

#5 - R. Smith

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RELEASE DATE	JULY 13, 1971



**JOHN F. KENNEDY
SPACE CENTER**

**RELEASED
FOR AS 510**

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

**VOLUME I OF IV
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**

**RELEASED
FOR AS 510**

TCP NO V-20060, VOL IREVISION 031DATE JULY 13, 1971NO OF PAGES 125EFFECTIVITY AS-510 & SUBS

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SUPPORT OF SPACE VEHICLE COUNTDOWN
DEMONSTRATION TEST AND LAUNCH COUNTDOWN

VOLUME I OF IV

**THIS TCP CONTAINS
HAZARDOUS OPERATIONS**

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A. INTRODUCTION

1. 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.
2. 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:
 - (A) SPACECRAFT COUNTDOWN PROCEDURE K=0007
 - (B) LUNAR MODULE COUNTDOWN PROCEDURE KL=007
 - (C) 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)
 - (D) APOLLO/SATURN V LAUNCH MISSION RULES = AS-510 K=V=05.10/10
3. IN ADDITION, UNDER EMERGENCY CONDITIONS SPECIFIED THEREIN, THE SATURN V LV EMERGENCY PROCEDURE V=20056, WILL BE USED.

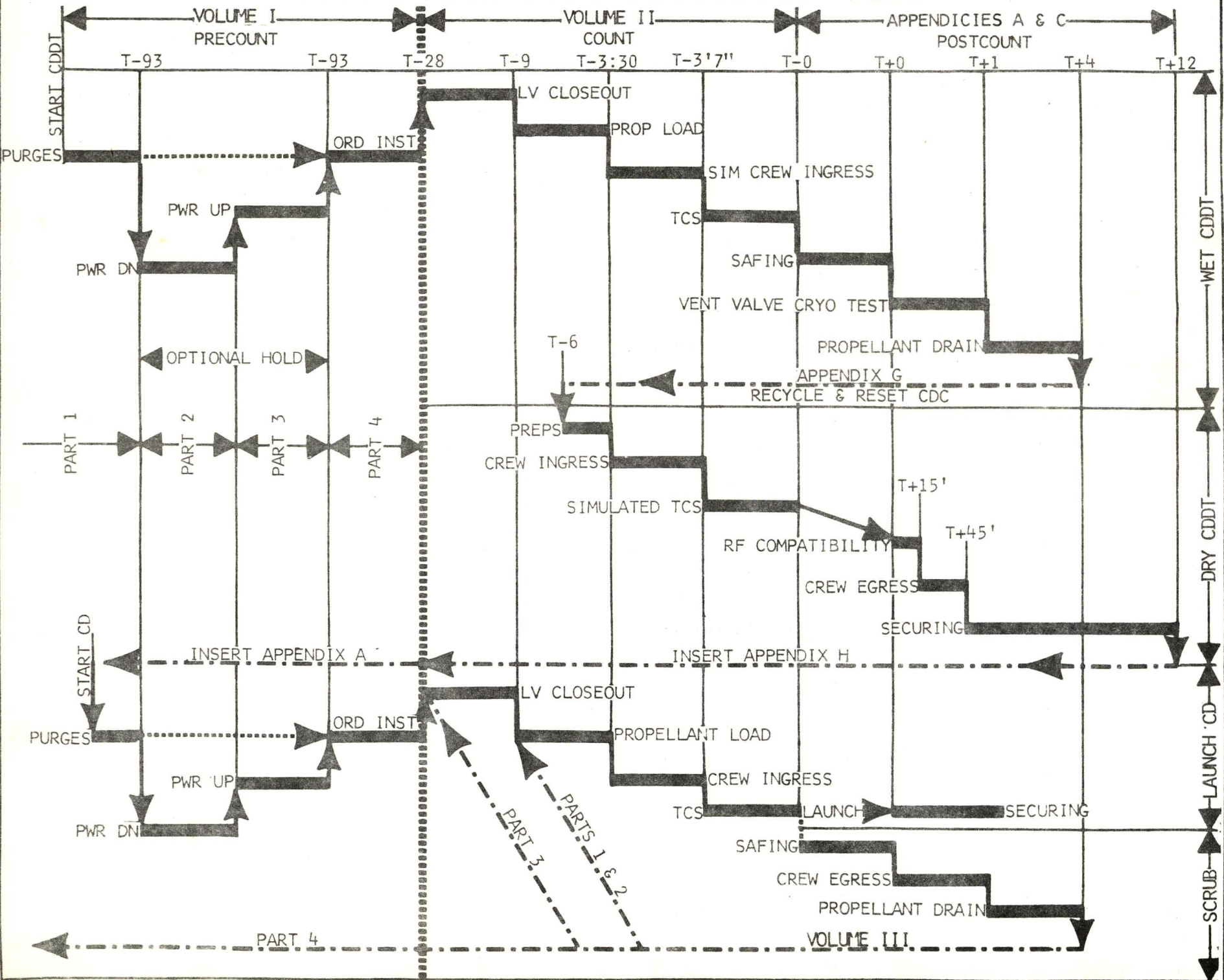
B. CDDT AND COUNTDOWN PROCEDURE EXPLANATION

1. THE CDDT/CD WILL BE TREATED AS ONE PROCEDURE BUT WILL BE PUBLISHED SEPARATELY AS FOLLOWS:
 - (A) IN THE ISSUE RELEASED FOR CDDT, THE PAGES IN THE PROCEDURE HAVING A STEP UNIQUE TO CDDT WILL BE MARKED "CDDT ONLY". SUCH PAGES WILL HAVE A COUNTERPART PAGE CONTAINED IN APPENDIX A MARKED "CD ONLY". THIS ISSUE OF THE PROCEDURE WILL BE PROMINENTLY MARKED ON THE FRONT COVER "ASSEMBLED FOR CDDT".
 - (1) PAGES WITH BLACK BARS ARE TO BE USED ONLY DURING THE COUNTDOWN DEMONSTRATION TEST.
 - (B) FOLLOWING CDDT, THE "CDDT ONLY" PAGES WILL BE REPLACED BY THE "CD ONLY" PAGES. ALL APPROVED PERMANENT PROCEDURE CHANGES INCORPORATED, THE PROCEDURE REV NUMBER INCREASED, THE FRONT COVER PROMINENTLY MARKED "ASSEMBLED FOR CD" AND THE PROCEDURE REPUBLISHED AND REDISTRIBUTED.
 - (1) PAGES WITH BLACK DIAMONDS ARE TO BE USED ONLY DURING THE LAUNCH COUNTDOWN.
 - (C) THE "ASSEMBLED FOR CD" VERSION WILL NOT BE DISTRIBUTED UNTIL ABOUT 4 CALENDAR DAYS PRIOR TO THE START OF CD TO AVOID THE RISK OF HAVING THE TWO PROCEDURES CONFUSED.

C. CODES IN REMARKS COLUMN

1. * INDICATES INFORMATION UNIQUE TO CDDT
2. # INDICATES INFORMATION UNIQUE TO LAUNCH CD
3. † INDICATES START OR COMPLETION OF BARCHART BAR
4. A INDICATES INFORMATION UNIQUE TO AS-510 ONLY
5. TCPI (SEE PARAGRAPH D,1 FOLLOWING)

CDDT & COUNTDOWN PROCEDURE FLOW



D, INTEGRATED TCP INTERFACE

1. SPECIFIC SEQUENCES IDENTIFIED IN THIS TCP WITH THE SYMBOL TCPI (TEST AND CHECKOUT PROCEDURE INTERFACE) HAVE BEEN COORDINATED WITH OTHER ORGANIZATIONS WHOSE CORRESPONDING TCPIS ARE USED DURING THIS TEST. IT IS THE RESPONSIBILITY OF THE ORGANIZATION INITIATING A CHANGE TO A TCPI SEQUENCE TO INSURE THAT COORDINATION WITH AFFECTED ORGANIZATIONS IS ACCOMPLISHED THROUGH THE INTEGRATION SUPPORT CONTRACTOR. PROBLEMS RESULTING FROM THE COORDINATION WILL BE RESOLVED BY LV-OMO-1 PRIOR TO THE DLO PRE-TEST BRIEFING, AND LV-OMO-3 FROM THE TIME OF DLO PRE-TEST BRIEFING THROUGH COMPLETION OF THE TEST.

E, SAFETY

1. THE LAUNCH VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN OPERATIONS ARE CONSIDERED TO BE HAZARDOUS FOR THE FOLLOWING REASONS:
 - (A) SPACECRAFT HYPERGOLICS WILL BE ON BOARD.
 - (B) RP-1 WILL BE ON BOARD.
 - (C) SPACE VEHICLE ORDNANCE WILL BE INSTALLED AND CONNECTED.
 - (D) SPACE VEHICLE PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSURIZED.
 - (E) HAZARDOUS ENVIRONMENTAL CONDITIONS MAY BE ENCOUNTERED (INERT ATMOSPHERES, WORK AT HEIGHTS, RADIATION AND ENGINE GIMBALLING).
 - (F) HEAVY EQUIPMENT MOVEMENTS WILL BE REQUIRED.
 - (G) SPACE VEHICLE CRYOGENIC LIQUIDS (LOX, LH2 & SHE) WILL BE LOADED.
 - (H) THE FLIGHT CREW WILL INGRESS AND THE HATCH WILL BE CLOSED.
 - (I) THE SPACE VEHICLE WILL BE LAUNCHED (CD ONLY).

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET		PAGE <u>1</u> OF <u>5</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-510 & SUBS	
4. TEST OBJECTIVES <u>CCDT</u> 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. <u>CD</u> 1. TO ACCOMPLISH THE OPERATIONS REQUIRED TO PREPARE THE LAUNCH VEHICLE FOR LAUNCH. 2. TO LAUNCH THE SPACE VEHICLE. IT IS CLASSIFIED AS A THIS TEST ☒ DOES ☐ DOES NOT CONTAIN HAZARDOUS OPERATIONS. TEST OR OPERATION. OPERATIONS ARE CONSIDERED HAZARDOUS FOR THE FOLLOWING REASONS: SPACECRAFT HYPERGOLICS WILL BE ON BOARD, RP-1 WILL BE ON BOARD, ORDNANCE WILL BE INSTALLED AND CONNECTED, PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSURIZED, HAZARDOUS ENVIRONMENTAL CONDITIONS MAY BE ENCOUNTERED (INERT ATMOSPHERES, WORK AT HEIGHTS, RADIATION AND ENGINE GIMBALLING), HEAVY EQUIPMENT MOVEMENTS WILL BE REQUIRED, CRYOGENIC LIQUIDS WILL BE LOADED, THE FLIGHT CREW WILL INGRESS AND THE HATCH WILL BE CLOSED. THE SPACE VEHICLE WILL BE LAUNCHED. WITH THE SPACE VEHICLE ON THE PAD, ALL TESTS MUST HAVE BEEN COMPLETED. <u>TEST AND CHECKOUT PROCEDURE DESCRIPTION</u> THE PROCEDURE IS DIVIDED INTO FOUR VOLUMES. THE INITIAL RELEASE IS ASSEMBLED FOR CCDT (WITH COUNTERPART CD PAGES IN APPENDICES TO VOLUME I AND II). AFTER CCDT, VOLUMES I AND II WILL BE ASSEMBLED FOR CD AND REISSUED. VOLUME I WILL COVER LAUNCH VEHICLE OPERATIONS THROUGH SPACECRAFT CRYOGENIC LOADING. VOLUME II WILL INCLUDE LAUNCH VEHICLE OPERATIONS FROM THE COMPLETION OF SPACECRAFT CRYOGENIC LOADING THROUGH THE TERMINAL COUNT SEQUENCE. APPENDICES WILL INCLUDE SAFING PROCEDURES, HOLD OPTIONS AND RECYCLE PROCEDURES, DRAIN OPERATIONS, CONTINGENCY PROCEDURES, PAD ACCESS DURING HAZARDOUS OPERATIONS, AND RECONFIGURATION FOR DRY CCDT, DRY CCDT AND LV SECURING FROM DRY CCDT. VOLUME III WILL INCLUDE OPERATIONS TO PREPARE THE LAUNCH VEHICLE FOR ANOTHER WINDOW AFTER A SCRUBBED LAUNCH ATTEMPT. VOLUME IV WILL INCLUDE GUIDELINES FOR EVALUATION OF TCS ANOMALIES.			
5. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION			
6. REV. <u>DATE</u> <u>REASON</u>		7. CONTRACTOR APPROVAL	
S <u>6/22/71</u> REVISE TEST REQUIREMENTS		8. ORGANIZATION BATC 5-8553 9. DATE 9/24/68	
R <u>5/11/71</u> REVISE COMP PROG, VOL II AND IV DESCRIPTION AND TEST REQUIREMENTS.			
10. NASA-KSC APPROVAL		11. ORGANIZATION	
S/I. A. RIGELL		LV-ENG	
		12. APPROVAL DATE	
		10/28/68	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE <u>2</u> OF <u>5</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-510 & SUBS	
13. LOCATION PAD 39	14. COMPUTER PROC. IDENTIFICATION SEE PAGE 5 OF 5	15. EST. TEST TIME CCDT 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	
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			
(5) <u>COUNTDOWN/COUNTDOWN DEMONSTRATION COMPARISON</u>			
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; FLIGHT BATTERY SIMULATORS WILL BE USED; JUMPERS WILL BE INSTALLED TO INHIBIT RETRACTION OF SERVICE ARMS 1 & 2; ASTRONAUTS WILL NOT ENTER THE SPACECRAFT; AND TCS WILL BE INTERRUPTED AT TIME FOR IGNITION. 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 RECONNECTED IMMEDIATELY AFTER DISCONNECTION. <u>VOLUME I</u> 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. <u>VOLUME II</u> LAUNCH VEHICLE OPERATIONS WILL INCLUDE THE FOLLOWING MAJOR OPERATIONS: FLIGHT BATTERY (OR SIMULATORS) 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			

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)		APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)		APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)																																																						
PAGE 3 OF 5		PAGE 4 OF 5		PAGE 5 OF 5																																																						
1. TEST TITLE LAUNCH VEHICLE OPERATIONS IN SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN		1. TEST TITLE LAUNCH VEHICLE OPERATIONS IN SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN		1. TEST TITLE LAUNCH VEHICLE OPERATIONS IN SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN																																																						
2. KSC TEST NUMBER V-20060		2. KSC TEST NUMBER V-20060		2. KSC TEST NUMBER V-20060																																																						
3. EFFECTIVITY AS-510 & SUBS		3. EFFECTIVITY AS-510 & SUBS		3. EFFECTIVITY AS-510 & SUBS																																																						
ITEM CONTINUATION (5) COUNTDOWN/COUNTDOWN DEMONSTRATION COMPARISON (CONTINUED)		ITEM CONTINUATION (5) PART 3 (3 DAY SCRUB TURNAROUND)		ITEM CONTINUATION (14) BE01 FE50 FT25 FT49 KAPW QAPQ VAMC WAPQ BE02 FT03 FT31 FT55 ME01 QAPU VAPX WASL BT01 FT04 FT33 GE01 MT01 QASP VARS WAST CS80 FT05 FT35 GT16 NT98 VAAR VARY WASV CTC1 FT06 FT37 KA01 NT99 VAED VATC WATL CTC2 FT08 FT42 KAF1 QAEC VAFC VATS XADS CTC3 FT10 FT43 KAF2 QAES VALJ VZ33 XAIC CTC4 FT20 FT45 KAF3 QALS VALK VZEA XAPU CTC5 FT23 FT47 KAG1 QAMS VALL VZSA XAPS VZEC XASS																																																						
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. 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. 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. <u>TEST DESCRIPTION (COUNTDOWN)</u> 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. <u>VOLUME III</u> <u>PART 1 (24 HOUR SCRUB TURNAROUND)</u> LAUNCH VEHICLE OPERATIONS WILL INCLUDE SERVICE ARM 2 AND 3 TIP EXTENSION AND RETRACTION, MSS MOVE TO AND FROM THE PAD, LAUNCH VEHICLE RE-ENTRY AND CLOSEOUT, PROPELLANT STORAGE TANKS SAMPLING AND FILL, LAUNCH VEHICLE TANK SAMPLING, S-II INSULATION INSPECTION, VERIFICATION OF S-IC FORWARD UMBILICAL RECONNECTION AND PREPARATION FOR PROPELLANT LOADING STARTING AT T-8:59 HOURS IN VOLUME II. <u>PART 2 (2 DAY SCRUB TURNAROUND)</u> LAUNCH VEHICLE OPERATIONS 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 SRE RESERVICING, PROPELLANT STORAGE TANKS SAMPLING AND FILL, LAUNCH VEHICLE TANK SAMPLING, VERIFICATION OF S-IC FORWARD UMBILICAL RECONNECTION, S-II INSULATION INSPECTION, AND PREPARATION FOR PROPELLANT LOADING STARTING AT T-8:59 HOURS 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 STORAGE TANKS SAMPLING AND FILL, LAUNCH VEHICLE TANK SAMPLING, S-II INSULATION INSPECTION, BATTERY REMOVAL AND SYSTEMS RETESTS IN PREPARATION FOR RESUMPTION OF THE LAUNCH VEHICLE COUNTDOWN AT T-28 HOURS IN VOLUME II. <u>PART 4 (FIRST 24 HOURS OF 28 DAY SCRUB TURNAROUND)</u> LAUNCH VEHICLE OPERATIONS 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, REMOVAL OF DIGITAL RANGE SAFETY COMMAND SYSTEM FLIGHT CODE PLUGS, S-II INSULATION INSPECTION, BATTERY REMOVAL AND SYSTEMS INSPECTION AND RETESTS TO SECURE THE LAUNCH VEHICLE FOR A LAUNCH WINDOW APPROXIMATELY 4 WEEKS LATER. A BARCHART WILL DEPICT THE SEQUENCE OF OPERATIONS TO BE PERFORMED IN THE EVENT OF A POST IGNITION SCRUB. <u>VOLUME IV</u> DURING THE TERMINAL COUNT SEQUENCE (TCS), IT IS POSSIBLE THAT A SPECIFIC FUNCTION OR INDICATION MAY NOT OCCUR AS ANTICIPATED. THIS VOLUME CONTAINS A DESCRIPTION, FOR EACH TCS SEQUENCE, OF THE POTENTIAL SIGNIFICANCE OF THE ANOMALY, THE STATION RESPONSIBLE FOR ACTION, THE ACTION TO BE TAKEN AND THE RATIONALE FOR THE PRESCRIBED ACTION. <u>TEST REQUIREMENTS, MSFC</u> <table border="0"> <tr> <td>LV-TM-010-002-2H</td> <td>B.1.2.1</td> <td>B.1.6.1.1</td> <td>B.3.1.1</td> <td>C.2.2.13.1</td> </tr> <tr> <td></td> <td>B.1.2.1.1</td> <td>B.1.6.1.2.1</td> <td>B.10.0.1.3</td> <td>C.2.3.1</td> </tr> <tr> <td></td> <td>B.1.2.1.2</td> <td>B.1.8.1.2</td> <td>B.10.0.1.4</td> <td>C.2.3.2</td> </tr> <tr> <td></td> <td>B.1.2.1.3</td> <td>B.1.8.1.4</td> <td>B.12.0.1</td> <td>C.2.3.4</td> </tr> <tr> <td></td> <td>B.1.5.1.1</td> <td>B.1.9.1</td> <td>B.13.0.1</td> <td>C.2.4.1.1</td> </tr> <tr> <td></td> <td>B.1.5.1.2</td> <td>B.1.9.2</td> <td>C.2.1.1 THRU C.2.1.9</td> <td>C.2.5.1</td> </tr> <tr> <td></td> <td>B.1.5.2</td> <td>B.3.1</td> <td>(EXCEPT C.2.1.7.1)</td> <td>C.2.2.16.1</td> </tr> </table> S-IC 66813618A 4.4.4.3.1 S-II SID 66-1465-7 <table border="0"> <tr> <td>2.2.1.2.18</td> <td>2.4.2.5.1</td> <td>2.7.2.7.3.2</td> </tr> <tr> <td>2.2.5.1.5 (PARTIAL)</td> <td>2.7.2.2.3</td> <td>2.7.2.7.4</td> </tr> <tr> <td>2.3.2.2 - 2.3.2.2.4</td> <td>2.7.2.5.2</td> <td>2.7.2.7.5</td> </tr> <tr> <td>2.3.3.1</td> <td>2.7.2.7.1 (PARTIAL)</td> <td>2.7.2.7.7</td> </tr> <tr> <td>2.3.4.2.20 (CD ONLY)</td> <td>2.7.2.7.2</td> <td>2.7.2.8</td> </tr> <tr> <td></td> <td>2.7.2.7.3.1</td> <td></td> </tr> </table> S-IVB IB 76996 NONE IU 7916404 0.3.4.1.1.1.1 0.3.5.2.5.2		LV-TM-010-002-2H	B.1.2.1	B.1.6.1.1	B.3.1.1	C.2.2.13.1		B.1.2.1.1	B.1.6.1.2.1	B.10.0.1.3	C.2.3.1		B.1.2.1.2	B.1.8.1.2	B.10.0.1.4	C.2.3.2		B.1.2.1.3	B.1.8.1.4	B.12.0.1	C.2.3.4		B.1.5.1.1	B.1.9.1	B.13.0.1	C.2.4.1.1		B.1.5.1.2	B.1.9.2	C.2.1.1 THRU C.2.1.9	C.2.5.1		B.1.5.2	B.3.1	(EXCEPT C.2.1.7.1)	C.2.2.16.1	2.2.1.2.18	2.4.2.5.1	2.7.2.7.3.2	2.2.5.1.5 (PARTIAL)	2.7.2.2.3	2.7.2.7.4	2.3.2.2 - 2.3.2.2.4	2.7.2.5.2	2.7.2.7.5	2.3.3.1	2.7.2.7.1 (PARTIAL)	2.7.2.7.7	2.3.4.2.20 (CD ONLY)	2.7.2.7.2	2.7.2.8		2.7.2.7.3.1		(6) Q 3/11/71 REVISE TEST REQUIREMENTS OWENS/BRYAN 3/17/71	
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2.3.3.1	2.7.2.7.1 (PARTIAL)	2.7.2.7.7																																																								
2.3.4.2.20 (CD ONLY)	2.7.2.7.2	2.7.2.8																																																								
	2.7.2.7.3.1																																																									

TEST OUTLINE					TEST OUTLINE				
1. TCP TITLE LV OPERATIONS IN SUPPORT OF MANNED SV CDDT & CD	2. TCP NUMBER V-20060	3. REV. 003	4. VEHICLE NUMBER AS-510 & SUBS	5. PAGE <u>1</u> OF <u>4</u>	1. TCP TITLE LV OPERATIONS IN SUPPORT OF MANNED SV CDDT & CD	2. TCP NUMBER V-20060	3. REV. 003	4. VEHICLE NUMBER AS-510 & SUBS	5. PAGE <u>2</u> OF <u>4</u>
6. CONTENT: THIS PROCEDURE INCLUDES LAUNCH VEHICLE OPERATIONS FOR BOTH THE COUNTDOWN DEMONSTRATION TEST AND COUNTDOWN. IT IS DIVIDED INTO FOUR VOLUMES. VOLUME I COVERS LAUNCH VEHICLE PRECOUNT OPERATIONS. VOLUME II COVERS LAUNCH VEHICLE COUNT OPERATIONS AS WELL AS SAFING, HOLD, RECYCLE, SECURING AND DRY COUNTDOWN DEMONSTRATION TEST OPERATIONS. VOLUME III INCLUDES OPERATIONS NECESSARY TO RECYCLE THE LAUNCH VEHICLE FOR ANOTHER LAUNCH WINDOW. VOLUME IV PROVIDES GUIDELINES FOR EVALUATION OF TERMINAL COUNT SEQUENCE ANOMALIES. 1. <u>RADIO FREQUENCY SYSTEMS:</u> 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. <u>TELEMETRY SYSTEMS:</u> 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. <u>MEASUREMENT SYSTEM:</u> 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. <u>GUIDANCE, CONTROL AND STABILIZED PLATFORM:</u> 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 LV 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.					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. <u>NETWORKS:</u> 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 PROPELLANT 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. THEY 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 ELECTRICAL SYSTEM BUSS 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. <u>EMERGENCY DETECTION SYSTEM:</u> 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.				
003	5/19/71	GENERAL REVISION		John Chase Reed	5/19/71	Frank Bryan	5/20		
7. PREPARED BY S/JOHN CHASE REED		8. DATE 6/2/69		9. CHIEF ENGINEER S/T. A. RIGELL		10. DATE 6/4/69			

KSC FORM 23-330 (7)

KSC FORM 23-330 (7-57)

TEST OUTLINE				
1. TCP TITLE	2. TCP NUMBER	3. REV.	4. VEHICLE NUMBER	5. PAGE
LV OPERATIONS IN SUPPORT OF MANNED SV CDDT & CD	V-20060	003	AS-510 & SUBS	3 OF 4
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. CRYOGENIC PROPELLANTS WILL BE LOADED DURING WET CDDT AND CD. DURING WET CDDT THE FOLLOWING CRYOGENIC TESTS OF THE PROPELLANT SYSTEM WILL BE PERFORMED: 1. S-IC LOX PROBE SATURATION TEST 2. S-IC VENT VALVE TEST 3. S-II LOX OVERFILL SENSOR TEST 4. S-II LH2 OVERFILL SENSOR TEST 5. S-II ACCUMULATOR CHARGE & HELIUM BLOWDOWN TEST 6. S-II LH2 VENT VALVE TEST 7. S-II START TANK RECHILL TEST 8. S-IVB LOX OVERFILL SENSOR TEST 9. S-IVB LH2 OVERFILL SENSOR TEST 10. S-IVB LOX PRESSURE DRAIN TEST 11. DETERMINATION OF REPLENISH VALVE SETTINGS WHICH MATCH BOILOFF RATE FOLLOWING THE CDDT TERMINAL COUNT SEQUENCE AND COMPLETION OF THE ABOVE TESTS, THE PROPELLANTS WILL BE DRAINED. 8. PROPULSION: 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.				
7. PREPARED BY	8. DATE	8. CHIEF ENGINEER	10. DATE	

TEST OUTLINE				
1. TCP TITLE	2. TCP NUMBER	3. REV.	4. VEHICLE NUMBER	5. PAGE
LV OPERATIONS IN SUPPORT OF MANNED SV CDDT & CD	V-20060	003	AS-510 & SUBS	4 OF 4
6. CONTENT:				
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. 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. 12. ENVIRONMENTAL CONTROL: LV 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 CHANGEOVER OPERATIONS. THE S-IC, S-II, S-IVB, 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 CONTINUOUSLY THROUGH LAUNCH. 13. WATER SYSTEMS: 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. APPROXIMATELY 5 MINUTES BEFORE LAUNCH, THE WATER SYSTEM WILL BE ARMED. FLAME DEFLECTOR COOLING WATER AND LUT SERVICE ARM QUENCH WATER SYSTEMS WILL BE ACTIVATED AUTOMATICALLY DURING THE TERMINAL COUNT SEQUENCE, LUT DECK FLUSH WILL BE MANUALLY ACTIVATED JUST AFTER LIFTOFF. 14. FIRING ACCESSORIES: 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. 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. 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.				
7. PREPARED BY	8. DATE	8. CHIEF ENGINEER	10. DATE	

LIST OF EFFECTIVE PAGES				Date	Effectivity	Test Number	Revision	Page	
				12 JUL 71	AS-510	V-20060, VOL I	031	11	
Page No.	Rev.	Page No.	Rev.	Page No.	Rev.	Page No.	Rev.	Page No.	Rev.
COVER (1)	031	A124	029						
2 & 3	031	125	029						
4 THRU 6	029								
7 & 8	S								
9 & 10	003								
11 & 12	031								
13 THRU 15	029								
16 THRU 18	031								
19 THRU 25	029								
A26	029								
27 THRU 29	029								
A30 THRU A32	029								
A33	030								
34	029								
A35 & A36	029								
37 & 38	029								
A39	029								
40 & 41	029								
A42 THRU A52	029								
53 THRU 55	029								
A56 THRU A58	029								
59 THRU 62	029								
A63 THRU A65	029								
66 THRU 69	029								
	030								
A71	029								
72	030								
73	029								
A74	031								
75	031								
A76 & A77	029								
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A85	030								
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87 & 88	029								
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90 THRU 96	029								
A97	029								
A98	030								
99 THRU 105	029								
A106 & A107	029								
A108									
THRU A110	031								
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A112									
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A123	031								

DATE 23, 1971
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VISION RECORD PAGE (CURRENT VEHICLE)

PAGES AFFECTED

REV.	REVISED	ADDED	DELETED	REASON/SUPPORTING DOCUMENT
028	ALL			DERIVED FROM REV 027 BY: INCORPORATING AS=509 PCR'S B-309=19, XB-256=28, N=222=29 NOT INCORPORATED IN PRIOR REVISIONS, INCORPORATING AS=510 PCR'S XB=300=1, XB=302=2, B=324=3, XB=305=4, XB=307=5, N=227=6, I=186=7, I=187=8, I=188=9, I=189=10 & I=190=11. PRERELEASE FOR AS=510 DATED APRIL 20, 1971.
029	ALL			DERIVED FROM REV 028 BY: INCORPORATING PCR'S B=327=12, B=328=13, B=330=14, XB=312=15, N=232=16, N=233=17, N=234=18, N=235=19, N=236=20, I=199=21, I=200=22, I=201=23, D=93=24, XB=313=25, XB=315=26, XB=318=27, D=96=28, I=211=29 & B=342=30. RELEASED FOR AS=510 CDDT, MAY 21, 1971.
030	COVER, 2, 7, 8, 11, 12, 33, 70, 72, 85, 98, A33, A85 AND A98.	NONE	NONE	INCORPORATED PCR'S: XB=328=31, N=242=32 AND N=243=33. PARTIAL REVISION FOR AS=510 CDDT, JUNE 25, 1971.
031	COVER, 2, 3, 11, 12, 16, 17, 18, A74, 75, A108, A109, A110, 119, A121 & A123.	NONE	ALL CDDT ONLY PAGES	INCORPORATED PCR'S: B=349=34, XB=329=35, XB=327=36 & N=250=37. RELEASED FOR AS=510 LAUNCH CD, JULY 13, 1971.

