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~~KSC~~ TCP NO. SV-41407R
DATE JUNE 15, 1973
REVISION ORIGINAL
EFFECTIVITY SKYLAB R

JOHN F. KENNEDY SPACE CENTER

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SKYLAB RESCUE SPACE VEHICLE FLIGHT READINESS TEST

RELEASED FOR RESCUE

THIS TCP CONTAINS HAZARDOUS OPERATIONS

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SPACE VEHICLE
FLIGHT READINESS TEST

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 6-19-73

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

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

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REVISION RECORD PAGE

REVISION	REASON/SUPPORTING DOCUMENTATION
ORIGINAL	RELEASED FOR SKYLAB R

TEST OUTLINE

SPACE VEHICLE FLIGHT READINESS TEST

1.0 PURPOSE

THE PURPOSE OF THIS TEST IS TO ENSURE THAT THE SPACE VEHICLE SYSTEMS ARE IN A STATE OF FLIGHT READINESS AND ARE COMPATIBLE WITH ASSOCIATED GSE WHEN ALL SYSTEMS ARE AS NEAR AS PRACTICABLE TO LAUNCH CONFIGURATION.

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 WILL BE IN A LAUNCH CONFIGURATION WITH THE EXCEPTION OF A MINIMUM AMOUNT OF TEST EQUIPMENT REQUIRED TO SIMULATE CERTAIN FUNCTIONS ITEMIZED IN PARAGRAPH 1.2.2. AUTOMATIC CHECKOUT EQUIPMENT (CARRY-ON EQUIPMENT) WILL BE CONNECTED AND THE MOBILE SERVICE STRUCTURE WILL BE IN PLACE AROUND THE VEHICLE. LV HEAVY ORDNANCE AND THE LAUNCH ESCAPE SYSTEM (LES) WILL BE INSTALLED BUT NOT CONNECTED. HYPERGOLICS, RP-1, AND CRYOGENICS WILL NOT BE LOADED IN THE SPACE VEHICLE FOR THIS TEST. REACTION CONTROL SYSTEM ENGINES WILL BE CONNECTED.

1.2.2 SIMULATION OF FUNCTIONS

THE FUNCTIONS OF PROPELLANT LOADING, UMBILICAL EJECTION, IGNITION, HOLDDOWN ARM RELEASE, LIFTOFF AND SERVICE ARM AND TAIL SERVICE MAST RETRACTION WILL BE SIMULATED. SIMULATORS WILL BE USED INSTEAD OF ORDANCE FIRING DEVICES. ELECTRICAL POWER TO THE LAUNCH VEHICLE WILL BE SUPPLIED FROM GROUND POWER THROUGH BATTERY BYPASS JUMPER CABLES, AND THE SPACECRAFT WILL BE SUPPLIED WITH GSE SUPPORT ELECTRICAL POWER INSTEAD OF FUEL CELL POWER.

1.2.3 OPERATIONAL CONSTRAINTS AND GUIDELINES

THE FOLLOWING OPERATIONAL CONSTRAINTS AND GUIDELINES SHALL APPLY

A. MANNED PARTICIPATION IN THE CSM WILL BE REQUIRED.

B. LAUNCH SUPPORT EQUIPMENT WILL BE CONFIGURED TO ENSURE AGAINST ACTUATION OF UMBILICALS, SERVICE ARMS, TAIL SERVICE MASTS, HOLDDOWN ARMS, AND INDUSTRIAL WATER SYSTEMS.

1.3 SAFETY

THE FLIGHT READINESS TEST IS CONSIDERED TO BE HAZARDOUS BECAUSE SPACE VEHICLE HEAVY ORDNANCE IS INSTALLED. ALSO, HAZARDOUS OPERATIONS SUCH AS APPLICATION OF HYDRAULICS AND PNEUMATICS, VENTING OF TANK AND GIMBALING OF ENGINES OCCUR IN LOCALIZED AREAS.

1.4 TEST DESCRIPTION

AFTER ALL SYSTEMS HAVE BEEN PREPARED, POWER WILL BE APPLIED TO THE CSM, IU, AND GSE. ALL SUPPORTING SYSTEMS WILL BE CHECKED AND VERIFIED READY TO SUPPORT THE TEST.

A BACKUP GUIDANCE SIMULATED MISSION WILL BE PERFORMED BY THE LV AND CSM, WITH SWITCHOVER AND SECONDARY SIGNALS GENERATED FOR ASCERTAINING IF THERE ARE ANY SOURCES OF INTERFERENCE BETWEEN BOOSTER AND CSM SYSTEMS THAT MIGHT ADVERSELY AFFECT THE MISSION IN BACKUP MODE.

SC OPERATIONS WILL BE SEQUENCED WITH LV OPERATIONS IN PREPARATION FOR A NORMAL MISSION. POWER WILL THEN BE APPLIED TO THE S-IB AND S-IVB STAGES OF THE LV; FUNCTIONAL TESTS WILL BE PERFORMED; LV PROPELLANT LOADING WILL BE SIMULATED; AND THE RANGE SAFETY COMMAND RECEIVER (RSCR), RF, AND TELEMETRY CHECKS WILL BE MADE IN AN ABBREVIATED COUNTDOWN CULMINATING IN "PREPS COMPLETE.", CSM RF, TELEMETRY, TELEVISION, AND UDL COMMAND CONTROL SYSTEMS WILL BE EXERCISED. LV TELEMETERS AND RF WILL BE OPERATED OPEN LOOP. RSCR CHECKS WILL BE PERFORMED USING THE AUDIO LINES TO LC-39, AND OPEN LOOP USING THE RANGE SAFETY COMMAND TRANSMITTER. PRIOR TO TCS START A "HOLDFIRE" WILL BE SENT BY THE RANGE. AFTER A TERMINAL COUNT SEQUENCE AND SIMULATED LIFTOFF, A SIMULATED ABBREVIATED MISSION WILL BE PERFORMED THROUGH CM TOUCHDOWN. THE LV PORTION OF THE SIMULATED FLIGHT WILL INCLUDE S-IB AND S-IVB PROPELLANT DISPERSION TESTS. THE SIMULATED FLIGHT WILL BE CONCLUDED AFTER SELECTED CSM PROPULSION TESTS AND CM TOUCHDOWN.

LIST OF REFERENCES

1. LAUNCH VEHICLE OPERATIONS FOR SPACE VEHICLE FRT, V-20120,

2. SPACECRAFT OPERATIONS FOR SPACE VEHICLE FRT, K0028;

3. SKYLAB SPACE VEHICLE FRT OPERATIONS INTERFACE CONTROL CHART,

4. SKYLAB 1/SKYLAB 2 AND SUBSEQUENT LC-39 LAUNCH OPERATIONS INSTRUCTIONS, 600-26-0002,

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

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

7. KSC CALL SIGN HANDBOOK, 630-23-0001,

8. GROUND SAFETY PLAN, KV-053,

9. SECURITY PLAN KV-052,

10. SKYLAB PART I RD 20002,

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.

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-SB)	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 WHICH IS CO-SHARED WITH ATM ATTITUDE AND POINTING CONTROL SYSTEMS OPERATIONS 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 181.

OIS SYSTEM TROUBLE REPORTING

TO REPORT TROUBLES OR REQUEST ASSISTANCE IN THE USE OF THE OIS SYSTEM, CONTACT JROL (ALL AREAS), OR YROL (O&C, CIF) 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, 1, 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,

R. 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

KSC FORM 28-81 D (REV. 8/73)

SKYLAB OIS CHANNELIZATION

TS 111 SEE NOTE	TS 121 TEST SUPPORT CONTROLLER C R	LV 131 SEE NOTE	LV 141 SEE NOTE	LV 151 SEE NOTE	LV 161 SEE NOTE	LO 171 TEST SUPERVISOR (BACKUP) R U	LO 181 TEST SUPERVISOR R U	LS 211 SEE NOTE	LS 221 CSM PAD LEADER AND Q.C.	LV 231 S-IB TEST CONDUCTOR	LV 241 S-IVB TEST CONDUCTOR	LV 251 IU TEST CONDUCTOR	LV 261 LAUNCH VEHICLE TEST COND. R U
SO 112 SEE NOTE	SO 122 SUPPORT CONTROLLER C	IN 132 FACILITY AND ENVIRON. MEAS.	LV 142 SEE NOTE	LV 152 SEE NOTE	LV 162 SEE NOTE	LS 172 SEE NOTE	LS 182 CSM AEROMED	LS 212 CSM SPACECRAFT TEST COND. U	LS 222 CSM TEST PROJECT ENGINEER	LV 232 S-IB MECHANICAL	LV 242 S-IVB MECHANICAL	LV 252 IU MECHANICAL DDAS AND GRND. MEAS	LV 262 FLIGHT CONTROL
IN 113 OTV CONTROL ENGINEER C	IS 123 PHOTO	LV 133 SEE NOTE	LV 143 SEE NOTE	LV 153 SEE NOTE	LV 163 SEE NOTE	LS 173 SEE NOTE	LS 183 SEE NOTE	LS 213 CSM TROUBLE SHOOTING	LS 223 CSM ELECTRICAL POWER SYSTEM	LV 233 S-IB ELECTRICAL	LV 243 S-IVB ELECTRICAL	LV 253 IU ELECTRICAL AND EMS	LV 263 FLIGHT COMPUTER
IS 114 INSTALLATION SUPPORT CONTROLLER C	TS 124 TROUBLE SHOOTING	LV 134 SEE NOTE	LV 144 SEE NOTE	LV 154 SEE NOTE	LV 164 SEE NOTE	LO 174 WEATHER	LS 184 SEE NOTE	LS 214 CSM COMM., INST., AND BIOMED. U	LS 224 CSM FUEL CELL AND CRYO	LV 234 S-IB INSTRUMENTATION & HGD	LV 244 S-IVB INSTRUMENTATION	LV 254 IU INSTRUMENTATION R U	LV 264 RF & TM (INTEGRATED) R U
SO 115 CRAWLER OPERATIONS C	SF 125 PAD SAFETY	LV 135 SEE NOTE	LV 145 SEE NOTE	LV 155 SEE NOTE	LV 165 SEE NOTE	LS 175 SEE NOTE	LS 185 SEE NOTE	LS 215 CSM G&N U	LS 225 CSM STABILIZATION CONT. SYSTEM	LV 235 PROPELLANT (OXIDIZER)	LV 245 PROPELLANT (FUEL)	LV 255 RCA-110, CDC, DEE-6 AND AUX. POWER	LV 265 TROUBLE SHOOTING & DESC PREP
IN 116 INSTRUMENTATION CONTROLLER C	SO 126 PAD OPERATIONS	LV 136 SEE NOTE	LV 146 SEE NOTE	LV 156 STABILIZER	LV 166 LAUNCH VEHICLE Q. C.	LV 176 SERVICE ARM OPERATIONS	LS 186 SEE NOTE	LV 216 SERVICE ARM OPERATIONS	LS 226 CSM PROPULSION/ REACTION CONT. SYS	LV 236 SERVICE ARMS OPERATIONS	LV 246 IWS & PNEU	LV 256 S-IB FIRING ACCESSOR. & ESP	LV 266 GSE TEST CONDUCTOR
IN 117 OIS CONTROL ENGINEER C U	SO 127 PNEUMATICS	LV 137 SEE NOTE	SO 147 SEE NOTE	IN 157 DATA DISPLAY	LS 167 SEE NOTE	LV 177 SERVICE ARM OPERATIONS	LS 187 SEE NOTE	LV 217 SERVICE ARM OPERATIONS	LS 227 ENVIRONMENTAL CONTROL SYSTEM	LV 237 ECS	SO 247 MOBILE LAUNCHER STRUCTURE	SO 257 MOBILE SERVICE STRUCTURE OPERATIONS	IN 267 KSC TIMING
IN 118 FACILITY AND ENVIRON. MEAS. C	IN 128 FACILITY AND ENVIRON. MEAS.	LV 138 SEE NOTE	IN 148 CIP TELEMETER GROUND STATION	IN 158 CIP TELEMETER GROUND STATION	LS 168 SEE NOTE	LV 178 SERVICE ARM OPERATIONS	188 PAGING	LV 218 SERVICE ARM OPERATIONS	LS 228 CSM ACE/GSE	LV 238 LSE ELECTRICAL	LS 248 SEE NOTE	LS 258 SEE NOTE	LS 268 SEE NOTE

