HRS 30' 0"						
171		2	C2PU	C2TC	PU FUNCTIONAL COMPLETE.	
121		3	C2TC	CLTC	AUTO PROGRAM QALS & QAPU ARE COMPLETE	
121		4	CLTC	CUTC	REQUEST BGCC TO REMOVE LINE PRINTER DATA FROM TEST PROGRAM QAPU FOR C2NK.	
171		5	C2TC	C2NP	PLACE STAGE SELECT TO INHIBIT	
181		6	C2TC	C1TC	REMOVE PTCS POWER	
181		7	C1TC	LPLX	PTCS SUPPORT NO LONGER REQUIRED. SECURE SYSTEM. REPORT WHEN COMPLETE.	
171		8	C2TC	C2NP	REMOVE PM POWER	
121		9	CLTC	CUTC	PREPARE IU STAGE FOR RF SILENCE & CONTROLLED SWITCHING PER V-31062, APPENDIX C.	
161		10	C4TC	C4SM	CONFIGURE ORDNANCE CONTROL PANELS PER V-30539, SECT F. REPORT WHEN COMPLETE.	
171		11	C2TC	C2DP	CONFIGURE ORDNANCE AND PD PANEL PER V-30029 (M020) TASK 5. REPORT WHEN COMPLETE.	
181		12	C1TC	C1NE	VERIFY CORRECT PANEL CONFIGURATION FOR ORDNANCE INSTALLATION PER V-21012 & V-21009	
121		13	CLTC	C1TC C2TC C4TC	VERIFY ORDNANCE AND PD PANELS ARE IN CORRECT CONFIGURATION AND READY TO START ORDNANCE INSTALLATION.	
161		14	C4TC	C4NP	INHIBIT SWITCH SELECTOR AND VERIFY.	
161		15	C4TC	C4ES	VERIFY READY FOR CONTROLLED SWITCHING.	
121		16	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR RF SILENCE & CONTROLLED SWITCHING PER TI-2-13 & INHIBIT SWITCH SELECTORS.	

LV CDDT & CD, VOL 1
 DATE: SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. 89
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
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3 DAY
 20 HRS
 30' 0"

111	17	CLTC	CVTS		REQUEST RF SILENCE, LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING IS NOW IN EFFECT	TCPI
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18

NOTE

THE FOLLOWING SWITCHES WILL BE CYCLED DURING ELECTRICAL CONNECTION OF THE ENGINE ORDNANCE:

C1SP TCS ARM/SAFE SWITCH
 C1EN IGNITOR MONITOR BUS OFF/ON

188	19	CVTS	PA		RF SILENCE IS NOW IN EFFECT. CONTROLLED SWITCHING ON THE LV AND ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT. SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS.	TCPI
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121	20	C1TC	CLTC		REQUEST CPSS TO RELEASE TCS KEY TO C1SP	
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111	21	CLTC	CVTS		REQUEST CPSS TO RELEASE TCS KEY TO C1SP	TCPI
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121	22	CLTC	C1TC		START ELECTRICAL CONNECTION OF S-IC ENGINE HIGH VOLTAGE IGNITORS AND RR PYROGEN INITIATORS.	
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181	23	C1TC	C1NE		START ELECTRICAL CONNECTION OF SKIRT IGNITORS PER V-21014.	
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171	24	U2EO	C2TC		U2EO READY FOR S-IC/S-II PULSE SENSOR REMOVAL.	
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181	25	C2TC	C1TC		S-II READY FOR S-IC/S-II PULSE SENSOR REMOVAL.	
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181	26	C1TC	C1NE		HAVE U1FN MONITOR S-IC/S-II SEPARATION PULSE SENSOR REMOVAL PER V-21012.	
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LY CDDT & CD, VOL I
 DATE: OCTOBER 26, 1969
 REVISION 015

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A 90
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
3 DAY 20 HRS 0' 0"	181	1	C1TC	C1PE	VERIFY MECHANICAL INSTALLATION OF SKIRT IGNITORS COMPLETE.	
3 DAY 19 HRS 30' 0"	181	1	C1TC	C1PE	START FAIRING ACCESS PANEL INSTALLATION PER V-29003.	
3 DAY 18 HRS 30' 0"		1			DELETED CDDT ONLY	B-205-53
		2			DELETED CDDT ONLY	B-205-53
		3			DELETED CDDT ONLY	B-205-53
3 DAY 18 HRS 0' 0"	181	1	C1TC	C1PE	VERIFY IN WORK, OR START MECHANICAL INSTALLATION OF GAS GENERATOR IGNITERS.	
	181	2	C1TC	C1NE	VERIFY IN WORK OR START ELECTRICAL CONNECTION OF GG IGNITERS	
	171	3	C2TC	U2MU	DELETED CDDT ONLY	*

5254.60

91

TEST NO.

V-20060, VOL I

VEHICLE

AS-507

 LV CDDT & CD, VOL I
 DATE SEPTEMBER 5, 1969
 REVISION

APOLLO/SATURN LAUNCH OPERATIONS

012

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 17 HRS 45' 0"	121	1	CLTC	C1TC C2TC C4TC	VERIFY READY FOR PROPELLANT DISPERSION AND SEPARATION ORDNANCE DELIVERY.	
	121	2	CLTC	C1TC C2TC C4TC	START LEG STAT CHECKS AND HAVE ORDNANCE PERSONNEL REPORT TO SAFETY AT BASE OF EAST LOW RISE ELEVATOR IN 35 MINUTES.	
	111	3	CLTC	CVTS	REQUEST CTSC START LV P D, HDA & SEPARATION ORDNANCE DELIVERY.	TCP1
	161	4	C4TC	C4SM	START ORDNANCE CREW RESISTANCE CHECKS PER V-30539. REPORT WHEN COMPLETE.	
3 DAY 17 HRS 30' 0"	181	1	C1TC	C1NE	VERIFY ELECTRICAL CONNECTION OF SKIRT IGNITORS COMPLETE.	
	181	2	C1TC	C1PE	VERIFY IN WORK, OR START THERMAL INSULATION CLOSE OUT OF SKIRT IGNITOR ACCESS DOOR.	
3 DAY 17 HRS 20' 0"	111	1	CLTC	CVTS	REQUEST A 50 FOOT RADIUS BE CLEARED AROUND THE ML EAST LOW RISE ELEVATORS AT THE GROUND & ML ZERO LEVEL FOR LV ORDNANCE DELIVERY.	TCP1

