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TCP NO. SV-4040GR
DATE AUGUST 22, 1973
REVISION ORIGINAL
EFFECTIVITY SKYLAB R

SKYLAB RESCUE SPACE VEHICLE COUNTDOWN

THIS TCP CONTAINS HAZARDOUS OPERATIONS

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SKYLAB RESCUE SPACE VEHICLE COUNTDOWN

APPROVAL

W. J. Kapryan

W J KAPRYAN
DIRECTOR OF LAUNCH OPERATIONS

[redacted]

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THIS TCP CONTAINS HAZARDOUS OPERATIONS

PREPARED BY:
TEST INTEGRATION BRANCH (LA-PLN-1)

NASA CONCURRENCE/APPROVAL

P. C. DONNELLY
MANAGER, TEST OPERATIONS (LA-OPN)

KSC SAFETY OFFICE

R. E. MOSER 8-20-73
MANAGER, TEST PLANNING (LA-PLN)

A. E. MORSE, JR.
JSC RESIDENT OFFICE
WSK

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REVISION RECORD PAGE

REVISION	REASON/SUPPORTING DOCUMENTATION
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TEST OUTLINE

SPACE VEHICLE COUNTDOWN

1.0 PURPOSE

THE PURPOSE OF THE COUNTDOWN IS TO ACCOMPLISH THE OPERATIONS REQUIRED TO PREPARE AND LAUNCH THE SKYLAB SPACE VEHICLE. THE SKYLAB CONFIGURATION IS A TWO-STAGE SATURN-IB RESCUE VEHICLE, SERVICE MODULE, COMMAND MODULE WITH A RESCUE KIT AND A LAUNCH ESCAPE SYSTEM.

1.1 TEST OBJECTIVE

THE OBJECTIVE OF THIS TEST IS TO SATISFY THOSE SPACE VEHICLE TEST AND CHECKOUT REQUIREMENTS SPECIFIED IN THE TEST AND CHECKOUT REQUIREMENTS MATRIX SECTION OF THE SKYLAB TEST AND CHECKOUT PLAN.

1.2 CONSTRAINTS AND GUIDELINES

1.2.1 TEST CONFIGURATION

THE SPACE VEHICLE SHALL BE AT THE PAD IN A LAUNCH CONFIGURATION.

1.2.2 OPERATIONAL CONSTRAINTS AND GUIDELINES

A. FLIGHT BATTERIES WILL TO BE INSTALLED AS LATE IN THE COUNTDOWN AS POSSIBLE.

B. FUEL CELLS WILL BE ACTIVATED AS LATE IN THE COUNTDOWN AS POSSIBLE.

C. THE FLIGHT CREW WILL INGRESS AS LATE IN THE COUNTDOWN AS POSSIBLE (AFTER CRYOGENIC TANKING), BUT WITH SUFFICIENT TIME REMAINING TO PERFORM THE REQUIRED SYSTEM CHECKS.

D. THE PRIMARY DAMPER WILL BE RAISED (AFTER LV CRYOGENIC TANKING) PRIOR TO FLIGHT CREW INGRESS.

E. A HOLD IS PLANNED IN THE COUNTDOWN JUST PRIOR TO AND AFTER LAUNCH VEHICLE CRYOGENIC LOADING.

1.2.3 SAFETY

THE SPACE VEHICLE LAUNCH COUNTDOWN IS CONSIDERED TO BE HAZARDOUS FOR THE FOLLOWING REASONS

A. SPACE VEHICLE HYPERGOLICS WILL BE ON BOARD;

B. SPACE VEHICLE ORDNANCE WILL BE INSTALLED AND CONNECTED;

C. SPACE VEHICLE PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSURIZED;

D. SPACE VEHICLE CRYOGENICS (LOX, LH2, AND LHE) WILL BE LOADED,

E. RP-1 WILL BE ON BOARD;

F. THE FLIGHT CREW WILL INGRESS AND THE HATCH WILL BE CLOSED,

1.3 TEST DESCRIPTION

PRECOUNT ACTIVITIES STAPT AT T-91 HOURS FOR THE LAUNCH COUNTDOWN. THE FUEL CELLS WILL BE ACTIVATED, LAUNCH VEHICLE BATTERIES INSTALLED, CSM CRYOGENIC LOADED, LAUNCH VEHICLE RP-1 REPLENISHED, LV ORDNANCE INSTALLED AND SV ORDNANCE HOOKED-UP, S&A, HDA, AND SRGG CONNECTED, AND LAUNCH VEHICLE CRYOGENICS LOADED, A RFI TEST WILL BE RUN AT T-4 1/2 HOURS; THE CSM CLOSE OUT CREW WILL BE ON STATION BEFORE THE ONE HOUR HOLD AT T-3 1/2 HOURS; LAUNCH WINDOW OPENING TIME ADJUSTMENT WILL BE MADE DURING THIS HOLD WITH FURTHER REFINEMENT POSSIBLE IN 2 MINUTE NOMINOL HOLD AT T-15 MINUTES; TARGET UPDATES FOR THE LVDC ARE PLANNED AT T-8 HOURS 5 MINUTES AND T-35 MINUTES; THE FLIGHT CREW WILL INGRESS THE COMMAND MODULE AT T-2 HOURS 40 MINUTES, FINAL SYSTEM VERIFICATION WILL BE PERFORMED AND THE COMMAND MODULE CLOSED OUT, A FINAL CHECK OF CRITICAL OPERATIONS, GUIDANCE, AND COMMUNICATIONS WILL BE MADE, THE TERMINAL COUNT SEQUENCER (TCS) WILL BE ACTIVATED TO PROVIDE AUTOMATIC PROCESSING THROUGH LIFTOFF;

1.4 POST LAUNCH

AT LIFTOFF THE FLIGHT DIRECTOR AT MCC ASSUMES OPERATIONAL RESPONSIBILITY FOR THE SPACE VEHICLE. A DUAL ABORT REQUEST RESPONSIBILITY EXISTS WITH THE FLIGHT DIRECTOR AND THE LAUNCH OPERATIONS MANAGER (KSC) UNTIL THE VEHICLE CLEARS THE UMBILICAL TOWER. AT THAT TIME, THE LAUNCH OPERATIONS RESPONSIBILITY IS TRANSFERRED TO THE FLIGHT DIRECTOR.

KSC OPERATING AND SUPPORT ELEMENTS SHALL SECURE THEIR SYSTEMS IN A TIMELY SEQUENCE SO AS NOT TO AFFECT THE OBJECTIVES OF THE MISSION. POST LAUNCH PAD INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE POST LAUNCH ACCESS AND INSPECTION PLAN, LAUNCH COMPLEX 39-A AND B.

DESIGNATED PERSONNEL SHALL REMAIN ON STATION THROUGH THE LAUNCH INSERTION PHASES.

LIST OF REFERENCES

1. LAUNCH VEHICLE OPERATIONS FOR SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN, V-20130.

2. SPACECRAFT OPERATIONS FOR SPACE VEHICLE LAUNCH COUNTDOWN/ COUNTDOWN DEMONSTRATION, K-0007.

3. SKYLAB SPACE VEHICLE COUNTDOWN OPERATIONS INTERFACE CONTROL CHART.

4. SKYLAB 2,3,4, RESCUE TEST AND CHECKOUT PLAN, VOL. 1, KHB 8635.5/LO.

5. SKYLAB1/SKYLAB 2 AND SUBSEQUENT LC-39 LAUNCH OPERATIONS INSTRUCTIONS, 600-26-0002.

6. ASTP/SKYLAB - SATURN IB SPACE VEHICLE TEST SUPERVISOR EMERGENCY PROCEDURES, SV-46101.

7. S-IB STAGE RP-1 AUTOMATIC LOADING, V-20127

8. POST LAUNCH ACCESS AND INSPECTION PLAN, LAUNCH COMPLEX 39-A AND B, 630-39-0018.

9. APOLLO/SATURN CAMERA OVERRIDE CONTROL SYSTEM GROUND RULES AND PROCEDURES, 630-40-0009.

10. KSC APOLLO/SATURN CALL SIGN HANDBOOK, 630-23-0001.

11. GROUND SAFETY PLAN, KV-053.

12. SECURITY OPERATIONS PLAN FOR SKYLAB, KHB 1600.1/IS.

13. SKYLAB PART I RD 20000.

14. LOX/LH2 LOADING AND DRAIN OPERATIONS, PAD A, V-35014.

15. SKYLAB LAUNCH MISSION RULES.

ACCESS CONTROL

CONTROL OF PERSONNEL IN THE LAUNCH COMPLEX 39 OPERATIONAL AREA IS MANDATORY DUE TO HAZARDOUS CONDITIONS.

THE CONTROL OF PERSONNEL IN THE OPERATIONAL AREA IS UNDER THE DIRECTION OF THE TEST SUPERVISOR. THE GROUND SAFETY PLAN AND THE SKYLAB SECURITY PLAN WILL GOVERN DURING THE SPACE VEHICLE LAUNCH COUNTDOWN. THE NUMBER OF PERSONNEL EXPOSED TO HAZARDOUS OPERATIONS WILL BE CONTROLLED BY THE HAZARDOUS OPERATIONS MANLOADING DOCUMENT, AS APPROVED BY THE TEST SUPERVISOR AND KSC SAFETY FOR ALL OPERATIONS. ANY CHANGES TO MANLOADING DURING THE PERFORMANCE OF THE TEST/OPERATION MUST HAVE THE CONCURRENCE OF THE KSC SAFETY REPRESENTATIVE.

HAZARDOUS AREA CONTROL

	FUNCTION	CONTROL AREA
1.	CSM SMALL ORDNANCE HOOKUP	MSS LEVELS 4 AND 5, SA 8 AND 9.
2.	S-IB ENGINE HYPERGOL INSTALLATION	TOP OF PEDESTAL AND ML ZERO LEVEL.
3.	LAUNCH VEHICLE INITIATOR DETONATOR HOOKUP AND CSM HEAVY ORDNANCE HOOKUP.	ML, MSS, PAD APRON, AND ZERO LEVEL.
4.	CSM REMOTE RESISTANCE CHECKS AND GHE SERVICE AND PROPELLANT LINE DISCONNECTION.	AREA CONFINED BY THE COMPLEX PERIMETER FENCE.
5.	CSM LO2 AND LH2 TANKING	1100-FOOT RADIUS AROUND THE SPACE VEHICLE. LV COMPUTER MAINTENANCE PERSONNEL ARE PERMITTED TO REMAIN IN ML ROOM 10 AND 15A DURING CSM CRYO TANKING.
6.	CSM LO2 AND LH2 PRESSURIZATION.	AREA CONFINED BY THE COMPLEX PERIMETER FENCE.
7.	CM O2 SURGE TANK PRESSURIZATION	CM INTERIOR.
8.	HDA AND SPGGI CONNECTION	TOP OF PEDESTAL, ML ZERO LEVAL AND FLAME TRENCH.
9.	LV S&A CONNECTION	LV INTERIOR, S-IB AFT AND A 10 FOOT RADIUS AROUND THE S&A UNITS AND TOP OF PEDESTAL.
10.	LOWERING OF ESP	ML 127' LEVEL, DIRECTLY BELOW THE ESP, AND INSIDE THE PEDESTAL LEGS.
11.	LV LO2 SYSTEM CHILLDOWN	PERIMETER ROAD.

	FUNCTION	CONTROL AREA
12.	LV RP-1 REPLENISH	MOBILE LAUNCHER 127', ZERO LEVEL AND THE FLAME TRENCH.
13.	MSS MOVE TO PAD B	50-FOOT RADIUS AROUND MSS EXCLUDING ML AND SPACE VEHICLE FOR MOVE TO PAD GATE. 600-FOOT RADIUS AROUND MSS OUTSIDE PAD PERIMETER.
14.	LV LO2 AND LH2 LOADING.	BLAST DANGER AREA.
15.	ARM LES	BLAST DANGER AREA.

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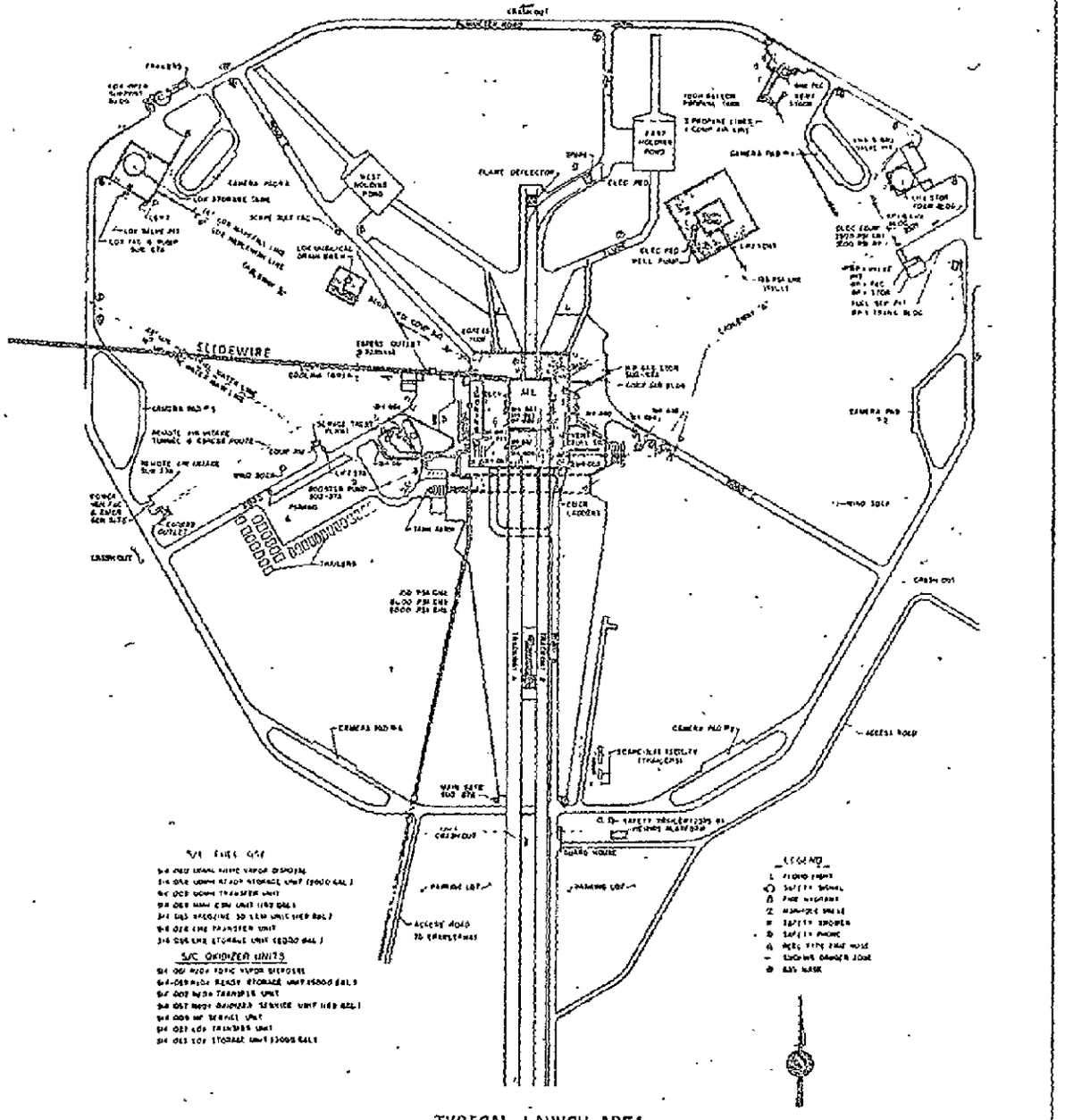
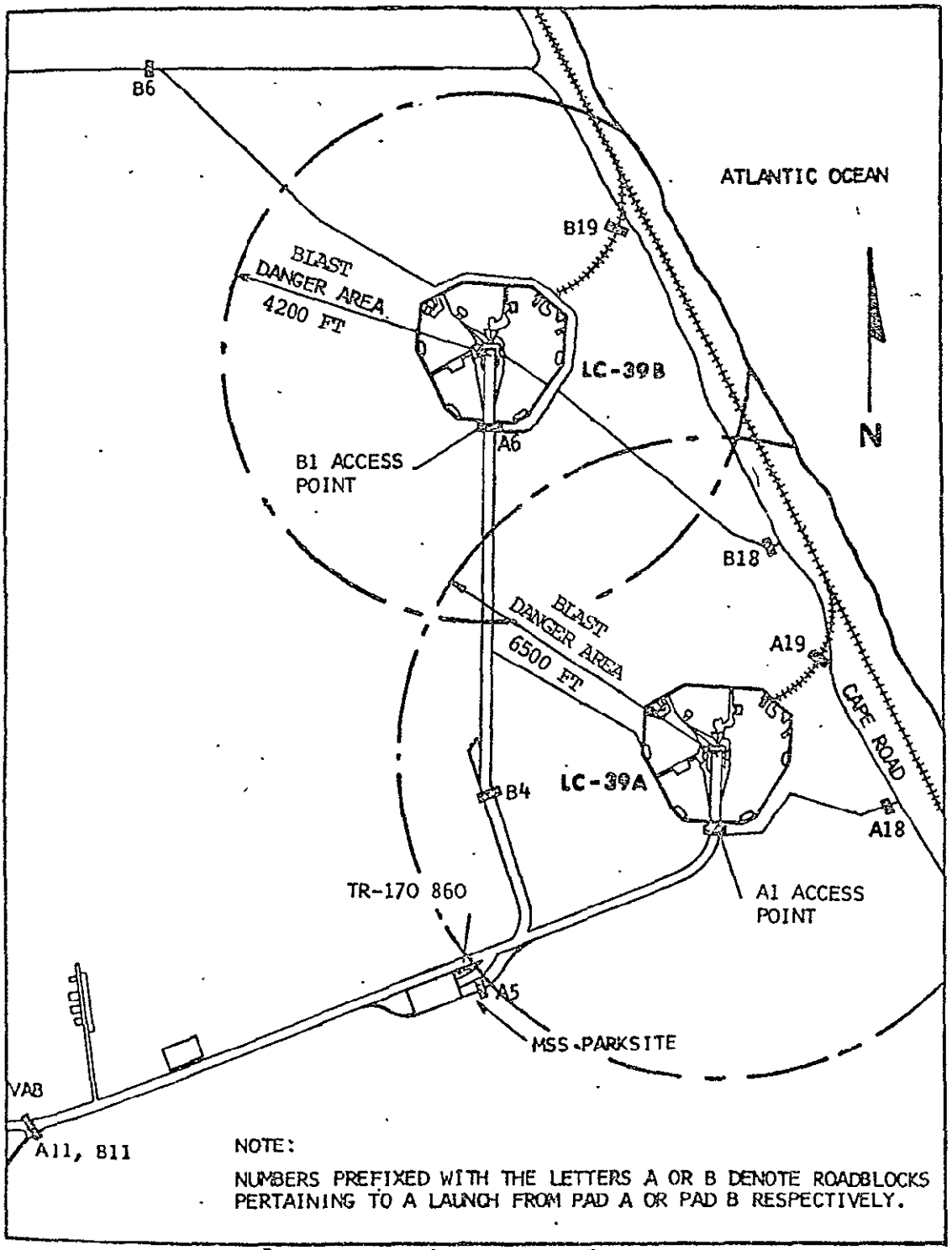
SPACE VEHICLE COUNTDOWN - RESCUE VEHICLE APOLLO/SATURN

DATE: AUGUST 22, 1973
REVISION ORIGINAL

PAGE SV-40400R
TEST NO. SKYLAB R
VEHICLE



TYPICAL LAUNCH AREA


B6
ATLANTIC OCEAN
B19
BLAST DANGER AREA 4200 FT
LC-39B
A6
B1 ACCESS POINT
N
B18
BLAST DANGER AREA 6500 FT
A19
CAPE ROAD
B4
LC-39A
A18
TR-170 860
A1 ACCESS POINT
A5
MSS-PARKSITE
VAB
A11, B11
NOTE:
NUMBERS PREFIXED WITH THE LETTERS A OR B DENOTE ROADBLOCKS PERTAINING TO A LAUNCH FROM PAD A OR PAD B RESPECTIVELY.

INTERCOMMUNICATIONS INFORMATION

ALL-AREA-PAGING EM PA

TO BE USED FOR ALL AREA ANNOUNCEMENTS SUCH AS, PERSONNEL CLEARING FOR ORDNANCE OPERATIONS IN THE VAB OR FOR EMERGENCIES.

PAGING (CH.) 188 (PA)

TO BE USED FOR OPERATIONAL ANNOUNCEMENTS WITHIN THE OPERATIONAL AREA OF A SPECIFIC OIS MISSION BUS, PA OPERATES AT LAUNCH COMPLEX 39, INCLUDING THE VAB, LCC, AND PADS. PA DOES NOT GO TO THE CIF OR O&C BUILDINGS.

OPERATIONAL INTERCOMMUNICATIONS SYSTEM (OIS)

THE TEST AND CHECKOUT OPERATIONAL COMMUNICATIONS ARE UTILIZED AS ASSIGNED OR INDICATED IN THE PROCEDURE FOR THE TEST OPERATIONS. COORDINATION BY THE SPACE VEHICLE TEST SUPERVISOR WILL NORMALLY BE CONDUCTED OVER OIS CHANNEL 181. IF THE TEST SUPERVISOR IS UNABLE TO REACH AN ORGANIZATION ON OIS CHANNEL 181, ONLY THEN WILL HE SWITCH TO THAT ORGANIZATION'S PRIMARY ASSIGNED CHANNEL. TEST SUPERVISORY PERSONNEL SHOULD ALWAYS BE AVAILABLE ON THE FOLLOWING CIRCUITS

SPACE VEHICLE TEST SUPERVISOR (NASA-LO)	181
TEST SUPPORT CONTROLLER (NASA-TS)	121
LAUNCH VEHICLE TEST CONDUCTOR (NASA-LV)	261
CSM SPACECRAFT TEST CONDUCTOR (NASA-LS)	212
SYSTEMS SAFETY (NASA-SF)	125
S-IB TEST CONDUCTOR (CHRYSLER)	231
GSE TEST CONDUCTOR (BOEING)	266
S-IVB TEST CONDUCTOR (MDAC)	241
IU TEST CONDUCTOR (IBM)	251
INSTRUMENTATION CONTROLLER (NASA-IN)	116
SUPPORT CONTROLLER (NASA-SO)	122
INSTALLATION SUPPORT CONTROLLER (NASA-IS)	114

SPACE VEHICLE TEST SUPERVISOR OIS SPECIAL COORDINATION CHANNEL

CHANNEL 174 HAS BEEN DELEGATED TO THE SV TEST SUPERVISOR AS AN AUXILIARY CHANNEL. THIS CHANNEL MAY BE UTILIZED AT THE DISCRETION OF THE SV TEST SUPERVISOR TO RESOLVE PROBLEMS INVOLVED WITH TEST SUPPORT ACTIVITIES AND FOR CONFERENCE DISCUSSIONS WITH THE KSC WEATHER STATION.

SUPERINTENDENT OF RANGE OPERATIONS (SRO)

THE SRO HAS ACCESS TO OIS CHANNELS 181, 121, 261, AND 264. THE TEST SUPERVISOR WILL REQUEST THE SRO TO SWITCH TO ONE OF THESE CHANNELS WHEN HIS ACTIVE PARTICIPATION IS REQUIRED; NORMALLY, THE SRO WILL MONITOR ROUTINE TEST COMMUNICATIONS WITH THE TEST SUPERVISOR.

PAD TEST SUPERVISOR (PVTS)

AN ASSISTANT TEST SUPERVISOR WILL BE LOCATED AT THE PAD DURING TIMES OF OPEN PAD CONDITIONS TO MONITOR THE OPERATIONS AND ASSESS PROBLEM AREAS FOR THE TEST SUPERVISOR. HE WILL COORDINATE OPERATIONS AT THE PAD FOR THE TEST SUPERVISOR AND WILL UTILIZE OIS CHANNEL 151.

OIS SYSTEM TROUBLE REPORTING

TO REPORT TROUBLES OR REQUEST ASSISTANCE IN THE USE OF THE OIS SYSTEM, CONTACT YROL (O&C, CIF), BROL (LC-39), OR JROL (ALL OTHER AREAS ON OIS CHANNEL 117. IF TROUBLE PREVENTS USE OF OIS, CONTACT COMMUNICATIONS CONTROL CONSOLE ON 867-4141.

HEADSET INTEGRITY CHECK

A HEADSET, HEADSET CORD, AND EXTENDER CABLE INTEGRITY CHECK WILL BE MADE BY EACH USER OF THE OIS SYSTEM EACH TIME HE COMES ON STATION TO SUPPORT THE SPACE VEHICLE LAUNCH COUNTDOWN.

WHEN COMING ON STATION, HE WILL REPORT TO HIS IMMEDIATE SUPERVISOR USING ONE OF THE FOLLOWING PROCEDURES

A. IF THE HEADSET IS CONNECTED DIRECTLY TO AN OIS-RF END INSTRUMENTS

1. SELECT YOUR SUPERVISOR'S PRIME CHANNEL ON THE ACTIVE DIAL.

2. REPORT TO YOUR SUPERVISOR STATING CALL SIGN AND POSITION.

3. SELECT CHANNEL 274 ON THE MONITOR DIAL. A 1000 HZ TONE WILL BE HEARD.

4. GIVE A SHORT COUNT, E.G. 1, 2, 3, 4, 5, --- 5, 4, 3, 2, 1. ON YOUR ACTIVE CHANNEL.

5. THE SUPERVISOR MONITOR DIAL SHOULD NOT BE SET TO CHANNEL 274.

IF THE SUPERVISOR HEARS THE 1000 HZ TONE, THE HEADSET IS UNSATISFACTORY AND SHOULD BE REPORTED THROUGH ESTABLISHED CHANNELS.

IF THE SUPERVISOR DOES NOT HEAR THE 1000 HZ TONE, THE HEADSET IS SATISFACTORY.

B. IF THE HEADSET IS CONNECTED TO AN EXTENDER CABLE

1. REPEAT ITEMS A.1 THROUGH 5.

2. IF THE RESULTS ARE UNSATISFACTORY (SUPERVISOR HEARS 1000 HZ TONE), THE FOLLOWING IS REQUIRED TO ISOLATE THE PROBLEM TO HEADSET OR EXTENDER CABLE

(A) REMOVE HEADSET FROM EXTENDER CABLE AND CONNECT DIRECTLY TO NEAREST AVAILABLE OIS-RF INSTRUMENTS.

(B) REPEAT ITEMS A.1 THROUGH 5.

(C) IF RESULTS ARE STILL UNSATISFACTORY, THE PROBLEM IS IN THE HEADSET OR HEADSET CORD.

(D) IF THE RESULTS ARE SATISFACTORY, THE PROBLEM IS IN THE EXTENDER CABLE.

THE UNSATISFACTORY COMPONENT SHOULD BE REPORTED THROUGH ESTABLISHED CHANNELS.

NOTE

THIS CHECK IS APPLICABLE AT THE O&C AND LC-39.

THOSE USERS HAVING AUDIO CAPABILITY (TYPE 51 UNIT) SHOULD NOT ACCESS ANY OIS CHANNELS THROUGH THE AUDIO SYSTEM FOR THIS CHECK.

END OF HEADSET INTEGRITY CHECK

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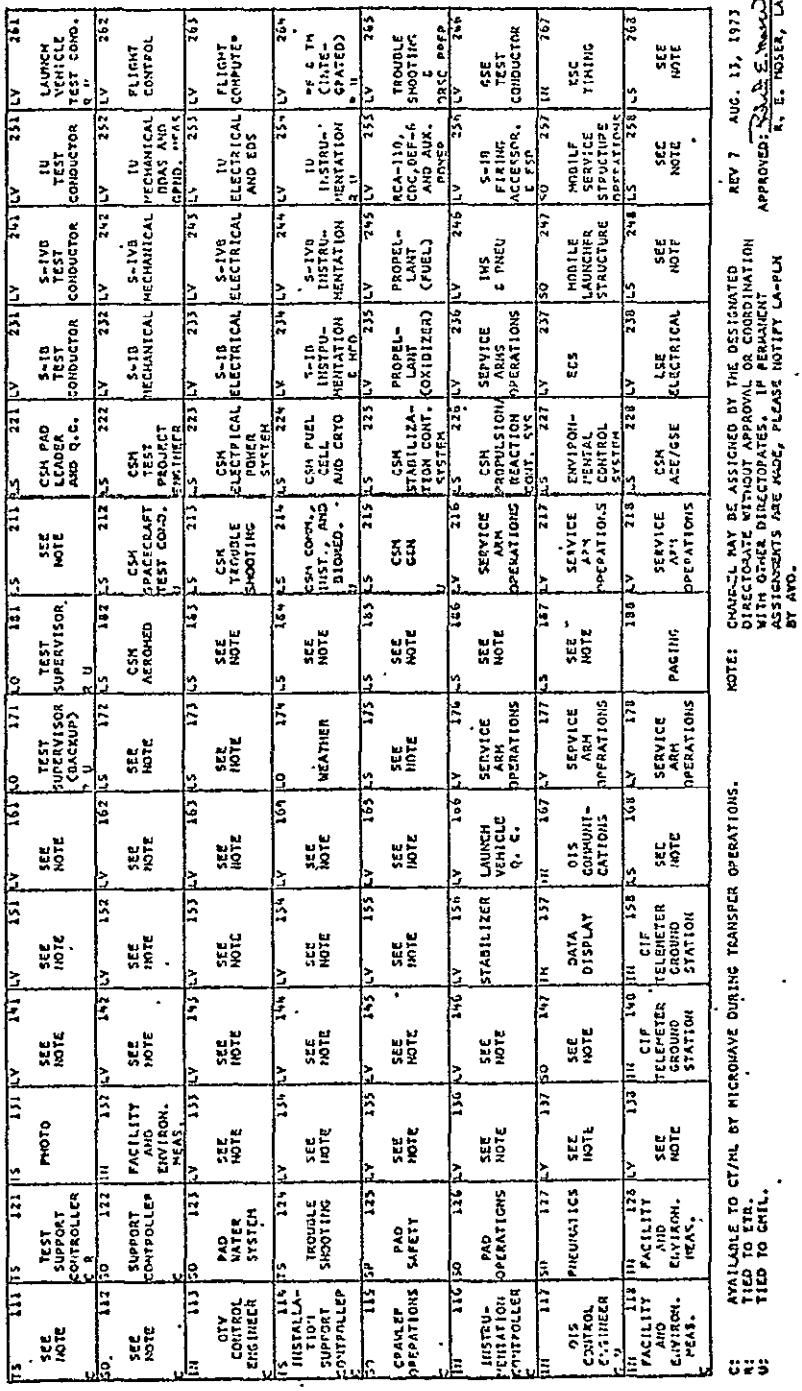


OPERATING STATIONS

TEST CONDUCTORS AND TEST MANAGEMENT PERSONNEL

DLO	LAUNCH DIRECTOR (NASA)
LOM	LAUNCH OPERATIONS MANAGER (NASA)
SVTS	SPACE VEHICLE TEST SUPERVISOR (NASA)
MSTC	SPACECRAFT TEST CONDUCTOR (CSM/NASA)
CLTC	LAUNCH VEHICLE TEST CONDUCTOR (NASA)
CTSC	TEST SUPPORT CONTROLLER (NASA)
CUTC	IU STAGE TEST CONDUCTOR (IBM)
C3TC	S-IB STAGE TEST CONDUCTOR (CHRYSLER)
C1TC	GSE STAGE TEST CONDUCTOR (BOEING)
C4TC	S-IVB TEST CONDUCTOR (MDAC)
BOSC	SUPPORT CONTROLLER (NASA)
RTIS	INSTALLATION SUPPORT CONTROLLER (NASA)
CGIC	INSTRUMENTATION CONTROLLER (NASA)

SYSTEMS SAFETY

CPSS	SYSTEMS SAFETY

LAUNCH OPERATIONS SECURITY

CTNS	SECURITY CONTROLLER

RANGE SUPPORT

CRSS	RANGE SAFETY SUPERVISOR'S PANEL
GMIL	UNIFIED S-BAND GROUND STATION
RSO	RANGE SAFETY OFFICER
SRO	SUPERINTENDENT OF RANGE OPERATIONS

FLIGHT CONTROL (MCC)

HFLT	FLIGHT DIRECTOR, HOUSTON

OPERATIONS PERSONNEL

BCMP	CSM PILOT, BACK-UP
BEACH	
BOSS	LAUNCH SITE RECOVERY FORCES COMMANDER
BGCC	GROUND COMPUTER COMPLEX FIRING ROOM
BLTM	TM SYSTEMS ENGINEER
BLRF	LV DR5CR SYSTEMS ENGINEER
BP40	PHOTO COORDINATOR
BOTV	OTV CONTROLLER
BWIC	WIDEBAND SYSTEM CENTER/AAS POWER-RECORDER OPERATOR
BTMC	TM C/O EQUIPMENT, COMM, MODULE ROOM 2P10
CEDK	CRT KEYBOARD - EDS DCC OPERATOR
CLGK	CRT KEYBOARD - GUIDANCE COMPUTER
CLVN	VEHICLE NETWORKS CONSOLE
CSAT	TEST CONDUCTOR, S/C ASST.
CSA9	SERVICE ARM 9 CONTROL CONSOLE, COMM, MOD.
CSPP	SERVICE ARMS POWER PANEL
CSTO	ASTRO COMM.
CUES	EDS PREPARATION
CUEV	EVENTS DISPLAY (IU)
CUNP	NETWORKS PANEL
CUSW	NETWORKS SWITCH SELECTOR PANEL
CWCP	INDUSTRIAL WATER CONTROL PANEL
CLMS	MECHANICAL SYSTEMS ENGINEER
C1CS	CUTOFF SENSORS PANEL
C1DP	PROPELLANT DISPERSION AND ORDNANCE (DESTRUCT) PANEL
C1FC	FLIGHT CONTROL RECORDERS
C1FP	FIRING CONSOLE AND COMPONENT TEST PANEL
C1LO	LOX SYSTEM PANEL
C1NP	NETWORKS PANEL (S-IC)
C1PP	POWER PANEL (DC)
C1SP	SEQUENCER PANEL
C2DP	PROPELLANT DISPERSION PANEL
C1VP	NETWORKS PANEL (S-II)
FTMS	TELEMETRY GROUND STATION (CIF)
HARDTOP	PAD EGRESS TEAM COMMANDER
LIEF	LAUNCH INFORMATION EXCHANGE FACILITY
MACE	ACE TEST DIRECTOR, GE
MLFC	FUEL CELL UNIT 12, S/C
MTPE	MR TEST PROJECT ENGINEER, UNIT 10, S/C