C: Available to CT/ML by microwave during transfer operations.
R: Tied to ETR.
U: Tied to GMIL.

NOTE: Channel may be assigned by the designated directorate without approval or coordination with other directorates. If permanent assignments are made, please notify LA-PLN by AVO.

REV 5 JUNE 12, 1973

APPROVED: R. E. Moser, LA-

OPERATING STATIONS

TEST CONDUCTORS AND TEST MANAGEMENT PERSONNEL

DLO	LAUNCH DIRECTOR (NASA)
LOM	LAUNCH OPERATIONS MANAGER (NASA)
CVTS	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)
ROSC	SUPPORT CONTROLLER (NASA)
BTIS	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, BACKeUP
BEACH	
BOSS	LAUNCH SITE RECOVERY FORCES COMMANDER
BGCC	GROUND COMPUTER COMPLEX FIRING ROOM
BLTM	TM SYSTEMS ENGINEER
BLRF	LV DRSCR SYSTEMS ENGINEER
BPHO	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
C1NP	NETWORKS PANEL (S-II)
ETMS	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	NR TEST PROJECT ENGINEER; UNIT 10, S/C

PEHE	ENVIRONMENTAL HEALTH ENGINEER
PVSS	SYSTEMS SAFETY (PAD)
PVTS	PAD TEST SUPERVISOR
SCDR	CSM COMMANDER
SEHZ	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-47	PREFLIGHT GMD SYSTEM TEST	6 MINUTES
IATS	TERMINAL SEQUENCE LINKING PROGRAM	25 MINUTES

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
29B	ML LEVEL 320 FT,	WHITE ROOM AND SPACECRAFT
28B	ML LEVEL 320 FT,	SERVICE ARM #9
34B	SOUTHWEST ON PAD	SURVEILLANCE OF FLIGHT CREW
38 B	NORTHEAST ON PAD	SURVEILLANCE OF FLIGHT CREW
ROOF	VAB ROOF	SURVEILLANCE OF FLIGHT CREW

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 DATA 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
CRW	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
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	MEGA-HERTZ
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
RADCC	RADIOLOGICAL CONTROL CENTER
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)
S&A	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	SPACEFLIGHT 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

FOLDOUT FRAME 1

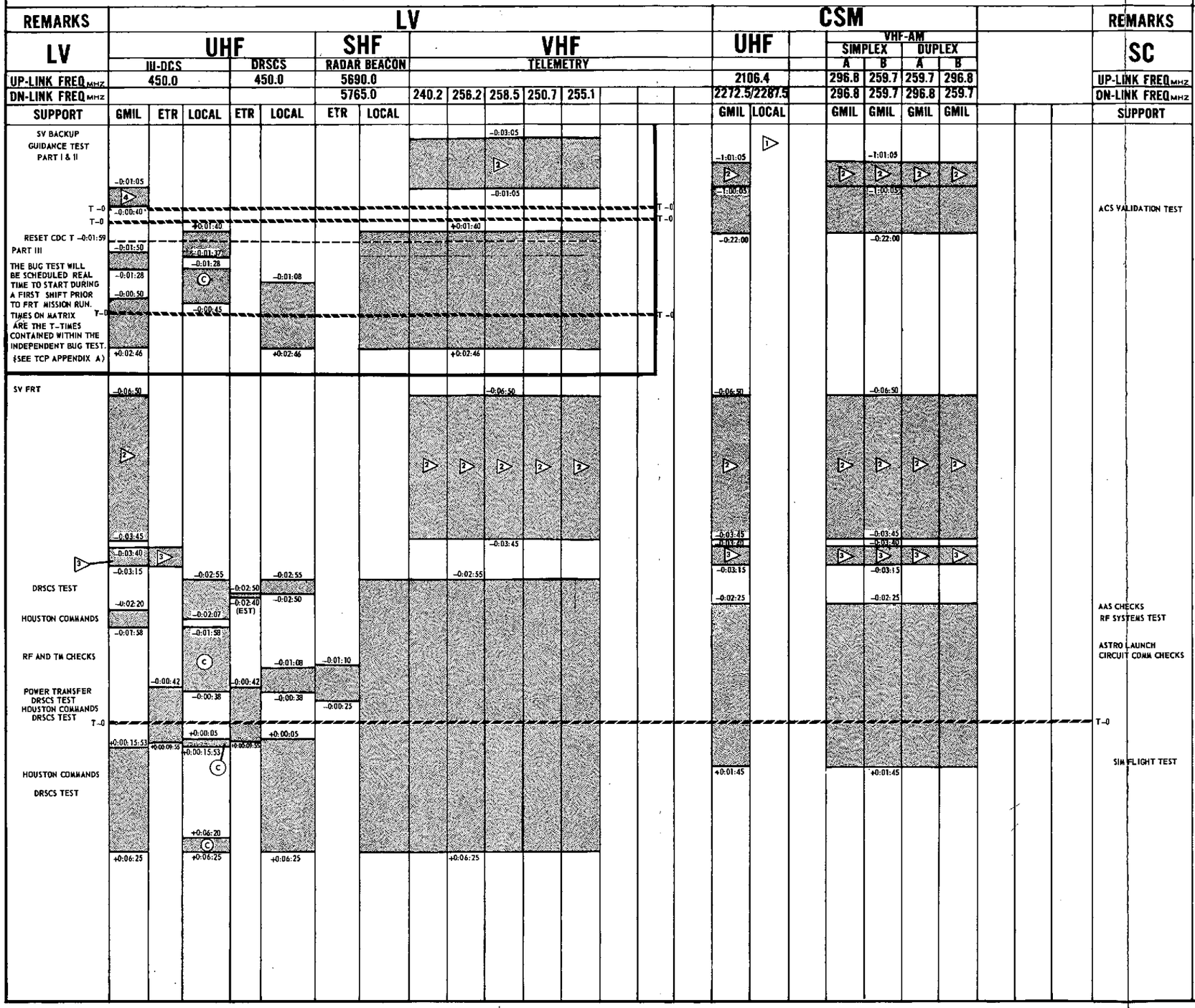
FOLDOUT FRAME 2

SV FRT RESCUE
DATE: JUNE 15, 1973
REVISION: 001

SKYLAB LAUNCH OPERATIONS

PAGE: 23/24
TEST NO: SV - 4 1407 R
VEHICLE: SKYLAB 3 RESCUE

SV FLIGHT READINESS TEST RF MATRIX



SPACE VEHICLE TM FREQUENCIES

STAGE	LINK	FREQUENCIES (MHZ)
S-IB	GF-1	240.2
	GP-1	256.2
S-IVB	CP-1	258.5
IU	DF-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)

