

APOLLO 16

LM LUNAR  
SURFACE CHECKLIST

PART NO.	S/N
SKB32100122 - 363	1001

APOLLO 16

LM LUNAR SURFACE CHECKLIST

MARCH 13, 1972

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It is requested that any organization having comments, questions, or suggestions concerning this document contact Wallace Teague, EVA/IVA Procedures Branch, CG34, Building 4, room 212, telephone 483-3091.

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FIRST REV ACT

EVA 1 PREP

EVA 1 POST

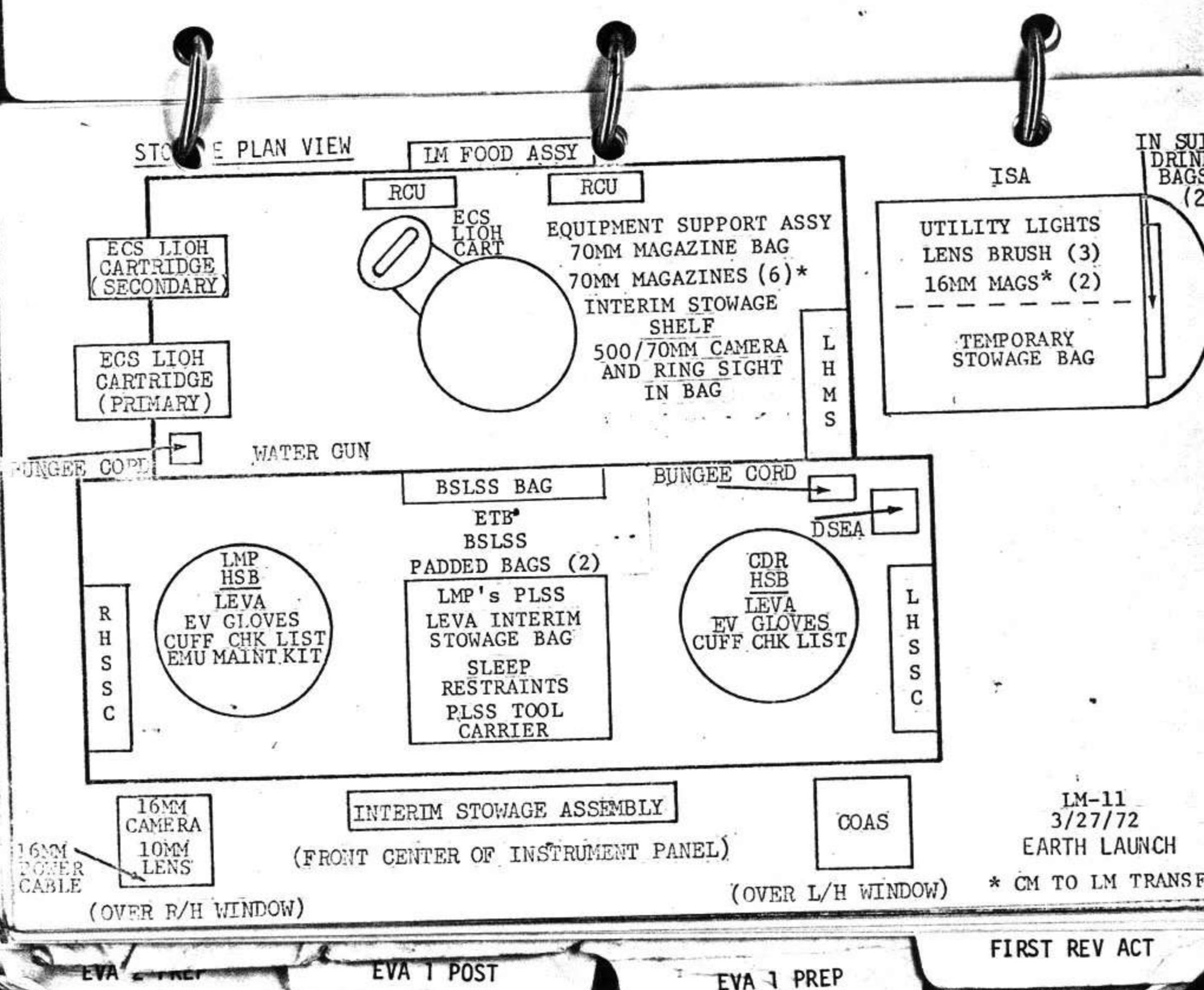
EVA 2 PREP

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Any organization having specific comments regarding a particular area of responsibility should contact the individual(s) listed above.

DATE 12/21/71



RIGHT HAND SIDE STOWAGE CONSOLE

70MM MAG (3) IN XFR BAG *	70MM CAMERA TRIGGER 20 BAG BRKT. ASSY. (2)	70MM RESEAU CAMERA W/60MM LENS W/ COVER W/POLARIZING FILTER	NECK RING DUST COVER(2)
16MM CAMERA WEDGE BRACKET	SPARE FUSE (2) W/BAG CDR/LMP CUFF CHECKLISTS	70MM MAGAZINES 4 EA. IN TRANSFER BAG	LCG ADAPT (2)
LEC WAIST TETHER KIT	16MM MAGAZINES (6) IN TRANSFER BAG * W/DOSIMETER	WEBBING   TIEDOWN (CONTINGENCY)	70MM RCU BRACKET TOOL "B" DUST CAPS (2) ACA PLUG VENT CAP BUNGEE CORD NEEDLE NOSE PLIERS
EMPTY		SAMPLE SCALE	AOT HIGH DENS FILTER A AOT EYE-GUARD ASSY EYEPAT
			LM-11 3/27/72 EARTH LAUNCH

\*CM TO LM TRANSF

LEFT HAND MID SECTION STOWAGE

CDR'S LUNAR BOOTS PURGE VALVE ASSEMBLY		FLIGHT DATA FILE DATA CARD KIT ACCESSORY KIT WITH 3 EA. BOOK CLAMPS & 4 EA. FILE CLIPS 3 EA. C B LATCH CAPS MAP HOLDER - LRV C/L SUN COMPASS & CIRCULAR LEVEL *LM XFR. DATA CARD KIT
LMP'S LUNAR BOOTS PURGE VALVE ASSEMBLY	MED KIT (2) BIOELECTRODE BAG TOOTH PASTE TOOTH BRUSHES	(PLSS RECHARGE STATION)
FLAG KIT	LMP'S OPS IN OPS/SRC ADAPTER	CDR'S PLSS W/TOOL HARNESS
PPK (3)	CDR'S OPS IN OPS/SRC ADAPTER	LCG-2      ICG-2
CONN PLIERS ED CABLES JET- TISSON STOWAGE BAG (2)		LM-11 3/27/72 EARTH LAUNCH *CM TO LM TRANSFER

EVA 2 PREP

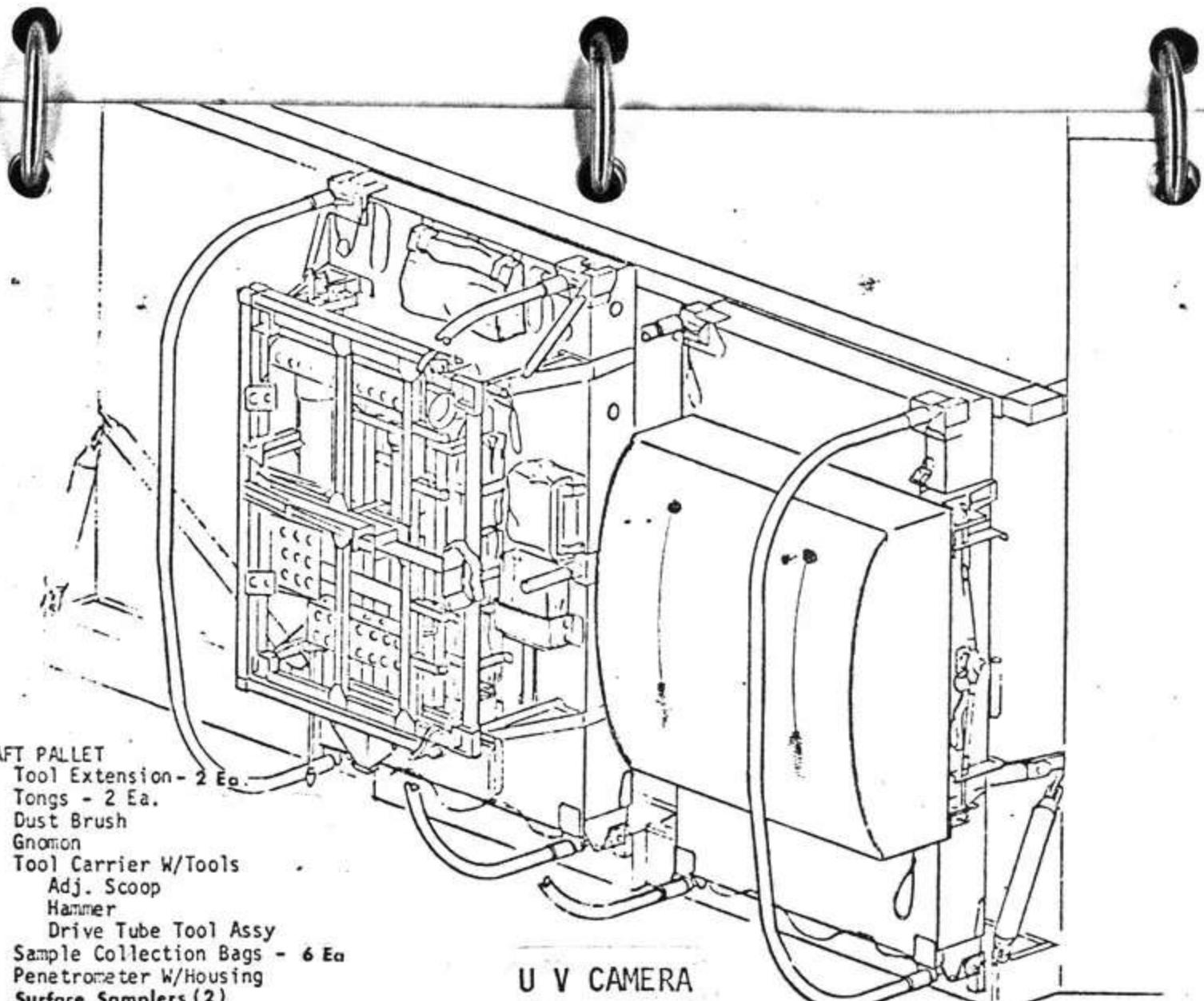
EVA 1 POST

EVA 1 PREP

FIRST REV ACT

LEFT HAND SIDE STOWAGE COMPARTMENT

FACIAL WET WIPES 9 EA.	URINE RECEPTACLE SYSTEM	LM UTILITY TOWEL ASSY 3 SETS (2 TOWELS PER SET)	TAPE ROLLS CONTING VELCRO KIT	TISSUE DISPENSER	CWG E A L D E A C P
EMPTY	JETTISON BAG (2)	URINE COLLECTION ASSY 2 EA.	E M B S S G I S	TISSUE DISPENSER	T R I C A L * T T E R
	UCTA CLAMP 2 EA. INFLIGHT RETAIN STRAPS 4EA.* UTILITY STRAPS 3EA,*	COAS BULB COAS FILTER	DEFECATION COLLECTION DEVICE 6 EA.	6 EA.	2 EA.
		CDR HAMMOCK W/ TOWELS (2) IMP HAMMOCK W/ TOWELS (2)			LM-11 3/27/72 EARTH LAUNCH *CM TO LM TRANS