PEHE	ENVIRONMENTAL HEALTH ENGINEER
PVSS	SYSTEMS SAFETY (PAD)
PVTS	PAD TEST SUPERVISOR
SCDR	CSM COMMANDER
SEH7	MSS HAZARDS MONITOR OPERATOR
UGCU	WATER GLYCOL CONTROL UNIT OPERATOR
UWGR	GLYCOL REFRIGERATION UNIT, S/C
VUMS	IU MEASURING GSE STATION
VURF	C-BAND RADAR AND CCS CHECKOUT
Z1	ABORT MONITOR VISUAL OBSERVER UC-4 (PAD A); UC-12 (PAD B)
Z2	ABORT MONITOR VISUAL OBSERVER UC-16 (PADS A & B)
Z3	ABORT MONITOR VISUAL OBSERVER UC-17 (PADS A & B)

COMPUTER PROGRAMS

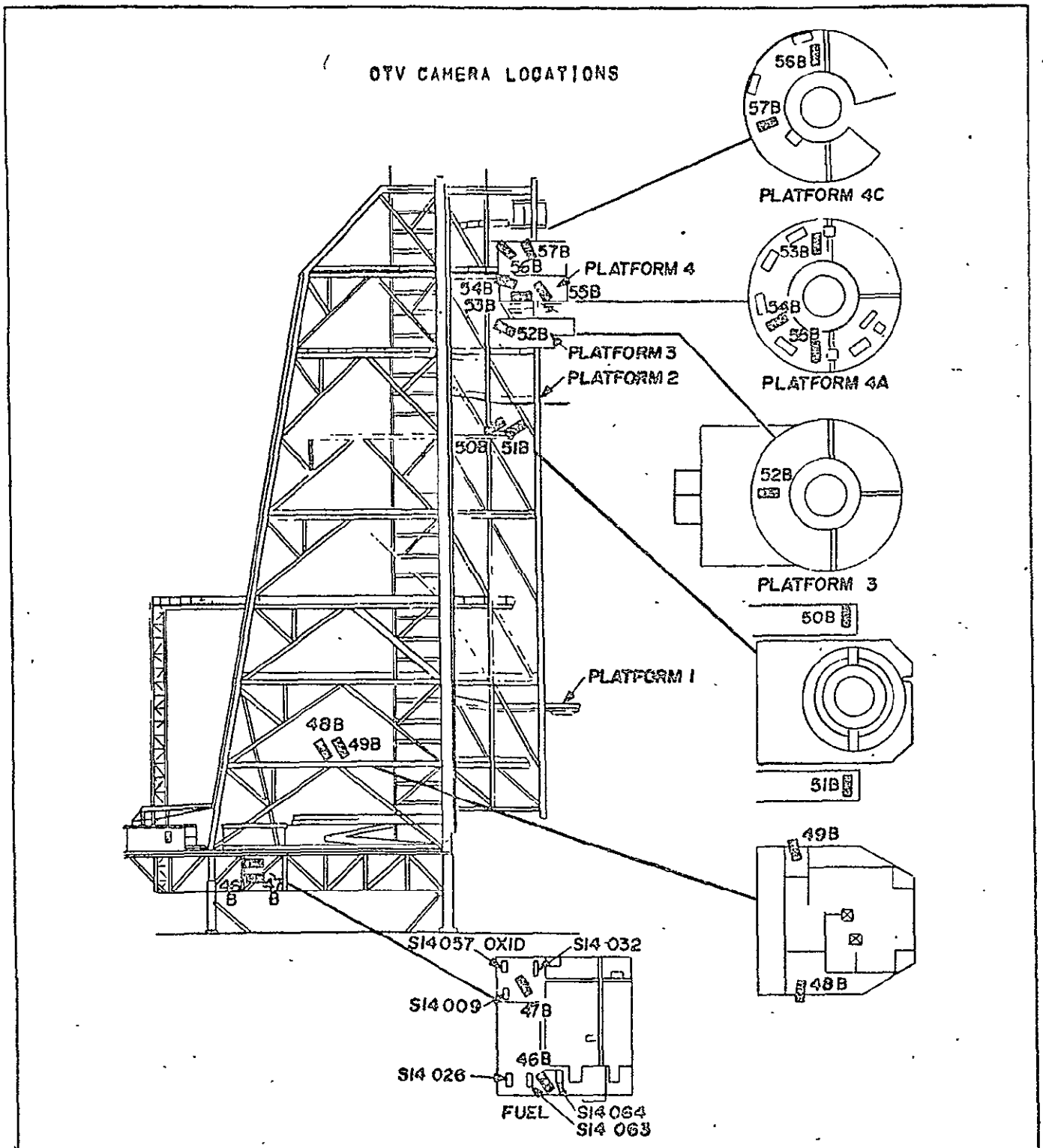
PROGRAM	TITLE & DESCRIPTION	RUNNING TIME
FT-25	SC DISCRETE INPUT TEST	5 MINUTES
FT-42	PREPARE TO LAUNCH TEST	2 MINUTES, 25 SECONDS
FT-45	LVDC COMMAND SYSTEM TEST	5 MINUTES
FT-47	PREFLIGHT COMMAND TEST	6 OR 10 MINUTES (DEPENDENT ON VARIOUS OPTIONS)

THIS LIST CONTAINS ONLY MAJOR COMPUTER PROGRAMS REFERENCED IN THIS TCP. REFER TO SUPPORTING COUNTDOWN TCP'S FOR OTHER COMPUTER PROGRAM INFORMATION.

OTV AND AAS CAMERA LOCATIONS

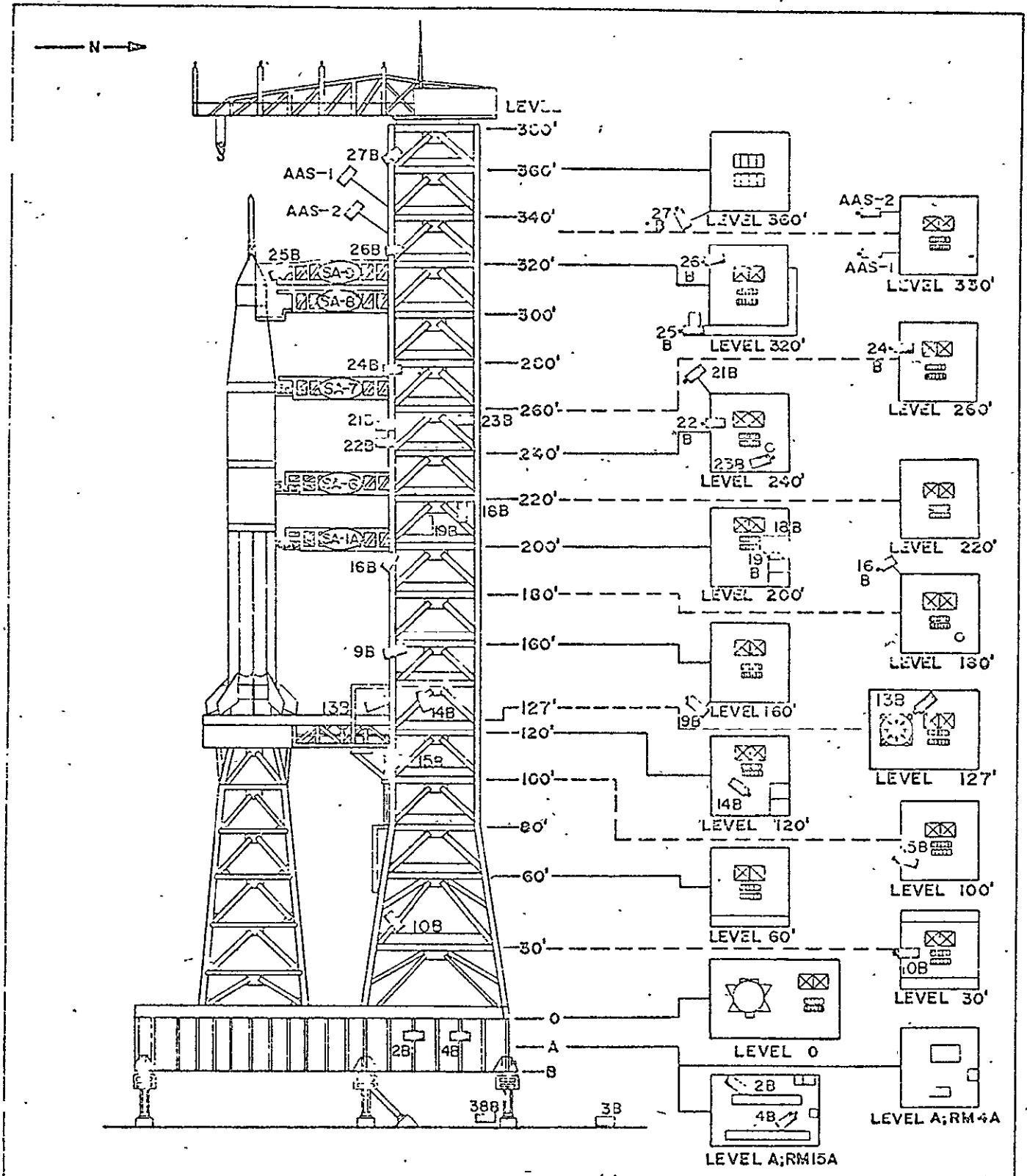
CAMERA NUMBER	LOCATION	SUBJECT TO BE VIEWED
		PRIME SWITCHER INPUTS
03B	(NW) PAD APRON	LUT SIDE 3; LOX/LH2 DISCONNECT TOWERS; FLAME DEFLECTOR COOLING WATER; LUT HORIZ, RUN AND VERT, RISERS 0'-200'.
09R	(SE) LUT-1 160' LEVEL	S-IB VEHICLE OVERALL; RP-1 FUEL MAST; EMERG, EGRESS
10R	LUT-1 30' LEVEL	S-IB ENG, SERVICE PLATFORM
12R	LUT-1 100' LEVEL	S-IB RP-1 VALVE COMPLEX
16B	(SW) LUT-1 180' LEVEL	VIEW OF 127' DECK; EMERG, EGRESS; S/A-1A AND 6; S-IB FIRING ACCESSORIES; LOX SERVICE MAST
19B	(E) LUT-1 200' LEVEL	S-IVB LOX/LH2 VALVE COMPLEX; IWS FOGGING
21R	(SW) LUT-1 240' LEVEL	S-IVB LOX/LH2 FILL DISCONNECT; S/A-6; MSS PLATFORM 2
22B	(S) LUT-1 240' LEVEL	S-IVB LOX/LH2 FILL DISCONNECT/AFT UMBILICAL; S/A-1A-6-7; S-IB
24R	(S) LUT-1 260' LEVEL	S-IVB FWD, IU UMBILICAL; GH2 VENT; S/A-6-7-8
25R	LUT-1 320' LEVEL	INTERIOR OF WHITE ROOM AND SPACECRAFT; CM HATCH
26R	(S) LUT-1 320' LEVEL	S/A-8-9; CM; UMBILICAL CONNECTIONS; FLUID LINES
27R	(SE) LUT-1 360' LEVEL	S/A-8-9; Q-BALL; DAMPERS; EMERG, EGRESS; FLUID LINES
28B	(NW) SIDE OF PAD	LOX STORAGE TANKS, VALVES, LINES, PUMPS
29R	(NW) SIDE OF PAD	LOX STORAGE TANKS, VALVES, LINES, PUMPS, EMERG, EGRESS
31R	(NE) PAD PERIMETER SITE #1	VEHICLE; LH2 FACILITIES - VALVES, LINES, BURN POND

32B	(NE) SIDE OF PAD	LH2 STORAGE TANK, VALVES, LINES
34B	(SW) PAD APRON	INGRESS/EGRESS ELEVATOR ENTRANCE; S-IVB; LOX VENTS; OXIDIZER
35B	(SE) PAD APRON	VEHICLE; LOX VENT VALVES; WATER PIT; OXIDIZER
36B	(E) PAD APRON	PAD SURFACE; VEHICLE; SERVICE ARMS; LOX/LH2 FAC.
38B	(NE) PAD APRON	LH2 FACILITIES; PAD SURFACE; INGRESS/EGRESS
AAS-3	(E) SIDE OF PAD	VEHICLE VERTICAL MOTION; DECK; AND SERVICE ARMS
AAS-4	(W) SIDE OF PAD	VEHICLE VERTICAL MOTION; DECK; AND SERVICE ARMS
ROOF	VAB ROOF (SE)	CRAWLERWAY; PAD/LUT-1; VEHICLE; MSS PARKSITE
SANDERS	FR-2 COMPUTER ROOM	SANDERS OUTPUT TRUNK #1 (FR-2 OR FR-3 COMPUTER RM, DATA WILL BE PROVIDED AS DICTATED BY TEST CONDITION);


OTV CAMERA LOCATIONS
56B
57B
PLATFORM 4C
57B
56B
PLATFORM 4
54B
53B
55B
53B
54B
56B
PLATFORM 4A
52B
PLATFORM 3
PLATFORM 2
50B 51B
52B
PLATFORM 3
50B
PLATFORM 1
48B
49B
51B
49B
48B
S14 057 OXID
S14 032
S14 009
47B
46B
S14 026
FUEL
S14 064
S14 063
MSS

SPACE VEHICLE COUNTDOWN - RESCUE VEHICLE
AUGUST 22, 1973 APOLLO/SATURN

DATE: ORIGINAL
REVISION



ML-1

SPACE VEHICLE COUNTDOWN - RESCUE VEHICLE
AUGUST 22, 1973 APOLLO/SATURN

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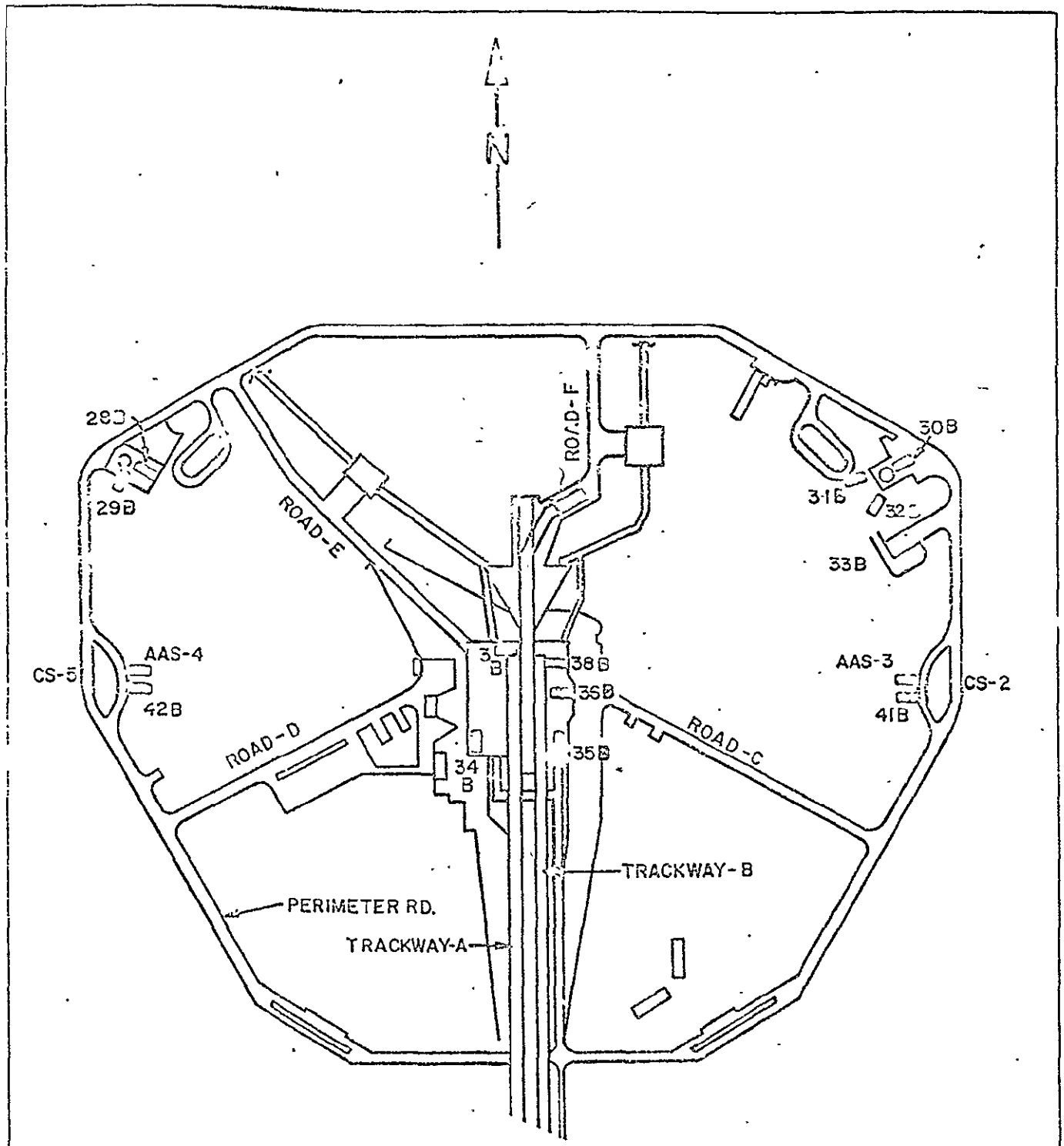
PAGE 26
TEST NO. SV-46400R
VEHICLE SKYLAB R



PAD-B

LIST OF ABBREVIATIONS/ACRONYMS

AAC	ABORT ADVISORY CHANNEL
AAS	ABORT ADVISORY SYSTEM
ACE	ACCEPTANCE CHECKOUT EQUIPMENT
ACS	ASTRO-COMMUNICATION SYSTEM
AFETR	AIR FORCE EASTERN TEST RANGE
AIU	ABORT INTERFACE UNIT
ALC	ASTRO LAUNCH CIRCUIT
ALDS	APOLLO LAUNCH DATA SYSTEM
ALSA	ASTRONAUT LIFE SUPPORT ASSEMBLY
AM	AMPLITUDE MODULATED; AIRLOCK MODULE
APS	AUXILIARY PROPULSION SYSTEM (SWS)
ATM	APOLLO TELESCOPE MOUNT
ATMDC	ATM DIGITAL COMPUTER
BP	BOILERPLATE
BPC	BOOST PROTECTIVE COVER
CADFISS	COMPUTATION AND DATA FLOW INTEGRATED SUBSYSTEM
CASTS	COUNTDOWN AND STATUS TRANSMITTING SYSTEM
CB	CIRCUIT BREAKER
CBRM	CHARGER BATTERY RELAY MODULE
CCATS	COMMUNICATIONS, COMMAND, AND TELEMETRY SYSTEM
CCC	COMPLEX CONTROL CENTER
CCF	CONVERTER COMPRESSOR FACILITY
CCS	COMMAND COMMUNICATIONS SYSTEM
C&D	CONTROL AND DISPLAY (ATM)
CD	COUNTDOWN
CD&SC	CENTRAL DISTRIBUTION AND SWITCHING CENTER
CDC	COUNTDOWN CLOCK
CDDT	COUNTDOWN DEMONSTRATION TEST
CDF	CONFINED DETONATING FUSE
CDU	COUPLING DATA UNIT
C2F2	CREW COMPARTMENT FIT AND FUNCTION
CH	CHANNEL
CIF	CENTRAL INSTRUMENTATION FACILITY
CIU	COMPUTER INTERFACE UNIT
CMD	COMMAND
CMGS	CONTROL MOMENT GYRO SUBSYSTEM
COAS	CREW OPTICAL ALIGNMENT SIGHT
COMM	COMMUNICATION
C/O	CHECKOUT
CRDU	COMMAND RELAY DRIVER UNIT
CRG	CONTROL RATE GYRO
CRT	CATHODE RAY TUBE
CRYO	CRYOGENIC
C/T	CRAWLER/TRANSPORTER
C&W	CAUTION AND WARNING

DA	DEPLOYMENT ASSEMBLY
DADE	DIGITAL ACQUISITION AND DECOMMUTATION EQUIPMENT
DAS	DATA ACQUISITION SYSTEM
DB	DESIGN BURST
DC	DIRECT CURRENT
DCS	DIGITAL COMMAND SYSTEM
DDAS	DIGITAL DATA ACQUISITION SYSTEM
DEE	DIGITAL EVENTS EVALUATOR
DPDM	DOUBLE PULSE DURATION MODULATION
DPF	DIFFERENTIAL PRESSURE FEEDBACK
DRSCS	DIGITAL RANGE SAFETY COMMAND SYSTEM
DRSCR	DIGITAL RANGE SAFETY COMMAND RECEIVER
DTC	DESIGN/TEST CONTRACTOR OR CENTER
DTCS	DIGITAL TEST COMMAND SYSTEM
DTMS	DIGITAL TEST MONITORING SYSTEM
DTS	DATA TRANSMISSION SYSTEM
DTVC	DIGITAL TRANSMISSION AND VERIFICATION CONVERTER
DUA	DIGITAL UPLINK ASSEMBLY
EBW	EXPLOSIVE BRIDGE WIRE
E/C	ENVIRONMENTAL CHAMBER
ECS	ENVIRONMENTAL CONTROL SYSTEM
EDC	EXPERIMENT DEVELOPMENT CENTER
EDS	EMERGENCY DETECTION SYSTEM
EEAP	EMERGENCY EGRESS AIR PACK
EGADS	ELECTRONIC GROUND AUTOMATIC DESTRUCT SYSTEM
EIS	EXPERIMENT INTEGRATION CENTER
E-M	ELECTRO-MECHANICAL
EMC	ELECTROMAGNETIC COMPATIBILITY
EPC	EXPERIMENT POINTING CONTROL
EPS	ELECTRICAL POWER SYSTEM
ERD	EXPERIMENT REQUIREMENTS DOCUMENT
EREP	EARTH RESOURCES EXPERIMENT PACKAGE
ESE	ELECTRICAL SUPPORT EQUIPMENT
ESP	ENGINE SERVICE PLATFORM
ESS	EXPERIMENT SUPPORT SYSTEM
ETR	EASTERN TEST RANGE
EVA	EXTRAVEHICULAR ACTIVITY
FAS	FIXED AIRLOCK SHROUD
FCC	FLIGHT CONTROL COMPUTER (LV)
FDS	FLUID DISTRIBUTION SYSTEM
FM	FREQUENCY MODULATION
FMS	FOOD SERVICE MANAGEMENT (OWS)
FR	FIRING ROOM (LCC)
FSRT	FLIGHT SYSTEMS REDUNDANCY TEST
FT	FUNTIONAL TEST, FOOT
FTR	FINAL TEST RACK
FWD	FORWARD

G&C	GUIDANCE AND CONTROL
GET	GROUND ELAPSED TIME
GETS	GROUND EQUIPMENT TEST SET
GHE	GASEOUS HELIUM
GH2	GASEOUS HYDROGEN
GLFC	GRAPHITE LM FUEL CASK
GMT	GREENWICH MEAN TIME
GSFC	GODDARD SPACE FLIGHT CENTER
GN2	GASEOUS NITROGEN
GO2(GOX)	GASEOUS OXYGEN
GSE	GROUND SUPPORT EQUIPMENT
HCO	HARVARD COLLEGE OBSERVATORY
HDA	HOLDDOWN ARM
HGDS	HAZARDOUS GAS DETECTION SYSTEM
HOSC	HUNTSVILLE OPERATIONS SUPPORT CENTER
HPG	HIGH PRESSURE GAS
HSS	HABITABILITY SUPPORT SYSTEM
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
H2	HYDROGEN
H2O	WATER
HZ	HERTZ (CYCLES PER SECOND)
ID	IDENTIFICATION
IEU	INTERFACE ELECTRONICS UNIT
IGOR	INTERCEPT GROUND OPTICAL RECORDER
ILCA	INVERTER LIGHT CONTROL ASSEMBLY (AM/MDA)
IMU	INERTIAL MEASURING UNIT
IP	IMPACT PREDICTOR
IRIG	INERTIAL RATE INTEGRATION GYRO; INTER-RANGE INSTRUMENTATION GROUP
IU	INSTRUMENT UNIT
IVA	INTRA VEHICLAR ACTIVITY
IWS	INDUSTRIAL WATER SYSTEM
KSC	KENNEDY SPACE CENTER
LBNP	LOWER BODY NEGATIVE PRESSURE
LBR	LOW BIT RATE
LC	LAUNCH COMPLEX
LCC	LAUNCH CONTROL CENTER
LCG	LIQUID COOLED GARMENT
LH2	LIQUID HYDROGEN
LIEF	LAUNCH INFORMATION EXCHANGE SYSTEM
LO	LAUNCH OPERATIONS
LOM	LAUNCH OPERATIONS MANAGER
L/O	LIFTOFF
LO2(LOX)	LIQUID OXYGEN
LP	LOW PRESSURE
LRR	LAUNCH READINESS REVIEW

LS	SPACECRAFT OPERATION (OFFICE SYMBOL)
LSC	LINEAR SHAPED CHARGE
LSE	LAUNCH SUPPORT EQUIPMENT
LSR	LAUNCH SITE RECOVERY
LUT	LAUNCH UMBILICAL TOWER
LV	LAUNCH VEHICLE
LVDA	LAUNCH VEHICLE DATA ADAPTER
LVDC	LAUNCH VEHICLE DIGITAL COMPUTER
LVO	LAUNCH VEHICLE OPERATIONS
MAP	MESSAGE ACCEPTANCE PULSE
MCC	MISSION CONTROL CENTER
MDA	MULTIPLE DOCKING ADAPTER
MDF	MILD DETONATING FUSE
MHZ	MEGAHERTZ
MILA	MERRITT ISLAND LAUNCH AREA
MITTS	MOBILE IGOR TRACKING TELESCOPE SYSTEM
ML	MOBILE LAUNCHER
MODEM	MODULATOR/DEMODULATOR
MOTS	MOBILE OPTICAL TRACKING SYSTEM
MSFC	MARSHALL SPACE FLIGHT CENTER
MSOB	MANNED SPACECRAFT OPERATIONS BUILDING
MSS	MOBILE SERVICE STRUCTURE
OA	ORBITAL ASSEMBLY
OAT	OVERALL TEST
O2	OXYGEN
OIS	OPERATIONAL INTERCOMMUNICATIONS SYSTEM
OICC	OPERATIONS INTERFACE CONTROL CHART
OTV	OPERATIONAL TELEVISION
OWS	ORBITAL WORKSHOP
PA	PUBLIC ADDRESS
PAM	PULSE AMPLITUDE MODULATION
PCG	POWER CONDITIONING GROUP (AM)
PCM	PULSE CODE MODULATION
PCMD	PARTICLE COUNT MONITORING DEVICE
PCS	POINTING CONTROL SYSTEM (ATM)
PD	PROPELLANT DISPERSION
PDS	PROPELLANT DISPERSION SYSTEM
PI	PRINCIPAL INVESTIGATOR
PREPS	PREPARATIONS
PS	PAYLOAD SHROUD
PSI	POUNDS PER SQUARE INCH
PTCR	PAD TERMINAL CONNECTION ROOM
PTCS	PROPELLANT TANKING COMPUTER SYSTEM
PU	PROPELLANT UTILIZATION
PYRO	PYROTECHNIC

QC	QUALITY CONTROL
QD	QUICK DISCONNECT
QLDS	QUICK LOOK DATA STATION
RACS	REMOTE AUTOMATIC CALIBRATION SYSTEM
RCS	REACTION CONTROL SYSTEM
RF	RADIO FREQUENCY
RICS	RANGE INSTRUMENTATION CONTROL SYSTEM
RLC	ROTATING LITTER CHAIR
RP-1	ROCKET PROPELLANT - 1
ROTI	RECORDING OPTICAL TRACKING INSTRUMENT
RSCR	RANGE SAFETY COMMAND RECEIVER
RSO	RANGE SAFETY OFFICER
RSS	REFRIGERATION SUBSYSTEM
RTC	REAL TIME COMMAND
RTCC	REAL TIME COMPUTER COMPLEX (MCC)
RTCS	REAL TIME COMPUTER SYSTEM (AFETR)
SRA	SAFE AND ARM
SA	SERVICE ARM
SAL	SCIENTIFIC AIRLOCK
SAS	SOLAR ARRAY SYSTEM
SAWS	SOLAR ARRAY WING SIMULATOR
SC	SPACECRAFT
SCAPE	SELF-CONTAINED ATMOSPHERIC PROTECTIVE ENSEMBLE
SCO	SPACECRAFT OPERATIONS
SCS	STABILIZATION AND CONTROL SYSTEM
SHE	SUPERCRITICAL HELIUM
SIM	SIMULATE
SIT	SOFTWARE INTEGRATED TEST
SLCC	SATURN LAUNCH COMPUTER COMPLEX
SLDS	SKYLAB LAUNCH DATA SYSTEM
SLR	SKYLAB RESCUE

SRO	SUPERINTENDENT OF RANGE OPERATIONS
STC	SPACECRAFT TEST CONDUCTOR
STDN	SPACECRAFT TRACKING AND DATA NETWORK
STS	STRUCTURE TRANSITION SECTION
SV	SPACE VEHICLE
SWS	SATURN WORKSHOP
S-IB	SATURN IB LAUNCH VEHICLE
S-IC	SATURN V 1ST STAGE
S-II	SATURN 2ND STAGE
TACS	THRUST ATTITUDE CONTROL SUBSYSTEM (SWS)
TCE	TELEMETRY CHECKOUT EQUIPMENT
TCH	THRUST CHAMBER
TCP	TEST AND CHECKOUT PROCEDURE
TCS	TERMINAL COUNT SEQUENCER; THERMAL CONTROL SYSTEM (ATM)
TDDS	TELEVISION DATA DISPLAY SYSTEM
TDR	TIME DOMAIN REFLECTOMETER
TM	TELEMETRY
TRS	TIME REFERENCE SYSTEM
TSM	TAIL SERVICE MAST
TTY	TELETYPE
UDL	UP-DATA LINK
UHF	ULTRA HIGH FREQUENCY
UMB	UMBILICAL
USB	UNIFIED S-BAND
UV	ULTRAVIOLET
VAB	VEHICLE ASSEMBLY BUILDING
VCG	VECTORCARDIOGRAM
VHF	VERY HIGH FREQUENCY
VLF	VERY LOW FREQUENCY
VMGSE	VEHICLE MEASUREMENT GSE
WCIU	WORKSHOP COMPUTER INTERFACE UNIT
WITS	WEST INTEGRATED TEST STAND
WMS	WASTE MANAGEMENT SYSTEM (OWS)
W/R	WHITE ROOM
Z-LV	Z-AXIS PARALLEL TO LOCAL VERTICAL

SELECTED HOLD POINTS

THE FOLLOWING MAJOR MILESTONE ACTIVITIES ARE THE MOST PROBABLE HOLD POINTS IN THE COUNTDOWN FOR ALL VEHICLES. THE TEST SUPERVISOR OR LAUNCH OPERATIONS MANAGER WILL OBTAIN THE STATUS OF THE MCC OPERATIONS; HE MAY ELECT TO HOLD THE COUNT IF MCC IS HAVING PROBLEMS (IN A NO-GO STATUS) DEPENDENT ON THE OVERALL ASSESSMENT OF THE OPERATIONS.