1 NOT USED DURING THIS TEST

2 REQUIRED FOR GMIL ON- STATION CALIBRATION

3 REQUIRED FOR MCC COMMAND VALIDATION TEST AND AIR/GROUND VALIDATION TEST

4 REQUIRED FOR MCC COMMAND VALIDATION TEST

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SPACE VEHICLE FLIGHT READINESS TEST - RESCUE VEHICLE

DATE: JUNE 15, 1973

REVISION ORIGINAL

SKYLAB RESCUE SPACE VEHICLE FRT
OPERATIONS INTERFACE CONTROL CHART

PAGE 26

TEST NO. SV-41407R

VEHICLE SKYLAB

DATE: 5/31/73 LA-PLR
EFFECTIVITY: SL RESCUE
REVISION: ORIGINAL

CONCURRENCE:
A. GOLDENBERG LS
J.H. SLOGAN LV
R.E. WOODS SF-OPN

APPROVAL:
R.E. MOSER DLO

LEGEND
T - H M S

NOTE:
BACKUP GUIDANCE TEST WILL BE PERFORMED DURING FRT PER OICC BACKUP GUIDANCE SIM FLT TEST

OPERATIONAL SEQUENCE

GMIL ON STATION CALIBRATION T-0:06:45 TO -0:03:45
START CDC T - 0:04:31
TCS FUNCT TEST T - 0:03:46
MCC CMD & A/G VALID TESTS T - 0:03:35 TO -0:03:15
FPI CHECK T - 0:03:30
EDS POWER ON T - 0:02:54 TO - 0:02:50
LV DRSCS CHECKS T - 0:02:50
CSM ABORT LIGHT VERIF T - 0:02:40
LV PROP SIM LOAD T - 0:02:30 TO -0:01:10
CSM A/G VOICE CKS T - 0:02:20 TO -0:02:05
FT-47 T-0:02:05
EDS POWER ON T - 0:02:00 TO - 0:01:21
AAS CHECKS T - 0:01:55 TO - 0:01:52
EDS TEST T - 0:01:51 TO - 0:01:21
LV RF & TM CHECK T - 0:01:21 TO - 0:00:25
LV POWER TRANSFER TEST T-0:00:58
5 MIN HOLD FOR GMT RESET T-0:00:50
EDS POWER ON T - 0:00:44 TO + 0:00:15
CSM ARMED T-0:00:44
LV DRSCS CHECKS T-0:00:42
FT-47 T-0:00:37
FT-47 T-0:00:26
HOLD FOR L.O ADJUSTMENT T-0:00:15
ASTRO LAUNCH CIRCUIT COMM CKS T -0:00:13
S/C READY LIGHT ON T-0:00:06
ENG OUT LITES ON T - 0:00:04
HOLDFIRE TEST T 0:00:03
SIM FLIGHT
LV DRSCS CHECKS T+0:00:15
ATTITUDE CMD CHECKS L.O T+0:00:20
CSM/LV SEPARATION T + 0:01:30
LV DRSCS CHECKS T+0:06:30

SUPPORT

GMIL UHF/VHF CARRIER (CSM)
ETR (LV DRSCS PREPS)
LV UHF CARRIER (DRSCS)
ETR UHF CARRIER (LV DRSCS)
LV UHF CARRIER (DCS)
H/T
GMIL UHF CARRIER (LV DCS)
MSS PLF 2 BELOW LV STA 1400
MSS ELEVATOR NO. 2 LOCKED OUT
EMC MONITORING
ETR S/HF CARRIER & LV S/HF TRANSPONDER
CSM PYRO BUS ARM
LV S/HF CARRIER & LV S/HF TRANSPONDER

NASA/KSC JUN/73

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					OPERATING STEPS NOTE HAZARDOUS OPERATIONS ARE DENOTED WITH THE LETTER "H" IN THE REMARKS COLUMN. NOTE THE SPACE VEHICLE FRT INCLUDES A SPACE VEHICLE BACK-UP GUIDANCE SIMULATED FLIGHT TEST WHICH IS PERFORMED INDEPENDENTLY AS DESCRIBED IN APPENDIX A. THE TEST SUPERVISOR WILL CONTROL THE CDC TO PERFORM THIS TEST DURING THE GENERAL CONDUCT OF THE SPACE VEHICLE FRT. T-TIMES LISTED FOR OPERATIONS PRIOR TO CDC RESET TO T-4 HOURS, 31' 0" ARE FOR REFERENCE ONLY. THE 72-HOUR OPERATIONAL SCHEDULE WILL INDICATE WHEN THE AFOREMENTIONED TEST WILL OCCUR.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-29:45 - 1 DAY 5 HRS 45' 0"						
	181	1	MSTC	CVTS	VERIFY CLEARANCE TO START TEST. SC POWER WILL BE APPLIED IN APPROXIMATELY 45 MINUTES.	
-28:30 - 1 DAY 4 HRS 30' 0"						
	181	1	MSTC	CVTS	SC POWER UP COMPLETE. STARTING SYSTEMS TESTING.	
-25:05 - 1 DAY 1 HR 5' 0"						
	181	1	CVTS	GMIL SRO	VERIFY READY TO PROCEED WITH THE SPACE VEHICLE FLIGHT READINESS TEST PREPS.	
	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.	
-25:00 - 1 DAY 1 HR 0' 0"						
	181	1	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-24 05 - 1 DAY 0 HRS 5' 0"						
	181	1	GMIL	CVTS	ON-STATION CALIBRATION IS COMPLETE, GMIL RF IS OFF.	
	181	2	CVTS	SRO	GMIL ON-STATION CALIBRATION IS COMPLETE, CSM UHF AND VHF-AM CLEARANCE IS STILL REQUIRED.	
-24 00 - 1 DAY 0 HRS 0' 0"						
	181	1	MSTC	CVTS	VERIFY CLEARANCE FOR CSM RF UHF 2106.4, 2287.5, AND 2272.5 MHZ; VHF-AM 259.7 AND 296.8 MHZ. PROVIDE GMIL SUPPORT ON CH. 214. CSM COMMAND DECODER IS OFF.	
	181	2	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 IS OFF, KEEP CVTS ADVISED OF CARRIER STATUS.	
-22 HRS 0' 0"						
	181	1	MSTC	CVTS	CSM RF IS OFF, GMIL SUPPORT IS NO LONGER REQUIRED.	
	181	2	GMIL	CVTS	CSM UHF COMMAND CARRIER IS OFF.	
	181	3	CVTS	SRO	CSM RF IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-20 HRS 0' 0"						
	181	1	MSTC	CVTS	SC PROCEEDING WITH PREPS FOR BACKUP GUIDANCE SIMULATED FLIGHT TEST IN 1 HOUR.	
- 6 HRS 50' 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.	
- 6 HRS 45' 0"						
	181	1	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION.	
- 4 HRS 31' 0"						
	181	1	CVTS	CLTC MSTC GMIL SRO CTSC CPSS	VERIFY READY TO PROCEED WITH THE SPACE VEHICLE FLIGHT READINESS TEST.	
	181	2	CLTC	CVTS	LV POWER IS COMING ON.	
	181	3	CLTC	CVTS	PRESET CDC TO T-4 HOURS, 31' 0" AND COUNTING DOWN.	
	181 EM PA	4	CVTS		THE SPACE VEHICLE FLIGHT READINESS TEST AT PAD B WILL START ON MY MARK AT T-4 HOURS, 31' 0". 5 - 4 - 3 - 2 - 1 - MARK.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 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,	
					NOTE --- POWER BUS LIGHTS ON CONSOLE AB-6 MAY BE ACTIVATED DURING VOLTAGE CHECKS,	
- 3 HRS 56' 0"						
	181	1	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN,	
	181	2	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN,	
					NOTE --- THE DESTRUCT SYSTEM ENABLE KEY IS RELEASED AT THIS TIME TO SUPPORT S-IVB FUNCTIONAL TEST FOLLOWED BY LV DRSCS CLOSED LOOP TEST AT T-2 HOURS, 50' 0",	
	181	3	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-3 HRS 46' 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.	
	181	5	CLTC	CVTS	LV POWER IS ON.	
-3 HRS 45' 0"						
	181	1	CVTS	HFLT	VERIFY READY TO PROCEED WITH THE SPACE VEHICLE FLIGHT READINESS TEST.	
	181	2	GMIL	CVTS	ON-STATION CALIBRATION IS COMPLETE; GMIL RF IS OFF.	
	181	3	CVTS	SRO	GMIL ON-STATION CALIBRATION IS COMPLETE, GMIL RF IS OFF.	
-3 HRS 40' 0"						
	181	1	CLTC	CVTS	REQUEST ETR SUPPORT DRSCS/GSE PREPS WITH AUDIO LINE SIGNALS USING OIS CH, 264.	
	181	2	CVTS	SRO	REQUEST ETR SUPPORT DRSCS/GSE PREPS	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 3 HRS 40' 0"	CONTINUED					
					WITH AUDIO LINE SIGNALS USING OIS CH. 264.	
	181	3	CVTS	CLTC	GMIL AND RANGE BRINGING UP 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
					VERIFY IU COMMAND RECEIVER/DECODER IS OFF.	
	181	4	CVTS	MSTC	GMIL BRINGING UP 2106.4 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
					VERIFY CSM COMMAND DECODER IS OFF.	
	181	5	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.	
- 3 HRS 35' 0"						
	181	1	HFLT	CVTS	VERIFY IU COMMAND RECEIVER/DECODER AND CSM COMMAND DECODER ARE OFF.	
					BRING UP RANGE SAFETY 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
	181	2	CVTS	GMIL	BRINGING UP RANGE SAFETY 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
	181	3	CVTS	SRO	BRING UP RANGE SAFETY COMMAND CARRIER AND VERIFY.	
	181	4	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS ON.	
	181	5	CVTS	HFLT	RANGE SAFETY COMMAND CARRIER IS ON.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
= 3 HRS 35' 0"	CONTINUED					
	181	6	HFLT	CVTS	RANGE SAFETY SUPPORT FOR MCC COMMAND VALIDATION TEST IS NO LONGER REQUIRED. BRING DOWN RANGE SAFETY 450.0 MHZ COMMAND CARRIER. 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.	
	181	7	CVTS	SRO	RANGE SAFETY SUPPORT FOR MCC COMMAND VALIDATION TEST IS NO LONGER REQUIRED. BRING DOWN RANGE SAFETY COMMAND CARRIER AND VERIFY.	
	181	8	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	9	CVTS	GMIL	BRING UP 450.0 AND 2106.4 MHZ COMMAND CARRIERS FOR MCC COMMAND VALIDATION TEST. BRING UP 259.7, 296.8 AND 2106.4 MHZ CARRIERS FOR MCC AIR/GROUND VALIDATION TEST.	
	181	10	GMIL	CVTS	GMIL RF IS ON.	
	181	11	CVTS	HFLT	GMIL RF IS ON.	
= 3 HRS 30' 0"						
	181	1	CVTS	CTSC	VERIFY ALL REQUIRED PERSONNEL AND EQUIPMENT ARE ON STATION READY TO SUPPORT TEST OPERATIONS.	