Vice Device  
LCRU Retainer Strap  
Penetrometer Accessory Holder  
LPM W/Shade

QUAD III

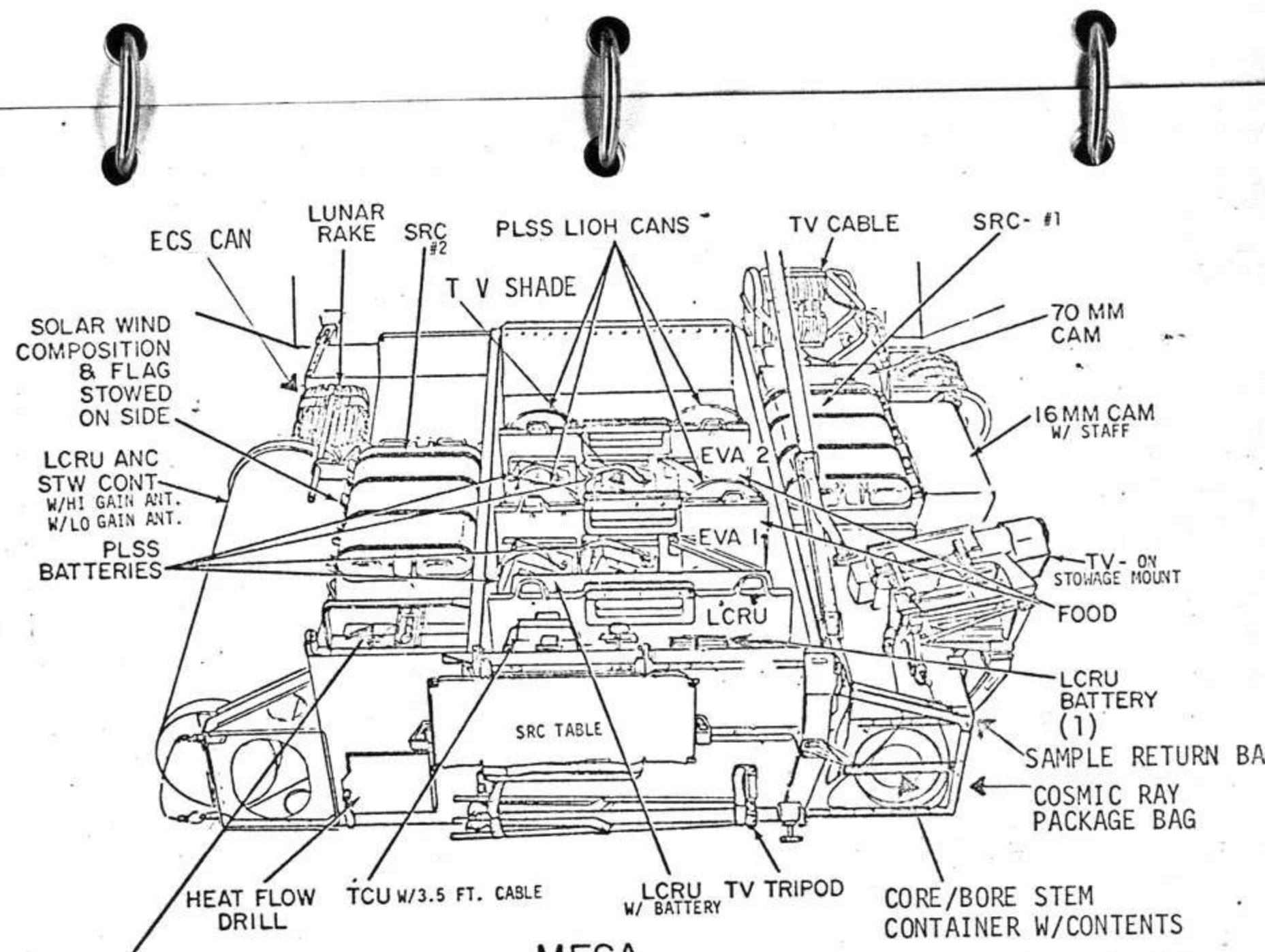
LM-11  
3/3/72  
EARTH LAUNCH

EVA 2 PREP

EVA 1 POST

EVA 1 PREP

FIRST REV ACT



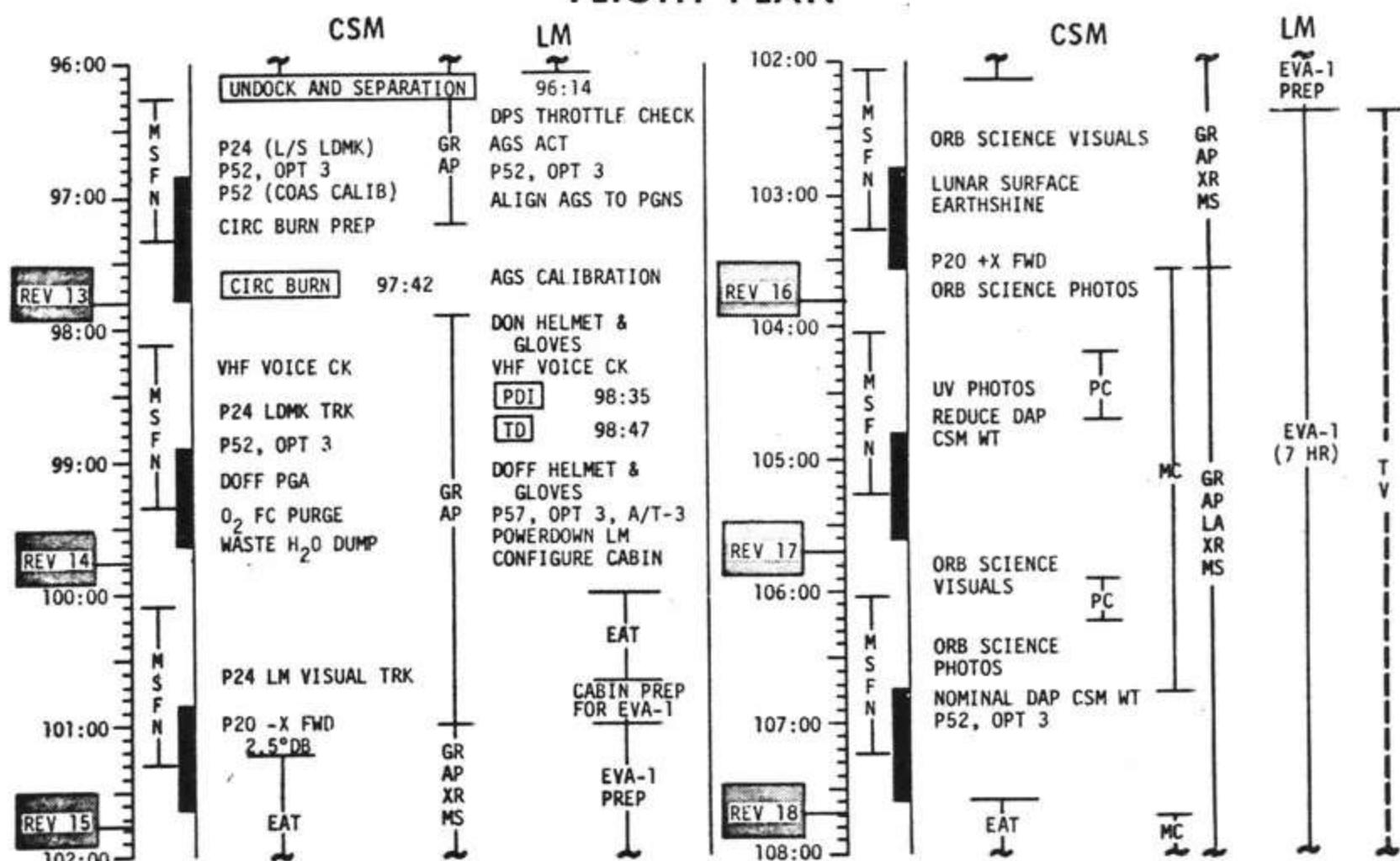
SAMPLE CONTAINMENT BAGS - 6 EA.  
SOLAR WIND COMPOSITION BAG (ON BOTTOM)  
& CORE STEM BAG

MESA  
QUAD IV

LM-11  
3/3/72  
EARTH LAUNCH

DATE 3/13/72

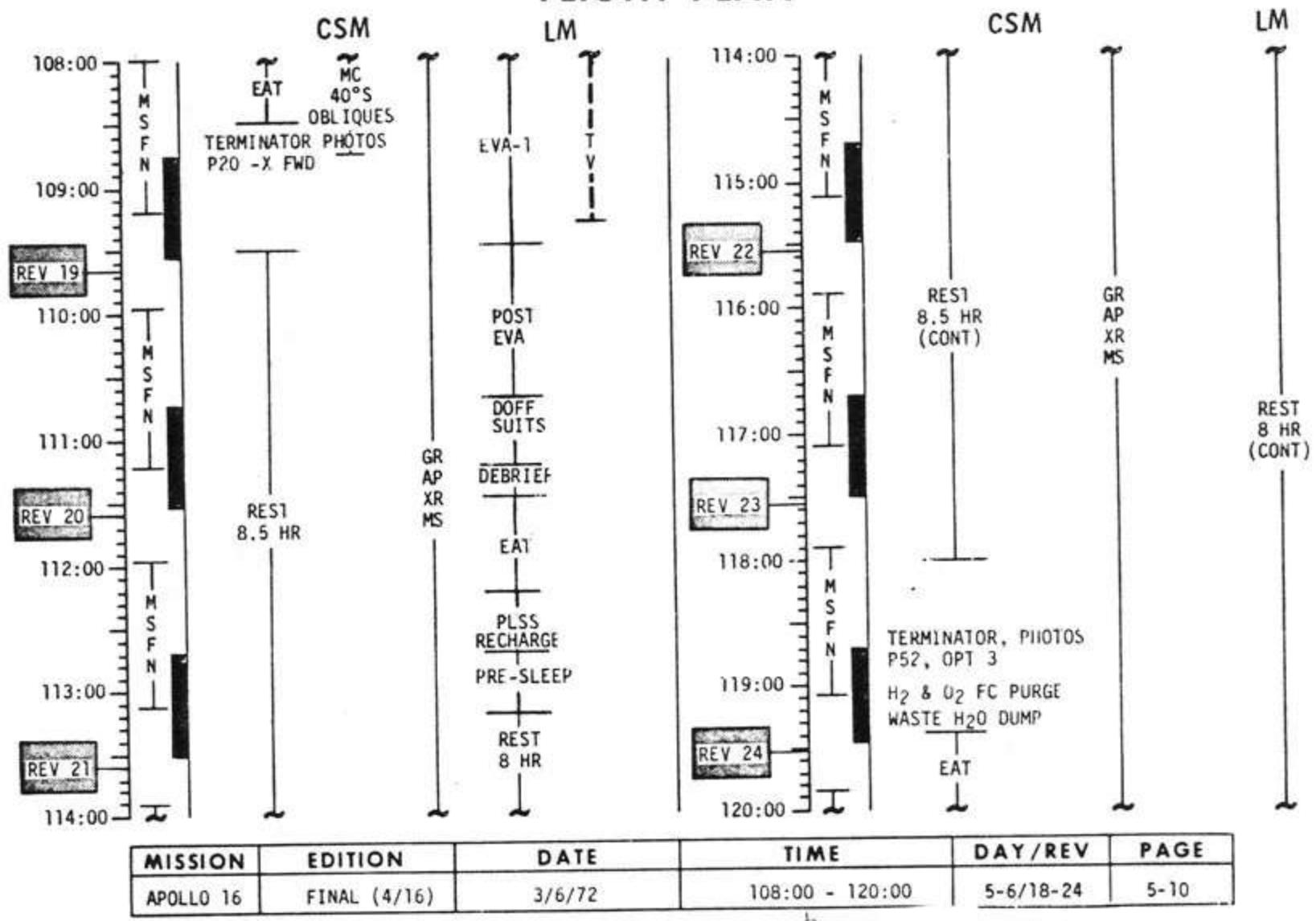
## FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 108:00	5/12-18	5-9