MCC STATUS REPORT T-TIME DAYS HRS MIN SEC	KSC EVENT T-TIME DAYS HRS MIN SEC	EVENT
07 05 00	06 50 00	LV CRYO LOADING
5 MINUTES BEFORE END OF HOLD AT T-3 30 00	03 15 00	FLIGHT CREW LEAVES MSOB
01 00 00	04 45 00	RETRACT ACCESS ARM (TO PARK POSITION
00 20 00	00 14 30	LV TERMINAL SEQUENCE HOLD POINT
00 06 00	00 03 07	START AUTOMATIC LAUNCH SEQUENCE

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SPACE VEHICLE COUNTDOWN - RESCUE VEHICLE
AUGUST 22, 1973
DATE: ORIGINAL
REVISION

PAD SPACECRAFT LAUNCH CLOSEOUT PLAN

-3:30 -3 HOURS -2:30 -2 HOURS -1:30 -1 HOUR -30 MIN 0

L/V CRYOGENIC LOADING
CLOSEOUT CREW TO PAD
OPEN HATCH & PREP CABIN
CREW INGRESS
FINAL CABIN PREPS
CLOSE HATCH
CABIN PURGE & LEAK CHECK
CLOSE BPC & SECURE W/R
CLEAR PAD

		ELEV. NO.	VEHICLE NO.
CLOSEOUT CREW	SPAD	1	1
	BSPT	1	1
	SGQC	1	2
	SCMT	1	2
	SSSA	1	3
	SSSB	1	3
ASTRONAUTS	SCDR	1	3
	SPLT	1	3
	SSPT	1	3
SECURITY	VAN DRIVER		3
	VAN SECURITY ESCORT		3

ML ELEVATOR NO. 1 — ML LEVEL 320, ML LEVEL A

ML ELEVATOR NO. 2 — ML LEVEL 320, ML LEVEL A

LO-RISE ELEVATOR (WEST PAD APRON) — ML LEVEL A, PAD APRON

PAD APRON
ML LEVEL 90
ML LEVEL 320
IN TRANSIT IN ELEVATORS
ELEVATORS IN EGRESS MODE
ELEVATOR IN NORMAL MODE
IN TRANSIT VEHICLE NO. 1
IN TRANSIT VEHICLE NO. 2
IN TRANSIT VEHICLE NO. 3 (TRANSFER VAN)

1. PERSONNEL WILL REPORT IN TO CVTS UPON ENTERING AND PRIOR TO EXITING ML (HI-RISE) ELEVATORS VIA POINT TO POINT PHONE.
2. PERSONNEL GOING UP WILL REPORT IN TO PAD LEADER.
3. PERSONNEL ON PAD APRON OR IN LO-RISE ELEVATOR WILL RESPOND TO EMERGENCY PAGING DIRECTIONS FROM CVTS.
4. ALL THREE CREWMEN WILL BE TRANSFERRED TO THE LEVEL 320' SIMULTANEOUSLY. SCDR & SPLT WILL EXIT ELEVATOR WITH SSSA AND PROCEED TO W/R. SSPT & SSSB WILL REMAIN IN ELEVATOR UNTIL REQUIRED AT S/C. A SEAT WILL BE PROVIDED IN ELEVATOR FOR SSPT. UPON DIRECTION FROM MSTC, CVTS WILL NOTIFY SSSB VIA POINT TO POINT PHONE TO TRANSFER SSPT TO W/R.
5. LOW RISE ELEVATOR MUST COME TO A COMPLETE STOP BEFORE INNER DOOR IS OPENED.
6. VAN DRIVER WILL REPORT TO CVTS VIA NET 105 UPON ENTRANCE TO THE PAD.
7. UPON COMPLETION OF L/V CRYOGENIC LOADING CVTS WILL NOTIFY SAFETY TO DISPATCH VEHICLES 1, AND 2 FROM MSS PARKSITE (ROADBLOCK A5) TO THE PAD.
8. VAN DRIVER WILL BE RELEASED TO EXIT PAD BY CVTS AFTER SSSB REPORTS ASTRONAUTS ARE AT THE 320 FT LEVEL (PT. TO PT.)
9. CSTO WILL SEND ELEVATOR NO. 2 TO THE 320 FOOT LEVEL UNOCCUPIED.

FOLDOUT FRAME 1

FOLDOUT FRAME 2

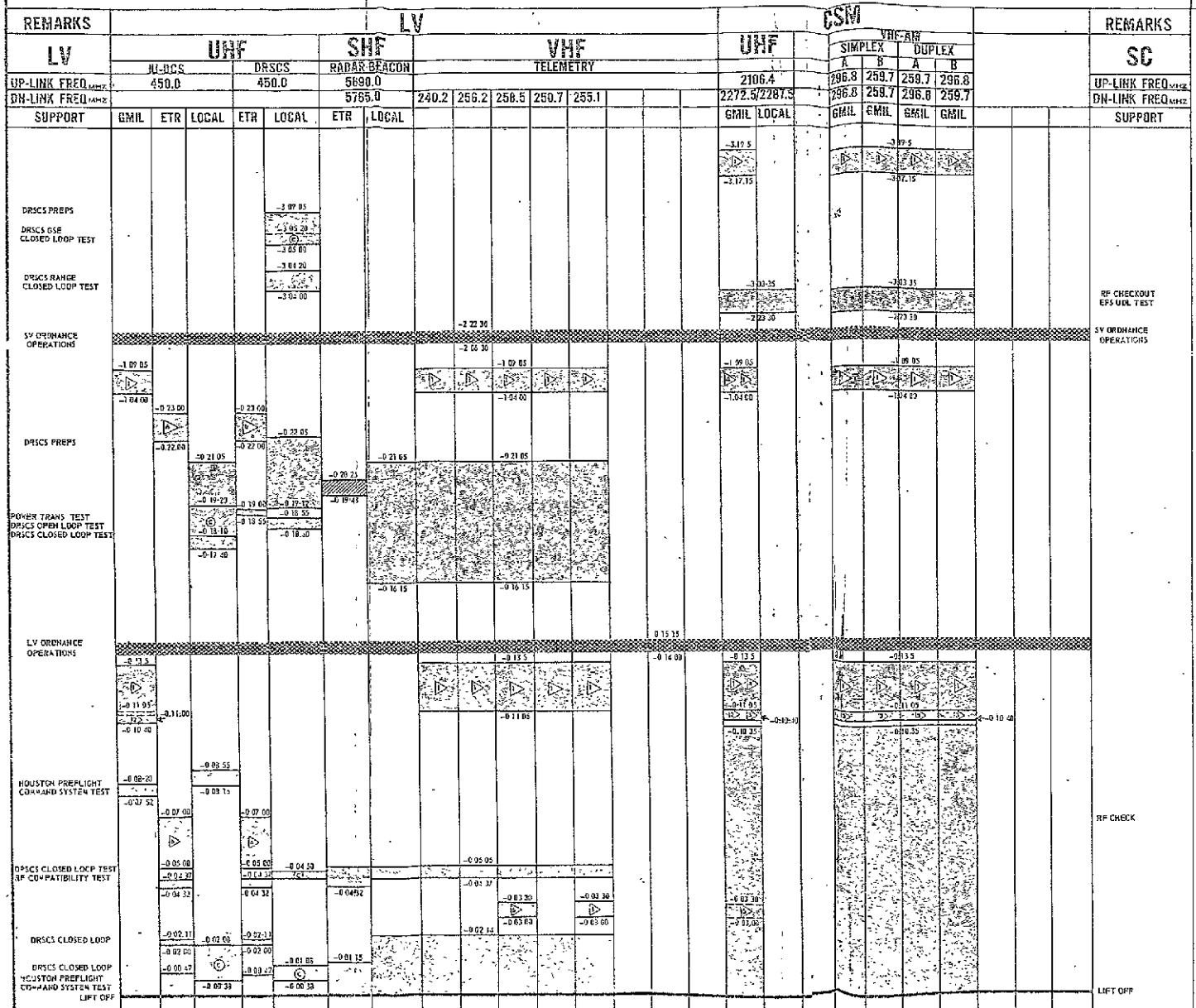
FOLDOUT FRAME

RESCUE SPACE VEHICLE CD.
DATE: 22 AUGUST 1973
REVISION: ORIGINAL

SKYLAB LAUNCH OPERATIONS

PAGE: 5758
TEST NO: SV4D00R
VEHICLE: SKYLAB R

SV CD RF MATRIX



SPACE VEHICLE TM FREQUENCIES

STAGE	LINK	FREQUENCIES (MHZ)
S-IB	CP-1	240.2
	DP-1	256.2
S-IVB	CP-1	
IU	CP-1	250.7
	DP-1	255.1
CSM		2287.5
		2272.5
RECOVERY BEACONS CSM		243.0

LEGEND

ALL RADIATION CLEARANCE ARE OPEN LOOP UNLESS INDICATED BY ©

© CLOSED LOOP CLEARANCE

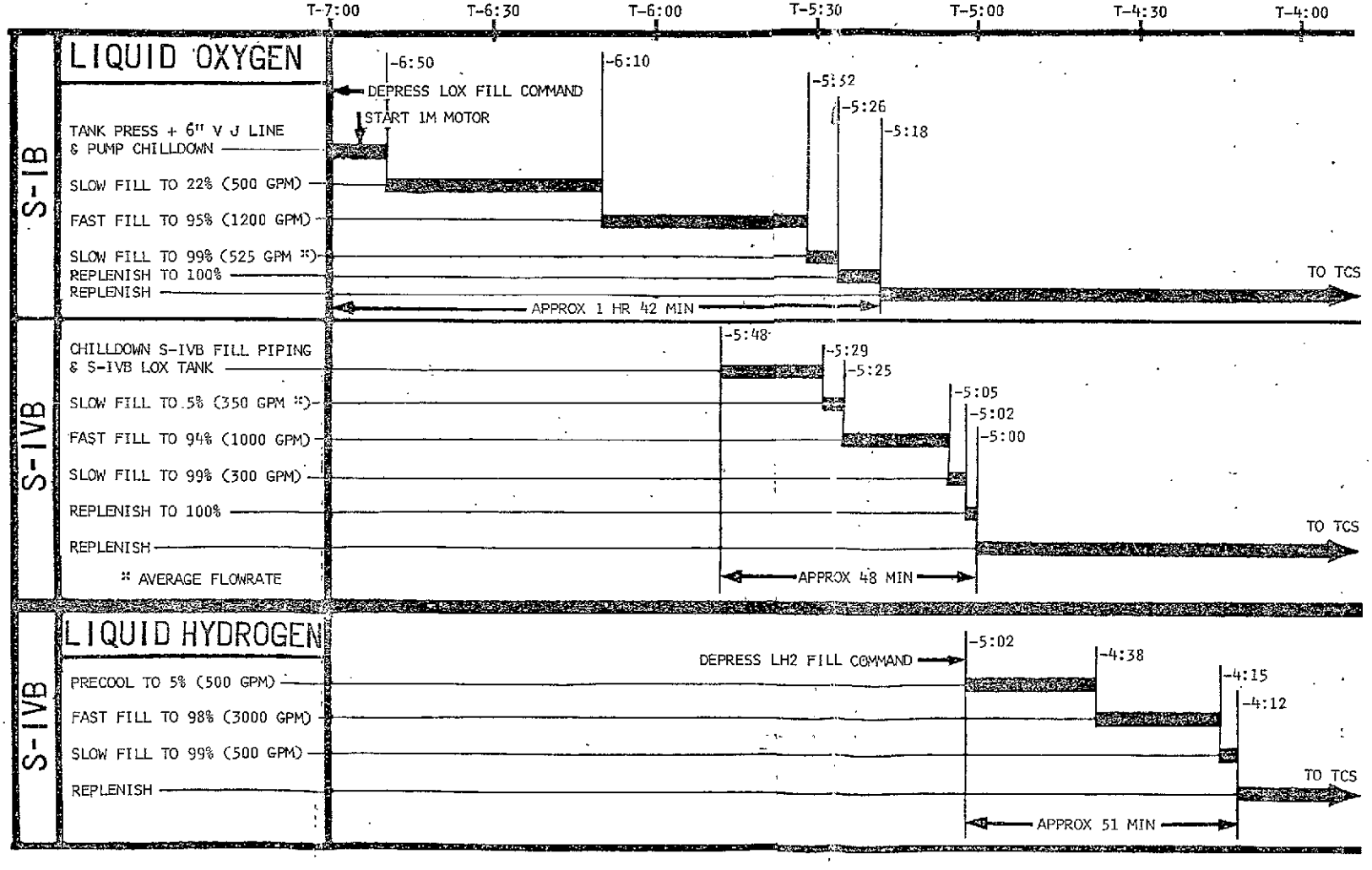
POTENTIAL INTERFERENCE RF SILENCE

D H M S
T- 0 : 00 : 00 : 00 (SECONDS NOT USED UNLESS REQUIRED)

- REQUIRED FOR GMIL ON-STATION CALIBRATION
- REQUIRED FOR MCC COMMAND VALIDATION TEST
- REQUIRED FOR MCC AIR/GROUND VALIDATION TEST
- REQUIRED FOR CIF ANTENNA CALIBRATION
- REQUIRED FOR GMIL FINAL ANTENNA ALIGNMENT
- REQUIRED FOR ETR COMMAND VALIDATION TEST

FOLDOUT FRAME 2

SATURN IB LOX-LH2 LOADING



FOLDOUT FRAME

FOLDOUT FRAME 2

DATE: AUGUST 22, 1973
REVISION: ORIGINAL

SKYLAB RESCUE SPACE VEHICLE COUNTDOWN

OPERATIONS INTERFACE CONTROL CHART

PAGE
TEST NO. SV-40400R
VEHICLE SKYLAB R

OPERATIONAL SEQUENCE

SUPPORT

TEST CONDITIONS

THIS TASK OCCURS 30 MIN EARLIER THAN SHOWN

DATE 7/24/73 LA PLM
EFFECTIVITY SL RESCUE
REVISION ORIGINAL

LEGEND
INTERFACE ITEMS
NON INTERFACE ITEMS

TOP OF PEDESTAL AND ML ZERO LEVEL
MSS LEVELS 4 & 5, 5A, 6 & 7
PAD APRON FLAME TRENCH
BEYOND PERIMETER FENCE
100 FT RADIUS AROUND SV BEYOND PERIMETER FENCE
CM INTERIOR, SLA INTERIOR, SLA SWD
TOP OF PEDESTAL SV INTERIOR, S IB AFT & 10 FT RADIUS OF S IB 56A UNITS
ML 127 FT LEVEL DIRECTLY BELOW ESP & INSIDE PEDESTAL LEGS
ML ZERO LEVEL, ML 127 FT LEVEL & FLAME TRENCH
BLAST DANGER AREA
LAUNCH DANGER AREA

NASA/KSC JUL/73

FOLDOUT FRAME 1

FOLDOUT FRAME 2

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

OPERATING STEPS

**********WARNING**********
*
* IN THE EVENT AN
* EMERGENCY ARISES DURING
* THE RESCUE SPACE
* VEHICLE COUNTDOWN, THE
* SPACE VEHICLE TEST
* SUPERVISOR EMERGENCY
* PROCEDURES, TCP NO.
* SV-46101, SHALL BE
* IMPLEMENTED.
*
****

NOTE

HAZARDOUS OPERATIONS ARE DENOTED WITH THE LETTER "H" IN THE REMARKS COLUMN.

NOTE

HOLDS (STOPPING THE COUNTDOWN CLOCK PRIOR TO T-3' 8"). A HOLD MAY BE REQUESTED BY THE LAUNCH VEHICLE TEST CONDUCTOR, THE SPACECRAFT TEST CONDUCTOR, THE LAUNCH OPERATIONS MANAGER, GMIL, THE TEST SUPPORT CONTROLLER, THE SUPERINTENDENT OF RANGE OPERATIONS, OR THE FLIGHT DIRECTOR. THE REQUEST FOR A HOLD WILL BE MADE TO THE TEST SUPERVISOR (CVTS) OVER CHANNEL 181, WHO WILL STOP THE COUNTDOWN CLOCK AT THE MOST ADVANTAGEOUS TIME.

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					NOTE ---- PRIOR TO BURN POND IGNITION, APPROVAL MUST BE RECEIVED FROM CPSS THAT THE BURN POND AREA IS CLEAR OF ALL PERSONNEL AND THE GATES TO THE AREA ARE LOCKED.	
-91:05 -3 DAYS 19 HRS 5' 0"						
	181	1	CVTS	GMIL SRO	VERIFY READY TO PROCEED WITH PRECOUNT OPERATIONS.	
	181	2	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ FOR GMIL ON-STATION CALIBRATION.	
-91:00 -3 DAYS 19 HRS 0' 0"						
	181 EM PA	1	CVTS		THE RESCUE SPACE VEHICLE PRECOUNT OPERATIONS AT PAD B WILL START ON MY MARK AT T-3 DAYS, 19 HOURS, 0' 0". 5 - 4 - 3 - 2 - 1 - MARK.	
	181	2	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-90:30 -3 DAYS 18 HRS 30' 0"						
	181	1	CVTS	CTSC	VERIFY ALL REQUIRED PERSONNEL AND EQUIPMENT ARE ON STATION READY TO SUPPORT TEST OPERATIONS.	
	181	2	CVTS	LOM	PLACE THE CAMERA OVERRIDE CONTROL SYSTEM OVERRIDE SWITCH ON CONSOLE AB-8 IN THE OFF POSITION AND VERIFY.	
	181	3	CVTS	CTSC	CAMERA OVERRIDE CONTROL SYSTEM OVERRIDE SWITCH ON CONSOLE AB-8 IS IN THE OFF POSITION. ACTIVATE THE CAMERA OVERRIDE CONTROL SYSTEM. PLACE THE CAMERA OVERRIDE CONTROL SYSTEM IN MODE I.	
	181	4	CTSC	CVTS	CAMERA OVERRIDE CONTROL SYSTEM ACTIVATED IN MODE I.	
	181	5	CVTS	LOM	VERIFY CAMERA OVERRIDE CONTROL SYSTEM MODE I LIGHT ON.	
	181	6	CVTS	CTSC	CAMERA OVERRIDE CONTROL SYSTEM MODE I LIGHT ON. NOTE ---- MODE I CAMERAS, WHICH ARE TO BE USED ONLY IN AN EMERGENCY, WILL BE AVAILABLE TO LOM THROUGHOUT THE COUNTDOWN.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-90:30 -3 DAYS 18 HRS 30' 0"	CONTINUED					
	181	7	CVTS	CLTC	VERIFY THE SMDPS IS IN THE 2-SWITCH, 1-VALVE MODE. VERIFY SLA AIR AND GN2 PURGE TEMPERATURE CONTROLS ARE SET TO 67 DEG. F.	
	181	8	CVTS	MSTC	VERIFY READY TO PROCEED WITH PRECOUNT OPERATIONS.	
	181	9	MSTC	CVTS	POWER WILL BE APPLIED TO THE CSM IN APPROXIMATELY 30 MINUTES. VERIFY SMDPS IS IN 2-SWITCH, 1-VALVE MODE. VERIFY SLA AIR AND GN2 PURGE TEMPERATURE CONTROLS ARE SET TO 67 DEG. F.	
-90:05 -3 DAYS 18 HRS 5' 0"						
	181	1	CVTS	CLTC	VERIFY READY TO PROCEED WITH PRECOUNT OPERATIONS.	
	181	2	CVTS	CPSS	VERIFY SAFETY HAS CONTROL OF THE PROPELLANT DISPERSION ENABLE AND TCS KEYS. VERIFY READY TO PROCEED WITH THE PRECOUNT.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-89 15 -3 DAYS 17 HRS 15' 0"						
	181	1	GMIL	CVTS	ON;STATION CALIBRATION IS COMPLETE; GMIL RF IS OFF;	
	181	2	CVTS	SRO	GMIL ON;STATION CALIBRATION IS COMPLETE; GMIL RF IS OFF;	
-89 00 -3 DAYS 17 HRS 0' 0"						
	181	1	MSTC	CVTS	CSM POWER IS ON;	
-84 00 -3 DAYS 12 HRS 0' 0"						
	181	1	MSTC	CVTS	REQUEST CPSS CLEARANCE TO FLOW GO2 AND GH2; REQUEST GH2 HAZARD MONITOR SYSTEM BE ACTIVATED; HAVE SEHZ REPORT TO MTPE ON CH; 222;	
	181	2	CVTS	CTSC	ACTIVATE GH2 HAZARD MONITOR SYSTEM; HAVE SEHZ REPORT TO MTPE ON CH; 222;	
	181	3	CTSC	CVTS	GH2 HAZARD MONITOR SYSTEM IS ACTIVE;	
	181	4	CVTS	CPSS	VERIFY CLEARANCE TO FLOW GO2 AND GH2;	
	181	5	CVTS	MSTC	CLEAR TO FLOW GO2 AND GH2; GH2 HAZARD MONITOR SYSTEM IS ACTIVE;	H

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-83 15 -3 DAYS 11 HRS 15' 0"						
	181	1	CLTC	CVTS	SA-9 WILL BE PRESSURIZED IN 15 MINUTES; THERE WILL BE NO ACCESS ACROSS THE EC/SC INTERFACE FOR APPROXIMATELY 15 MINUTES; CLEARING WILL BE CONTROLLED BY SERVICE ARM PERSONNEL.	
	181	2	CVTS	MSTC	SA-9 WILL BE PRESSURIZED IN 15 MINUTES; CLEARING WILL BE COORDINATED BY SERVICE ARM PERSONNEL LOCALLY.	
83 00 -3 DAYS 11 HRS 0' 0"						
	181	1	CLTC	CVTS	LV APPLYING POWER.	
-82 30 -3 DAYS 10 HRS 30' 0"						
	181	1	CVTS	CLTC MSTC	VERIFY READY FOR SA-9 ENVIRONMENTAL CHAMBER DISCONNECTION IN 1 HOUR.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-82 30 -3 DAYS 10 HRS 30' 0"	CONTINUED					
					NOTE ---- THE CONNECTION/DISCONNECTION OF THE SERVICE ARM NO. 9 ENVIRONMENTAL CHAMBER REQUIRES TBC PERSONNEL TO OPERATE THE SYSTEM AND IBM PERSONNEL TO PROVIDE THE GROUND COMPUTER AND ASSOCIATED SUPPORT EQUIPMENT. SCHEDULING OF THIS OPERATION WILL BE COORDINATED THROUGH THE DLO DAILY STATUS MEETING AND WILL APPEAR ON THE LC-39 72 HOUR/11 DAY OPERATIONS SCHEDULE. WHEN POSSIBLE, IT WILL BE ON FIRST SHIFT IN ORDER TO PROPERLY UTILIZE PERSONNEL AND EQUIPMENT AVAILABLE. IN EMERGENCY REAL TIME SITUATIONS WHEN TBC AND IBM PERSONNEL ARE NOT ON DUTY, LV MUST HAVE AT LEAST 6 HOURS NOTICE TO SUPPORT WHITE ROOM OPERATIONS AND IT MUST BE COORDINATED WITH THE TEST SUPERVISOR.	
-82 20 -3 DAYS 10 HRS 20' 0"						
	181	1	CLTC	CVTS	LV POWER IS ON.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-82 00 -3 DAYS 10 HRS 0' 0"					NOTE ---- ASTRO COMM CHECKS WITH GSE ON OIS CHANNELS-181, 182, 212, 214, 223, AND SPECIAL AUDIO CIRCUITS-ASTRO LAUNCH, KSC AEROMED PRIVATE, MSC PRIVATE, FLIGHT DIRECTOR AND CAP COMM ARE SCHEDULED FOR THE NEXT 8 HOURS.	
-81 30 -3 DAYS 9 HRS 30' 0"						
	181	1	MSTC	CVTS	REQUEST SA-9 ENVIRONMENTAL CHAMBER BE DISCONNECTED FROM SC FOR BPC INSTALLATION.	
	181	2	CVTS	CLTC	DISCONNECT SA-9 ENVIRONMENTAL CHAMBER FROM SC FOR BPC INSTALLATION.	
-81 15 -3 DAYS 9 HRS 15' 0"						
	181	1	CLTC	CVTS	SA-9 ENVIRONMENTAL CHAMBER HAS BEEN DISCONNECTED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-81 00 -3 DAYS 9 HRS 0' 0"						
	181	1	CVTS	BYNS	VERIFY THAT FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8.	
-80 05 -3 DAYS 9 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR DRSCS PREPS. PROTECTION IS NOT REQUIRED.	
-80 00 -3 DAYS 9 HRS 0' 0"						
	181	1	CLTC	CVTS	OBTAIN CLEARANCE FOR LOCAL RANGE SAFETY COMMAND CARRIER. (PROTECTION IS NOT REQUIRED.)	
	181	2	CVTS	CLTC	FLIGHT CODE PLUGS ARE AVAILABLE IN ROOM 4P8.	
-77 20 -3 DAYS 5 HRS 20' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR DRSCS GSB CLOSED LOOP TEST; PROTECTION IS REQUIRED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-77 15 -3 DAYS 5 HRS 15' 0"						
	181	1	CLTC	CVTS	LV PROCEEDING WITH LV DRSCS GSE TEST; VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND CARRIER; (PROTECTION IS REQUIRED.) REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN;	
	181	2	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN;	
	181	3	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN; NOTE THE DETAILED SEQUENCES FOR THE DRSCS GSE CLOSED LOOP TEST ARE IN THE LV PROCEDURE.	
-77 00 -3 DAYS 5 HRS 0' 0"						
	181	1	CLTC	CVTS	LV DRSCS GSE TEST IS COMPLETE; DESTRUCT SYSTEM ENABLE KEY RETURNED TO CPSS; LOCAL RANGE SAFETY COMMAND CARRIER IS OFF;	
	181	2	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED;	
	181	3	CLTC	CVTS	REQUEST RANGE TO SUPPORT DRSCS PREPS ON CH. 264;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-77 00 -3 DAYS 5 HRS 0' 0"	CONTINUED					
	181	4	CVTS	SRO	LV DRSCS GSE CLOSED LOOP TEST IS COMPLETE; LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF; STANDBY ON CH, 264 FOR LV DRSCS PROPS,	
-76 20 -3 DAYS 4 HRS 20' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER; PROTECTION IS REQUIRED; STANDBY ON CH, 261 FOR LV DRSCS RANGE CLOSED LOOP TEST WITH FLIGHT CODE PLUGS,	
-76 15 -3 DAYS 4 HRS 15' 0"						
	181	1	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND CARRIER; (PROTECTION IS REQUIRED.) VERIFY RANGE IS READY TO SUPPORT DRSCS CLOSED LOOP TEST WITH FLIGHT CODE PLUGS ON CH, 261,	
	181	2	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN;	
	181	3	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-76:15 -3 DAYS 4 HRS 15' 0"	CONTINUED					
	181	4	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN.	
					NOTE ---- THE DETAILED SEQUENCES FOR THE DRSCS RANGE CLOSED LOOP TEST ARE IN THE LV PROCEDURE.	
-76:00 -3 DAYS 4 HRS 0' 0"						
	181	1	CLTC	CVTS	LV DRSCS TEST IS COMPLETE. DESTRUCT SYSTEM ENABLE KEY RETURNED TO CPSS. LOCAL RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	2	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED.	
	181	3	CVTS	SRO	LV DRSCS RANGE CLOSED LOOP TEST IS COMPLETE. LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF. LV DRSCS SUPPORT IS NO LONGER REQUIRED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-75:35 -3 DAYS 3 HRS 35' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ.	
-75:30 -3 DAYS 3 HRS 30' 0"						
	181	1	CLTC	CVTS	LV STAGE POWER IS OFF.	
	131	1	MSTC	CVTS	CSM PYRO BUSSES WILL BE ARMED. VERIFY CLEARANCE FOR CSM RF UHF 2106.4, 2287.5 AND 2272.5 MHZ; VHF-AM 259.7 AND 296.8 MHZ. CSM COMMAND DECODER IS OFF. GMIL SUPPORT IS REQUIRED ON CH. 214.	
	181	3	CVTS	GMIL	STANDBY ON CH. 214 TO SUPPORT CSM RF CHECKS. CLEAR TO BRING UP THE CSM UHF COMMAND CARRIER WHEN REQUESTED. CSM COMMAND DECODER WILL REMAIN OFF. KEEP CVTS ADVISED OF CARRIER STATUS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-75 30 -3 DAYS 3 HRS 30' 0"	CONTINUED					
					NOTE "-" CSM IS SCHEDULE TO ACCOMPLISH POWER ON STRAY VOLTAGE CHECKS FOR THE NEXT 4 HOURS.	
-75 00 -3 DAYS 3 HRS 0' 0"						
	181	1	MSTC	CVTS	CLEAR TO SECURE GH2 HAZARDOUS MONITOR SYSTEM;	
	181	2	CVTS	CTSO	SECURE GH2 HAZARDOUS MONITOR SYSTEM;	
	181	3	CTSC	CVTS	GH2 HAZARDOUS MONITOR SYSTEM SECURED;	
-73 00 -3 DAYS 1 HR 0' 0"						
	181	1	MSTC	CVTS	REQUEST SC ORDNANCE BE DELIVERED TO MSS LOW RISE ELEVATOR BY T-71 30;	
	181	2	CVTS	CPSS	VERIFY CLEARANCE FOR SUPPORT TO DELIVER SC ORDNANCE TO PAD B;	
	181	3	CVTS	CTSC	DELIVER SC ORDNANCE TO PAD B MSS LOW RISE ELEVATOR IN 90 MINUTES;	H