OCL

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- ' HRS 15' 0"						
	181	1	HFLT	CVTS	MCC COMMAND VALIDATION TEST IS COMPLETE, MCC AIR/GROUND VALIDATION TEST IS COMPLETE. GMIL RF IS NO LONGER REQUIRED.	
	181	2	CVTS	GMIL	BRING DOWN 450.0, 2106.4, 259.7 AND 296.8 MHZ CARRIERS.	
	181	3	GMIL	CVTS	GMIL RF IS OFF.	
	181	4	CVTS	CLTC 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.	
- 3 HRS 10' 0"						
	181	1	CVTS	GMIL	POWER UP THE AIU AND VERIFY.	
	181	2	CVTS	LOM	VERIFY THE FOLLOWING SWITCHES ON THE ABORT REQUEST PANEL ARE OFF, ABORT REQUEST ENABLE, ABORT REQUEST A, AND ABORT REQUEST B.	
	181	3	CVTS	BWIC	TURN ON AAS POWER BUSSES.	
		4		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL GO ON POWER SUPPLY 1, 2, 3, AAS SUPPLY, AND ORDNANCE SAFE.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
≈ 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	THE GMIL COMMAND SYSTEM WILL BE SAFED MOMENTARILY FOR AIU ENABLE,	
	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,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 55' 0"						
	181	1	CVTS	SRO	VERIFY CLEARANCE TO RADIATE THE LV LOCAL RANGE SAFETY COMMAND CARRIER FOR CLOSED LOOP RANGE SAFETY TEST, PROTECTION IS REQUIRED. STANDBY ON CH. 261 FOR CLOSED LOOP RANGE SAFETY COMMAND CHECKS USING TEST CODE PLUGS AND CLOSED LOOP RANGE SAFETY AUDIO LINKS TO LC-39. VERIFY RADIATION CLEARANCE FOR THE 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.	
- 2 HRS 54' 0"						
	181	1	MSTC	CVTS	EDS POWER IS ON. SCDR IS ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
	181	2	CVTS	CLTC	SC EDS POWER IS ON. SCDR IS ON CH. 223 FOR ABORT LIGHT VERIFICATION.	
- 2 HRS 50' 0"						
	181	1	CLTC	CVTS	VERIFY THE RANGE IS READY FOR CLOSED LOOP RANGE SAFETY COMMAND CHECKS USING TEST CODE PLUGS AND CLOSED LOOP RANGE SAFETY AUDIO LINKS TO LC-39.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-2 HRS 56' 0"	CONTINUED					
	181	2	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND CARRIER AND RANGE READY TO SUPPORT DRSCS CLOSED LOOP TEST ON CH. 261. PROTECTION IS REQUIRED. NOTE ---- THE DESTRUCT SYSTEM ENABLE KEY WAS RELEASED TO CLVN AT T-3 HRS. 56' 0".	
	181	3	CLTC	CVTS	LV STARTING DRSCS TEST. LOCAL RANGE SAFETY COMMAND CARRIER IS COMING ON. NOTE ---- THE DETAILED SEQUENCES FOR THE ABORT LIGHT VERIFICATION AND THE DRSCS CLOSED LOOP TEST ARE IN THE LV PROCEDURE.	
	181	4	CLTC	CVTS	ABORT LIGHT CHECK COMPLETE. LV NO LONGER REQUIRES EDS POWER.	
	181	5	CVTS	MSTC	ABORT LIGHT CHECK COMPLETE. REQUEST EDS POWER OFF.	
	181	6	CVTS	SRO	VERIFY READY TO SUPPORT OPEN LOOP DRSCS TEST WITH TEST CODE PLUGS.	
	181	7	CLTC	CVTS	VERIFY THE RANGE READY TO SUPPORT OPEN LOOP DRSCS TEST WITH TEST CODE PLUGS. REQUEST RANGE SAFETY COMMAND CARRIER ON AND VERIFY.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 50' 0"	CONTINUED					
	181	8	CVTS	SRO	BRING UP RANGE SAFETY COMMAND CARRIER AND VERIFY,	
	181	9	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS ON,	
	181	10	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS ON,	
	181	11	CLTC	CVTS	LOCAL RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	12	CVTS	SRO	LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	13	CLTC	CVTS	REQUEST RANGE SAFETY COMMAND CARRIER OFF AND VERIFY,	
	181	14	CVTS	SRO	BRING DOWN RANGE SAFETY COMMAND CARRIER AND VERIFY,	
	181	15	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	16	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	17	CLTC	CVTS	DRSCS OPEN LOOP TEST IS COMPLETE, DESTRUCT SYSTEM ENABLE KEY RETURNED TO CPSS,	
	181	18	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RETURNED,	
	181	19	CVTS	SRO	LV DRSCS OPEN LOOP TEST IS COMPLETE,	
	181	20	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,	
	181	21	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 40' 0"						
	181	1	MSTC	CVTS	EDS POWER IS OFF.	
- 2 HRS 30' 0"						
	181	1	CLTC	CVTS	REQUEST MSS ELEVATOR 2 (WEST) BE LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 BE POSITIONED BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECKS.	
	181	2	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.	H
	181	3	CLTC	CVTS	STARTING SIM PROP LOADING.	
- 2 HRS 25' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR CSM FREQUENCIES 2106.4, 2272.5, 2287.5, 259.7 AND 296.8 MHZ.	
- 2 HRS 20' 0"						
	181	1	MSTC	CVTS	VERIFY CLEARANCE FOR CSM RF. UHF 2106.4, 2287.5 AND 2272.5 MHZ; VHF-AM 259.7 AND 296.8 MHZ. GMIL SUPPORT REQUIRED ON CH. 212. CSM COMMAND DECODER IS OFF. HFLT SUPPORT REQUIRED ON CH. 212.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 20' 0"	CONTINUED					
	181	2	CVTS	HFLT	CSM UHF COMMAND CARRIER IS COMING ON, CSM COMMAND DECODER IS OFF, SUPPORT REQUIRED ON CH. 212 FOR CSM AIR/GROUND VOICE CHECKS,	
	181	3	CVTS	GMIL	SUPPORT REQUIRED ON CH. 212 FOR CSM AIR/GROUND VOICE CHECKS, CSM COMMAND DECODER IS OFF, CLEAR TO BRING UP CSM UHF COMMAND CARRIER WHEN REQUESTED, KEEP CVTS ADVISED OF CARRIER STATUS,	
	181	4	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE GMIL IU COMMAND CARRIER,	
- 2 HRS 15' 0"	181	1	CLTC	CVTS	REQUEST GMIL AND HFLT REPORT TO CH. 261 TO SUPPORT FT-47 (PREFLIGHT COMMAND SYSTEM TEST), REQUEST CLEARANCE TO BRING UP GMIL IU COMMAND CARRIER, NOTE ---- IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER (REF. SEQ. 5, T-2 HOURS, 50' 0"),	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 15' 0"	CONTINUED					
	181	2	CVTS	HFLT	REPORT TO CH, 261 TO SUPPORT FT-47; IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER, GMIL IU COMMAND CARRIER WILL BE COMING ON WHEN REQUESTED BY CLTC,	
	181	3	CVTS	GMIL	REPORT TO CH, 261 TO SUPPORT FT-47, IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER, CLEAR TO BRING UP GMIL IU COMMAND CARRIER WHEN REQUESTED BY CLTC, KEEP CVTS ADVISED OF CARRIER STATUS,	
- 2 HRS 10' 0"						
	181	1	LOM	CVTS	READY TO SUPPORT AAS CHECKS AT T-1 HOUR, 55' 0" ON CH, 214,	
- 2 HRS 7' 0"						
	181	1	GMIL	CVTS	IU COMMAND CARRIER IS ON,	
	181	2	CVTS	HFLT	GMIL IU COMMAND CARRIER IS ON,	
	181	3	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF,	
	181	4	CVTS	SRO	LV LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF AND GMIL IU COMMAND CARRIER IS ON,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 2 HRS 0' 0"						
	181	1	MSTC	CVTS	EDS POWER COMING ON, CSM COMMAND DECODER COMING ON, GMIL AND HFLT SUPPORT REQUIRED ON CH. 214, LOM REQUIRED ON CH. 214 AT T=1 HOUR, 55' 0" FOR AAS CHECKS,	
	181	2	CVTS	CLTC	SC EDS POWER IS COMING ON,	
	181	3	CVTS	GMIL	STANDBY ON CH. 214 TO SUPPORT MCC/CSM COMMAND AND AAS CHECKS,	
	181	4	CVTS	HFLT	STANDBY ON CH. 214 TO SUPPORT MCC/CSM COMMAND AND AAS CHECKS,	
					CSM COMMAND DECODER IS COMING ON,	
	181	5	CTSC	CVTS	MSS ELEVATOR 2 (WEST) IS LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 IS BELOW AND WILL REMAIN BELOW LV STATION 1400 UNTIL AFTER T+2' 0",	
					OPERATOR IS IN ELEVATOR 1,	
	181	6	CLTC	CVTS	VERIFY THAT ELEVATOR 2 ON WEST SIDE OF MSS IS LOCKED OUT AT PLATFORM 5 AND MSS PLATFORM 2 IS BELOW LV STATION 1400.	
- 1 HR 58' 0"						
	181	1	CLTC	CVTS	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE,	