LV CDDT & CD, VOL I
DATE: MAY 17, 1971
REVISION 029

APOLLO/SATURN

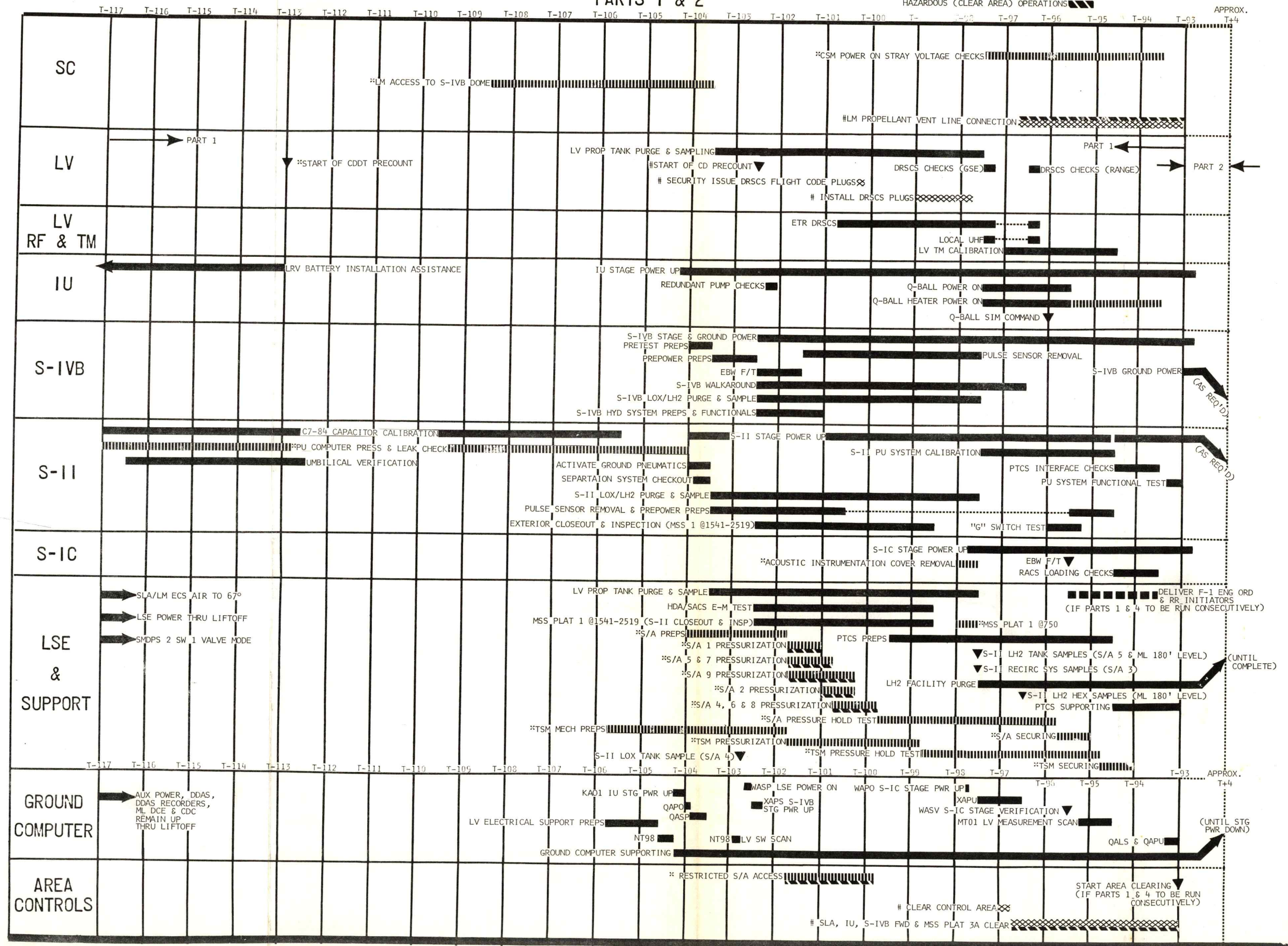
PAGE 5251.60 13
TEST NO. V=20060, VOL I
VEHICLE AS-510

REVISION RECORD PAGE (PRIOR REVISIONS)

REV.	REASON/SUPPORTING DOCUMENT
BASIC	INITIAL RELEASE FOR AS-504 1/13/69 (CDDT)
001	PARTIAL REVISION FOR AS-504 1/31/69 (CDDT)
002	SECOND RELEASE FOR AS-504 2/17/69 (CD)
003	PRERELEASE FOR AS-505 DATED 3/12/69
004	INITIAL RELEASE FOR AS-505 4/7/69 (CDDT)
005	PARTIAL REVISION FOR AS-505 4/18/69 (CDDT)
006	SECOND RELEASE FOR AS-505 5/2/69 (CD)
007	NOT USED
008	INITIAL RELEASE FOR AS-506 5/14/69 (CDDT)
009	PARTIAL REVISION FOR AS-506 6/18/69 (CDDT)
010	SECOND RELEASE FOR AS-506 7/3/69 (CD)
011	PRERELEASE FOR AS-507 8/13/69
012	INITIAL RELEASE FOR AS-507 9/12/69 (CDDT)
013	PARTIAL REVISION FOR AS-507 10/15/69 (CDDT)
014	NOT USED
015	SECOND RELEASE FOR AS-507 10/27/69 (CD)
016	AS-508 RELEASE 12/31/69, LATER DESIGNATED PRERELEASE
017	INITIAL RELEASE FOR AS-508 1/30/70 (CDDT)
018	PARTIAL REVISION FOR AS-508 3/9/70 (CDDT)
019	SECOND RELEASE FOR AS-508 3/24/70 (CD)
020 & 021	NOT USED
022	CONTINGENCY CD FOR AS-508 (NOT RELEASED)
023	PRERELEASE FOR AS-509 10/28/70
024	INITIAL RELEASE FOR AS-509 11/24/70 (CDDT)
025	PARTIAL REVISION FOR AS-509 12/30/70 (CDDT)
026	NOT USED
027	SECOND RELEASE FOR AS-509 1/16/71 (CD)
028	PRERELEASE FOR AS-510 4/20/71

APOLLO/SATURN
LAUNCH OPERATIONS
LV COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN
PARTS 1 & 2

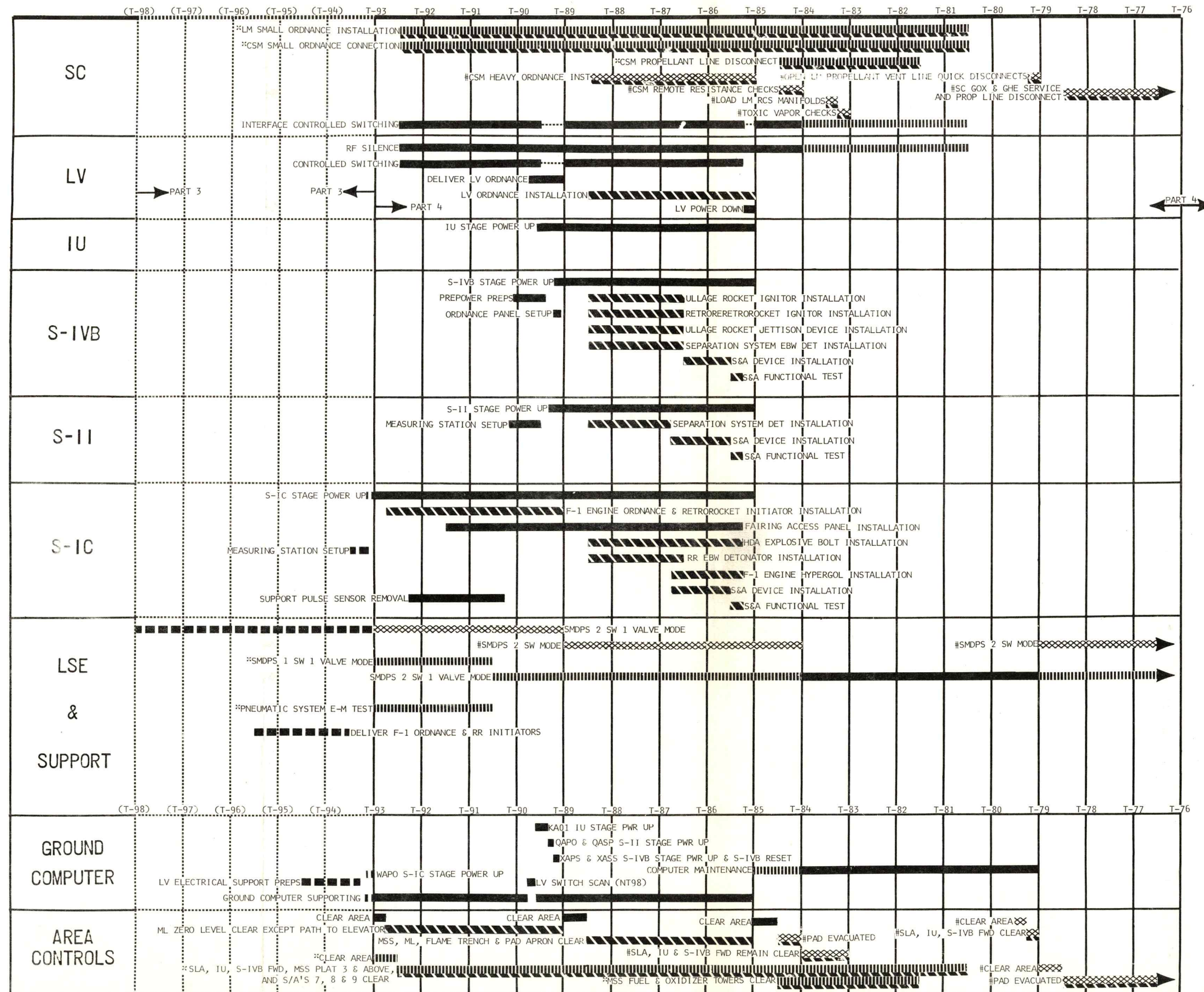
CD ONLY 
* CDDT ONLY 



APOLLO/SATURN
LAUNCH OPERATIONS
LV COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN
PARTS 3 & 4

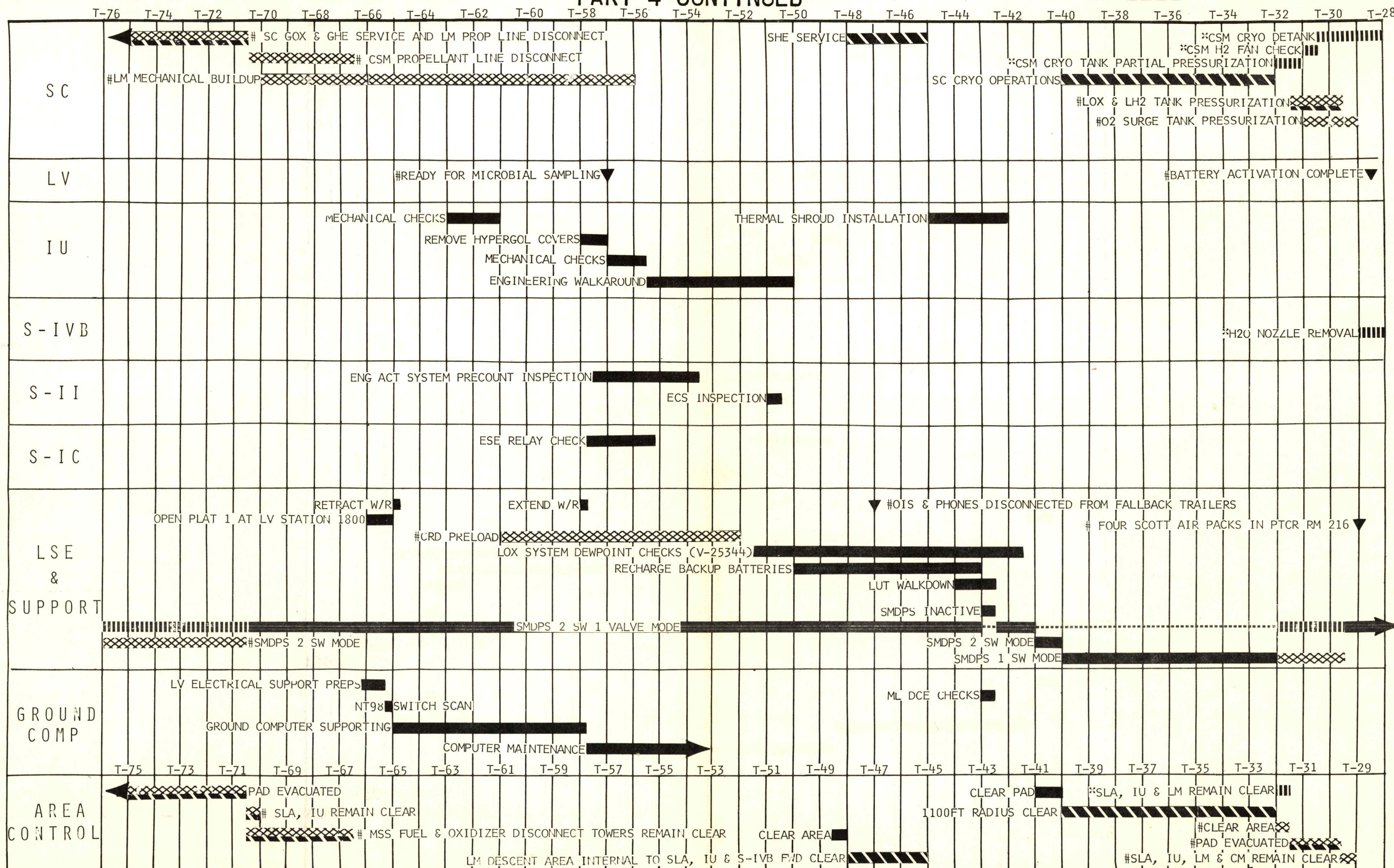
#CD ONLY 
#CDDT ONLY 
HAZARDOUS (CLEAR AREA) OPERATIONS 

PAGE 15
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APOLLO/SATURN LAUNCH OPERATIONS
LV COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN
PART 4 CONTINUED

** CDDT ONLY
CD ONLY
HAZARDOUS (CLEAR AREA) OPERATIONS



REFERENCED TEST AND CHECKOUT PROCEDURES

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 T1-2-17.

S-IC STAGE & GSE REFERENCED TCP'S

TCP NO.	REV	TITLE	
V-21008	008	ELEC CONNECTION OF S-IC PD EBM DETONATORS	(HAZARDOUS)
V-21009	009	ELEC CONNECTION OF S-IC PD S&A UNIT	(HAZARDOUS)
V-21010	007	S&A DEVICE CHECKOUT	(HAZARDOUS)
V-21012	008	ELEC CONNECTION OF S-IC RR EBM DETONATORS	(HAZARDOUS)
V-21013	008	EBM DETONATOR CHECKOUT	(HAZARDOUS)
V-21014	008	ELEC INSTL/REMOVAL OF HV IGNITERS	(HAZARDOUS)
V-21018	009	FLT BATT ACTIVATION & C/D (CD ONLY)	(HAZARDOUS)
V-21035	008	PREPS OF S-IC ESE TO SUPPORT LAUNCH CD	
V-21036	006	S-IC STAGE ESE POST LAUNCH CHECK LIST	
V-21038	010	S-IC POWER ON	
V-21097	005	S-IC POWER OFF	
V-21194	008	LSE POWER ON & OFF REMOTE CONTROL (LCC)	
V-21221	006	ELEC INSTALLATION OF S-IC WDA ORD	(HAZARDOUS)
V-21439	003	EMERGENCY BACKUP BATTERY OPERATIONAL TEST	(HAZARDOUS)
V-24010	007	S-IC INTERNAL WORK PLATFORM REMOVAL	(HAZARDOUS)
V-24011	005	S-IC BULKHEAD PROTECTION EQUIPMENT REMOVAL	(HAZARDOUS)
V-24320	004	S-IC FORWARD UMBILICAL RECONNECTION	(HAZARDOUS)
V-24327	008	S-IC STAGE PNEU SYS CDDT AND LAUNCH PREPS	
V-25003	002	RP-1 STANDBY	(HAZARDOUS)
V-25034	005	LWP STORAGE TANK FILL AND DRAIN	
V-25159	009	PICS PREPS FOR PROPELLANT LOADING	
V-25160	009	DTS/DEE SYSTEM PAD SECURING	
V-25329	003	LOX STORAGE ARE TANK FILLING/PAD A	(HAZARDOUS)
V-25331	002	LOX TANK SAMPLING/PAD A	(HAZARDOUS)
V-25340	007	LOX PREPS FOR VEHICLE LOADING/PAD A	(HAZARDOUS)
V-25342	003	LOX SYS SECURING AFTER LOX LOAD/DRAIN	(HAZARDOUS)
V-25344	004	TOTAL LOX SYS DEW POINT/PAD A	(HAZARDOUS)
V-25345	003	LOX SYS SECURING AFTER LAUNCH/PAD A	(HAZARDOUS)
V-25349	008	RP-1 AUTO LEVEL ADJUST/LINE INERT	(HAZARDOUS)
V-25389	006	WDA UPPER LINK PRELOAD/RELAX PROC	(HAZARDOUS)
V-26046	006	PNEU DIST SYS OPERATING PROC	(HAZARDOUS)
V-26272	006	ECS DAILY OPS/LC-39A	(HAZARDOUS)
V-26247	006	WDA EXPLOSIVE RELEASE SYS CARTRIDGE	(HAZARDOUS)
V-26329	004	INSTL/REMOVAL	(HAZARDOUS)
V-26476	002	CRD INST & TORQUE (CD ONLY)	(HAZARDOUS)
V-27067	003	WGD SYSTEM OPERATING PROCEDURE	(HAZARDOUS)
V-27093	007	S-IC LOX/FUEL LEVEL & LOADING ELECTRONICS TESTS	
V-27098	009	VEH MEAS GSE STA TEST SUPPORT PREPS	
V-27153	010	S-IC STAGE MEASURING SCAN TEST MTO1	
V-27175	008	LCC MEAS STA OPERATION, CAL & MAINT	
V-27195	007	MEAS SYS EQUIP CONFIG VERIFICATION	
V-28016	007	TM CONFIGURATION CHECKS	
V-28031	006	DRCS CLOSED LOOP CHECKS	
V-28186	004	S-IC STAGE AND GSE TELMETRY SUPPORT	(HAZARDOUS)
V-29003	006	S-IC STAGE ORD INST AT PAD	(HAZARDOUS)
V-29005	006	F-1 ENGINE ORDNANCE INSTALLATION	(HAZARDOUS)
V-31031	004	1WS ELECTRICAL POWER PREPARATION	
V-31045	008	SA/TSM/LA/ELEC SUPPORT FOR CDDT & LAUNCH	
V-31047	004	S-IC UMR CABLE CONNECTION/DISCONNECTION	
V-33030	006	S-IC FLIGHT CONTROL SYSTEMS PREPARATIONS	(HAZARDOUS)
V-34012	007	S-IC PROPULSION SYSTEMS PREPS	(HAZARDOUS)
V-35004	006	LW SYSTEM PREP FOR VEHICLE LOADING	(HAZARDOUS)
V-36032	003	S-11 AFT SERV ARM LOCAL CONTROL OPERATION	(HAZARDOUS)
V-36039	006	TSM SYS PREP & OPS FOR S/V CDDT AND CD	(HAZARDOUS)
V-36063	007	SWDPS LAUNCH CONFIGURATION PREPS	(HAZARDOUS)
V-36064	005	PNEU DIST SYS LAUNCH PREPS	(HAZARDOUS)
V-36069	005	WDA & S/A CONTROL SW SUPPORT OPERATIONS	(HAZARDOUS)
V-36070	005	PLATFORMS AND TRANSPORTER LAUNCH PREPS	(HAZARDOUS)
V-36071	004	S-IC INTERTANK S/A EXTENSION/RECONNECTION	(HAZARDOUS)
V-36074	006	ECS PRPD LAD SUPPORT OPS	(HAZARDOUS)
V-36077	006	S-IC INTERTANK S/A SUPPORT OPS	(HAZARDOUS)
V-36078	005	S-IC FWD S/A SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36079	005	HYD DISTRIBUTION SYS PREPS FOR COUNTDOWN TEST	(HAZARDOUS)
V-36080	006	S-11 INTERMEDIATE S/A SUPPORT OPS	(HAZARDOUS)
V-36081	005	S-11 FWD S/A SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36082	005	S-11V AFT S/A SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36083	006	S-11V FWD S/A SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36084	005	SM S/A SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36085	006	CM ACCESS ARM SUPPORT OPS CDDT & LAUNCH	(HAZARDOUS)
V-36086	006	DRCS SUPPORT OPS	(HAZARDOUS)
V-36087	004	LSE MECH OPS FOR SUPPORT OF MAJOR INTEGRATED TESTS	(HAZARDOUS)
V-36112	004	B-BALL COVER REMOVAL SYSTEM PREPS/ML	(HAZARDOUS)
V-36113	004	INDUSTRIAL WATER SYSTEM LAUNCH PREPS	(HAZARDOUS)
V-37038	004	HAZARDOUS GAS DETECTION SYSTEM MAINT PROC	(HAZARDOUS)
V-38000	009	DRCS=PAD, STAGE & VEH SUPPORT	

S-11 STAGE REFERENCED TCP'S

TCP NO.	REV	TITLE	
V-21067	---	DELETED	
V-21101	009	B012 FLT BATT ACT FOR S-11 STAGE (CD ONLY)	(HAZARDOUS)
V-21103	010	B011 S-11 STAGE POWER APPLICATION	
V-21253	011	B060 S-11 FINAL ELECTRICAL CHECKS (CD ONLY)	
V-21348	006	B017 PU COMPUTER PRESSURIZATION	
V-21438	003	B022 FINAL STAGE ELECTRICAL CHECKS (CDDT ONLY)	
V-21452	001	B141 FINAL LUT ELECTRICAL CHECKS (CDDT ONLY)	
V-21416	006	J001 PROPELLANT LINES VACUUM CHECK (CD ONLY)	
V-24411	005	BAS, B003 S-11 STAGE & LUT INSPECTION	(HAZARDOUS)
V-24246	009	F002 EAS SERVICING & CONFIGURATION	(HAZARDOUS)
V-25151	008	H013 PROP UTILIZATION CAL AND FUNC TEST	(HAZARDOUS)
V-25311	007	L009 PURGE & VACUUM SYS SECURING	(HAZARDOUS)
V-26507	001	G147 ACCESS EQUIP INST, REMOVAL & STORAGE	(HAZARDOUS)
V-27154	003	B031 LCC REORDER, FUNCT SETUP & VERIFICATION	
V-27185	003	B032 MEASUREMENT STATION CHECKOUT/TEST	
V-27218	003	G137 GSE ENGR WALKDOWN OF ML INSTR	
V-28135	002	B050 PCM/TM STAGE RF & TM CLOSOUT FOR LAUNCH	
V-28143	008	M021 S-11 TM OPERATIONAL READINESS CHECK	
V-28144	007	R014 S-11 TM OPERATIONAL READINESS CHECK	
V-28181	002	G125 FM/FM TM C/D EQUIP TEST (STAGE MODULE)	
V-29023	007	Z008 S-11 EBM DETONATOR INST (CD ONLY)	(HAZARDOUS)
V-29024	006	K008 S&A DEVICE INSTL & C/D (CD ONLY)	(HAZARDOUS)
V-29038	006	S009 PULSE SENSOR REMOVAL	(HAZARDOUS)
V-29049	005	Z030 INERT EBM DETONATOR INSTL (CDDT ONLY)	(HAZARDOUS)
V-29050	007	X010 INERT S&A DEVICE INSTL (CDDT ONLY)	(HAZARDOUS)
V-30029	011	M020 S-11 STAGE & GSE PREPS FOR CDDT & CD	(HAZARDOUS)
V-30575	001	Z037 PISC EQUIP SECURING SOP	(HAZARDOUS)
V-34014	007	E023 PROP SYS LAUNCH PAD TEST OPS	(HAZARDOUS)