TIME	COMM CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-72 30 -3 DAYS 0 HRS 30' 0"						
	181	1	CVTS	CLTC MSTC	VERIFY READY FOR SA-9 ENVIRONMENTAL CHAMBER CONNECTION IN 30 MINUTES;	
-72 00 -3 DAYS 0 HRS 0' 0"						
	181	1	MSTC	CVTS	REQUEST SA-9 ENVIRONMENTAL CHAMBER BE CONNECTED;	
	181	2	CVTS	CLTC	CONNECT SA-9 ENVIRONMENTAL CHAMBER;	
-71 45 -2 DAYS 23 HRS 45' 0"						
	181	1	CLTC	CVTS	SA-9 ENVIRONMENTAL CHAMBER HAS BEEN CONNECTED;	
-71 30 -2 DAYS 23 HRS 30' 0"						
	181	1	MSTC	CVTS	PYRO ARM SWITCH GUARD IS INSTALLED; CSM PYRO BUSSES ARE SAFE, CSM RF (VHF AND UHF) IS OFF; GMIL SUPPORT IS NO LONGER REQUIRED;	
	181	2	GMIL	CVTS	CSM UHF COMMAND CARRIER IS OFF;	
	181	3	CVTS	GMIL	CSM RF SUPPORT IS NO LONGER REQUIRED;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-71 30 -2 DAYS 23 HRS 30' 0"	CONTINUED					
	181	4	CVTS	SRO	CSM RF IS OFF;	
	181	5	CTSC	CVTS	SC ORDNANCE HAS BEEN DELIVERED TO THE MSS LOW RISE ELEVATOR;	
	181	6	CVTS	MSTC	SC ORDNANCE HAS BEEN DELIVERED TO THE MSS LOW RISE ELEVATOR;	
-71 00 -2 DAYS 23 HRS 0' 0"						
	181	1	MSTC	CVTS	CLEAR THE CONTROL AREAS FOR CSM SMALL ORDNANCE HOOKUP OPERATIONS; CSM IS POWERED DOWN;	
	181	2	CVTS	CTSC	PROVIDE FIRE AND MEDICAL SUPPORT FOR SPACE VEHICLE ORDNANCE OPERATIONS;	
	181 EM PA	3	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREAS FOR CSM SMALL ORDNANCE HOOKUP OPERATIONS; **********WARNING********** * * THE CONTROL AREAS FOR * * CSM SMALL ORDNANCE * * HOOKUP OPERATIONS * * CONSISTS OF SA-8, SA-9 * * AND MSS LEVELS 4 AND 5; * * **********	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-71 00 -2 DAYS 23 HRS 0' 0"	CONTINUED					
	181	4	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREAS FOR CSM SMALL ORDNANCE HOOKUP OPERATIONS;	
-70 30 -2 DAYS 22 HRS 30' 0"						
		1		CVTS	TURN RF SILENCE SWITCH ON;	
	181 EM PA	2	CVTS		RF SILENCE IS NOW IN EFFECT ON THE SPACE VEHICLE AT PAD B;	
	181	3	CPSS	CVTS	CLEAR TO START CSM SMALL ORDNANCE HOOKUP OPERATIONS;	
	181	4	CVTS	MSTC	START CSM SMALL ORDNANCE HOOKUP OPERATIONS; RF SILENCE IS IN EFFECT ON THE SPACE VEHICLE UNTIL T-54 30;	H
-64 30 -2 DAYS 16 HRS 30' 0"						
	181	1	CLTC	CVTS	LV APPLYING POWER;	
-64 20 -2 DAYS 16 HRS 20' 0"						
	181	1	CLTC	CVTS	REQUEST CPSS TO RELEASE TCS ARM KEY TO CSSP;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-64 20 -2 DAYS 16 HRS 20' 0"	CONTINUED					
	181	2	CVTS	CPSS	RELEASE TCS ARM KEY TO C3SR.	
	181	3	CPSS	CVTS	TCS ARM KEY RELEASED TO C3SR.	
-64 00 -2 DAYS 16 HRS 0' 0"						
	181	1	CLTC	CVTS	REQUEST CTSC START S-IB HYPERGOL CARTRIDGE DELIVERY. CARTRIDGES ARE TO BE DELIVERED TO THE PAD LEVEL EAST ELEVATOR.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE FOR SUPPORT TO DELIVER S-IB HYPERGOL CARTRIDGES TO PAD B.	
	181	3	CVTS	CTSC	DELIVER S-IB HYPERGOL CARTRIDGES TO PAD LEVEL, PAD B, EAST ELEVATOR IN 30 MINUTES.	H
	181	4	CLTC	CVTS	PROVIDE FIREMAN, BUNKER SUITED, AT TOP OF PEDESTAL IN 30 MINUTES TO SUPPORT HYPERGOL CARTRIDGE INSTALLATION.	
	181	5	CVTS	CTSC	PROVIDE FIREMAN, BUNKER SUITED, AT TOP OF PEDESTAL IN 30 MINUTES TO SUPPORT HYPERGOL CARTRIDGE INSTALLATION.	
-63 45 -2 DAYS 15 HRS 45' 0"						
	181	1	CLTC	CVTS	READY TO CLEAR THE CONTROL AREA FOR S-IB HYPERGOL CARTRIDGE INSTALLATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-63 45 -2 DAYS 15 HRS 45' 0"	CONTINUED					
	181 EM PA	2	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREA FOR S-IB HYPERGOL CARTRIDGE INSTALLATION;	
					**********WARNING********** * * THE CONTROL AREA FOR * * S-IB HYPERGOL CARTRIDGE * * INSTALLATION CONSISTS * * OF THE TOP OF THE * * PEDESTAL AND ML ZERO * * LEVEL; * * **********	
	181	3	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREA FOR S-IB HYPERGOL CARTRIDGE INSTALLATION;	
	181	4	CLTC	CVTS	REQUEST A 50 FOOT RADIUS BE CLEARED AROUND THE ML EAST ELEVATOR AT THE GROUND AND ML ZERO LEVEL FOR LV ORDNANCE DELIVERY;	
	181	5	CVTS	CPSS	CLEAR A 50 FOOT RADIUS AROUND THE ML EAST ELEVATOR AT THE GROUND AND ML ZERO LEVEL FOR LV ORDNANCE DELIVERY;	
-63 30 -2 DAYS 15 HRS 30' 0"						
	181	1	CLTC	CVTS	REQUEST CTSC START LV ORDNANCE DELIVERY; ORDNANCE IS TO BE DELIVERED TO PAD LEVEL EAST ELEVATOR;	
	181	2	CVTS	CPSS	VERIFY CLEARANCE FOR SUPPORT TO DELIVER LV ORDNANCE TO PAD B;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-63 30 -2 DAYS 15 HRS 30' 0"	CONTINUED					
	181	3	CVTS	CTSC	DELIVERY LV ORDNANCE TO PAB LEVEL, PAD B, EAST ELEVATOR IN 30 MINUTES;	H
	181	4	CTSC	CVTS	S-IB HYPERGOL CARTRIDGES HAVE BEEN DELIVERED TO THE PAD LEVEL; PAD B, EAST ELEVATOR,	
	181	5	CVTS	CLTC	S-IB HYPERGOL CARTRIDGES HAVE BEEN DELIVERED TO THE PAD LEVEL EAST ELEVATOR,	
	181	6	CPSS	CVTS	CLEAR TO START S-IB HYPERGOL CARTRIDGE INSTALLATION;	
	181	7	CVTS	CLTC	START S-IB HYPERGOL CARTRIDGE INSTALLATION;	H
-63 00 -2 DAYS 15 HRS 0' 0"						
	181	1	CTSC	CVTS	LV ORDNANCE HAS BEEN DELIVERED TO THE PAD LEVEL; PAD B, EAST ELEVATOR,	
	181	2	CVTS	CLTC	LV ORDNANCE HAS BEEN DELIVERED TO THE PAD LEVEL EAST ELEVATOR,	
	181	3	CLTC	CVTS	READY TO CLEAR THE CONTROL AREAS FOR LV ORDNANCE INSTALLATION,	
	181	4	CLTC	CVTS	LV POWER HAS BEEN APPLIED; LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING IS NOW IN EFFECT;	
	181	5	CVTS	MSTC	LV POWER IS ON; CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-63 00 -2 DAYS 15 HRS 01 0"	CONTINUED					
	181 EM PA	6	CVTS		CONTROLLED SWITCHING ON THE LV AND ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT AT PAD B. SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS. RF SILENCE IS STILL IN EFFECT AT PAD B.	
	181	7	CVTS	MSTC	SMDPS WILL BE CHANGED FROM 2-SWITCH, 1-VALVE MODE TO 2-SWITCH MODE.	
	181	8	CVTS	CLTC	CHANGE THE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 2-SWITCH MODE. REPORT WHEN COMPLETE.	
	181 EM PA	9	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREAS FOR SV ORDNANCE INSTALLATION. **********WARNING********** * * * THE CONTROL AREAS FOR * * LV ORDNANCE * * INSTALLATION CONSISTS * * OF THE ML, MSS, PAD * * APRON AND FLAME TRENCH. * * * **********WARNING**********	
	181	10	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREAS FOR LV ORDNANCE INSTALLATION.	
	181	11	CLTC	CVTS	SMDPS IS IN 2-SWITCH MODE.	
	181	12	CVTS	MSTC	SMDPS IS IN 2-SWITCH MODE.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-62 30 -2 DAYS 14 HRS 30' 0"						
	181	1	CLTC	CVTS	S-IB HYPERGOL CARTRIDGE INSTALLATION IS COMPLETE, RELEASE FIREMAN;	
	181	2	CVTS	CPSS	S-IB HYPERGOL CARTRIDGE INSTALLATION IS COMPLETE, VERIFY READY TO RELEASE FIREMAN SUPPORT FROM S-IB HYPERGOL CARTRIDGE INSTALLATION;	
	181	3	CVTS	CTSC	S-IB HYPERGOL CARTRIDGE INSTALLATION IS COMPLETE, RELEASE FIREMAN SUPPORT FROM S-IB HYPERGOL CARTRIDGE INSTALLATION;	
	181	4	CPSS	CVTS	CLEAR TO START LV ORDNANCE INSTALLATION;	
	181	5	CVTS	CLTC	START LV ORDNANCE INSTALLATION;	H
-59 30 -2 DAYS 11 HRS 30' 0"						
	181	1	MSTC	CVTS	CSM SMALL ORDNANCE HOOKUP OPERATIONS ARE COMPLETE; REQUEST CPSS CLEARANCE TO START CSM HEAVY ORDNANCE HOOKUP OPERATIONS; **********WARNING********** * * THE CONTROL AREAS FOR * * SV ORDNDNCE OPERATIONS * * CONTINUES TO CONSIST OF * * THE ML, MSS, PAD APRON * * AND FLAME TRENCH; * * **********	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-59 30 -2 DAYS 11 HRS 0' 0"	CONTINUED					
	181	2	CVTS	CPSS	CSM SMALL ORDNANCE HOOKUP OPERATIONS ARE COMPLETE. VERIFY CPSS CLEARANCE TO START CSM HEAVY ORDNANCE HOOKUP OPERATIONS.	
	181	3	CVTS	MSTC	START CSM HEAVY ORDNANCE HOOKUP OPERATIONS.	H
-57 45 -2 DAYS 9 HRS 45' 0"						
	181	1	CVTS	CPSS	VERIFY SAFETY IS READY TO MONITOR S&A FUNCTIONALS.	
	181	2	CVTS	CLTC	CPSS IS ON STATION FOR S&A FUNCTIONALS.	
-57 30 -2 DAYS 9 HRS 30' 0"						
	181	1	CLTC	CVTS	REQUEST LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE BE LIFTED FOR LV POWER DOWN OPERATIONS.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO LIFT LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE FOR LV POWER DOWN OPERATIONS.	
	181	3	CVTS	MSTC	LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS BEING LIFTED FOR LV POWER DOWN OPERATIONS.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-57 30 -2 DAYS 9 HRS 30' 0"	CONTINUED					
	181 EM PA	4	CVTS		CONTROLLED SWITCHING INCLUDING SWITCHING ACROSS THE LV/SC INTERFACE IS LIFTED FOR LV POWER DOWN OPERATIONS AT PAD B. RF SILENCE IS STILL IN EFFECT AT PAD B.	
	181	5	CVTS	CLTC	POWER DOWN THE LV.	
-57 15 -2 DAYS 9 HRS 15' 0"						
	181	1	CLTC	CVTS	LV STAGE POWER IS OFF. LV READY TO RESUME CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE.	
	181	2	CVTS	MSTC	LV STAGE POWER IS OFF. CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT.	
	181 EM PA	3	CVTS		CONTROLLED SWITCHING INCLUDING CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS IN EFFECT AT PAD B. RF SILENCE IS STILL IN EFFECT AT PAD B.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-56 0.0 -2 DAYS 8 HRS 01 0"						
	181	1	CLTC	CVTS	REQUEST LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE BE LIFTED FOR S-IB POWER UP OPERATIONS.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO LIFT LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE FOR S-IB POWER UP OPERATIONS.	
	181	3	CVTS	MSTC	LV CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS BEING LIFTED FOR S-IB POWER UP OPERATIONS.	
	181 EM PA	4	CVTS		CONTROLLED SWITCHING INCLUDING CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE IS LIFTED FOR S-IB POWER UP OPERATIONS AT PAD B. RF SILENCE IS STILL IN EFFECT AT PAD B.	
	181	5	CVTS	CLTC	POWER UP THE S-IB.	
	181	6	CLTC	CVTS	LV ORDNANCE INSTALLATION IS COMPLETE, READY TO REMOVE LV CONTROLLED SWITCHING.	
	181	7	CVTS	CPSS	LV ORDNANCE INSTALLATION IS COMPLETE, VERIFY READY TO REMOVE LV CONTROLLED SWITCHING.	
	181	8	CVTS	MSTC	LV ORDNANCE INSTALLATIONS IS COMPLETE. LV CONTROLLED SWITCHING IS ENDED. LV/SC INTERFACE CONTROLLED SWITCHING IS STILL IN EFFECT.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-56 00 -2 DAYS 8 HRS 0' 0"	CONTINUED					
	181 EM PA	9	CVTS		LV ORDNANCE OPERATIONS ARE COMPLETE; LV CONTROLLED SWITCHING IS ENDED AT PAD B; RF SILENCE AND LV/SC INTERFACE CONTROLLED SWITCHING ARE STILL IN EFFECT AT PAD B;	
-55 30 -2 DAYS 7 HRS 30' 0"						
	181	1	MSTC	CVTS	CSM HEAVY ORDNANCE HOOKUP IS COMPLETE; READY TO CLEAR THE CONTROL AREA FOR CSM REMOTE RESISTANCE CHECKS;	
	181 EM PA	2	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREA FOR CSM REMOTE RESISTANCE CHECKS; **********WARNING********** * * THE CONTROL AREA FOR * * CSM REMOTE RESISTANCE * * CHECKS CONSISTS OF THE * * AREA CONFINED BY THE * * COMPLEX PERIMETER * * FENCE; * * **********	
	181	3	CVTS	EPSS	CSM HEAVY ORDNANCE HOOKUP IS COMPLETE; CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREA FOR CSM REMOTE RESISTANCE CHECKS; SC PERSONNEL ARE TO REMAIN IN COMPARTMENT 1A;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-55 00 -2 DAYS 7 HRS 0' 0"						
	181	1	CPSS	CVTS	CLEAR TO START CSM REMOTE RESISTANCE CHECKS;	
	181	2	CVTS	MSTC	START CSM REMOTE RESISTANCE CHECKS;	H
-54 30 -2 DAYS 6 HRS 30' 0"						
	181	1	MSTC	CVTS	CSM REMOTE RESISTANCE CHECKS ARE COMPLETE; CONTROLLED AREA MAY BE OPENED FOR NORMAL WORK; VERIFY WHEN OPEN; RF SILENCE IS NO LONGER REQUIRED; CHANGE SMDPS FROM 2-SWITCH MODE TO 2-SWITCH, 1-VALVE MODE AND VERIFY; HAVE SUPPORT PICKUP SC ORDNANCE SPARES AT MSS LOW RISE ELEVATOR,	
	181	2	CVTS	CPSS	CSM REMOTE RESISTANCE CHECKS ARE COMPLETE; VERIFY READY TO OPEN THE CONTROLLED AREA FOR NORMAL WORK; VERIFY READY TO RELEASE FIRE AND MEDICAL SUPPORT FROM SPACE VEHICLE ORDNANCE OPERATIONS;	
		3		CVTS	TURN RF SILENCE SWITCH OFF;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-54 30 -2 DAYS 6 HRS 30' 0"	CONTINUED					
	181 EM PA	4	CVTS		CSM REMOTE RESISTANCE CHECKS ARE COMPLETE; RF SILENCE AND CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE ARE ENDED AT PAD B; THE PAD B CONTROLLED AREA IS OPEN FOR NORMAL WORK;	
	181	5	CVTS	CLTC	CHANGE SMDPS FROM 2-SWITCH MODE TO 2-SWITCH, 1-VALVE MODE; REPORT WHEN COMPLETE;	
	181	6	CVTS	MSTC	THE CONTROLLED AREA IS OPEN FOR NORMAL WORK;	
	181	7	CVTS	CTSC	SC ORDNANCE OPERATIONS ARE COMPLETE; THE CONTROLLED AREA IS OPEN FOR NORMAL WORK; PICKUP SC ORDNANCE SPARES AT MSS LOW RISE ELEVATOR; RELEASE FIRE AND MEDICAL SUPPORT FROM SPACE VEHICLE ORDNANCE OPERATIONS;	
	181	8	CLTC	CVTS	SMDPS IS IN 2-SWITCH, 1-VALVE MODE;	
	181	9	CVTS	MSTC	SMDPS IS IN 2-SWITCH, 1-VALVE MODE;	
-52 30 -2 DAYS 4 HRS 30' 0"						
	181	1	MSTC	CVTS	CSM POWER IS ON;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-52 00 -2 DAYS 4 HRS 0' 0"						
	181	1	MSTC	CVTS	REQUEST CLEARANCE TO TRANSPORT LH2 AND LO2 DEWARS TO PAD B;	
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO TRANSPORT LH2 AND LO2 DEWARS TO PAD B;	
	181	3	CVTS	MSTC	TRANSPORT LH2 AND LO2 DEWARS TO PAD B,	H
-51 30 -2 DAY 3 HRS 30' 0"						
	181	1	MSTC	CVTS	CLEAR CONTROL AREAS FOR LH2 DEWAR TRANSFER TO MSS LEVEL 4A AND LO2 DEWAR TRANSFER TO MSS +12 FOOT LEVEL; CONFIGURE ELEVATORS FOR TRANSFER; REQUEST CPSS CLEARANCE FOR TRANSFER; REQUEST GH2 HAZARD MONITOR SYSTEM BE ACTIVATED; SEND SEHZ TO CH; 222;	
	181	2	CVTS	CPSS	CLEAR THE CONTROL AREAS FOR ARRIVAL OF LH2 AND LO2 DEWARS AND POSITIONING ON SERVICE STRUCTURE; DEWARS ARE TO BE MOVED IN SERIES; MAINTAIN CONTROL AREA AROUND DEWAR CONVOY;	
	181	3	CVTS	CTSC	CONFIGURE AND OPERATE MSS LOW AND HIGH RISE ELEVATORS FOR LH2 DEWAR TRANSFER TO MSS LEVEL 4A; ACTIVATE GH2 HAZARD MONITOR SYSTEM; HAVE SEHZ REPORT TO MTPE ON CH; 222;	

TIME	COMM CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-51 30 -2 DAY 3 HRS 30' 0"	CONTINUED					
	181	4	CTSC	CVTS	GH2 HAZARD MONITOR SYSTEM IS ACTIVE.	
	181	5	CVTS	MSTC	GH2 HAZARD MONITOR SYSTEM IS ACTIVE.	
-51 00 -2 DAYS 3 HRS 0' 0"						
	181	1	CPSS	CVTS	CLEAR TO TRANSFER LH2 DEWAR TO MSS LEVEL 4A.	
	181	2	CVTS	MSTC	TRANSFER LH2 DEWAR TO MSS LEVEL 4A.	H
					NOTE --- LH2 DEWAR WILL GO TO MSS LEVEL 4A. LOX DEWAR HANDLING WILL START IN PARALLEL WITH LH2 DEWAR AS SOON AS THE HIGH RISE ELEVATOR STARTS UP. BACKUP DEWARS WILL BE HELD IN PAD STORAGE AREAS.	
-50 30 -2 DAY 2 HRS 30' 0"						
	181	1	MSTC	CVTS	REQUEST CPSS OPEN MSS LEVEL 4A WITH EXCEPTION OF VICINITY OF DEWARS.	
	181	2	CVTS	CPSS	VERIFY READY TO OPEN MSS LEVEL 4A FOR NORMAL WORK WITH EXCEPTION OF VICINITY OF DEWARS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-50 30 -2 DAY 2 HRS 30' 0"	CONTINUED					
	181	3	CVTS	MSTC	MSS LEVEL 4A IS OPEN FOR NORMAL WORK WITH EXCEPTION OF VICINITY OF DEWARS;	
-50 00 -2 DAYS 2 HRS 01' 0"						
	181	1	MSTC	CVTS	RELEASE MSS ELEVATORS FROM DEWAR TRANSFER;	
	181	2	CVTS	CTSC	RELEASE MSS ELEVATORS FROM DEWAR TRANSFER OPERATIONS.	
	181	3	MSTC	CVTS	REQUEST CPSS CLEARANCE TO FLOW GH2;	
	181	4	CVTS	CPSS	VERIFY CLEARANCE TO FLOW GH2 FOR CSM;	H
	181	5	CVTS	MSTC	CLEAR TO FLOW GH2;	
	181	6	CTSC	CVTS	OIS AND TELEPHONES ARE BEING DISCONNECTED FROM OIS FALLBACK TRAILERS;	
-48 00 -2 DAYS 0 HRS 01' 0"						
	181	1	CVTS	MSTC ELTC CTSC	REQUEST PURGE BOX VALIDATION STATUS;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-47 30 -1 DAY 23 HRS 30' 0"					NOTE MSS PLATFORM 3 AND 4 AIR CONDITIONING SYSTEMS ARE TO BE POWERED DOWN PRIOR TO STARTING CSM LO2 AND LH2 SERVICING, BOSC WILL COORDINATE SECURING WITH MSTC;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-47 00 -1 DAY 23 HRS 0' 0"					**********WARNING********** * * DURING LH2 FLOW, SEHZ * * WILL MONITOR HYDROGEN * * DETECTION SYSTEM METERS * * AND INFORM MSTC OF ALL * * HYDROGEN INDICATIONS * * SPECIFYING SENSOR I.D. * * AND PERCENT GAS * * CONCENTRATION. * * * SYSTEM SAFETY (PVSS) * * WILL VERIFY READINGS * * USING A PORTABLE GAS * * DETECTOR (A FOUR * * PERCENT CONCENTRATION * * OF HYDROGEN CONSTITUTES * * AN EXPLOSIVE * * ATMOSPHERE). * * * MSTC WILL DIRECT * * SECURING OF LH2 FLOW * * UNDER CONDITIONS OF * * RAPID INCREASE IN H2 * * CONCENTRATION OR A * * REPORTED READING * * NEARING FOUR PERCENT AT * * ANY SENSOR. * * * TIME PERMITTING, MSTC * * WILL CONFER WITH PVSS * * AND MLPC PRIOR TO * * DIRECTING ANY * * INTERRUPTION OF FLOW. * * * CVTS WILL DIRECT THE * * USE OF THE GN2 DELUGE * * PURGE AS SPECIFIED IN * * THE SPACE VEHICLE * * TEST SUPERVISOR * * EMERGENCY PROCEDURES, * * TCP NO. SV-46101. * * **********	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-47 00 -1 DAY 23 HRS 01 0"	CONTINUED					
	181	1	MSTC	CVTS	READY TO CLEAR THE CONTROL AREA FOR CSM LH2 SERVICING. REQUEST CPSS CLEARANCE TO START LH2 SERVICING. CHANGE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 1-SWITCH MODE AND VERIFY. ALL NON-EXPLOSION PROOF ELECTRICAL EQUIPMENT HAS BEEN DISCONNECTED. NOTE -0- SMDPS IS CONFIGURED FOR 1-SWITCH AT THE COMPLETION OF CONTROL AREA CLEARING.	
	181	2	CVTS	CLTC	CHANGE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 2-SWITCH MODE. REPORT WHEN COMPLETE.	
	181	3	CVTS	CTSC	PROVIDE FIRE AND MEDICAL SUPPORT FOR CSM CRYO SERVICING.	
	181 EM PA	4	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREA FOR CSM CRYO SERVICING. **********WARNING********** * * * THE CONTROL AREA FOR * * CSM LO2 AND LH2 TANKING * * IS AN 1100 FOOT RADIUS * * AROUND THE SPACE * * VEHICLE. * * * **********	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-47 00 -1 DAY 23 HRS 0' 0"	CONTINUED					
	181	5	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREA FOR CSM CRYO SERVICING; MSTC VERIFIES ALL NON-EXPLOSION PROOF ELECTRICAL EQUIPMENT HAS BEEN DISCONNECTED;	
	181	6	CLTC	CVTS	SMDPS IS IN 2-SWITCH MODE;	
-46 00 -1 DAY 22 HRS 0' 0"						
	181	1	CPSS	CVTS	CLEAR TO START CSM LH2 SERVICING; CLEAR TO CHANGE SMDPS FROM 2-SWITCH MODE TO 1-SWITCH MODE FOR LH2 SERVICING;	
	181	2	CVTS	CLTC	CHANGE THE SMDPS FROM 2-SWITCH MODE TO 1-SWITCH MODE, REPORT WHEN COMPLETE;	
	181	3	CLTC	CVTS	SMDPS IS IN 1-SWITCH MODE;	
	181	4	CVTS	MSTC	START CSM LH2 SERVICING; SMDPS IS IN THE 1-SWITCH MODE;	H
-43 00 -1 DAY 19 HRS 0' 0"						
	121	1	MSTC	CVTS	READY TO CLEAR CONTROL AREA FOR LO2 DEWAR TRANSFER TO MSS LEVEL 4A; REQUEST CPSS CLEARANCE FOR TRANSFER;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-43 00 -1 DAY 19 HRS 0' 0"	CONTINUED					
	181	2	CVTS	CPSS	CLEAR CONTROL AREA FOR LO2 DEWAR TRANSFER TO MSS LEVEL 4A.	
-42 30 -1 DAY 18 HRS 30' 0"						
	181	1	CPSS	CVTS	CLEAR TO TRANSFER LO2 DEWAR TO MSS LEVEL 4A.	
	181	2	CVTS	MSTC	TRANSFER LO2 DEWAR TO MSS LEVEL 4A.	H
-41 30 -1 DAY 17 HRS 30' 0"						
	181	1	MSTC	CVTS	REQUEST CPSS CLEARANCE TO START CSM LO2 SERVICING.	
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO START CSM LO2 SERVICING.	
	181	3	CVTS	MSTC	START CSM LO2 SERVICING.	H
-39 00 -1 DAY 15 HRS 0' 0"						
	181	1	MSTC	CVTS	CSM PERSONNEL ARE CLEARING CONTROL AREA. REQUEST CPSS CLEARANCE TO START LO2 AND LH2 TANK PRESSURIZATION TO LESS THAN 25 PERCENT D.B.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-39 00 -1 DAY 15 HRS 01' 0"	CONTINUED					
	181 EM PA	2	CVTS		ALL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREA FOR CSM LO_2 AND LH_2 TANK PRESSURIZATION TO FLIGHT PRESSURES; **********WARNING********** * * * THE CONTROL AREA FOR * * CSM LO_2 AND LH_2 TANK * * PRESSURIZATION CONSISTS * * OF THE AREA CONFINED BY * * THE COMPLEX PERIMETER * * FENCE; * * * **********	
	181	3	CVTS	CPSS	CLEAR ALL PERSONNEL FROM THE CONTROL AREA FOR CSM LO_2 AND LH_2 TANK PRESSURIZATION TO FLIGHT PRESSURES; VERIFY READY TO START LO2 AND LH2 TANK PRESSURIZATION TO LESS THAN 25 PERCENT D.B.	
	181	4	CVTS	MSTC	CLEAR TO PROCEED WITH LO2 AND LH2 TANK PRESSURIZATION TO LESS THAN 25 PERCENT D.B.	
-38 30 -1 DAY 14 HRS 30' 0"						
	181	1	CPSS	CVTS	CLEAR TO PROCEED WITH CSM LO_2 AND LH_2 TANK PRESSURIZATION TO FLIGHT PRESSURES;	
	181	2	CVTS	MSTC	CLEAR TO PROCEED WITH CSM LO_2 AND LH_2 TANK PRESSURIZATION TO FLIGHT PRESSURES;	H

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-35 30 -1 DAY 11 HRS 30' 0"						
	181	1	MSTC	CVTS	CSM CRYO TANK PRESSURIZATION IS COMPLETE; TANK PRESSURES HAVE STABILIZED; REQUEST CLEARANCE FOR TWO PERSONNEL TO RETURN TO MSS LEVEL 4A TO ESTABLISH CRYO VENT CAPABILITY;	
	181	2	CVTS	CPSS	CSM CRYO TANK PRESSURIZATION IS COMPLETE; TANK PRESSURES HAVE STABILIZED; VERIFY CLEARANCE FOR TWO PERSONNEL TO RETURN TO MSS LEVEL 4A TO ESTABLISH CRYO VENT CAPABILITY;	
	181	3	CVTS	MSTC	CLEAR FOR TWO PERSONNEL TO RETURN TO MSS LEVEL 4A TO ESTABLISH CRYO VENT CAPABILITY;	
	181	4	MSTC	CVTS	CONTINUING O2 SURGE TANK PRESSURIZATION; READY TO OPEN THE CONTROLLED AREA FOR NORMAL WORK EXCEPT FOR THE CM INTERIOR; VERIFY WHEN OPEN; CHANGE SMDPS TO 2-SWITCH, 1-VALVE MODE AND VERIFY;	
	181	5	CVTS	CPSS	CSM HAZARDOUS CRYO SERVICING OPERATIONS ARE COMPLETE; VERIFY READY TO OPEN THE CONTROLLED AREA FOR NORMAL WORK EXCEPT FOR THE CM INTERIOR, SLA INTERIOR, IU AND S-IVB FORWARD AREAS; SMDPS GOING FROM 1-SWITCH MODE TO 2-SWITCH, 1-VALVE MODE;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35 30 -1 DAY 11 HRS 30' 0"	CONTINUED					
	181 EM PA	6	CVTS		CSM LO2 AND LH2 CRYO PRESSURIZATION IS COMPLETE; CONTINUING O2 SURGE TANK PRESSURIZATION; THE PAD B CONTROLLED AREA IS OPEN FOR NORMAL WORK EXCEPT FOR THE CM INTERIOR, SLA INTERIOR, IU AND S-IVB FORWARD AREAS;	
	181	7	CVTS	CLTC	CHANGE SMDPS FROM 1-SWITCH MODE TO 2-SWITCH, 1-VALVE MODE; REPORT WHEN COMPLETE;	
	181	8	CVTS	MSTC	THE CONTROLLED AREA IS OPEN FOR NORMAL WORK EXCEPT FOR THE CM INTERIOR, SLA INTERIOR, IU AND S-IVB FORWARD AREAS;	
	181	7	CLTC	CVTS	REQUEST PEHE PERFORM SNIFFER CHECKS IN THE SLA, IU AND S-IVB FORWARD AREAS AND VERIFY OXYGEN LEVEL IS AT 19.5 PERCENT OR GREATER;	
	181	8	CVTS	CTSC	PERFORM SNIFFER CHECKS IN THE SLA, IU AND S-IVB FORWARD AREAS AND HAVE PEHE ADVISE SYSTEMS SAFETY WHEN OXYGEN LEVEL IS AT 19.5 PERCENT OR GREATER;	
	181	9	CLTC	CVTS	SMDPS IS IN A 2-SWITCH, 1-VALVE MODE;	
	181	10	CVTS	MSTC	SMDPS IS IN A 2-SWITCH, 1-VALVE MODE;	
-35 00 -1 DAY 11 HRS 0' 0"						
	181	1	MSTC	CVTS	O2 SURGE TANK PRESSURIZATION IS COMPLETE; READY TO OPEN THE CM INTERIOR FOR NORMAL WORK, VERIFY WHEN OPEN;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35 00 -1 DAY 11 HRS 0' 0"	CONTINUED.					
	181	2	CVTS	CPSS	02 SURGE TANK PRESSURIZATION IS COMPLETE; VERIFY READY TO OPEN THE CM INTERIOR FOR NORMAL WORK; VERIFY READY TO RELEASE FIRE AND MEDICAL SUPPORT FROM CSM CRYO SERVICING;	
	181 EM PA	3	CVTS		02 SURGE TANK PRESSURIZATION IS COMPLETE; THE CM INTERIOR IS OPEN FOR NORMAL WORK;	
	181	4	CVTS	MSTC	CM INTERIOR IS OPEN FOR NORMAL WORK;	
	181	5	CPSS	CVTS	SNIFFER CHECKS ARE COMPLETE; THE SLA INTERIOR, IU AND S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK.	
	181	6	CVTS	CLTC MSTC	THE SLA INTERIOR, IU AND S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK AT PAD B.	
	181 EM PA	7	CVTS		THE SLA INTERIOR, IU AND S-IVB FORWARD AREAS ARE OPEN FOR NORMAL WORK;	
	181	8	CVTS	CTSC	CSM CRYO SERVICING IS COMPLETE; RELEASE FIRE AND MEDICAL SUPPORT FROM CSM CRYO SERVICING;	
	181	9	CVTS	CLTC	REDUCE SASS ECS FLOWRATE TO MINIMUM; REPORT WHEN COMPLETE;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35 00 -1 DAY 11 HRS 0' 0"	CONTINUED					
					NOTE SEQUENCE 9 IS TO BE COMPLETED PRIOR TO INITIATING SEQUENCES 10 AND 11.	
	181	10	CVTS	CLTC	RECONFIGURE SA-8 ECS "Y" DUCT TO FLIGHT CONFIGURATION, REPORT WHEN COMPLETE.	
	181	11	CVTS	MSTC	RECONFIGURE SA-8 ECS CONDITIONING DUCT TO FLIGHT CONFIGURATION. SA-8 ECS FLOWRATE HAS BEEN REDUCED TO MINIMUM.	
					NOTE SA-8 ECS "Y" DUCT RECONFIGURATION IS A 1 HOUR, 30 MINUTE SCHEDULED TASK.	
	181	12	CTSC	CVTS	END-TO-END COMM CHECKS WILL BE CONDUCTED IN ONE HOUR, REQUIRE ACCESS TO ALL HCC LONG LINES FOR 2 HOURS.	
-34 00 -1 DAY 10 HRS 0' 0"						
	181	1	MSTC	CVTS	REQUEST CPSS CLEARANCE TO PRESSURIZE GN_2 SPHERE TO 1485 PSIG.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-34 00 -1 DAY 10 HRS 0' 0"	CONTINUED					
	181	2	CVTS	CPSS	VERIFY CLEARANCE TO PRESSURIZE CSM GN2 SPHERE TO 1485 PSIG.	
	181	3	CVTS	MSTC	CLEAR TO PRESSURIZE GN2 SPHERE TO 1485 PSIG.	
	181	4	CTSC	CVTS	MOVING LH2 AND LO2 DEWARS TO CRYO BLDGS. 1 AND 2.	
	181	5	CTSC	CVTS	CONDUCTING END-TO-END COMM CHECKS. ACCESS TO ALL LONG LINES TO MCC FOR 2 HOURS IS REQUIRED.	
-33 30 -1 DAY 9 HRS 30' 0"						
	181	1	MSTC	CVTS	RAISE SA-8 ECS FLOW RATE TO 75 + OR - 5 LBS/MIN.	
	181	2	CVTS	CLTC	INCREASE SM ECS FLOW RATE TO 75 + OR - 5 LBS/MIN.	
-33 05 -1 DAY 9 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ AND LV FREQUENCIES 240.2, 250.7, 255.1, 256.2, 258.5 AND 450.0 MHZ FOR GMIL ON-STATION CALIBRATION.	
	181	2	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCY 2287.5 MHZ FOR CIF ANTENNA CALIBRATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-33 00 -1 DAY 9 HRS 0' 0"						
	181	1	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION;	
	181	2	CTSC	CVTS	VERIFY RADIATION CLEARANCE FOR CIF ANTENNA CALIBRATION;	
-28 00 -1 DAY 4 HRS 0' 0"						
	181	1	GMIL	CVTS	ON-STATION CALIBRATION IS COMPLETE; GMIL RF IS OFF;	
	181	2	CVTS	SRO	GMIL ON-STATION CALIBRATION IS COMPLETE; GMIL RF IS OFF.	
	181	3	CTSC	CVTS	CIF ANTENNA CALIBRATION IS COMPLETE; TERMINATE CLEARANCE FOR 2287.5 MHZ;	
	181	4	CVTS	SRO	CIF ANTENNA CALIBRATION IS COMPLETE; CIF RF IS OFF.	
-26 30 -1 DAY 2 HRS 30' 0"						
	181	1	CVTS	CTSC	VERIFY FIRE TRUCK IS ON STATION AND EMERGENCY EQUIPMENT IS AVAILABLE FOR LV BATTERY INSTALLATION;	
	181	2	CLTC	CVTS	VERIFY FIRE TRUCK IS ON STATION AND EMERGENCY EQUIPMENT IS AVAILABLE FOR LV BATTERY INSTALLATION;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-26 00 -1 DAY 2 HRS 0' 0"						
	181	1	CVTS	CTSC	RESERVE ML ELEVATOR 1 FOR 30 MINUTES FOR IU AND S-IVB BATTERY MOVE; RESERVE MSS LOW RISE AND HIGH RISE ELEVATOR FOR 30 MINUTES FOR S-IB BATTERY MOVE;	
	181	2	CVTS	CLTC	MSS LOW RISE AND HIGH RISE ELEVATOR RESERVED FOR 30 MINUTES FOR S-IB BATTERY MOVE; ML ELEVATOR 1 IS RESERVED FOR 30 MINUTES FOR IU AND S-IVB BATTERY MOVE.	
	181	3	CTSC	CVTS	REQUEST CLEARANCE TO LOWER ML LIGHTNING MAST ON HAMMERHEAD CRANE AT T-25 00 FOR LIGHTNING WARNING SYSTEM TEST;	
-25 35 -1 DAY 1 HR 35' 0"						
	181	1	CVTS	CPSS	VERIFY EMERGENCY BATTERY REMOVAL CREW IS ON STATION FOR LV BATTERY INSTALLATION;	
-25 30 -1 DAY 1 HR 30' 0"						
	181	1	CLTC	CVTS	RELEASE ML ELEVATOR 1 FOR NORMAL SERVICE;	
	181	2	CVTS	CTSC	RELEASE ML ELEVATOR 1 FOR NORMAL SERVICE;	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-25 30 -1 DAY 1 HR 30' 0"	CONTINUED					
	181	3	CLTC	CVTS	RELEASE MSS LOW RISE AND HIGH RISE ELEVATOR FOR NORMAL SERVICE;	
	181	4	CVTS	CVSC	RELEASE MSS LOW RISE AND HIGH RISE ELEVATOR FOR NORMAL SERVICE;	
					NOTE "T-0" LV BATTERIES ARE SCHEDULED TO BE INSTALLED DURING THE NEXT 2 HOURS 30 MINUTES;	
-25 00 -1 DAY 1 HR 0' 0"						
	181	1	MSTC	CVTS	CLEAR TO TERMINATE AND DISCONNECT MSS/PAD GHE AND GN2 LINES; CLEAR TO SECURE GH2 HAZARDOUS MONITOR SYSTEM;	
	181	2	CVTS	CTSC	CLEAR TO TERMINATE AND DISCONNECT MSS/PAD GHE AND GN2 LINES; SECURE GH2 HAZARDOUS MONITOR SYSTEM;	
	181	3	CTSC	CVTS	GH2 HAZARDOUS MONITOR SYSTEM SECURED;	
-24 30 -1 DAY 0 HRS 30' 0"						
	181	1	CTSC	CVTS	ML LIGHTNING MAST RAISED,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-24 00 -1 DAY 0 HRS 0' 0"						
	181	1	CTSC	CVTS	REQUEST THAT A PAGE BE MADE TO SECURE ALL OIS MONITOR SPEAKERS FOR THE REMAINDER OF THE COUNTDOWN;	
	181 EM PA	2	CVTS		ALL OIS MONITOR SPEAKERS ARE TO BE SECURED FOR THE REMAINDER OF THE COUNTDOWN,	
-23 HRS 5' 0"						
	181	1	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS COMING ON FOR ETR COMMAND VALIDATION TEST; VERIFY IU COMMAND RECEIVER/DECODER IS OFF; VERIFY DRSOS RECEIVERS ARE OFF;	
-23 HRS 0' 0"						
	181	1	CLTC	CVTS	LV APPLYING POWER;	
	181	2	CLTC	CVTS	LV BATTERY INSTALLATION IS COMPLETE; RELEASE FIRE TRUCK AND EMERGENCY EQUIPMENT;	
	181	3	CVTS	CPSS	LV BATTERY INSTALLATION IS COMPLETE; VERIFY READY TO RELEASE FIRE TRUCK AND EMERGENCY EQUIPMENT;	
	181	4	CVTS	CTSC	LV BATTERY INSTALLATION IS COMPLETE; RELEASE FIRE TRUCK AND EMERGENCY EQUIPMENT FROM LV BATTERY INSTALLATION;	