LV CDDT & CD, VOL 1
 DATE: SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A 92
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 17 HRS 15' 0"						
181		1	C1TC	C1PE	VERIFY MECHANICAL INSTALLATION OF G.G. IGNITORS COMPLETE.	
181		2	C1TC	C1NE	VERIFY ELECTRICAL CONNECTION OF G.G. IGNITORS COMPLETE.	
181		3	C1TC	C1PE	VERIFY IN WORK OR START THERMAL INSULATION CLOSEOUT OF G.G. IGNITOR ACCESS DOORS.	
3 DAY 17 HRS 0' 0"						
171		1	U2IE	C2TC	CLOSEOUT OF MSS PLATFORM #1 IS COMPLETE.	
171		2	U2SE	C2TC	FINAL INSPECTION/CLOSEOUT OF S-II STAGE EXTERIOR IS COMPLETE.	
171		3	U2QC	C2TC	REMOVAL OF ALL NON-FLIGHT HARDWARE FROM STAGE EXTERIOR IS COMPLETE.	
121		4	C2TC	CLTC	S-II STAGE EXTERIOR INSPECTION/CLOSEOUT COMPLETE. MSS PLATFORM #1 IS NO LONGER REQUIRED FOR S-II SUPPORT.	
181		5	CCLH	C1TC	S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES COMPLETED.	
121		6	C1TC	CLTC	S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES COMPLETED.	
161		7	C4TC	C4PS	START PROPULSION SECURING PER V-35015.	
188		8	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR SV ORDNANCE OPERATIONS.	# TCP
8-1					*****WARNING***** * THE CONTROL AREA IS * * EXPANDED FOR LV * * INITIATOR DETONATOR * * HOOKUP AND CONSISTS OF * * THE ML, MSS, PAD APRON * * AND FLAME TRENCH. * *****	# TPC

LY CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
 REVISION

APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. A93
 V-20060, VOL I
 VEHICLE AS-507

012

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ CD ONLY ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶						
- 3 DAY 17 HRS 0' 0"						
121		9	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE	# TCP
121		10	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE	#
181		11	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE.	#
181		12	C1TC	C1PE C1NE	VERIFY S-IC ENGINE HIGH VOLTAGE IGNITORS INSTALLATION & CONNECTION COMPLETE.	
181		13	C1TC	C1PE	VERIFY INSTALLATION OF PYROGEN INITIATORS COMPLETE.	
121		14	C1TC	CLTC	S-IC ENGINE HIGH VOLTAGE IGNITORS INSTALLATION & CONNECTION AND RR INITIATOR INSTALLATION COMPLETE.	
111		15	CLTC	CVTS	S-IC ENGINE ORDNANCE CONNECTION COMPLETE.	TCP
181		16	C1TC	C1SP	DELIVER TCS KEY TO CPSS	
171		17	C2TC	U2EO	VERIFY ALL PULSE SENSORS REMOVED EXCEPT PD.	
188		18	CVTS	PA	DELETED GDDT ONLY	* TCP
		18-1			DELETED GDDT ONLY	* TCP

LV CDDT & CD, VOL I

DATE: OCTOBER 28, 1969

APOLLO/SATURN LAUNCH OPERATIONS

2251.60

TEST NO.

94

V-20060, VOL I

VEHICLE

AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 17 HRS 0' 0"						
111		19	CLTC	CVTS	REQUEST CTSC VERIFY LV ORDNANCE DELIVERY COMPLETE.	TCPI
181		20	C1TC	L1LS	VERIFY HDA POWER CARTRIDGES, S & A DEVICE AND RR EBW DETONATORS ARE AT THE PAD.	
161		21	C4TC	S4OR	VERIFY ORDNANCE IS AT THE PAD.	
171		22	C2TC	C2GP	SECURE GROUND PNEUMATICS. REPORT WHEN COMPLETE.	
171		23	C4TC	C2TC	VERIFY S-II OBSERVER AVAILABLE FOR SEPARATION AND RETRO ROCKET DETONATOR INSTALLATION.	
3 DAY 16 HRS 30' 0"						
111		1	CLTC	CVTS	REQUEST CPSS VERIFY AREA CLEAR FOR ORDNANCE INST AND SEQUENCER ARM KEY IS ON HAND.	TCPI
121		2	CLTC	C1TC C2TC C4TC	START ORDNANCE INSTALLATION.	
181		3	C1TC	C1PE	INSTALL RETRO-ROCKET EBW DETONATORS PER V-29003.	
181		4	C1TC	LHDA L10E	INSTALL AND CONNECT HOLDDOWN ARMS EXPLOSIVE RELEASE POWER CARTRIDGES PER V-26329 AND V-21321.	
181		4-1	C1TC	C1NE	DISCONNECT FLIGHT CABLE FROM INERT S&A DEVICES PER V-21009. MONITOR S-II FIRST PLANE SEPARATION SYSTEM DETONATOR CONNECTION.	B-202-55
171		5	C2TC	U2MO	INSTALL & CONNECT S-II SECOND PLANE SEP SYS & ULLAGE ROCKET DETONATORS PER V-29049 (Z030) (CDDT) V-29023 (Z008) (CD)	

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 95
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 16 HRS 30' 0"	171	6	C2TC	U2HO	INSTALL AND CONNECT S-II FIRST PLANE SEPARATION SYSTEM DETONATORS PER V-29049 (Z030) (CDDT) V-29023 (Z008) (CD)	
	171	7	C2TC	U2HO	START PREPS FOR S-II S & A INST PER V-29050 (K010) (CDDT) V-29024 (K008) (CD)	
	161	8	C4TC	C4SM	INSTALL S-IVB ORDNANCE DETONATORS AND CONNECT PER V-30539, SECT F.	
3 DAY 15 HRS 30' 0"	181	1	C1TC	C1PE	VERIFY MECHANICAL INSTALLATION OF RETRO-ROCKET EBW DETONATORS COMPLETE.	
	181	2	C1TC	C1NE	START RETRO-ROCKET EBW DETONATOR CONNECTION PER V-21012.	
	181	3	C1TC	LHDA	VERIFY MECHANICAL INSTALLATION OF HDA ORDNANCE COMPLETE.	
	181	4	C1TC	L10E	START ELECTRICAL CONNECTION OF HDA ORDNANCE PER V-21321 OR VERIFY ALREADY STARTED.	
3 DAY 15 HRS 0' 0"	181	1	C1PE	C1TC	REQUEST F-1 ENGINE HYPERGOLS DELIVERED TO ML ZERO LEVEL.	
	181	1	C1TC	C1NE C1PE	INSTALL & CONNECT S & A PER V-21009 AND V-29003.	