					REQUEST CLEARANCE TO BRING UP THE LOCAL CLOSED LOOP IU COMMAND CARRIER, PROTECTION IS NOT REQUIRED,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 1 HR 58' 0"	CONTINUED					
	181	2	CVTS	SRO	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE. VERIFY RADIATION CLEARANCE FOR THE LV LOCAL CLOSE LOOP IU COMMAND CARRIER, PROTECTION IS NOT REQUIRED.	
	181	3	CVTS	CLTC	BRING UP LOCAL CLOSED LOOP IU COMMAND CARRIER.	
	181	4	CLTC	CVTS	REMOVE GMIL IU COMMAND CARRIER. REPORT WHEN COMPLETE. LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON.	
	181	5	CVTS	GMIL	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON. BRING DOWN IU COMMAND CARRIER.	
	181	6	GMIL	CVTS	IU COMMAND CARRIER IS OFF.	
	181	7	CVTS	CLTC	GMIL IU COMMAND CARRIER IS OFF.	
	181	8	CVTS	HFLT SRO	GMIL IU 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.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
= 1 HR 55' 0"						
	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,	
	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	SEND ABORT LIGHT 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 TRANSMITTER LIGHT AND REQUEST B RECEIVED LIGHT = ON AND REQUEST A RECEIVED LIGHT = 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	HFLT	SEND ABORT LIGHT B = OFF (RTC 06),	
	214	17	SCDR		ABORT LIGHT = OFF,	
	214	18	MSTC	GMIL	RESET REQUEST B RECEIVED LIGHT.	
		19		LOM	NOTE THAT REQUEST B RECEIVED LIGHT = OFF,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 55' 0"						
	214	20	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM A) = ON (RTC 01),	
	214	21	SCDR		ABORT LIGHT = ON,	
	214	22	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM A) = OFF (RTC 00),	
	214	23	SCDR		ABORT LIGHT = OFF,	
	214	24	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM B) = ON (RTC 07),	
	214	25	SCDR		ABORT LIGHT = ON,	
	214	26	MSTC	HFLT	EXECUTE ABORT LIGHT (SYSTEM B) = OFF (RTC 06),	
	214	27	SCDR		ABORT LIGHT = OFF,	
	181	28	CLTC	CVTS	LV READY FOR EDS TEST, REQUEST SCO PERSONNEL SWITCH TO CH, 223,	
-1 HR 52' 0"						
	181	1	MSTC	LOM	AAS CHECKS COMPLETE,	
	181	2	MSTC	CVTS	AAS CHECKS COMPLETE,	
					CSM COMMAND DECODER IS OFF,	
	181	3	CVTS	BWIC	AAS EVENT RECORDERS TO SLOW SPEED,	
	181	4	CVTS	HFLT	CSM COMMAND DECODER IS OFF,	
	181	5	CVTS	MSTC	VERIFY MSEQ AND SCDR ON CH, 223 FOR EDS TEST,	
	181	6	CVTS	CLTC	SCO PERSONNEL ARE ON CH, 223 TO SUPPORT EDS TEST,	
	181	7	CVTS	LOM	SWITCH TO CH, 223 TO SUPPORT EDS TEST,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 1 HR 52' 0"	CONTINUED					
	223	8	CEDK	LOM	VERIFY ABORT REQUEST ENABLE ON,	
	223	9	LOM		ABORT REQUEST ENABLE A AND ABORT REQUEST ENABLE B LIGHTS ARE ON,	
					NOTE --- IN THE FOLLOWING SEQUENCE DO NOT OPERATE BOTH SWITCHES SIMULTANEOUSLY,	
	223	10	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCHES - ON,	
		11		LOM	NOTE THAT REQUEST A TRANSMITTED AND REQUEST B TRANSMITTED LIGHTS GO ON,	
	223	12	SCDR		ABORT LIGHT ON,	
	223	13	CEDK	LOM	ABORT REQUEST A AND ABORT REQUEST B SWITCHES - OFF,	
		14		LOM	NOTE THAT REQUEST A TRANSMITTED, REQUEST B TRANSMITTED, REQUEST A RECEIVED, AND REQUEST B RECEIVED LIGHTS GO OFF,	
	223	15	SCDR		ABORT LIGHT OFF,	
- 1 HR 21' 0"						
	181	1	CLTC	CVTS	EDS TEST IS COMPLETE,	
	181	2	MSTC	CVTS	EDS TEST IS COMPLETE, EDS POWER IS OFF,	
	181	3	CVTS	CLTC	EDS POWER IS OFF,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 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,	
	181	3	CLTC	CVTS	SIM PROPELLANT LOADING IS COMPLETE,	
- 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	CLTC	CVTS	REQUEST CPSS RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN AND TCS ARM KEY TO C3SP,	
	181	2	CVTS	CPSS	RELEASE DESTRUCT SYSTEM ENABLE KEY TO CLVN, RELEASE TCS ARM KEY TO C3SP,	
	181	3	CPSS	CVTS	DESTRUCT SYSTEM ENABLE KEY RELEASED TO CLVN, TCS ARM KEY RELEASED TO C3SP,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
= 1 HR 31' 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 FOR ANY CHANGES DURING LV POWER TRANSFER TEST.	
	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".	
-53' 0"						
	181	1	CLTC	CVTS	HOLD THE CDC AT T-50' 0" FOR 5 MINUTES FOR GMT RESET.	
	181	2	CVTS	MSTC HFLT GMIL SRO CTSC	THE CDC WILL BE STOPPED AT T-50' 0" FOR 5 MINUTES FOR GMT RESET.	
	181	3	CLTC	CVTS	REQUEST SRO SWITCH TO CH. 261 TO SUPPORT DRSCS CLOSED LOOP TEST USING TEST CODE PLUGS.	
	181	4	CVTS	SRO	STANDBY ON CH. 261 FOR LV DRSCS CLOSED LOOP TEST USING TEST CODE PLUGS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-53' 0"	CONTINUED					
					NOTE --- THE DETAILED SEQUENCES FOR THE DRSCS CLOSED LOOP TEST ARE IN THE LV PROCEDURE AT T-42' 0",	
-51'30"						
	181	1	CVTS	SRO	VERIFY RADAR BEACON 2 READOUTS COMPLETE AND READY FOR RADAR BEACON 1,	
-50' 0"						
					STARTING 5 MINUTE SCHEDULED HOLD FOR GMT RESET	
	181	1	CVTS	CLTC MSTC HFLT GMIL SRO CTSC	THE COUNT IS HOLDING FOR 5' 0" FOR GMT RESET,	
	181	2	CLTC	CVTS	LV READY TO RESUME COUNT AT COMPLETION OF HOLD, ---JUST PRIOR TO RESUMING COUNT---	
	181	3	CVTS	CLTC MSTC HFLT GMIL SRO CTSC	THE CDC WILL BE RESTARTED AT T-50' 0" ON MY MARK, 5 - 4 - 3 - 2 - 1 - MARK,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-50' 0"	CONTINUED					
	181	4	CLTC	CVTS	VERIFY RADAR BEACON 2 READOUTS COMPLETE AND READY FOR RADAR BEACON 1,	
	181	5	CLTC	CVTS	REQUEST RANGE READOUT RADAR BEACON 1, REPORT READOUTS TO VURF ON CH, 264,	
	181	6	CVTS	SRO	INTERROGATE RADAR BEACON 1, REPORT READOUTS TO VURF ON CH, 264,	
	181	7	CLTC	CVTS	REQUEST HFLT GO TO CH, 263 FOR TELETYPE DATA VERIFICATION,	
	181	8	CVTS	HFLT	GO TO CH, 263 FOR TELETYPE DATA VERIFICATION,	
-47' 0"						
	181	1	MSTC	CVTS	REQUEST GMIL SUPPORT ON CH, 213 FOR RF READOUTS,	
	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,	
-44' 0"					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, 6, T=44' 0"),	
	181	1	CVTS	CPSS	VERIFY CLEARANCE TO ARM SC PYRO BUSSES,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-44' 0"	CONTINUED					
	181	2	MSTC	CVTS	VERIFY CPSS PERMISSION TO ARM PYRO BUSSES, EDS POWER IS COMING ON, CSM COMMAND DECODER IS COMING ON,	
	181	3	CVTS	CLTC	SC EDS POWER IS COMING ON,	
	181	4	CVTS	HFLT	CSM COMMAND DECODER IS COMING ON,	
	181	5	MSTC	CVTS	CSM BUSSES ARE ARMED (PYRO AND LOGIC),	
	181	6	LOM	CVTS	THE ABORT REQUEST PANEL ORDNANCE ARMED LIGHT IS ON AND ORDNANCE SAFE LIGHT IS OFF, **********WARNING********** * * THE LES IS TO BE ARMED * * BEFORE PROCEEDING WITH * * LV DRSCS TEST WITH SRO * * (REF, SEQ, 5, * * T-44' 0"), * * **********	
	181	7	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,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-421' 0"	CONTINUED					
					NOTE --- LV LOCAL CLOSED LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON (REF. SEQ. 8, T-1 HOUR, 58' 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 FT-47.	
	181	4	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS ON.	
	181	5	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS ON.	
-391' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL AND HFLT MONITOR CH. 261 AND REPORT WHEN READY TO SUPPORT FT-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 FT-47 AND LIFTOFF TIME UPDATE.	