a

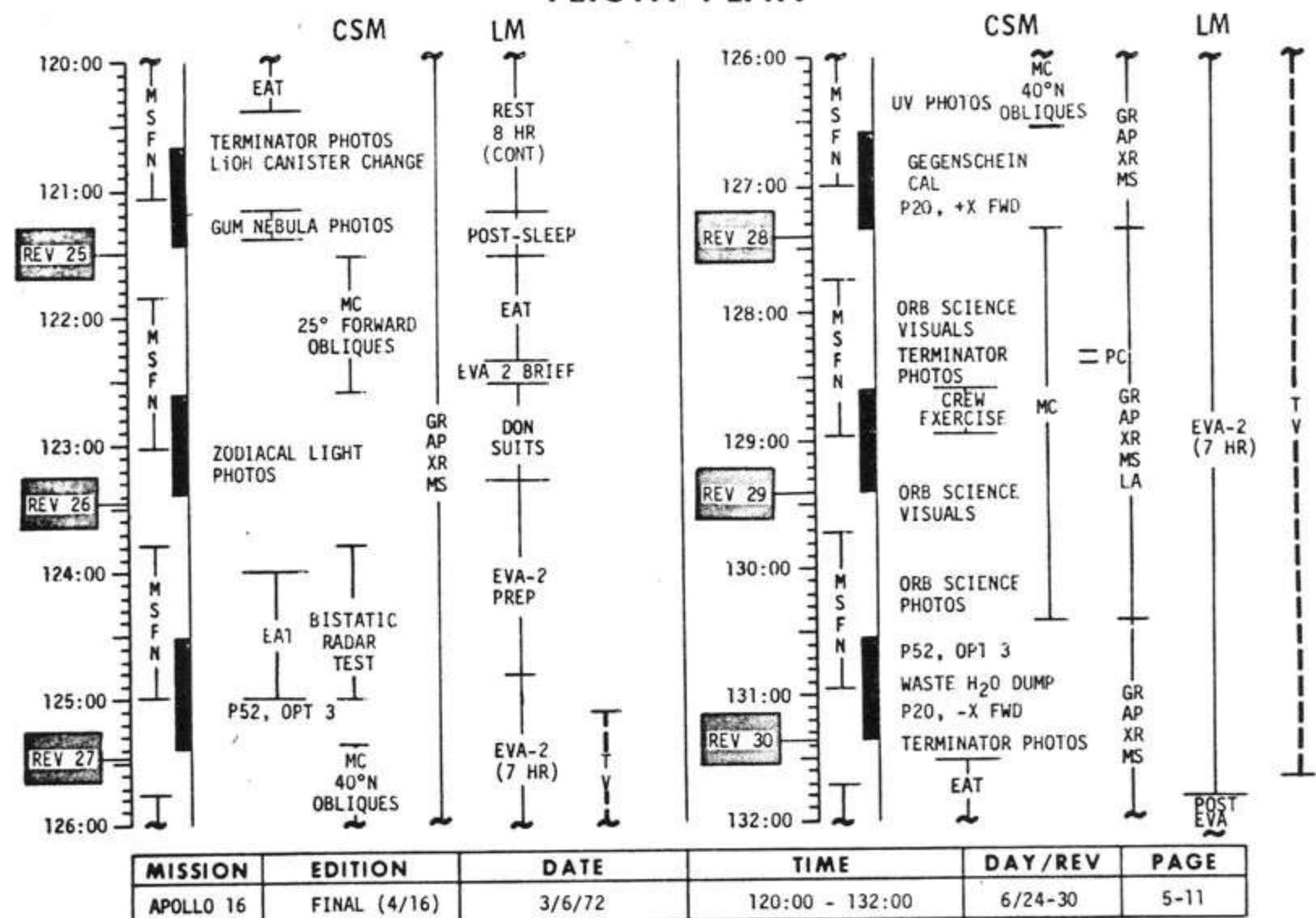
# FLIGHT PLAN



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DATE 3/13/72

# FLIGHT PLAN



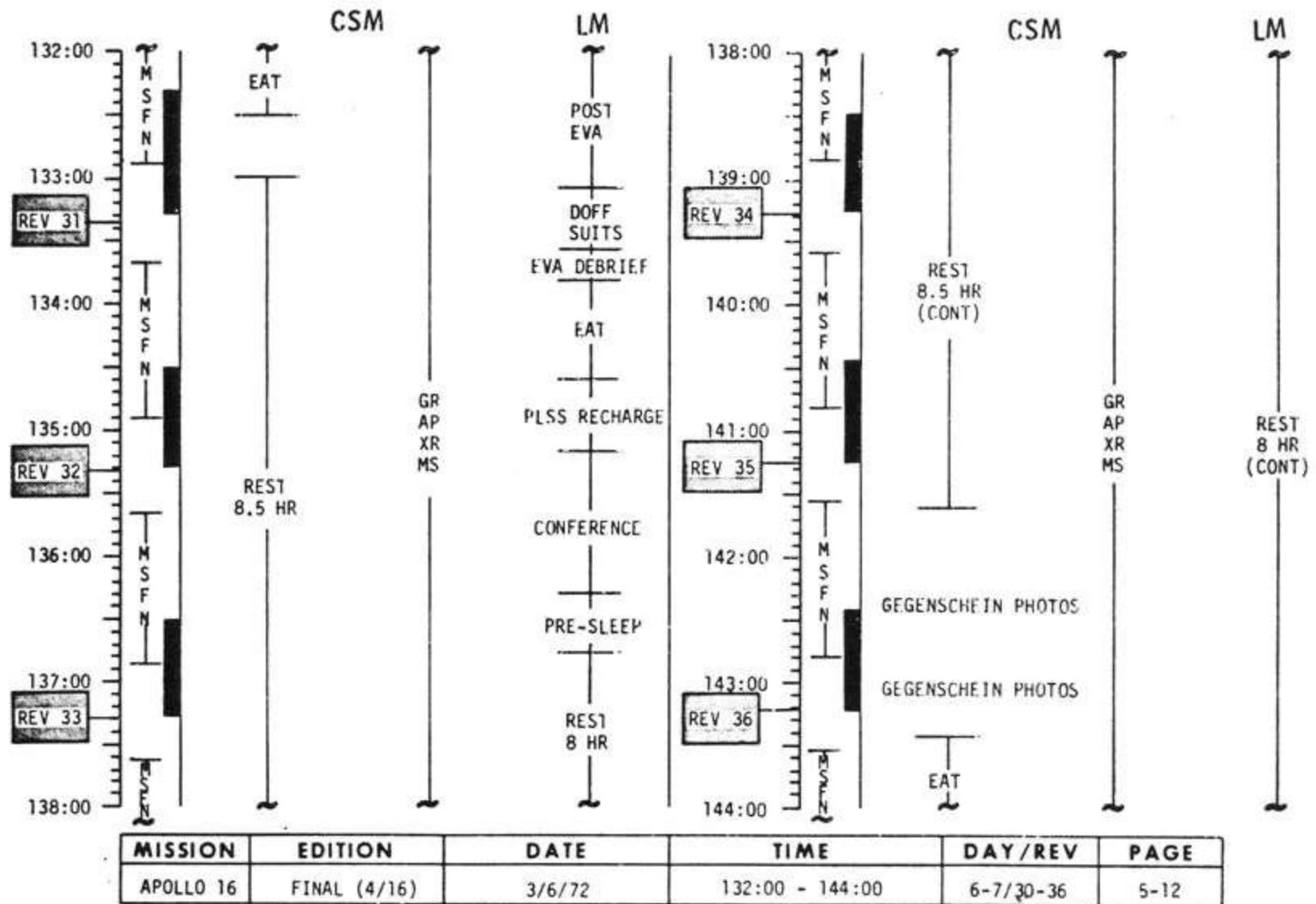
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EVA 1 POST