LY CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. 96
 V-20060, VOL I
 VEHICLE AS-507

012

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 3 DAY 14 HRS 45' 0"		2			NOTE ----- THE FOLLOWING SWITCH WILL BE OPERATED DURING F-1 ENGINE HYPERGOL CARTRIDGE INSTALLATION. C1EN - IGNITORS INSTALLED - ARM	
	181	3	C1TC	C1PE	START HYPERGOL CARTRIDGE INSTALLATION PER V-29005.	
	171	4	U2MO	C2TC	S-II SECOND PLANE SEPARATION SYSTEM AND ULLAGE ROCKET DETONATOR INSTALLATION AND CONNECTION HAVE BEEN COMPLETED.	
	171	5	U2HO	C2TC	S-II FIRST PLANE SEPARATION SYSTEM DETONATOR INSTALLATION AND CONNECTION HAVE BEEN COMPLETED.	
	171	6	U2HO	C2TC	PREPS FOR S & A INSTALLATION HAVE BEEN COMPLETED.	
	171	7	C2TC	U2HO	INSTALL S & A PER V-29050 (K010) (CDDT) V-29024 (K008) (CD).	
	161	1	C4TC	C4SM	VERIFY S-IVB ORDNANCE DETONATOR INSTALLATIONS AND CONNECTIONS COMPLETED.	
- 3 DAY 14 HRS 30' 0"	161	2	C4TC	C4SM	START INSTALLATION OF S-IVB S & A PER V-30539, SECT F.	
	181	3	C1TC	C1NE	VERIFY S-IC RETRO-ROCKET EBW DETONATOR CONNECTIONS COMPLETED.	
	181	4	C1TC	C1PE	COMPLETE INSTALLATION OF S-IC FAIRING HEAT SHIELD ACCESS PANELS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 13 HRS 30' 0"						
181		1	C1TC	C1PE C1NE	VERIFY S-IC S AND A INSTALLATION AND CONNECTION COMPLETE.	
121		2	C1TC	CLTC	S-IC S & A INSTALLATION IS COMPLETE.	
171		3	U2HO	C2TC	S-II S & A INSTALLATION IS COMPLETE.	
121		4	C2TC	CLTC	S-II S & A INSTALLATION IS COMPLETE.	
161		5	C4TC	C4SM	VERIFY S-IVB S & A INSTALLATION COMPLETE	
121		6	C4TC	CLTC	S-IVB S & A INSTALLATION IS COMPLETE.	
121		7	CLTC	C1TC C2TC C4TC	VERIFY READY FOR S & A FUNCTIONALS.	
188		8	CLTC	ALL	ALL PERSONNEL SUPPORTING LV S & A FUNCTIONALS GO TO CHANNEL 121 ACTIVE AND MONITOR STAGE TC CHANNEL S & A FUNCTIONAL TEST -----	
		9			*****CAUTION***** * * UNDER NO CIRCUMSTANCES * * SHALL THE S & A DEVICES * * BE OPERATED AT MORE * * THAN FOUR COMPLETE * * CYCLES PER MINUTE. * * SOLENOID OVER-HEATING * * MAY RESULT FROM HIGHER * * FREQUENCY CYCLING. * *****	
121		10	CLTC	U1FN U2HO S4OR	VERIFY SHORTING PLUGS INSTALLED ON PROPELLANT DISPERSION DETONATORS AND CDF NOT CONNECTED TO S & A'S.	

LY CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

3254.60
 TEST NO. 98
 V-20060, VOL I
 VEHICLE AS-207

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 3 DAY 13 HRS 30' 0"						
121		11	CLTC	U1FN U2HO S4OR	VERIFY S & A ROTOR MECHANICALLY IN SAFE POSITION.	
121		12	CLTC	C1DP C2DP C4DP	VERIFY S & A SAFE INDICATION ON.	
121		13	CLTC	C1DP C2DP C4DP	S & A TO ARM FOR 2 SECONDS THEN AUTO. VERIFY ARMED INDICATION ON - SAFE INDICATION OFF.	
121		14	CLTC	U1FN U2HO S4OR	VERIFY S & A ROTOR MECHANICALLY IN ARMED POSITION.	
121		15	CLTC	C1DP C2DP C4DP	S & A TO SAFE. VERIFY SAFE INDICATION ON - ARMED INDICATION OFF.	
121		16	CLTC	U1FN U2HO S4OR	VERIFY S & A ROTOR MECHANICALLY IN SAFE POSITION.	
121		17	CLTC	C1DP C2DP C4DP	S & A TO ARM FOR 2 SECONDS THEN AUTO. VERIFY ARMED INDICATION ON - SAFE INDICATION OFF.	
121		18	CLTC	U1FN U2HO S4OR	VERIFY S & A ROTOR MECHANICALLY IN ARMED POSITION.	
121		19	CLTC	C1DP C2DP C4DP	S & A TO SAFE. VERIFY SAFE INDICATION ON - ARMED INDICATION OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 3 DAY 13 HRS 30' 0"	121	20	CLTC	U1FN U2HO S4OR	VERIFY S & A ROTOR MECHANICALLY IN SAFE POSITION.	
	121	21	CLTC	C1TC C2TC C4TC	S & A FUNCTIONALS ARE COMPLETE.	
	188	22	CLTC	ALL	ALL PERSONNEL WHO SUPPORTED S & A FUNCTIONALS RETURN TO ASSIGNED CHANNELS.	
- 3 DAY 13 HRS 15' 0"	181	1	C1TC	C1PE	VERIFY HYPERGOL CARTRIDGES ARE INSTALLED IN ENGINE.	
	181	2	C1TC	C1PE	START THERMAL INSTALLATION CLOSEOUT OF HYPERGOL ACCESS DOOR OR VERIFY IN WORK.	
	181	3	C1TC	C1PE C1NE	VERIFY S-IC ORDNANCE INSTALLATION COMPLETED.	
	181	4	C1TC	LHDA C1NE	VERIFY HOLDDOWN ARMS EXPLOSIVE RELEASE POWER CARTRIDGES INSTALLATION AND CONNECTION COMPLETED.	
	181	5	C1TC	C1PE	VERIFY INSTALLATION OF FAIRING HEAT SHIELD ACCESS PANELS COMPLETE.	
	121	6	CLTC	C1TC C2TC C4TC	VERIFY ALL ORDNANCE INSTALLATION COMPLETE.	
	111	7	CLTC	CVTS	LV CONTROLLED SWITCHING ACROSS LV/SC INTERFACE WILL BE LIFTED FOR LV POWER DOWN OPERATIONS	TCP1