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

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35' 0"	CONTINUED					
	181	4		CVTS	NOTE CALCULATION REQUIRED TO DETERMINE COUNT CLOCK PICKUP TIME AT T-15 MINUTES IS.	
					NEW LIFTOFF TIME ------ HRS ; ------ MIN ; ------ SEC GMT.	
					MINUS 15 MINUTES 15 MIN ; 00 SEC	
					CDC PICKUP TIME ------ HRS ; ------ MIN ; ------ SEC GMT.	
-26' 0"						
	181	1	CVTS	SRO	VERIFY RADAR BEACONS HAD NO CHANGES DURING LV POWER TRANSFER.	
					VERIFY RANGE INTERROGATION OF RADAR BEACONS IS COMPLETE.	
-25' 0"						
	181	1	CLTC	CVTS	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE.	
	181	2	CLTC	CVTS	VERIFY RADAR BEACONS HAD NO CHANGES DURING POWER TRANSFER.	
					VERIFY RADAR BEACON INTERROGATION IS COMPLETE.	
					RANGE SUPPORT FOR RADAR BEACONS IS NO LONGER REQUIRED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-25' 0"	CONTINUED					
	181	3	CVTS	SRO	RADAR BEACON SUPPORT IS NO LONGER REQUIRED.	
-18' 0"					---CDC LIFTOFF ADJUSTMENT START TIME---	
	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	SEND LOM TO CH, 214 FOR ASTRO LAUNCH CIRCUIT COMM CHECKS,	
	181	2	CVTS	LOM	GO TO CH, 214 FOR ASTRO LAUNCH COMM CHECKS,	
	214	3	MSTC	CSTO	PUT ASTRO LAUNCH CIRCUIT ON VHF,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-15' 0"	CONTINUED					
	ALC	4		CSTO LOM MSTC	PERFORM COMM CHECKS WITH SCDR VIA VHF ON ASTRO LAUNCH CIRCUIT.	
	214	5	MSTC	CSTO	PUT ASTRO LAUNCH CIRCUIT ON UMBILICAL. RELEASE VHF.	
	ALC	6		CSTO LOM MSTC	PERFORM COMM CHECK WITH SCDR VIA UMBILICAL ON ASTRO LAUNCH CIRCUIT.	
	214	7	MSTC	CSTO	PUT CH. 214 ON UMBILICAL AND VHF.	
		8		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.	
- 9'58"						
	261	1	C4TC	CLTC	S-IVB TCH CHILLDOWN IS IN PROGRESS.	
- 6'30"						
	261	1	CLTC	CUES	EDS MODE TO LAUNCH.	
	261	2	CLTC	C3NP CUNP	INHIBIT SWITCH SELECTOR AND RESET COUNTERS.	
- 6' 0"						
	181	1	MSTC	CVTS	SC IS GO. SEND LOM TO ASTRO LAUNCH CIRCUIT AT T-4' 0".	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 6' 0"	CONTINUED					
	181	2	CVTS	LOM	GO TO ASTRO LAUNCH CIRCUIT AT T-4' 0".	
	181	3	CVTS	SRO	VERIFY GO FOR TERMINAL COUNT.	
- 5'30"						
	261	1	CLTC	C3NP	FUNCTION SELECTOR TO LAUNCH AND VERIFY ALL STAGES READY FOR POWER TRANSFER ON.	
- 5' 0"						
	261	1	CLTC	C3SP	ARM TACS.	
	181	2	CLTC	CVTS	REQUEST RSO HOLDFIRE AT T-3'30" THEN PROCEED AT T-3'25" BY THE CLOCK.	
	181	3	CVTS	SRO	REQUEST RSO HOLDFIRE AT T-3'30" THEN PROCEED AT T-3'25" BY THE CLOCK.	
- 4'30"						
	261	1	CLTC	CUSW	LVDA/ESE TO LVDA.	
					**********CAUTION********** * * * S-IVB CHILLDOWN MUST BE * * COMPLETE PRIOR TO THE * * NEXT LAUNCH VEHICLE * * SEQUENCE. * * * **********	
- 4' 0"						
	181	1	CVTS	CLTC	CLEARED FOR LAUNCH.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-4' 0"	CONTINUED					
		2		CSTO LOM MSTC	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 -0'0" EVERY 1 SECOND.	
-3'30"						
	261	1		SRO	INITIATE RSO HOLDFIRE.	
-3'25"						
	261	1		SRO	REMOVE RSO HOLDFIRE.	
-3' 6"						
	261	1	C3FR		VERIFY FIRING COMMAND IS ON (H).	
-0' 0"						
	261	1	C3FR		COMMIT.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 0' 0"	CONTINUED					
		2			**********WARNING********** * * * LIFTOFF MUST BE GIVEN * * BY CLVN WITHIN 4 * * SECONDS OF COMMIT. * * * **********	
		3		CLVN	SIMULATED LIFTOFF ENABLE ON (START TIME BASE NO. 1).	
+ 0' 0"						TB-1 +0'0"
	261	1	CLTC		LIFTOFF (PANEL LIGHT AND OTV).	
		2		H3FR	NOTE LIFTOFF (C).	
+ 2' 0"						TB-1 +2'0"
	181	1	CLTC	CVTS	MSS ELEVATOR 2 (WEST) AND PLATFORM 2 ARE RELEASED FOR NORMAL SERVICE.	
	181	2	CVTS	CTSC	RETURN MSS ELEVATOR 2 AND PLATFORM 2 TO NORMAL SERVICE.	
+ 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL RANGE SAFETY COMMAND CARRIER AND THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER. PROTECTION IS REQUIRED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 9'55"						TB-4 0'1,8"
	181	1	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP THE LOCAL RANGE SAFETY COMMAND AND LOCAL CLOSED LOOP IU COMMAND CARRIERS, PROTECTION IS REQUIRED.	
	181	2	CLTC	CVTS	HAVE SRO DISABLE RANGE SAFETY COMMAND CARRIER AND VERIFY. LOCAL CLOSED LOOP IU COMMAND AND LOCAL RANGE SAFETY COMMAND CARRIERS ARE ON. RANGE SAFETY COMMAND CARRIER IS NO LONGER REQUIRED.	
	181	3	CVTS	SRO	BRING DOWN RANGE SAFETY COMMAND CARRIER AND VERIFY. LV LOCAL CLOSED LOOP IU COMMAND AND LOCAL RANGE SAFETY COMMAND CARRIERS ARE ON. VERIFY RADIATION CLEARANCE FOR THE GMIL IU COMMAND CARRIER.	
	181	4	SRO	CVTS	RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	5	CVTS	HFLT GMIL	RANGE SAFETY COMMAND CARRIER IS OFF. LV LOCAL CLOSED LOOP IU COMMAND AND LOCAL RANGE SAFETY COMMAND CARRIERS ARE ON.	
	181	6	CVTS	CLTC	RANGE SAFETY COMMAND CARRIER IS OFF.	
	181	7	CVTS	SRO	VERIFY READY FOR CLOSED LOOP RANGE SAFETY COMMAND CHECKS USING TEST CODE PLUGS AND AUDIO LINKS TO LC-39 ON OIS CH. 261.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+13'53"						TB=4 +4'0"
	181	1	CLTC	CVTS	VERIFY THE RANGE IS READY FOR CLOSED LOOP RANGE SAFETY COMMAND CHECKS USING TEST CODE PLUGS AND AUDIO LINKS TO LC=39 ON CH. 261.	
+15' 0"						TB=4 +5'0"
	181	1	MSTC	CVTS	CLEAR TO SAFE AAS.	
	181	2	CVTS	HFLT	VERIFY CLEAR TO SAFE THE GMIL COMMAND SYSTEM MOMENTARILY TO POWER DOWN THE AAS.	
	181	3	CVTS	GMIL	SAFE THE GMIL COMMAND SYSTEM.	
					DISABLE AND POWER DOWN THE AIU AND VERIFY.	
					REARM THE COMMAND SYSTEM AND VERIFY.	
		4		LOM	NOTE THAT THE GMIL ON INDICATOR IS OFF.	
	181	5	MSTC	CVTS	PYRO BUSSES ARE SAFE.	
					EDS POWER IS OFF.	
					VERIFY GMIL COMMAND SYSTEM ARMED.	
	181	6	CVTS	CLTC	SC EDS POWER IS OFF.	
	181	7	CVTS	LOM	ABORT REQUEST ENABLE SWITCH TO OFF AND VERIFY.	
		8		LOM	NOTE THAT THE FOLLOWING LIGHTS ON THE ABORT REQUEST PANEL ARE OFF, REQUEST A ENABLED AND REQUEST B ENABLED.	
	181	9	CVTS	BWIC	POWER DOWN AAS POWER BUSSES AND POWER SUPPLIES, TURN OFF AAS EVENT RECORDERS.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+15' 0"	CONTINUED					
	181	10	BWIC	CVTS	AAS POWER BUSSES AND POWER SUPPLIES ARE POWERED DOWN AND EVENT RECORDERS ARE OFF.	
	181	11		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	12	CVTS	HFLT GMIL	ABORT ADVISORY SYSTEM IS POWERED DOWN.	
+15'53"						TB-4 +6'0"
	181	1	CLTC	CVTS	REQUEST GMIL ENABLE GMIL IU COMMAND CARRIER AND VERIFY. NOTE ---- THE IU RECEIVER/DECODER IS CAPTURED BY THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER.	
	181	2	CVTS	HFLT	IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER, GMIL IU COMMAND CARRIER IS COMING ON.	
	181	3	CVTS	GMIL	IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER. BRING UP IU COMMAND CARRIER.	
	181	4	GMIL	CVTS	IU COMMAND CARRIER IS ON.	
	181	5	CVTS	CLTC	GMIL IU COMMAND CARRIER IS ON.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+15'53"	CONTINUED					
	181	6	CLTC	CVTS	LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF.	
	181	7	CVTS	SRO	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF AND GMIL IU COMMAND CARRIER IS ON.	
	181	8	CLTC	CVTS	S-IB RANGE COMMANDS COMPLETE AND RANGE SUPPORT FOR DRSCS IS NO LONGER REQUIRED.	
	181	9	CVTS	SRO	S-IB RANGE COMMANDS COMPLETE AND RANGE SUPPORT FOR DRSCS IS NO LONGER REQUIRED.	
+ 1 HR 0' 0"						
	181	1	MSTC	CVTS	PYRO BUSSES WILL BE ARMED.	
+1 HR 45' 0"						
	181	1	MSTC	CVTS	CSM RF IS OFF. PYRO BUSSES ARE SAFE. EDS POWER IS OFF. STARTING SC SECURING.	
	181	2	CVTS	GMIL	BRING DOWN CSM UHF CARRIER AND VERIFY.	
	181	3	CVTS	SRO	CSM RF IS OFF.	
	181	4	CVTS	HFLT	GMIL CSM UHF CARRIER IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 4 HRS 45' 0"						TB=4 +4 HRS 36'0"
	181	1	MSTC	CVTS	SC POWER DOWN COMPLETE.	
+ 6 HRS 20' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER, PROTECTION IS NOT REQUIRED.	
+ 6 HRS 25' 0"						TB=5 +1 HR 0' 24"
	181	1	CVTS	HFLT	VERIFY HOUSTON COMMANDS ARE COMPLETE.	
	181	2	CLTC	CVTS	VERIFY HOUSTON COMMANDS ARE COMPLETE.	
	181	3	CLTC	CVTS	VERIFY CLEARANCE FOR LOCAL CLOSED LOOP IU COMMAND CARRIER (PROTECTION IS NOT REQUIRED).	
	181	4	CLTC	CVTS	LOCAL CLOSED LOOP IU COMMAND CARRIER IS ENABLED.	
					DISABLE GMIL IU COMMAND CARRIER AND VERIFY.	
	181	5	CVTS	GMIL	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON.	
					BRING DOWN IU COMMAND CARRIER.	
	181	6	GMIL	CVTS	IU COMMAND CARRIER IS OFF.	
	181	7	CVTS	CLTC	GMIL IU COMMAND CARRIER IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 6 HRS 25' 0"	CONTINUED					+1 HR 0'24"
	181	8	CVTS	HFLT SRO	GMIL IU COMMAND CARRIER IS OFF, LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON, IU COMMAND RECEIVER/DECODER IS ON, NOTE --- THE LV RANGE SAFETY TEST IS SCHEDULED TO START AT THIS TIME. THE DETAILED SEQUENCES ARE IN THE LV PROCEDURE.	
	181	9	CLTC	CVTS	CLOSED LOOP RANGE SAFETY COMMAND CHECKS COMPLETE, LOCAL RANGE SAFETY COMMAND CARRIER IS OFF,	
	181	10	CLTC	CVTS	IU COMMAND RECEIVER/DECODER IS OFF AND LOCAL CLOSED LOOP IU COMMAND CARRIER IS DISABLED,	
	181	11	CVTS	SRO	LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF, LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF,	
	181	12	CLTC	CVTS	LV RF AND TM CLEARANCE IS NO LONGER REQUIRED, DESTRUCT SYSTEM ENABLE KEY AND TCS ARM KEY RETURNED TO CPSS,	
	181	13	CPSS	CVTS	TCS AND DESTRUCT SYSTEM ENABLE KEYS HAVE BEEN RETURNED,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 6 HRS 25' 0"	CONTINUED					+1 HR 0'24"
	181	14	CVTS	SRO	ALL LV RF AND TM SYSTEMS ARE OFF, SV FRT COMPLETE, SUPPORT NO LONGER REQUIRED.	
	181	15	CVTS	CPSS CTSC HFLT GMIL	SV FRT COMPLETE, SUPPORT NO LONGER REQUIRED.	