EVA 1 PREP

FIRST REV ACT

## FLIGHT PLAN

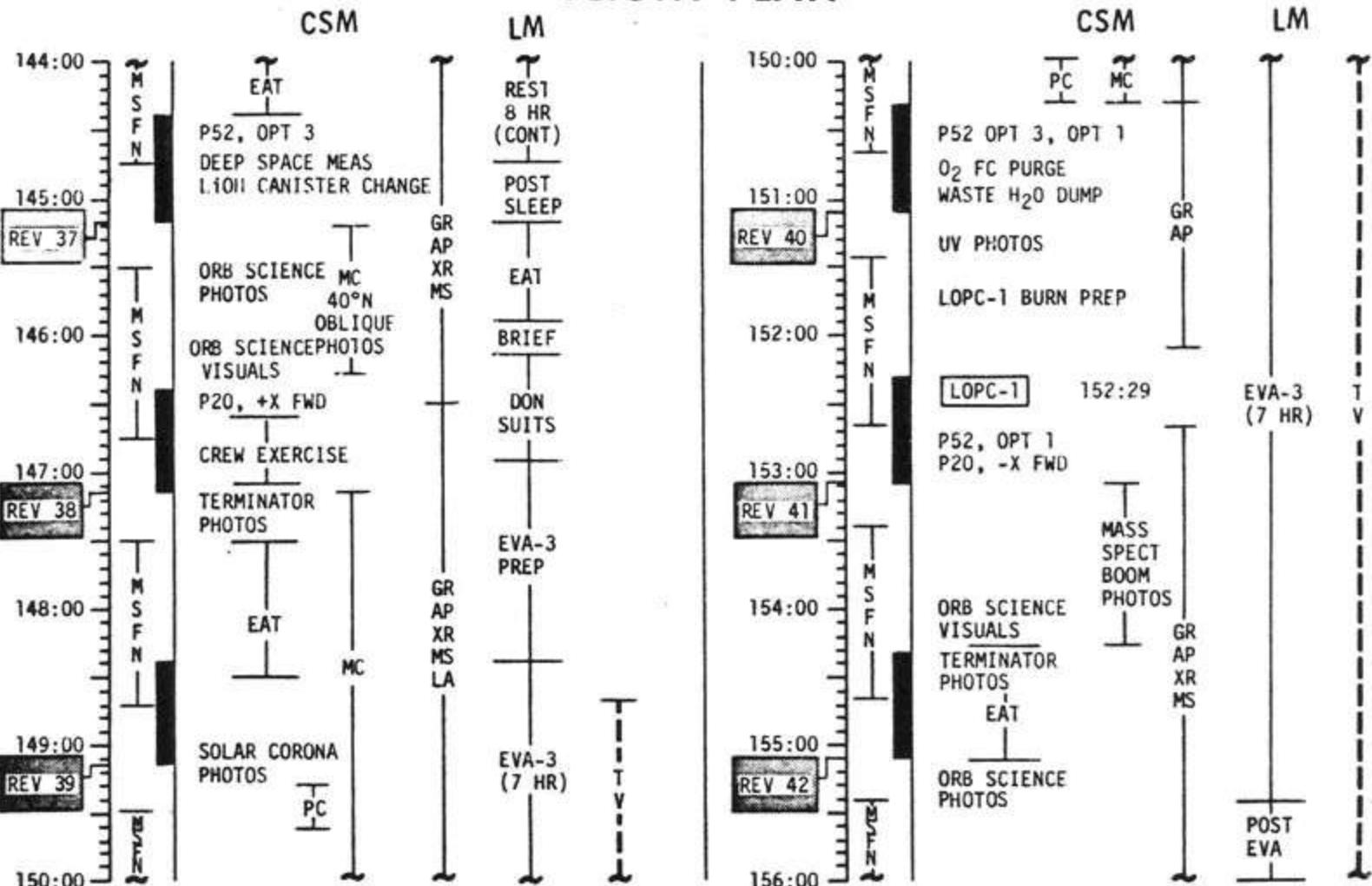


d

DATE 3/13/72

DATE 3/13/72

## FLIGHT PLAN



e

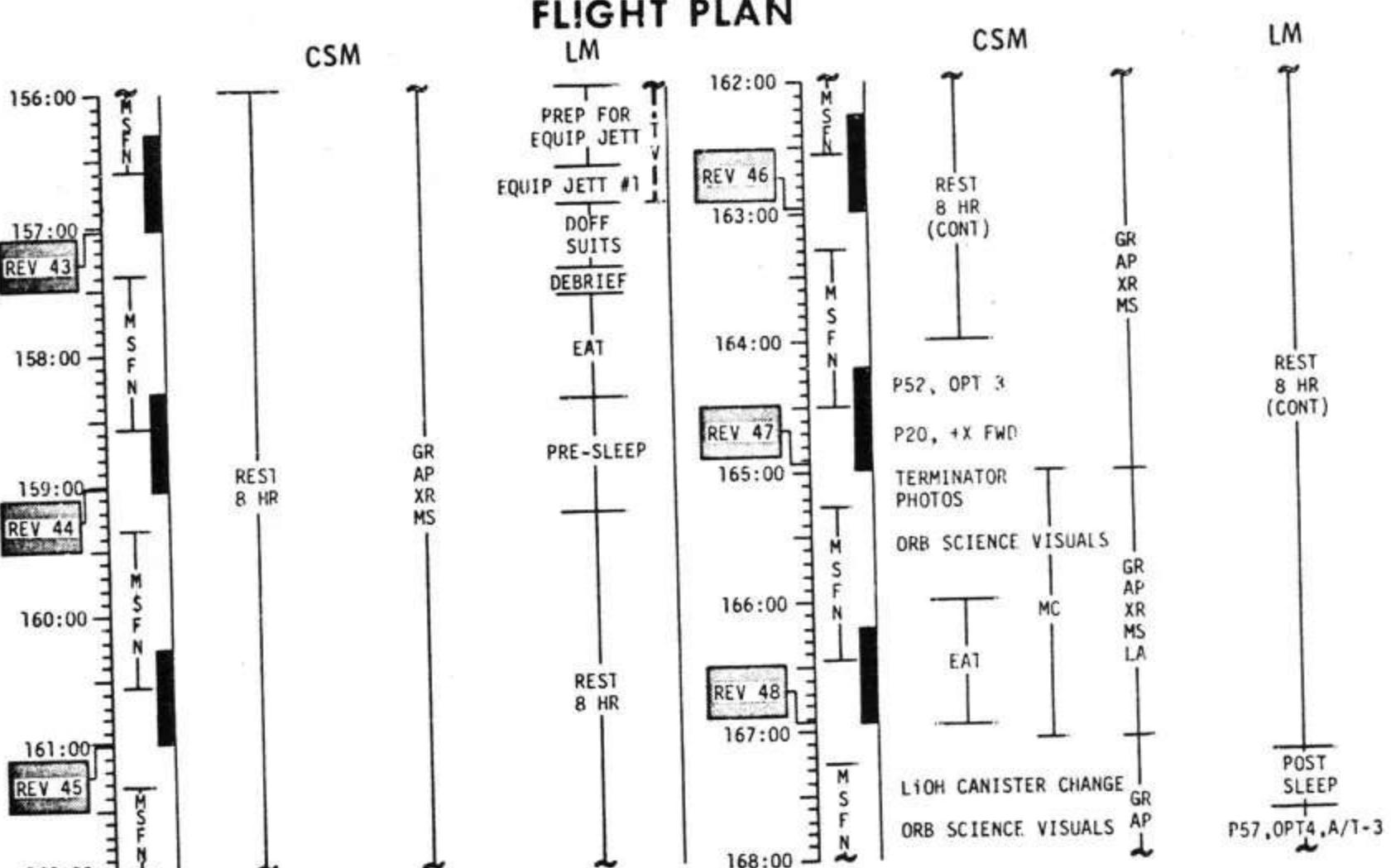
FIRST REV ACT

EVA 2 PREP

EVA 1 POST

EVA 1 PREP

# FLIGHT PLAN

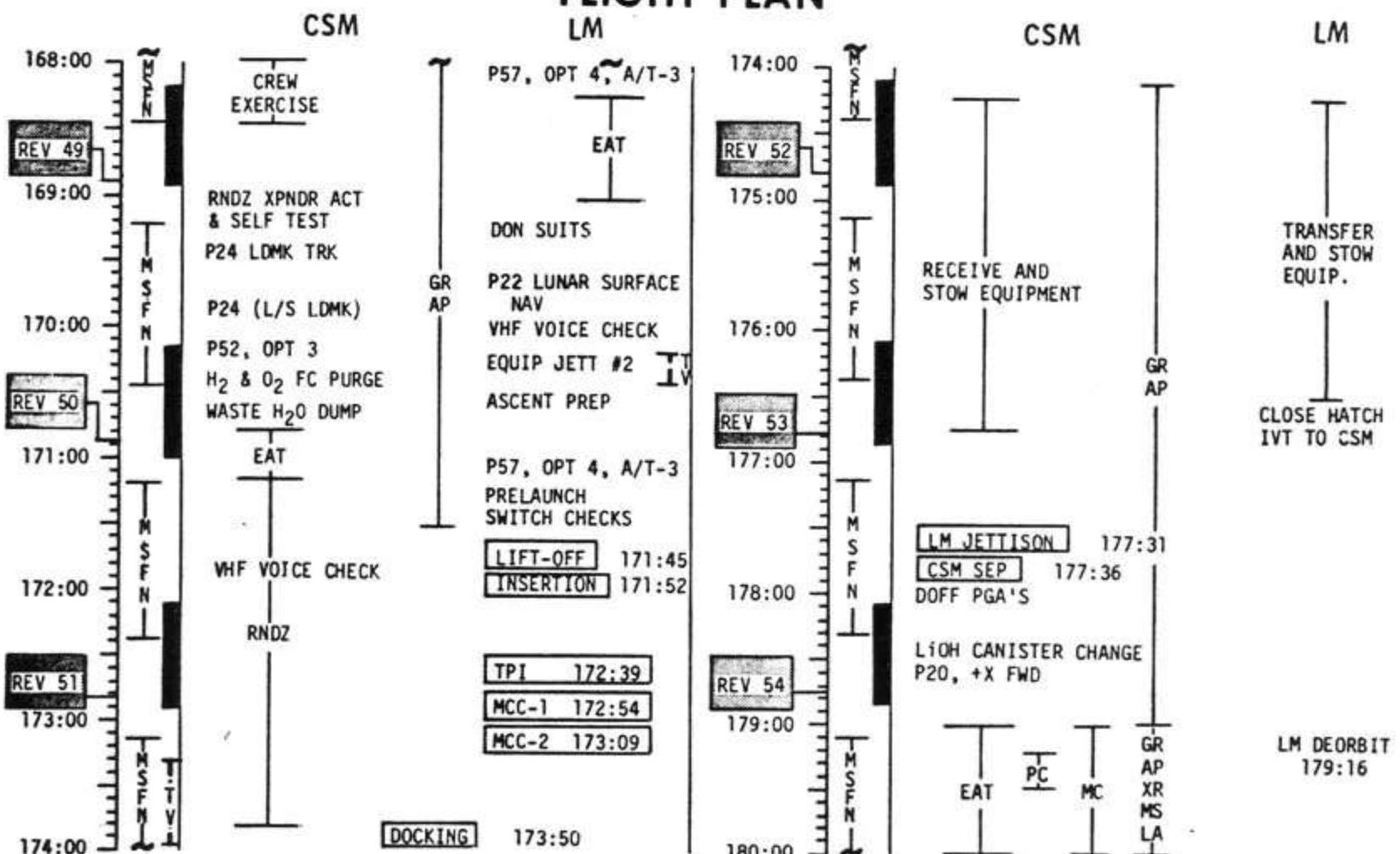


f

DATE 3/13/72

DATE 3/13/72

# FLIGHT PLAN



g

EVA 2 PREP

EVA 1 POST

EVA 1 PREP

FIRST REV ACT

DATE 3/13/72

\*\*\*\*\* PDI +20 (98:55) \*\*\*\*\*

PRPLNT TEMP/PRESS MON - DES 1, 2  
DES He REG 1 - CLOSE; tb(2)-bp  
OXID & FUEL VENTS - OPEN; tb(2)-gray  
MASTER ARM - ON  
DES VENT - FIRE  
MASTER ARM - OFF  
Monitor OXID Press Until 20 to  
40 psi, then OXID VENT - CLOSE  
Monitor FUEL Press Until <8 psi,  
Then FUEL VENT - CLOSE  
MODE CONTROL (2) - ATT HOLD  
Verify INV - 2 Selected  
CB(11) INV 1 - Open  
DECA PWR - Open

CB (16) ASC ECA CONT - Close  
BAT 5,6 - OFF/RESET, tb - bp  
INVERTER - 2  
CB(16) PQGS - Open  
DES ENG OVRD - Open  
ASC ECA CONT - Open  
CWEA - Open Then Close (DES REG Lt - Off)

Verify Cabin Press  
PRESS REG A&B - CABIN  
SUIT GAS DIVERTER - Pull/EGRESS  
CABIN GAS RETURN - EGRESS  
CABIN REPRESS - AUTO

Doff Helmet & Gloves  
PGA Diverter V1vs - IV (Horz)  
Remove & Stow Restraints (CDR's To Floor Fittings)  
Window Shades - Close

V16 N20E (Used For MAN ASC; pg 13-1)  
Record \_\_\_\_\_ OG (.01°)  
\_\_\_\_\_ IG  
\_\_\_\_\_ MG

047 R Sin Az (To MSFN)  
053 R Cos Az (To MSFN)  
544 R X Gyro Coeff (.01°/hr)  
545 R Y Gyro Coeff  
546 R Z Gyro Coeff  
400 + 6 Calib Gyros

Park RR Ant For P57 Use

1-1

CB(11)AOT LAMP - Close  
P57E, R2 00003, PRO

N06 00010  
00003  
00110

PRO (NO ATT Lt - On/Off, Twice)  
N04 Nav. Err. (.01°)  
V32E (NO ATT Lt - On/Off, Twice)

N04 Grav. Err. (.01°)

PRO

N22 ICDU Angles (.01°)

PRO (NO ATT Lt - On/Off)

N70 (Altair) 340

PRO

N71 Star, 4 Marks

N05 Angle Diff (.01°)

PRO

N93 Torq. Angles (.001°)

PRO

N25 00014, ENTR

POOE

CB(11)AOT LAMP - Open; AOT - CL

224 + 58222E

226 + 58222E

662 + 0E

673 + 0E

400 R (+0 Calib Complete In 5m 2s)

VHF - OFF, ON OFF, OFF

AUDIO (Both): VHF A - RCV

: VHF B - OFF

S-BD P&Y Set (+81° -34°), SLEW

*P* *M* *M* *Y* Peak until > 3.9

544 R X Gyro Coeff (0.01°/hr)

545 R Y Gyro Coeff

546 R Z Gyro Coeff

If Gyro Drift Changes >2.0°/hr,  
AGS Failed

If Adjacent Detent Desired:  
V21 N01E, 373E, 32533E,  
PRO To N79



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Notify MSFN of E-DUMP  
TLM-HI (Verify)  
V74E (42 sec)

400 +3 AGS/PGNS Align  
413 +1 Store Azimuth

#### STAY/NO STAY From MSFN

Park RR Ant. Along +X For Lunar Stay

342 + 0E

CB(16) AEA - Open (M.A., AGS Warn Lt-On)

V41 N20E, Load OG,IG,MG From MSFN

AGS STATUS - STBY

V16 N20E, Verify Angles

CB(16) AEA - Close (AGS Lt - Off)

NO ATT, NO DAP, GIMBAL LOCK, ALT, &  
VEL Lts - On; RSET (ALT & VEL - Off)

P06E

CB (11) IMU OPR - Open  
PRO (Hold In Until STBY Lt-On)

Window Shades - Open

POWER/TEMP MON - ED/OFF

Check ED VOLTS, A 37, B 37 (To HOU)

POWER/TEMP MON - LUN

BAT 23- OFF/RESET, tb-bp

BAT L (~~EMP~~) - ON; tb - EMPC002

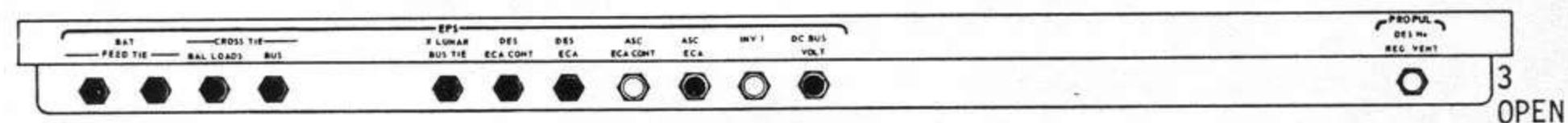
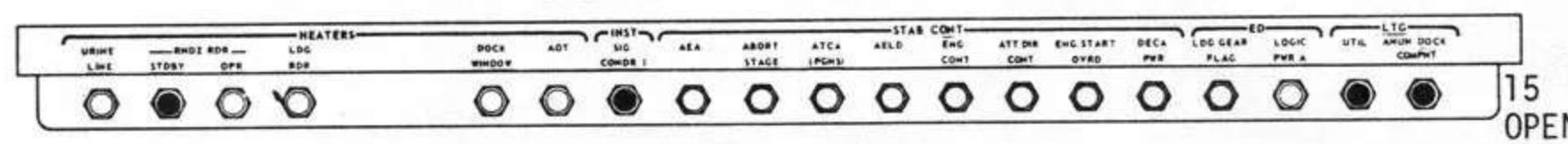
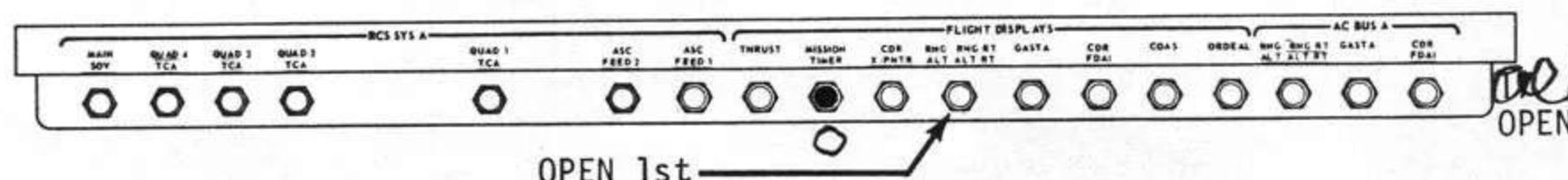
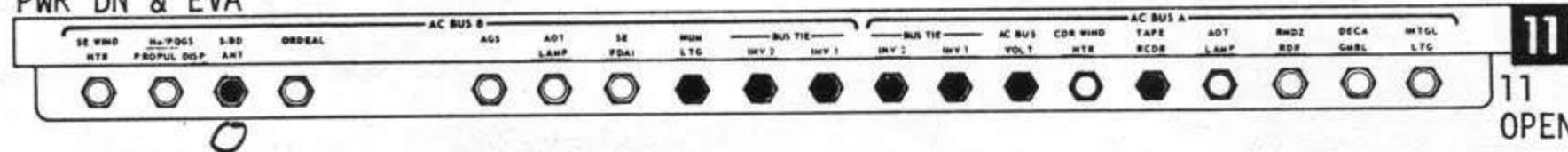
BAT 24- OFF/RESET; tb-bp

POWER/TEMP MON - Check Bus Volts

Configure CB's Per PWR DN Charts

1-3

PWR DN & EVA

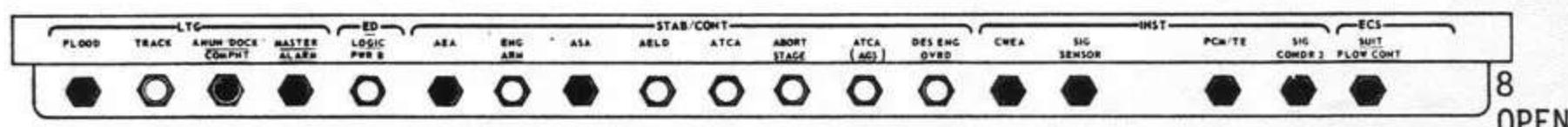
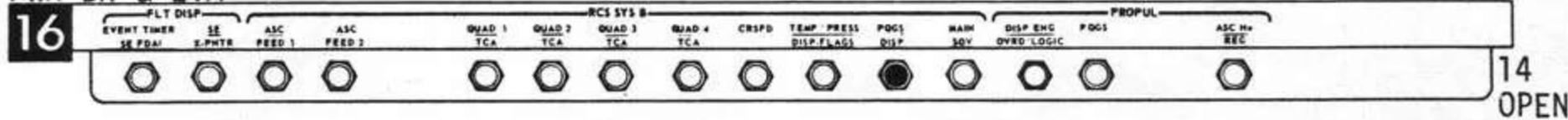


1-4

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PWR DN & EVA



OPENED DURING EVA 3 DEPRESS  
& LEFT OPEN THEREAFTER

★ — OPEN FOR EVA

1-5

**POWERDOWN SWITCH CONFIG.**

FDAI 1&2 - INRTL  
EARTH/LUNAR - PWR OFF  
LTG - OFF  
MODE - HOLD/FAST  
ALT SET - 35

FUEL & OXID VENT tb-bp  
MESA - HI  
URINE LINE - OFF  
MASTER ARM - OFF  
ASC He SEL - BOTH  
STAGE - SAFE (guarded)

S BAND T/R - T/R  
ICS T/R - T/R  
RELAY - OFF  
MODE - ICS/PTT  
AUDIO CONT - NORM  
VHF A - RCV  
VHF B - OFF  
COAS - OFF

TTCA (CDR) - JETS (Dn)

Eng STOP - Reset  
Eng START - Reset

TMR CONT - START  
OVERRIDE ANUN - OFF  
OVERRIDE NUM - OFF  
OVERRIDE INTEGRAL - OFF

X-POINTER SCALE (CDR) - HI MULT  
RATE/ERR MON (CDR) - LDG RDR/CMPTR  
ATTITUDE MON (CDR) - PGNS  
GUID CONT - PGNS  
MODE SEL - PGNS  
RNG/ALT MON - RNG/RNG RT  
SHFT/TRUN - +50°  
RATE SCALE - 25°/SEC  
ACA PROP (CDR) - ENABLE  
THR CONT - AUTO  
MAN THROT - CDR  
ENG ARM - OFF  
ATT/TRANSL - 4 JETS  
BAL CPL - ON  
ABORT - Reset  
ABORT STAGE - Reset (Guarded)  
PRPLNT QTY MON - OFF  
PRPLNT TEMP/PRESS MON - ASC  
HELIUM MON - PRESS 1

RR GYRO SEL - PRIM

1-6

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TEMP/PRESS MON - OXID MANF  
ACA PROP (LMP) - ENABLE  
GLYCOL - PUMP 1  
SUIT FAN - 1  
O2/H2O QTY MON - DES 2  
RATE/ERR MON (LMP) - RNDZ RADAR  
ATTITUDE MON (LMP) - AGS

ENG GMBL - ENABLE  
DES ENG CMD OVRD - OFF  
LDG ANT - AUTO  
RDR TEST - OFF  
TEST MONITOR - AGC  
SLEW RATE - LO  
RR MODE - SLEW