S-1VB STAGE REFERENCED TCP'S

TCP NO.	REV	TITLE	
V-21085	005	PROPELLANT UTILIZATION SUBSYSTEM TEST	
V-21322	006	FLT BATT ACT, 1A68316 FWD NO. 2 (CD ONLY)	(HAZARDOUS)
V-21323	006	FLT BATT ACT, 1A68317 AFT NO. 2 (CD ONLY)	(HAZARDOUS)
V-21324	006	FLT BATT ACT, 1A59741 (CD ONLY)	(HAZARDOUS)
V-21413	004	VEHICLE BATTERY MONITORING (CD ONLY)	(HAZARDOUS)
V-30539	008	S-1VB SUPPORT AND PREPS FOR CDDT & CD	(HAZARDOUS)

INSTRUMENT UNIT REFERENCED TCP'S

TCP NO.	REV	TITLE	
V-21272	011	AUXILIARY DAILY POWER N PROCEDURE	
V-21223	019	IU POWER APPLICATION/REMOVAL	
V-21479	001G	IU BATT ACT, MON & DISCHARGE PROC (CD ONLY)	(HAZARDOUS)
V-22006	009	GROUND COMPUTER DAILY/TEST OPERATIONS	(HAZARDOUS)
V-31062	013	IBM SUPPLEMENTAL TO S/V CDDT AND CD	(HAZARDOUS)

INTEGRATED PROCEDURES

TCP NO.	REV	TITLE	
V-20056	015	LV EMERGENCY PROCEDURE	(HAZARDOUS)
V-35014	013	LV LOX/LH2 LOAD & DRAIN OPS	(HAZARDOUS)
V-35015	014	LV LOX/LH2 SYSTEM PURGE, VOL 1	(HAZARDOUS)

LV PROCEDURES

TCP NO.	REV	TITLE	
V-28009	007	TCE DAILY READINESS TEST	

DATE: JULY 12, 1971

TEST NO. V-20060, VOL I

REVISION 031

VEHICLE

AS-510

AUTOMATED PROGRAM INDEX

THE AUTOMATED PROGRAMS (IVARIS) EXECUTED DURING THE COURSE OF THIS TEST AND CHECKOUT PROCEDURE 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,

IVAR	REV	TITLE	REMARKS
----	---	-----	-----
KA01	0015	IU STAGE POWER APPLICATION	
MT01	0019	MEASUREMENTS CALIBRATION TEST	
NT98	0017	DISCRETE INITIALIZATION/REINITIALIZATION	
NT99	0005	DISCRETE EXECUTIVE ACTION TABLE MODIFY	
QALS	0003	S-II LEVEL & DEPLETION SENSOR TEST	
GAPO	0003	S-II STAGE POWER ON	
QAPU	0000	S-II PROPELLANT UTILIZATION	
QASP	0003	S-II SEPARATION SYSTEM	
WAP0	0002	S-IC DAILY POWER ON	
WASP	0004	LSE POWER ON	
WASV	0001	S-IC STAGE SYSTEMS VERIFICATION TEST	
XADS	0017	S-IVB DISCRETE SCAN	
XAIC	0000	S-IVB INITIAL CONDITION	
XAPS	0004	S-IVB STAGE & GROUND POWER APPLICATION	
XAPU	0015	S-IVB PROPELLANT UTILIZATION CAL CHECK	
XASS	0001	S-IVB SWITCH SELECTOR RESET	

XB-327-36

XB-327-36

LAUNCH OPERATIONS COMMUNICATIONS
-----COMPLEX 39 PA SYSTEM:

TO BE UTILIZED FOR ADMINISTRATIVE PHONE CALL ANNOUNCEMENTS, "T"
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 (TBC)	C1TC	181	121
S=II TEST CONDUCTOR (NR)	C2TC	171	121
S=IVB TEST CONDUCTOR (MDC)	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)	CPSS	141	121
TEST SUPPORT CONTROLLER (TSM)	CTSC	112	
OPERATIONS SUPPORT CONTROLLER (SO)	BOSC	261	
INSTALLATION SUPPORT CONTROLLER (IN)	BTIS	262	
LM TEST CONDUCTOR (LS)	KSTC	242	
CSM TEST CONDUCTOR (LS)	MSTC	212	

CALL STATIONS

ACCF CCF TEST CONDUCTOR
 BCUX BENDIX SUPPORT SUPERVISOR
 BCUM FACILITY MEASUREMENTS
 BCUN CCC PNEUMATICS CONSOLE
 BCRL RDA/LTV SUPPORT SUPERVISOR
 BCSC VEHICLE SUPPORT CONTROLLER
 BCWC WATER CONTROL (CCC CONSOLES)
 BDDC LCC DATA DISPLAY STATION
 BEIS 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, OPS/VEHICLE RM 1P9
 BOTV OTV SYSTEM CENTER
 BP40 PHOTOGRAPHY (TECHNICOLOR)
 BRFS RF GROUND STATION LCC, RF=DRSCS GND STATION = 2P10A
 BTIS INSTALLATION SUPPORT CONTROLLER
 BTMC TM C/O EQUIPMENT, COMMON MODULE = ROOM 2P10
 BTMI TM C/O EQUIPMENT, CIF INTERFACE MODULE = RM 2P10
 BUTM IU TM CHECKOUT EQUIPMENT
 B1RF RF C/O STATION
 B1TM TM CHECKOUT EQUIPMENT
 B2RF 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
 CARE GROUND NETWORKS ENGINEER
 CCAP 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 GUE PANEL CONSOLE BE-11
 CIAR I, A, RIGELL
 CLBC G.F. CORN
 CLCU LVO GROUND COMPUTER SYSTEMS ENGINEER
 CLCE LVO CHIEF ENGINEER
 CLCP LVO COMPUTER AUTOMATION PROGRAMMING ENGR
 CLDE LUT SYSTEMS DEE PRINTER
 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 G&C OPERATIONS ENGINEER
 CLEU ELEC NETWKS SYST ENGR IU
 CLEN 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 LV CRT KEYBOARD = MEASURING
 CLIS LVO INSTRUMENTATION SYSTEM ENGINEER
 CLMS LV MECHANICAL SYSTEMS ENGINEER
 CLM4 S-IVB MECHANICAL SYSTEMS ENGINEER
 CLNS FLIGHT COMPUTER SYSTEMS ENGR
 CLOM LVO OPERATIONS MANAGER
 CLPS LV PROPELLANT SYSTEMS ENGINEER
 CLQD LV GAL BACKUP FIRING ROOM
 CLQS LV GAL 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
 CRSS RANGE SAFETY SUPERVISOR PANEL
 CSAC SERVICE ARMS CONTROL CONSOLE
 CSAD DRSS CONSOLE
 CSAH 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
 CUFC IU FLIGHT CONTROL 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
 CUJP IU INSTRUMENTATION PANEL
 CUNE IU GROUND NETWORKS ENGINEER
 CUNK IU CRT KEYBOARD-NETWORKS
 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 PANEL
 C1HP HYDRAULICS PANEL
 C1JP MEASURING PANEL
 C1LO S-IC LOX CONSOLE
 C1MS MEASURING SYSTEM TEST OPERATIONS
 C1NE GROUND ELECTRICAL ENGINEER
 C1NK CRT KEYBOARD = NETWORKS
 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
 C1PP DC POWER PANEL
 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
 C2DK S-II ALERT MONITOR DISPLAY CONSOLE
 C2DP PD AND EGV AND ORDNANCE PANELS
 C2EC ENGINE COMPONENTS PANEL
 C2EV EVENTS DISPLAY PANEL
 C2FC HYDRAULICS PANEL
 C2FE S-II ENGINE DEFLECTION PANEL
 C2GP GROUND PNEUMATICS PANEL
 C2HG HAZARDOUS GAS DETECTION ENGINEER
 C2HU LH2 TANKING COMPUTER
 C2IP MEASURING AND RF PANEL
 C2LA S-II PROPELLANT LOADING ELECT ADVISOR
 C2NK CRT KEYBOARD = NETWORKS
 C2NP NETWORKS PANEL
 C2OU LOX TANKING COMPUTER
 C2PA PRESSURIZATION ADVISOR, MECHANICAL
 C2PC DC POWER CONTROL PANEL #1
 C2PK CRT KEYBOARD = PROPULSION
 C2PM PROPELLANT MONITOR PANEL
 C2PU PROPELLANT UTILIZATION AND DEPLETION PANELS
 C2PV PURGE AND VACUUM PANEL
 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
 C4DE DIGITAL EVENTS EVALUATOR PRINTER
 C4DP PROPELLANT DISPERSION AND ORDNANCE PANEL
 C4EP ENGINE PREPARATION PANEL
 C4ES S-IVB ELECTRONICS SYSTEM ENGINEER
 C4ET ENGINE TEST PANEL

(CONTINUED)

CALL STATIONS

(CONTINUED)

C4EV S-IVB EVENTS DISPLAY PANEL
C4FC S-IVB FLIGHT CONTROL PANEL
C4FS S-IVB FLIGHT CONTROL SYSTEM ENGINEER
C4HC S-IVB WE CONTROL PANEL
C4HN S-IVB GH2/GA2 CONTROL PANEL
C4HU LH2 TANKING COMPUTER
C4HY HYDRAULIC PANEL
C4IP S-IVB MEASURING PANEL
C4NK CRT KEYBOARD - NETWORKS
C4NP S-IVB NETWORK PANEL
C4NZ CRT DISPLAY CONSOLE - NETWORKS OPERATIONAL MON SYS
C4N3 S-IVB NETWORKS CRT DISPLAY CONSOLE - CIF DATA
C4OH 02/M2 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 PROPELLANT SYSTEM ENGINEER
C4PU S-IVB PROPELLANT UTILIZATION SYSTEMS PANEL
C4P2 CRT DISPLAY CONSOLE - PROP OPERATIONAL MON SYS
C4P3 S-IVB PROPELLANT CRT DISPLAY CONSOLE - CIF DATA
C4QC S-IVB QUALITY CONTROL
C4SM S-IVB MECH/STRUCTURES SYSTEM ENGINEER
C4SP S-IVB STAGE PRESSURE PANEL
C4TC S-IVB STAGE TEST CONDUCTOR
EASH CIF ANTENNA SITE
ECOP CIF COMPUTER
EDDS CIF DATA DISPLAY ROOM (307)
EDTS DATA TRANSMISSION STATION
ETMS TELEMETRY GROUND STATION (CIF)
ETOM GUIDANCE TM OUTPUT MONITOR (CIF)
E2TM CIF S-11 TM ENGR MONITOR
E4FC CIF S-IVB FLIGHT CONTROL ENGR MONITOR
E4TM TM MONITOR
GMIL UNIFIED S BAND GROUND STATION
HFLT HOUSTON FLIGHT DIRECTOR
KSTC SPACECRAFT TEST CONDUCTOR
LASE LSE ELECT ENGR LUT BASE
LAS1 LSE POWER SUPPLY AND DIST. RACKS
LDAS DDAS (ML)
LEHS EMERGENCY BACKUP BATTERIES (ML)
LESP ENGINE SERVICE PLATFORM
LGCC GROUND COMPUTER COMPLEX (ML)
LHDA HOLDDOWN ARMS
LHGD HAZARDOUS GAS DETECTION SYSTEM, RM 15B
LLDE DIGITAL EVENT EVALUATOR (ML) DEB-6
LLRS DIGITAL RANGE SAFETY COMMAND SYSTEM GSE
LOM LAUNCH OPERATIONS MANAGER
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
LTSN LUT TAIL SERVICE MAST ENGINEER
LUNW IU NETWORKS
LUQI ML QUALITY INSPECTION
L1EP S-1C ENGINE AREA
L1GH S-1C GROUND HYDRAULIC SUPPLY & CHECKOUT
L1HC MOTOR CONTROL CENTER S-1C GRND HYD SUPPLY AND C/O
L1IC S-1C INSTRUMENTATION ENGINEER (ML)
L1LS LUT SUPERVISOR
L1NE LUT NETWORKS ENGR (S-1C STAGE)
L1OE S-1C ORDNANCE ENGINEER
L1PS GROUND POWER POWER SUPPLY ENGINEER
L1PU S-1C PREFILL UNIT
L1RS RELAY RACKS AND SEQUENCER RACK
L1SM STAGE MONITOR/OPERATIONS COORDINATOR
L1TH HANDLING & ORDNANCE ENGINEER, THRUST STRUCTURE, S-1C
L1TT TM & RF THRUST STRUCTURE
L2PD S-11 POWER DISTRIBUTION RACKS - ROOM 8B
L2RR S-11 RELAY RACKS (1 THROUGH 5) (ROOM 7A)
L4CE CONTROL ELECTRONIC ENGINEER
L4JR JUNCTION RACKS
L4PR S-IVB POWER RACKS (ROOM 7B)
MGNR GUID & NAV RIGHT SIDE UNIT 4, SC
MGNS GUID & NAV UNIT 14, SC
MSTC NASA SC TEST CONDUCTOR
MTPE TEST PROJECT ENGINEER
PEHE ENVIRONMENTAL HEALTH ENGINEER
PEST ENGINE SERVICE PLATFORM TRANSPORTER
PGHE PAD HP GAS ENGINEER
PLOG LV=0AL=35 GSE & ML
PLOU LV=0AL=34 IU
PLO1 LV=0AL=31 S-1C
PLO2 LV=0AL=32 S-11
PLO4 LV=0AL=33 S-IVB
PRF1 EMC MONITOR INFORMATION SYSTEM
PUPL IU PAD LEADER
PUSD IHM PAD SAFETY
PVTS TEST SUPERVISOR, PAD
P1ES S-1C GROUND LEVEL ENGINE SERVICING
RAS1 LSE FIRING ROOM NETWORKS ENGR
RCDC COUNTDOWN (LCC)

RDAS DDAS GSE RACKS
RDE3 DEE-3 SYSTEM ENGINEER
RDSC LV E & I RECORDERS
RDT5 DATA TRANSMISSION SYSTEM ENGINEER
RESC ECS STRIP CHARTS
RHSC LH2 STRIP CHARTS
RLDE DEE 6 (LCC)
RLDR LOX NETWORKS ENGINEER
RLSC TSM & S/A RECORDERS
RPDC PROPELLANTS D.C. POWER - LCC
RPSC RP-1 STRIP CHARTS
RRSC RANGE SAFETY OFFICER STRIP CHARTS
RUGH IU STRIP CHARTS
RXSC LOX STRIP CHARTS
RJLR LCC RACKS PATCH DIST.
RJNE S-1C MEASURING STRIP CHARTS
R1SC S-1C STRIP CHARTS
R2DP S-11 DIGITAL PRINTER
R2RL S-11 ENGINES REDLINE ENGINEER
R2SC STRIP CHARTS
R4E1 S-IVB GROUND RUSS E & I RECORDERS
R4HY S-IVB HYDRAULIC STRIP CHARTS
R4PS S-IVB PROPELLANT STRIP CHARTS
R4PU S-IVB PU STRIP CHARTS
R4SC STRIP CHART RECORDERS
SCDR SC COMMANDER
SRD SUPERINTENDENT OF RANGE OPERATIONS
SURF IU RF STRUCTURE
SUTH TM IU STRUCTURE
SUWE IU VEHICLE NETWORKS
SUVN 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
S4NF FWD STRUCTURAL/MECHANICAL ENGINEER
S4NL S-IVB MOBILE LAUNCHER STRUCTURAL MECHANICAL ENGINEER
S4NM SERVICE STRUCTURE MECHANICAL ENGINEER
S4NS STRUCTURE MEASURING STATION
S4OR S-IVB ORDNANCE ENGINEER
S4PC S-IVB PAD CONTROL
S4PE S-IVB PROPELLANT ENGINEER
S4SY S-IVB SAFETY ENGINEER
S4TM S-IVB STRUCTURE TM ENGINEER
UASE LSE ELECT ENGR, TOWER
USAB SERVICE ARM & B SYSTEM
UUCU GROUND SUPPORT COOLING UNIT
UUPC IU PNEUMATIC CONSOLE
UUVN IU MECHANICAL, UMBILICAL TOWER
U1FN FORWARD SKIRT ELECTRICAL NETWORKS
U1FT S-1C FORWARD SKIRT TM & RF
U2AN S-11 AFT MONITOR
U2AN AIRBORNE SYSTEMS ENGINEER
U2A1 S-11 AIRBORNE NETWORKS FWD
U2A2 S-11 AIRBORNE NETWORKS AFT
U2EC ENVIRONMENTAL CONTROL ENGINEER
U2EO S-11 ELECTRICAL ORDNANCE ENGINEER
U2FE S-11 FLIGHT CONTROL
U2FM S-11 FWD MONITOR
U2HO HANDLING AND ORDNANCE ENGINEER
U2IE S-11 INSULATION ENGINEER
U2J2 ENGINE SYSTEMS ENGINEER
U2LF FLIGHT CONTROL LEADMAN
U2LM S-11 HYDRAULIC LEADMAN
U2LN S-11 LUT NETWORKS ENGINEER
U2LP S-11 PRESSURIZATION LEADMAN
U2MH MECHANICAL AND HYDRAULICS ENGINEER
U2MO S-11 MECHANICAL ORDNANCE ENGINEER
U2MU MECH/UMBILICAL ENGINEER
U2PE PROPELLANT/PRESSURIZATION ENGINEER
U2PF PROPELLANT FILL ENGINEER
U2PM PROPELLANT MANAGEMENT ENGINEER
U2PV ML PURGE & VACUUM ENGINEER
U2QC ML QUALITY CONTROL REP
U2SE S-11 PAD LEADER
U2S1 STRUCTURES AND INSULATION ENGINEER
U2S2 SAFETY ENGINEER
U2TM TM ENGINEER
U24A PNEUMATIC CONSOLE S7=45A
U245 INSULATION PURGE PNEUMATIC CONSOLE, S7=45
U4A6 S-IVB AFT MONITOR
U4A7 S-IVB FORWARD MONITOR
U4PE PROPELLANT ENGINEER
VUMS IU MEASURING STATION
VURF RF, "C" BAND RADAR & CCS CHECKOUT
V1MS MEASURING GSE STATION
V2EC S-11 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)

OIS-RF CHANNELIZATION LC-39

AS-508 & SUBS

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

R = AVAILABLE TO ETR
U = AVAILABLE TO USB - MILA
SA = FOR TEMPORARY USE DURING SERVICE ARM OPERATIONS
C = AVAILABLE TO CRAWLER TRANSPORTER/MOBILE LAUNCHER BY MICROWAVE DURING TRANSFER OPERATIONS

APPROVED

A. J. Siffert Jr. 1/22/70
LO/PLN

CDDT & CD OPERATIONAL DIFFERENCES

"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
CONDITIONS	LM2 VENT VALVE CHECKOUT EQUIPMENT INSTALLED FOR CDDT ONLY
CONDITIONS	FLAME DEFLECTOR IN LAUNCH POSITION FOR CD ONLY
PRECOUNT	FUSES REMOVED TO INHIBIT S/A 1 & 2 RETRACT FOR CDDT
DAY HR MIN	DIFFERENCE
-4 21 0	PU COMPUTER PRESSURIZED AND LEAK CHECKED DURING CDDT
-4 21 0	PU COMPUTER PRESSURE VERIFIED UP DURING CD
-4 21 3	WDA RESISTANCE CHECKS COMPLETED DURING CDDT
-4 20 30	S-II PREPOWER ELECTRICAL PREPS DONE DURING CDDT
-4 20 30	S-II STAGE ELEC INSPECTION DURING CDDT ONLY
-4 16 30	LM RADAR SHIELD INSTALLED DURING CDDT
-4 8 30	PU COMPUTER PRESS DECAY CHECKED DURING CDDT
-4 8 0	PU COMPUTER LEAK CHECK COMPLETED DURING CDDT
-4 7 10	INTERFACE TEST STARTED DURING CD
-4 7 0	FACILITY AIR SYSTEM CHARGED WITH GN2 DURING CDDT
-4 6 15	LSE INTERFACE TEST COMPLETE DURING CD
-4 6 15	SERVICE ARMS PRESSURIZED DURING CDDT
-4 6 15	LSE MECHANICAL OPERATIONS STARTED DURING CDDT
-4 6 15	HCU PREPARED DURING CDDT
-4 6 3	S/A'S 1, 5, 7 & 9 PRESSURE TESTED DURING CDDT ONLY
-4 5 45	HCU SUPPORTING DURING CDDT
-4 5 45	LSE MECH OPS (S/A'S 1, 5, 7 & 9 AND TSM'S) DURING CDDT
-4 5 45	TSM E-M AND PRESSURE HOLD TEST DURING CDDT
-4 5 15	S/A 2 PRESSURE TESTED DURING CDDT
-4 5 0	LSE MECHANICAL OPERATIONS (S/A 2) DURING CDDT
-4 5 0	S/A'S 4, 6 & 8 PRESSURE TESTED DURING CDDT
-4 4 45	LSE MECH OPS (S/A'S 4, 6 & 8 AND DAMPER) DURING CDDT
-4 4 15	FLIGHT CODE PLUGS ISSUED DURING CD ONLY
-4 3 45	S/A PRESSURE HOLD TEST DURING CDDT
-4 3 0	FLIGHT CODE PLUGS INSTALLED DURING CD ONLY
-4 3 0	TEST CODE PLUGS INSTALLED FOR CDDT
-4 2 45	TSM PRESS HOLD TEST DURING ONLY
-4 2 30	MSS PLAT 1 REQUIRED AT LV STA 750 FOR CDDT ONLY
-4 2 0	TEST CODE PLUGS INSTALLED FOR CDDT
-4 2 0	MSS PLAT 1 AT STA 750 DURING CDDT
-4 2 0	ACOUSTIC INSTRUMENTATION COVERS REMOVED DURING CDDT
-4 1 45	FLIGHT CODE PLUGS INSTALLED FOR CD ONLY
-4 1 30	Q-BALL POWER ON FOR SC STRAY VOLTAGE CHECKS DURING CDDT
-4 1 30	ACOUSTIC INSTRUMENTATION COVERS REMOVED DURING CDDT
-4 1 30	FLIGHT CODE PLUG REMOVED DURING CD ONLY
-4 1 0	LM PROP LINE ROUTING, CONNECTION/LEAK CHECK DURING CD
-4 0 45	FLIGHT CODE PLUGS USED DURING CD ONLY
-4 0 45	TEST CODE PLUGS USED DURING CDDT
-4 0 30	FLIGHT CODE PLUGS USED DURING CD ONLY
-4 0 30	TEST CODE PLUGS USED DURING CDDT
-4 0 30	FLIGHT CODE PLUG SECURED DURING CD ONLY

DAY HR MIN	DIFFERENCE
-3 23 45	S/A PRESSURE HOLD TEST COMPLETED DURING CDDT
-3 23 30	Q-BALL HEATER POWER OFF DURING CD
-3 23 0	S/A SECURING COMPLETED DURING CDDT
-3 22 45	TSM PRESSURE HOLD TEST COMPLETED DURING CDDT
-3 22 0	SECURING FROM TSM PRESSURE HOLD TEST DONE DURING CDDT
-3 22 0	FACILITY AIR SYSTEM CHARGED WITH GN2 DURING CDDT
-3 21 30	Q-BALL HEATER POWER OFF DURING CDDT
-3 21 0	LM PROP LINE ROUTING, CONNECTION/LEAK CHECK DURING CD
-3 20 50	SC SMALL ORDNANCE INSTALLED DURING CDDT
-3 20 50	PNEUMATIC SYSTEM E-M TEST RUN DURING CDDT
-3 18 30	PNEUMATIC SYSTEM E-M TEST RUN DURING CDDT
-3 17 0	CSM HEAVY ORDNANCE CONNECTED DURING CD
-3 17 0	SNOWPS RECONFIGURED DURING CD
-3 17 0	SC ORDNANCE OPERATIONS CONTINUE DURING CDDT
-3 13 0	CONTROL AREA OPEN FOR NORMAL WORK DURING CDDT
-3 13 0	CSM REMOTE RESISTANCE CHECKS RUN DURING CD
-3 13 0	CSM HYPERGOLIC LINE DISCONNECTED DURING CDDT
-3 12 0	CSM REMOTE RESISTANCE CHECKS COMPLETED DURING CD
-3 12 0	SNOWPS RECONFIGURED DURING CD
-3 11 15	LM RCS MANIFOLD LOADING DURING CD ONLY
-3 9 30	CSM HYPERGOLIC LINE DISCONNECTED DURING CDDT
-3 8 30	LM & CSM ORDNANCE OPERATIONS COMPLETED DURING CDDT
-3 7 30	PROPELLANT VENT LINE CD OPENING DURING CD
-3 7 0	SC OPERATIONS UNIQUE TO CD
-3 7 0	SNOWPS RECONFIGURED DURING CD
-2 18 30	PAD REOPENED AND SNOWPS RECONFIGURED DURING CD
-2 14 0	STAGE ELECTRICAL INSPECTION DURING CDDT
-2 13 0	CRD'S PRELOADED DURING CD
-2 10 0	HYPERGOL COVER CURTAINS REMOVED DURING CDDT
-2 10 0	HYPERGOL COVERS REMOVED DURING CD
-2 10 0	MICROBIAL SAMPLING DURING CD ONLY
-2 9 0	HYPERGOL COVERS REMOVED DURING CD
-2 9 0	MICROBIAL SAMPLING DURING CD ONLY
-2 8 0	FLIGHT BATTERIES ACTIVATED FOR CD ONLY
-2 4 0	CRD PRELOAD COMPLETED DURING CD
-1 8 0	CLEARING FOR CSM LOX AND LH2 TANK PRESSURIZATION (TO FLIGHT PRESSURE) REQUIRED DURING CD
-1 8 0	CONTROL AREA OPEN FOR NORMAL WORK DURING CDDT
-1 7 30	SLA, IU & S-IVB FORWARD OPEN FOR NORMAL WORK DURING CDDT
-1 5 30	CONTROL AREA OPEN FOR NORMAL WORK DURING CD
-1 5 15	FLIGHT BATTERIES USED FOR CD ONLY
-1 5 0	SLA, IU & S-IVB FORWARD OPEN FOR NORMAL WORK DURING CD
-1 5 0	SCOTT AIR PACKS REQUIRED FOR CD ONLY
-1 5 0	IU WATER DELUGE SYSTEM REMOVED DURING CDDT
-1 4 30	BATTERIES ACTIVATED AND MOVED TO PAD DURING CD ONLY