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APPENDIX A

SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST

SPACE VEHICLE FLIGHT READINESS TEST -
RESCUE VEHICLE
DATE: JUNE 15, 1973
REVISION ORIGINAL

PAGE 70
TEST NO. CV-41407R
VEHICLE SKYLAB R

SKYLAB 3 & RESCUE SPACE VEHICLE BACKUP GUIDANCE SIM FLT TEST

OPERATIONS INTERFACE CONTROL CHART

MINUTES

GMIL ON STATION CALIBRATION
RESET CDC T-0 01 45
LV PWR ON PREPS
MCC COMMAND VALID TESTS
TCS FUNCT TEST T 0 01 00
PART I TILT & ROLL TEST T-0 00 05 TO +0 00 03 30
T-0 LIFTOFF
HOLD CDC T+0 00 03 30
RECONFIGURE FOR PART II
RESET CDC T-0 00 05
PART II POLARITY TEST T-0 00 05 TO +0 00 01 40
T-0 LIFTOFF
HOLD CDC T +0 00 01 40
RECONFIG FOR PART III
RESET CDC T 0 01 59
LV PWR TRANSF TEST T-0 00 58
FT 471 T-0 00 37
FT 471 T 0 00 26
EDS PWR ON
HOLD FOR L O TIME ADJUSTMENT
ENGINE OUT LITES ON T-0 00 04 10
SIM FLT
S IVB HAND CONTROLLER CKS L/O +0 00 03 20
S IVB ENGINE CUTOFF L O 0 00 10 50
S IVB HAND CONTROLLER CKS L/O +0 00 16
ACTIVATE THC O 0 00 40 50

OPERATIONAL SEQUENCE

NOTES PART III
LOCAL CLEARING IS REQUIRED WHEN ENGINES ARE GIMBALED

SUPPORT

CIF SUPPORT
LV UHF (DCS)
GMIL UHF CARRIER (LV DCS)
LV SHF CARRIER/TRANSPONDER
LV VHF (TM)
MSS ELEVATOR 2 LOCKED OUT
PLTF 2 BELOW STA 1400
LV UHF (DRSCS)