EVENT	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-23 HRS 01 0"	CONTINUED					
	181	5	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS COMING ON FOR ETR COMMAND VALIDATION TEST; VERIFY IU COMMAND RECEIVER/DECODER IS OFF; VERIFY DRSCS RECEIVERS ARE OFF;	
-22 HRS 40' 0"						
	181	1	CLTC	CVTS	READY FOR TCS FUNCTIONAL TEST, REQUEST PERMISSION TO PLACE CDC IN LOCAL CONTROL,	
	181 EM PA	2	CVTS		THE CDC WILL BE RESET TO T=3'15" AND COUNTDOWN WILL BE INITIATED TO SUPPORT TCS FUNCTIONAL TEST;	
	181	3	CLTC	CVTS	CDC SUPPORT FOR THE TCS FUNCTIONAL TEST IS NO LONGER REQUIRED; CDC MAY BE RESET FOR COUNTDOWN;	
	181 EM PA	4	CVTS		THE TCS FUNCTIONAL TEST IS COMPLETE; THE CDC WILL BE RESET AND COUNTDOWN INITIATED ON MY MARK; 5 - 4 - 3 - 2 - 1 - MARK,	
-22 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR DRSCS PREPS; PROTECTION IS NOT REQUIRED;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-22 HRS 0' 0"						
	181	1	CLTC	CVTS	LV POWER IS ON;	
	181	2	SRO	CVTS	ETR COMMAND VALIDATION TEST IS COMPLETE; RANGE SAFETY COMMAND CARRIER IS OFF;	
	181	3	CVTS	CLTC	ETR COMMAND VALIDATION TEST IS COMPLETE; RANGE SAFETY COMMAND CARRIER IS OFF;	
	181	4	CLTC	CVTS	REQUEST CLEARANCE FOR LOCAL RANGE SAFETY COMMAND CARRIER; (PROTECTION IS NOT REQUIRED;)	
-21 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV LOCAL OPEN LOOP IU COMMAND CARRIER; PROTECTION IS REQUIRED; VERIFY RADIATION CLEARANCE FOR LV FREQUENCIES 240.2; 256.2; 258.5; 250.7; 255.1 AND 5765 MHZ;	
-21 HRS 0' 0"						
	181	1	CLTC	CVTS	VERIFY CLEARANCE FOR LOCAL OPEN LOOP IU COMMAND CARRIER (PROTECTION IS REQUIRED); VERIFY CLEARANCE FOR LV FREQUENCIES 240.2, 256.2, 258.5, 250.7, 255.1 AND 5765 MHZ;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-20 HRS 30' 0"						
	181	1	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON;	
	181	2	CVTS	SRO	VERIFY RANGE IS READY TO SUPPORT LV RADAR CHECKS WITH READOUTS;	
	181	4	CLTC	CVTS	REQUEST MSS ELEVATOR 2 (WEST) BE LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 BE POSITION BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECKS;	H
	181	4	CVTS	CTSC	LOCK OUT MSS ELEVATOR 2 (WEST) AT MSS PLATFORM 5 AND POSITION MSS PLATFORM 2 BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECKS; STATION OPERATOR IN MSS ELEVATOR 1;	
-20 HRS 25' 0"						
	181	1	CLTC	CVTS	REQUEST RANGE INTERROGATE RADAR BEACON 2; REPORT RANGE READOUT TO VURF ON CH; 264;	
	181	2	CVTS	SRO	INTERROGATE RADAR BEACON 2 AND REPORT READOUTS TO VURF ON CH; 264;	
-20 HRS 17' 0"						
	181	1	CLTC	CVTS	REQUEST RANGE SUPPORT DRSCS PREPS ON CH, 264 PER V-38000; SECTION 14;	
	181	2	CVTS	SRO	STANDBY ON CH, 264 FOR LV DRSCS OPEN LOOP TEST PREPS PER V-38000, SECTION 14;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-20 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADAR BEACON 2 READOUTS ARE COMPLETE; STANDBY TO INTERROGATE RADAR BEACON 1;	
	181	2	CLTC	CVTS	VERIFY RADAR BEACON 2 READOUTS ARE COMPLETE; STANDBY FOR RADAR BEACON 1;	
	181	3	CLTC	CVTS	REQUEST RANGE INTERROGATE RADAR BEACON 1; REPORT READOUTS TO VURF ON CH; 264;	
	181	4	CVTS	SRO	INTERROGATE RADAR BEACON 1 AND REPORT READOUTS TO VURF ON CH; 264;	
-19 HRS 48' 0"						
	181	1	CVTS	SRO	VERIFY RADAR BEACON INTERROGATION COMPLETE;	
-19 HRS 45' 0"						
	181	1	CLTC	CVTS	VERIFY RADAR BEACON INTERROGATION COMPLETE;	
	181	2	CTSC	CVTS	MSS ELEVATOR 2 (WEST) IS LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 IS BELOW LV STATION 1400; OPERATOR IS STATIONED IN MSS ELEVATOR 1;	
	181	3	CLTC	CVTS	VERIFY WEST MSS ELEVATOR 2 IS LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 IS BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECKS;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-19 HRS 25' 0"						
	181	1	CLTC	CVTS	ADVISE CPSS THAT PAD RSCR ENABLE JUMPERS ARE INSTALLED;	
	181	2	CVTS	CPSS	LV PD RSCR ENABLE JUMPERS ARE INSTALLED;	
-19 HRS 22' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR LV POWER TRANSFER TEST; PROTECTION IS REQUIRED;	
-19 HRS 20' 0"						
	181	1	CLTC	CVTS	REQUEST CLEARANCE FOR LOCAL CLOSED LOOP IU COMMAND CARRIER (PROTECTION IS NOT REQUIRED); LOCAL OPEN LOOP IU COMMAND CARRIER IS COMING OFF;	
	181	2	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV LOCAL CLOSED LOOP IU COMMAND CARRIER; PROTECTION IS NOT REQUIRED; LV LOCAL OPEN LOOP IU COMMAND CARRIER IS COMING OFF;	
	181	3	CVTS	CLTC	BRING UP LOCAL CLOSED LOOP IU COMMAND CARRIER;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-19 HRS 17' 0"						
	181	1	CLTC	CVTS	LV PROCEEDING WITH POWER TRANSFER TEST. REQUEST RANGE INTERROGATE AND MONITOR RADAR BEACONS FOR ANY CHANGES. REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	2	CVTS	SRO	STANDBY ON CH, 261 TO INTERROGATE AND MONITOR RADAR BEACONS FOR CHANGES DURING LV POWER TRANSFER. NOTE C-B-P BOTH RADAR BEACONS ARE ON.	
	181	3	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	4	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN.	
	181	5	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LV LOCAL RANGE SAFETY COMMAND CARRIER. (PROTECTION IS REQUIRED.)	
-19 HRS 15' 0"						
	181	1	CVTS	SRO	VERIFY RADAR HAD NO CHANGES DURING LV POWER TRANSFER TEST.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-19 HRS 12' 0"						
	181	1	CLTC	CVTS	POWER TRANSFER TEST IS COMPLETE; DESTRUCT SYSTEM ENABLE KEY RETURNED TO CPSS; LOCAL RANGE SAFETY COMMAND CARRIER IS OFF; VERIFY RADAR BEACONS HAD NO CHANGES;	
	181	2	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED;	
	181	3	CVTS	SRO	LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF;	
	181	4	CLTC	CVTS	THEODOLITE CHECKS ARE COMPLETE; MSS ELEVATOR 2 (WEST) AND PLATFORM 2 ARE RELEASED FOR NORMAL SERVICE;	
	181	5	CVTS	CTSC	THEODOLITE CHECKS ARE COMPLETE; RETURN MSS ELEVATOR 2 AND PLATFORM 2 TO NORMAL SERVICE;	
-19 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY READY TO SUPPORT LV DRSCS OPEN LOOP TEST WITH TEST CODE PLUGS;	
	181	2	CVTS	CLTC MSTC	COMM CHECKS ON CH; 181; 212; 261 AND ABORT ADVISORY LOOP WILL BE RUN NIB DURING THE NEXT 15 MINUTES WITH FORWARD OBSERVER SITES 12, 16 AND 17 FOR PHOTO OPTICS VALIDATION;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-19 HRS 0' 0"						
	181	1	CLTC	CVTS	VERIFY THE RANGE IS READY TO SUPPORT OPEN LOOP DRSCS TEST WITH TEST CODE PLUGS. REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	2	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	3	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN.	
	181	4	CLTC	CVTS	REQUEST RANGE SAFETY COMMAND CARRIER 1 ON AND VERIFY.	
	181	5	CVTS	SRO	RANGE SAFETY COMMAND CARRIER 1 ON AND VERIFY.	
	181	6	SRO	CVTS	RANGE SAFETY COMMAND CARRIER 1 IS ON.	
	181	7	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER 1 IS ON.	
	181	8	CLTC	CVTS	REQUEST SRO SWITCH TO CH. 261 TO SUPPORT DRSCS TEST.	
	181	9	CVTS	SRO	STANDBY ON CH. 261 FOR LV DRSCS OPEN LOOP TEST.	
					NOTE THE LV DRSCS OPEN LOOP TEST IS IN THE LV PROCEDURE, CLTC WILL COORDINATE WITH SRO IN BRINGING UP RANGE SAFETY COMMAND CARRIER 2.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-19 HRS 01' 0"	CONTINUED					
	181	10	CTSC	CVTS	MSS ELEVATOR 2 RETURNED TO NORMAL SERVICE;	
	181	11	CTSC	CVTS	NEED NIB CHECKS ON CH' 181" 212, 261 AND ABORT ADVISORY LOOP FROM UCS 12, 16" AND 17 TO FIRING ROOM CONSOLES AB5 AND AB8 TO PERFORM PHOTO OPTICS VALIDATION AT FORWARD OBSERVER SITES FOR NEXT 15 MINUTES;	
-18 HRS 55' 0"						
	181	1	CLTC	CVTS	DRSCS OPEN LOOP TEST IS COMPLETE;	
					DESTRUCT SYSTEM ENABLE KEY RETURNED TO CPSS;	
					REQUEST RANGE SAFETY COMMAND CARRIER OFF;	
	181	2	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED;	
	181	3	CVTS	SRO	RANGE SAFETY COMMAND CARRIER OFF AND VERIFY;	
	181	4	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS OFF;	
	181	5	CLTC	CVTS	REQUEST SRO RECONFIGURE TO FLIGHT CODE PLUGS;	
	181	6	CVTS	SRO	RECONFIGURE TO FLIGHT CODE PLUGS;	
	181	7	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER; PROTECTION IS REQUIRED;	
					STANDBY ON CH' 261 FOR LV DRSCS CLOSED LOOP TEST;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-18 HRS 35' 0"						
	181	1	CLTC	CVTS	REQUEST SCO PERSONNEL ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
					REQUEST EDS POWER ON.	
	181	2	CVTS	MSTC	SCO PERSONNEL ARE REQUIRED ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
					TURN EDS POWER ON.	
	181	3	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LV LOCAL RANGE SAFETY COMMAND CARRIER (PROTECTION IS REQUIRED). VERIFY RANGE IS READY TO SUPPORT DRSCS CLOSED LOOP TEST ON CH. 261.	
	181	4	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	5	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	6	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN.	
					NOTE THE DETAILED SEQUENCES FOR THE DRSCS CLOSED LOOP TEST ARE IN THE LV PROCEDURE.	
-18 HRS 30' 0"						
	181	1	CVTS	CTSC	AAS POWER BUSSES WILL BE REQUIRED IN 1 HOUR. HAVE BWIC MONITOR CH. 181.	
	181	2	BWIC	CVTS	AAS POWER SUPPLIES ARE COMING ON.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-18 HRS 30' 0"	CONTINUED					
					NOTE --- POWER BUSS LIGHTS ON CONSOLE AB66 MAY BE ACTIVATED DURING VOLTAGE CHECKS.	
	181	3	MSTC	CVTS	EDS POWER IS ON;	
					SCO PERSONNEL ARE ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
	181	4	CVTS	CLTC	SCO PERSONNEL ARE ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
					EDS POWER IS ON;	
	181	5	CLTC	CVTS	ABORT LIGHT CHECK COMPLETE;	
					LV NO LONGER REQUIRES EDS POWER;	
	181	6	CVTS	MSTC	ABORT LIGHT CHECK COMPLETE;	
					REQUEST EDS POWER OFF;	
	181	7	MSTC	CVTS	EDS POWER IS OFF.	
	181	8	CLTC	CVTS	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON ML LEVEL 240 FOR GH2 SNIFFER CHECKS OF THE S-IVB HEAT EXCHANGER;	
	181	9	CVTS	CPSS	SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON ML LEVEL 240 FOR GH2 SNIFFER CHECKS OF THE S-IV HEAT EXCHANGER;	
	181	10	CLTC	CVTS	DRSCS CHECKS COMPLETE;	
					LOCAL RANGE SAFETY COMMAND CARRIER IS OFF AND DESTRUCT SYSTEM ENABLE KEY KEY RETURNED TO CPSS;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-18 HRS 30' 0"	CONTINUED					
	181	11	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED;	
	181	12	CVTS	SRO	LV DRSCS RANGE CLOSED LOOP TEST IS COMPLETE; LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF; LV DRSCS SUPPORT IS NO LONGER REQUIRED;	
-18 HRS 10' 0"						
	181	1	CLTC	CVTS	REQUEST CLEARANCE FOR LOCAL OPEN LOOP IU COMMAND CARRIER (PROTECTION IS REQUIRED);	
	181	2	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV LOCAL OPEN LOOP IU COMMAND CARRIER; PROTECTION IS REQUIRED;	
	181	3	CVTS	CLTC	BRING UP LOCAL OPEN LOOP IU COMMAND CARRIER;	
	181	4	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER IS ON; LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF;	
	181	5	CVTS	SRO	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF;	
-18 HRS 0' 0"						
	181	1	CTSC	CVTS	ML EGRESS SPRAY SYSTEM AND ML LES SPRAY SYSTEM WILL BE CONFIGURED IN READINESS CONFIGURATION AND REMOTE CONTROL;	
	181	2	CLTC	CVTS	ADVISE CPSS THAT PD ENABLE JUMPERS HAVE BEEN REMOVED;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-18 HRS 0' 0"	CONTINUED					
	181	3	CVTS	EPSS	LV PD ENABLE JUMPERS HAVE BEEN REMOVED.	
-17 HRS 45' 0"						
	181	1	MSTC	CVTS	CSM READY FOR SC CONTROL OF SATURN ATTITUDE COMMAND CHECKS.	
	181	2	CVTS	CLTC	CSM IS READY FOR SC CONTROL OF SATURN ATTITUDE COMMAND CHECKS ON CH. 212.	
					NOTE --o-- SATURN ATTITUDE COMMAND CHECKS ARE SCHEDULED TO OCCUR DURING THE NEXT 5 MINUTES.	
-17 HRS 40' 0"						
	181	1	CLTC	CVTS	REQUEST SCO PERSONNEL ON CH. 223 TO PERFORM FT-25.	
	181	2	CVTS	MSTC	CSM PERSONNEL ARE REQUIRED ON CH. 223 TO SUPPORT FT-25.	
	181	3	CLTC	CVTS	IU COMMAND RECEIVER/DECODER IF OFF. LOCAL OPEN LOOP IU COMMAND CARRIER IS COMING OFF.	
	181	4	CVTS	SRO	LV LOCAL OPEN LOOP IU COMMAND CARRIER IS COMING OFF.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-17 HRS 30' 0"						
	181	1	CLTC	CVTS	LV READY FOR EDS TEST, REQUEST SCO PERSONNEL SWITCH TO CH' 223.	
	181	2	CVTS	LOM	SWITCH TO CH' 223 FOR EDS TEST'	
	181	3	CVTS	MSTC	SCO PERSONNEL ARE REQUIRED ON CH' 223 FOR EDS TEST' TURN EDS POWER ON'	
	181	4	MSTC	CVTS	CSM EDS POWER IS COMING ON'	
					SCO PERSONNEL ARE ON CH' 223 FOR EDS TEST'	
	181	5	CVTS	CLTC	SCO PERSONNEL ARE ON CH' 223 FOR EDS TEST'	
	223	6	CVTS	LOM	VERIFY THE FOLLOWING SWITCHES ON THE ABORT REQUEST PANEL ARE OFF ABORT REQUEST ENABLE' ABORT REQUEST A, AND ABORT REQUEST B'	
	181	7	CVTS	BWIC	TURN ON AAS RECORDERS AT FAST SPEED'	
					TURN ON AAS POWER BUSSES.	
		8		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL GO ON POWER SUPPLY 1, 2, 3' AAS SUPPLY' AND ORDNANCE SAFE'	
	223	9	CEDK	LOM	ABORT REQUEST ENABLE = ON'	
	223	10	LOM		ABORT REQUEST A ENABLED AND REQUEST B ENABLED LIGHTS = ON'	
					NOTE " IN THE FOLLOWING SEQUENCE, DO NOT OPERATE BOTH SWITCHES SIMULTANEOUSLY'	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-17 HRS 30' 0"	CONTINUED					
	223	11	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCH ON;	
		12		LOM	NOTE THAT REQUEST A TRANSMITTED AND REQUEST B TRANSMITTED LIGHTS GO ON;	
	223	13	SCDR		ABORT LIGHT - ON;	
	223	14	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCHES - OFF;	
		15		LOM	NOTE THAT REQUEST A TRANSMITTED AND REQUEST B TRANSMITTED LIGHTS GO OFF;	
	223	16	SCDR		ABORT LIGHT - OFF;	
	181	17	CTSC	CVTS	ML EGRESS SPRAY SYSTEM AND ML LES SPRAY SYSTEM IN READINESS CONFIGURATION AND REMOTE CONTROL;	
	181	18	CTSC	CVTS	MSS LES SPRAY SYSTEM ON PLATFORM B AND MSS LEVELS DELUGE ON LEVELS 4A, 4C; 3A; 3C AND -22 FOOT LEVEL WILL BE SECURED;	
	181	19	CLTC	CVTS	ADVISE CPSS THAT PD ENABLE JUMPERS HAVE BEEN REMOVED;	
	181	20	CVTS	CPSS	LV PD ENABLE JUMPERS HAVE BEEN REMOVED;	
	181	21	CLTC	CVTS	PROVIDE FIRE SUPPORT ON THE 127 FOOT LEVEL OF THE ML IN 1 HOUR FOR THRUST JACKET FILL OPERATIONS;	
	181	22	CVTS	CTSC	PROVIDE FIRE SUPPORT ON THE 127 FOOT LEVEL OF THE ML IN 1 HOUR FOR THRUST JACKET FILL OPERATIONS;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-17 HRS 0' 0"						
	181	1	CLTC	CVTS	EDS TEST IS COMPLETE;	
	181	2	MSTC	CVTS	EDS POWER IS OFF,	
	223	3	CEDK	LOM	ABORT REQUEST ENABLE SWITCH - OFF;	
	181	4	LOM		ABORT REQUEST A ENABLED AND REQUEST B ENABLED LIGHTS - OFF;	
	181	5	CVTS	BWIC	TURN OFF AAS POWER BUSSES AND AAS EVENT RECORDERS;	
		6		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL GO OFF POWER SUPPLY 1, 2, 3, AAS SUPPLY, AND ORDNANCE SAFE,	
-16 HRS 30' 0"						
	181	1	CTSC	CVTS	MSS LES SPRAY SYSTEM ON PLATFORM 5 AND MSS LEVELS DELUGE ON LEVELS 4A, 4C, 3A, 3C AND -22 FOOT LEVEL SECURED;	
	181	2	CTSC	CVTS	FIRE SUPPORT ON 127 FOOT LEVEL OF ML TO SUPPORT THRUST CHAMBER FILL OPERATIONS;	
	181	3	CVTS	CLTC	FIRE SUPPORT IS ON 127 FOOT LEVEL OF ML TO SUPPORT THRUST CHAMBER FILL OPERATIONS;	
-16 HRS 15' 0"						
	181	1	CLTC	CVTS	LV RF AND TM SYSTEMS ARE OFF;	
	181	2	CVTS	SRO	LV RF AND TM SYSTEMS ARE OFF;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-15 HRS 30' 0"						
	181	1	CLTC	CVTS	MSS PLATFORM 2 IS AVAILABLE FOR OPENING.	
	181	2	CVTS	CTSC	OPEN AND SECURE MSS PLATFORM 2.	H
					NOTE --- THE MSS PLATFORM CREW IS TO PERFORM PLATFORM BREAKUP TASKS AT THIS TIME. OTHER WORK REQUIRING USE OF THE PLATFORM MAY BE ACCOMPLISHED ON A NON-INTERFERENCE BASIS.	
	181	3	CLTC	CVTS	THRUST CHAMBER JACKET FILL IS COMPLETE. RELEASE FIRE SUPPORT.	
	181	4	CVTS	CPSS	THRUST CHAMBER JACKET FILL IS COMPLETE. VERIFY READY TO RELEASE FIRE SUPPORT.	
	181	5	CVTS	CTSC	THRUST CHAMBER JACKET FILL IS COMPLETE. RELEASE FIRE SUPPORT FROM THRUST CHAMBER JACKET FILL.	
	181	6	CLTC	CVTS	READY TO CLEAR THE CONTROL AREA FOR HDA AND SPGGI CONNECTIONS.	
	181	7	CVTS	CTSC	PROVIDE FIRE AND MEDICAL SUPPORT FOR LV ORDNANCE CONNECTIONS.	
	181 EM PA	8	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREAS FOR LV HDA AND SPGGI CONNECTIONS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-15 HRS 30' 0"	CONTINUED					
					***********WARNING*********** * * * THE CONTROL AREA FOR LV * * HDA AND SPGGI * * CONNECTIONS CONSISTS OF * * THE TOP OF THE * * PEDESTAL, ML "0" LEVEL * * AND THE FLAME TRENCH. * * * *********************************	
	181	9	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREAS FOR LV HDA AND SPGGI CONNECTIONS.	
-15 HR 15' 0"						
	181	1	CVTS	MSTC	VERIFY READY TO MAINTAIN RF SILENCE AND CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE.	
	181	2	CLTC	CVTS	REQUEST RF SILENCE ON. LV CONTROLLED SWITCHING AND CONTROLLED SWITCHING ACROSS THE LV/SC INTERFACE ARE IN EFFECT.	
		3		CVTS	TURN RF SILENCE SWITCH ON.	
	181 EM PA	4	CVTS		RF SILENCE IS NOW IN EFFECT ON THE SPACE VEHICLE AT PAD B. CONTROLLED SWITCHING IS NOW IN EFFECT ON THE LV AND ACROSS THE LV/SC INTERFACE AT PAD B. SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS.	
	181	5	CPSS	CVTS	CLEAR TO START LV HDA AND SPGGI CONNECTIONS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-15 HRS 15' 0"	CONTINUED					
	181	6	CVTS	CLTC	START HDA AND SPGGI CONNECTIONS.	H
	181	7	CLTC	CVTS	READY TO CLEAR THE CONTROL AREAS FOR LV ORDNANCE CONNECTIONS.	
	181 EM PA	8	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREAS FOR LV S&A CONNECTIONS.	
					**********WARNING********** * * * THE CONTROL AREA FOR LV * * S&A CONNECTIONS * * CONSISTS OF THE LV * * INTERIOR, S-IB AFT AND * * A 10 FOOT RADIUS OF THE * * S&A UNITS. * * * **********	
	181	9	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREAS FOR LV S&A CONNECTIONS.	
	181	10	CLTC	CVTS	REQUEST CPSS RELEASE TCS KEY TO C3SP FOR IGNITION SOURCE VOLTAGE CHECKS.	
	181	11	CVTS	CPSS	RELEASE TCS KEY TO C3SP FOR LV IGNITION SOURCE VOLTAGE CHECKS.	
	181	12	CLTC	CVTS	ADVISE SC QC THAT LV IS STARTING SA-8 CLOSEOUT.	
	181	13	CVTS	MSTC	ADVISE SC QC THAT LV IS STARTING SA-8 CLOSEOUT.	
-14 HRS 45' 0"						
	181	1	CPSS	CVTS	CLEAR TO START LV S&A CONNECTIONS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-14 HRS 45' 0"	CONTINUED					
	181	2	CVTS	CLTC	START LV S&A CONNECTIONS.	H
	181	3	CLTC	CVTS	SA-9 WILL BE PRESSURIZED IN 15 MINUTES LOCAL CLEARING ON SA-9 WILL BE CONTROLLED BY SA PERSONNEL.	
	181	4	CVTS	MSTC	SA-9 WILL BE PRESSURIZED IN 15 MINUTES. LOCAL CLEARING ON SA-9 WILL BE CONTROLLED BY SA PERSONNEL.	
-14 HRS 15' 0"						
	181	1	CVTS	MSTC	VERIFY READY FOR SA-8 EXTENSION PLATFORM RETRACTION.	
	181	2	CVTS	CLTC	RETRACT SA-8 EXTENSION PLATFORM.	
-14 HRS 0' 0"						
	181	1	CLTC	CVTS	LV ORDNANCE CONNECTIONS ARE COMPLETE. TCS HAS BEEN SAFED AND TCS KEY HAS BEEN RETURNED TO CPSS.	
	181	2	CLTC	CVTS	RF SILENCE AND CONTROLLED SWITCHING ARE NO LONGER REQUIRED.	
	181	3	CVTS	CPSS	LV ORDNANCE CONNECTIONS ARE COMPLETE. VERIFY TCS KEY HAS BEEN RETURNED. VERIFY READY TO OPEN THE CONTROLLED AREAS FOR NORMAL WORK.	
		4		CVTS	TURN RF SILENCE SWITCH OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-14 HRS 0' 0"	CONTINUED					
	181 EM PA	5	CVTS		LV ORDNANCE CONNECTIONS ARE COMPLETE. RF SILENCE AND CONTROLLED SWITCHING ARE ENDED AT PAD B. THE PAD B CONTROLLED AREAS ARE OPEN FOR NORMAL WORK.	
	181	6	CVTS	MSTC	RF SILENCE AND CONTROLLED SWITCHING ARE ENDED.	
	181	7	CVTS	CTSC	LV ORDNANCE CONNECTIONS ARE COMPLETE. RELEASE FIRE AND MEDICAL SUPPORT FROM LV ORDNANCE CONNECTIONS.	
	181	8	MSTC	CVTS	READY FOR MSS W/R DOOR LOCK INSTALLATION AND SA-9 HANGER REMOVAL.	
	181	9	CVTS	CLTC	INSTALL MSS W/R DOOR LOCK. REMOVE SA-9 HANGERS. NOTE ---- WITH THE SHEAR DOOR OR TORSIONAL AND SHEAR FRAME IN PLACE, THE MAXIMUM ALLOWABLE LOADING IN THE ACCESS ARM ENVIRONMENTAL CONTROL CHAMBER IS 1250 LBS. OR 5 MEN, OF THIS 1250 LBS., 600 LBS. MAXIMUM ARE ALLOWED ON THE ENVIRONMENTAL CONTROL CHAMBER EXTENSION PLATFORM.	
	181	10	CLTC	CVTS	MSS PLATFORM 1 IS AVAILABLE FOR OPENING.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-14 HRS 0' 0"	CONTINUED					
	181	11	CVTS	CTSC	OPEN AND SECURE MSS PLATFORM 1.	H
					NOTE --- THE MSS PLATFORM CREW IS TO PERFORM PLATFORM BREAKUP TASKS AT THIS TIME. OTHER WORK REQUIRING USE OF THE PLATFORM MAY BE ACCOMPLISHED ON A NON-INTERFERENCE BASIS.	
	181	12	CTSC	CVTS	MSS PLATFORM 2 IS OPEN AND SECURE.	
	181	13	CVTS	CLTC	MSS PLATFORM 2 IS OPEN AND SECURE.	
	181	14	CLTC	CVTS	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON ML 240 FOOT LEVEL FOR GH2 SNIFFER CHECKS OF THE S-IVB HEAT EXCHANGER.	
	181	15	CVTS	CPSS	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON ML 240 FOOT LEVEL FOR GH2 SNIFFER CHECKS OF THE S-IVB HEAT EXCHANGER.	
-13 HRS 45' 0"						
	181	1	MSTC	CVTS	CLEAR TO REMOVE SA-8 YELLOW LADDER. (READY TO REMOVE SA-8 EMERGENCY EGRESS LADDER AND DOOR ASSEMBLY.)	
	181	2	CVTS	CLTC	REMOVE SA-8 EMERGENCY EGRESS LADDER AND DOOR ASSEMBLY.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-13 HRS 30' 0"						
	181	1	MSTC	CVTS	MSS PLATFORM 4 IS AVAILABLE FOR OPENING.	
	181	2	CLTC	CVTS	MSS PLATFORM 4 IS AVAILABLE FOR OPENING.	
	181	3	CVTS	CTSC	OPEN AND SECURE MSS PLATFORM 4.	H
					NOTE ---- THE MSS PLATFORM CREW IS TO PERFORM PLATFORM BREAKUP TASKS AT THIS TIME. OTHER WORK REQUIRING USE OF THE PLATFORM MAY BE ACCOMPLISHED ON A NON-INTERFERENCE BASIS.	
-13 HRS 15' 0"						
	181	1	CTSC	CVTS	RESCUE EQUIPMENT IS IN WHITE ROOM AND SA-9 RESCUE LOCKER.	
	181	2	CTSC	CVTS	MSS PLATFORM 1 IS OPEN AND SECURE.	
	181	3	CVTS	CLTC	MSS PLATFORM 1 IS OPEN AND SECURE.	
-13 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ AND LV FREQUENCIES 240.2, 250.7, 255.1, 256.2, 258.5 AND 450.0 MHZ FOR GMIL ON-STATION CALIBRATION.	
	181	2	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCY 2287.5 MHZ FOR CIF ANTENNA CALIBRATION.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-13 HRS 0' 0"						
	181	1	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION.	
	181	2	CTSC	CVTS	VERIFY RADIATION CLEARANCE FOR CIF ANTENNA CALIBRATION.	
	181	3	MSTC	CVTS	MSS PLATFORM 3 IS AVAILABLE FOR OPENING.	
	181	4	CLTC	CVTS	MSS PLATFORM 3 IS AVAILABLE FOR OPENING.	
	181	5	CVTS	CTSC	OPEN AND SECURE MSS PLATFORM 3.	H
					NOTE --- THE MSS PLATFORM CREW IS TO PERFORM PLATFORM BREAKUP TASKS AT THIS TIME. OTHER WORK REQUIRING USE OF THE PLATFORM MAY BE ACCOMPLISHED ON A NON-INTERFERENCE BASIS.	
-12 HRS 30' 0"						
	181	1	CVTS	CTSC	VERIFY THE H/H CRANE WILL BE AVAILABLE FOR ESP LOWERING PREPS IN 30 MINUTES.	
	181	2	CLTC	CVTS	READY TO CLEAR THE CONTROL AREA FOR ESP LOWERING. VERIFY THE H/H CRANE WILL BE AVAILABLE FOR ESP LOWERING PREPS IN 30 MINUTES.	
	181 EM PA	3	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE PAD B CONTROL AREA FOR LOWERING THE ENGINE SERVICE PLATFORM.	