ABBREVIATIONS

A/B AIRBORNE
AC ALTERNATING CURRENT
ACCEL ACCELERATING
ACE AUTOMATIC CHECKOUT EQUIPMENT
ACS AIRBORNE COMMAND SYSTEM
ACT ACTUATION
ALSEP APOLLO LUNAR SURFACE EXPERIMENTAL PACKAGE
ALT ALTERNATE
AMB 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
CCF CONVERTER COMPRESSOR FACILITY
CCSKB SWITCH SELECTOR MALFUNCTION COMMAND BOXES
CCR COMMAND COMMUNICATIONS RECEIVER
CCS COMMAND COMMUNICATIONS SYSTEM
CDC COUNTDOWN CLOCK
CDF CONFINED DETONATING FUSE
CDDT COUNTDOWN DEMONSTRATION TEST
CH CHANNEL
CHE COMPONENT HANDLING EQUIPMENT
CIF CENTRAL INSTRUMENTATION FACILITY
CKS CHECKS
CKT CIRCUIT
CL CLOSED LOOP
CM COMMAND MODULE
CMD COMMAND
CMP COMPUTER MANUAL PROCEED
COMM COMMUNICATIONS
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
DCE DIGITAL CHECKOUT EQUIPMENT
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
DPRS 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
ELEC ELECTRICAL
EMER EMERGENCY
EMC ELECTRO-MAGNETIC COMPATIBILITY
EMI ELECTROMAGNETIC INTERFERENCE
ENR ENGINE MIXTURE RATIO
E/M ELECTRO-MECHANICAL
ENG ENGINE
ENGR ENGINEER
EQUIP EQUIPMENT
ESE ELECTRICAL SUPPORT EQUIPMENT
ESP ENGINE SERVICE PLATFORM
EST EASTERN STANDARD TIME
ETR EASTERN TEST RANGE
FACIL FACILITY
FCA FUEL TASK 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 FOOT
F/T FUNCTIONAL TEST
FWD FORWARD
F/R FIRING ROOM
F.U. FIRING UNIT
FUNCT FUNCTIONAL
FUSU FORWARD UMBILICAL SERVICE UNIT
G&C GUIDANCE AND CONTROL
GEN GENERATOR, GENERALIZED
GG GAS GENERATOR
GME GASEOUS HELIUM
GH2 GASEOUS HYDROGEN
GMT GREENWICH MEAN TIME
GN2 GASEOUS NITROGEN
GOX GASEOUS OXYGEN
GRP GROUP
GRR GUIDANCE REFERENCE RELEASE
GRRR GUIDANCE REFERENCE RELEASE ALERT
GSE GROUND SUPPORT EQUIPMENT
GSFC GODDARD SPACE FLIGHT CENTER
GUID GUIDANCE

ABBREVIATIONS

HE HELIUM
HEX HEAT EXCHANGER
HCU HYDRAULIC CHARGING UNIT
HDA HOLD DOWN ARMS
MGD HAZARDOUS GAS DETECTION
H/H HAMMERHEAD
H/M HIGH
HP HIGH PRESSURE
HRS, HR HOURS
HV HAND VALVE
HYD HYDRAULIC
HZ HERTZ (ONE CYCLE PER SECOND)
IBM INTERNATIONAL BUSINESS MACHINES
IGN IGNITION
IMU INERTIAL MEASUREMENT UNIT
INFLT INFLIGHT
INI INDICATION
INJ INJECTOR OR INJECTION
INS INSTRUMENTATION SYSTEMS DIVISION
INSP INSPECTION
INSTL INSTALLATION
INSTR INSTRUMENTATION
IODC INPUT/OUTPUT DATA CHANNEL
ITI INTEGRATED TEST INSPECTION
IU INSTRUMENT UNIT
IVAR INTERNAL VARIABLE
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, LH LIQUID HYDROGEN
MLP ML ZERO LEVEL PLATFORM
LM LUNAR MODULE
LMR LAUNCH MISSION RULES
LO LIFT OFF
LOM LAUNCH OPERATIONS MANAGER
LOS LOSS OF SIGNAL, LINE OF SIGHT
LOX LIQUID OXYGEN
L/R LATCH RELIEF
LRV LUNAR ROVING VEHICLE
LSE LAUNCH SUPPORT EQUIPMENT
LUT LAUNCH UMBILICAL TOWER
LV LAUNCH VEHICLE
LVL LEVEL
LVDA LAUNCH VEHICLE DATA ADAPTER
LYDC LAUNCH VEHICLE DIGITAL COMPUTER
LVO LAUNCH VEHICLE OPERATIONS
MALF MALFUNCTION
MAINT MAINTENANCE
MAN MANUAL
MAP MESSAGE ACCEPTANCE PULSE
MAX MAXIMUM
MCCAH MISSION CONTROL CENTER - HOUSTON
MDC McDONNELLDOUGLAS
MDO MOBILE LAUNCHER COMPUTER DIGITAL OUTPUT
MEAS MEASURE, MEASURING OR MEASUREMENT
MECH MECHANICAL
MHZ MEGA-HERTZ
MILA MERRITT ISLAND LAUNCH AREA
MIN MINUTE
MISC MISCELLANEOUS
ML MOBILE LAUNCHER
MNSTG MAINSTAGE
MON MONITOR
MRCV MIXTURE RATIO CONTROL VALVE
MSS MOBILE SERVICE STRUCTURE
MDL 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
PVS POSITIVE
POSN POSITION
PLAT PLATFORM
PRA PROPELLANT RECORDING AMPLIFIER
PRN PSEUDO RANDOM NOISE
PREFLT PREFLIGHT
PREPS PREPARATIONS
PREPRESS PREPRESSURIZATION
PRESS PRESSURE
PROC PROCEDURE
PROG PROGRESS
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
QD QUICK DISCONNECT
QUAD QUADRANT
RACS REMOTE AUTOMATIC CALIBRATION SYSTEM
RCA RADIO CORPORATION OF AMERICA
RCS REACTION CONTROL SYSTEM
RECIRC RECIRCULATION
RECVR RECEIVER
REF REFERENCE
REG REGULATOR
REPRESS REPRESSURIZATION
REQD REQUIRED
REV REVISION
RF RADIO FREQUENCY
RFI RADIO FREQUENCY INTERFERENCE
RHC2 RIGHT HAND CONTROL #2
RM ROOM
RP-1 REFINED KEROSENE
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 ARM
SACS SERVICE ARM CONTROL SWITCHES
SAA SAFE AND ARM
SAT SATURN
SC SPACECRAFT
SCD SPACECRAFT OPERATIONS
SEC SECOND
SECT SECTION
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
SOP STANDARD OPERATING PROCEDURE
SP STABILIZED PLATFORM
SPEC SPECIAL
SRO SUPERINTENDENT OF RANGE OPERATIONS
SSB SINGLE S-BAND
STA STATION
STG STAGE
S/V SPACE VEHICLE
SW SWITCH
S/S SWITCH SELECTOR
SYS SYSTEM
SYNC SYNCHRONIZE
S-1C SATURN V 1ST STAGE
S-1I SATURN V 2ND STAGE
S-1VH SATURN V 3RD STAGE
T TIME
T-0 NOMINAL LIFTOFF
TB TIME BASE
TBC THE BOEING COMPANY
TC TEST CONDUCTOR
TCE TELEMETRY CHECKOUT EQUIPMENT
TCH THRUST CHAMBER
TCP TEST & CHECKOUT PROCEDURE
TCPI TEST & CHECKOUT PROCEDURE INTERFACE
TCS TERMINAL COUNTDOWN SEQUENCER
TEMP TEMPERATURE
THEOD THEODOLITE
TM TELEMETRY
TOK THRUST OKAY
TSM TAIL SERVICE MAST
TV TELEVISION
TWR TOWER
UCS UNIVERSAL CAMERA SITE
UMF ULTRA-HIGH FREQUENCY
UMB UMBILICAL
UR ULLAGE ROCKET
USB UNIFIED S-BAND FACILITY
VAB VEHICLE ASSEMBLY BUILDING
VEH VEHICLE
VLA VARIABLE LAUNCH AZIMUTH
VT VENT
W/R WHITE ROOM (S/A 9 ENVIRONMENTAL CHAMBER)
XNTR TRANSMITTER

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 EXISTS 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 EXISTS DURING HAZARDOUS
OPERATIONS ON THE PAD WHEN ONLY SPECIFIED
TASKS MAY BE WORKED.

AMBER:

LIMITED ACCESS

CONDITION 3

THIS CONDITION EXISTS 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 ARE
REQUIRED AND PAD SECURITY WILL BE IN EFFECT.

CD ONLY

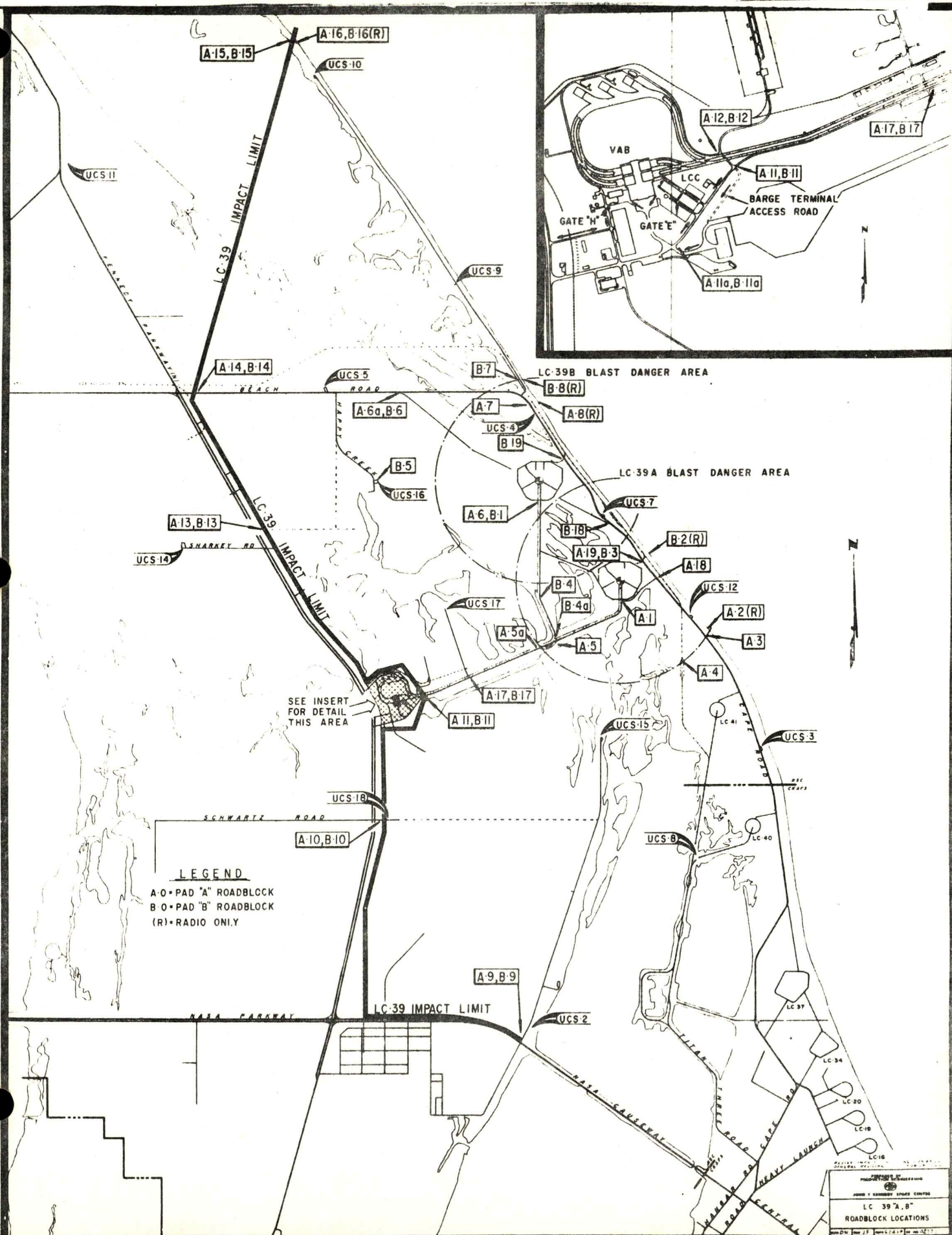
CD CONTROLLED AREA RESTRICTIONS

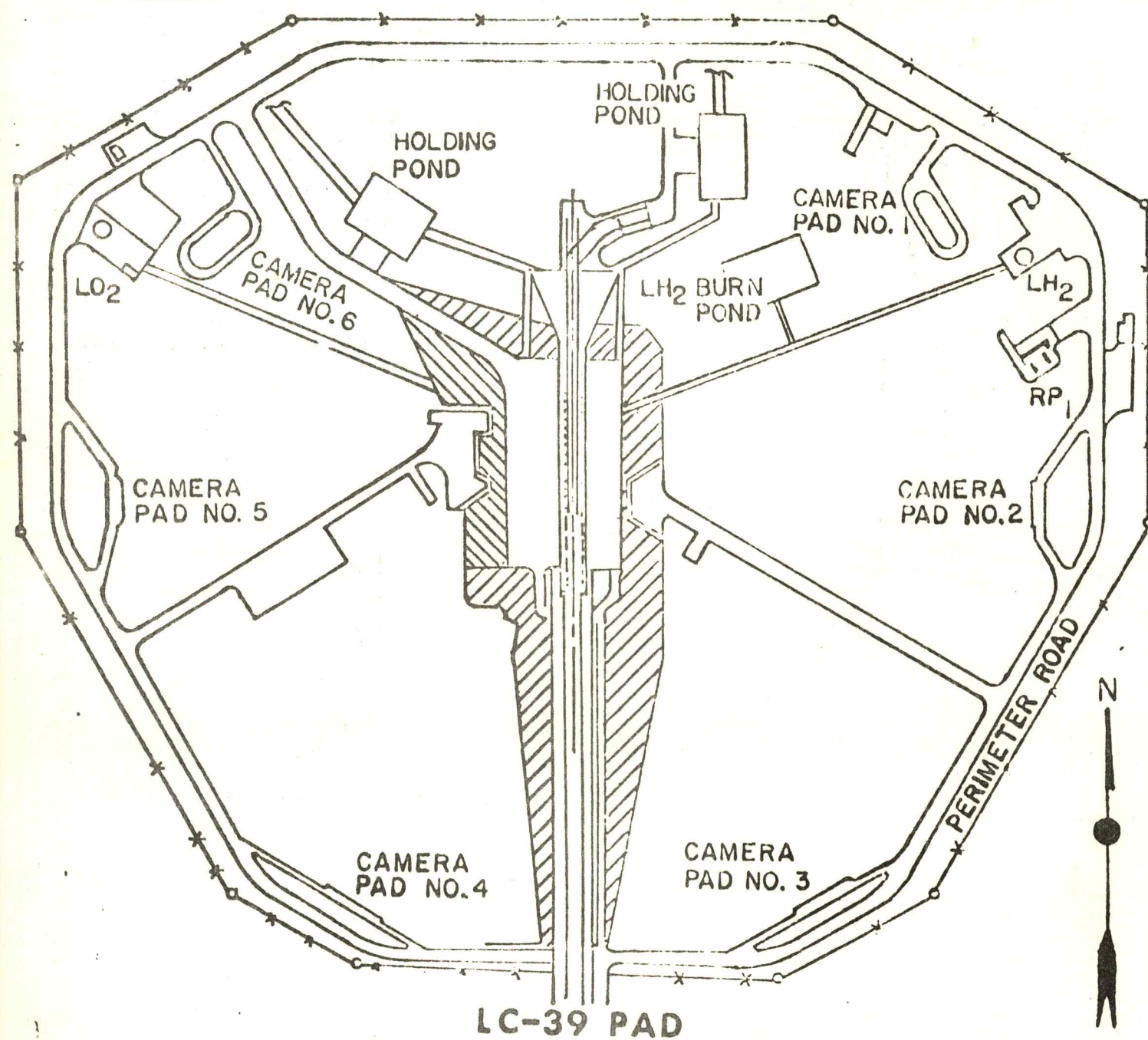
PART 1

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,

PART 4

1. T=3 DAYS 20:45 HRS TO T=3 DAYS 17 HRS: THE LUT ZERO LEVEL (EXCEPT PATH TO ELEVATOR) WILL BE CLEARED FOR F-1 ENGINE AND RR ORDNANCE INSTALLATION,
2. T=3 DAYS 16:30 HRS TO T=3 DAYS 13 HRS: THE MSS, PAD APRON, FLAME TRENCH AND ML WILL BE CLEARED FOR LV INITIATOR DETONATOR HOOKUP AND CSM HEAVY ORDNANCE HOOKUP,
3. 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,
4. T=3 DAYS 12 HRS TO T=3 DAYS 11:15 HRS: THE SLA INTERIOR, IU & S=IVB FORWARD AREA WILL BE RESTRICTED TO PERSONNEL ESSENTIAL FOR LM RCS MANIFOLD LOAD,
5. T=3 DAYS 7:15 HRS TO T=3 DAYS 7 HRS: THE SLA INTERIOR, IU & S=IVB FORWARD AREA WILL BE CLEARED FOR PROPELLANT VENT LINE QUICK DISCONNECT OPENING,
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 8 HRS: AN 1100 FOOT RADIUS AROUND THE SV WILL BE CLEARED FOR CSM LOX AND LH2 TANKING,
9. T=1 DAY 7:30 HRS TO T=1 DAY 5:30 HRS: THE AREA INSIDE THE PAD PERIMETER FENCE WILL BE CLEARED FOR CSM LO2 & LH2 TANK PRESSURIZATION,
10. T=1 DAY 5:30 HRS TO T=1 DAY 5 HRS: THE SLA INTERIOR, IU & S=IVB FORWARD AREA WILL REMAIN CLEAR FOR OXYGEN CONTENT CHECK,





TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					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 LUT ZERO PLATFORM RAISED	
		5			ALL S/A'S IN PLACE WITH TIPS EXTENDED	
		6			MSS AT PAD WITH PLATFORMS CLOSED	
		7			50 PSI GN2 DISTR BOX PURGE ON V-36064	
		8			DTS SUPPORTING & PROPELLANTS DC PWR ON	
		9			DEE-3 SYSTEM SUPPORTING	
		10			LSE MECH PRELIM TOWER PREPS IN PROGRESS (S/A'S 1 THRU 9, CDDT ONLY):	
					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 PROG V-21035	
		13			LSE 42D100 POWER ON	
		14			ML SLUG INST COMPLETE PER V-20072	
		15			S-IVB APS HYPERGOLICS LOADED	
		16			LO AND DESTRUCT ENABLE KEYS TO CPSS	
		17			ALL EBW PULSE SENSORS INSTALLED	
		18			REQ PNEU DIST SYS ARE PRESSURIZED	

APOLLO/SATURN LAUNCH OPERATIONS

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CD ONLY	
		19			COUNTCLOCK SUPPORTING PER V-31062	†
		20			DDAS SUPPORTING PER V-31062 WITH DDAS RECORDERS ON	†
		21			AUX PWR SUPPORTING PER V-31062 & ML DCE PWR ON (MANUAL MODE) & 400 HZ PWR ON	†
		22			IU THERMAL CONDITIONING SYSTEM CONFIGURED PER V-31062 (CLOSED LOOP) WITH FLIGHT TUBE INSTALLED	
		23			IU MECH ASSISTANCE WITH LRV BATT INST IN PROGRESS PER IV-34047,	†
		24			SMDPS IN 2 SWITCH - 1 VALVE MODE	TCPI †
		25			READY TO SUPPORT MANDATORY MEAS SPECIFIED IN LMR K-V-05.10/10	
		26			CDDT ONLY	*
		27			CDDT ONLY	*
		28			FLAME DEFLECTOR IN LAUNCH POSITION	#
		29			ECS E-M COMPONENT CHECKOUT COMPLETE	
		30			ESP TRANSPORTER LOCATED UNDER ML	
		31			HDA'S PRELOADED PER V-26046	
		32			IWS E-M TEST V-26472 IS COMPLETE	
		33			SLA/LM ECS AIR TEMP CONTROLS 67 DEG F	TCPI †
		34			ALL GN2 ELEC ENCLOSURES ARE VALIDATED	
		35			S-IC, S-II, S-IVB AND IU STAGE POWER OFF	
		36			LOX STORAGE TANK FILLED PER V-25329 AND SAMPLED PER V-25331	
		37			LH2 STORAGE TANK FILLED AND SAMPLED PER V-25034	

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APOLLO/SATURN LAUNCH OPERATIONS

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V-20000, PART 1
 VEHICLE **AS-510**

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY PART 1 LV PURGE & PRECOUNT OPERATIONS						
121		1	CLTC	C1TC	CDDT ONLY	*
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,	TCPI
		4	CLTC		*** NOTE SC WILL REQUEST VERIFICATION THAT THE SMDPS IS IN THE 2 SWITCH 1 VALVE MODE AND THAT THE SLA/LM ECS AIR TEMPERATURE CONTROLS ARE SET TO 67 DEG F WHEN SC BEGINS POWER ON OPERATIONS,	TCPI
-117:00 4 DAY 21 HRS 0' 0"						
171		1	C2TC	U2PF	CDDT ONLY	* ↑
171		2	C2TC	U2PF	START PU COMPUTER PRESSURE CHECK PER V-30029 (M020) SECTION VI, TASK 93. REPORT WHEN COMPLETE.	# ↑
171		3	C2TC	U2PM	START C7-84 CAPACITOR CALIBRATION PER V-25151 (H013) SECT D.1.	↑
181		4	C1TC	CSPP	CDDT ONLY	*

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
-116:30 4 DAY 20 HRS 30' 0"						
171	1	C2TC	U2J2		START PROPELLANT FEED SYSTEM VACUUM JACKETED LINE PRESSURE CHECKS PER V-24116 (J001), REPORT WHEN COMPLETE,	
171	2	C2TC	C2NP		START NETWORKS PREPOWER TASK PER V-30029 (M020) TASK 0. REPORT WHEN COMPLETE.	
171	3	C2TC	U2A2		CDDT ONLY	
171	4	C2TC	C2SP		START PRESSURIZATION UMBILICAL VERIFICATION PER V-30029 (M020) TASK 1. REPORT WHEN COMPLETE.	
171	5	C2TC	U2J2		START ENGINE/RECIRC UMBILICAL VERIFICATION PER V-30029 (M020) TASK 2. REPORT WHEN COMPLETE.	
171	6	C2TC	U2QC		START CLOSEOUT INSPECTION PER V-24411 (Q003).	
171	7	C2TC	U2LN		START LUT ELEC INSPECTION PER: V-21253 (G060) (CD) V-21452 (G141) (CDDT)	
171	8	C2TC	U2AN		CDDT ONLY	
-115:30 4 DAY 18 HRS 30' 0"						
171	1	C2NP	C2TC		NETWORKS PREPOWER TASK 0 IS COMPLETE.	
-113:00 4 DAY 17 HRS 0' 0"						
151	1	SUVM	CUTC		LRV BATTERY INSTALLATION SUPPORT IS COMPLETE.	

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V-~~20060~~, PART 1
VEHICLE **AS-510**

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-112:30 4 DAY 16 HRS 30' 0"					CD ONLY	
	171	1	C2SP	C2TC	PRESS UMBILICAL VERIFICATION IS COMPLETE	
	171	2	U2J2	C2TC	ENG/RECIRC UMBILICAL VERIFICATION IS COMPLETE.	
		3		CLTC	CDDT ONLY	* TCPI
-110:00 4 DAY 4 HRS 0' 0"						
	161	1	C4TC	C4ES	START RESISTANCE CHECKS PER V-30539 SECT A. REPORT WHEN COMPLETE.	
-106:15 4 DAY 10 HRS 15' 0"	171	2	C2TC	C2HP	START PATCH DISTRIBUTOR RESISTANCE CHECKS PER V-30029 (M020) TASK 101. REPORT WHEN COMPLETE.	
	171	1	C2TC	B2TM	SETUP TCE GROUND STATION PER V-28135 (G050). REPORT WHEN COMPLETE.	
	171	1	C2TC	R2SC	SETUP LCC MEASURING STATION PER V-27154 (G031).	
-105:45 4 DAY 9 HRS 45' 0"						
	121	1	CUTC	CLTC	LV ELECT SUPPORT PREPS PER V-31062, APPENDIX B ARE IN PROGRESS.	
		2			DELETED	

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 V-20000, PART 1
 VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-105:30 - 4 DAY 9 HRS 30' 0"						
	171	1	C2TC	U2PM	VERIFY C7-84 CAPACITOR CALIBRATION PER SECTION D1 OF V-25151 (H013) IS COMPLETE	
	171	2	C2TC	U2PM	START MEGGER CHECKS/C7-84 HOOKUP PER SECTIONS D2 AND D3 OF V-25151 (H013).	
	171	3	C2TC	U2A2	START PREPS FOR "G" SWITCH CHECKOUT PER V-30029 (M020) TASK 6.	
-104:35 - 4 DAY 8 HRS 35' 0"						
	121	1	CUTC	CLTC	SUPPORT PREPS ARE COMPLETE - READY TO APPLY S-II SWITCH POWER.	
	121	2	CLTC	C2TC	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 NT98), REPORT WHEN SWITCH SCAN IS BEING DISPLAYED.	
	151	5	CUTC	RLDE	LOAD AND INITIATE SEQUENCE COMPARE TABLES AS REQUIRED FOR THIS TEST.	
	151	6	CUTC	RLDE	TERMINATE CURRENT MAGNETIC TAPE FILE EACH DAY AT 2400 HRS LOCAL TIME AND START NEW TAPE FILE AFTER OBTAINING CUTC CONCURRENCE.	

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V-2000, PART 1
VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-104:30 4 DAY 8 HRS 30' 0" CD ONLY TCPI						
171		1	C2TC	V2MS	SETUP VAB MEASURING STATION PER V-27183 (G032).	
171		2	C2TC	U2PF	CDDT ONLY	
121		3	C2TC	CLTC	MSS PLATFORM 1 WILL BE REQUIRED BETWEEN STA 1541 & 2519 FOR THE NEXT 6 HRS TO SUPPORT S-II STAGE EXTERIOR INSPECTION/CLOSEOUT.	
111		4	CLTC	CVTS	MSS PLATFORM 1 WILL BE REQUIRED BETWEEN STA 1541 & 2519 FOR THE NEXT 6 HRS TO SUPPORT S-II STAGE EXTERIOR INSPECTION/CLOSEOUT.	TCPI
171		5	C2TC	U2SE	CLOSEOUT MSS PLATFORM 1 PER V-30029 (M020) TASK 9. REPORT WHEN COMPLETE.	
171		6	C2TC	U2SE	START FINAL INSPECTION/CLOSEOUT OF S-II STAGE PER V-30029 (M020) TASK 9. REPORT WHEN COMPLETE. (REQUIRES MSS PLATFORM 1 TO TRAVERSE FROM STA 1541 THROUGH 2519)	
171		7	C2TC	U20C	VERIFY REMOVAL OF ALL NON-FLIGHT HARDWARE FROM STAGE EXTERIOR PER V-30029 (M020) TASK 47.	
-104:25 4 DAY 8 HRS 25' 0"						
121		1	CUTC	CLTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION.	
121		2	CLTC	C2TC	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.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-104:25 4 DAY 8 HRS 25' 0"					CD ONLY	
	151	5	CUTC	CCPM	START REDUNDANT POWER SUPPLY PER V-21222. REPORT WHEN COMPLETE.	
-104:15 4 DAY 8 HRS 15' 0"						
	121	1	CLTC	CUTC	SWITCH SCAN IS SATISFACTORY. BRING UP COMPUTER.	
	151	2	CUTC	BGCC	ENTER \$ GO AND REPORT WHEN COMPUTER SUPPORTING.	
	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	
	111	5	CLTC	CVTS	LV APPLYING STAGE POWER	TCPI
	121	6	CLTC	CUTC	APPLY IO STAGE POWER	
	151	7	CUTC	CUNP	APPLY IO STAGE POWER PER V-21223. REPORT WHEN COMPLETE.	
-104:00 4 DAY 8 HRS 0' 0"						
	171	1	U2PF	C2TC	CDDT ONLY	*
	171	2	C2TC	U2J2	START ENGINE/RECIRC SYSTEMS INSPECTION AND ENGINE COVER REMOVAL PER V-34014 (E023). REPORT WHEN COMPLETE.	