DEAD BAND - MIN  
ATTITUDE CONTROL (3) - MODE CONT  
MODE CONTROL (2) - ATT HOLD  
TEMP MON - RNDZ RDR  
RCS SYS A/B-2 QUAD 1,2,3,4 - AUTO  
X-POINTER SCALE (LMP) - HI MULT  
EXTERIOR LTG - OFF  
FLOOD - OFF  
ACA/4 JET (2) - ENABLE  
TTCA/TRANSL (2) - ENABLE  
TTCA (LMP) - JETS (Dn)

Eng STOP - Reset  
AGS STATUS - STBY

POWER/TEMP MON - CDR BUS  
INVERTER - ~~OFF~~  
UP LINK SQUELCH - OFF  
UP DATA LINK - OFF

AUDIO CONT - NORM  
S BAND T/R - T/R  
ICS T/R - T/R  
RELAY - OFF  
MODE - ICS/PTT  
VHF A - RCV  
VHF B - OFF  
S BAND MODULATE - PM  
XMTR/RCVR - SEC  
PWR AMPL - ~~OFF~~ ON  
VOICE - VOICE  
PCM - PCM  
RANGE - RANGE -

VHF A XMTR - OFF  
VHF A RCVR - ON  
VHF B XMTR & RCVR (2) - OFF  
BIOMED - RIGHT  
TLM - HI  
RECORDER - OFF

1-7

VHF - AFT  
 TRACK MODE - SLEW OFF  
 S BAND - SLEW ON

PRESS REG A&B - CABIN  
 CABIN REPRESS - AUTO  
 LO PLSS FILL - CLOSE  
 DES 02 - OPEN  
 #1, #2 ASC 02 - CLOSE  
 SUIT ISOL (2) - SUIT FLOW  
 SUIT CIRCUIT RELIEF - AUTO  
 CABIN GAS RETURN - EGRESS  
 SUIT GAS DIVERTER - Pull/EGRESS  
 CO<sub>2</sub> CANISTER SEL - PRIM  
 PRIM & SEC CO<sub>2</sub> CANISTER - CLOSE  
 WATER SEP SEL - PUSH/SEP 1  
 ASC H<sub>2</sub>O - CLOSE  
 SEC EVAP FLOW - CLOSE  
 PRIM EVAP FLOW No. 2 - CLOSE  
 DES H<sub>2</sub>O - OPEN  
 PRIM EVAP FLOW No. 1 - OPEN  
 WATER TANK SELECT - DES  
 HI PLSS 02 FILL - CLOSE  
 WMS - CLOSE  
 DES COOLING - ON

CABIN RELIEF & DUMP (2) - AUTO & Locked

CWEA STATUS: CAUTION: PREAMPS  
CES AC & CES DC - Reset Via GYRO TEST

Copy Lift-off Time In Data Card Book  
 For Rev 15 thru 19

1-8

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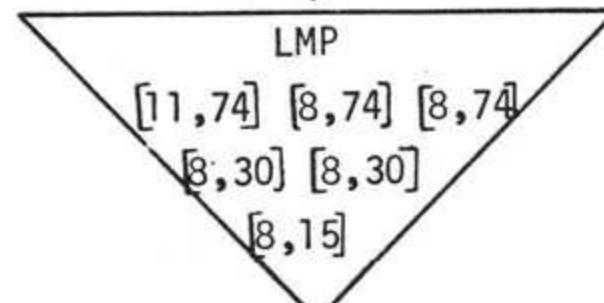
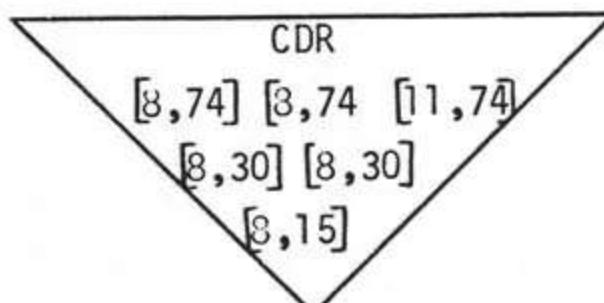
99:27 CONFIGURE CABIN FOR STAY (28 Min)

✓ Disconnect 3 Armrests, CDR LH,  
 LMP RH & LH, Stow In Jett Bag

99:55 EVA PERIOD (45 Min)

✓ Report PRD Readings To Hou

Window Photos, Setting: 1/250



✓ Stow Armrests  
 ✓ Stow COAS In Fwd window Mount  
 ✓ Stow LEVA Bags On Floor, 1 Left, 1 Right  
 ✓ Unstow PLSS On Floor, Set Against Hatch  
 Install Helmet Bag, Stow Helmets  
 ✓ Stow Sleep Restraints Under CDR's PLSS  
 ✓ Stow 2 Lens Brush (ISA Top Pkt) In Purse

✓ CDR Move Aft & Remove ISA, Temp Stow  
 On Eng Cover  
 ✓ Transfer RCU's To LCG Bag (LHMS, CDR's 1st)  
 ✓ Stow ISA Above RCU Shelf  
 ✓ Stow Sleep Restraints Above RCU Shelf

✓ Deploy LM EVA Antenna  
 ✓ Stow 1 Jett Bags (2-Aft OPS) In LHSSC  
 ✓ Hang 1 Jett Bag From CDR's LH Handhold

✗ Transfer LM Mag Bag (Aft Of Eng Cover) To  
 LCG Compt (RHSSC)  
 ✓ Transfer 500mm Lens, Camr & Ring Sight To Purse  
 ✓ Connect Aft ISS Hooks  
 ✓ Stow Camr Bag In Jett Bag

1-9

~~105:35  
100:40~~ CABIN PREP-EVA 1(20 Min)

Stow All Loose Items Not Reqd For EVA

Disconnect BSLSS Bag & Remove ETB

Configure 500mm Lens Camr (Purse)

- Remove Tape From Camr & Lens

Install 500mm Lens

Install Ring Sight

Stow Reseau Cover & Tape In Jett Bag

Install B&W Mag L (Aft RHSSC)

✓ Stow Dark Slide In Mag Pkt

✓ Stow 500mm Lens Camr In ETB

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Stow In ETB:

- ✓ BSLSS
- ✓ 70mm Camr With HCEX Mag A
- ✓ Bag Dispenser Bkt (Camr Compt)
- ✓ 2 - HCEX Mags B&C (Fwd RHSSC)
- ✓ ✓ B&W Mag G (Fwd RHSSC)
- ✓ ✓ B&W Mag H (LCG Compt)
- ✓ ✓ 16mm Mags P,Q & R (RHSSC)
- ✓ ✓ Padded Bags (BSLSS Bag)
- ✓ ✓ Lens Brush (Purse) ~~25' TAPE (LHSSC)~~
- ✓ Sun Compass, Map Holder, LRV CKLIST (Aft FDF)
- ✓ ✓ EVA 1 Maps & Return Chart (Fwd FDF)

✓ Unstow EVA 1 Prep & Post Card

✓ Attach LEC (Fwd RHSSC) To ETB

✓ Stow ETB Fwd Corner LMP's Station

✓ ~~Stow PLSS Tool Harnesses (BSLSS Bag)~~

~~Behind CDR's PLSS~~

✓ ~~Stow BSLSS Bag Behind LMP's Fwd~~

~~Restraint Cables~~

Clip Page 2-3 Over AOT  
Stow Lunar Surface Checklist

2-1 go to 3-#

EVA 1 PREP

## COLLECTION WEIGHT SUMMARY (#)

	<u>EVA 1</u>	<u>EVA 2</u>	<u>EVA 3</u>
SRC	<u>49</u>	<u>41</u>	<u>70</u>
Bag	<u>5</u>	<u>3</u>	<u>7</u>
Bag	<u> </u>	<u>26</u>	<u>25</u>
TOTAL	<u>56</u>	<u>97</u>	<u>118</u>
BSLSS/Rock Bag			
Bag	<u>5</u>	<u>7</u>	<u>33</u>
Bag	<u> </u>	<u>4</u>	<u>28</u>
TOTAL			

## COLLECTION BAG STOWAGE

- 1 - Aft Eng Cover (40 # Max): Bag 7
- 1 - LHMS (32 # Max): Bag 4
- 2 - LH + RHSSC (40 # Max): Bags 5, 8
- 2 - ISA (50 # Max): Bags 3, 6

DATE 3/13/72DATE 12/21/71EQUIPMENT

- BOTH Stow NO GO Equipment  
 OPS - Aft Engine Cover (Disconnect Antenna)  
 PLSS - Recharge Station (Remove All 4 Straps, Stow in LHSSC or Exchange On PLSS's If Required)  
 RCU - LCG Bag (LHMS)

Unstow ONE MAN EVA PREP CARD &amp; LUNAR SURFACE BOOK

## NO GO CREWMAN:

- PLSS MODE - 0  
 Disconnect OPS 02 Hose  
 Disconnect Purge Vlv, Stow In Purse  
 Disconnect OPS Actuator From RCU  
 Disconnect RCU From PLSS, Then PGA  
 Disconnect PLSS COMM, H2O, And 02  
 Doff PLSS/OPS  
 AUDIO CB - Open, TLM BIOMED - OFF  
 Connect LM COMM, 02, & H2O  
 Audio CB - Close, Comm SWS - As Reqd

- PLSS FAN - OFF (Left)

- Verify/Perform-As Rqd At Time of NO GO  
 PLSS PRIM H2O - CLOSE  
 Fwd Hatch Closed & Locked, Dump Vlvs - AUTO  
 CABIN REPRESS - AUTO  
 CB(16)ECS: CABIN REPRESS - Close (Cab Warn Lt)

- Verify Press Increasing  
 PRESS REGS A & B - CABIN  
 PLSS 02 - OFF @ Cabin >2.5 Psia  
 CB(16) ECS: SUIT FAN 2 - Close  
 SUIT FAN 4P - Close  
 ECS Caution & H2O SEP Comp Lts - Out  
 PGA Press Equal To Cabin, Use Purge Vlv If Rqd  
 Cab At 5.0 psia, Doff Gloves, Helmets With Visors  
 PLSS PUMP - OFF (Left)  
 PLSS FAN - OFF (Left)

2-3

EVA 2 PREP

EVA 1 POST

EVA 3 PREP

EVA 2 POST

LM REPRESS FAILURE PROCEDURE

CB(16) ECS: CABIN REPRESS - Open (Verify)  
 Verify CABIN REPRESS - AUTO  
 Verify PRESS REG A & B - EGRESS  
 Verify LM Suit Circuit 3.6 - 4.0 Psia  
 CB(16) ECS: SUIT FAN 2 - Close  
 SUIT FAN ΔP - Close  
 ECS Caution & H2O SEP Comp Lts - Out

Verify OPS 02 - OFF  
 Disconnect Purge Vlv, Swap In Purse  
 Disconnect OPS 02 Hose

Connect to LM ECS Hoses, R/R, B/B  
 SUIT ISOL - SUIT FLOW  
 PLSS FAN - OFF (Left)  
 PLSS 02 - OFF

Verify Cuff Gage 3.6 - 4.0 Psig  
 PGA Diverter Vlv - Horizontal  
 PLSS Mode - 0  
 Disconnect PLSS Elec From PGA

AUDIO CB - Open  
 Connect To LM Comm  
 AUDIO CB - Close  
 Audio (CDR & LMP)  
 VHF A - RCV  
 VHF B - OFF  
 MODE - ICS/PTT  
 RELAY - OFF

COMM:  
 VHF - OFF, ON, OFF, OFF, LEFT

PLSS PRIM H2O - Close  
 PLSS PUMP - OFF (Left)

Disconnect OPS 02 Actuator  
 Disconnect RCU From PGA, Then PLSS  
 Stow RCU On Eng Cover

Disconnect PLSS H2O From PGA  
 Disconnect PLSS Red 02 Hose, Then Blue  
 Doff PLSS/OPS, Place on Floor  
 Stow OPS 02 Hose & Actuator

As Req'd-Connect LM H2O to PGA  
 CB(16) ECS: LCG PUMP - Close

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*1617:53* 101:00 EQUIPMENT PREP EVA 1 (25 Min)

Empty UCTA's (HTR,WMS Valve)  
 Check PGA Zippers, Verify Lock - Lock  
 Stow PGA Gas Conn Plugs In Purse  
 Empty PGA Pockets Into Purse  
 PGA Relief Valve Cap In Pkt

CDR Move To Aft Cabin Area

Unstow CDR Boots, Purge Valve To Purse.  
 CDR Don Boots  
 Unstow CDR OPS

Unstow LMP OPS  
 Remove Pallet, Stow In Jett Bag  
 Perform OPS Check

Stow LMP OPS On Eng Cover  
 Install ISS

Apply Antifog (LMP LEVA Bag), Wipe Dry  
 With Tissue (LHSSC)  
 Stow EMU Maintenance Kit In Purse  
 Stow LEVA's, Helmets & EV Gloves (Attach  
 Watch & Mirror) On ISS  
 Stow LEVA Bags Under SRC Compt  
 Stow Helmet Bag

Move CDR's OPS Forward On Eng Cover  
 Stow ETB On Aft Eng Cover  
 Tie Jett Bag, Stow On Aft Engine Cover

Fwd Hatch Handle - UNLOCK

Remove Pallet, Stow In Jett Bag **USE △**  
 Perform OPS Check **FOR PEND.**  
 Restow OPS

LMP Move To Aft Cabin Area

Unstow LMP Boots, Purge Valve To Purse  
 Stow IV Gloves In Bot Boot Comp  
 LMP Don Boots

LM REPRESS FAILURE PROCEDURE101:25 PLSS DONNING (26 Min)

\*\*\*\*\* LMP 1st: \* \* \* \*  
 Set PLSS On Mid-Step  
 Verify OPS Reg Decay  
 Unstow O2 Nozzle & Antenna Lead  
 Secure Flaps