LV CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 100
 V-20060, VOL I
 VEHICLE AS-307

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
GD ONLY						
3 DAY 13 HRS 15' 0"						
188		8	CVTS	PA	CONTROLLED SWITCHING INCLUDING CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS LIFTED FOR LV POWER DOWN OPERATIONS, RF SILENCE IS STILL IN EFFECT.	TCPI
121		9	CLTC	C1TC C2TC C4TC CUTC	REMOVE STAGE POWER, REPORT WHEN COMPLETE.	
181		10	C1TC	C1NE	REMOVE S-IC STAGE POWER PER V-21097.	
181		11	C1TC	RRSC	DRSCS RECORDERS - OFF	
171		12	C2TC	C2NP	REMOVE S-II STAGE AND ESE POWER PER V-21103 (B011).	
161		13	C4TC	C4ES	REMOVE S-IVB STAGE & GROUND POWER PER V-30539, APPENDIX C.	
161		14	CUTC	C4TC	VERIFY S-IVB READY FOR REMOVAL OF IU STAGE AND GROUND POWER.	
151		15	CUTC	CUNP	REMOVE IU STAGE AND GROUND POWER PER PROCEDURE V-21223. REPORT WHEN COMPLETE	
3 DAY 13 HRS 0' 0"						
121		1	C1TC	CLTC	S-IC STAGE POWER IS OFF	
121		2	C2TC	CLTC	S-II STAGE POWER IS OFF.	
121		3	C4TC	CLTC	S-IVB STAGE POWER IS OFF.	
121		4	CUTC	CLTC	IU STAGE POWER HAS BEEN REMOVED.	
111		5	CLTC	CVTS	LAUNCH VEHICLE POWER IS OFF.	TCPI
121		6	CLTC	CUTC	ESTABLISH CONTROL SWITCHING ACROSS THE INTERFACE PER V-31062 APPENDIX C.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 DAY 13 HRS 0' 0"				CD ONLY		
111		7	CLTC	CVTS	L/V INTERFACE CONTROLLED SWITCHING IS IN EFFECT.	TCP1
188		8	CVTS	PA	CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT. SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS	TCP1
181		9	C1TC	C1PE	VERIFY HYPERGOL CARTRIDGE ACCESS DOOR CLOSEOUT COMPLETE.	
181		10	C1TC	V1MS	SECURE VEHICLE MEASURING GSE PER V-27098	
121		11	C1TC	CLTC	F-1 ENG HYPERGOL CARTRIDGE ACCESS DOOR CLOSEOUT COMPLETE.	
111		12	CLTC	CVTS	LV ORDNANCE INSTALLATION IS COMPLETE	TCP1
188		13	CVTS	PA	LV ORDNANCE INSTALLATION IS COMPLETE	TCP1
188		14	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM REMOTE RESISTANCE CHECKS.	* TCP1
		14-1			*****WARNING***** * * THE CONTROL AREA FOR * CSM REMOTE RESISTANCE * CHECKS CONSISTS OF THE * AREA CONFINED BY THE * COMPLEX PERIMETER FENCE * *****	* TCP1
188		15	CVTS	PA	DELETED CDDT ONLY	* TCP1
		15-1			DELETED CDDT ONLY	* TCP1

LV CDDT & CD, VOL I
 DATE: OCTOBER 26, 1969
 REVISION 015

APOLLO/SATURN LAUNCH OPERATIONS

3281.60
 TEST NO. 102
 Y-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
3 DAY 13 HRS 0' 0"						
	181	16	C1TC	B1TM	SECURE TM GSE PER V-38004	
	181	17	C1TC	BTMC	SECURE TOE PER V-28009	
3 DAY 12 HRS 45' 0"						
	121	1	CLTC	CUTC	SECURE LV ELECT SUPPORT EQUIPMENT PER V-31062, APPENDIX A. REPORT WHEN COMPLETE.	
3 DAY 12 HRS 0' 0"						
	188	1	CVTS	PA	CSM ORDNANCE OPERATIONS ARE COMPLETE. RF SILENCE IS ENDED. CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS ENDED. THE CONTROL AREA IS OPEN FOR NORMAL WORK EXCEPT THE SLA INTERIOR, IU & S-IVB FORWARD AREA WHICH IS RESTRICTED TO ESSENTIAL PERSONNEL ONLY FOR LM PROPELLANT VENT LINE QD HV OPENING.	# TCP
	121	2	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE.	# TCP XB-148-54
	121	3	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE.	#
	181	4	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE.	#
3 DAY 11 HRS 0' 0"						
	171	1	C2TC	C2NP	DELETED CDDT ONLY	*