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V-30060, PART 1

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-104:00 4 DAY 8 HRS 0' 0"						
161	3	C4TC	L4CE S4CE		START PRETEST PREPS PER V-30539, SECT A. REPORT WHEN COMPLETE.	↑
161	4	C4ES	C4TC		RESISTANCE CHECKS ARE COMPLETE.	
171	5	R2SC	C2TC		LCC MEASURING STATION SETUP IS COMPLETE.	
171	6	V2MS	C2TC		VAB MEASURING STATION SETUP IS COMPLETE.	
151	7	C2TC	CUTC		LOAD S-II POWER UP SEQUENCE COMPARE TABLE -----	
121	8	CUTC	CLTC		STAGE POWER IS ON AND COOLING IS SUPPORTING.	↑
121	9	CLTC	C2TC		APPLY S-II STAGE POWER. CLEAR TO RUN GAPO.	↑
171	10	C2TC	U2PM		VERIFY PREPS COMPLETE AND READY FOR STAGE POWER.	
171	11	C2TC	U2A2		VERIFY "G" SWITCH PREPS COMPLETE AND READY FOR STAGE POWER UP.	
171	12	C2TC	R2SC		VERIFY READY FOR STAGE POWER.	
171	13	C2TC	C2NP		REQUEST & EXECUTE GAPO (S-II STAGE POWER UP)	↑
171	14	C2TC	C2IP		GROUND POWER TO ON.	
171	15	C2TC	B2TM		START PCM/DDAS CHECKS PER V-28144 (R014) TASK 1. REPORT WHEN COMPLETE.	
171	16	C2TC	C2GP		ACTIVATE GROUND PNEUMATICS PER V-30029 (M020) TASK 95 TO SUPPORT PROP TANK PURGING.	↑
121	17	C2TC	CLTC		S-II STAGE POWER IS ON. GAPO IS COMPLETE.	↑
171	18	C2TC	C2DP C2NK		START SEPARATION SYSTEM CHECKOUT PER V-30029 (M020) TASK 4 (QASP). REPORT WHEN COMPLETE.	↑

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V-20000, PART 1

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-103:30 - 4 DAY 7 HRS 30' 0"						
	171	1	C2NK	C2TC	SEPARATION SYSTEM CHECKOUT PER QASP IS COMPLETE.	↑
	171	2	C2TC	U2EO	REMOVE S-II/S-II & S-II/S-IVB SEPARATION SYSTEM PULSE SENSORS PER V-29038 (S009).	↑
	161	3	S4PC	C4TC	PRETEST PREPS ARE COMPLETE.	↑
	161	4	C4TC	C4ES	START S-IVB PREPOWER PREPS PER V-30539, APPENDIX A.	↑
	161	5	C4TC	C4PS	START PROPULSION SYSTEM POWER OFF PREPS PER V-35015.	
	171	6	C2GP	C2TC	GROUND PNEUMATICS ACTIVATED.	↑
	181	7	C1TC	CCLH	STANDBY TO SUPPORT S-II LH2 TANK PURGING AND SAMPLING PER V-35015	
	181	8	C1TC	CCLO	STANDBY TO SUPPORT S-II LOX TANK PURGING AND SAMPLING PER V-35015	
	121	9	C1TC	CLTC	LOX & LH2 PROPELLANTS SUPPORTING FOR S-II TANK PURGE AND SAMPLING	↑
	121	10	CLTC	C2TC	LOX & LH2 PROPELLANTS SUPPORTING FOR S-II TANK PURGES AND SAMPLING.	
	171	11	C2TC	C2SP C2RP	START S-II PROPELLANT TANK AND FEED SYSTEM PURGES PER V-35015.	↑
-103:15 - 4 DAY 7 HRS 15' 0"						
	261	1	C2TC	BOSC	S-II WILL BE READY FOR LOX TANK DEWPOINT GN2 SAMPLE (1 EACH) ON S/A 4 IN 30 MINUTES. LVN-1	TCPI ↑

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VEHICLE 20000, PART 1
VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-103:10 4 DAY 7 HRS 10' 0"					CD ONLY	
	181	1	C1TC	CSPP L1RS	START INTERFACE TEST PER V-31045 ON CH 124, REPORT WHEN COMPLETE.	#
	121	2	C1TC	CLTC	LV ECS SUPPORTING PER V-26247.	
-103:00 4 DAY 7 HRS 0' 0"						
	121	1	C1TC	CLTC	CDDT ONLY	*
		1-1			CDDT ONLY	*
	181	2	C1TC	CPDC	CDDT ONLY	*
-102:55 4 DAY 6 HRS 55' 0"						
	121	1	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR LV SWITCH SCAN.	
	171	2	C2TC	C2SP	ML COMPUTER IS BEING INHIBITED FOR LV SWITCH SCAN, ANTICIPATE COMPUTER WILL BE SUPPORTING IN 15 MINUTES.	

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V-20000, PART 1

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-102:55 4 DAY 6 HRS 55' 0"						
	121	3	CLTC	C4TC	VERIFY STAGE SWITCH POWER IS OFF.	
	121	4	CLTC	CLVN	COMPUTER TEST SWITCH OFF AND INHIBIT ML COMPUTER.	
	121	5	CLTC	C4TC	APPLY SWITCH POWER AND VERIFY.	
	121	6	CLTC	BGCC	REQUEST & EXECUTE NT98. REPORT WHEN SWITCH SCAN IS BEING DISPLAYED.	
	121	7	BGCC	CLTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION.	
	121	8	CLTC	C4TC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION. REPORT WHEN SATISFACTORY.	
-102:45 4 DAY 6 HRS 45' 0"						
	121	1	CLTC	CLVN	ML INHIBIT TO AUTO, COMPUTER TEST SWITCH ON AND VERIFY DISCRETE CYCLING.	
	121	2	CLTC	BGCC	ENTER SGO. REPORT WHEN COMPUTER SUPPORTING.	
	121	3	BGCC	CLTC	GROUND COMPUTER IS SUPPORTING.	
	188	4	CLTC	ALL	GROUND COMPUTER IS SUPPORTING.	
	171	5	C2TC	C2SP	ML COMPUTER IS SUPPORTING.	
-102:40 4 DAY 6 HRS 40' 0"						
	171	1	CLTC	C1TC	CLEAR TO REQUEST AND EXECUTE WASP (LSE POWER ON).	
	181	2	C1TC	CSPP	VERIFY LSE POWER ON AND START BATTERY SWITCHOVER TEST PER V-21194 (WASP).	

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V-30060, PART 1

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-102:30 - 4 DAY 6 HRS 30' 0"						
181		1	CSPP	C1TC	BATTERY SWITCHOVER TEST COMPLETE.	↑
161		2	C4TC	S4PC	START S-IVB ENGINEERING WALKAROUND PER V-30539, SECT B.	↑
161		3	C4TC	C4ES	VERIFY PREPOWER PREPARATIONS COMPLETE,	↑
121		4	CLTC	C4TC	APPLY S-IVB POWER AND RUN EBW FUNCTIONAL TEST, CLEAR TO REQUEST & EXECUTE XAPS.	↑
161		5	C4TC	ALL	S-IVB POWER WILL BE APPLIED PER V-30539, APPENDIX B.	
181		6	C1TC	CCLH	STANDBY TO SUPPORT S-IVB LH2 TANK PURGING & SAMPLING PER V-35015.	
181		7	C1TC	CCLO	STANDBY TO SUPPORT S-IVB LOX TANK PURGING AND SAMPLING PER V-35015.	
171		8	C2TC	C2NK	START S-II SYSTEM BYPASS/BYPASS INHIBIT CHECKS PER V-30029 (4020) TASK 3. REPORT WHEN COMPLETE.	
121		9	C1TC	CLTC	LOX AND LH2 PROPELLANTS SUPPORTING FOR S-IVB TANK PURGE AND SAMPLING.	↑
181		10	C1TC	CHDA	START HDA/SACS ELECTRO-MECHANICAL TESTS PER V-36069.	↑
-102:20 - 4 DAY 6 HRS 20' 0"						
121		1	C4TC	CLTC	S-IVB POWER HAS BEEN APPLIED, XAPS AND XASS ARE COMPLETE.	↑
161		2	C4TC	C4PS	START PROPULSION SYSTEM POWER ON PREPS PER V-35015.	
161		3	C4TC	C4ES	START EBW FUNCTIONAL TEST PER V-30539 SECT C.	
161		4	C4TC	C4HY	START S-IVB HYDRAULIC SYSTEM PREPARATION AND FUNCTIONAL PER V-30539, SECT D.	↑

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-102:20 4 DAY 6 HRS 20' 0"					CD ONLY	
	151	5	CUTC	CUCP	START REDUNDANT COOLANT PUMP CHECK WITH RUBM ON CHANNEL 152 PER V-31062, PART II, REPORT WHEN COMPLETE.	
-102:15 4 DAY 6 HRS 15' 0"						
	181	1	CSPP	C1TC	LSE INTERFACE TEST COMPLETE	#
	181	2	C1TC	CSAC	CDDT ONLY	*
	118	3	CSAC	CHCU	CDDT ONLY	*
-102:05 4 DAY 6 HRS 5' 0"						
	151	1	CUCP	CUTC	REDUNDANT COOLING PUMP CHECKS ARE COMPLETE.	
-102:00 4 DAY 6 HRS 0' 0"						
	188	1	CLTC	ALL	CDDT ONLY	*
	111	2	CLTC	CVTS	CDDT ONLY	* TCPI
	161	3	C4TC	C4PS	START PROPULSION SYSTEM PURGES PER V-35015.	

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V-30000, PART 1

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
------	--------------	----------	-----------------	------------------	-------------	---------

CD ONLY

-101:45

- 4 DAY

5 HRS

45' 0"

118

1

CSAC

CHCU

CDDT ONLY

*

2

CDDT ONLY

*

118

3

CSAC

CSA1

CDDT ONLY

*

118

4

CSAC

CSA5

CDDT ONLY

*

118

5

CSAC

CSA7

CDDT ONLY

*

118

6

CSAC

CSA9

CDDT ONLY

*

181

7

C1TC

CTS1

CDDT ONLY

*

7-1

CDDT ONLY

*

171

8

C2TC

U2PE

START CLOSEOUT OF ML LEVEL 180 PER
V-30029 (M020) TASK 64.

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-101:30 4 DAY 5 HRS 30' 0"					CD ONLY	
	161	1	C4ES	C4TC	EBW FUNCTIONAL TEST COMPLETE.	
	121	2	C4TC	CLTC	EBW FUNCTIONAL TEST COMPLETE	
	161	3	C4TC	C4ES	START REMOVAL OF PULSE SENSORS AND BRACKETS PER V-30539, SECT C.	
	171	4	C4TC	C2TC	VERIFY SEPARATION AND RETRO ROCKET PULSE SENSORS ARE DISCONNECTED AND READY FOR REMOVAL.	
-101:15 4 DAY 5 HRS 15' 0"						
	188	1	CLTC	ALL	CDDT ONLY	*
-101:00 4 DAY 5 HRS 0' 0"						
	118	1	CSAC	CSA2	CDDT ONLY	*
	118	2	CLTC	ALL	CDDT ONLY	*
	111	3	CLTC	CVTS	CDDT ONLY	* TCP I
	161	4	C4HY	C4TC	HYDRAULIC SYSTEM PREPS AND FUNCTIONAL TESTS ARE COMPLETE,	

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V-2000.0, PART 1

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-100:45 4 DAY 4 HRS 45' 0"					CD ONLY	
	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),	TCPI *
	118	3	CSAC	CSA4	CDDT ONLY	* *
	118	4	CSAC	CSA6	CDDT ONLY	* *
	118	5	CSAC	CSA8	CDDT ONLY	* *
	118	6	CSAC	CSAD	CDDT ONLY	*
-100:30 4 DAY 4 HRS 30' 0"						
	181	1	C1TC	BRFS	START DRSCR/GSE PREPS PER V-38000 SECTIONS 1 THRU 11,	
	171	2	U2EO	C2TC	S-II/S-II & S-II/S-IVB SEPARATION SYSTEM PULSE SENSORS HAVE BEEN REMOVED,	*
-100:15 4 DAY 4 HRS 15' 0"						
	121	1	CVTS	CLTC	FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8	# TCPI *
	121	2	CLTC	C1TC C2TC C4TC	FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8	# *

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-100:00 4 DAY 4 HRS 0' 0"					CD ONLY	
	171	1	C2NK	C2TC	BYPASS/BYPASS INHIBIT CHECKS ARE COMPLETE.	
	121	2	CLTC	C1TC	START CRITICAL PATCH PATH VERIFICATION PER V-21035. REPORT WHEN COMPLETE.	
	181	3	C1TC	C1NE	START CRITICAL PATCH PATH VERIFICATION PER V-21035. REPORT WHEN COMPLETE.	
T-99:45 4 DAY 3 HRS 45' 0"						
	181	1	CSAC	C1TC	CDDT ONLY	*
	121	2	C1TC	CLTC	CDDT ONLY	*
	118	3	CSAC	CSA1 CSA2 CSA4 CSA5 CSA6 CSA7 CSA8 CSA9	CDDT ONLY	*
T-99:30 4 DAY 3 HRS 30' 0"						
	171	1	U2J2	C2TC	ENGINE/RECIRC SYSTEMS INSPECTION COMPLETE.	
	181	2	C1TC	LPLX	START PTCS PREPS FOR S-II PU FACILITY INTERFACE CHECKS PER V-25159.	
T-99:00 4 DAY 3 HRS 0' 0"						
	121	1	CLTC	C1TC C2TC C4TC	INSTALL DRSCS FLIGHT CODE PLUGS IN LV	#

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶▶▶						

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-98:30 4 DAY 2 HRS 30' 0"					CD ONLY	
	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.	*
	111	5	CLTC	CVTS	S-II STAGE EXTERIOR INSPECTION/CLOSEOUT COMPLETE, MSS PLATFORM 1 IS NO LONGER REQUIRED FOR LV SUPPORT.	# TCPI
	121	6	C1TC	CLTC	CDDT ONLY	*
	111	7	CLTC	CVTS	CDDT ONLY	* TCPI
	171	8	C2TC	C2DP	VERIFY PD PULSE SENSORS CONNECTED,	
	171	9	C2TC	U2PM	VERIFY READY TO APPLY PM POWER.	
	171	10	C2TC	C2NP	APPLY PM POWER.	
	161	11	C4TC	R4PU	PU STRIP CHARTS TO ON.	
	161	12	C4TC	C4PU	PU OVEN AND INVERTER POWER ON THEN AUTO.	
	161	13	C4TC	\$4CE	VERIFY PD PULSE SENSORS CONNECTED	
T-98:15 4 DAY 2 HRS 15' 0"						
	121	1	CLTC	BTMC	START TCE PREPS PER V-28009. REPORT WHEN COMPLETE.	
	181	2	C1TC	V1MS	PREPARE VEHICLE MEASURING GSE PER V-27098, REPORT WHEN COMPLETE.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ ▶ ▶ ▶ ▶ CD ONLY ◀ ◀ ◀ ◀ ◀ ◀						
T-98:15 4 DAY 2 HRS 15' 0"						
181		3	C1TC	B1TM	PREPARE TM GSE PER V-28186. REPORT WHEN COMPLETE.	
T-98:05 4 DAY 2 HRS 5' 0"						
121		1	CLTC	C1TC C2TC C4TC	VERIFY PROPELLANT DISPERSION PULSE SENSOR UNITS CONNECTED.	
T-98:00 4 DAY 2 HRS 0' 0"						
121		1	CLTC	C1TC C2TC C4TC	CDDT ONLY	*
181		2	C1TC	CHDA	VERIFY HDA SACS ELECTRO-MECHANICAL TESTS COMPLETE AND SECURE SYSTEM.	
261		3	C2TC	BOSC	S-II WILL BE READY FOR LH2 TANK N2 & O2 CONTENT AND DEWPOINT GHE SAMPLES (2 EACH) ON S/A 5 AND LUT 180 FT LEVEL AND RECIRCULATION SYSTEM DEWPOINT GHE SAMPLES (3 EACH) ON S/A 3 IN 30 MINUTES. LVN-2 AND LVN-3;	TCPI
121		4	CVTS	CLTC	CDDT ONLY	* TCPI
121		5	CLTC	C1TC	CDDT ONLY	*
181		6	C1TC	L1IC	START FINAL INSTRUMENTATION WALKAROUND PER V-27195. REPORT WHEN COMPLETE.	*
181		7	C1TC	L1IC	CDDT ONLY	*

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ ▶ ▶ ▶ ▶ ▶ CD ONLY ◀ ◀ ◀ ◀ ◀ ◀ ◀						
T-98:00 4 DAY 2 HRS 0' 0"						
	181	8	C1TC	B1RF	START FINAL DRSCS WALKAROUND INSPECTION PER V-28031. REPORT WHEN COMPLETE.	
	181	9	C1TC	B1TM	START FINAL TM WALKAROUND INSPECTION PER V-28016. REPORT WHEN COMPLETE.	
T-97:45 4 DAY 1 HRS 45' 0"						
	181	1	B1RF	C1TC	DRSCS FLIGHT CODE PLUG INSTALLATION COMPLETE ON STAGE	#
	181	2	LLRS	C1TC	DRSCS FLIGHT CODE PLUG INSTALLATION COMPLETED IN ML ENCODER	#
	171	3	B2RF	C2TC	FLIGHT CODE PLUGS INSTALLED	#
	161	4	S4CE	C4TC	FLIGHT CODE PLUGS INSTALLED	#
	121	5	CLTC	C1TC C2TC C4TC	VERIFY LV FLIGHT CODE PLUGS INSTALLED	#
	181	6	B1TM	C1TC	TM GSE PREPS COMPLETE.	
	121	7	B1MC	CLTC	TGE PREPS COMPLETE.	
	181	8	C1TC	C1NE	APPLY S-IC POWER PER V-21038. REPORT WHEN COMPLETE.	
T-97:40 4 DAY 1 HRS 40' 0"						
	121	1	C1TC	CLTC	S-IC STAGE POWER IS ON. WAPO IS COMPLETE.	
	181	2	C1TC	B1TM	START S-IC PCM DDAS CHECKS PER V-28186.	
	121	3	CLTC	C4TC	CLEAR TO REQUEST & EXECUTE XAPU (S-IVB PU CAL CHECKS)	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-97:35 4 DAY 1 HRS 35' 0"		111	1	CLTC CVTS	ADVISE SCO PERSONNEL THAT Q-BALL POWER IS COMING ON IN APPROXIMATELY FIVE MINUTES.	TCPI
T-97:30 4 DAY 1 HRS 30' 0"		121	1	CVTS CLTC	CDDT ONLY	TCPI
		121	2	CLTC CUIP	Q-BALL HEATER POWER ON Q-BALL POWER ON	TCPI
		161	3	C4TC C4ES	VERIFY PULSE SENSOR BRACKET REMOVAL COMPLETE	
		161	4	C4TC C4PS	VERIFY TANK PURGE & SAMPLING COMPLETE AND PROPULSION SYSTEMS ARE READY FOR PU CALIBRATION CHECKS.	
		161	5	C4TC C4ES	START PU CALIBRATION CHECK PER V-21085 (XAPU).	
		121	6	C4TC CLTC	S-IVB TANK PURGE AND SAMPLING IS COMPLETE. STARTING PU CALIBRATIONS.	
		181	7	CCLC C1TC	SUPPORT OF S-II/S-IVB LOX TANK PURGING AND SAMPLING IS COMPLETE.	
		181	8	CCLH C1TC	SUPPORT OF S-II/S-IVB LH2 TANK PURGING AND SAMPLING IS COMPLETE.	
		171	9	C2SP C2TC	S-II PROPELLANT TANKS AND FEED SYSTEM PURGES AND SAMPLING COMPLETE. LOX & LH2 TANK ULLAGE PRESSURES 21.7 +/- 1.0 PSIA. READY FOR PU CALIBRATION. (LH2 TANK 90% HE AT 70 DEG +/- 30 DEG F. LOX TANK 90% GN2 AT 70 DEG +/- 30 DEG F.)	
		121	10	C2TC CLTC	S-II PROPELLANT TANKS AND FEED SYSTEM PURGES AND SAMPLING COMPLETE. STARTING PU CALIBRATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ ▶ ▶ ▶ CD ONLY ◀ ◀ ◀ ◀ ◀ ◀						
T-97:30 4 DAY 1 HRS 30' 0"						
171	11	C2TC	U2PM		START FINAL PU CALIBRATION PER V-25151 (H0131)	
121	12	CLTC	C1TC		S-II AND S-IVB ARE READY TO SUPPORT LH2 FACILITY SYSTEM PURGE.	
181	13	C1TC	CCLH		START LH2 FACILITY SYSTEM PURGE PER V-35015.	
121	14	C1TC	CLTC		BENDIX SAMPLING IS REQUIRED TO SUPPORT LH2 FACILITY PURGE AND SAMPLING PER V-35015 (RD 41081 ANNEX R)	
261	15	CLTC	BOSC		BENDIX SAMPLING CREW IS REQUIRED TO SUPPORT LH2 FACILITY PURGE & SAMPLING PER V-35015 (RD 41081 ANNEX R)	TCPI
181	16	L1TC	C1TC		CDDT ONLY	*
121	17	C1TC	CLTC		CDDT ONLY	*
111	18	CLTC	CVTS		CDDT ONLY	* TCPI
	19				*****WARNING***** * * THE FOLLOWING SEQUENCE * * IS HAZARDOUS, * * *****	
181	20	C1TC	C1PE		START THRUST CHAMBER PREPARATIONS PER V-34012	
181	21	C1TC	B1TM		VERIFY S-IC PCM DDAS CHECKS COMPLETE.	
181	22	C1TC	LLRS		SET SIG GEN NO. 1 FOR NOMINAL 15 KHZ DEVIATION WITH TONE 4 AND SET SIG GEN NO. 2 RF POWER OUTPUT FOR -97 DBM AT LV RECEIVERS.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-97:30 - 4 DAY 1 HRS 30' 0"					LV DRSCS TEST - GSE (CLOSED LOOP) -----	
		181 23	C1TC	BRFS	VERIFY ML-DRSCS/GSE PREPARED TO SUPPORT THE LV DRSCS TEST.	
		181 24	C1TC	RRSC	VERIFY READY TO SUPPORT DRSCS TEST.	
		121 25	C1TC	CLTC	DRSCS-GSE READY TO SUPPORT CLOSED LOOP TEST.	
		111 26	CLTC	CVTS	LV PROCEEDING WITH LV DRSCS GSE TEST. VERIFY CLEARANCE TO BRING UP LOCAL COMMAND CARRIER (PROTECTION REQUIRED), CPSS RELEASE DESTRUCT SYSTEM KEY TO CLVN	TCPI *
		121 27	CLTC	CLVN	OBTAIN DESTRUCT SYSTEM KEY FROM CPSS.	
		188 28	CLTC	ALL	ALL PERSONNEL SUPPORTING LV DRSCS TEST GO TO CHANNEL 121 ACTIVE & MONITOR STAGE TC CHANNEL.	
		121 29	CLTC	C1DP C2DP C4DP	VERIFY ALL SWITCHES AUTO EXCEPT: PD RSCR ENABLE - OFF SYSTEMS STATUS SWITCH - OFF S&A STATUS SWITCH - SAFE	
		121 30	CLTC	C4DP	PULSE SENSOR POWER ON.	
		121 31	CLTC	RRSC	RECORDERS - ON.	
		121 32	CLTC	CLVN	DESTRUCT SYSTEM TO ENABLE.	
		32-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS ON.	
		121 33	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 TRANSFER - EXTERNAL, THEN AUTO.	
		121 34	CLTC	C1DP C2DP C4DP	VERIFY RSCR'S 1 & 2 PD BLOCKED ON.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-97:30 - 4 DAY 1 HRS 30' 0"						
		34-1		CRSS	*** NOTE ALL RSCR'S PD BLOCKED ON	
121		35	CLTC	BRFS	SIG GEN SELECT - #1 AUDIO SELECT - POS, OFF VERIFY REMOTE MONITOR TO HYBRID	
121		36	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - ON	
121		37	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK	
		37-1		CRSS	*** NOTE LIMITER VOLTAGES RECEIVED.	
121		38	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		39	CLTC	LLRS	ON YOUR MARK SEND CUTOFF COMMAND FOR 3 SEC.	
121		40	LLRS	ALL	3-2-1-MARK	
121		41	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		42	CLTC	B1RF B2RF B4RF	VERIFY CUTOFF INDICATIONS ON CONSTANTLY	
		42-1		C1DP C2DP C4DP CRSS BRFS LLRS	*** NOTE CUTOFF RECEIVED.	
		42-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
121		43	CLTC	C1DP C2DP C4DP	VERIFY EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER,	
		43-1		CRSS	*** NOTE ALL EBW'S CHARGED.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-97:30 - 4 DAY 1 HRS 30' 0"						
121		44	CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
		44-1	CRSS		*** NOTE ALL EBW'S NOT CHARGED.	
121		45	CLTC	BRFS	SIGNAL GENERATOR SELECT - POS #2	
121		46	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES AS EXPECTED	
121		47	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		48	CLTC	LLRS	ON YOUR MARK SEND CUTOFF COMMAND FOR 3 SEC.	
121		49	LLRS	ALL	3-2-1-MARK	
121		50	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		51	CLTC	B1RF B2RF B4RF	VERIFY CUTOFF INDICATIONS ON CONSTANTLY	
		51-1	LLRS BRFS CRSS C1DP C2DP C4DP		*** NOTE CUTOFF RECEIVED.	
		51-2	C1CS		*** NOTE ENGINE CUTOFF NOT RECEIVED	
121		52	CLTC	C1DP C2DP C4DP	VERIFY EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER	
		52-1	CRSS		*** NOTE ALL EBW'S CHARGED.	
121		53	CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-97:30 4 DAY 1 HRS 30' 0"						
		53-1		CRSS	*** NOTE ALL EBW'S NOT CHARGED.	
121	54	CLTC	C1DP C2DP C4DP		RSCR'S 1 & 2 GROUND POWER - OFF, THEN AUTO AND VERIFY RSCR'S 1 AND 2 OFF.	
		54-1		CRSS	*** NOTE ALL RSCR'S OFF.	
121	55	CLTC	BRFS		SIGNAL GENERATOR SELECT - STANDBY	
121	56	CLTC	CLVN		DESTRUCT SYSTEM - OFF. DELIVER DESTRUCT SYSTEM KEY TO CPSS AND VERIFY.	
121	57	CLTC	C1DP C2DP C4DP		VERIFY SAFETY BUS - OFF	
111	58	CLTC	CVTS		LV DRSCS GSE TEST COMPLETE. DESTRUCT SYSTEM KEY DELIVERED TO CPSS AND LOCAL COMMAND CARRIER IS OFF.	TCPI
181	59	C1TC	LLRS		SET BOTH SIG GEN'S FOR 30 KHZ DEVIATION WITH TONE 4 AND RF POWER OUTPUT FOR -68 DBM AT LV RECEIVERS.	
121	60	CLTC	LLRS		PATCH RANGE AUDIO LINKS ON DRSCS/GSE TO SUPPORT CLOSED LOOP TEST PER V-38000, SECTION 12.	
121	61	CLTC	LLRS		REMOVE DRSCS FLIGHT CODE PLUG PER V-38000 SECT 12 DELIVER TO BRFS.	#
111	62	CLTC	CVTS		REQUEST RANGE TO SUPPORT DRSCR PREPS ON CHANNEL 137	TCPI
188	63	CLTC	ALL		ALL PERSONNEL WHO SUPPORTED LV DRSCS CHECKS RETURN TO ASSIGNED CHANNELS	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-97:00 4 DAY 1 HRS 0' 0"					CD ONLY	
188		1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM PROPELLANT LINE ROUTING, CONNECTION AND LEAK CHECK,	# TCPI ?
		1-1			*****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 ?
261		2	C2TC	BOSC	S-II WILL BE READY FOR A7-71 LH2 HEAT EXCHANGER GH2 & N2 CONTENT AND DEW POINT GHE SAMPLES (2 EACH) ON 180 FT LEVEL OF LUT IN 30 MINUTES.	TCPI ?
171		3	C2TC	B2TM	SETUP TCE GROUND STATION PER V-28181 (G125). REPORT WHEN COMPLETE.	
111		4	CLTC	CVTS	REQUEST RANGE CLEARANCE FOR S-II TM LINKS BF-1 & BF-2 (241.5 MHZ AND 234.0 MHZ).	TCPI ?
121		5	CLTC	BTMC ETMS	PREPARE STATION RECORDING EQUIPMENT TO SUPPORT MT01 AND "G" SWITCH TEST.	
T-96:45 4 DAY 45' 0"						
111		1	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 ?