Attach OPS To PLSS  
 Connect OPS Antenna Lead To PLSS  
 Verify Sublimator Exhausts Clear  
~~Install PLSS Tool Harness~~

Unstow PLSS Straps & Hoses  
 Remove Elect Dust Cap, Stow In Purse  
 Verify AUX H2O, DIVERTER, O2, &  
 PRIM H2O-OFF  
 Connect Battery Cable

Verify The Following Locked:  
 PLSS Battery Connection  
 OPS Antenna Lead To PLSS  
 OPS To PLSS

Don PLSS/OPS, Lift PLSS Hoses Above  
 Lower Straps

Connect PLSS O2 Hoses To PGA  
 Verify AUX H2O, DIVERTER, O2, &  
 PRIM H2O-OFF

Connect RCU To PGA & Upper Straps  
 Verify RCU Controls:  
 PUMP, FAN - OFF (Left) MODE SEL-0  
 Connect RCU To PLSS

Unstow OPS O2 Hose & Actuator, Route  
 Hose Behind PGA  
 Connect Actuator To RCU

CDR Repeat PLSS DONNING \* \* \*

101:51 PLSS COMM CHECK (8 Min)

Verify Powerdown CB Configuration  
 (White Dots Out)  
 COMM: MODULATE - FM  
 PWR AMP - PRIM  
 Verify Voice Comm With Hou



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Audio (LMP)  
 S-BAND - T/R  
 ICS - T/R  
 RELAY - ON  
 MODE - VOX  
 VOX SENS - MAX  
 VHF A - T/R  
 B - RCV

COMM:  
 VHF A XMTR - VOICE  
 A RCVR - ON  
 B XMTR - OFF  
 B RCVR - ON  
 TLM BIOMED - OFF  
 SQUELCH VHF A&B  
 Noise Thres + 1 1/2  
 RECORDER - ON  
 VHF Antenna - EVA  
 UPLINK SQUELCH - ENABLE

Audio (CDR)  
 S-BAND - T/R  
 ICS - T/R  
 RELAY - OFF  
 MODE - VOX  
 VOX SENS - MAX  
 VHF A - T/R  
 B - RCV

CB(16) COMM: SE AUDIO - Open  
 LMP Connect To PLSS Comm

CB(16) COMM: SE AUDIO - Close  
 PLSS PTT (LMP) - MAIN (Rt), Verify  
 PLSS Mode(LMP) - A, Wheel-CCW  
 (Tone-On, Vent Flag - P,  
 Press Flag - 0, 02 Mom)  
 PLSS O2 Press Gage > 85%  
 LMP Comm Check With CDR And Hou

NOTE: Unstow PLSS Antenna If It  
 Transmits Garbled And/Or Loses TM  
 Restow Before Egress

CB(11) COMM: CDR AUDIO - Open  
 CDR Connect To PLSS Comm

CB(11) COMM: CDR AUDIO - Close  
 Audio (CDR)  
 VHF A - OFF  
 VHF B - OFF

PLSS PTT (CDR) - MAIN (Rt), Verify  
 PLSS Mode(CDR) - B, Blade-CCW  
 (Tone-On, Vent Flag - P,  
 Press Flag - 0, 02 Mom)  
 PLSS O2 Press Gage > 85%

2-7

EVA 2 POST

EVA 2 PREP

EVA 1 POST

EVA 3 PREP

LM REPRESS FAILURE PROCEDURE

NOTE: Crewman In Mode B Cannot Hear Hou

LMP Comm Check With CDR And Hou

PLSS Mode(LMP)-B, Blade-CCW(Tone-On)

PLSS Mode(CDR)-A, Wheel-CCW(Tone-On)

CDR Comm Check With LMP And Hou

PLSS Mode (Both) - AR (Tone-On)

NOTE: (AR) Wheel-Hou, Blade-EVA

Perform Comm & TM Check With Hou & Comm Check With Each Other

Read PLSS 02 Qty to Hou *SQUEECH  
L1/F B (LmD) FULL DEC,*

NOTE: If Comm Is NO GO With Hou

S-BAND MOD - PM

Verify Comm & TM

101:59 FINAL SYSTEMS PREP (1 Min)

CB(16) ECS: LCG PUMP - Close

LCG - Cold, As Reqd

CB(16) ECS: CABIN REPRESS - Close (Ver)  
SUIT FAN ΔP - Open

SUIT FAN 2 - Open

SUIT FAN Sel - 2

Verify ECS Caution & H<sub>2</sub>O SEP COMP  
Lts - On (~ 1 Min)

SUIT GAS DIVERTER - PULL-EGRESS(Verify)

CABIN GAS RETURN - EGRESS (Verify)

SUIT CIRCUIT RELIEF - AUTO (Verify)

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102:00 OPS CONNECT (6 Min)

# # # # LMP 1st: # # # #

SUIT ISOL - ACT OVRD (SUIT DISC)

Discon LM 02 Hoses, Secure About PGA

Connect OPS 02 Hose To PGA B/B  
Retrieve Purge Valve (Purse)-

Verify Closed, Lock Pin In & LO

Install Purge Valve In PGA R/R

PGA Diverter Valve - Vertical

CDR Repeat OPS CONNECT # # # #

Drink

DES H<sub>2</sub>O VLV - CLOSE.

102:06 HELMET/GLOVE DONNING (12 Min)

Position Mikes (Both)

PLSS FAN - ON, Rt (Vent Flag - Clear)

Don Helmets, Check Drink Bag Position

Don LEVA's And Lower Protective Visor

Secure Tool Harness Self Doff Straps  
To LEVA's

LCG-Cold, As Reqd

CB(16) ECS: LCG PUMP - Open

Disconnect LM H<sub>2</sub>O Hose

Connect PLSS H<sub>2</sub>O Hose

Stow LM Hoses (CDR's To ECS Handhold)

Verify The Following:

Helmet & Visor (1) - Aligned &  
Adjusted

02 Connectors (3) - Locked

Purge Valves (1) - Locked

H<sub>2</sub>O Connectors (1) - Locked

Comm Connectors (1) - Locked

PGA Diverter Vlv(1) - Vertical

Verify EVA CB Configuration  
(White Dots Out + EVA Decals)

Don EV Gloves & Verify:

Wrist Locks (4) - Locked

Glove Straps (4) - Adjusted

NOTE: If PGA Biting, PLSS 02 - ON/OFF

PLSS DIVERTER - MIN (Verify)

PLSS PUMP - ON (Rt)

PRESS REG A & B - EGRESS

2-9

102:18 PRESSURE INTEGRITY CHECK (4 Min)

PLSS 02 - ON (Tone-On, 02 Flag-0)  
 Press Flag Clear (3.1-3.4 Psid)  
 Cuff Gage 3.7-4.0 Psig  
 02 Flag Clear

PLSS 02 - OFF (Monitor Cuff Gage For 1 Min, Report Decay)  
 PLSS 02 - ON (Cuff Gage 3.7-4.0 Psig, Tone & 02 Flag May Come On)  
 Verify 02 Flag Clear

102:22 CABIN DEPRESS (3 Min)

Confirm Go For Depress From Hou CB(16)ECS: CABIN REPRESS - Open  
 CB(16) Comm: TV - Close  
 CABIN REPRESS Vlv - CLOSE  
 Ovhd Or Fwd Dump Vlv - OPEN Then AUTO @ 3.5 Psia (Verify Cuff Gage Does Not Drop Below 4.6 Psig)  
 Verify:  
 Cabin At 3.5 Psia  
 LM Suit Circuit Lockup At 4.3 Psia  
 PGA > 4.6 Psig & Decaying

102:25 Start Wrist Watch :00

Ovhd Or Fwd Dump Valve - OPEN  
 Verify:  
 Tone-On & H2O Flag - A (1.2-1.7 Psia)  
 PGA > 4.6 Psig & Decaying

Partially Open Fwd Hatch

FINAL PREP FOR EGRESS :03

PLSS PRIM H2O - OPEN (H2O Flag - Clear In About 4 Min)

Fwd Hatch - Open

Rest Until Cooling Sufficient  
 Verify:  
 PGA 3.7 To 4.6 Psig  
 CWEA Status:  
 Caution  
PREAMPS  
 ECS

H2O SEP COMP LT - ON

Lower EV Visor As Reqd :10

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POST EVA 1

PLSS PRIM H2O - CLOSE  
 Fwd Hatch - Close & Lock  
 Dump Valves (Both) - AUTO

NOTE: PLSS 02 & PRESS Flags May Come On During Repress. If PLSS 02 <10% Manually Control Cabin Repress To Maintain Positive PGA Pressure. (Leave Cabin Repress CB Open For Manual Repress)

CABIN REPRESS - AUTO  
 CB(16)ECS: CABIN REPRESS - Close  
 MASTER ALARM & CABIN Warning Lt - On  
 Verify Cabin Press Increasing  
 PRESS REG A & B - CABIN

PLSS 02 - OFF @ Cabin > 2.5 Psia

CABIN Warning Lt - Off  
 Verify Cabin Press Stable At 4.6-5 Psia  
 Use Purge Valve To Depress PGA As Reqd

109:25 POST EVA SYSTEMS CONFIG (15 Min)

Verify EVA CB Configuration  
 (White Dots Out + EVA Decals)  
 CB(16) ECS: SUIT FAN 2 - Close  
 SUIT FAN ΔP - Close  
 ECS Caution & H2O SEP Comp Lts - Out

Doff Gloves, Stow On Comm Panel  
 Doff Helmets With Visors, Lower Shades,  
 Stow In Helmet Bags

Verify Safety On Dump Valve  
 DES H2O Vlv - OPEN  
 Remove Purge Valve, Stow In Purse  
 Disconnect OPS 02 Hose

Connect LM 02 Hoses R/B & B/R  
 PGA Diverter Vlv - Horizontal

SUIT ISOL (Both) - SUIT FLOW  
 PLSS PUMP - OFF (Left)  
 PLSS FAN - OFF (Left)

Disconnect PLSS H2O From PGA  
 Connect LM H2O

3-1

PLSS Mode (Both) - 0  
AUDIO CB - Open  
Connect To LM Comm

AUDIO CB - Close  
AUDIO (CDR & LMP)  
VHF A - RCV  
B - OFF  
MODE - ICS/PTT  
RELAY - OFF

COMM:  
VHF A XMTR - OFF  
A RCVR - ON  
B XMTR & RCVR - OFF  
TLM BIOMED - LEFT  
VHF ANTENNA - AFT  
UPLINK SQUELCH-OFF

109:40 PLSS 02 RECHARGE (15 Min)

Verify DES 2 02 >56%

\* \* \* \* LMP 1st: \* \* \* \*

Connect LM 02 To PLSS  
HI PLSS 02 FILL - OPEN Then CLOSE  
After 4 Min

PLSS Mode - AR (02 QTY ~85%)  
PLSS Mode - 0

Disconnect LM 02

CDR Repeat 02 RECHARGE \* \* \* \*

Stow LM 02 Supply Hose

109:55 PLSS/OPS DOFFING (30 Min)

Disconnect OPS Actuator From RCU  
Disconnect RCU From PGA  
PLSS PUMP, FAN - OFF(LEFT)MODE SEL-0  
Disconnect RCU From PLSS, Stow In  
LCG Bag (LHMS, CDR's 1st)

Disconnect PLSS 02 Hoses  
Doff PLSS/OPS (LMP 1st)  
Stow LMP PLSS On Floor  
Stow CDR PLSS On Mid-Step

Report OPS Press To Hou  
Stow OPS 02 Hose & Actuator

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Install Gas Conn Plugs (Purse) In PGA  
Install PLSS Elect Dust Cap (Purse)

CAUTION: Insure PLSS LiOH Carts & Batt  
Numbered 1 or 2 Replaced with 3 or 4.

# # # # CDR 1st: # # # #  
Change PLSS Batt, Stow In BSLSS Bag  
Connect Cable to Battery  
Stow PLSS Hoses & Straps

Disconnect Left End Of PLSS Tool Harness  
Change LiOH Cart, Temp<130°, Read Cart  
Decal  
Stow Used LiOH Carts Inside Canisters  
Stow Canisters In BSLSS Bag  
Install PLSS Tool Harness

Disconnect OPS Antenna Lead  
Remove OPS & Stow Antenna Lead  
Stow CDR OPS On Eng Cover  
Stow CDR PLSS In Recharge Station

LMP PLSS To Mid-Step, Repeat Above ####

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3-2  
Stow LMP OPS On Floor Under Dump Vlv  
Stow PLSS On Floor Against Hatch

110:25 POST EVA CABIN CONFIG (20 Min)

110:25 BATT MGMT  
POWER/TEMP MON - ED/OFF  
Check ED Volts A \_\_, B \_\_ (To Hou)  
TLM PCM - HI  
POWER/TEMP MON - BAT 1  
BAT 1 HI V-ON; tb - gray  
POWER/TEMP MON - BAT 2  
BAT L (LMP) - OFF/RESET; tb - bp  
BAT 2 - ON; tb - gray  
BAT 3 - OFF/RESET; tb - bp  
BAT L (CDR) - ON; tb - CDR  
BAT 4 - OFF/RESET; tb - bp  
POWER/TEMP MON - Check Bus Volts

Unstow Lunar Surface Checklist, 3-4  
 Stow EVA 1 Prep & Post Card

Stow Collection Bags In Covers (ETB)  
 Stow Loose Covers In Camr Compt (RHSSC)  
 Stow ETB On RH Cabin Floor, Fwd

Unstow Scale (Bot RHSSC)  
 Weigh SRC & Collection Bags,  
 Record On 2-2 & Report To Hou  
 Stow Scale In RHSSC

■ Stow Core Tube Bag On Floor  
 Stow SRC In Lower Comp  
 Stow CDR OPS In Top Comp  
 Place Collection Bags Aft Of Eng Cvr