LV CDDT & CD, VOL 1
DATE: OCT 13 1969
REVISION 013

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
TEST NO. 103
V-20060, VOL 1
VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
- 3 DAY 10 HRS 30'0"	188	1	CVTS	PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM RCS MANIFOLD LOADING	# TCPI
		1-1			***** WARNING ***** * * THE CONTROL AREA FOR LM RCS * MANIFOLD LOADING CONSISTS OF * THE SLA INTERIOR, IU & S-IVB * FORWARD * *****	
-3 DAY 10 HRS 0'0"	188	1	CVTS	PA	LM RCS MANIFOLD LOADING IS COMPLETE. THE CONTROL AREA IS OPEN FOR NORMAL WORK.	# TCPI
-3 DAY 9 HRS 0'0"	171	1	U2AN	C2TC	DELETED CD ONLY	*
-3 DAY 8 HRS 45'0"		1			DELETED	
		1-1			DELETED	
-3 DAY 8 HRS 30'0"	188	1	CVTS	PA	DELETED CDDT ONLY	* TCPI
-3 DAY 7 HRS 0'0"	188	1	CVTS	PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM PROPELLANT TANK PRESSURIZATION, LM A/S AND D/S GOX TANK TO REGULATOR LOCK-UP AND CSM HELIUM SERVICING TO FLIGHT PRESSURE	# TCPI

LV CDDT & CD, VOL 1
 DATE: SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. A 104
 V-20060, VOL 1
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
GD ONLY						
3 DAY 7 HRS 0' 0"		1-1			*****WARNING***** * THE CONTROL AREA FOR LM * * PROPELLANT TANK * * PRESSURIZATION, LM A/S * * AND D/S GOX TANK TO * * REGULATOR LOCK-UP AND * * CSM HELIUM SERVICING * * TO FLIGHT PRESSURE * * CONSISTS OF THE AREA * * CONFINED BY THE COMPLEX * * PERIMETER FENCE * *****	# TCPI
	121	2	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE.	# TCPI
	121	3	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE.	#
	181	4	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE.	#
	181	5	CCLH	C1TC	LH2 FACILITY SYSTEM PURGE IS COMPLETE	
2 DAY 19 HRS 10' 0"		1	CLTC	CUTC	START L/V ELECT SUPPORT PREPS PER V-31062, APPENDIX B.	
2 DAY 19 HRS 0' 0"	121	1	CVTS	CLTC	VERIFY READY FOR SERVICE ARM #9 HOOD RETRACT IN ONE HOUR.	TCPI

LV CDDT & CD, VOL I
 DATE SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A105
 V-20060, VOL I
 AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
- 2 DAY 18 HRS 30' 0"						
188	1	CVTS	PA		LM AND CSM GOX AND GHE SERVICING AND PROPELLANT LINE DISCONNECT IS COMPLETE. THE CONTROL AREA IS OPEN FOR NORMAL WORK.	# TCP1
121	2	CLTC	C1TC C2TC C4TC CUTC		HAZARDOUS S/C HYPERGOLIC VENT LINE OPERATIONS ARE COMPLETE. THE PAD IS OPEN FOR NORMAL WORK.	#
121	3	CVTS	CLTC		CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE	# TCP1
121	4	CLTC	C1TC		CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE	#
181	5	C1TC	CPDC		CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE	#
- 2 DAY 18 HRS 10' 0"						
121	1	CUTC	CLTC		SUPPORT PREPS ARE COMPLETE. READY TO APPLY LSE SWITCH POWER.	
121	2	CLTC	C1TC		APPLY SWITCH POWER AND VERIFY.	
121	3	CLTC	CUTC		SWITCH POWER IS ON - INITIALIZE DISCRETES.	
151	4	CUTC	BGCC		INITIALIZE DISCRETES PER V-22006 (PROGRAMS NT99 AND 98). REPORT WHEN SWITCH SCAN IS BEING DISPLAYED.	
- 2 DAY 18 HRS 0' 0"						
111	1	CLTC	CVTS		MSS PLATFORM #1 AVAILABLE FOR OPENING.	TCP1

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A106
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
- 2 DAY 18 HRS 0' 0"						
121		2	CUTC	CLTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION.	
151		3	CUTC	CLVN	ML COMPUTER INHIBIT - AUTO	
151		4	CUTC	CLVN	COMPUTER TEST SWITCH - ON AND VERIFY DISCRETE CYCLING.	
151		5	CUTC	CCPM	APPLY 400 HERTZ POWER AND START REDUNDANT POWER SUPPLY PER PROCEDURE V-21222. REPORT WHEN COMPLETE.	
121		6	CLTC	C1TC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION. REPORT WHEN SATISFACTORY.	
121		7	CLTC	CUTC	SWITCH SCAN IS SATISFACTORY. BRING UP COMPUTER.	
151		8	CUTC	BGCC	ENTER S GO AND PERFORM DATA LINK SWITCH OVER PER V-22006. REPORT WHEN COMPLETE.	
121		9	CUTC	CLTC	GROUND COMPUTER IS SUPPORTING.	
188		10	CLTC	ALL	GROUND COMPUTER IS SUPPORTING.	
121		11	CVTS	CLTC	DISCONNECT ENVIRONMENTAL CHAMBER FROM S/C FOR BPC INSTALLATION. REPORT WHEN COMPLETE.	TCP1
121		12	CLTC	C1TC	DISCONNECT ENVIRONMENTAL CHAMBER FOR BPC INSTALLATION. REPORT WHEN COMPLETE.	
181		13	C1TC	CSA9	DISCONNECT ENVIRONMENTAL CHAMBER FROM S/C FOR BPC INSTALLATION. REPORT WHEN COMPLETE	
- 2 DAY 17 HRS 45' 0"						
181		1	CSA9	C1TC	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED.	

LV CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A107
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
2 DAY 17 HRS 45' 0"						
	121	2	C1TC	CLTC	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED.	
	111	3	CLTC	CVTS	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED.	TCPI
2 DAY 17 HRS 0' 0"						
	121	1	CVTS	CLTC	MSS PLATFORM #1 IS OPEN AND SECURE.	TCPI
2 DAY 15 HRS 0' 0"						
	171	1	C2TC	C2LD	ACTIVATE LEAK DETECTION OPERATION PER V-26326 (G080) AND V-26276 (G058), LOCAL OR REMOTE POWER, AS REQUIRED FOR PAD OPEN AND CLOSE PERIODS.	
	151	2	CUTC	UUVN	START MECHANICAL CHECKS PER V-31062, PART II.	
	171	3	C2TC	U2LN	CONTINUE ELEC INSP PER V-21253 (G060).	
2 DAY 13 HRS 0' 0"						
	181	1	C1TC	LHDA	START ORD PRELOAD OPERATION PER V-26337.	#
2 DAY 11 HRS 0' 0"						
	121	1	CVTS	CLTC	RECONNECT ENVIRONMENTAL CHAMBER.	TCPI
	121	2	CLTC	C1TC	RECONNECT ENVIRONMENTAL CHAMBER.	