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T-96:45 4 DAY 45' 0"					CD ONLY	
	121	2	CLTC	BRFS	VERIFY DRSCS FLIGHT CODE PLUG INSTALLED IN LCC DECODER PER V-38000 SECT 12 AND DRSCS GSE READY FOR RANGE TEST,	#
	111	3	CLTC	CVTS	CDDT ONLY	* TCPI
	121	4	CLTC	BRFS	CDDT ONLY	*
T-96:30 4 DAY 30' 0"						
	161	1	C4ES	C4TC	PU CAL CHECKS (XAPU) COMPLETE,	
	161	2	C4TC	C4PU	PU AND INVERTER POWER -- ON	
	161	3	C4TC	S4PC	VERIFY ENGINEERING WALK AROUND COMPLETE,	
					DRSCS TEST - RANGE (CLOSED ----- LOOP - FLIGHT CODE) -----	#
	111	4	CLTC	CVTS	REQUEST CPSS RELEASE DESTRICT SYSTEM KEY TO CLVN,	TCPI
	121	5	CLTC	CLV	OBTAIN DESTRICT SYSTEM KEY FROM CPSS	
	188	6	CLTC	ALL	ALL PERSONNEL SUPPORTING DRSCS TEST GO TO CHANNEL 121 ACTIVE AND MONITOR STAGE TC CHANNEL,	
	121	7	CLTC	G1DP G2DP G4DP	VERIFY ALL SWITCHES AUTO EXCEPT: PD RSCR ENABLE -- OFF SYSTEMS STATUS SWITCH -- OFF S & A SWITCH -- SAFE	

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T-96:30 - 4 DAY 30' 0"						
121		8	CLTC	C4DP	VERIFY PULSE SENSOR POWER - ON	
121		9	CLTC	CLVN	DESTRUCT SYSTEM TO ENABLE.	
		9-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS ON	
		9-2		C1DP C2DP C4DP	*** NOTE RSCR'S 1 & 2 PD BLOCKED.	
		9-3		CRSS	*** NOTE ALL RSCR'S PD BLOCKED ON	
121		10	CLTC	BTMC	TM TAPE RECORDING - ON	
121		11	CLTC	BRFS	SIGNAL GENERATOR-SELECT #1. VERIFY REMOTE MONITOR TO HYBRID.	
121		12	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 TRANSFER EXTERNAL THEN AUTO.	
121		13	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - ON.	
		13-1		C1DP C2DP C4DP	*** NOTE RSCR'S 1 AND 2 POWER ON.	
121		14	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK.	
		14-1		CRSS	*** NOTE ALL LIMITER VOLTAGES RECEIVED.	
121		15	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		16	CLTC	SRO	ON YOUR MARK SEND CUTOFF ON CLOSED LOOP LINKS WITH CODER #1 FOR 3 SECONDS.	
121		17	SRO	ALL	3-2-1-MARK	

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T-96:30 4 DAY 30' 0"						
121	18		CLTC	RRSC	RECORDERS - SLOW SPEED.	
121	19		CLTC	CRSS	VERIFY CUTOFF RECEIVED AND ALL EBW'S CHARGED.	
	19-1			BRFS LLRS C1DP C2DP C4DP	*** NOTE CUTOFF RECEIVED	
	19-2			C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
	19-3			C1DP C2DP C4DP	*** NOTE EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER	
121	20		CLTC	RRSC	RECORDERS - FAST SPEED.	
121	21		CLTC	SRO	ON YOUR MARK SEND PD ON CLOSED LOOP LINKS WITH CODER #1 FOR 3 SECONDS.	
121	22		SRO	ALL	3-2-1-MARK	
121	23		CLTC	RRSC	RECORDERS - SLOW SPEED.	
121	24		CLTC	CRSS	VERIFY PD RECEIVED AND EBW'S NOT FIRED	
	24-1			C1DP C2DP C4DP	*** NOTE PD RECEIVED AND EBW'S NOT FIRED	
	24-2			BRFS LLRS	*** NOTE PD RECEIVED	
121	25		CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
	25-1			CRSS	*** NOTE EBW'S NOT CHARGED.	
121	26		CLTC	SRO	CONFIGURE RANGE STATION FOR CLOSED LOOP LINKS WITH CODER #2 OPERATION.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-96:30 - 4 DAY 30' 0"						
121		27	CLTC	BRFS	SIGNAL GENERATOR SELECT #2	
121		28	CLTC	B1RF B2RF B4RF	VERIFY RSCR LIMITER VOLTAGES OK,	
		28-1		CRSS	*** NOTE RSCR LIMITER VOLTAGES RECEIVED.	
121		29	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		30	CLTC	SRO	ON YOUR MARK SEND CUTOFF COMMAND ON CLOSED LOOP LINKS WITH CODER #2, FOR 3 SECONDS.	
121		31	SRO	ALL	3-2-1-MARK	
121		32	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		33	CLTC	CRSS	VERIFY CUTOFF RECEIVED AND ALL EBW'S CHARGED.	
		33-1		C1DP C2DP C4DP BRFS LLRS	*** NOTE CUTOFF RECEIVED.	
		33-2		C1CS	*** NOTE ENGINE CUTOFF NOT RECEIVED	
		33-3		C1DP C2DP C4DP	*** NOTE EBW'S 1 & 2 CHARGED AND ON INTERNAL POWER.	
121		34	CLTC	RRSC	RECORDERS - FAST SPEED.	
121		35	CLTC	SRO	ON YOUR MARK SEND PD ON CLOSED LOOP LINKS WITH CODER #2, FOR 3 SECONDS.	
121		36	SRO	ALL	3-2-1-MARK	
121		37	CLTC	RRSC	RECORDERS - SLOW SPEED.	
121		38	CLTC	CRSS	VERIFY PD RECEIVED AND EBW'S NOT FIRED	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-96:30 - 4 DAY 30' 0"						
		38-1		C1DP C2DP C4DP	*** NOTE PD RECEIVED AND EBW'S NOT FIRED.	
		38-2		LLRS BRFS	*** NOTE PD RECEIVED.	
121		39	CLTC	C1DP C2DP C4DP	EBW'S 1 & 2 - EXTERNAL THEN AUTO AND VERIFY EBW'S NOT CHARGED.	
		39-1		CRSS	*** NOTE EBW'S NOT CHARGED.	
121		40	CLTC	RRSC	RECORDERS-FAST SPEED.	
121		41	CLTC	SRO	ON YOUR MARK SEND SAFE COMMAND FOR 3 SECONDS ON CLOSED LOOP LINKS.	
121		42	SRO	ALL	3, 2, 1, MARK	
121		43	CLTC	RRSC	RECORDERS-SLOW SPEED.	
121		44	CLTC	CRSS	VERIFY S-II AND S-IVB SAFE COMMAND RECEIVED.	
		44-1		BRFS	*** NOTE S-II AND S-IVB SAFE COMMAND RECEIVED.	
		44-2		C2DP C4DP	*** NOTE RSCR'S 1 & 2 SAFE COMMAND RECEIVED	
		44-3		C1DP C2DP C4DP	*** NOTE RSCR'S 1 AND 2 REMAIN ON.	
		44-4		CRSS	*** NOTE ALL RSCR'S REMAIN ON.	
121		45	CLTC	C1DP C2DP C4DP	RSCR'S 1 & 2 GROUND POWER - OFF AND VERIFY.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-96:30 - 4 DAY 30' 0"						
		45-1	CRSS		*** NOTE ALL RSCR'S OFF.	
121		46	CLTC	CLVN	DESTRUCT SYSTEM - OFF. DELIVER DESTRUCT SYSTEM KEY TO CPSS. REPORT WHEN COMPLETE.	
		46-1		C1DP C2DP C4DP	*** NOTE SAFETY BUS OFF.	
121		47	CLTC	C1DP C2DP C4DP	SYSTEMS STATUS SWITCH - SAFE.	
121		48	CLTC	BRFS	SIGNAL GENERATOR SELECT - STANDBY.	
121		49	CLTC	BTMC	TM TAPE RECORDING - OFF AND RELOAD	
		49-1		BTMC	*** NOTE DELIVER TAPE TO SECURITY OFFICER (COUNTDOWN ONLY)	
121		50	CLTC	RRSC	RECORDERS - OFF	
121		51	CLTC	BRFS	LUT & LCC/GSE POWER - OFF	
121		52	CLTC	BRFS	SECURE DRSCS FLIGHT CODE PLUG	#
121		53	CLTC	C4DP	PULSE SENSOR POWER OFF	
188		54	CLTC	ALL	ALL PERSONNEL WHO SUPPORTED DRSCS TEST RETURN TO ASSIGNED CHANNELS	
111		55	CLTC	CVTS	LV DRSCS TEST COMPLETED. DESTRUCT SYSTEM KEY RETURNED TO CPSS. LOCAL COMMAND CARRIER IS OFF	TCPI +
T-96:05 - 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

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V-20000, PART 1

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
REVISION 021 CD ONLY 1 2 3 4 5 6 7 8 9 0						
T-95:35 3 DAY 23 HRS 35' 0"						
111		1	CLTC	CVTS	ADVISE SCO PERSONNEL THAT Q-BALL POWER IS GOING OFF IN APPROXIMATELY FIVE MINUTES.	TCPI
T-95:30 3 DAY 23 HRS 30' 0"						
		1	CLTC	CLTC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF PARTS 1 & 4 OF THIS TCP WILL BE RUN CONSECUTIVELY.	
121		1-1	CLTC	CLTC	REQUEST F-1 ENGINE HIGH VOLTAGE IGNITORS AND S-IC RETROROCKET PYROGEN INITIATORS BE DELIVERED TO PAD LEVEL, EAST ELEVATOR.	
111		1-2	CLTC	CVTS	REQUEST CTSC DELIVER F-1 ENGINE HIGH VOLTAGE IGNITORS AND S-IC RETROROCKET PYROGEN INITIATORS TO PAD LEVEL, EAST LOW RISE ELEVATOR.	TCPI
121		2	CLTC	CUIP	Q-BALL POWER - OFF Q-BALL HEATER POWER - OFF	# TCPI
121		3	CLTC	CUIP	CDDT ONLY	* TCPI
121		4	CLTC	CLTC	REQUEST CLEARANCE TO PROCEED WITH S-IC EBW FUNCTIONAL TEST.	
		5	CLTC	CLTC	NOTE ----- PRIOR TO OPERATION OF THESE SEQUENCES, VERIFY S-IC PULSE SENSORS ARE CONNECTED & LIVE DETONATORS ARE NOT INSTALLED.	

LV CDDT & CD, VOL 1

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V-20060, PART 1

VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:30 3 DAY 23 HRS 30' 0"						
181		6	C1TC	C1NE	PROCEED WITH EBW FUNCTIONAL ON CHANNEL 185.	
185		7	C1NE	L1RS	VERIFY/INSTALL JUMPER PLUG J2 IN X02-121A2 (OAT PLUGS IN/OUT TEST).	
185		8	C1NE	C1NP	SET PLUGS IN OAT SWITCH TO ON. VERIFY INDICATION ON.	
185		9	C1NE	C1NP	SET SWITCH SELECTOR INHIBIT SWITCH TO AUTO.	
		9-1		C1EV	*** NOTE SWITCH SELECTOR INHIBIT - OFF.	
185		10	C1NE	C1NP	SET EMERGENCY POWER TRANSFER EXTERNAL SWITCH TO EXTERNAL.	
181		11	C1NE	C1TC	REQUEST CLVN TO SWITCH VEHICLE LIFTOFF ENABLE TO ON.	
121		12	C1TC	CLTC	REQUEST VEHICLE LIFTOFF ENABLE TO ON	
111		13	CLTC	CVTS	REQUEST CPSS RELEASE LIFTOFF ENABLE KEY TO CLVN.	TCPI
121		14	CLTC	CLVN	OBTAIN LIFTOFF ENABLE KEY FROM CPSS.	
121		15	CLTC	C2TC C4TC CUTC	VEH LIFTOFF ENABLE WILL BE TURNED ON. VERIFY THIS SWITCH ACTION ACCEPTABLE AT THIS TIME. (S-II & S-IVB WILL NOT BE AFFECTED).	
121		16	CLTC	CLVN	SIMULATE LIFTOFF ENABLE ON	
181		17	C1TC	C1NE	VEHICLE LIFTOFF ENABLE IS ON	
185		18	C1NE	C1NP	VERIFY VEHICLE LIFTOFF ENABLE ON.	
185		19	C1NE	C1NK	REQUEST WASV AND PERFORM SEPARATION AND RETROROCKET EBW TEST AND SWITCH SELECTOR REGISTER TEST.	

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V-20000, PART 1

VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:30 - 3 DAY 23 HRS 30' 0"		20	C1NE		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF WASV CANNOT BE REQUESTED.	
185		20-1	C1NE	C1NP	SET S-IC LIFTOFF ENABLE SWITCH TO ON, VERIFY INDICATION ON.	
		20-2		C1NP	*** NOTE LIFTOFF INDICATION REMAINS OFF	
185		20-3	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 10 (ARM SEP #1 AND RR #1 EBW FU).	
185		20-4	C1NE	C1DP	VERIFY SEP F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC	
185		20-5	C1NE	C1DP	VERIFY RR F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	
		20-6		C1NP	*** NOTE STAGE LOGIC ZERO - OFF.	
185		20-7	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 15, (S-IC/S-II SEP #1).	
185		20-8	C1NE	C1DP	VERIFY RR#1 & SEP #1 EBW FIRED INDICATIONS ON.	
185		20-9	C1NE	C1DP	VERIFY RR #2 & SEP #2 EBW FIRED INDICATIONS REMAIN OFF.	
185		20-10	C1NE	C1DP	VERIFY RR #1 AND SEP #1 METERS FLUCTUATE TOWARD ZERO VOLTS.	
185		20-11	C1NE	C1DP	VERIFY RR #2 SEP #2 METERS REMAIN CHARGED.	
185		20-12	C1NE	C1NP	SET STAGE LOGIC SWITCH TO RESET MOMENTARILY. VERIFY STAGE LOGIC ZERO INDICATION ON.	
185		20-13	C1NE	C1DP	VERIFY RR #1 & #2 AND SEP #1 & #2 METERS INDICATE ZERO VOLTS	

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V-20080, PART 1

VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:30 - 3 DAY 23 HRS 30' 0"						
185		20-14	C1NE	C1DP	SET PULSE SENSOR SWITCH TO RESET MOMENTARILY. VERIFY RR AND SEP #1 EBW FIRED INDICATION OFF.	
185		20-15	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 20, (ARM SEP #2 AND RR #2 EBW FU).	
185		20-16	C1NE	C1DP	VERIFY RR F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	
185		20-17	C1NE	C1DP	VERIFY SEP F.U. #1 & #2 METERS INDICATE 2300 +/- 100 VDC.	
185		20-18	C1NE	C1NK	ISSUE S-IC SWITCH SELECTOR CHANNEL 19 (S-IC/S-II SEPARATION #2).	
185		20-19	C1NE	C1DP	VERIFY RR #2 & SEP #2 EBW FIRED INDICATIONS ON.	
185		20-20	C1NE	C1DP	VERIFY RR #1 & SEP #1 EBW FIRED INDICATIONS REMAIN OFF.	
185		20-21	C1NE	C1DP	VERIFY RR #2 AND SEP #2 METERS FLUCTUATE TOWARD ZERO VOLTS.	
185		20-22	C1NE	C1DP	VERIFY RR #1 AND SEP #1 METER REMAIN CHARGED.	
185		20-23	C1NE	C1NP	SET STAGE LOGIC SWITCH TO RESET MOMENTARILY. VERIFY STAGE LOGIC ZERO INDICATION ON.	
185		20-24	C1NE	C1DP	VERIFY RR #1 & #2 AND SEP #1 & #2 METERS INDICATE ZERO VOLTS	
185		20-25	C1NE	C1DP	SET PULSE SENSOR SWITCH TO RESET MOMENTARILY. VERIFY RR #2 AND SEP #2 EBW FIRED INDICATIONS OFF.	
185		21	C1NE	C1NP	SET PLUGS IN OAT - OFF THEN AUTO. VERIFY INDICATION OFF.	
185		22	C1NE	C1NP	SET SWITCH SELECTOR INHIBIT SWITCH TO INHIBIT.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:30 - 3 DAY 23 HRS 30' 0"						
		22-1	C1EV		*** NOTE SWITCH SELECTOR INHIBIT - ON,	
185		23	C1NE	C1NP	SET S-IC LIFTOFF ENABLE SWITCH TO - OFF, VERIFY INDICATION OFF,	
185		24	C1NE	C1NP	EMERGENCY POWER TRANSFER TO OFF,	
181		25	C1NE	C1TC	REQUEST CLVN TO SWITCH VEHICLE LIFTOFF ENABLE TO - OFF,	
121		26	C1TC	CLTC	REQUEST VEHICLE LIFTOFF ENABLE TO OFF	
121		27	CLTC	CLVN	LIFTOFF ENABLE OFF, DELIVER LIFTOFF ENABLE KEY TO CPSS, REPORT WHEN COMPLETE,	
121		28	CLTC	C1TC C2TC C4TC CUTC	VEHICLE LIFTOFF ENABLE IS OFF	
111		29	CLTC	CVTS	LIFTOFF ENABLE KEY RETURNED TO CPSS	TCPI
181		30	C1TC	C1NE	VEHICLE LIFTOFF ENABLE IS OFF	
185		31	C1NE	C1NP	VERIFY VEHICLE LIFTOFF INDICATION OFF,	
185		32	C1NE	C1NK	REQUEST WASV AND RUN SWITCH SELECTOR REGISTER TEST IF SEPARATION AND RETROCKET EBW TEST WAS NOT RUN,	
181		33	C1NE	C1TC	EBW FUNCTIONAL TEST COMPLETE.	
121		34	C1TC	CLTC	S-IC EBW FUNCTIONAL TEST COMPLETE.	
171		35	C1TC	C2TC	S-IC READY FOR S-IC/S-II SEPARATION PULSE SENSOR REMOVAL,	
171		36	C2TC	U2EO	REMOVE S-IC/S-II SEPARATION PULSE SENSORS PER V-29038 (S009), REPORT WHEN COMPLETE,	
181		37	C1TC	C1NE	HAVE U1FN MONITOR S-IC/S-II SEPARATION PULSE SENSOR REMOVAL PER V-21012.	

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V-20000, PART 1

VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:20 - 3 DAY 23 HRS 20' 0"						
	121	1	CLTC	C2TC	PREPARE S-II FOR MT01	
	171	2	C2TC	C2IP	FREQ MEAS CAL TO ON	
	171	3	C2TC	C2IP	BF1 TRANSMITTER ON AND MARK ON CH 171	
		4			DELETED	
T-95:15 - 3 DAY 23 HRS 15' 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-II BURN TEST & S-IVB COAST TEST - AUTO. (60X-607A6 - CCIS PANEL)	
	151	3	CUTC	BGCC	REMOVE ATOLL TAPE AND LOAD MT01 TAPE ON IODC 2-9. LOAD SCRATCH TAPE ON IODC 1-3.	
	171	4	C2EC	C2TC	"G" SWITCH CHECKOUT IS COMPLETE.	
	121	5	C2TC	CLTC	"G" SWITCH CHECKOUT COMPLETE.	
	121	6	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MT01 (LV MEAS SCAN)	
	121	7	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP - ON	
	121	8	CLTC	CLIK	ISSUE S-IVB ALL RACS RUN.	
	121	9	CLTC	C2NP	RACS POWER - ON.	
	121	10	CLTC	CLIK	COMMAND RACS S-II ALL - ALL RUN.	
	188	11	CLTC	ALL	STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT01	

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V-20000, PART 1

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-95:15 3 DAY 23 HRS 15' 0"					CD ONLY	
	121	12	CLTC	CLIK	REQUEST & EXECUTE MT01 (LV MEASUREMENT SCAN VEHICLE OPTION)	
		12-1			NOTE ----- SWITCH ACTION IN NEXT STEP TO BE ACCOMPLISHED JUST PRIOR TO S-IC PORTION OF MT01 SCAN.	
	121	12-2	CLIK	C1IP	HARDWIRE SWITCH TO TELEMETER.	
T-95:00 3 DAY 23 HRS 0' 0"						
	118	1	CSAC	CSA1 CSA2 CSA4 CSA5 CSA6 CSA7 CSA8 CSA9 CSAD	CDDT ONLY	*
	181	2	CSAC	C1TC	CDDT ONLY	* ↑
T-94:45 3 DAY 22 HRS 45' 0"						
	181	1	C1TC	CTS1	CDDT ONLY	*
	121	2	C1TC	CLTC	CDDT ONLY	* ↑

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-94:30 - 3 DAY 22 HRS 30' 0"						
	121	1	CLIK	CLTC	LV MT01 COMPLETE,	
	121	2	CLTC	C2NP	RACS POWER OFF.	
	121	3	CLTC	C2TC	TERMINATE MT01 SUPPORT.	
	171	4	C2TC	C2IP	ALL TM TRANSMITTERS OFF IN SEQUENCE LISTED AND MARK ON CH 171.	
	171	5	C2IP		F1 RF OFF, MARK F2 RF OFF, MARK	
	171	6	C2TC	C2IP	RF COUPLER TO AUTO	
	171	7	C2TC	C2IP	FREQ MEAS CAL TO AUTO	
		8			DELETED	
	121	9	C2TC	CLTC	S-II MT01 SUPPORT TERMINATION IS COMPLETE.	
	121	10	CLTC	BTMC ETMS	TM TAPE RECORDING OFF	
	111	11	CLTC	CVTS	RANGE CLEARANCE FOR S-II TM NO LONGER REQUIRED.	TCPI ↑
	121	12	CLTC	C1IP	HARDWIRE SWITCH TO GROUND AND 400 HZ CAL POWER TO AUTO	
	151	13	CUTC	CUIP	MEASUREMENT TRANSFER - OFF, S-II BURN TEST AND S-IVB COAST TEST - OFF (60X-607A6 - CCIS PANEL)	
	151	14	CUTC	BGCC	REMOVE MT01 TAPE AND RELOAD ATOLL TAPE ON IODC 2-7	
	121	15	C1TC	CLTC	REQUEST CLIK SWITCH TO CHANNEL 116 TO SUPPORT L1IC ON RACS LOADING SYSTEM CHECKS.	
	121	16	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP-OFF THEN AUTO.	
	121	17	CLTC	ALL	THE FOLLOWING STATIONS SWITCH TO CH 116 TO SUPPORT RACS LOADING SYSTEM CHECKS: CLIK C1IP C1RU C10U V1ME R1SC	

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V-00000, PART 1

VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
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T-94:30
- 3 DAY
22 HRS
30' 0"

181	18	C1TC	LPLX	VERIFY PTCS IS READY TO SUPPORT S-II PTCS INTERFACE CHECKS.	
171	19	U2PM	C2TC	S-II PU CALIBRATION COMPLETE.	
121	20	C2TC	CLTC	S-II PU SYSTEM CALIBRATION COMPLETE.	
181	21	C2TC	C1TC	REMOVE PTCS POWER.	
171	22	C2TC	C2SP	VERIFY READY TO REMOVE STAGE POWER TO RECONFIGURE PU SYSTEM.	
171	23	C2TC	C2NP	REMOVE STAGE POWER PER V-21103 (B011)	

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NOTE

STAGE AND PTCS POWER MUST
BE REMOVED PRIOR TO
CONFIGURING PU SYSTEM FOR
PTCS INTERFACE CHECKS.
STAGE POWER APPLICATION AND
REMOVAL MUST BE COORDINATED
BETWEEN LPLX, C2NP AND U2PM.

171	25	C2TC	U2PM	WHEN STAGE AND PTCS POWER HAVE BEEN REMOVED, CONFIGURE PU SYSTEM FOR PTCS INTERFACE CHECKS PER V-25151 (H013), REPORT WHEN COMPLETE.	
171	26	U2PM	C2TC	PU SYSTEM CONFIGURED FOR PU FACILITY INTERFACE CHECKS.	
171	27	C2TC	R2SC	VERIFY READY FOR STAGE POWER.	
171	28	C2TC	C2NP	APPLY S-II STAGE POWER PER V-21103 (B011) INCLUDING PM POWER.	
181	29	C2TC	C1TC	REAPPLY PTCS POWER & VERIFY PTCS READY TO SUPPORT S-II PU FACILITY INTERFACE CHECKS.	