Verify Powerdown CB Configuration  
 (White Dots Out)

On Hou Cue: TLM PGM - LO  
~~S-BD VOICE = DN VOICE BU~~

110:45 DOFF SUITS (30 Min)  
 TLM BIOMED - OFF (Only LMP Data Req'd)

\* \* \* \* CDR 1st: \* \* \* \*  
 Empty UCTA (HTR, WMS VALVE)  
 SUIT ISOL - ACT OVRD (SUIT DISC)  
 AUDIO CB - OPEN

DOFF PGA 105.58  
 Stow Comm Carrier On ISS  
 Stow LM 02, H2O & Comm  
 Install PGA Elect Connector Cap (Aft RHSSC)  
 Disconnect LCG, Bio Belt & UCTA ~~open~~  
 Insert LCG Plug (Purse)  
 Close Inner & Outer Zipper  
 Attach Neckring Cover (Aft RHSSC)  
 Stow On Eng Cover, Neck Aft &  
 CDR On RH, Face Up  
 LMP On LH, Face Down  
 Install One Glove  
 Cover PGA Legs With Jett Bag (LHSSC)

DRY PGA (Or Perform Configure ECS For Sleep)  
 Connect LM 02 Hoses, R/B & B/R  
 CABIN GAS RETURN - AUTO ~~open~~  
 SUIT GAS DIVERTER - PUSH CABIN  
 SUIT ISOL - SUIT FLOW

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DON ICG (ICG Bag, LHMS)  
 Don Comm Carrier (ISS)  
 Connect CWG Adapter (LHSSC)

Connect LM Comm  
 Audio CB - CLOSE  
 Verify Comm

LMP Repeat DOFF SUITS \* \* \* \*

TLM BIOMED - RIGHT

~~5/16/72 128.20~~

111:15 EVA DEBRIEFING WITH HOU (15 Min)

Copy Liftoff Time In Data Book  
 For Rev 20 - 24

~~5/16/72 128.35~~  
111:30 EAT PERIOD (45 Min)

✓ Stow Food as Reqd  
 Remove Fwd End Of ISS  
 Fill Drink Bags (Food Compt), Evacuate  
 & Stow In Top Boot Compt

112:10 5 MIN Before Transfer:  
 ✓ CB(11) HTR: URINE LINE - Close  
 HTR CONT: URINE LINE - HTR 1

3-4

124.20

112:15 PLSS 02 & H2O RECHARGE (30 Min)

Verify 1 Hr Elapsed Since Initial  
 02 Recharge (DES 2 02 >56%)

Fold LMP's PGA Legs Over PGA Back

\* \* \* \* CDR 1st: \* \* \* \*

Connect LM 02 To PLSS  
 HI PLSS 02 FILL - OPEN Then CLOSE  
 After 10 min

Perform Feedwater Recharge (Decal):

PLSS AUX H2O - OPEN

Connect WMS To PLSS H2O DRAIN

WMS VALVE - OPEN

LM DES H2O - OPEN

Connect LM H2O To PLSS H2O FILL, Verify  
 Condensate Flow Thru WMS Sight Glass

FILL FOR 5 MINUTES

Connect WMS To PLSS PRIM Vent For 10 Sec

Connect WMS To PLSS AUX Vent For 10 Sec

WMS VALVE - CLOSE, Stow WMS Hose

PLSS AUX H2O - CLOSE

Disconnect And Stow LM H2O Hose

Verify HI PLSS 02 FILL - CLOSED  
Disconnect And Stow LM 02 Supply Hose  
Stow PLSS Connector Covers  
Set LMP PLSS On Mid-step

LMP Repeat O2 & H2O RECHARGE \* \* \*

Set LMP PLSS Against Hatch  
HTR CONT: URINE LINE - OFF  
CB(11) HTR: URINE LINE - Open

~~107-128129.50~~  
112:45 PRESLEEP (25 Min)

PRO, V37E 06E, PRO *ships*  
(STBY Lt - On)

Configure ECS For Sleep

- ✓ Stow LM 02 Hoses, R/R & B/B
- ✓ SUIT ISOL - SUIT FLOW
- ✓ CABIN GAS RETURN - ~~AUTO~~ (Verify) *open*
- ✓ SUIT GAS DIVERTER - PUSH - CABIN (Verify)
- ✓ Install Other Glove

Unstow CDR's Hammock, Place On Suits

Unroll LMP's Hammock

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~~8:15:53~~  
121:10 POSTSLEEP (25 Min)  
Crew Awake - Verify CWEA Status:  
Caution: PREAMPS

✓ Stow Hammocks, Roll Up With  
Sleep Restraints

✓ STAY/NO STAY FOR EVA 2 PREP

CREW STATUS REPORT

CDR                    LMP

FOOD	_____	_____
MED	_____	_____
SLEEP	_____	_____

Copy Liftoff Time In Data  
Book For Rev ~~25-31~~ 34-31

PRO, V37E 06E, PRO *ships*  
(STBY Lt - On)

Check LCG's

~~110:18~~  
121:35 EAT PERIOD (45 Min)

Stow Food Sticks (Food Compt) & Drink  
Bags (Top Boot Compt) On ISS

Install ISS

Top Off PLSS 02 *delete for*

✓ LMP: Attach Straps To LH & RHSSC  
Adjust Strap Tension LHSSC  
Route Inboard Center Support Strap  
Under LMP & CDR Comm Cables,  
Attach To Vertical Handhold, ECS  
Module

✓ Attach Outboard Center Support  
Strap To Lower ISA Fitting, Position  
Sleep Restraint (RCU Shelf)  
Straddle/Ingress

✓ CDR: Attach Aft Straps - Z27  
Route Hammock Under Comm Cable  
Attach Fwd Straps, Panel 1 & 2  
Adjust Strap Tension

✓ Attach Outboard Center Support Strap  
To Horizontal Handhold, ECS Module

✓ Position Sleep Restraint (RCU Shelf)  
✓ Ingress Hammock

✓ Attach Inboard Center Support Strap  
To PLSS Donning Station, Upper  
Outboard

✓ Adjust Strap Tension

~~7-167-53/30.51~~  
113:10 REST PERIOD (8:00 Hr)

3-6

122:20 EVA 2 PLANNING WITH HOU (15 Min)

Update EVA 2 & 3 Cuff Checklist  
As Reqd (RHSSC)

Empty ETB As Follows:

~~+ HCEX Mag B in Fwd RHSSC~~

~~✓ - B&W Mag G In Fwd RHSSC~~

~~✓ - HCEX Mag A in Aft RHSSC~~

~~✓ - 16mm Mag P in RHSSC~~

~~✓ EVA 1 Maps As Reqd~~

~~✓ Return Items in Purse~~

Stow In ETB

~~✓ CDR's Camr With HCEX Mag C (ETB)~~

~~✓ LMP's Camr With B&W Mag H (ETB)~~

~~✓ - B&W Mag I (LCG Compt)~~

~~✓ - HCEX Mag D (LCG Compt)~~

~~✓ - B&W Mag L (ETB)~~

~~✓ - 16mm Mags Q & R (ETB)~~

~~✓ - 16mm Mag S (RHSSC)~~

~~EVA 2 Maps~~

~~✓ HCEX Mag B in ETB~~

Unstow EVA 2 Prep & Post Card

3-7

10 117:03

122:35 DON SUITS (50 Min)

TLM BIOMED - OFF

\*\*\*\*\* LMP 1st: \*\*\*\*\*

AUDIO CB - OPEN ✓

Stow LM Comm Cable ✓

Stow Comm Carrier on ISS ✓

Stow EVA 1 Cuff Checklist In Purse ✓

Install EVA 2 &amp; 3 Cuff Checklist (RHSSC) ✓

Stow Gloves On Comm Panel ✓

Stow Neckring Cover Aft RHSSC ✓

CLEAN & LUB PGAWipe With Tissue, Lub With Pad From  
EMU Maint Kit - Neckring, Wristring, &  
Gas Connectors & PRV "O" Ring

Lub Zipper With Pad

Install Drink Bag (On ISS)

Stow Used Bag In BSLSS Bag

Install Food Stick (On ISS)

DOFF ICG

Stow ICG In ICG Bag (LHMS)

## DON PGA

Stow Jett Bag On PGA Legs In LHSSC

✓ LCG Plug In Purse

Connect UCTA, Bio Belt &amp; LCG

✓ Close Zippers &amp; Lock

✓ Don &amp; Connect Comm Carrier

✓ Stow PGA Elect Connector Cap In Purse

SUIT ISOL - ACT OVRD (SUIT DISC)

Connect LM O2 R/B &amp; B/R, H2O &amp; Comm

SUIT ISOL - SUIT FLOW

SUIT GAS DIVERTER - PULL - EGRESS

CABIN GAS RETURN - EGRESS

AUDIO CB - CLOSE

Verify Comm

Change LM ECS L10H Cart

Stow Used Cart With BSLSS Bag

CDR Repeat DON SUITS \*\*\*

TLM BIOMED - LEFT

S-BD VOICE - VOICE

3-8

~~go to 265~~DATE 3/29/72DATE 3/13/72123:20 BATT MGMT

POWER/TEMP MON - ED/OFF

Check ED VOLTS, A \_\_\_, B \_\_\_ (To Hou)

PWR AMP - PRIM

TLM PCM - HI

POWER/TEMP MON - BAT 4

BAT 4 - ON; tb - gray

POWER/TEMP MON - BAT 3

BAT L (CDR) - OFF/RESET; tb - bp

BAT 3 - ON; tb - gray

POWER/TEMP MON - Check BUS Volts

On Hou Cue: PWR AMR - OFF

TLM PCM - LO

3-9

EVA 1 POST

EVA 1 PREP

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123:25 CABIN PREP EVA 2 (15 Min)

Stow All Loose Items Not Reqd For EVA

Report PRD Readings to Hou

Stow Lunar Surface Checklist

123:40 EQUIPMENT PREP EVA 2 (16 Min)

Stow PGA Gas Conn Plugs In Purse  
 Empty PGA Pockets Into Purse  
 PGA Relief Valve Cap In Pkt  
 Verify Watch & Mirror On EV Glove  
  
 Unstow CDR OPS  
 Perform OPS Check (Both)  
 Stow Both OPS On Floor  
  
 Apply Antifog (Purse), Wipe Dry With  
     Tissue (LHSSC)  
 Stow EMU Maintenance Kit In Purse  
 Stow LEVA's & Helmets On ISS  
 Stow Helmet Bag  
  
 Stow ETB On RH Eng Cover  
 Close BSLSS Bag, Stow On LH Eng Cover  
 Stow LM ECS LiOH Cart with BSLSS Bag  
  
 Fwd Hatch Handle - UNLOCK

123:56 PLSS DONNING (20 Min)

\* \* \* \* LMP 1st: \* \* \* \*  
 Set PLSS On Mid-Step  
 Verify OPS Reg Decay  
 Unstow O2 Nozzle & Antenna Lead  
 Secure Flaps  
  
 Attach OPS To PLSS  
 Connect OPS Antenna Lead To PLSS  
 Verify Sublimator Exhausts Clear  
  
 Unstow PLSS Straps & Hoses  
 Remove Elect Dust Cap, Stow In Purse  
 Verify AUX H2O, DIVERTER, O2, &  
     PRIM H2O - OFF  
  
 Verify The Following Locked:  
     PLSS Battery Connection  
     OPS Antenna Lead To PLSS  
     OPS To PLSS  
  
 Don PLSS/OPS, Lift PLSS Hoses Above  
     Lower Straps  
  
 Connect PLSS O2 Hoses To PGA  
 Verify AUX H2O, DIVERTER, O2, &  
     PRIM H2O - OFF

4.

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Connect RCU To PGA & Upper Straps  
 Verify RCU Controls:  
     PUMP, FAN - OFF (Left) MODE SEL-0  
 Connect RCU To PLSS  
  
 Unstow OPS O2 Hose & Actuator, Route  
     Hose Behind PGA  
 Connect Actuator To RCU  
  
 CDR Repeat PLSS DONNING \* \* \* \*

124:16 PLSS COMM CHECK (8 Min)

Verify Powerdown CB Configuration  
     (White Dots Out)  
 Verify Voice Comm With Hou

Audio (LMP)  
 S-BAND - T/R  
 ICS - T/R  
 RELAY - ON  
 MODE - VOX  
 VOX SENS - MAX  
 VHF A - T/R  
     B - RCV

COMM:  
     VHF A XMTR - VOICE  
     A RCVR - ON  
     B XMTR - OFF  
     B RCVR - ON  
     TLM BIOMED - OFF  
     SQUELCH VHF A&B -  
         Noise Thres + 1 1/2  
     RECODER - ON  
     VHF Antenna - EVA  
     UPLINK SQUELCH - ENABLE

Audio (CDR)  
     S-BAND - T/R  
     ICS - T/R  
     RELAY - OFF  
     MODE - VOX  
     VOX SENS - MAX  
     VHF A - T/R  
         B - RCV

CB(16) COMM: SE AUDIO - Open  
LMP Connect To PLSS Comm

CB(16) COMM: SE AUDIO - Close  
PLSS PTT (LMP) - MAIN (Rt), Verify  
PLSS Mode(LMP) - A, Wheel-CCW  
(Tone-On, Vent Flag - P,  
Press Flag - 0, 02 Mom)  
PLSS 02 Press Gage > 85%  
LMP Comm Check With CDR And Hou

NOTE: Unstow PLSS Antenna If It  
Transmits Garbled And/Or Loses TM  
Restow Before Egress