TIME	COMM CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-12 HRS 30' 0"	CONTINUED					
					***********WARNING***********	
					* *	
					* THE CONTROL AREA FOR *	
					* LOWERING THE ESP IS THE *	
					* ML 127 FOOT LEVEL, *	
					* DIRECTLY BELOW THE ESP *	
					* AND INSIDE THE PEDESTAL *	
					* LEGS. *	
					* *	
					*********************************	
	181	4	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREA FOR LOWERING THE ESP.	
-12 HRS 0' 0"						
	181	1	CPSS	CVTS	CLEAR TO START ESP PREPS AND LOWERING OPERATIONS.	
	181	2	CVTS	CLTC	START ESP PREPS AND LOWERING OPERATIONS. REPORT WHEN COMPLETE.	
-11 HRS 30' 0"						
	181	1	CTSC	CVTS	ENTRANCE TO LCC ROOM 1P4 WILL BE REQUIRED IN 30 MINUTES TO JUMPER MSS FIRE ALARM CABLES PRIOR TO DISCONNECTION.	
	181	2	CVTS	CTNS	ENTRANCE TO LCC ROOM 1P4 WILL BE REQUIRED IN 30 MINUTES TO JUMPER MSS FIRE ALARM CABLES PRIOR TO DISCONNECTION.	
	181	3	CTSC	CVTS	CIF ANTENNA CALIBRATION IS COMPLETE. TERMINATE CLEARANCE FOR 2287.5 MHZ.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-11 HRS 30' 0"	CONTINUED					
	181	4	CVTS	SRO	CIF ANTENNA CALIBRATION IS COMPLETE. CIF RF IS OFF.	
-11 HRS 45' 0"						
	181	1	CVTS	CPSS	VERIFY CLEARANCE TO TERMINATE AND DISCONNECT MSS FIREX WATER.	
	181	2	CVTS	CTSC	TERMINATE AND DISCONNECT MSS FIREX WATER.	
-11 HRS 15' 0"						
	181	1	CVTS	MSTC CLTC	MSS PLATFORM OBSERVERS ARE TO REPORT TO PVTS AT THE BASE OF THE MSS LOW RISE ELEVATOR FOR OBSERVER BRIEFING IN 45 MINUTES.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-11 HRS 15' 0"	CONTINUED					
					NOTE MSS OBSERVERS WILL BE BRIEFED PER SKYLAB LC-39 LAUNCH OPERATIONS INSTRUCTION, 600-26-0002.	
-11 HRS 5' 0"						
	181	1	CVTS	CLTC	GMIL BRINGING UP 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
					VERIFY IU COMMAND RECEIVER/DECODER IS OFF.	
	181	2	CVTS	MSTC	GMIL BRINGING UP 2106.4 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
					VERIFY CSM COMMAND DECODER IS OFF.	
	181	3	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV AND CSM FREQUENCIES 450.0, 2106.4, 259.7 AND 296.8 MHZ FOR MCC COMMAND VALIDATION TEST AND MCC AIR/GROUND VALIDATION TEST.	
-11 HRS 0' 0"						
	181	1	MSTC	CVTS	MSS PLATFORM 5 IS AVAILABLE FOR OPENING.	
	181	2	CVTS	CTSC	OPEN AND SECURE MSS PLATFORM 5.	H

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-11 HRS 01' 0"	CONTINUED					
					NOTE THE MSS PLATFORM CREW IS TO PERFORM PLATFORM BREAKUP TASKS AT THIS TIME. OTHER WORK REQUIRING USE OF THE PLATFORM MAY BE ACCOMPLISHED ON A NON-INTERFERENCE BASIS.	
	181	3	CTSC	CVTS	MSS PLATFORM 3 IS OPEN AND SECURE.	
	181	4	CTSC	CVTS	ALERT ALL LV AND LS OBSERVERS TO BE ON STATION IN 60 MINUTES FOR COMM CHECK IN SUPPORT OF MSS MOVE.	
	181	5	CVTS	PVTS	ALERT ALL LV AND LS OBSERVERS TO BE ON STATION IN 60 MINUTES FOR COMM CHECK IN SUPPORT OF MSS MOVE.	
	181	6	GMIL	CVTS	ON-STATION CALIBRATION IS COMPLETE. GMIL RF IS OFF.	
	181	7	CVTS	SRO	GMIL ON-STATION CALIBRATION IS COMPLETE. GMIL RF IS OFF.	
	181	8	HFLT	CVTS	VERIFY IU COMMAND RECEIVER/DECODER AND CSM COMMAND DECODER ARE OFF. BRING UP GMIL 450.0 AND 2106.4 MHZ COMMAND CARRIERS FOR MCC COMMAND VALIDATION TEST. BRING UP GMIL 259.7, 296.8 AND 2106.4 MHZ CARRIERS FOR MCC AIR/GROUND VALIDATION TEST.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-11 HRS 0' 0"	CONTINUED					
	181	9	CVTS	GMIL	BRING UP 450.0 AND 2106.4 MHZ COMMAND CARRIERS FOR MCC COMMAND VALIDATION TEST. BRING UP 295.7, 296.8 AND 2106.4 MHZ CARRIERS FOR AIR/GROUND VALIDATION TEST.	
	181	10	GMIL	CVTS	GMIL RF IS ON.	
	181	11	CVTS	HFLT	GMIL RF IS ON.	
	181	12	CTSC	CVTS	PROPELLING TRANSPORTER UNDER MSS TO MATE POSITION.	
	181	13	CVTS	CPSS	PROPELLING TRANSPORTER UNDER MSS TO MATE POSITION.	
-10 HRS 45' 0"						
	181	1	CVTS	CLTC	HAVE SA-9 PERSONNEL REPORT TO SA-9 IN 15 MINUTES FOR CO2 SYSTEM VERIFICATION.	
	181	2	CVTS	CTSC	PERSONNEL WILL BE REQUIRED ON SA-9 IN 15 MINUTES TO SUPPORT CO2 SYSTEM VERIFICATION.	
-10 HRS 40' 0"						
	181	1	HFLT	CVTS	MCC COMMAND VALIDATION TEST IS COMPLETE. MCC AIR/GROOND VALIDATION TEST IS COMPLETE. GMIL RF IS NO LONGER REQUIRED.	
	181	2	CVTS	GMIL	BRING DOWN 450.0, 2106.4, 299.7 AND 296.8 MHZ CARRIERS.	
	181	3	GMIL	CVTS	GMIL RF IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-10 HRS 40' 0"	CONTINUED					
	181	4	CVTS	ELTC MSTC	MCC COMMAND VALIDATION TEST IS COMPLETE;	
	181	5	CVTS	SRO	MCC COMMAND VALIDATION TEST AND AIR/GROUND VALIDATION TEST ARE COMPLETE; GMIL RF IS OFF;	
	181	6	CTSC	CVTS	ML NON-CRITICAL POWER WILL BE SECURED IN 10 MINUTES;	
-10 HRS 35' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ.	
-10 HRS 30' 0"	—					
	181	1	MSTC	CVTS	280 FOOT ACE ROOM IS READY FOR SECURING;	
	181	2	CVTS	CTSC	280 FOOT ACE ROOM IS READY FOR SECURING;	
	181	3	MSTC	CVTS	VERIFY CLEARANCE FOR CSM RF UHF 2106.4, 2287.5 AND 2272.5 MHZ; VHF-AM 259.7 AND 296.8 MHZ; CSM COMMAND DECODER IS COMING ON; HAVE GMIL AND HFLT PROVIDE SUPPORT ON CH, 212;	
	181	4	CVTS	HFLT	CSM COMMAND DECODER IS COMING ON; STANDBY ON CH, 212 TO SUPPORT CSM RF VOICE CHECKS;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-10 HRS 30' 0"	CONTINUED					
	181	5	CVTS	GMIL	STANDBY ON CH. 212 TO SUPPORT CSM RF VOICE CHECKS; CLEAR TO BRING UP CSM UHF COMMAND CARRIER WHEN REQUESTED; KEEP CVTS ADVISED ON CARRIER STATUS; CSM DECODER IS COMING ON.	
	181	6	CTSC	CVTS	UNSECURED FIRE EXTINGUISHERS WILL BE REMOVED FROM THE ML.	
	181	7	CTSC	CVTS	CONFIGURING MSS OIS-RF UHF;	
	181	8	CVTS	MSTC CLTC	STARTING MSS OIS TRANSFER - PAD HARDLINE TO CT UHF; CT OIS CHANNEL ASSIGNMENTS WILL BE IN EFFECT;	
-10 HRS 15' 0"						
	181	1	CTSC	CVTS	MSS OIS RF CONFIGURED TO UHF;	
	181	2	CVTS	MSTC CLTC	MSS OIS TRANSFER - PAD TO CT IS COMPLETE;	
	181	3	CTSC	CVTS	MSS POWER TRANSFER TO ONBOARD POWER WILL OCCUR IN 15 MINUTES.	
	181	4	CVTS	CLTC MSTC	MSS POWER TRANSFER TO ONBOARD POWER WILL OCCUR IN 15 MINUTES.	
-10 HRS 0' 0"						
	181	1	CTSC	CVTS	MSS PLATFORM 5 IS OPEN AND SECURE.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-10 HRS 01' 0"	CONTINUED					
	181	2	CVTS	CLTC MSTC	VERIFY READY FOR MSS POWER TRANSFER TO ONBOARD POWER.	
	181	3	CTSC	CVTS	VERIFY READY FOR MSS TRANSFER TO ONBOARD POWER.	
	181	4	CTSC	CVTS	MSS POWER TRANSFER TO ONBOARD POWER IS COMPLETE.	
	181	5	MSTC	CVTS	CHANGE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 1-SWITCH MODE AND VERIFY.	
	181	6	CVTS	CPSS	VERIFY CLEARANCE TO CHANGE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 1-SWITCH MODE.	
	181	7	CVTS	CLTC	CHANGE SMDPS FROM 2-SWITCH, 1-VALVE MODE TO 1-SWITCH MODE. REPORT WHEN COMPLETE.	
	181	8	CVTS	MSTC	VERIFY ASTRONAUT STOOL LOCATED IN ELEVATOR 1.	
	181	9	CVTS	CLTC MSTC CTSC	AVO POLICY IS IN EFFECT FOR NON-TCP WORK.	
	181	10	CLTC	CVTS	SMDPS IS IN A 1-SWITCH MODE.	
	181	11	CVTS	MSTC	SMDPS IS IN A 1-SWITCH MODE.	
	181	12	CLTC	CVTS	SA-9 CO2 SYSTEM VERIFICATION IS COMPLETE.	
-9 HRS 45' 0"						
	181	1	MSTC	CVTS	MSS PREPARATIONS FOR MOVE ARB COMPLETE.	
	181	2	CVTS	MSTC	VERIFY READY FOR AUXILIARY DAMPER DISCONNECTION.	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-9 HRS 45' 0"	CONTINUED					
	181	3	CLTC	CVTS	VERIFY PREVAILING WINDS DO NOT EXCEED REDLINE VALUES FOR FREE STANDING SV (REFERENCE LMR).	
	181	4	CVTS	CLTC	DISCONNECT AUXILIARY DAMPER.	
	181	5	CVTS	CTSC	SECURE FACILITY POWER TO PAD TRAILER COMPLEX.	
-9 HRS 35' 0"						
	181	1	CLTC	CVTS	LV QAL INSPECTION OF MSS PLATFORMS 1 AND 2 PER LV QAL QCP-11 IS COMPLETE. AUXILIARY DAMPER DISCONNECTED AND LV READY FOR MSS JACKING, BUT NOT FOR MOVE.	
	181	2	CVTS	CTSC	AUXILIARY DAMPER IS DISCONNECTED.	
-9 HRS 30' 0"						
	181	1	CLTC	CVTS	REQUEST THAT FIRE, SAFETY AND SECURITY BE ON STATION IN 1 HOUR AND READY TO SUPPORT HAZARDOUS PORTIONS OF LOX SYSTEM FINAL PREPS AND LV PROPELLANT LOADING.	
	181	2	CVTS	CTNS CPSS	SAFETY AND SECURITY PERSONNEL WILL BE REQUIRED ON STATION IN 1 HOUR AND READY TO SUPPORT HAZARDOUS PORTIONS OF LOX SYSTEM FINAL PREPS AND LV PROPELLANT LOADING.	

TIME	COMM CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-9 HRS 30' 0"	CONTINUED					
	181	3	CVTS	CTSC	FIRE PROTECTION PERSONNEL ARE REQUIRED ON STATION IN 1 HOUR IN SUPPORT OF LOX SYSTEM FINAL PREPS, RP-1 REPLENISH OPERATIONS, LOX LINE CHILLDOWN AND CRYO LOADING;	
	181	4	CVTS	MSTC CLTO CTSC	VERIFY FINAL PURGE BOX VALIDATION; VERIFY ALL DUST CAPS AND CABLE CAPS ON THE ML AND PAD ARE SECURED;	
	181	5	CTSC	CVTS	ML ELEVATORS ARE BEING CONFIGURED FOR LAUNCH;	
		6	CVTS		PERFORM COMM CHECK WITH M1831S ON CH; 121; 181; LSR HARDLINE AND NET 105;	
	181	7	CTSC	CVTS	MSS PLATFORM 4 IS OPEN AND SECURE;	
	181	8	CTSC	CVTS	REQUEST CLEARANCE TO JACK MSS TO CLEARANCE HEIGHT,	
	181	9	CVTS	CPSS	VERIFY CLEARANCE FOR MSS JACKING OPERATIONS;	
	181	10	CVTS	CTSC	JACK MSS TO CLEARANCE HEIGHT;	H
	181	11	CTSC	CVTS	FACILITY POWER TO THE PAD TRAILER COMPLEX IS SECURED;	
-9 HRS 15' 0"						
	181	1	CVTS	CTNS	VERIFY BOTH DOORS TO LCC ROOM 1P4 ARE LOCKED AND INTEGRITY SEALS HAVE BEEN APPLIED;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-9 HRS 15' 0"	CONTINUED					
	181	2	CVTS	CTSC	CONFIGURE PAD SURFACE SAFETY SIGNAL LIGHTS TO STEADY RED; CLOSE AND DOG THE PAD SURFACE PTCR BLAST DOORS; REMOVE ZERO LEVEL PLATFORM COVER PLATES FROM PAD ELEVATOR 2; CONFIGURE B-4 LIGHTS TO STEADY RED ON CLEARING PAD;	
-9 HRS 10' 0"	181	1	CVTS	MSTC	VERIFY READY FOR PRIMARY DAMPER CONNECTION IN 15 MINUTES;	
-9 HRS 5' 0"	181	1	CLTC	CVTS	ALL HIGHLY DESIRABLE LMR RANGE SAFETY MEASUREMENTS ARE GO; VERIFY ETR ASSUMES MONITORING RESPONSIBILITY AT THIS TIME;	
	181	2	CVTS	SRO	LV REPORTS ALL HIGHLY DESIRABLE LMR RANGE SAFETY MEASUREMENTS ARE GO; VERIFY ETR ASSUMES MONITORING RESPONSIBILITY AT THIS TIME;	
	181	3	CVTS	CLTC	ETR HAS ASSUMED MONITORING RESPONSIBILITY;	
-9 HRS 0' 0"	181	1	CTSC	CVTS	STARTING ML PRESSURIZATION TASK, PRESSURIZATION WILL OCCUR IN APPROXIMATELY 1 HOUR;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-9 HRS 0' 0"	CONTINUED					
	181	2	CVTS	CLTC MSTC CPSS	STARTING ML PRESSURIZATION TASK, PRESSURIZATION WILL OCCUR IN APPROXIMATELY 1 HOUR.	
					NOTE LOCAL PAGES WILL BE MADE 15, 10, AND 5 MINUTES PRIOR TO PRESSURIZING THE ML.	
	181	3	CLTC	CVTS	LV READY TO START PAD CLEARING OPERATIONS. REQUEST SECURITY TO VERIFY BOTH DOORS TO 1P4 ARE LOCKED AND INTEGRITY SEALS HAVE BEEN APPLIED.	
	181 EM PA	4	CVTS		ALL PERSONNEL NOT POSSESSING T-9 HOUR HAZARDOUS BADGES ARE TO CLEAR THE PAD B BLAST DANGER AREA.	
	181	5	CVTS	CPSS	CLEAR THE BLAST DANGER AREA OF ALL PERSONNEL NOT POSSESSING T-9 HOUR HAZARDOUS BADGES.	
	181	6	CTSC	CVTS	MSS IS JACKED TO CLEARANCE HEIGHT, REQUEST CLEARANCE TO PROPEL MSS TO PARK SITE.	
	181	7	CVTS	CLTC	MSS JACKING IS COMPLETE.	
	181	8	CLTC	CVTS	LV CLEAR FOR MSS MOVE.	
	181	9	CVTS	CPSS	VERIFY CLEARANCE TO PROPEL MSS TO PARKSITE.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-9 HRS 0' 0"	CONTINUED					
	181	10	CVTS	CTSC	PROPEL MSS CLEAR OF SUPPORT COLUMNS AND PROCEED WITH TRANSFER OPERATIONS; REPORT PROGRESS TO CVTS ENROUTE;	H
	181	11	CTSC	CVTS	MSS FIRST MOTION;	
	181	12	CVTS	MSTC CLTC	MSS IS IN MOTION;	
	181	13	CLTC	CVTS	ESP LOWERING IS COMPLETE; THE H/H CRANE IS RELEASED FOR NORMAL SERVICE;	
	181	14	CVTS	CPSS	ESP LOWERING IS COMPLETE;	
	181 EM PA	15	CVTS		ENGINE SERVICE PLATFORM LOWERING IS COMPLETE;	
	181	16	CVTS	CTSC	ESP LOWERING IS COMPLETE; THE H/H CRANE IS RELEASED FOR NORMAL SERVICE;	
	181	17	CVTS	MSTC	VERIFY CSM UHF ON AND VHF ON IN RELAY MODE FOR RF COMPATIBILITY TEST;	
	181	18	CLTC	CVTS	VERIFY CSM UHF ON AND VHF ON IN RELAY MODE FOR RF COMPATIBILITY TEST;	
	181	19	MSTC	CVTS	STANDBY FOR RF COMM; CHECKS WITH SPAD USING EEAP;	
	181	20	CTSC	CVTS	PERFORMING ELEVATOR FUNCTIONAL TEST IN EGRESS MODE ON ML ELEVATORS;	
-8 HRS 55' 0"						
	181	1	CTSC	CVTS	MSS IS AT 35 FT; POSITION;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-8 HRS 55' 0"	CONTINUED					
	181	2	CVTS	CLTC	CONNECT PRIMARY DAMPER;	
	181	3	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV OPEN LOOP IU COMMAND CARRIER; PROTECTION IS REQUIRED;	
-8 HRS 50' 0"						
	181	1	CLTC	CVTS	REQUEST CLEARANCE FOR LOCAL OPEN LOOP IU COMMAND CARRIER; (PROTECTION IS REQUIRED;)	
	181	2	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON;	
	181	3	CLTC	CVTS	PRIMARY DAMPER CONNECTION COMPLETE;	
-8 HRS 45' 0"						
	181	1	CLTC	CVTS	ALL LV COMPARTMENTS CLOSED OUT AND READY TO SWITCH ECS FROM AIR TO GN2;	
	181	2	CVTS	CPSS	ALL LV COMPARTMENTS ARE CLOSED OUT;	
-8 HRS 41'0"						
	181	1	CLTC	CVTS	REQUEST HFLT GO TO CH; 263 FOR TELETYPE DATA VERIFICATION;	
	181	2	CVTS	HFLT	GO TO CH; 263 FOR TELETYPE DATA VERIFICATION;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-8 HRS 30' 0"						
	181	1	CVTS	CTSC	PLACE SLIDEWIRE CAB IN READINESS CONFIGURATION.	H
	181	2	CLTC	CVTS	READY TO CLEAR THE CONTROL AREA FOR RP-1 REPLENISH.	
	181 EM PA	3	CVTS		ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREAS FOR LV RP-1 REPLENISH OPERATIONS. **********WARNING********** * * THE CONTROL AREAS FOR * * LV RP-1 REPLENISH * * OPERATIONS CONSISTS OF * * THE ML 127 FOOT LEVEL, * * THE ML ZERO LEVEL AND * * THE FLAME TRENCH. * * **********	
	181	4	CVTS	CPSS	CLEAR ALL NON-ESSENTIAL PERSONNEL FROM THE CONTROL AREAS FOR LV RP-1 REPLENISH OPERATIONS.	
-8 HRS 20' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE GMIL IU COMMAND CARRIER.	

TIME	COMM CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-8 HRS 15' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL IU COMMAND CARRIER ON; IU COMMAND RECEIVER/DECODER CAPTURED BY THE LOCAL OPEN LOOP IU COMMAND CARRIER; REQUEST GMIL AND HFLT MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT FT-47;	
	181	2	CVTS	HFLT	IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER; GMIL IU COMMAND CARRIER IS COMING ON; MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT FT-47 AND LIFTOFF TIME UPDATE;	
	181	3	CVTS	GMIL	IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER; BRING UP IU COMMAND CARRIER; MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT FT-47 AND LIFTOFF TIME UPDATE;	
	181	4	GMIL	CVTS	IU COMMAND CARRIER IS ON;	
	181	5	CVTS	CLTC	GMIL IU COMMAND CARRIER IS ON;	
	181	6	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF;	
	181	7	CVTS	SRO	LV LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF;	
	181	8	CTSC	CVTS	ML EGRESS CHUTE SYSTEM IS IN READINESS CONFIGURATION.	
	181	9	CLTC	CVTS	REQUEST CPSS VERIFY CLEARANCE TO SWITCH ECS TO GN2.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-8 HRS 15' 0"	CONTINUED					
	181	10	CVTS	CPSS	VERIFY CLEARANCE TO SWITCH ECS TO GN2.	
	181	11	CVTS	CLTC	CONFIGURE ECS FOR GN2 STANDBY.	H
	181	12	CTSC	CVTS	ML ELEVATOR FUNCTIONAL TEST IN EGRESS MODE COMPLETE. ML ELEVATORS RETURNED TO NORMAL SERVICE.	
					NOTE SWITCHING OF ECS TO GN2 IS SCHEDULED TO OCCUR 10 MINUTES AFTER CLEARANCE IS GRANTED.	
-8 HRS 13' 0"						
	181	1	HFLT	CVTS	NEW LIFTOFF TIME IS _____ : _____ : _____ GMT. HRS MIN SEC CLOSING OF LAUNCH WINDOW IS _____ : _____ : _____ GMT HRS MIN SEC	
	181	2	CVTS		READ BACK TIMES TO THE FLIGHT DIRECTOR FOR CONFIRMATION.	

				DESCRIPTION	REMARKS
-8 HRS 13' 0"	CONTINUED				
	181	3	CVTS	CLTC GMIL SRO NEW LIFTOFF TIME IS : : GMT HRS MIN SEC CLOSING OF LAUNCH WINDOW IS : : GMT HRS MIN SEC	
		4	CVTS	CALCULATE DURATION OF HOLD TO OCCUR AT T-3 HOURS, 30'0"; RECORD HOLD DURATION HERE AND AT T- 3 HOURS, 35'0"; : MIN SEC	
- 8 HRS .5' 0"					
	181	1	CTSC	CVTS FORWARD OBSERVER SITES HAVE BEEN EQUIPPED;	
-8 HRS 0' 0"	181	2	CLTC	CLTC SWITCH ECS TO GN2;	
	181	1	CPSS	CVTS CLEAR TO START RP-1 REPLENISH;	
	181	2	CVTS	CLTC START RP-1 REPLENISH;	H

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-8 HRS 0' 0"	CONTINUED					
	181	3	CVTS	ØPSS CTNS CTSC	CLEAR PTCR AND ECS ROOMS AND PRESSURIZE WHEN CLEAR;	H
	181	4	CVTS	CTSC	CONFIGURE TELEPHONES IN ML ELEVATORS AND ON 320 FOOT LEVEL TO PT, TO PT, MODE;	
	181	5	CTSC	CVTS	ML EGRESS SPRAY SYSTEM AND ML LES SPRAY SYSTEM IN FIELD ACTIVE MODE;	
	181	6	CTSC	CVTS	TELEPHONES IN ML ELEVATORS AND ON ML 320 FOOT LEVEL ARE CONFIGURED TO PT, TO PT, MODE;	
	181	7	CTSC	CVTS	ML IS PRESSURIZED;	
	181	8	CTSC	CVTS	ALL BLAST ROOM SUPPLIES AND EQUIPMENT ARE POSITIONED IN BLAST ROOM;	
	181	9	MSTC	CVTS	CSM PERSONNEL ARE CLEARING THE COMPLEX;	
-7 HRS 52' 0"						
	181	1	CLTC	CVTS	IU COMMAND RECEIVER/DECODER IS OFF; CLEAR TO BRING DOWN GMIL IU COMMAND CARRIER; HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE;	
	181	2	CVTS	GMIL	IU COMMAND RECEIVER/DECODER IS OFF; BRING DOWN IU COMMAND CARRIER.	
	181	3	GMIL	CVTS	IU COMMAND CARRIER IS OFF.	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-7 HRS 52' 0"	CONTINUED					
	181	4	CVTS	HFLT	IU COMMAND RECEIVER/DECODER IS OFF; GMIL IU COMMAND CARRIER IS OFF;	
	181	5	CVTS	SRO	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE, GMIL IU COMMAND CARRIER IS OFF;	
- 7 HRS 45' 0"						
	181	1	CTSC	CVTS	PAD ELEVATOR 2 IN EGRESS MODE;	
-7 HRS 40' 0"						
	181	1	CTSC	CVTS	PTCR AND ECS ROOMS ARE PRESSURIZED;	
-7 HRS 30' 0"					**********WARNING********** * * NO MORE THAN 20 PEOPLE * * WHO MAY REQUIRE THE USE * * OF THE BLAST ROOM WILL * * BE ALLOWED TO ENTER THE * * MOBILE LAUNCHER; * * ****************************	
-7 HRS 10' 0"						
	181	1	CVTS	CPSS	VERIFY SYSTEM SAFETY SUPERVISOR'S CHECKLIST IS COMPLETE (INCLUDES FIRE PROTECTION AND SECURITY). (TCP NO; SV-40400, APPENDIX A);	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-7 HRS 10' 0"	CONTINUED					
	181	2	CVTS	LIEF	WIND MONITORING TEAM REPORT GO/NO-GO FOR LO2 LOADING;	
-7 HRS 5' 0"						
	181	1	CVTS	HFLT SRO CTSC	VERIFY GO/NO-GO FOR START OF LV CRYO LOADING;	
	181	2	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS COMING ON FOR ETR COMMAND VALIDATION TEST, VERIFY IU COMMAND RECEIVER/DECODER IS OFF; VERIFY DRSCS RECEIVERS ARE OFF;	
-7 HRS 0' 0"						
		1		CVTS	VERIFY WITH MSFC THAT LAUNCH VEHICLE IS CAPABLE OF MEETING TARGET CONDITIONS;	
	181	2	CLTC	CVTS	RP-1 REPLENISH IS COMPLETE;	
	181	3	CVTS	CPSS	RP-1 REPLENISH IS COMPLETE;	
	181	4	CLTC	CVTS	VERIFY CLEARANCE TO START AUTOMATIC LOX LOADING (WITH CROSS COUNTRY LINE CHILLDOWN THROUGH S-IB STAGE VENTS);	
	181	5	CVTS	CPSS	VERIFY CLEAR TO START AUTOMATIC LOX LOADING (WITH CROSS COUNTRY LINE CHILLDOWN THROUGH S-IB STAGE VENTS),	
	181	6	CVTS	CLTC	START AUTOMATIC LOX LOADING;	H

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-7 HRS 01' 0"	CONTINUED					
	181	7	CVTS	LOM	VERIFY READY FOR CAMERA OVERRIDE CONTROL SYSTEM TO BE SWITCHED TO MODE II;	
	181	8	CVTS	CTSC	PLACE CAMERA OVERRIDE CONTROL SYSTEM IN MODE II;	
	181	9	CTSC	CVTS	CAMERA OVERRIDE CONTROL SYSTEM IS IN MODE II;	
	181	10	CVTS	LOM	VERIFY CAMERA OVERRIDE CONTROL SYSTEM MODE II LIGHT IS ON;	
	181	11	CVTS	CTSC	CAMERA OVERRIDE CONTROL SYSTEM MODE II LIGHT ON;	
	181	12	CTSC	CVTS	OIS TO AND FROM THE PAD WILL BE DEACTIVATED (OIS WILL BE REACTIVATED AT T-4 HOURS, 3D1 0");	
	181	13	CTSC	CVTS	OIS TO AND FROM THE PAD HAS BEEN DEACTIVATED;	
	181	14	CPSS	CVTS	PAD CLEARING OPERATIONS ARE COMPLETE;	
	181	15	CVTS	CLTC	PAD CLEARING OPERATIONS ARE COMPLETE;	
	181	16	CVTS	HARD TOP	RETURN TO FALLBACK AREA;	
	181	17	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS COMING ON FOR ETR COMMAND VALIDATION TEST;	
					VERIFY IU COMMAND RECEIVER/DECODER IS OFF;	
					VERIFY DRSCS RECEIVERS ARE OFF;	
-5 HRS 15' 0"						
	181	1	CVTS	CPSS	DISPATCH PAD EGRESS TEAM FROM ROADBLOCK A5;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-5 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV FREQUENCIES 240.2, 256.2, 258.5, 250.7, 255.1, AND 5765 MHZ FOR RF COMPATIBILITY TEST.	
-5 HRS 0' 0"						
	181	1	CLTC	CVTS	LV LOX LOADING IS COMPLETE. ALL STAGE REPLENISH IS NORMAL.	
	181	2	CLTC	CVTS	VERIFY CLEARANCE FOR LV FREQUENCIES 240.2, 256.2, 258.5, 250.7, 255.1 AND 5765 MHZ FOR RF COMPATIBILITY TEST.	
	181	3	SRO	CVTS	ETR COMMAND VALIDATION TEST IS COMPLETE. RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	4	CVTS	CLTC	ETR COMMAND VALIDATION TEST IS COMPLETE. RANGE SAFETY COMMAND CARRIER IS OFF.	
-4 HRS 50' 0"						
	181	1	CVTS	SRO	VERIFY CLEARANCE TO RADIATE THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR DRSCS CLOSED LOOP TEST. PROTECTION IS REQUIRED.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-4 HRS 45' 0"						
	181	1	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND CARRIER. (PROTECTION IS REQUIRED.) REQUEST SRO SWITCH TO CH. 261 TO SUPPORT DRSCS CLOSED LOOP TEST USING FLIGHT CODE PLUGS. REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	2	CVTS	SRO	STANDBY ON CH. 261 FOR DRSCS CLOSED LOOP TEST USING FLIGHT CODE PLUGS.	
	181	3	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN.	
	181	4	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN.	
	181	5	CLTC	CVTS	LOCAL RANGE SAFETY COMMAND CARRIER IS COMING ON.	
					NOTE ---- THE DETAILED SEQUENCES FOR THE DRSCS CLOSED LOOP TEST ARE IN THE LV PROCEDURE.	
-4 HRS 40' 0"						
	181	1	CVTS	MSTC GMIL SRO	VERIFY READY TO SUPPORT RF COMPATIBILITY TEST.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-4 HRS 37' 0"						
	181	1	CLTC	CVTS	DRSCS CLOSED LOOP TEST IS COMPLETE. LOCAL RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	2	CVTS	SRO	DRSCS CLOSED LOOP TEST IS COMPLETE. LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	3	CLTC	CVTS	REQUEST RANGE SAFETY COMMAND CARRIER ON AND VERIFY.	
	181	4	CVTS	SRO	BRING UP RANGE SAFETY COMMAND CARRIER AND VERIFY.	
	181	5	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS ON.	
	181	6	CLTC	CVTS	REQUEST RANGE INTERROGATE RADAR BEACONS 1 AND 2. REQUEST ALL LAUNCH DAY RADAR UP THROUGH COMPLETION OF RF COMPATIBILITY TEST.	
	181	7	CVTS	SRO	INTERROGATE RADAR BEACONS 1 AND 2. BRING UP ALL LAUNCH DAY RADARS THROUGH COMPLETION OF RF COMPATIBILITY TEST.	
	181	8	CLTC	CVTS	IU RECEIVER/DECODER IS ON.	
	181	9	MSTC	CVTS	CSM IS READY FOR RF COMPATIBILITY TEST ON CH. 261. CSM UHF AND VHF-AM ARE ON.	
	181	10	CVTS	CLTC	CSM UHF AND VHF-AM ARE ON.	
	181	11	CLTC	CVTS	REQUEST SRO, MSTC AND GMIL GO TO CHANNEL 261 TO SUPPORT RF COMPATIBILITY TEST.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-4 HRS 37' 0"	CONTINUED					
	181	12	CVTS	MSTC GMIL SRO	STANDBY ON CHANNEL 261 TO SUPPORT RF COMPATIBILITY TEST. NOTE ---- THE DETAILED SEQUENCES FOR THE RF COMPATIBILITY TEST ARE IN THE LV PROCEDURE.	
	181	13	CLTC	CVTS	CLEAR TO BRING DOWN RANGE RADARS.	
	181	14	CVTS	SRO	CLEAR TO BRING DOWN RANGE RADARS.	
	181	15	CLTC	CVTS	RF COMPATIBILITY TEST IS COMPLETE. DESTRUCT SYSTEM ENABLE KEY HAS BEEN RETURNED TO CPSS. ALL LV RF AND TM SYSTEMS ARE OFF. IU COMMAND RECEIVER/RECODER IS OFF. RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	16	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED.	
	181	17	CVTS	SRO	ALL LV RF AND TM SYSTEMS ARE OFF. IU RECEIVER/DECODER IS OFF.	
	181	18	CVTS	GMIL	I.U. RECEIVER/DECODER IS OFF. RANGE SAFETY COMMAND CARRIER IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-4 HRS 30' 0"						
	181	1	CTSC	CVTS	OIS TO AND FROM THE PAD HAS BEEN REACTIVATED.	
	181	2	CVTS	HARD TOP	VERIFY PAD EGRESS TEAM IS ON STATION FOR COMM CHECK.	
	HF 105	3	CVTS	SPAD	HF 105 CH. COMM CHECK.	
-4 HRS 22' 0"						
	181	1	CLTC	CVTS	LV CRYO LOADING IS COMPLETE AND NORMAL REPLENISH HAS BEEN ESTABLISHED.	
-4 HRS 10' 0"						
	181	1	CVTS	CTSC	AAS POWER BUSSES WILL BE REQUIRED AT T-3 HOURS, 10' 0". HAVE BWIC MONITOR CH. 181.	
-4 HRS 5' 0"						
	181	1	BWIC	CVTS	AAS POWER SUPPLIES ARE COMING ON.	
-4 HRS 0' 0"						
	181	1	HARD TOP	CVTS	PAD EGRESS TEAM IS ON STATION MANNED AND READY TO SUPPORT.	
	181	2	CVTS	CTSC	DELIVER ELEVATOR CONTROL PANEL KEYS TO CSTO AT ASTRO COMM CONSOLE AC 15.	
	181	3	CVTS	HARD TOP	VERIFY NO VISIBLE LOX VAPORS IN PRIME ACCESS ROUTE.	
	181	4	CVTS	CSTO	VERIFY ELEVATOR CONTROL PANEL IS FUNCTIONAL.	