APOLLO/SATURN LAUNCH OPERATIONS

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ CD ONLY ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶						
T-94:30 3 DAY 22 HRS 30' 0"						
	171	30	C2TC	U2PM	START S-II PTCS INTERFACE CHECKS PER V-25151 (H013).	
	171	31	C2TC	C2SP	STAGE POWER HAS BEEN REAPPLIED	
	161	32	C4TC	C4PU	PU OVEN AND INVERTER POWER OFF THEN AUTO	
	161	33	C4TC	R4PU	PU STRIPCHARTS OFF	
	171	34	U2EO	C2TC	S-IC/S-II SEPARATION PULSE SENSOR REMOVAL IS COMPLETE.	
T-94:00 3 DAY 22 HRS 0' 0"						
	181	1	CTS1	C1TC	CDDT ONLY	*
	118	2	CTS1	CHCU	CDDT ONLY	*
	181	3	C1TC	CPDC	CDDT ONLY	*
		3-1			CDDT ONLY	*
		4			DELETED	B-340-34
		5			DELETED	B-349-34

LV CDDT & CD, VOL I

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V-20000, PART 1

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-94:00 - 3 DAY 22 HRS 0' 0"		5-1			DELETED	B-349-34
		6			DELETED	B-349-34
		7			DELETED	B-349-34
T-93:30 - 3 DAY 21 HRS 30' 0"		1		ALL	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF PARTS 1 & 4 OF THIS TCP WILL BE RUN CONSECUTIVELY.	
	181	1-1	C1TC	C1PE	START LEG STAT CHECKS	
	121	1-2	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.	
		1-3			*****WARNING***** * * THE FOLLOWING SEQUENCE * * IS HAZARDOUS. * * *****	

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VEHICLE

AS-510

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-93:30 3 DAY 21 HRS 30' 0"					CD ONLY	
181		1-4	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,	
121		2	CVTS	CLTC	CDDT ONLY	* TCPI
121		3	CLTC	CUIP	CDDT ONLY	* TCPI
171		4	U2PM	C2TC	S-II PTCS INTERFACE CHECKS ARE COMPLETE,	
171		5	C2TC	C2NP	REMOVE PM POWER	
171		6	C2TC	U2PM	RECONNECT PU SYSTEM TO FLIGHT CONFIGURATION PER V-25151 (H013).	
171		7	U2PM	C2TC	THE PU SYSTEM IS CONFIGURED FOR FLIGHT	
171		8	C2TC	C2NP	APPLY PM POWER	
181		9	V1ME	C1TC	RACS LOADING SYSTEM CHECKS ARE COMPLETE	
181		10	C1TC	C1IP	VERIFY 28 VOLT RACS AND LOX AND FUEL RACS AUTO	
T-93:20 3 DAY 21 HRS 20' 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	C2PU	START PROPELLANT SYSTEM FUNCTIONAL PER V-30029 (M020), TASK 10 (TEST PROGRAM GALS & QAPU WILL BE EXECUTED,) REPORT WHEN COMPLETE.	

T-93:00
3 DAY
21 HRS
0' 0"

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING - 3 DAY 21 HRS 0' 0"					--- 4 HRS AFTER REACHING T-93 HRS ---<br/ -----	
		1			NOTE -----	
					THE FOLLOWING SUBSEQUENCES WILL OCCUR DURING THE LH2 FACILITY SYSTEM PURGES.	
	181	1-1	CCLH	C1TC	S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES IS NO LONGER REQUIRED	
	121	1-2	C1TC	CLTC	S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES IS NO LONGER REQUIRED	
	121	1-3	CLTC	C2TC C4TC	S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES IS COMPLETE.	
	161	1-4	C4TC	C4PS	START PROPULSION SECURING PER V-35015	
	171	1-5	C2TC	C2GP	SECURE GROUND PNEUMATICS PER V-30029 (M020), TASK 96, REPORT WHEN COMPLETE.	
HOLDING - 3 DAY 21 HRS 0' 0"					--- 8 HRS AFTER REACHING T-93 HRS ---<br/ -----	
		1			NOTE -----	
					THE FOLLOWING SUBSEQUENCE WILL OCCUR UPON COMPLETION OF THE LH2 FACILITY SYSTEM PURGES.	
	181	1-1	CCLH	C1TC	LH2 FACILITY SYSTEM PURGE IS COMPLETE	
					END OF PART 1 -----	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
PART 2 ----- OPTIONAL LV POWER DOWN FOR T-93 HR HOLD ----- (NOT TO BE PERFORMED IF PART 4 WILL IMMEDIATELY FOLLOW PART 1) ----- --- AT START OF HOLD --- -----						
HOLDING -93 HRS 0' 0"		121	1	CLTC C1TC C4TC CUTC	REMOVE STAGE POWER, REPORT WHEN COMPLETE.	
		181	2	C1TC C1NE	REMOVE S-IC STAGE POWER PER V-21097	
		181	3	C1TC RRSC	DRSCS RECORDERS - OFF	
		161	4	C4TC C4ES	REMOVE S-IVB STAGE POWER PER V-30539, APPENDIX C	
HOLDING -93 HRS 0' 0"		--- 15 MINUTES AFTER START OF HOLD --- -----				
		121	1	C1TC CLTC	S-IC STAGE POWER IS OFF	
		121	2	C4TC CLTC CUTC	S-IVB STAGE POWER IS OFF. READY FOR REMOVAL OF IU STAGE AND GROUND POWER.	
		151	3	CUTC CUNP	REMOVE IU STAGE AND GROUND POWER PER V-21223, REPORT WHEN COMPLETE.	
		121	4	CUTC CLTC	IU STAGE AND GROUND POWER HAVE BEEN REMOVED	
		181	5	C1TC VIMS	SECURE VEHICLE MEASURING GSE PER V-27098	
		181	6	C1TC 81TM	SECURE TM GSE PER V-28186	
		121	7	CLTC 8TMC	SECURE TCE PER V-28009	

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V-20000, PART 2

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -93 HRS 0' 0"					--- 4 HRS AFTER START OF HOLD ---<br/ -----	
121		1	CLTC	C2TC C4TC	(S-II & S-IVB SUPPORT OF FACILITY SYSTEM PURGES IS COMPLETE,) REMOVE STAGE AND/OR GROUND POWER. REPORT WHEN COMPLETE.	
171		2	C2TC	C2NP	REMOVE S-II STAGE AND ESE POWER PER V-21103 (B011)	
171		3	C2TC	R2SC V2MS B2TM	SECURE STATION SUPPORT	
161		4	C4TC	C4ES	REMOVE S-IVB GROUND POWER PER V-30539, APPENDIX C	
121		5	C4TC	CLTC	S-IVB GROUND POWER IS OFF	
121		6	C2TC	CLTC	S-II STAGE & ESE POWER IS OFF	
111		7	CLTC	CVTS	LV POWER IS OFF	TCPI
121		8	CLTC	CUTC	SECURE LV ELECTRICAL SUPPORT EQUIPMENT PER V-31062, APPENDIX A. REPORT WHEN COMPLETE.	
					END OF PART 2 -----	

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V-20000, PART 3

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -93 HRS (150' 0")					PART 3 ----- LV POWER UP FOR RESUMPTION OF COUNT AT ----- T-93 HRS -----	

					2130 HRS PRIOR TO RESUMING COUNT	

	121	1	CLTC	CLTC	REQUEST F-1 ENGINE HIGH VOLTAGE IGNITORS 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 S-IC RETROROCKET PYROGEN INITIATORS TO PAD LEVEL, EAST LOW RISE ELEVATOR.	TCPI *
HOLDING -93 HRS (90' 0")					---	
					1130 HRS PRIOR TO RESUMING COUNT	
	121	1	CLTC	CUTC	START LV ELECTRICAL SUPPORT PREPS PER V-31062, APPENDIX B.	
HOLDING -93 HRS (35' 0")					---	
					35 MIN PRIOR TO RESUMING COUNT	
	121	1	CLTC	BTMC	START TCE PREPS PER V-28009. REPORT WHEN COMPLETE.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -93 HRS (30' 0")						
					--- 30 MIN PRIOR TO RESUMING COUNT --- -----	
181		1	C1TC	C1PE	START LEG STAT CHECKS	
121		2	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.	
		3			*****WARNING***** * * THE FOLLOWING SEQUENCE * * IS HAZARDOUS. * * *****	
181		4	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.	
181		5	C1TC	B1TM	START S-IC TM GSE READINESS CHECK PER V-28186.	
181		6	C1TC	V1MS	START S-IC VEHICLE MEASURING STATION PREPS PER V-27098.	

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V-20000, PART 3

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -93 HRS (15' 0")					--- 15 MIN PRIOR TO RESUMING COUNT ---<br/ -----	
121		1	CUTC	CLTC	SUPPORT PREPS ARE COMPLETE.	
151		2	CUTC	BGCC	INITIALIZE DISCRETES PER V-22006 (PROGRAMS NT99 & NT98). REPORT WHEN SWITCH SCAN IS BEING DISPLAYED.	
151		3	CUTC	CLVN	ML COMPUTER INHIBIT - AUTO	
151		4	CUTC	CLVN	COMPUTER TEST SWITCH ON AND VERIFY DISCRETE CYCLING	
151		5	CUTC	CCPM	START REDUNDANT POWER SUPPLY PER V-21222, REPORT WHEN COMPLETE.	
HOLDING 93 HRS (10' 0")					--- 10 MIN PRIOR TO RESUMING COUNT ---<br/ -----	
151		1	CUTC	BGCC	ENTER \$GO AND REPORT WHEN COMPUTER SUPPORTING	
121		2	CUTC	CLTC	GROUND COMPUTER IS SUPPORTING	
188		3	CLTC	ALL	GROUND COMPUTER IS SUPPORTING	
		3-1			*** 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	

APOLLO/SATURN LAUNCH OPERATIONS

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -93 HRS (5' 0")					--- 5 MIN PRIOR TO RESUMING COUNT --- -----	
181		1	C1TC	B1TM	VERIFY TM GSE PREPS COMPLETE.	
181		2	C1TC	C1NK	REQUEST & EXECUTE WAPO (S-IC POWER UP). REPORT WHEN COMPLETE.	†
HOLDING -93 HRS 0' 0"					--- JUST PRIOR TO RESUMING COUNT --- -----	
121		1	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY TO RESUME CD OPERATIONS AT -3 DAYS 21 HRS 0' 0"	†
111		2	CLTC	CVTS	LV IS READY FOR COUNTDOWN START AT -3 DAYS 21 HRS 0' 0"	TCPI
					END OF PART 3 -----	

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V-00000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
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CD ONLY

PART 4

 LV ORDNANCE INSTALLATION & PRECOUNT

 OPERATIONS

T-92:59
 - 3 DAY
 20 HRS
 59' 0"

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
121		1	CVTS	CLTC	S-IC ORDNANCE DELIVERY COMPLETE	TCPI *
111		2	CLTC	CVTS	CLEAR ML ZERO LEVEL FOR S-IC ORDNANCE OPERATIONS,	TCPI *
188		3	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREAS FOR SPACE VEHICLE ORDNANCE OPERATIONS	TCPI *
		3-1			*****WARNING***** * * THE CONTROL AREA FOR LV * * ORDNANCE OPERATIONS * * CONSISTS OF ML ZERO * * LEVEL, A CONTROLLED * * WALKWAY WILL BE KEPT * * OPEN TO THE ELEVATORS * * *****	# TCPI *
		3-2			CDDT ONLY	* TCPI *

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-92:45 - 3 DAY 20 HRS 45' 0"						
	181	8	C1TC	RRSC	RECORDERS - ON - SLOW SPEED.	
T-92:30 - 3 DAY 20 HRS 30' 0"						
	121	1	CLTC	CUTC	PREPARE IU STAGE FOR RF SILENCE & CONTROLLED SWITCHING PER V-31062, APPENDIX C.	
		2	CLTC C1TC C2TC C4TC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES AT THIS TIME ONLY IF PARTS 1 & 4 OF THIS TCP HAVE BEEN RUN CONSECUTIVELY,	
	161	2-1	C4TC	C4SM	CONFIGURE ORDNANCE CONTROL PANELS PER V-30539, SECT F. REPORT WHEN COMPLETE.	
	171	2-2	C2TC	C2DP	CONFIGURE ORDNANCE AND PD PANEL PER V-30029 (M020) TASK 5. REPORT WHEN COMPLETE.	
	181	2-3	C1TC	C1NE	VERIFY CORRECT PANEL CONFIGURATION FOR ORDNANCE INSTALLATION PER V-21012 & V-21009	
	121	2-4	CLTC	C1TC C2TC C4TC	VERIFY ORDNANCE AND PD PANELS ARE IN CORRECT CONFIGURATION AND READY TO START ORDNANCE INSTALLATION.	
	161	3	C4TC	C4NP	INHIBIT SWITCH SELECTOR AND VERIFY.	
	161	4	C4TC	C4ES	VERIFY READY FOR CONTROLLED SWITCHING,	
	121	5	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR RF SILENCE & CONTROLLED SWITCHING PER TI-2-13 & INHIBIT SWITCH SELECTORS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-92:30 - 3 DAY 20 HRS 30' 0"						
	111	6	CLTC	CVTS	REQUEST RF SILENCE. LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING IS NOW IN EFFECT	TCPI
		7			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	8	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
	121	9	C1TC	CLTC	REQUEST CPSS TO RELEASE TCS KEY TO C1SP	
	111	10	CLTC	CVTS	REQUEST CPSS TO RELEASE TCS KEY TO C1SP	TCPI
	121	11	CLTC	C1TC	START ELECTRICAL CONNECTION OF S-1C ENGINE HIGH VOLTAGE IGNITORS AND RR PYROGEN INITIATORS,	
	181	12	C1TC	C1NE	START ELECTRICAL CONNECTION OF SKIRT IGNITORS PER V-21014.	
T-92:00 - 3 DAY 20 HRS 0' 0"						
	181	1	C1TC	C1PE	VERIFY MECHANICAL INSTALLATION OF SKIRT IGNITORS COMPLETE.	

APOLLO/SATURN LAUNCH OPERATIONS

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-91:40 - 3 DAY 19 HRS 40' 0"		1	C2TC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	171	1-1	C2TC	R2SC	SETUP LCC MEASURING STATION PER V-27154 (G031), REPORT WHEN COMPLETE.	
	171	1-2	C2TC	V2MS	SETUP VAB MEASURING STATION PER V-27183 (G032), REPORT WHEN COMPLETE.	
T-91:30 - 3 DAY 19 HRS 30' 0"		181	1	C1TC	C1PE START FAIRING ACCESS PANEL INSTALLATION PER V-29003.	
T-90:30 - 3 DAY 18 HRS 30' 0"		181	1	C1TC	CPDC CDDT ONLY	*
	121	2	C1TC	CLTC	CDDT ONLY	*
	111	3	CLTC	CVTS	CDDT ONLY	* TCPI

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V-20060, PART 4

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-90:10 - 3 DAY 18 HRS 10' 0"		1	C2TC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCE ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	171	1-1	C2TC	B2TM	SETUP TCE GROUND STATION PER V-28181 (G125) AND V-28135 (G050). REPORT WHEN COMPLETE.	
T-90:05 - 3 DAY 18 HRS 5' 0"		1	C4TC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCE ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	161	1-1	C4TC	C4ES	START S-IVB PREPOWER PREPS PER V-30539, APPENDIX A.	
T-90:00 - 3 DAY 18 HRS 0' 0"		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	

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V-40000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:45 - 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 PD, HYPERGOLS, HDA & SEPARATION ORDNANCE DELIVERY.	TCPI *
161		4	C4TC	C4SM	START ORDNANCE CREW RESISTANCE CHECKS PER V-30539, REPORT WHEN COMPLETE.	
		5		CLTC CUTC BGCC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
111		5-1	CLTC	CVTS	REQUEST LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE BE LIFTED FOR LV POWER UP OPERATIONS.	TCPI
188		5-2	CVTS	PA	CONTROLLED SWITCHING INCLUDING CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS LIFTED FOR LV POWER UP OPERATIONS, RF SILENCE IS STILL IN EFFECT.	TCPI *
121		5-3	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR LV SWITCH SCAN	
121		5-4	CLTC	C2TC C4TC CUTC	VERIFY STAGE SWITCH POWER IS OFF	

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V-20000, PART 4

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:45 - 3 DAY 17 HRS 45' 0"						
	121	5-5	CLTC	CLVN	COMPUTER TEST SWITCH OFF AND INHIBIT ML COMPUTER	
	121	5-6	CLTC	C2TC C4TC CUTC	APPLY SWITCH POWER AND VERIFY	
	121	5-7	CLTC	BGCC	REQUEST & EXECUTE NT98. REPORT WHEN SWITCH SCAN IS BEING DISPLAYED	
	121	5-8	BGCC	CLTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION	
	121	5-9	CLTC	C1TC C2TC C4TC CUTC	SWITCH SCAN IS BEING DISPLAYED FOR VERIFICATION. REPORT WHEN COMPLETE.	
T-89:35 - 3 DAY 17 HRS 35' 0"						
		1	CLTC CUTC BGCC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	121	1-1	CLTC	CLVN	ML INHIBIT TO AUTO, COMPUTER TEST SWITCH ON AND VERIFY DISCRETE CYCLING	
	121	1-2	CLTC	BGCC	ENTER SGO. REPORT WHEN COMPUTER IS SUPPORTING	
	121	1-3	BGCC	CLTC	GROUND COMPUTER IS SUPPORTING	
	188	1-4	CLTC	ALL	GROUND COMPUTER IS SUPPORTING	
	121	1-5	CLTC	CUTC	APPLY STAGE POWER. REPORT WHEN COMPLETE	

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V-20000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:35 - 3 DAY 17 HRS 35' 0"						
	151	1-6	CUTC	CUNP	APPLY IU STAGE POWER PER V-21223. REPORT WHEN COMPLETE.	
T-89:30 - 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		R2SC V2MS	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	171	3-1	R2SC	C2TC	LCC MEASURING STATION SETUP IS COMPLETE.	
	171	3-2	V2MS	C2TC	VAB MEASURING STATION SETUP IS COMPLETE.	
T-89:25 - 3 DAY 17 HRS 25' 0"						
		1		C2TC C4TC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	151	1-1	C2TC	CUTC	CLOSE S-II 400 HZ CIRCUIT BREAKER	

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V-20000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:25 3 DAY 17 HRS 25' 0"						
	171	1-2	C2TC	R2SC	VERIFY READY FOR S-II STAGE AND ESE POWER	
	151	1-3	C2TC	CUTC	LOAD S-II POWER UP SEQUENCE COMPARE TABLE	
	161	1-4	C4TC	C4ES C4SM	VERIFY S-IVB PREPOWER PREPS COMPLETED,	
T-09:20 3 DAY 17 HRS 20' 0"		1	CUTC C2TC C4TC		NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	121	1-1	CUTC	CLTC	10 STAGE POWER ON AND COOLING IS SUPPORTING	
	121	1-2	CLTC	C2TC	CLEAR TO RUN QAPD	
	171	1-3	C2TC	C2NP	REQUEST & EXECUTE QAPD (S-II STAGE POWER UP) OR APPLY STAGE AND ESE POWER PER V-21103 (B011).	
	111	2	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.	TCPI
T-89:15 3 DAY 17 HRS 15' 0"						
	181	1	C1TC	C1PE	VERIFY MECHANICAL INSTALLATION OF GG IGNITORS COMPLETE.	

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V-30000, PART 4

VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-09:15 - 3 DAY 17 HRS 15' 0"						
	181	2	C1TC	C1NE	VERIFY ELECTRICAL CONNECTION OF GG IGNITORS COMPLETE.	
	181	3	C1TC	C1PE	VERIFY IN WORK OR START THERMAL INSULATION CLOSEOUT OF GG IGNITOR ACCESS DOORS.	
T-09:13 - 3 DAY 17 HRS 13' 0"						
		1		CLTC C2TC C4TC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
	121	1-1	C2TC	CLTC	S-II ESE & STAGE POWER HAS BEEN APPLIED. QAPO IS COMPLETE.	
	121	1-2	CLTC	C4TC	CLEAR TO RUN XAPS	
	161	1-3	C4TC	ALL	S-IVB POWER WILL BE APPLIED PER V-30539, APP B.	
	161	1-4	C4TC	C4NK	REQUEST & EXECUTE XAPS (S-IVB POWER UP), REPORT WHEN COMPLETE.	
	161	1-5	C4TC	C4SM	CONFIGURE ORDNANCE CONTROL PANELS PER V-30539, SECT F, REPORT WHEN COMPLETE.	
	171	1-6	C2TC	C2DP	CONFIGURE ORDNANCE AND PD PANEL PER V-30029 (M020) TASK 5, REPORT WHEN COMPLETE.	
	181	1-7	C1TC	C1NE	VERIFY CORRECT PANEL CONFIGURATION FOR ORDNANCE INSTALLATION PER V-21012 & V-21009.	

LV CDDT & CD, VOL I

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:03 - 3 DAY 17 HRS 3' 0"		1		C4TC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
121		1-1	C4TC	CLTC	XAPS & XASS ARE COMPLETE	
121		1-2	CLTC	C1TC C2TC C4TC	VERIFY ORDNANCE AND PD PANELS ARE IN CORRECT CONFIGURATION AND READY TO START ORDNANCE OPERATIONS.	
T-89:00 - 3 DAY 17 HRS 0' 0"		1		CLTC C4TC	NOTE ----- PERFORM THE FOLLOWING SUBSEQUENCES ONLY IF THERE HAS BEEN A HOLD AT T-93 HRS.	
161		1-1	C4TC	C4NP	INHIBIT SWITCH SELECTOR AND VERIFY	
161		1-2	C4TC	C4ES	VERIFY READY FOR CONTROLLED SWITCHING	
121		1-3	CLTC	CUTC	PREPARE IU STAGE FOR RF SILENCE & CONTROLLED SWITCHING PER V-31062 APPENDIX C	
121		1-4	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY TO RESUME CONTROLLED SWITCHING PER TI-2-13 AND INHIBIT SWITCH SELECTORS	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-89:00 3 DAY 17 HRS 0' 0"					CD ONLY	
	111	1-5	CLTC	CVTS	LV POWER HAS BEEN APPLIED. LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING IS NOW IN EFFECT.	TCPI
	188	1-6	CVTS	PA	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, RF SILENCE IS STILL IN EFFECT.	
	188	2	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR SV ORDNANCE OPERATIONS.	# TCPI
		2-1			*****WARNING***** * * THE CONTROL AREA IS * * EXPANDED FOR LV * * INITIATOR DETONATOR * * AND CSM HEAVY ORDNANCE * * HOOKUP AND CONSISTS OF * * THE ML, MSS, PAD APRON * * AND FLAME TRENCH. * * *****	# TPCI
	121	3	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE. REPORT WHEN COMPLETE.	# TCPI
	121	4	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE. REPORT WHEN COMPLETE.	#
	181	5	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE. REPORT WHEN COMPLETE.	#

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS.
T-89:00 3 DAY 17 HRS 0' 0"					CD ONLY	
181		6	C1TC	C1PE C1NE	VERIFY S-IC ENGINE HIGH VOLTAGE IGNITORS INSTALLATION & CONNECTION COMPLETE.	
181		7	C1TC	C1PE	VERIFY INSTALLATION OF PYROGEN INITIATORS COMPLETE.	
121		8	C1TC	CLTC	S-IC ENGINE HIGH VOLTAGE IGNITORS INSTALLATION & CONNECTION AND RR INITIATOR INSTALLATION COMPLETE.	
111		9	CLTC	CVTS	S-IC ENGINE ORDNANCE CONNECTION COMPLETE.	TCPI
181		10	C1TC	C1SP	DELIVER TCS KEY TO CPSS. REPORT WHEN COMPLETE.	
121		11	C1TC	CLTC	TCS KEY RETURNED TO CPSS.	
111		12	CLTC	CVTS	TCS KEY RETURNED TO CPSS.	TCPI
188		13	CVTS	PA	CDDT ONLY	* TCPI
		13-1			CDDT ONLY	* TCPI
121		14	CVTS	CLTC	LV ORDNANCE DELIVERY COMPLETE	TCPI
181		15	C1TC	L1LS	VERIFY HDA POWER CARTRIDGES, S-IC HYPERGOLS, S&A DEVICE AND RR EBW DETONATORS ARE AT THE PAD.	XB-328-3

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VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
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T-89:00
- 3 DAY
17 HRS
0' 0"

161	16	C4TC	S40R	VERIFY ORDNANCE IS AT THE PAD.	
171	17	C4TC	C2TC	VERIFY S-II OBSERVER AVAILABLE FOR SEPARATION AND RETRO ROCKET DETONATOR INSTALLATION.	

T-88:30
- 3 DAY
16 HRS
30' 0"

111	1	CLTC	CVTS	REQUEST CPSS VERIFY AREA CLEAR FOR ORDNANCE INSTALLATION	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 LASE	INSTALL AND CONNECT HOLDDOWN ARMS EXPLOSIVE RELEASE POWER CARTRIDGES PER V-26329 AND V-21321.	
181	5	C1TC	C1NE	DISCONNECT FLIGHT CABLE FROM INERT S&A DEVICES PER V-21009, MONITOR S-II FIRST PLANE SEPARATION SYSTEM DETONATOR CONNECTION.	
171	6	C2TC	U2MO	INSTALL & CONNECT S-II SECOND PLANE SEPARATION SYSTEM DETONATORS PER V-29049 (Z030) (CDDT) V-29023 (Z008) (CD)	
171	7	C2TC	U2HO	INSTALL AND CONNECT S-II FIRST PLANE SEPARATION SYSTEM DETONATORS PER V-29049 (Z030) (CDDT) V-29023 (Z008) (CD)	
171	8	C2TC	U2HO	START PREPS FOR S-II S&A INST PER V-29050 (K010) (CDDT) V-29024 (K008) (CD)	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-88:30 - 3 DAY 16 HRS 30' 0"						
	161	9	C4TC	C4SM	INSTALL S-IVB ORDNANCE DETONATORS AND CONNECT PER V-30539, SECT F.	
T-87:30 - 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	LASE	START ELECTRICAL CONNECTION OF HDA ORDNANCE PER V-21321 OR VERIFY ALREADY STARTED.	
T-87:00 - 3 DAY 15 HRS 0' 0"						
	181	1	C1PE	C1TC	REQUEST F-1 ENGINE HYPERGOLS DELIVERED TO ML ZERO LEVEL.	
T-86:45 - 3 DAY 14 HRS 45' 0"						
	181	1	C1TC	C1NE C1PE	INSTALL & CONNECT S&A PER V-21009 AND V-29003.	
		2			NOTE ----- THE FOLLOWING SWITCH WILL BE OPERATED DURING F-1 ENGINE HYPERGOL CARTRIDGE INSTALLATION. C1EN - IGNITORS INSTALLED - ARM	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
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T-86:45
- 3 DAY
14 HRS
45' 0"

181	3	C1TC	C1PE	START HYPERGOL CARTRIDGE INSTALLATION PER V-29005.	
171	4	U2MO	C2TC	S-II SECOND PLANE SEPARATION SYSTEM 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).	

T-86:30
- 3 DAY
14 HRS
30' 0"

161	1	C4TC	C4SM	VERIFY S-IVB ORDNANCE DETONATOR INSTALLATIONS AND CONNECTIONS COMPLETED.	
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.	