DATE 5 31 73 LA-PLN
EFFECTIVITY SL 3 & RESCUE
REVISION ORIGINAL

CONCURRENCE:
A. GOLDENBERG LS
J H BLOGAR IV
R T WOODS SF-OPN

APPROVAL:
R E. MOSER OLO

LEGEND

MINUTES

NASA/KSC JUN/73

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
					SV BACKUP GUIDANCE SIM FLIGHT TEST	
					OPERATING STEPS	
					NOTE THIS TEST IS TO START DURING A FIRST WORK SHIFT, AFTER THE COMPLETION OF THE SC G&C TESTING TASK, AND PRIOR TO THE START OF LV OPERATIONS IN SUPPORT OF SV FRT (T-6 HOURS, 6' 0").	
-3 HRS 5' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR LV FREQUENCIES 240.2, 250.7, 255.1, 256.2, 258.5 AND 450.0 MHZ FOR GMIL ON-STATION CALIBRATION.	
-3 HRS 0' 0"						
	181	1	GMIL	CVTS	VERIFY RADIATION CLEARANCE FOR ON-STATION CALIBRATION.	
-1 HR 45' 0"						
	181	1	CVTS	CLTC MSTC SRO CTSC	VERIFY READY TO PROCEED WITH THE SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST.	
	181	2	CLTC	CVTS	RESET CDC TO T-1 HOUR, 45' 0" AND COUNTING DOWN.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 45' 0"	CONTINUED					
	181 EM PA	3	CVTS		THE SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST AT PAD B WILL START ON MY MARK AT T-1 HOUR, 45' 0". 5 - 4 - 3 - 2 - 1 - MARK.	
-1 HR 30' 0"	181	1	CLTC	CVTS	LV POWER COMING ON.	
-1 HR 5' 0"	181	1	CVTS	HFLT	VERIFY READY TO PROCEED WITH THE SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST.	
	181	2	GMIL	CVTS	ON-STATION CALIBRATION IS COMPLETE, GMIL RF IS OFF.	
	181	3	CVTS	SRO	GMIL ON-STATION CALIBRATION IS COMPLETE, GMIL RF IS OFF. VERIFY RADIATION CLEARANCE FOR LV FREQUENCY 450.0 MHZ FOR MCC COMMAND VALIDATION TEST.	
	181	4	CVTS	CLTC	GMIL BRINGING UP 450.0 MHZ COMMAND CARRIERS FOR MCC COMMAND VALIDATION TEST. VERIFY IU COMMAND RECEIVER/DECODER IS OFF.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 0' 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,	
	181	5	HFLT	CVTS	VERIFY IU COMMAND RECEIVER/DECODER IS OFF, BRING UP GMIL 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST.	
	181	6	CVTS	GMIL	BRING UP 450.0 MHZ COMMAND CARRIER FOR MCC COMMAND VALIDATION TEST,	
	181	7	GMIL	CVTS	GMIL RF IS ON,	
	181	8	CVTS	HFLT	GMIL RF IS ON,	
-40' 0"						
	181	1	HFLT	CVTS	MCC COMMAND VALIDATION TEST IS COMPLETE, GMIL RF IS NO LONGER REQUIRED,	
	191	2	CVTS	GMIL	BRING DOWN 450.0, MHZ COMMAND CARRIER,	
	181	3	GMIL	CVTS	GMIL RF IS OFF,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-40' 0"	CONTINUED					
	181	4	CVTS	CLTC	MCC COMMAND VALIDATION TEST IS COMPLETE.	
	181	5	CVTS	SRO	MCC COMMAND VALIDATION TEST IS COMPLETE. GMIL RF IS OFF.	
-32' 0"						
	181	1	CLTC	CVTS	LV POWER IS ON.	
- 5' 0"						
	181	1	CLTC	CVTS	REQUEST MSS ELEVATOR 2 (WEST) BE LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 BE POSITIONED BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECKS.	
	181	2	CVTS	CTSC	LOCKOUT MSS ELEVATOR 2 (WEST) AT MSS PLATFORM 5 AND POSITION MSS PLATFORM 2 BELOW LV STATION 1400 TO SUPPORT LONG RANGE THEODOLITE CHECK. STATION OPERATOR IN MSS ELEVATOR 1. NOTE ---- STARTING PART I, BACKUP GUIDANCE TILT AND ROLL TEST.	H
- 0' 0"						
		1		CVTS	START CDC COUNT UP.	
+ 3'30"						
	181	1	CLTC	CVTS	HOLD CDC.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 3'30"	CONTINUED					
	181 EM PA	2	CVTS		THE CDC IS BEING HELD FOR RECONFIGURATION FOR PART II - SPACE VEHICLE BACKUP GUIDANCE POLARITY TEST,	
- 5' 0"					NOTE ---- STARTING PART II, BACKUP GUIDANCE POLARITY TEST,	
	181	1	CLTC	CVTS	RESET CDC TO T-5' 0" AND COUNTING DOWN.	
	181 EM PA	2	CVTS		THE SPACE VEHICLE BACKUP GUIDANCE POLARITY TEST AT PAD B WILL START ON MY MARK AT T=5' 0", 5 - 4 - 3 - 2 - 1 - MARK,	
- 0' 0"		1		CVTS	START CDC COUNT UP,	
+ 1'40"	181	1	CLTC	CVTS	HOLD CDC,	
	181 EM PA	2	CVTS		THE CDC IS BEING HELD FOR RECONFIGURATION FOR PART III - SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 1'40"	CONTINUED					
					5 MINUTES PRIOR TO RESUMING COUNT	
	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, 5765.0 AND 5690.0 MHZ,	
- 1 HR 59' 0"						
	181	1	CLTC	CVTS	RESET CDC TO T-1 HOUR, 59' 0" AND COUNTING DOWN,	
	181 EM PA	2	CVTS		THE SPACE VEHICLE BACKUP GUIDANCE SIMULATED FLIGHT TEST AT PAD B WILL START ON MY MARK AT T-1 HOUR, 59' 0", 5 - 4 - 3 - 2 - 1 - MARK,	
	181	3	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, 5765.0 AND 5690.0 MHZ,	
	181	4	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON,	
-1 HR 50' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE GMIL IU COMMAND CARRIER,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 45' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL AND HFLT REPORT TO CH, 261 TO SUPPORT FT-47 (PRE-FLIGHT COMMAND SYSTEM TEST), REQUEST CLEARANCE TO BRING UP GMIL IU COMMAND CARRIER, NOTE ---- IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER (REF, SEQ. 4, T-1 HOUR, 59' 0",)	
	181	2	CVTS	HFLT	REPORT TO CH, 261 TO SUPPORT FT-47, IU COMMAND RECEIVER/DECODER CARTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER, GMIL IU COMMAND CARRIER WILL BE COMING ON WHEN REQUESTED BY CLTC,	
	181	3	CVTS	GMIL	REPORT TO CH, 261 TO SUPPORT FT-47, IU COMMAND RECEIVER/DECODER CARTURED BY THE LV LOCAL OPEN LOOP IU COMMAND CARRIER, CLEAR TO BRING UP GMIL IU COMMAND CARRIER WHEN REQUESTED BY CLTC, KEEP CVTS ADVISED OF CARRIER STATUS,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 40' 0"						
	181	1	CTSC	CVTS	MSS ELEVATOR 2 (WEST) IS LOCKED OUT AT MSS PLATFORM 5 AND MSS PLATFORM 2 IS BELOW AND WILL REMAIN BELOW LV STATION 1400 UNTIL AFTER T+1' 0" (PART III), OPERATOR IS IN ELEVATOR 1,	
	181	2	CLTC	CVTS	VERIFY THAT ELEVATOR 2 ON WEST SIDE OF MSS IS LOCKED OUT AT PLATFORM 5 AND MSS PLATFORM 2 IS BELOW LV STATION 1400.	
-1 HR 37' 0"						
	181	1	GMIL	CVTS	IU COMMAND CARRIER IS ON,	
	181	2	CVTS	HFLT	GMIL IU COMMAND CARRIER IS ON,	
	181	3	CLTC	CVTS	LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF,	
	181	4	CVTS	SRO	LV LOCAL OPEN LOOP IU COMMAND CARRIER IS OFF AND GMIL IU COMMAND CARRIER IS ON,	
-1 HR 28' 0"						
	181	1	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,	
	181	2	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,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 28' 0"	CONTINUED					
	181	3	CVTS	CLTC	BRING UP LOCAL CLOSED LOOP IU COMMAND CARRIER,	
	181	4	CLTC	CVTS	REMOVE GMIL IU COMMAND CARRIER, REPORT WHEN COMPLETE,	
					LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
	181	5	CVTS	GMIL	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
					BRING DOWN IU COMMAND CARRIER,	
	181	6	GMIL	CVTS	IU COMMAND CARRIER IS OFF,	
	181	7	CVTS	CLTC	GMIL IU COMMAND CARRIER IS OFF,	
	181	8	CVTS	HFLT SRO	GMIL IU COMMAND CARRIER IS OFF,	
					LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS ON,	
					IU COMMAND RECEIVER/DECODER IS ON,	
- 1 HR 15'30"						
	181	1	CLTC	CVTS	LV STARTING FLIGHT CONTROL SYSTEM TEST,	
- 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,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-1 HR 3' 0"						
	181	1	CLTC	CVTS	VERIFY CLEARANCE TO BRING UP LOCAL RANGE SAFETY COMMAND CARRIER, PROTECTION IS REQUIRED,	
-59' 0"						
	181	1	CLTC	CVTS	LV STARTING POWER TRANSFER TEST,	
-50' 0"						
	181	1	CVTS	SRO	VERIFY RADIATION CLEARANCE FOR THE GMIL IU COMMAND CARRIER,	
-45' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL ENABLE IU COMMAND CARRIER AND VERIFY, NOTE --- LV LOCAL CLOSED LOOP IU COMMAND CARRIER AND IU COMMAND RECEIVER/DECODER ARE ON (REF. SEQ. 8, T=1 HOUR, 28' 0").	
	181	2	CVTS	MFLT	GMIL IU COMMAND CARRIER IS COMING ON,	
	181	3	CVTS	GMIL	IU COMMAND RECEIVER/DECODER CAPTURED BY THE LV LOCAL CLOSED LOOP IU COMMAND CARRIER, BRING UP IU COMMAND CARRIER,	
	181	4	GMIL	CVTS	IU COMMAND CARRIER IS ON,	
	181	5	CVTS	CLTC	GMIL IU COMMAND CARRIER IS ON,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-45' 0"	CONTINUED					
	181	6	CLTC	CVTS	LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF.	
	181	7	CVTS	SRO	LV LOCAL CLOSED LOOP IU COMMAND CARRIER IS OFF.	
-39' 0"						
	181	1	CLTC	CVTS	REQUEST GMIL AND HFLT MONITOR CH, 261 AND REPORT WHEN READY TO SUPPORT FT-47 (PREFLIGHT COMMAND SYSTEM TEST).	
	181	2	CVTS	HFLT GMIL	IU COMMAND RECEIVER/DECODER IS ON, GMIL IU COMMAND CARRIER IS ON, MONITOR CH, 261 AND REPORT WHEN READY TO SUPPORT FT-47 AND LIFTOFF TIME UPDATE.	
-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	HFLT	READ BACK TIMES TO THE FLIGHT DIRECTOR FOR CONFIRMATION.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-35' 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	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	
-25' 0"						
	181	1	MSTC	CVTS	SC PYRO BUSSES WILL BE ARMED, EDS POWER IS COMING ON,	
	181	2	CVTS	CLTC	SC EDS POWER IS COMING ON,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-25' 0"	CONTINUED					
	181	3	CLTC	CVTS	HOUSTON PREFLIGHT COMMAND SYSTEM TEST IS COMPLETE.	
-18' 0"					---CDC LIFTOFF ADJUSTMENT START TIME---	
	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.	
- 6'30"						
	261	1	CLTC	CUES	EDS MODE TO LAUNCH.	
- 5'30"						
	261	1	CLTC	C3NP	FUNCTION SELECTOR TO LAUNCH AND VERIFY ALL STAGES READY FOR POWER TRANSFER ON.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
-5' 0"						
	261	1	CLTC	C3SP	ARM TCS.	
-4'30"						
	261	1	CLTC	CUSW	ESE/LVDA TO LVDA	
-4' 0"						
	181	1	CVTS	CLTC	CLEARED FOR LAUNCH.	
-3'40"						
	261	1	CLTC	SUST	ON CVTS COUNT AT T+0' 9" SIMULATE ATTITUDE REFERENCE FAILURE.	
	181 261	2	CVTS		NOTE ---- COUNT TIME ANNOUNCEMENTS ---------- -3'30" TO -0'40" EVERY 10 SECONDS. -0'40" TO -0'15" EVERY 5 SECONDS. -0'11" TO +0'10" EVERY 1 SECOND.	
-3' 6"						
	261	1	C3FR		FIRING COMMAND ON (H).	
-0'17"						
	261	1	CUEV		VERIFY GUIDANCE RELEASE (DEE 0869 ON).	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
- 0' 0"						
	261	1	C3FR		COMMIT,	
		2		CLVN	**********WARNING********** * * LIFTOFF MUST BE GIVEN * * WITHIN 4 SECONDS OF * * COMMIT, * * ********** LIFTOFF MUST BE GIVEN WITHIN 4 SECONDS OF COMMIT,	
		3	CLVN		SIMULATED LIFTOFF ENABLE ON, START TIME BASE 1,	
+ 0' 0"						TB=1 +0'0"
		1	CLTC		NOTE LIFTOFF (PANEL LIGHT AND OTV),	
		2	C3FR		NOTE LIFTOFF (C) DEE 2176,	
	181 261	3	CVTS	SUST	PLUS 1 +2 +3 +4 +5 +6 +7 +8 +9 +10,	
					NOTE --- THE DETAILED SEQUENCES FOR POST LIFTOFF OPERATIONS ARE LISTED UNDER TB=1 IN TCP V-20119 (BACKUP GUIDANCE SIMULATED FLIGHT TEST).	
+ 1' 0"						TB=1 +1'0"
	181	1	CLTC	CVTS	MSS ELEVATOR 2 (WEST) AND PLATFORM 2 ARE RELEASED FOR NORMAL SERVICE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 1' 0"	CONTINUED					
	181	2	CVTS	CTSC	RETURN MSS ELEVATOR 2 AND PLATFORM 2 TO NORMAL SERVICE,	
+15' 0"						TB=4 +4:30"
	181	1	MSTC	CVTS	EDS POWER IS OFF,	
	181	2	CVTS	CLTC	SC EDS POWER IS OFF,	
+2 HRS 46' 0"						TB=5 +54:54"
	181	1	CVTS	HFLT	VERIFY HOUSTON COMMANDS ARE COMPLETE,	
	181	2	CLTC	CVTS	VERIFY HOUSTON COMMANDS ARE COMPLETE,	
	181	3	MSTC	CVTS	PYRO BUSSES ARE SAFE,	
					BACKUP GUIDANCE TEST SUPPORT IS COMPLETE,	
	181	4	CLTC	CVTS	BACKUP GUIDANCE SIMULATED FLIGHT TEST IS COMPLETE,	
					IU COMMAND RECEIVER/DECODER IS OFF,	
					LOCAL RANGE SAFETY COMMAND CARRIER IS OFF,	
					LV RF AND TM CLEARANCE IS NO LONGER REQUIRED,	
					GMIL SUPPORT IS NO LONGER REQUIRED,	
	181	5	CVTS	GMIL	IU COMMAND RECEIVER/DECODER IS OFF,	
					BRING DOWN IU COMMAND CARRIER,	
	181	6	GMIL	CVTS	IU COMMAND CARRIER IS OFF,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+2 HRS 46' 0"	CONTINUED					TB-5 +54154"
	181	7	CVTS	SRO	BACKUP GUIDANCE SIMULATED FLIGHT TEST IS COMPLETE, GMIL IU COMMAND CARRIER IS OFF, LV LOCAL RANGE SAFETY COMMAND CARRIER IS OFF, ALL LV RF AND TM ARE OFF,	
	181	8	CVTS	HFLT	IU COMMAND RECEIVER/DECODER IS OFF, GMIL IU COMMAND CARRIER IS OFF, BACKUP GUIDANCE SIMULATED FLIGHT TEST IS COMPLETE,	
	181	9	CVTS	GMIL CTSC	BACKUP GUIDANCE SIMULATED FLIGHT TEST IS COMPLETE, SUPPORT NO LONGER REQUIRED,	
					END OF APPENDIX A	

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