LV CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. 108
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
- 2 DAY 11 HRS 0' 0"	181	3	C1TC	CSA9	RECONNECT ENVIRONMENTAL CHAMBER TO S/C. REPORT WHEN COMPLETE,	
- 2 DAY 10 HRS 45' 0"	121	1	C1TC	CLTC	S/A #9 ENVIRONMENTAL CHAMBER RECONNECT COMPLETE.	
	121	2	CLTC	CUTC	SECURE L/V ELECT SUPPORT EQUIPMENT PER V-31062, APPENDIX A. REPORT WHEN COMPLETE.	
- 2 DAY 9 HRS 45' 0"	181	1	C1TC	C1NE	START LAUNCH CRITICAL NORMALLY OPEN RELAY VERIFICATION CHECKOUT PER V-21035. REPORT WHEN COMPLETE.	
	121	2	C1TC	CLTC	REQUEST LSCP SWITCH TO CHANNEL 185 TO SUPPORT C1NE ON RELAY VERIFICATION CHECKOUT.	
- 2 DAY 9 HRS 30' 0"	171	1	C2TC	U2MH U2FE	START PRECOUNT INSPECTION OF ENGINE ACTUATION SYSTEM PER V-30029 (M020) TASK 7. REPORT WHEN COMPLETE.	
- 2 DAY 8 HRS 0' 0"		1	ALL	***	NOTE STAGE BATTERY ACTIVATION WILL BE STARTED AT THE DIRECTION OF CLTC 28130 HOURS TOTAL TIME PRIOR TO SCHEDULED INSTALLATION PER THE FOLLOWING PROCEDURES:	
				S-IC	V-21018	
				S-II	V-21101 (B012)	
				S-IVB	V-21322, V-21323 & V-21324	
				IU	IV-21254	

DATE: OCTOBER 26, 1969

REVISION 015

APOLLO/SATURN LAUNCH OPERATIONS

5254.60
TEST NO. A109
Y-20060, VOL I
VEHICLE AS-307

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
2 DAY 5 HRS 30' 0"	171	1	C2TC	U2FE U2MH	VERIFY EAS PRECOUNT INSPECTION IS COMPLETE.	
2 DAY 4 HRS 30' 0"	171	1	C2TC	U24A	VERIFY/CONNECT FLEX HOSES TO P70 & P71 STAGE POSITIVE PRESSURE FITTINGS	N-119-52
2 DAY 4 HRS 0' 0"	181	1	C1TC	LHDA	VERIFY CRD PRELOAD OPERATIONS COMPLETE.	#
	171	2	U2MU	C2TC	DELETED CDDT ONLY	*
2 DAY 3 HRS 30' 0"	181	1	C1TC	CCLO	START TOTAL LOX SYSTEM DEWPOINT CHECKS PER V-25344.	
	121	2	C1TC	C2TC	VERIFY PERSONNEL AVAILABLE TO MONITOR S-II LOX TANK PRESSURE IN SUPPORT OF LOX SYSTEM DEWPOINT CHECKS.	
	171	3	C2TC	U24A	MONITOR S-II LOX TANK PRESSURE DURING BOEING LOX SYSTEM DEWPOINT CHECKS.	

LY CDDT & CD, VOL I
DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5-254.60
TEST NO. A 110
Y-20060, VOL I
VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
2 DAY 3 HRS 0' 0"	171	1	C2TC	U2EC	START S-II ECS INSPECTION & VERIFICATION PER V-30029 (M020) TASK 11. REPORT WHEN COMPLETE.	
2 DAY 2 HRS 30' 0"	171	1	U2EC	C2TC	S-II ECS INSPECTION IS COMPLETE.	
2 DAY 2 HRS 0' 0"	181	1	C1TC	LEBS	SCAN EMERGENCY BACKUP BATTERY CELLS PER V-21019 AND RECHARGE PER V-21021. REPORT WHEN COMPLETE.	
2 DAY 0 HRS 30' 0"	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM SHE SERVICE OPERATIONS.	TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR LM * * SHE SERVICE CONSISTS OF * * THE LM DESCENT AREA * * INTERNAL TO THE SLA, * * IU AND S-IVB FORWARD * * *****	TCPI

LV CDDT & CD, VOL I
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AFOLLO/SATURN LAUNCH OPERATIONS

5254.60
TEST NO. A111
Y-20060, VOL I
VEHICLE AS-307

012

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					GD ONLY	
1 DAY 21 HRS 0' 0"						
	111	1	CLTC	CVTS	VERIFY PLATFORM #2 OF MSS IS BELOW STATION 2900 (FOR THEODOLITE CHECKS)	TCPI
	121	2	CVTS	CLTC	OIS AND PHONES ARE BEING DISCONNECTED FROM OIS FALLBACK TRAILERS.	# TCPI
	188	3	CVTS	PA	LM SHE INITIAL FILL IS COMPLETE. THE CONTROL AREA IS OPEN FOR NORMAL WORK.	TCPI
1 DAY 20 HRS 0' 0"						
	181	1	C1TC	L1LS	START FIRST LUT WALKDOWN. REPORT WHEN COMPLETE.	
		1-1			LV-QAL PARTICIPATION REQUIRED.	
1 DAY 19 HRS 0' 0"						
	151	1	CUTC	CLVN	ML DCE TO COMPUTER MODE VERIFY MTOAD INDICATION IS OFF ML COMPUTER INHIBIT - AUTO	
	151	2	CUTC	LGCC	VERIFY SYSTEM CONFIGURED TO START ML DCE SELF TEST.	
		2-1			*****CAUTION***** * * DO NOT PERFORM ML DCE * * TEST UNTIL VERIFICATION * * TO PROCEED HAS BEEN * * OBTAINED FROM CLTC. * * *****	
	121	3	CUTC	CLTC	READY TO START ML DCE TEST. REQUEST ALL ML GROUND POWER BE REMOVED.	