T-85:30
- 3 DAY
13 HRS
30' 0"

181	1	C1TC	C1PE C1NE	VERIFY S-IC S&A INSTALLATION AND CONNECTION COMPLETE.	
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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-85:30 - 3 DAY 13 HRS 30' 0"						
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.	
111		8	CLTC	CVTS	VERIFY CPSS ON STATION FOR S&A FUNCTIONALS.	TCPI
188		9	CLTC	ALL	ALL PERSONNEL SUPPORTING LV S&A FUNCTIONALS GO TO CHANNEL 121 ACTIVE AND MONITOR STAGE TC CHANNEL	
					S&A FUNCTIONAL TEST -----	
		10			*****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		11	CLTC	U1FN U2HO S4OR	VERIFY SHORTING PLUGS INSTALLED ON PROPELLANT DISPERSION DETONATORS AND CDF NOT CONNECTED TO S&A'S.	
121		12	CLTC	U1FN U2HO S4OR	VERIFY S&A ROTOR MECHANICALLY IN SAFE POSITION.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-85:30 - 3 DAY 13 HRS 30' 0"						
121		13	CLTC	C1DP C2DP C4DP	VERIFY S&A SAFE INDICATION ON.	
121		14	CLTC	C1DP C2DP C4DP	S&A TO ARM FOR 2 SECONDS THEN AUTO. VERIFY ARMED INDICATION ON - SAFE INDICATION OFF.	
121		15	CLTC	U1FN U2HO S4OR	VERIFY S&A ROTOR MECHANICALLY IN ARMED POSITION.	
121		16	CLTC	C1DP C2DP C4DP	S&A TO SAFE, VERIFY SAFE INDICATION ON - ARMED INDICATION OFF.	
121		17	CLTC	U1FN U2HO S4OR	VERIFY S&A ROTOR MECHANICALLY IN SAFE POSITION.	
121		18	CLTC	C1DP C2DP C4DP	S&A TO ARM FOR 2 SECONDS THEN AUTO. VERIFY ARMED INDICATION ON - SAFE INDICATION OFF.	
121		19	CLTC	U1FN U2HO S4OR	VERIFY S&A ROTOR MECHANICALLY IN ARMED POSITION.	
121		20	CLTC	C1DP C2DP C4DP	S&A TO SAFE, VERIFY SAFE INDICATION ON - ARMED INDICATION OFF.	
121		21	CLTC	U1FN U2HO S4OR	VERIFY S&A ROTOR MECHANICALLY IN SAFE POSITION.	

APOLLO/SATURN LAUNCH OPERATIONS

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARK
T-85:15 - 3 DAY 13 HRS 15' 0"						
121		1	CLTC	C1TC C2TC C4TC	S&A FUNCTIONALS ARE COMPLETE.	
188		2	CLTC	ALL	ALL PERSONNEL WHO SUPPORTED S&A FUNCTIONALS RETURN TO ASSIGNED CHANNELS.	
181		3	C1TC	C1PE	VERIFY HYPERGOL CARTRIDGES ARE INSTALLED IN ENGINE.	
181		4	C1TC	C1PE	START THERMAL INSTALLATION CLOSEOUT OF HYPERGOL ACCESS DOOR OR VERIFY IN WORK.	
181		5	C1TC	C1PE C1NE	VERIFY S-IC ORDNANCE INSTALLATION COMPLETED.	
181		6	C1TC	LHDA CSPP	VERIFY HOLDDOWN ARMS EXPLOSIVE RELEASE POWER CARTRIDGES INSTALLATION AND CONNECTION COMPLETED.	
181		7	C1TC	C1PE	VERIFY INSTALLATION OF FAIRING HEAT SHIELD ACCESS PANELS COMPLETE.	
121		8	CLTC	C1TC C2TC C4TC	VERIFY ALL ORDNANCE INSTALLATION COMPLETE.	
111		9	CLTC	CVTS	REQUEST LV CONTROLLED SWITCHING ACROSS LV/SC INTERFACE BE LIFTED FOR LV POWER DOWN OPERATIONS	TCPI
188		10	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		11	CLTC	C1TC C2TC C4TC CUTC	REMOVE STAGE POWER, REPORT WHEN COMPLETE.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-85:15 - 3 DAY 13 HRS 15' 0"						
181		12	C1TC	C1NE	REMOVE S-IC STAGE POWER PER V-21097.	
181		13	C1TC	RRSC	DRSCS RECORDERS - OFF	
171		14	C2TC	C2NP	REMOVE S-II STAGE AND ESE POWER PER V-21103 (B011),	
161		15	C4TC	C4ES	REMOVE S-IVB STAGE & GROUND POWER PER V-30539, APPENDIX C.	
161		16	CUTC	C4TC	VERIFY S-IVB READY FOR REMOVAL OF IU STAGE AND GROUND POWER.	
151		17	CUTC	CUNP	REMOVE IU STAGE AND GROUND POWER PER V-21223, REPORT WHEN COMPLETE.	
T-85:00 3 DAY 3 HRS 0' 0"						
121		1	C1TC	CLTC	S-IC STAGE POWER IS OFF	↑
121		2	C2TC	CLTC	S-II STAGE AND ESE POWER IS OFF.	↑
171		3	C2TC	B2TM	VERIFY S-II STAGE RF & TM CLOSEOUT FOR LAUNCH IS COMPLETE PER V-28143 (M021),	
121		4	C4TC	CLTC	S-IVB STAGE POWER IS OFF.	↑
121		5	CUTC	CLTC	IU STAGE POWER HAS BEEN REMOVED.	↑
111		6	CLTC	CVTS	LAUNCH VEHICLE POWER IS OFF.	TCPI ↑
121		7	CLTC	CUTC	SECURE LV ELECT SUPPORT EQUIPMENT PER V-31062, APPENDIX A. REPORT WHEN COMPLETE.	↑
111		8	CLTC	CVTS	LV INTERFACE CONTROLLED SWITCHING IS IN EFFECT.	TCPI ↑
188		9	CVTS	PA	CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT. SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS	TCPI

T-85:00
3 DAY
13 HRS
0' 0"

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CD ONLY

T-85:00

- 3 DAY

13 HRS

0' 0"

181 17 C1TC B1TM SECURE TM GSE PER V-28186

121 18 CLTC BTMC SECURE TCE PER V-28009.

T-84:00

- 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 AREAS WHICH ARE RESTRICTED TO ESSENTIAL PERSONNEL ONLY FOR LM RCS MANIFOLD LOADING. # TCPI

121 2 CVTS CLTC CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE. # TCPI

121 3 CLTC C1TC CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE. #

181 4 C1TC CPDC CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE. #

T-83:15

- 3 DAY

11 HRS

15' 0"

188 1 CVTS PA LM RCS MANIFOLD LOADING IS COMPLETE, THE CONTROL AREA IS OPEN FOR NORMAL WORK. # TCPI

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
▶ ▶ ▶ ▶ ▶ CD ONLY ◀ ◀ ◀ ◀ ◀ ◀						
T-81:30 3 DAY 9 HRS 30' 0"		188	1	CVTS PA	CDDT ONLY	* TCPI
T-80:30 3 DAY 8 HRS 30' 0"		188	1	CVTS PA	CDDT ONLY	* TCPI
T-79:30 3 DAY 7 HRS 30' 0"		188	1	CVTS PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR PROPELLANT VENT LINE QD OPENING,	# TCPI
			1-1		*****WARNING***** * * THE CONTROL AREA FOR * * PROPELLANT VENT LINE QD * * OPENING CONSISTS OF THE * * SLA INTERIOR, IU & * * S-IVB FORWARD AREAS. * * *****	# TCPI
T-79:00 3 DAY 7 HRS 0' 0"		188	1	CVTS PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM PROPELLANT AND GOX TANK PRESSURIZATION, SCIENTIFIC INSTRUMENT MODULE CAMERA GN2 AND CSM HELIUM SERVICING TO FLIGHT PRESSURE	# TCPI

XB-329-55

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-79100 3 DAY 7 HRS 0' 0"		1-1			CD ONLY	
					*****WARNING***** * THE CONTROL AREA FOR LM PROPELLANT TANK * * PRESSURIZATION, LM GOX TANK PRESSURIZATION, * * CSM HELIUM SERVICING TO FLIGHT PRESSURE & * * CSM SCIENTIFIC INSTRUMENT MODULE GN2 * * SERVICING TO FLIGHT PRESSURE, CONSISTS OF * * THE AREA CONFINED BY THE COMPLEX PERIMETER * * FENCE * *****	# TCPI XB-329-35
	121	2	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	# TCPI
	121	3	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	#
	181	4	C1TC	CPDC	CHANGE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	#
T-70:30 2 DAY 22 HRS 30' 0"						
	188	1	CVTS	PA	THE CONTROL AREA IS OPEN FOR NORMAL WORK EXCEPT FOR A 50 FT RADIUS OF THE MSS FUEL & OXIDIZER OPERATIONAL DISCONNECT TOWERS AND THE SLA INTERIOR, IU & S-IVB FORWARD AREAS	# TCPI XB-329-35
	121	2	CLTC	C1TC C2TC C4TC CUTC	THE PAD IS OPEN FOR NORMAL WORK	# XB-329-35
		2-1			*****WARNING***** * ACCESS TO THE SLA INTI, * * IU & S-IVB FORWARD * * AREAS WILL NOT BE * * PERMITTED UNTIL SAFETY * * HAS VERIFIED THAT THE * * OXYGEN LEVEL IS AT * * LEAST 18 PERCENT * *****	# TCPI XB-329-35
	121	3	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	# TCPI

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-70:30 2 DAY 22 HRS 30' 0"						
	121	4	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	#
	181	5	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	#
T-70:00 2 DAY 22 HRS 0' 0"						
	188	1	CVTS	PA	THE SLA INTERIOR, IU & S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK	# TCPI XB-329-35
T-66:10 2 DAY 18 HRS 10' 0"						
	121	1	CLTC	CUTC	START LV ELECT SUPPORT PREPS PER V-31062, APPENDIX B.	
T-66:00 2 DAY 18 HRS 0' 0"						
	111	1	CLTC	CVTS	MSS PLATFORM 1 AVAILABLE FOR OPENING AT LV STATION 1800.	TCPI
	121	2	CVTS	CLTC	VERIFY READY FOR SERVICE ARM 9 HOOD RETRACT IN ONE HOUR.	TCPI
T-65:10 2 DAY 17 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.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-65:00 - 2 DAY 17 HRS 0' 0"	121	1	CVTS	CLTC	MSS PLATFORM 1 IS OPEN AND SECURE.	TCPI ↑
	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	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 \$ GO AND REPORT WHEN COMPUTER SUPPORTING.	
	121	9	CUTC	CLTC	GROUND COMPUTER IS SUPPORTING.	
	188	10	CLTC	ALL	GROUND COMPUTER IS SUPPORTING.	↑
	121	11	CVTS	CLTC	DISCONNECT ENVIRONMENTAL CHAMBER FROM SC FOR BPC INSTALLATION. REPORT WHEN COMPLETE.	TCPI
	121	12	CLTC	C1TC	DISCONNECT ENVIRONMENTAL CHAMBER FOR BPC INSTALLATION. REPORT WHEN COMPLETE.	↑
	181	13	C1TC	CSA9	DISCONNECT ENVIRONMENTAL CHAMBER FROM SC FOR BPC INSTALLATION. REPORT WHEN COMPLETE	
T-64:45 - 2 DAY 16 HRS 45' 0"	181	1	CSA9	C1TC	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-64:45 2 DAY 16 HRS 45' 0"					CD ONLY	
	121	2	C1TC	CLTC	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED,	
	111	3	CLTC	CVTS	ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED,	TCPI
T-63:00 2 DAY 15 HRS 0' 0"						
	151	1	CUTC	UUVM	START MECHANICAL CHECKS PER V-31062, PART II,	
T-62:00 2 DAY 14 HRS 0' 0"						
	171	1	U2AN	C2TC	CDDT ONLY	*
T-61:00 2 DAY 13 HRS 0' 0"						
	181	1	C1TC	LHDA	START CRD PRELOAD OPERATION PER V-26476,	#
T-58:00 2 DAY 10 HRS 0' 0"						
	121	1	CVTS	CLTC	RECONNECT ENVIRONMENTAL CHAMBER,	TCPI
	121	2	CLTC	C1TC	RECONNECT ENVIRONMENTAL CHAMBER,	
	181	3	C1TC	CSA9	RECONNECT ENVIRONMENTAL CHAMBER TO SC, REPORT WHEN COMPLETE.	
	151	4	CUTC	SUVE SUVM	CDDT ONLY	*

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CD ONLY						
T-58:00 2 DAY 10 HRS 0' 0"						
	151	5	CUTC	SUVE SUVM	START REMOVAL OF HYPERGOL COVERS.	#
	121	6	CUTC	CLTC	STARTING REMOVAL OF HYPERGOL COVERS.	#
		6-1	CLTC		*** NOTE LV WILL BE READY FOR MICROBIAL SAMPLING IN 1 HOUR.	#
T-57:45 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.	
	121	3	C1TC	CLTC	S/A 9 ENVIRONMENTAL CHAMBER RECONNECT COMPLETE.	+
	121	4	CLTC	CUTC	SECURE LV ELECT SUPPORT EQUIPMENT PER V-31062, APPENDIX A. REPORT WHEN COMPLETE.	+
T-57:30 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.	+
T-57:00 2 DAY 9 HRS 0' 0"						
	151	1	UUVM	CUTC	HYPERGOL COVER REMOVAL IS COMPLETE.	+

VERIFY EAS PRECOUNT INSPECTION IS COMPLETE.

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T-52:30
- 2 DAY
4 HRS
30' 0"

171 1 C2TC U24A VERIFY THE FLEXHOSES ARE CONNECTED TO
P70 & P71 STAGE POSITIVE PRESSURE
FITTINGS.

T-52:00
- 2 DAY
4 HRS
0' 0"

181 1 C1TC LHDA VERIFY CRD PRELOAD OPERATIONS COMPLETE.

T-51:30
- 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 (ON S7-41
GAUGE A15741) DURING BOEING LOX SYSTEM
DEWPOINT CHECKS.

T-51:00
- 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.

T-50:30
- 2 DAY
2 HRS
30' 0"

171 1 U2EC C2TC S-II ECS INSPECTION IS COMPLETE.

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-50:00 - 2 DAY 2 HRS 0' 0"						
	181	1	C1TC	LEBS	SCAN EMERGENCY BACKUP BATTERY CELLS AND RECHARGE AS REQUIRED PER V-21439. REPORT WHEN COMPLETE.	
	121	2	CUTC	CLTC	IU ENGINEERING WALKAROUND IS COMPLETE,	
T-48:30 - 2 DAY 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 *
T-47:00 1 DAY 23 HRS 0' 0"						
	121	1	CVTS	CLTC	OIS AND PHONES ARE BEING DISCONNECTED FROM FALLBACK TRAILERS (CD ONLY).	TCPI *
T-45:00 - 1 DAY 21 HRS 0' 0"						
	111	1	CLTC	CVTS	VERIFY MSS PLATFORM 2 IS BELOW STATION 2900 (FOR THEODOLITE CHECKS AT T-21 HRS 40 MIN)	TCPI
	188	2	CVTS	PA	LM SHE INITIAL FILL IS COMPLETE, THE CONTROL AREA IS OPEN FOR NORMAL WORK,	TCPI *

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VEHICLE

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-45:00 - 1 DAY 21 HRS 0' 0"						
	151	3	CUTC	SUVM	START INITIAL INSTALLATION OF IU THERMAL ISOLATION BOTTOM SHROUDS PER V-31062, PART II,	
T-44:00 - 1 DAY 20 HRS 0' 0"						
	181	1	C1TC	L1LS	START FIRST LUT WALKDOWN. REPORT WHEN COMPLETE.	
		1-1			LV-QAL PARTICIPATION REQUIRED.	
T-43:00 - 1 DAY 19 HRS 0' 0"	151	2	CUTC	BGCC	START HARDWARE FUNCTIONAL CHECKS PER V-31062, PART II.	
	151	1	CUTC	LGCC	VERIFY SYSTEM CONFIGURED TO START ML DCE SELF TEST,	
		1-1			*****CAUTION***** * * DO NOT PERFORM ML DCE * * TEST UNTIL VERIFICATION * * TO PROCEED HAS BEEN * * OBTAINED FROM CLTC. * * *****	
	121	2	CUTC	CLTC	READY TO START ML DCE TEST. REQUEST ALL ML GROUND POWER BE REMOVED.	
	111	3	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	4	CLTC	C1TC	SECURE 42D100 POWER.	
	181	5	C1TC	CSPP	SECURE 42D100 POWER PER V-21194.	

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V-20000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-43:00 - 1 DAY 19 HRS 0' 0"						
121		6	CLTC	C1TC C2TC C4TC CUTC	VERIFY ALL ML GROUND POWER IS REMOVED,	
151		7	CUTC	CCPM	POWER OFF 400 HZ POWER. REPORT WHEN COMPLETE.	
151		8	CUTC	CLVN	ML DCE TO COMPUTER MODE VERIFY MTOAD INDICATION IS OFF ML COMPUTER INHIBIT - AUTO	
121		9	CLTC	C1TC C2TC C4TC CUTC	REQUEST PURGE BOX VALIDATION STATUS	
121		10	CVTS	CLTC	REQUEST PURGE BOX VALIDATION STATUS.	TCPI
121		11	CLTC	CUTC	START ML/DCE PANEL HARDWIRE CHECKS (APPROX 2 MIN) AND ML DCE CHECKOUT	
		11-1		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.	
151		12	CUTC	BGCC	START ML/DCE PANEL HARDWIRE CHECKS AND DCE SELF TEST PER V-31062, PART II.	
171		13	C2TC	U2MU	START S-II PREPS FOR RELEASE SENSOR CHECKS (V-31045) PER V-30029 (M020) TASK 24, REPORT WHEN COMPLETE,	

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V-20000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-42:30 - 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	ML COMPUTER INHIBIT TO INHIBIT	
151		4	CUTC	CLVN	APPLY 400 HZ POWER, REPORT WHEN COMPLETE.	
121		5	CUTC	CLTC	ML DCE CHECKOUT AND ML/DCE HARDWIRE CHECKS COMPLETE.	
121		6	CLTC	C1TC	APPLY 42D100 POWER,	
181		7	C1TC	CSPP	APPLY LSE 42D100 POWER PER V-21194, COMPLETE.	
111		8	CLTC	CVTS	DELUGE PURGE PANEL IS POWERED UP	TCPI
181		9	L1LS	C1TC	LUT WALKDOWN COMPLETE.	
		9-1			VERIFICATION BY LV-QAL	
T-42:00 - 1 DAY 18 HRS 0' 0"						
151		1	SUVM	CUTC	INITIAL THERMAL ISOLATION BOTTOM SHROUD INSTALLATION COMPLETE	
T-41:30 - 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.	
171		3	C2TC	U24A	S-II LOX TANK PRESSURE MONITOR IS NO LONGER REQUIRED.	
171		4	U2MU	C2TC	S-II PREPS FOR RELEASE SENSOR CHECKS (V-31045) PER V-30029 (M020) TASK 24 ARE COMPLETE	N-250-37

LV CDDT & CD, VOL I
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 V-20060, PART 4
 VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-41:00 - 1 DAY 17 HRS 0' 0"	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM CRYO SERVICING.	TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR * CSM LO2 AND LH2 TANKING * AND PRESSURIZATION IS * AN 1100 FOOT RADIUS * AROUND THE SPACE * VEHICLE. * *****	TCPI
	121	2	CVTS	CLTC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	TCPI
	121	3	CLTC	C1TC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	
	181	4	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	
T-40:00 - 1 DAY 16 HRS 0' 0"	121	1	CVTS	CLTC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE.	TCPI
	121	2	CLTC	C1TC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE.	
	181	3	C1TC	CPDC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE.	

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V-30000, PART 4

VEHICLE

AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
CS ONLY						
T-39:30 - 1 DAY 15 HRS 0' 0"		1			DELETED	N-250-37
		2			DELETED	N-250-37
APPROX. - 1 DAY 8 HRS 0' 0"						
188		1	CVTS PA		ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM LOX AND LH2 TANK PRESSURIZATION,	# TCPI †
		1-1			*****WARNING***** * * THE CONTROL AREA FOR * CSM LO2 AND LH2 TANK * PRESSURIZATION CONSISTS * OF THE AREA CONFINED BY * THE COMPLEX PERIMETER * FENCE. * *****	# TCPI †
188		2	CVTS PA		CDDT ONLY	* TCPI †
		2-1			CDDT ONLY	* TCPI †

(CONTINUED)

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
APPROX. 1 DAY 5 HRS 30' 0"					CD ONLY	
					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 SC HAVE BEEN CLEARED OF PERSONNEL.	
T-29:15 1 DAY 5 HRS 15' 0"		161	1	C4TC S4MA	START FLIGHT BATTERY PREPS FOR TRANSFER TO PAD PER V-30539 SECT H,	#
T-29:00 1 DAY 5 HRS 0' 0"		188	1	CVTS PA	THE SLA INTERIOR, IU AND S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK.	# TCPI
		261	2	C1TC BOSC	VERIFY FOUR SCOTT AIR PACKS IN PTCR RM 216 FOR BATTERY REMOVAL CREW.	# TCPI
		121	3	CVTS CLTC	CDDT ONLY	XB-329-35 * TCPI
		121	4	CLTC C4TC	CDDT ONLY	*
		161	5	C4TC S4MF	CDDT ONLY	*
		171	6	C2TC U2MH	TOPOFF EAS ACCUMULATOR PRECHARGE TO WITHIN FLIGHT PRECHARGE LIMITS PER V-24246 (E002), SECT E.4. REPORT WHEN COMPLETE.	

END OF TEST PROCEDURE V-20060, VOL 1

LV EDDT & CD, VOL 1
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V-30060, PART 4
VEHICLE AS-510

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T-28:00 - 1 DAY 4 HRS 0' 0"	188	4	CLTC	ALL	ALL PERSONNEL PROCEED WITH LV COUNTDOWN ON PAGE 33 OF VOLUME II.	

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ROSS, M.	DO=KSC	1
KALISHER, CAPT.	DOOT	1
TAYLOR, MAJOR	ETOSO, PAFB	3
HARLAN, C.	FC=MSC, AIR EX (HOSC)	5
DOWLING, J. E.	GUSH, KSC M5 1494	2
MOORE, R.	I=MO=0, MSFC	35
BRIDWELL, C. R.	IN=MSD=32	10
COONCE, J. M.	IN=TEC	40
LOVAN, J. G.	IS=UOC=24	2
DALEY, R. C.	IS=PEM	1
RAFANELLI, L. R.	IS=PEM=42	1
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BLUM, F. W.	LS=ENG=8	1
SCHILER, M.	LS=ENG=22	1
GRUENE, DR. H.	LV	2
RIGELL, I. A.	LV	2
PAUL, H. C.	LV=CAP	3
LEALMAN, R. E.	LV=GDC	2
CHAMBERS, M.	LV=GDC=1	6
CHANDLER, W. D.	LV=GDC=2	12
WHITESIDE, C. A.	LV=GDC=3	3
HAYNES, B.	LV=GDC=4	5
OVERSTREET, C. F.	LV=GDC=22	6
JONES, D. R.	LV=GDC=23	4
CLAY, R. P.	LV=GDC=24	4
DAVIS, L. R.	LV=GDC=25	3
SUMNER, K. W.	LV=GDC=26	2
MC CREARY, M. E.	LV=GDC=27	5
WHEELER, W. P.	LV=GDC=28	5
REGISTER, B. J.	LV=GDC=31	4
PERKINSON, J. A.	LV=GDC=32	3
ELY, G. W.	LV=GDC=33	5
EDWARDS, M. D.	LV=INS	4
CONAWAY, J. D.	LV=INS=4	1
HUFFMAN, B.	LV=INS=1	1
FITZGERALD, J. J.	LV=INS=2	1
BIZZELL, J. S.	LV=INS=11	3
BLANCHARD, L. C.	LV=INS=12	2
WATT, J. D.	LV=INS=12	2
GRUNENFELDER, A. C.	LV=INS=13	2
RALEY, E. O.	LV=INS=21	13
JORDAN, A. E.	LV=INS=22	5
FANNIN, L. E.	LV=MEC	1
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ROBINSON, G. H.	LV=MEC=12	6
OMARA, A.	LV=OMO	1
OGLESBY, T. L.	LV=OMO=1	1
YOUNG, R. E.	LV=OMO=3	5
WILLIAMS, M. C.	LV=PLN=1	1
COOK, H. D.	LV=PLN=13A	2
OSWALD, D. R.	LV=QAL	3
PRIDDY, E.	LV=QAL=1	2
MADERY, G. L.	LV=QAL=4	2
ARBOTT, R. G.	LV=QAL=5	9
BELL, J. H.	LV=TMO=A	6
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MOSES, C. S.	SO=OPN	1
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BOEING		

YANCEY, J. L.	LCC 2P26, BOFO=41	10
ADAMS, R. H.	VAB 6D17, BOFL=21	10
BAGGETT, J. A.	VAB 6B15, BOFO=49	16
BROWN, W. C.	VAB 2D9, BOFM=05	1
CALVETTO, R. S.	VAB 6D15, BOFO=04	7
CATER, R. B.	VAB 2E7, BOFM=27	3
CHANDLER, J. W.	VAB 2L8, BOFL=10	3
DREYER, W. F.	VAB 2E7, BOFM=27	2
ECKHOFF, J. L.	VAB 2E7, BOFM=27	4
FRIEND, G.	VAB 2D9, BOFM=05	1
GEORGE, J. A.	VAB 2E9, BOFM=29	20
HARDCASTLE, H. S.	VAB 6B20, BOFO=11	1
HAWK, G. A.	VAB 3E8, BOFM=42	6
HENDERSON, M. W.	VAB 6B13, BOFO=13	14
HOLLAND, R. E.	LCC 2P15, BOFL=52	6
HOLMES, W. C.	VAB 2L2, BOFM=34	2
LOONEY, J. H.	VAB 6B21, BOFO=21	6
LUNDY, J. H.	VAB 6D16, BOFM=49	1
LYONS, B. P.	VAB 2E6, BOFM=55	18
MC CRANEY, J. L.	VAB 6B23, BOFM=02	7
MC INNIS, F. W.	VAB 7B13, BOFL=93	2
NEAL, E. T.	VAB 2L10, BOFM=39	20
ONEIL, J.	VAB 2L9, BOFM=38	3
SACK, A.	VAB 6D18, BOFM=64	8
SAUBER, R. T.	VAB 3E9, BOFM=43	1
SCOTT, N. H.	VAB 3E9, BOFM=43	2
STEPHENS, C. H.	VAB 6D21, BOFM=66	5
TAYLOR, D.	VAB 3L15, BOFM=19A	2
WEBB, D. L.	VAB 2E12, BOFM=32	6
ZYZAK, E. E.	VAB 2L1, BOFM=33	1
YANCEY, J. T.	VAB 6D7, BOFM=60	9
DAVIS, J. R.	JD-49 (HUNTSVILLE)	1
BURKET, B. B.	K6=1045 RM 126	1
EDWARDS, E. T.	LS=03 MICHOU	3
FOSTER, E. T.	TA=01 MTF	1
GERHARDT, E. D.	MTVL JD=83	2
SIDES, C. A.	MICHOU LT=54	2
KIRBY, J. H.	MOBA FP=53	2
KUYKENDALL, M.	VAB 3L15C, BOFM=19C	1
LARSON, G.	O&C 2023, BOFM=96	1
CHAMBLEE, B.	HOSC, HA=04	1
OWENS, J. D.	VAB 2L3, BOFM=35	10
SCHINDLER, D. W.	MTVL AG=80	1
TBC FILE	VAB 3N1, BOFM=49	5
WEINBERG, D. B.	O&C 2130, BOFM=96	1
SUBTOTAL		1034
15% EXTRA		154
TOTAL		1188

NOTE
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DELIVER ALL EXTRAS TO LV=OMO=1.

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