TIME	COMM. CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-4 HRS 01 0"	CONTINUED					
	181	5	MSTC	CVTS	REQUEST GMIL PERFORM UNLOCKED VCO (CSM S-BAND DOWNLINK VARIABLE CARRIER OSCILLATOR) READOUT AND VERIFY COMPLETION;	
	181	6	CVTS	GMIL	PERFORM CSM S-BAND UNLOCKED VCO READOUT AND VERIFY COMPLETION;	
	181	7	CVTS	MSTC	UNLOCK VCO READOUT IS COMPLETE;	
	181	8	CTSC	CVTS	MSS IS IN MATE POSITION; REQUEST CLEARANCE TO LOWER MSS ONTO SUPPORT COLUMNS;	
	181	9	CVTS	CPSS	MSS IS IN MATE POSITION; VERIFY CLEARANCE TO LOWER MSS ONTO SUPPORT COLUMNS;	
	181	10	CVTS	CTSC	LOWER MSS ONTO SUPPORT COLUMNS;	H
-3 HRS 50' 0"						
	181	1	CLTC	CVTS	LV IS READY FOR CSM CLOSEOUT CREW INGRESS;	
	181	2	CVTS	CPSS	VERIFY CSM CLOSEOUT CREW IS AT ROADBLOCK A5;	
	181	3	CVTS	MSTC	CSM CLOSEOUT CREW IS AT ROADBLOCK A5;	
	181	4	CVTS	CPSS	VERIFY CLOSEOUT CREW CLEAR TO ENTER THE CONTROLLED AREA.	
	212	5	CVTS	CSTO	SWITCH ELEVATORS 1 AND 2 TO THE EGRESS MODE; POSITION ELEVATORS TO THE "A" LEVEL AND VERIFY.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-3 HRS 50' 0"	CONTINUED				NOTE CONTROL OF ELEVATORS 1 AND 2 WILL BE PER SPACECRAFT LAUNCH OPERATIONS CLOSEOUT PLANS FOR NORMAL OPERATIONS. NOTE SHOULD THE WATER GLYCOL CREW BE REQUIRED, THE FOLLOWING APPLIES THE WATER GLYCOL CREW TAKES ELEVATOR 2 TO THE 80 FOOT LEVEL AND RETAINS THE ELEVATOR AT THIS LEVEL WITH THE EMERGENCY STOP SWITCH. AFTER THE WATER GLYCOL CREW ON THE 80 FOOT LEVEL HAS CLEARED THE ML, POSITION ELEVATOR 2 AT THE 320 FOOT LEVEL IN THE EGRESS MODE AND VERIFY. AFTER THE CLOSEOUT CREW HAS CLEARED THE ML, POSITION ELEVATOR 1 AT THE 320 FOOT LEVEL AND VERIFY. (ELEVATOR 1 IS ALREADY IN THE EGRESS MODE). THE CLOSEOUT AND FLIGHT CREW UTILIZE ELEVATOR 1 BETWEEN THE "A" LEVEL AND THE 320 FOOT LEVEL PER THE CSM PCP FO-K-007V1.	

TIME	COMM CH	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-3 HRS 50' 0"	CONTINUED					

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**********WARNING**********
*                          *
* IN THE EVENT AN          *
* EMERGENCY CONDITION      *
* EXISTS WHICH REQUIRES    *
* THE EGRESS OF THE        *
* FLIGHT CREW AND/OR       *
* SUPPORT PERSONNEL FROM   *
* THE BLAST DANGER AREA,   *
* THE PROCEDURES DETAILED  *
* IN THE ASTP/SKYLAB       *
* FLIGHT CREW EMERGENCY    *
* EGRESS PROCEDURES        *
* LAUNCH COMPLEX 39, TCP   *
* NO. SV-46002, SHALL BE   *
* IMPLEMENTED, THIS        *
* PROCEDURE IS APPLICABLE  *
* DURING THE PERIOD OF     *
* TIME FROM THE RETURN OF  *
* THE CSM CLOSEOUT CREW    *
* TO THE BLAST DANGER      *
* AREA AFTER CRYOGENIC     *
* LOADING, THROUGH LAUNCH  *
* OR EGRESS OF THE CREW    *
* FROM THE BLAST DANGER    *
* AREA.                    *
*                          *
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NOTE

IN THE EVENT THAT A CONTINGENCY CREW REQUIRES ACCESS TO THE BLAST DANGER AREA DURING THE PERIOD OF TIME FROM THE END OF CRYOGENIC LOADING THROUGH CRYOGENIC DETANKING, THE PROCEDURES DETAILED IN APPENDIX B OF THIS DOCUMENT SHALL BE IMPLEMENTED.

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-3 HRS 50' 0"	CONTINUED					
	181	6	CVTS	MSTC	CONTROLLED AREA IS NOW OPEN FOR CLOSEOUT CREW.	
	181	7	MSTC	CVTS	DISPATCH CLOSEOUT CREW TO SA-9 FROM ROADBLOCK A5.	
	181	8	CVTS	CPSS	DISPATCH CLOSEOUT CREW AND VEHICLES 1 AND 2 FROM ROADBLOCK A5.	
					NOTE ---- SHOULD THE WATER GLYCOL CREW BE REQUIRED, DISPATCH VEHICLE 3 TO THE PAD.	
					NOTE ---- CM CLOSEOUT CREW AND FLIGHT CREW PERSONNEL WILL REPORT TO CVTS UPON ENTERING AND PRIOR TO EXITING ML (HI RISE) ELEVATORS VIA PT-PT PHONE PER SC LAUNCH CLOSEOUT PLANS.	
-3 HRS 45' 0"						
	181	1	CTSC	CVTS	MSS IS ON SUPPORT COLUMNS.	
	181	2	CTSC	CVTS	ENTRANCE TO LCC ROOM 1P4 WILL BE REQUIRED IN 30 MINUTES TO JUMPER MSS FIRE ALARM CABLES PRIOR TO CONNECTION.	
	181	3	CVTS	CTNS	ENTRANCE TO LCC ROOM 1P4 WILL BE REQUIRED IN 30 MINUTES TO JUMPER MSS FIRE ALARM CABLES PRIOR TO CONNECTION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-3 HRS 38' 0"						
	181	1	CLTC	CVTS	PRIMARY DAMPER IS RETRACTED AND LATCHED.	
-3 HRS 35' 0"						
		1		CVTS	STOP CDC AT T-3 HOURS, 30' 0" FOR SCHEDULED HOLD OF APPROXIMATELY 1 HOUR. LENGTH OF HOLD AT T-3 HOURS, 30' 0" WILL BE _____ : _____ : _____. HRS MIN SEC THE COUNT WILL BE RESUMED AT _____ : _____ : _____ GMT. HRS MIN SEC A NOMINAL HOLD OF 2 MINUTES IS TO OCCUR AT T-15' 0" FOR ADDITIONAL LIFTOFF TIME ADJUSTMENT.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING -3 HRS 30' 0"						
					STARTING ---1 HOUR SCHEDULED HOLD--- ----------	
	181	1	CVTS	CLTC MSTC HFLT GMIL SRO CTSC	THE CDC IS BEING HELD AT T-3 HOURS, 30' 0" FOR NEW LIFTOFF TIME UPDATE. THE COUNT WILL BE RESUMED AT . . . . . . GMT. ------ ------ ------ HRS MIN SEC ---5' 0" PRIOR TO RESUMING COUNT--- (IF NO HOLD, T-3 HOURS, 35' 0") ----------	
	181	2	CVTS	HFLT	VERIFY GO/NO-GO FOR FLIGHT CREW DEPARTURE FROM THE MSOB.	
	181	3	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR GMIL FINAL ANTENNA ALIGNMENT (255.1, 258.5, AND 2287.5 MHZ). ---JUST PRIOR TO RESUMING COUNT--- ----------	
	181	4	CVTS	CLTC MSTC HFLT GMIL SRO CTSC	THE CDC WILL BE RESTARTED AT T-3 HOURS, 30' 0" ON MY MARK. 5 - 4 - 3 - 2 - 1 - MARK.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
-3 HRS 30' 0"						
	181	1	CVTS	CPSS	VERIFY SAFETY GO FOR FLIGHT CREW INGRESS AT T-2 HOURS, 40' 0".	
	181	2	CVTS	CPSS	VERIFY GO FOR FLIGHT CREW DEPARTURE FROM MSOB.	
	181	3	MSTC	CVTS	VERIFY SAFETY CLEARANCE FOR CREW DEPARTURE FROM MSOB.	
	181	4	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR GMIL FINAL ANTENNA ALIGNMENT. GMIL SWITCHING TO CH. 214 TO COORDINATE FINAL ANTENNA ALIGNMENT.	
	181	5	CVTS	MSTC	GMIL SWITCHING TO CH. 214 TO COORDINATE GMIL FINAL ANTENNA ALIGNMENT.	
	181	6	MSTC	CVTS	CMS COMMAND DECODER IS OFF.	
-3 HRS 10' 0"						
	181	1	MSTC	CVTS	NOTIFY CPSS THAT SPAD HAS PYRO ARM SWITCH GUARD.	
	181	2	CVTS	CPSS	SPAD HAS PYRO ARM SWITCH GUARD.	
	181	3	CVTS	GMIL	POWER UP THE AIU AND VERIFY.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-3 HRS 10' 0"	CONTINUED					
	181	4	CVTS	LOM	VERIFY THE FOLLOWING SWITCHES ON THE ABORT REQUEST PANEL ARE OFF. ABORT REQUEST ENABLE, ABORT REQUEST A, AND ABORT REQUEST B;	
	181	5	CVTS	BWIC	TURN ON AAS POWER BUSSES.	
		6		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL GO ON POWER SUPPLY 1, 2, 3, AAS SUPPLY, AND ORDNANCE SAFE;	
-3 HRS 0' 0"						
	181	1	GMIL	CVTS	GMIL FINAL ANTENNA ALIGNMENT IS COMPLETE. GMIL RF IS OFF;	
	181	2	CVTS	SRO	GMIL FINAL ANTENNA ALIGNMENT IS COMPLETE. CLEARANCE FOR 2287.5 MHZ STILL REQUIRED;	
-2 HRS 58' 0"						
	181	1	CVTS	LOM	ABORT REQUEST ENABLE SWITCH TO ON AND VERIFY;	
		2		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL GO ON REQUEST A ENABLED AND REQUEST B ENABLED;	
	181	3	CVTS	HFLT	GMIL COMMAND SYSTEM WILL BE SAFED MOMENTARILY FOR AIU ENABLE;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-2 HRS 58' 0"	CONTINUED					
	181	4	CVTS	GMIL	SAFE THE GMIL COMMAND SYSTEM; ENABLE THE AIU;	
					ARM THE GMIL COMMAND SYSTEM AND VERIFY THAT GMIL ABORT SYSTEM IS GO;	
		5		LOM	NOTE THAT THE GMIL ON LIGHT IS ON.	
	181	6	CVTS	HFLT	GMIL COMMAND SYSTEM IS ARMED; AAS IS ENABLED;	
-2 HRS 40' 0"					NOTE --- THE FLIGHT CREW IS SCHEDULED TO INGRESS THE COMMAND MODULE AT THIS TIME.	
-2 HRS 30' 0"						
	LSR UHF	1	CVTS	BEACH BOSS	VERIFY COMMUNICATIONS GO VIA LSR UHF;	
	105 HF	2	CVTS	ASTRO VAN	STANDBY AT FALLBACK AREA.	
-2 HRS 20' 0"						
		1		Z1 Z2 ZS	MONITOR CHANNEL 181 FOR AAS COMM CHECKS;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-2 HRS 15' 0"						
	181	1	LOM	Z1 Z2 Z3	VERIFY COMM SYSTEM GO ON CHANNEL 181;	
	181	2	LOM	Z1 Z2 Z3	SWITCH TO ABORT ADVISORY CHANNEL;	
	AAC	3	LOM	Z1 Z2 Z3	VERIFY COMM SYSTEM GO ON ABORT ADVISORY CHANNEL,	
	AAC	4	LOM	Z1 Z2 Z3	AAS COMM CHECKS ARE COMPLETE;	
	181	5	LOM	CVTS	AAS COMM CHECKS ARE COMPLETE;	
-2 HRS 14' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV FREQUENCIES 240.2, 256.2, 258.5, 250.7, 255.1 AND 5765 MHZ.	
-2 HRS 11' 0"						
	181	1	CLTC	CVTS	REQUEST SRO TURN RANGE SAFETY CARRIER ON AND VERIFY, IU COMMAND RECEIVER/DECODER IS OFF;	
	181	2	CVTS	HFLT GMIL	RANGE SAFETY COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE COMING ON;	
	181	3	CVTS	SRO	IU COMMAND RECEIVER/DECODER IS OFF; BRING UP RANGE SAFETY COMMAND CARRIER AND VERIFY;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-2 HRS 11' 0"	CONTINUED					
	181	4	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS ON;	
	181	5	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS ON;	
	181	6	CLTC	CVTS	IU COMMAND RECEIVER/DECODER IS ON; REQUEST GMIL, HFLT AND SRO MONITOR CH' 261 AND REPORT WHEN READY TO SUPPORT FT-47 (PREFLIGHT COMMAND SYSTEM TEST);	
	181	7	CVTS	SRO	MONITOR CH' 261 AND REPORT WHEN READY TO SUPPORT FT-47.	
	181	8	CVTS	HFLT GMIL	IU COMMAND RECEIVER/DECODER IS ON; RANGE SAFETY COMMAND CARRIER IS ON; MONITOR CH' 261 AND REPORT WHEN READY TO SUPPORT FT-47.	
-2 HRS 10' 0"						
	181	1	LOM	CVTS	READY TO SUPPORT AAS CHECKS AT T-1 HOUR, 55' 0" ON CH' 214.	
	181	2	CVTS	HFLT GMIL	VERIFY READY TO SUPPORT MCC/CSM COMMAND AND AAS CHECKS ON CH' 214;	
-2 HRS 9' 0"						
	181	1	CLTC	CVTS	VERIFY RANGE CLEARANCE FOR LV FREQUENCIES 240.2, 256.2, 256.5, 250.7, 255.1 AND 5765 MHZ;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 0' 0"						
	18	1	MSTC	CVTS	VERIFY LOM READY FOR AAS CHECKS AT T-1 HOUR, 55' 0" ON CH. 214;	
					EDS POWER COMING ON AT T-1 HOUR, 55' 0";	
					CSM COMMAND DECODER COMING ON;	
					REQUEST GMIL SUPPORT ON CH' 214;	
					REQUEST HFLT STANDBY FOR COMMAND CHECKS;	
	18	2	CVTS	CLTC	CSM EDS POWER IS COMING ON AT T-1 HOUR, 55' 0";	
	18	3	CVTS	GMIL	STANDBY ON CH, 214 TO SUPPORT MCC/CSM COMMAND AND AAS CHECKS;	
	18	4	CVTS	HFLT	STANDBY ON CH, 214 TO SUPPORT MCC/CSM COMMAND AND AAS CHECKS;	
					CSM COMMAND DECODER IS COMING ON;	
	18	5	CLTC	CVTS	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE;	
					REQUEST CLEARANCE TO BRING UP THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER; PROTECTION IS NOT REQUIRED;	
	18	6	CVTS	SRO	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE;	
					VERIFY RADIATION CLEARANCE FOR THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER; PROTECTION IS NOT REQUIRED;	
	18	7	CVTS	CLTC	BRING UP LOCAL CLOSED LOOP IU COMMAND CARRIER;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 01' 0"	CONTINUED					
	181	8	CLTC	CVTS	REQUEST SRO REMOVE RANGE SAFETY COMMAND CARRIER, REPORT WHEN COMPLETE,	
					LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
	181	9	CVTS	SRO	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
					BRING DOWN RANGE SAFETY COMMAND CARRIER AND VERIFY,	
	181	10	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	11	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	12	CVTS	HFLT GMIL	RANGE SAFETY COMMAND CARRIER IS OFF,	
					LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
					IU COMMAND RECEIVER/DECODER IS ON,	
- 1 HR 56' 0"						
	181	1	CVTS	BWIC	TURN ON AAS EVENT RECORDERS AT FAST SPEED,	
- 1 HR 55' 0"						
	181	1	MSTC	CVTS	EDS POWER IS ON,	
	214	2	MSTC	LOM	ABORT REQUEST A SWITCH - ON,	
		3		LOM	NOTE THAT REQUEST A TRANSMITTED AND REQUEST A RECEIVED LIGHTS ARE ON,	
	214	4	SCDR		ABORT LIGHT - ON,	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
~ 1 HR 55' 0"	CONTINUED					
	214	5	MSTC	LOM	ABORT REQUEST A SWITCH - OFF;	
		6		LOM	NOTE THAT REQUEST A TRANSMITTED LIGHT IS OFF AND REQUEST A RECEIVED LIGHT REMAINS ON;	
	214	7	SCDR		ABORT LIGHT - REMAINS ON,	
	214	8	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM A) - OFF (RTC 00);	
	214	9	SCDR		ABORT LIGHT - OFF;	
	214	10	MSTC	LOM	ABORT REQUEST B SWITCH - ON;	
		11		LOM	NOTE THAT REQUEST B TRANSMITTED LIGHT, REQUEST B RECEIVED LIGHT ARE ON AND REQUEST A RECEIVED LIGHT IS OFF;	
	214	12	SCDR		ABORT LIGHT - ON,	
	214	13	MSTC	LOM	ABORT REQUEST B SWITCH - OFF;	
		14		LOM	NOTE THAT REQUEST B TRANSMITTED LIGHT OFF AND REQUEST B RECEIVED LIGHT REMAINS ON;	
	214	15	SCDR		ABORT LIGHT REMAINS ON;	
	214	16	MSTC	GMIL	RESET REQUEST B RECEIVED LIGHT;	
	214	17	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM B) - OFF (RTC 06);	
	214	18	SCDR		ABORT LIGHT - OFF;	
	214	19	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM A) - ON (RTC 01);	
	214	20	SCDR		ABORT LIGHT - ON,	
	214	21	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM A) - OFF (RTC 00);	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 1 HR 55' 0"	CONTINUED					
	214	22	SCDR		ABORT LIGHT = OFF;	
	214	23	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM B) - ON (RTC 07);	
	214	24	SCDR		ABORT LIGHT = ON;	
	214	25	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM B) - OFF (RTC 06);	
	214	26	SCDR		ABORT LIGHT = OFF;	
	181	27	CLTC	CVTS	LV READY FOR EDS TEST; REQUEST SCO PERSONNEL SWITCH TO CH; 223;	
- 1 HR 52' 0"						
	214	1	MSTC	LOM	AAS CHECKS COMPLETE;	
	181	2	MSTC	CVTS	AAS CHECKS COMPLETE;	
					CSM COMMAND DECODER IS OFF;	
	181	3	CVTS	HFLT	CSM COMMAND DECODER IS OFF;	
	181	4	CVTS	MSTC	VERIFY SC PERSONNEL ARE ON CH; 223 FOR EDS TEST;	
	181	5	CVTS	CLTC	SCO PERSONNEL ARE ON CH; 223 TO SUPPORT EDS TEST;	
	181	6	CVTS	LOM	SWITCH TO CH; 223 TO SUPPORT EDS TEST;	
	223	7	CEDK	LOM	VERIFY ABORT REQUEST ENABLE ON;	
	223	8	LOM		ABORT REQUEST A ENABLED AND REQUEST B ENABLED LIGHTS ARE ON;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
- 1 HR 52' 0"	CONTINUED					
					NOTE IN THE FOLLOWING SEQUENCE, DO NOT OPERATE BOTH SWITCHES SIMULTANEOUSLY.	
	223	9	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCHES - ON.	
		10		LOM	NOTE THAT REQUEST A TRANSMITTED AND REQUEST B TRANSMITTED LIGHTS GO ON.	
	223	11	SCDR		ABORT LIGHT ON.	
	223	12	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCHES - OFF.	
		13		LOM	NOTE THAT REQUEST A TRANSMITTED, REQUEST B TRANSMITTED, REQUEST A RECEIVED, AND REQUEST B RECEIVED LIGHTS GO OFF.	
	223	14	SCDR		ABORT LIGHT OFF.	
-1 HR 35' 0"						
	181	1	CVTS	SRO HFLT	FIRST MOTION TEST SIGNAL WILL BE INITIATED AT T-1 HOUR, 30' 0". VERIFY WHEN SIGNAL HAS BEEN RECEIVED.	
	181	2	CVTS	ETSC	SEND SIMULATED FIRST MOTION TEST SIGNAL TO ETR AND HFLT BY COUNTCLOCK AT T-1 HOUR, 30' 0" AND VERIFY.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 21' 0"						
	181	1	CLTC	CVTS	EDS TEST IS COMPLETE.	
	181	2	MSTC	CVTS	EDS POWER IS OFF.	
	181	3	CVTS	CLTC	EDS POWER IS OFF.	
	181	4	CVTS	BWIC	AAS EVENT RECORDERS TO SLOW SPEED.	
-1 HR 15' 0"						
	181	1	CVTS	SRO	VERIFY RANGE IS READY TO SUPPORT LV RADAR BEACON CHECKS WITH READOUTS.	
-1 HR 10' 0"						
	181	1	CLTC	CVTS	READY TO START RADAR BEACON 2 CHECKS. REPORT GO/NO-GO AND RANGE READOUTS TO VURF ON CH. 264.	
	181	2	CVTS	SRO	INTERROGATE RADAR BEACON 2 AND REPORT GO/NO-GO AND READOUTS TO VURF ON CH. 264.	
-1 HR 8' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR DRSCS CLOSED LOOP TEST. PROTECTION IS REQUIRED.	
-1 HR 5' 0"						
	181	1	CVTS	SRO	REPORT OPTICS COVERAGE OF LONG RANGE CAMERAS.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 5' 0"	CONTINUED					
					NOTE --- SRO WILL UPDATE OPTICS REPORT AT T-30' 0" IF SIGNIFICANT CHANGE OCCURS.	
	181	2	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN AND TCS ARM KEY TO C3SP.	
	181	3	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN. RELEASE TCS ARM KEY TO C3SP.	
	181	4	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN. TCS ARM KEY RELEASED TO C3SP.	
	181	5	CLTC	CVTS	CSA9 WILL REPORT ON CH. 181. CONFIRM WHEN COMMUNICATIONS HAVE BEEN SATISFACTORILY ESTABLISHED.	
	181	6	CVTS	CYSC	HAVE BPHO MONITOR CH. 181 FOR SA-9 RETRACTION OPERATIONS.	
	181	7	SRO	CVTS	ETR LAUNCH DANGER AREA IS CLEAR.	
-1 HR 3' 0"						
	181	1	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND CARRIER. (PROTECTION IS REQUIRED.)	
	181	2	CLTC	CVTS	LOCAL RANGE SAFETY COMMAND CARRIER IS COMING ON.	
	181	3	CLTC	CVTS	REQUEST RANGE MONITOR RADAR BEACONS DURING LV POWER TRANSFER TEST.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 3' 0"	CONTINUED					
	181	4	CVTS	SRO	MONITOR RADAR BEACONS FOR ANY CHANGES DURING LV POWER TRANSFER TEST.	
					NOTE --- LV POWER TRANSFER IS SCHEDULED TO OCCUR AT T-58' 0".	
- 1 HR 0' 0"	181	1	CVTS	HFLT	VERIFY GO/NO-GO FOR SA-9 ENVIRONMENTAL CHAMBER RETRACT TO PARK POSITION.	
-57' 0"	181	1	CVTS	SRO	VERIFY RADAR BEACONS HAD NO CHANGES DURING POWER TRANSFER TEST.	
					NOTE --- NOTIFY CLTC IF RADAR BEACONS HAD ANY CHANGES DURING LV POWER TRANSFER.	
	181	2	MSTC	CVTS	E/C HOOD READY FOR SA-9 RETRACTION.	
					CSM PERSONNEL ARE CLEARING THE CONTROLLED AREA.	
					STANDING BY FOR SA-9 RETRACTION AND TO ARM CSM BUSSES.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
-57' 0"	CONTINUED					
					NOTE "O" THE FOLLOWING SEQUENCE IS NOT TO BE ACCOMPLISHED UNTIL THE CLOSEOUT CREW IS CLEAR OF THE ML.	
	181	3	CVTS	CSTO	POSITION ELEVATOR 1 AT 320 FOOT LEVEL. VERIFY BOTH ELEVATORS IN EGRESS MODE AND AT 320 FOOT LEVEL.	
	181	4	CVTS	CPSS	VERIFY WHEN CSM PERSONNEL HAVE REACHED ROADBLOCK A5.	
-53' 0"						
	181	1	CLTC	CVTS	REQUEST SRO SWITCH TO CH. 261 TO SUPPORT RANGE SAFETY CLOSED LOOP TEST USING FLIGHT CODE PLUGS	
	181	2	CVTS	SRO	STANDBY ON CH. 261 FOR RANGE SAFETY CLOSED LOOP TEST USING FLIGHT CODE PLUGS.	
					NOTE "O" THE DETAILED SEQUENCES FOR THE RANGE SAFETY CLOSED LOOP TEST ARE IN THE LV PROCEDURE AT T-42' 0".	
-52' 0"						
	181	1	CVTS	BPHO	VERIFY READY FOR SAGO RETRACTION OPERATIONS.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-51:30"						
	181	1	CVTS	SRO	VERIFY RADAR BEACON 2 READOUTS COMPLETE AND READY FOR RADAR BEACON 1.	
-50: 0"						
	181	1	CLTC	CVTS	VERIFY RADAR BEACON 2 READOUTS COMPLETE AND READY FOR RADAR BEACON 1 INTERROGATION;	
	181	2	CLTC	CVTS	REQUEST RANGE READOUT OF RADAR BEACON 1;	
					REPORT READOUTS TO VURF ON CH; 264;	
	181	3	CVTS	SRO	INTERROGATE RADAR BEACON 1; REPORT READOUT TO VURF ON CH; 264;	
	181	4	CLTC	CVTS	REQUEST HFLT GO TO CH; 263 FOR TELETYPE DATA VERIFICATION;	
	181	5	CVTS	HFLT	GO TO CH; 263 FOR TELETYPE DATA VERIFICATION;	
	LSR UHF	6	CVTS	BEACH BOSS	VERIFY LAUNCH SITE RECOVERY FORCE HELICOPTERS ARE ON STATION; MANNED AND READY TO SUPPORT;	
-47: 0"						
	181	1	MSTC	CVTS	REQUEST GMIL SUPPORT ON CH; 213;	
	181	2	CVTS	GMIL	STANDBY ON CH, 213 TO PROVIDE CSM UHF AND VHF-AM READOUTS;	
	181	3	CVTS	BWIC	AAS EVENT RECORDERS TO FAST SPEED;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-47' 0"	CONTINUED					
					NOTE AFTER PYRO BUSSES ARE ARMED, THE LOM WILL NOTE THAT THE ABORT REQUEST PANEL ORDNANCE ARMED LIGHT IS ON AND THE ORDNANCE SAFE LIGHT IS OFF (REF. SEQ. 5, T-45' 0").	
	181	4	CPSS	CVTS	KSC AREA CLEAR FOR LAUNCH.	
	181	5	CVTS	SRO	KSC AREA CLEAR FOR LAUNCH.	
-46' 0"						
	181	1	MSTC	CVTS	EDS POWER COMING ON.	
					CSM COMMAND DECODER COMING ON.	
	181	2	CVTS	HFLT	CSM COMMAND DECODER COMING ON.	
	181	3	CVTS	CLTC	CSM EDS POWER COMING ON.	
-45'30"						
	181	1	CVTS	MSTC	STANDBY FOR SA-9 ENVIRONMENTAL CHAMBER RETRACT.	
	181	2	CVTS	CPSS	VERIFY CLEAR TO RETRACT SA-9 ENVIRONMENTAL CHAMBER TO THE PARK POSITION AND TO ARM CSM PYRO AND LOGIC BUSSES.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-45' 0"					NOTE ---- FOR THE NEXT 40 MINUTES, CSA9 REQUIRES EXCLUSIVE CONTROL OF CAMERAS 26B AND 27B. **********CAUTION********** * * * SEQUENCE 3 IS TO BE * * ACCOMPLISHED AFTER * * NOTIFICATION THAT SA-9 * * ENVIRONMENTAL CHAMBER * * IS IN THE RETRACT * * POSITION. * * * **********	
	181	1	CVTS	CSA9	ON YOUR MARK RETRACT SA-9 TO 12 DEGREE PARK POSITION PER V-36085. REPORT WHEN COMPLETE.	H
	181	2	CSA9	CVTS	SA-9 IS AT 12 DEGREE PARK POSITION.	
	181	3	CVTS	MSTC	SA-9 ENVIRONMENTAL CHAMBER IS AT THE 12 DEG PARK POSITION. CLEAR TO ARM CSM BUSSES (PYRO AND LOGIC).	
	181	4	MSTC	CVTS	CSM BUSSES ARE ARMED (PYRO AND LOGIC).	
	181	5	LOM	CVTS	THE ABORT REQUEST PANEL ORDNANCE ARMED LIGHT IS ON AND ORDNANCE SAFE LIGHT IS OFF.	
	181	6	CTSC	CVTS	OIS TO AND FROM THE PAD HAS BEEN DEACTIVATED.	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-44' 0"						
					**********WARNING**********	
					* *	
					* THE KSC AREA IS TO BE *	
					* CLEAR FOR LAUNCH AND *	
					* THE LES ARMED BEFORE *	
					* PROCEEDING WITH LV *	
					* DRSCS TEST WITH SRO *	
					* (REF; SEQ; 4, T=47' 0" *	
					* AND SEQ. 4, T=45' 0"). *	
					* *	
					**********	
	181	1	CVTS	CLTC	CLEAR TO PROCEED WITH DRSCS TEST WITH SRO ON CH; 261;	
-42' 0"						
	181	1	CLTC	CVTS	REQUEST RANGE SAFETY COMMAND CARRIER ON; REPORT WHEN TURNED ON;	
					NOTE	
					LV LOCAL CLOSED LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON (REF; SEQ. 12, T=2 HOURS, 0' 0");	
	181	2	CVTS	HFLT GMIL	RANGE SAFETY COMMAND CARRIER IS COMING ON;	
	181	3	CVTS	SRO	BRING UP RANGE SAFETY COMMAND CARRIER AND VERIFY;	
					MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT F?=47.	
	181	4	SRO	CVTS	RANGE COMMAND SAFETY CARRIER IS ON;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-41' 0"	CONTINUED					
	181	5	CVTS	CLTC	RANGE COMMAND SAFETY CARRIER IS ON;	
-39' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL AND HFLT MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT FF-47 (PREFLIGHT COMMAND SYSTEM TEST); COMMANDS TO BE ISSUED VIA RANGE SAFETY COMMAND CARRIER;	
	181	2	CVTS	HFLT GMIL	IU COMMAND RECEIVER/DECODER IS ON, RANGE SAFETY COMMAND CARRIER IS ON; MONITOR CH; 261 AND REPORT WHEN READY TO SUPPORT FF-47 AND LIFTOFF TIME UPDATE;	
-38' 0"						
	181	1	CLTC	CVTS	DRSCS TEST IS COMPLETE; LOCAL RANGE SAFETY COMMAND CARRIER IS OFF; LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF.	
	181	2	CVTS	SRO	LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF; LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF;	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35' 0"						
	181	1	HFLT	CVTS	NEW LIFTOFF TIME IS : : GMT; HRS MIN SEC CLOSING OF LAUNCH WINDOW IS : : GMT; HRS MIN SEC	
	181	2	CVTS		READ BACK TIMES TO THE FLIGHT DIRECTOR FOR CONFIRMATION.	
	181	3	CVTS	CLTC GMIL SRO	NEW LIFTOFF TIME IS : : GMT; HRS MIN SEC CLOSING OF LAUNCH WINDOW IS : : GMT; HRS MIN SEC	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35' 0"	CONTINUED					
		4		CVTS	NOTE CALCULATION REQUIRED TO DETERMINE COUNT CLOCK PICKUP TIME AT T-15 MINUTES IS	
					NEW LIFTOFF TIME ____ : ____ : ____ GMT; HRS MIN SEC	
					MINUS 15 MINUTES 15 : 00 MIN SEC	
					CDC PICKUP TIME ____ : ____ : ____ GMT; HRS MIN SEC	
-30' 0"						
	181	1	CVTS	HFLT	VERIFY GO/NO-GO FOR TERMINAL COUNT SEQUENCES;	
-26' 0"						
	181	1	CVTS	SRO	VERIFY RANGE INTERROGATION OF RADAR BEACON 1 IS COMPLETE;	
-25' 0"						
	181	1	CLTC	CVTS	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE;	
					REQUEST GMIL REPORT IU COMMAND GO/NO-GO TO VURF ON CH' 264;	
	181	2	CVTS	GMIL	REPORT IU COMMAND GO/NO-GO TO VURF ON CH' 264;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-25' 0"	CONTINUED					
	181	3	CVTS	CLTC	RANGE INTERROGATION OF RADAR BEACON 1 IS COMPLETE; VERIFY RADAR BEACON 2 IS COMING ON;	
	181	4	CVTS	SRO	RADAR BEACON 2 IS COMING ON;	
-18' 0"						
	181 EM PA	1	CVTS		AT CONCLUSION OF T-15'0" HOLD FOR CDC LIFTOFF ADJUSTMENT, THE COUNT WILL BE RESUMED AT ____ : ____ : ____ GMT; HRS MIN SEC	
HOLDING -15' 0"					--STARTING HOLD FOR LIFTOFF ADJUSTMENT--	
	181 EM PA	1	CVTS		THE COUNT IS HOLDING FOR LIFTOFF ADJUSTMENT; --JUST PRIOR TO RESUMING COUNT--	
	181 EM PA	2	CVTS		THE CDC WILL BE RESTARTED AT T-15' 0" ON MY MARK; 5 - 4 - 3 - 2 - 1 - MARK.	
-15' 0"						
	181	1	MSTC	CVTS	SC GOING TO FULL INTERNAL POWER;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
-15' 0"	CONTINUED					
	181	2	MSTC	CVTS	SEND LOM TO CH; 214 FOR ASTRO LAUNCH COMM; CHECKS;	
	181	3	CVTS	LOM	GO TO CH; 214 FOR ASTRO LAUNCH COMM; CHECKS;	
	214	4	MSTC	CSTO	PUT ASTRO LAUNCH CIRCUIT ON VHF;	
	ALC	5		CSTO LOM MSTC	PERFORM COMM; CHECKS WITH SCDR VIA VHF ON ASTRO LAUNCH CIRCUIT;	
	214	6	MSTC	CSTO	PUT ASTRO LAUNCH CIRCUIT ON UMBILICAL, RELEASE VHF;	
	ALC	7		CSTO LOM MSTC	PERFORM COMM; CHECK WITH SCDR VIA UMBILICAL ON ASTRO LAUNCH CIRCUIT;	
	214	8	MSTC	CSTO	PUT CH; 214 ON UMBILICAL AND VHF;	
		9		LOM	END OF ASTRO LAUNCH CIRCUIT COMM; CHECKS; RETURN TO CH; 181;	
-14'30"						
	261	1	C4TC	CLTC	S-IVB START TANK CHILLDOWN IS IN PROGRESS;	
-12'30"						
	261	1	CLTC	CLGK	READOUT LV FIRING AZIMUTH ON CH; 181 WHEN READY;	
-10'45"						
	181	1	CLGK	CLTC	FT-42 COMPLETE AND LVDC IN PREPARE TO LAUNCH MODE;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-10'45"	CONTINUED					
	181	2	CLGK	CVTS HFLT SRO	FIRING AZIMUTH IS ___ DEG; ___ MIN; ___ SEC; NOTE IF A HOLD OCCURS AFTER THIS TIME, CLGK WILL ANNOUNCE REVISED AZIMUTH;	
-10' 0"						
	181 EM PA	1	CVTS		THERE WILL BE NO SMOKING IN FIRING ROOM 3 UNTIL AFTER T-0; ALL PERSONNEL REMAIN IN YOUR SEATS AND MAINTAIN OPERATIONAL SILENCE;	
	181	2	MSTC	CVTS	SC IS GO FOR LAUNCH; SEND LOM TO ASTRO LAUNCH COMM; CIRCUIT AT T-4' 0";	
	181	3	CVTS	LOM	GO TO ASTRO LAUNCH COMM, CIRCUIT AT T-4' 0";	
- 9'58"						
	261	1	C4TC	CLTC	S-IVB TCH CHILLDOWN IS IN PROGRESS;	
-6'30"						
	261	1	CLTC	EUES	EDS MODE TO LAUNCH;	
	261	2	CLTC	EUNP	INHIBIT SWITCH SELECTOR AND RESET COUNTER;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 61 0"						
	181	1	CVTS	HOLT	VERIFY GO/NO-GO FOR START OF AUTOMATIC LAUNCH SEQUENCE.	
- 5130"						
	181	1	CVTS	PROG DIR	VERIFY GO FOR LAUNCH.	
	261	2	CLTC	C2CP	VERIFY IWS AUTO/ARM BUS-ON.	
	261	3	CLTC	C3NP	FUNCTION SELECTOR TO LAUNCH AND VERIFY ALL STAGES READY FOR POWER TRANSFER ON.	
	181	4	CVTS	CPSS CTSC SRO LOM DLO	VERIFY GO FOR LAUNCH.	
- 51 0"						
	261	1	CLTC	S1SP	ARM TCS.	
	181	2	CVTS	CSA9	RETRACT SA-9. REPORT WHEN RETRACTED.	
					NOTE "-9" CSA9 REQUIRES EXCLUSIVE USE OF CAMERAS 26B AND 36B UNTIL SA-9 IS RETRACTED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 5' 0"	CONTINUED					
					********CAUTION******** * * * S-IVB CHILLDOWN MUST BE * * COMPLETE PRIOR TO THE * * NEXT LAUNCH VEHICLE * * SEQUENCE; * * * **********	
- 4'30"						
	261	1	CLTC	CUSW	LVDA/ESE TO LVDA,	
- 4' 0"						
	-181	1	CVTS	CLTC	CLEARED FOR LAUNCH;	
	ALC	2		CSTO LOM HSTC	PERFORM ASTRO LAUNCH CIRCUIT COMM CHECK WITH SCDR;	
	181 261	3	CVTS		NOTE COUNT TIME ANNOUNCEMENTS -3'30" TO -0'40" EVERY 10 SECONDS; -0'40" TO -0'15" EVERY 5 SECONDS; -0'11" TO CUTOFF EVERY 1 SECOND;	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 3'20"					NOTE CUTOFF (AFTER AUTOMATIC SEQUENCER START) FROM T-31 7" TO T-30" LV PERSONNEL WILL REQUEST CUTOFF THROUGH THE LV TEST CONDUCTOR. IN AN EMERGENCY CONDITION, LV PERSONNEL WILL CALL DIRECTLY TO THE C3NP PANEL OPERATOR "C3NP GIVE CUTOFF" ON CH, 261. ALL PERSONNEL UNDER THE DIRECTION OF THE SPACECRAFT TEST CONDUCTOR, THE TEST SUPPORT CONTROLLER, THE FLIGHT DIRECTOR, GMIL, AND THE SRO WILL REQUEST CUTOFF THROUGH ONE OF THE ABOVE APPROPRIATE PERSONNEL WHO WILL RELAY THE REQUEST TO THE LAUNCH OPERATIONS MANAGER (LOM) ON CH, 261. THE LOM WILL DIRECT THE LAUNCH VEHICLE TEST CONDUCTOR TO IMPLEMENT THE CUTOFF WHO WILL RELAY THE REQUEST FOR "C3NP GIVE CUTOFF" OVER CH, 261. FROM T-30" TO T-5" ALL PERSONNEL EXCEPT THOSE UNDER THE SPACECRAFT TEST CONDUCTOR WILL REQUEST CUTOFF BY DIRECTLY CALLING "C3NP GIVE CUTOFF" ON CH, 261. SPACECRAFT PERSONNEL WILL REQUEST CUTOFF THROUGH THE SPACECRAFT TEST CONDUCTOR WHO WILL RELAY THE REQUEST FOR "C3NP GIVE CUTOFF" ON CH, 261. FROM T-5" TO T+8" NO MANUAL CUTOFF MAY BE GIVEN UNLESS AUTOMATIC CUTOFF FAILS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA	DESCRIPTION	REMARKS
- 3' 6"						
	26I	1	C3FR		VERIFY FIRING COMMAND IS ON (H) DEE 2209.	
- 0'13"						
	26I	1	C3FR		READY FOR IGNITION IS ON (C) DEE 0153.	
- 0' 3.1"						
	26I	1	C3FR		IGNITION COMMAND (H).	
- 0' 1.00"						
	26I	1	C3FR		ALL ENGINES RUNNING (C) DEE 2077 ON.	
- 0' 0"						
	26I	1	C3FR		COMMIT (H).	
+ 0' 0"						
	26I	1	CLTC		LIFTOFF (PANEL LIGHT AND OTV).	