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

4251.60
 TEST NO. A 112
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
1 DAY 19 HRS 0' 0"						
121		4	CLTC	C2TC	SECURE LEAK DETECTION POWER FOR ML DCE CHECKS. REPORT WHEN COMPLETE.	
171		5	C2TC	C2LD	SECURE LEAK DETECTION POWER PER V-26276 (G058) PARAGRAPH E.3.(A), STEPS (15), (16), (20) AND (21).	
121		6	C2TC	CLTC	S-II LEAK DETECTION POWER IS SECURED.	
111		7	CLTC	CVTS	DELUGE PURGE PANEL WILL BE POWERED DOWN FOR THE NEXT 30 MINUTES. DELUGE PURGE CAPABILITY WILL BE AVAILABLE WITHIN 30 SECONDS IF NEEDED.	TCPI
121		8	CLTC	C1TC	SECURE 42D100 POWER.	
181		9	C1TC	CSPP	SECURE 42D100 POWER PER V-21194.	
121		10	CLTC	C1TC C2TC C4TC CUTC	VERIFY ALL ML GROUND POWER IS REMOVED.	
151		11	CUTC	CCPM	POWER OFF 400 HZ POWER. REPORT WHEN COMPLETE.	
121		12	CLTC	CUTC	START ML DCE CHECKOUT.	
		12-1		CLTC CLVN CSPP		

NOTE

DURING ML DCE CHECKOUT,
 CLVN AND CSPP WILL RESPOND
 AS FOLLOWS UPON COMMAND
 FROM CLTC TO RESTORE DELUGE
 PURGE SYSTEM:

1. CLVN - ML DCE SEQUENCER
POWER - OFF
2. CSPP - APPLY 42D100
POWER.

A 113

TEST NO.

V-20060, VOL I

VEHICLE

AS-507

APOLLO/SATURN LAUNCH OPERATIONS

012

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
1 DAY 19 HRS 0' 0"					CD ONLY	
151	13	CUTC	LGCC		START DCE SELF TEST.	
151	14	CUTC	SUVE SUVN		DELETED CDDT ONLY	*
151	15	CUTC	SUVE SUVN		START REMOVAL OF HYPERGOL COVERS.	#
121	16	CUTC	CLTC		STARTING REMOVAL OF HYPERGOL COVERS.	#
112	17	CLTC	CTSC		LV WILL BE READY FOR MICROBIAL SAMPLING IN 1 HOUR.	# TCP
171	18	C2TC	U2MU		REMOVE SEQUENCING SWITCHES TO SUPPORT RELEASE SENSOR CHECKS PER V-31045, PROVIDE PROTECTION FOR SEQUENCING SWITCHES REMOVED FROM PROPELLANT DISCONNECTS AND SHROUD OPENINGS OF DISCONNECTS. PLACE SWITCHES IN MATED CONFIGURATION.	
1 DAY 18 HRS 30' 0"						
151	1	LGCC	CUTC		ML DCE SELF TEST IS COMPLETE.	
151	2	CUTC	CLVN		ML DCE TO MANUAL MODE.	
151	3	CUTC	CLVN		APPLY 400 HZ POWER, REPORT WHEN COMPLETE.	
121	4	CUTC	CLTC		ML DCE CHECKOUT IS COMPLETE.	
121	5	CLTC	C1TC		APPLY 42D100 POWER.	
181	6	C1TC	CSPP		APPLY LSE 42D100 POWER PER V-21194.	
121	7	CLTC	C2TC		YOU ARE CLEAR TO REACTIVATE LEAK DETECTION POWER.	
171	8	C2TC	C2LD		REACTIVATE LEAK DETECTION SYSTEM PER V-26276 (G058) PARAGRAPH E.3.(A), STEPS (26), (27), (29) AND (30). REPORT WHEN COMPLETE.	

LV CDDT & CD, VOL I
 DATE: OCT 13 1968
 REVISION 013

APOLLO/SATURN LAUNCH OPERATIONS

5251.60
 TEST NO. 114
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
1 DAY 18 HRS 30' 0"						
	111	9	CLTC	CVTS	DELUGE PURGE PANEL IS POWERED UP	TCPI
	181	10	L1LS	C1TC	LUT WALKDOWN COMPLETE.	
		10-1			VERIFICATION BY LV-QAL	
1 DAY 18 HRS 0' 0"						
		1			DELETED	
	151	2	UUVN	CUTC	HYPERGOL COVER REMOVAL IS COMPLETE.	
	121	3	CUTC	CLTC	HYPERGOL COVER REMOVAL IS COMPLETE.	#
	112	4	CLTC	CTSC	CLEAR TO START MICROBIAL SAMPLING	# TCPI
1 DAY 17 HRS 30' 0"						
	181	1	CCLO	C1TC	TOTAL LOX SYSTEM DEWPOINT CHECKS PER V-25344 ARE COMPLETE.	
	171	2	C1TC	C2TC	LOX SYSTEM DEWPOINT CHECKS COMPLETE. S-II LOX TANK PRESSURE MONITOR NO LONGER REQUIRED.	
1 DAY 17 HRS 0' 0"						
	151	1	UUVN	CUTC	MECHANICAL CHECKS ARE COMPLETE	
	171	2	C2TC	U2LN	TERMINATE V-21253 (G060) TEMPORARILY - REPORT STATUS.	
	188	3	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM CRYO SERVICING.	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
1 DAY 17 HRS 0' 0"		3-1			*****WARNING***** * THE CONTROL AREA FOR * * CSM LO2 AND LH2 TANKING * * AND PRESSURIZATION IS * * AN 1100 FOOT RADIUS * * AROUND THE SPACE * * VEHICLE, * * LV COMPUTER MAINTENANCE * * PERSONNEL ARE PERMITTED * * TO REMAIN IN ML ROOMS * * 10 AND 15A DURING CSM * * CRYO SERVICING, * *****	TCPI
121		4	CVTS	CLTC	SCC PERSONNEL READY FOR SMDPS CHANGE TO 2 SWITCH MODE.	TCPI
121		5	CLTC	C1TC	SCC PERSONNEL READY FOR SMDPS TO BE PUT IN THE TWO SWITCH MODE.	
181		6	C1TC	CPDC	CHANGE SMDPS FROM 2 SWITCH - 1 VALVE MODE TO 2 SWITCH MODE.	
		1			NOTE ----- THE FOLLOWING SEQUENCES ARE TO BE PERFORMED AFTER THE PAD IS CLEAR OF ALL NON-ESSENTIAL PERSONNEL.	
121		1-1	CVTS	CLTC	READY FOR SMDPS CHANGE TO 1 SWITCH MODE	TCPI
121		1-2	CLTC	C1TC	CHANGE THE SMDPS TO 1 SWITCH MODE	
181		1-3	C1TC	CPDC	CHANGE THE SMDPS TO 1 SWITCH MODE. REPORT WHEN COMPLETE.	