EMERGENCY RANGE CUTOFF PROCEDURE

```
**********WARNING**********
*                          *
* IN THE EVENT THAT        *
* LIFTOFF DOES NOT OCCUR,  *
* AUTOMATIC CUTOFF FAILS   *
* AND MANUAL CUTOFF        *
* COMMANDS FROM THE LCC    *
* FAIL, THE PROCEDURE      *
* BELOW IS TO BE USED.     *
*                          *
**********WARNING**********
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TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 0: 0"	CONTINUED					
		1	CLTC		NOTE --- ESTABLISH POINT TO POINT CONTACT WITH RSO.	
	261	2	C3FR	CLTC	AUTOMATIC AND EMERGENCY CUTOFFS HAVE FAILED, REQUEST RANGE CUTOFFS.	
	PT-PT	3	CLTC	RSO	REQUEST RANGE SAFETY CUTOFF COMMAND BY USING PREARRANGED CODE WORDS.	
	261	4	C3FR	CLTC	CUTOFF RECEIVED AND ENGINES OUT.	
	PT-PT	5	CLTC	RSO	REMOVE LV RANGE CUTOFF.	
	261	6	CLTC	C3DP C4DP	S&A SAFE.	
	261	7	CLTC	C3DP C4DP	STATUS SYSTEM SWITCH TO SAFE.	
					NOTE --- RESET OF S-IB, S-IV AND ESE, AND IU AND ESE OCCURS AT THIS TIME.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 01 0"	CONTINUED					
	261	8	CLTC	C3TC C4TC CUTC	SAFE YOUR STAGES AND GSE, ESTABLISH A HOLD CONDITION;	
					END OF EMERGENCY RANGE CUTOFF PROCEDURE	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
+ 0'18"						
	181	1	LOM	HFLT	CLEAR TOWER;	
	181	2	GMIL	LOM	ASTRO COMM UPLINK IS DISABLED;	
+ 0'55"						
	261	1	CLTC	CLTC CSTO C4TC CWTC	TAKE YOUR PERSONNEL TO STAGE TC CHANNELS FOR IMMEDIATE SECURING OPERATIONS AND REPORT WHEN COMPLETE;	
+ 5' 0"						
	111	1	CVTS	CSTO	RETURN ELEVATOR CONTROL PANEL KEYS TO CTSC;	
+ 6' 0"						
	181	1	CLTC	CVTS	LV STARTING FINAL SECURING OPERATIONS;	
	181 EM PA	2	CVTS		POST LAUNCH ACCESS AND INSPECTION PLAN IS TO BE STARTED AT THIS TIME;	
	181	3	CVTS	CPSS	LAUNCH VEHICLE IMPACT POINT HAS CLEARED LAND MASS; INITIAL SAFETY INSPECTION TEAM MAY PROCEED TO 7000 FOOT BLAST DANGER LINE;	
	181	4	CVTS	CLTC	VERIFY LH2 SYSTEM INERTING HAS STARTED;	
	181	5	CVTS	CPSS	LH2 SYSTEM INERTING HAS STARTED;	
	181	6	CTSC	CVTS	VIP PAGING SYSTEM TEST WILL BE PERFORMED AT T+10' 0",	

TIME	COMM CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+10' 0"						
	181	1	CVTS	LOM	VERIFY READY FOR CAMERA OVERRIDE CONTROL SYSTEM TO BE SWITCHED TO MODE 1.	
	181	2	CVTS	CTSC	PLACE CAMERA OVERRIDE CONTROL SYSTEM IS IN MODE 1.	
	181	3	CTSC	CVTS	CAMERA OVERRIDE CONTROL SYSTEM IS IN MODE 1.	
	181	4	CVTS	LOM	CAMERA OVERRIDE CONTROL SYSTEM IS IN MODE 1.	
	181	5	GMIL	CVTS	GMIL HAS LOSS OF SIGNAL. REQUEST CSTO RELEASED VHF AND S-BAND REMOTING.	
	181	6	CVTS	CSTO	GMIL HAS LOSS OF SIGNAL. RELEASE VHF AND S-BAND REMOTING.	
+ 7' 0"						
	181	1	GMIL	CVTS	GMIL CARRIERS ARE DOWN. COMMAND SYSTEM IS SAFED. READY TO POWER DOWN THE ABORT ADVISORY SYSTEM.	
	181	2	CVTS	GMIL	SAFE THE GMIL COMMAND SYSTEM. DISABLE AND POWER DOWN THE AIU AND VERIFY. CLEAR TO REARM THE COMMAND SYSTEM AS REQUIRED.	
		3		LOM	NOTE THAT THE GMIL ON INDICATOR IS OFF.	
	181	4	CVTS	LOM	ABORT REQUEST ENABLE SWITCH TO OFF AND VERIFY.	
		5		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL ARE OFF: REQUEST A ENABLED AND REQUEST B ENABLED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA	RESPONSE STA.	DESCRIPTION	REMARKS
+ 7' 0"	CONTINUED					
	181	6	CVTS	BWIC	POWER DOWN AAS POWER BOSSES AND POWER SUPPLIES. TURN OFF AAS EVENT RECORDERS.	
	181	7	BWIC	CVTS	AAS POWER BUSSES AND POWER SUPPLIES ARE POWERED DOWN. AAS EVENT RECORDERS ARE OFF.	
		8		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL ARE OFF AAS POWER SUPPLY 1, 2, 3, AAS SUPPLY, AND ORDNANCE SAFE.	
	181	9	CVTS	GMIL	ABORT ADVISORY SYSTEM IS POWERED DOWN.	
+21' 0"						
	181	1	CPSS	CVTS	INITIAL SAFETY INSPECTION HAS BEGUN.	
	181	2	CVTS	CPSS	ESTABLISH THE CONTROL AREA AT THE BLAST DANGER LINE AND A BADGE EXCHANGE AT THE SECURITY CHECK POINT.	
+36' 0"						
	181	1	CVTS	CPSS	LH2 SYSTEM HAS BEEN PURGED FOR 30 MINUTES. THE INITIAL SAFETY INSPECTION TEAM MAY PENETRATE THE 7000 FOOT SAFETY BARRIER. BEGIN SYSTEM SAFING WHEN READY. (IN ACCORDANCE WITH SKYLAB POST LAUNCH ACCESS AND INSPECTION PLAN, LAUNCH COMPLEX A AND B).	
+ 1 HR 0' 0"						
	181	1	CVTS	CTSC	SECURE CAMERA OVERRIDE CONTROL SYSTEM.	

TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
+ 1 HR 0' 0"	CONTINUED					
	181	2	CTSC	CVTS	CAMERA OVERRIDE CONTROL SYSTEM SECURED;	
+ 1 HR 15' 0"						
	181	1	CVTS	CYSC	CONFIGURE TELEPHONES IN ML ELEVATORS AND ML 320 FOOT LEVEL TO ADMIN MODE;	
+ 2 HRS 0' 0"						
	181	1	CPSS	CVTS	INITIAL SAFETY INSPECTION LH2/GH2 INERTING AND SYSTEM SAFING COMPLETE;	
	181	2	CVTS	CPSS	ESTABLISH THE CONTROL AREA AT PERIMETER FENCE AND BADGE EXCHANGE AT SECURITY CHECK POINT; VERIFY THE CONTROLLED AREA MAY BE OPENED FOR LIMITED ACCESS; ALL NON-ESSENTIAL PERSONNEL ARE TO REMAIN CLEAR OF THE TOP OF THE PEDESTAL FOR HOLDDOWN ARM SECURING;	
	181 EM PA	3	CVTS		SAFETY INSPECTION IS COMPLETE AND THE CONTROLLED AREA IS OPEN FOR LIMITED ACCESS; ALL NON-ESSENTIAL PERSONNEL ARE TO REMAIN CLEAR OF THE TOP OF THE PEDESTAL FOR HOLDDOWN ARM SECURING;	
	181	4	CVTS	CLTC	SAFETY INSPECTION IS COMPLETE AND THE CONTROL AREA IS OPEN FOR LIMITED ACCESS; ALL NON-ESSENTIAL PERSONNEL ARE TO REMAIN CLEAR OF THE TOP OF THE PEDESTAL FOR HOLDDOWN ARM SECURING;	
	181	5	CTSC	CVTS	6000 PSI GH2 TRANSFER LINE SECURED AND VENTED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA	DESCRIPTION	REMARKS
+ 2 HRS 01' 0"	CONTINUED					
	181	6	CVTS	CLTC	6000 PSI GH2 TRANSFER LINE SECURED AND VENTED;	
	181	7	CLTC	CVTS	REQUEST ORDNANCE PERSONNEL REMOVE HDA ORDNANCE PER V-39008;	
	181	8	CVTS	CPSS	HAVE ORDNANCE PERSONNEL REMOVE LV HDA ORDNANCE PER V-39008;	H
+ 2 HRS 30' 0"						
	181	1	CLTC	CVTS	THE TOP OF THE PEDESTAL HAS BEEN SECURED AND MAY BE OPENED FOR NORMAL WORK;	
	181	2	CVTS	CPSS	THE TOP OF THE PEDESTAL HAS BEEN SECURED; VERIFY READY TO OPEN THE TOP OF THE PEDESTAL FOR NORMAL WORK,	
	181 EM PA	3	CVTS		THE TOP OF THE PEDESTAL HAS BEEN SECURED AND IS OPEN FOR NORMAL WORK;	
	181	4	CVTS	CTSC	THE PAD IS OPEN FOR NORMAL OPERATIONS,	
					END OF OPERATING SEQUENCES	

APPENDIX A

PRE CRYOGENIC LOADING CHECKLISTS

NOTE

THE CHECKLISTS ARE TO BE PERFORMED BY THE OPERATIONAL SUPERVISOR PRIOR TO OR AT THE T-TIMES LISTED.

FUNCTION	TIME
1. SPACE VEHICLE TEST SUPERVISOR	
A. VERIFY SUPPORT CONTROLLER'S EVACUATION CHECKLIST IS COMPLETE.	T-7 HOURS, 5' 0",
B. VERIFY RADIO COMMUNICATION SYSTEMS ARE OPERATIONAL.	T-7 HOURS, 30' 0",
C. VERIFY SYSTEMS SAFETY SUPERVISOR'S CHECKLIST IS COMPLETE (INCLUDES FIRE PROTECTION AND SECURITY).	T-7 HOURS, 10' 0"
2. SYSTEMS SAFETY SUPERVISOR	
A. VERIFY TO THE TEST SUPERVISOR THAT SYSTEM SAFETY, FIRE PROTECTION, AND SECURITY CHECKLISTS ARE COMPLETE.	T-7 HOURS, 10' 0",
B. VERIFY OPERATION OF HAZARD WARNING SIGNAL AND PUBLIC ADDRESS SYSTEM.	T-8 HOURS, 0' 0",
C. VERIFY SAFETY EQUIPMENT IS LOCATED IN SPECIFIED AREAS.	T-8 HOURS, 0' 0",
D. VERIFY RADIO HF 105 NET COMMUNICATION SYSTEM OPERATION WITH KSC FIRE DEPARTMENT MEDICAL SUPPORT IMPACT CONVOYS ROADBLOCKS TEST SUPERVISOR	T-8 HOURS, 0' 0",

E.	VERIFY POINT-TO-POINT TELEPHONE SYSTEM OPERATION WITH LO2 AND LH2 FACILITIES VAB ROOF FALLBACK AREA DISPENSARY IMPACT CONVOYS	T-8 HOURS, 0' 0",
F.	VERIFY THE FOLLOWING ELEMENTS ARE ON STATION, MANNED AND READY, FIRE DEPARTMENT MEDICAL SUPPORT IMPACT CONVOYS LIFE SUPPORT	T-8 HOURS, 0' 0",
G.	VERIFY FIRE PROTECTION OFFICE CHECKLIST IS COMPLETE;	T-8 HOURS, 0' 0",
H.	VERIFY SECURITY EVACUATION CHECKLIST IS COMPLETE.	T-7 HOURS, 30' 0",

3. FIRE PROTECTION OFFICER

A.	VERIFY THAT ALL LAUNCH PAD LIFE SUPPORT AND FIRE SUPPRESSION EQUIPMENT IS LOCATED AS SPECIFIED BY THE OFFICE CHECKLIST, VERIFY THAT ALL EQUIPMENT IS FUNCTIONAL;	T-1 DAY, 0 HOURS, 0' 0",
B.	VERIFY THAT ALL PAD RESCUE EQUIPMENT IS READY TO SUPPORT CDDT;	T-8 HOURS, 0' 0",
C.	VERIFY RADIO COMMUNICATION SYSTEMS OPERATION WITH TEST SUPERVISOR SYSTEMS SAFETY SUPERVISOR KSC FIRE DEPARTMENT MEDICAL SUPPORT IMPACT CONVOY	T-8 HOURS, 0' 0",

D.	VERIFY TO SYSTEMS SAFETY SUPERVISOR THAT FIRE PROTECTION OFFICE EVACUATION CHECKLIST IS COMPLETE.	T-8 HOURS, 0' 0".
4.	SUPPORT CONTROLLER	
A.	VERIFY OPERATION OF ML AND PAD ELEVATORS.	T-8 HOURS, 0' 0".
B.	VERIFY BLAST ROOM CHECKLISTS COMPLETE AND BLAST ROOM READY FOR PERSONNEL SUPPORT.	T-8 HOURS, 0' 0".
C.	VERIFY SLIDEWIRE CAB IS LOCATED AT THE TAKE OFF POINT AND IS READY FOR USE.	T-8 HOURS, 0' 0".
D.	VERIFY ALL REQUIRED EQUIPMENT IS PLACED IN SA NO. 9 RESCUE LOCKER.	T-8 HOURS, 0' 0".
E.	VERIFY THE FORWARD OBSERVER SITES ARE EQUIPPED PER THE REQUIREMENT DOCUMENT.	T-6 HOURS, 0' 0".
5.	SECURITY	
A.	UNLOCK THE GATE IN THE PAD PERIMETER FENCE AT THE END OF ROAD "B" THAT SECURES THE DIRT ROAD LEADING TO THE PUMP STATION.	T-8 HOURS, 0' 0".
B.	VERIFY TO SYSTEMS SAFETY SUPERVISOR THAT THE SECURITY EVACUATION CHECKLIST IS COMPLETE.	T-7 HOURS, 30' 0".

END OF APPENDIX A.

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APPENDIX B

CONTINGENCY CREW PAD ACCESS AND EVACUATION PROCEDURES

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					NOTE THE FOLLOWING PROCEDURE IS TO BE USED AFTER LV CRYOGENIC LOADING TO ASSURE A SAFE SPACE VEHICLE CONFIGURATION PRIOR TO CONTINGENCY CREW ACCESS TO THE PAD, ALSO INCLUDED IS THE PROCEDURE FOR INITIATING EVACUATION OF THE CONTINGENCY CREW IN THE EVENT OF AN EMERGENCY.	
					CVTS CONTINGENCY CREW ACCESS PROCEDURE	
	181	1	CVTS	CLTC	A CONTINGENCY CREW IS READY TO ENTER THE PAD AREA, VERIFY HAZARDOUS GAS DETECTION SYSTEMS ARE OPERABLE AND INDICATE SAFE, VERIFY WHEN THE LAUNCH VEHICLE IS IN CONFIGURATION FOR CONTINGENCY CREW ENTRY TO THE PAD.	
	181	2	CVTS	MSTC	A CONTINGENCY CREW IS READY TO ENTER THE PAD AREA, VERIFY WHEN THE LES TOWER IS DISARMED, VERIFY WHEN THE SPACECRAFT IS CONFIGURED FOR CONTINGENCY CREW ENTRY TO THE PAD AREA.	
	181	3	CVTS	CTSC	REACTIVATE OIS TO AND FROM PAD FOR CONTINGENCY OPERATION.	
					NOTE THE NEXT STEP IS NOT TO BE PERFORMED UNTIL THE LES IS DISARMED.	

TIME	COMM: CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
	181	4	CVTS	CSA9	EXTEND ACCESS ARM TO COMMAND MODULE;	
	181	5	CVTS	HARD TOP	A CONTINGENCY CREW IS READY TO ENTER THE PAD AREA;	
	181 EM PA	6	CVTS		NO SWITCHING OR TEST PROGRAM STARTS PERMITTED UNTIL FURTHER NOTICE;	
					NOTE THE NEXT STEP IS TO BE PERFORMED IF THE CONTINGENCY CREW IS GOING ABOVE THE ZERO LEVEL OF THE LAUNCHER UMBILICAL TOWER;	
	181	7	CVTS	CST0	LOWER ELEVATOR NO. 2 TO "A" LEVEL; RETURN ELEVATOR NO. 2 TO NORMAL OPERATING MODE; RETURN KEY TO CTS6; END OF CVTS CREW ACCESS PROCEDURE	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					CONTINGENCY CREW EVACUATION PROCEDURE	
					PERSON DETECTING AN EMERGENCY CONDITION SHALL NOTIFY ALL PERSONNEL IN THE IMMEDIATE AREA;	
	181/ BLACK PHONE *				CALL CVTS ON OIS CHANNEL 181 (OR BLACK PHONE *), STATE A; YOUR NAME B; LOCATION OF EMERGENCY C; NATURE OF EMERGENCY D; DESCRIPTION OF SITUATION E; ACTION ALREADY TAKEN	
					* FR=3; 7=5753;	
					NOTE EVACUATION ROUTES MAY BE CHANGED AT THE DISCRETION OF THE TEST SUPERVISOR OR THE SYSTEM SAFETY SUPERVISOR;	
		1		CVTS	ACTIVATE EMERGENCY WARNING SYSTEM; SHUT OFF FOR ANNOUNCEMENT;	
	181 EM PA	2	CVTS		ATTENTION ALL PERSONNEL; THIS IS THE TEST SUPERVISOR; (DESCRIBE THE SITUATION); ALL PERSONNEL EVACUATE THE LAUNCH PAD;	

NAME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					NOTE --- IF THE FLIGHT CREW IS ON THE PAD AND EMERGENCY EGRESS OF THE FLIGHT CREW AND CLOSEOUT CREW IS REQUIRED, THE APOLLO/SKYLAB FLIGHT CREW EMERGENCY EGRESS PROCEDURES LAUNCH COMPLEX 39 (DOCUMENT V-46002) SHOULD BE FOLLOWED FROM THIS POINT.	
	181	3	CVTS	BCFW	INITIATE FIRE SUPPRESSION IN THE (NAME) AREA (IF REQUIRED).	
		4		CVTS	INITIATE PROCEDURES IN APPROPRIATE PORTION OF THE TEST SUPERVISOR EMERGENCY PROCEDURES (DOCUMENT SV-46102). END OF APPENDIX B	

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APPENDIX C

MOVEMENT OF SERVICE ARM NO. 9 DURING HOLD AFTER T-5 MINUTES

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TIME	COMM. CH	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					NOTE THE FOLLOWING SEQUENCES WILL BE USED FOR MOVING SERVICE ARM-9 FROM THE FULL RETRACT POSITION (AFTER T-5' 0" IN COUNTDOWN) TO EITHER PARK POSITION OR FULLY EXTENDED TO THE SPACECRAFT AND LATCHED.	
	181	1	CVTS	MSTC	1. VERIFY READY FOR SA-9 MOVE TO A. PARK POSITION, (OR) B. SPACECRAFT AND LATCHED. 2. VERIFY PYRO/LOGIC BUSSES SAFE.	
	181	2	CVTS	CSA9	ON YOUR MARK. A. EXTEND SA-9 TO SV AND RETRACT TO PARK POSITION PER V-36085 AND VERIFY. (OR) B. EXTEND SA-9 TO SV AND VERIFY LATCHED PER V-36085.	
	181	3	CVTS	MSTC	1. SA-9 IS AT A. PARK POSITION, (OR) B. SPACECRAFT AND LATCHED. 2. CLEAR TO ARM PYRO/LOGIC BUSSES AND VERIFY - (FOR MOVE TO PARK POSITION ONLY).	
					END OF APPENDIX C	

APPENDIX D

TYPICAL FLIGHT EVENT SEQUENCE FOR 44.90 DEGREES LAUNCH AZIMUTH

TYPICAL CRITICAL EVENTS SEQUENCE
(FOR 46.90 DEGREES FLIGHT AZIMUTH)

SKYLAB MISSION

TIME FROM FIRST MOTION (MIN SEC)	EVENT	TIME BASE
00 00.0	FIRST MOTION	
00 00.2	LIFTOFF	TB-1
00 10.2	INITIATE PITCH AND ROLL MANEUVERS	
00 58.9	MACH ONE	
01 13.6	MAX Q	
02 10.5	TILT ARREST	
02 11.1	ENABLE S-IB PROPELLANT LEVEL SENSORS	
02 14.6	LEVEL SENSOR ACTIVATE	TB-2
02 17.6	INBOARD ENGINE CUTOFF (IECO)	
02 20.6	OUTBOARD ENGINE CUTOFF (OECO)	TB-3
02 21.9	S-IB/S-IVB SEPARATION SIGNAL	
02 22.0	S-IB/S-IVB PHYSICAL SEPARATION	
02 23.3	S-IVB ENGINE START COMMAND	
02 25.7	ULLAGE ROCKET BURNOUT	
02 28.9	ULLAGE ROCKET MOTORS JETTISON	
02 45.6	LET JETTISON (CREW ACTION)	
02 50.4	ACTIVE GUIDANCE INITIATION	
09 41.9	GUIDANCE CUTOFF SIGNAL (GCS)	
09 42.1	S-IVB ATTITUDE HOLD	TB-4
09 51.9	ORBIT INSERTION	
10 02	PITCH MANEUVER TO LOCAL HORIZONTAL	
14 42.1	NOMINAL CSM SEPARATION	

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1	DY	Ross	4	KM-MGR	Williams
3	IN-MSD-12	Stevens	5	WSK	Morse
3	IN-OIS-1	Parrish	3	AFETR, DONO	
25	IN-OMO	Coonce	2	AFETR, DOOP	
1	IS	Parker	1	AFETR, DOOT	
1	IS-DOC-2	Fant	2	AFETR, PAPO, MU5420	Walker
1	IS-DOC-2A	Lovan	2	AFETR, PAPP, MU595	
1	IS-MED	Christensen	1	JSC/DD	Armstrong
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1	IS-TSM	Brown	3	BEN-2350, Hq 1503	Compton
1	LA-PLN	Moser	1	BEN-4120, Hq 2549	Reed
18	LCC 4R8	Schick	1	BEN-5460, Bldg K7-569	Christiansen
1	LS-OPN	Gay	2	BOFL-73, O&C 2116	Dalla Santa
1	LS-OPN-1	Chauvin	1	BOFL-73, O&C 2116	Weinberg
1	LS-OPN-2	Carothers	5	BOFM-36, VAB 2L4	Melton
1	LS-OPN-3	Proffitt	2	BOFM-39, VAB 2L10	Scholz
1	LS-QAL-3	Welly	18	BOFO-31, O&C 3121	Kramp
1	LV-ENG-A	Bryan	2	BOFS-00, K6-1045	Ballard
1	LV-GDC	Lealman	2	BOFT-00, VAB 7E14	Maxwell
2	LV-INS-1	Huffman	3	CHRY 16, VAB 15B7	O'Dell
1	LV-OMO-1	Slogar	1	FEC-200, MC-336, 123	Stein
2	LV-OMO-3	Youmans	1	FEC-300, CIF 310	Dell
1	LV-PLN	Nagle	1	FEC-810, M6-339	Boessow
25	PA-PIB	Harris	1	FEC-820, M6-339, 202	Tveter
1	SF	Atkins	1	FEC-870, M6-138, 117	Deeter
1	SF	Overbey	1	GE-AGS, O&C 3018	Fowler
2	SF-OPN	Woods	3	IBM-G18, VAB 2N5	Witt
1	SO	Gorman	1	MDAC, VAB 3K11-B	Bennett
1	SO-ENG	Smith	1	NR, ZK-20, O&C 3079	Nurnberg
1	SO-OPN	Moses	1	NR, ZK-49, O&C 3088	Cloyd
1	SO-OPN-1	Pyles	2	NWSI-D	Library
1	TS	Minderman	1	PANAM-9, OMEHS	Shult
1	TS-MET	Nicholson	1	TGS, VAB 3A7	Bamforth
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