LV CDDT & CD, VOL I
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60
 TEST NO. A 116
 V-20060, VOL I
 VEHICLE AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
		1			NOTE ----- THE FOLLOWING SEQUENCES WILL OCCUR AT APPROXIMATELY T-1 DAY 7 HRS, BUT MAY CHANGE REAL TIME DUE TO SPACECRAFT OPERATIONS.	#
188		2	CVTS	PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM LOX AND LH2 TANK PRESSURIZATION.	# TCP
		2-1			*****WARNING***** * * THE CONTROL AREA FOR * * CSM LO2 AND LH2 TANK * * PRESSURIZATION CONSISTS * * OF THE AREA CONFINED BY * * THE COMPLEX PERIMETER * * FENCE, * * *****	# TCP
		1			NOTE ----- THE FOLLOWING SEQUENCES WILL OCCUR AT APPROXIMATELY T-1 DAY 6 HRS, BUT MAY CHANGE REAL TIME DUE TO SPACECRAFT OPERATIONS.	
188		2	CVTS	PA	DELETED GDDT ONLY	* TCP
188		3	CVTS	PA	CSM LO2 AND LH2 CRYO PRESSURIZATION IS COMPLETE. THE CONTROL AREA, EXCEPT FOR THE SLA INTERIOR, CM INTERIOR, IU & S-IVB FORWARD, IS OPEN FOR NORMAL WORK.	# TCP

LV CDDT & CD, VOL 1
 DATE: SEPTEMBER 5, 1969
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APOLLO/SATURN LAUNCH OPERATIONS

5254.60 A 117
 TEST NO. Y-20060, VOL 1
 VEHICLE AS-307

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
121		4	CVTS	CLTC	CHANGE THE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE. REPORT WHEN COMPLETE.	TCP1
121		5	CLTC	C1TC	REQUEST CPDC TURN PANEL POWER OFF TO DISARM THE GN2 DELUGE SYSTEM AND CLOSE GN2 INLET HANDVALVE (2 SWITCH 1 VALVE MODE), REPORT WHEN COMPLETE.	
181		6	C1TC	CPDC	TURN PANEL POWER OFF TO DISARM THE GN2 DELUGE SYSTEM AND CLOSE GN2 INLET HANDVALVE. VERIFY SMDPS IN 2 SWITCH 1 VALVE MODE.	
		6-1		LPDC CPDC	NOTE ----- BETWEEN NOW AND START OF LV PROPELLANT LOADING, CPDC SHOULD STANDBY FOR EMERGENCY ARMING OF THE SMDPS. IN THE EVENT OF EMERGENCY EVACUATION OF THE LUT, LPDC MUST OPEN THE GN2 INLET VALVE TO THE SMDPP PRIOR TO EVACUATING. CPDC WILL TURN HIS PANEL POWER ON AT THE DIRECTION OF CVTS, CLTC OR C1TC ONLY. THIS DIRECTION WILL BE GIVEN ONLY AFTER VERIFICATION THAT IU AND S/C HAVE BEEN CLEARED OF PERSONNEL.	
188		7	CVTS	PA	LM RCS FINAL MANIFOLD LOADING IS COMPLETE. THE SLA INTERIOR, IU AND S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK.	# TCP1
121		1	CVTS	CLTC	DELETED CDDT ONLY	* TCP1

1 DAY
 5 HRS
 0' 0"

LV CDDT & CD, VOL I
 DATE: SEPTEMBER 5, 1969
 REVISION 012

APOLLO/SATURN LAUNCH OPERATIONS

3254.60
 TEST NO. A 118
 Y-20060, VOL I
 VERITY AS-507

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
1 DAY 5 HRS 0' 0"						
	121	2	CLTC	C4TC	DELETED CDDT ONLY	*
	161	3	C4TC	S4MF	DELETED CDDT ONLY	*
1 DAY 4 HRS 30' 0"						
	121	1	CLTC	C2TC C4TC CUTC	THIRTY MINUTES PRIOR TO PICKING UP THE COUNT AT T-1 DAY, 4 HRS, PERFORM THE FOLLOWING THREE SEQUENCES.	
	151	1-1	CUTC	SUNE PUPL	VERIFY IU BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD.	
	161	1-2	C4TC	C4ES	VERIFY S-IVB FLIGHT BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD.	
	171	1-3	C2TC	C2NP	VERIFY S-II FLIGHT BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD.	
1 DAY 4 HRS 0' 0"						
	188	1	CLTC	ALL	ALL PERSONNEL PROCEED WITH LV COUNTDOWN ON PAGE 31 OF VOLUME II.	

LV CDDT & CD, VOL I
DATE: SEPTEMBER 5, 1969
REVISION 012

APOLLO/SATURN
LAUNCH OPERATIONS

PAGE 5251.60
TEST NO. V-20060, VOL I
VEHICLE AS-507

▶ ▶ ▶ ▶ ▶ CD ONLY ▶ ▶ ▶ ▶ ▶

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SAHYER, A.	LV-GDC-21, LCC 2R26	4
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DELAROSA, H. J.	LV-MEC-11, LCC 2R12	6
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