CB(11) COMM: CDR AUDIO - Open  
CDR Connect To PLSS Comm

CB(11) COMM: CDR AUDIO - Close  
Audio (CDR)  
VHF A - OFF  
VHF B - OFF

PLSS PTT (CDR) - MAIN (Rt), Verify  
PLSS Mode(CDR) - B, Blade-CCW  
(Tone-On, Vent Flag - P,  
Press Flag - 0, 02 Mom)  
PLSS 02 Press Gage > 85%

NOTE: Crewman In Mode B Cannot  
Hear Hou

LMP Check With CDR And Hou

PLSS Mode(LMP)-B, Blade-CCW(Tone-On)  
PLSS Mode(CDR)-A, Wheel-CCW(Tone-On)  
CDR Comm Check With LMP And Hou

PLSS Mode (Both) - AR (Tone-On)

NOTE: (AR) Wheel-Hou, Blade-EVA

Perform Comm & TM Check With Hou &  
Comm Check With Each Other  
Read PLSS 02 Qty to Hou *SQVELCH VHF B(LME)  
FULL DRC.*

124:24 FINAL SYSTEMS PREP (1 Min)

CB(16) ECS: LCG PUMP - Close  
LCG - Cold, As Reqd  
CB(16) ECS: CABIN REPRESS - Close (Ver)  
SUIT FAN ΔP - Open  
SUIT FAN 2 - Open  
Verify ECS Caution & H2O SEP COMP  
Lts - On (~ 1 Min)

4-4

SUIT GAS DIVERTER - PULL-EGRESS(Verify)  
CABIN GAS RETURN - EGRESS (Verify)  
SUIT CIRCUIT RELIEF - AUTO (Verify)

124:25 OPS CONNECT (6 Min)

# # # # LMP 1st # # # #  
SUIT ISOL - ACT OVRD (SUIT DISC)  
Discon LM 02 Hoses, Secure About PGA

Connect OPS 02 Hose To PGA B/B  
Retrieve Purge Valve (Purse)-  
Verify Closed, Lock Pin In & LO  
Install Purge Valve In PGA R/R  
PGA Diverter Valve - Vertical

CDR Repeat OPS CONNECT # # # #

Drink  
DES H2O VLV - CLOSE

124:31 HELMET/GLOVE DONNING (12 Min)

Position Mikes (Both)  
PLSS FAN - ON, Rt (Vent Flag - Clear)  
Don Helmets With LEVA's, Check Drink  
Bag Position  
Lower LEVA Protective Visor  
Secure Tool Harness Self Doff Straps  
To LEVA's

LCG-Cold, As Reqd  
CB(16) ECS: LCG PUMP - Open  
Disconnect LM H2O Hose  
Connect PLSS H2O Hose  
Stow LM Hoses (CDR's To ECS Handhold)

Verify The Following:  
Helmet & Visor (1) - Aligned &  
Adjusted

O2 Connectors (3) - Locked  
Purge Valves (1) - Locked  
H2O Connectors (1) - Locked  
Comm Connectors (1) - Locked  
PGA Diverter Vlv(1) - Vertical

Verify EVA CB Configuration  
(White Dots Out + EVA Decals)

4-5

Don EV Gloves & Verify:  
 Wrist Locks (4) - Locked  
 Glove Straps (4) - Adjusted

NOTE: If PGA Biting, PLSS 02 - ON/OFF

PLSS DIVERTER - MIN (Verify)  
 PLSS PUMP - ON (Rt)

PRESS REG A & B - EGRESS

124:43 PRESSURE INTEGRITY CHECK (4 Min)

PLSS 02 - ON (Tone-On, 02 Flag-0)

Press Flag Clear (3.1-3.4 Psid)

Cuff Gage 3.7-4.0 Psig

02 Flag Clear

PLSS 02 - OFF (Monitor Cuff Gage For  
 1 Min, Report Decay)

PLSS 02 - ON (Cuff Gage 3.7-4.0  
 Psig, Tone & 02 Flag May Come On)

Verify 02 Flag Clear

124:47 CABIN DEPRESS (3 Min)

Confirm Go For Depress From Hou  
 CB(16)ECS: CABIN REPRESS - Open  
 CABIN REPRESS Vlv - CLOSE

Ovhd Or Fwd Dump Vlv - OPEN Then AUTO @  
 3.5 Psia (Verify Cuff Gage Does  
 Not Drop Below 4.6 Psig)

Verify:

Cabin At 3.5 Psia  
 LM Suit Circuit Lockup At 4.3 Psia  
 PGA > 4.6 Psig & Decaying

124:50 Start Wrist Watch :00

Ovhd Or Fwd Dump Valve - OPEN

Verify:  
 Tone-On & H2O Flag - A (1.2-1.7 Psia)  
 PGA > 4.6 Psig & Decaying

Partially Open Fwd Hatch

4-6

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FINAL PREP FOR EGRESS :03

PLSS PRIM H2O - OPEN (H2O Flag -  
 Clear In 2-4 Min)

Fwd Hatch - Open

Rest Until Cooling Sufficient

Verify:

PGA 3.7 To 4.6 Psig

CWEA Status:

Caution

PREAMPS

ECS

H2O SEP COMP LT - ON

Lower EV Visor As Reqd :10

4-7

DATE 12/21/71POST EVA 2

PLSS PRIM H<sub>2</sub>O - CLOSE  
 Fwd Hatch - Close & Lock  
 Dump Valves (Both) - AUTO

NOTE: PLSS 02 & PRESS Flags May Come On During Repress. If PLSS 02 <10% Manually Control Cabin Repress To Maintain Positive PGA Pressure. (Leave Cabin Repress CB Open For Manual Repress)

CABIN REPRESS - AUTO  
 CB(16)ECS: CABIN REPRESS - Close  
 MASTER ALARM & CABIN Warning Lt - On  
 Verify Cabin Press Increasing  
 PRESS REG A & B - CABIN

PLSS 02 - OFF @ Cabin > 2.5 Psia  
 CABIN Warning Lt - Off  
 Verify Cabin Press Stable At 4.6-5 Psia  
 Use Purge Valve To Depress PGA As Req'd

131:50 POST EVA SYSTEMS CONFIG (15 Min)

Verify EVA CB Configuration (White Dots Out + EVA Decals)  
 CB(16) ECS: SUIT FAN 2 - Close  
 SUIT FAN ΔP- Close  
 ECS Caution & H<sub>2</sub>O SEP Comp Lts - Out  
 Doff Gloves, Stow On Comm Panel  
 Doff Helmets With Visors, Lower Shades, Stow In Helmet Bags

Verify Safety On Dump Valve  
 DES H<sub>2</sub>O Vlv - OPEN  
 Remove Purge Valve, Stow In Purse  
 Disconnect OPS 02 Hose

Connect LM 02 Hoses R/B & B/R  
 PGA Diverter Vlv - Horizontal

SUIT ISOL (Both) - SUIT FLOW  
 PLSS PUMP - OFF (Left)  
 PLSS FAN - OFF (Left)

Disconnect PLSS H<sub>2</sub>O From PGA  
 Connect LM H<sub>2</sub>O

PLSS Mode (Both) - 0  
AUDIO CB - Open  
Connect To LM Comm

AUDIO CB - Close  
AUDIO (CDR & LMP)  
VHF A - RCV  
B - OFF  
MODE - ICS/PTT  
RELAY - OFF

## COMM:

VHF A XMTR - OFF  
A RCVR - ON  
B XMTR & RCVR - OFF  
TLM BIOMED - RIGHT  
VHF ANTENNA - AFT  
UPLINK SQUELCH-OFF

132:05 PLSS 02 RECHARGE (15 Min)

Verify DES 2 02 >56%

\* \* \* \* LMP 1st: \* \* \* \*

Connect LM 02 To PLSS  
HI PLSS 02 FILL - OPEN Then CLOSE  
After 4 Min

PLSS Mode - AR (02 QTY ~85%)  
PLSS Mode - 0

Disconnect LM 02

CDR Repeat 02 RECHARGE \* \* \* \*

Stow LM 02 Supply Hose

132:20 PLSS/OPS DOFFING (30 Min)

Disconnect OPS Actuator From RCU  
Disconnect RCU From PGA  
PLSS PUMP, FAN - OFF(LEFT) MODE SEL-0  
Disconnect RCU From PLSS, Stow In  
LCG Bag (LHMS, CDR's 1st)

Disconnect PLSS 02 Hoses  
Doff PLSS/OPS (LMP 1st)  
Stow LMP PLSS On Floor  
Stow CDR PLSS On Mid-Step  
Report OPS Press To Hou  
Stow OPS 02 Hose & Actuator

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5-2  
Stow LMP OPS On Floor Under Dump Vlv  
Stow PLSS On Floor Against Hatch

132:50 POST EVA CABIN CONFIG (20 Min)

~~132:50 BATT MGMT~~  
~~POWER/TEMP MON - ED/OFF~~  
~~Check ED Volts A \_\_, B \_\_ (To Hou)~~  
~~TLM PCM - HI~~  
~~POWER/TEMP MON - LUN~~  
~~BAT 2 - OFF/RESET; tb - bp~~  
~~BAT L (LMP) - ON; tb - LMP~~  
~~BAT 1 - OFF/RESET; tb - bp~~  
~~POWER/TEMP MON - Check Bus Volts~~

Unstow Jett Bag (LHSSC), Hang From

CDR's LH Handhold  
Install Gas Conn Plugs (Purse) In PGA  
Install PLSS Elect Dust Cap (Purse)

CAUTION: Insure PLSS LiOH Carts & Batts  
Numbered 3 or 4 Replaced with 5 or 6.

# # # # CDR 1st: # # # #  
Change PLSS Batt, Stow In Jett Bag  
Connect Cable to Battery  
Stow PLSS Hoses & Straps

Disconnect Left End Of PLSS Tool Harness  
Change LiOH Cart, Temp<130°, Read Cart  
Decal

Stow Used LiOH Carts Inside Canisters  
Stow Canisters In Jett Bag  
Install PLSS Tool Harness

Disconnect OPS Antenna Lead  
Remove OPS & Stow Antenna Lead  
Stow CDR OPS On Floor Under Purse  
Stow CDR PLSS In Recharge Station

LMP PLSS To Mid-Step, Repeat Above ####

Unstow Lunar Surface Checklist, 5-4  
Stow EVA 2 Prep & Post Card

Stow ETB On RH Cabin Floor, Fwd

Unstow Scale (Bot RHSSC)  
Stow Collection Bags In Covers (Camr Compt)  
Weigh SRC & Collection Bags,  
Record On 2-2 & Report To Hou  
Stow Scale In RHSSC

Stow Collection Bags Aft Of Eng Cover  
Stow SRC In Upper Comp

Verify Powerdown CB Configuration  
(White Dots Out)

On Hou Cue: TLM PCM - NO  
S-BD VOICE - DM VOICE BU

133:10 DOFF SUITS (30 Min)

TLM BIOMED - OFF (Only CDR Data Reqd)

\* \* \* \* CDR 1st: \* \* \* \*

Empty UCTA (HTR, WMS VALVE)  
SUIT ISOL - ACT OVRD (SUIT DISC)  
AUDIO CB - OPEN

DOFF PGA

Stow Comm Carrier On ISS  
Stow LM 02, H2O & Comm  
Install PGA Elect Connector Cap (Purse) *LUB*  
Disconnect LCG, Bio Belt & UCTA  
Insert LCG Plug (Purse)  
Close Inner & Outer Zipper  
Attach Neckring Cover (Aft LHSSC)  
Stow On Eng Cover, Neck Aft &  
CDR On RH, Face Up  
LMP On LH, Face Down  
Install One Glove  
Cover PGA Legs With Jett Bag (LHSSC)

DRY PGA (Or Perform Configure ECS For Sleep)

Connect LM 02 Hoses, R/B & B/R  
CABIN GAS RETURN - ~~AUTO~~ OPEN  
SUIT GAS DIVERTER - PUSH - CABIN  
SUIT ISOL - SUIT FLOW

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DON ICG (ICG Bag, LHMS)  
Don Comm Carrier (ISS)  
Connect CWG Adapter (LHSSC)

Connect LM Comm  
Audio CB - CLOSE  
Verify Comm

~~Stow LM FGS LIOH Cart In  
Bkt Aft of Eng Cover~~

LMP Repeat DOFF SUITS \* \* \* \*

TLM BIOMED - LEFT

~~151+55  
133:40 EVA DEBRIEFING WITH HOU (15 Min)~~

Copy Liftoff Time in Data Book  
For Rev 32-36 ~~70-45~~

~~152+10  
133:55 EAT PERIOD (45 Min)~~

Stow Food As Reqd  
Remove Fwd End of ISS  
Fill Drink Bags (Food Compt), Evacuate  
& Stow in Top Boot Compt

~~134:35 5 MIN Before Transfer:  
CB(11) HTR: URINE LINE - Close  
HTR CONT: URINE LINE - HTR 1~~

~~152+55  
134:40 PLSS 02 & H2O RECHARGE (30 Min)~~

Verify 1 Hr Elapsed Since Initial  
02 Recharge (DES 2 02 >56%)

Fold LMP's PGA Legs Over PGA Back

\* \* \* \* CDR 1st: \* \* \* \*

Connect LM 02 To PLSS  
HI PLSS 02 FILL - OPEN Then CLOSE  
After 10 min

EVA 2 PREP

EVA 1 POST

EVA 1 PREP

EVA 2 POST

Perform Feedwater Recharge (Decal):

PLSS AUX H2O - OPEN  
 Connect WMS To PLSS H2O DRAIN  
 WMS VALVE - OPEN  
 LM DES H2O - OPEN  
 Connect LM H2O To PLSS H2O FILL, Verify Condensate Flow Thru WMS Sight Glass Fill For 5 Minutes  
 Connect WMS To PLSS PRIM Vent For 10 Sec  
 Connect WMS To PLSS AUX Vent For 10 Sec  
 WMS VALVE - CLOSE, Stow WMS Hose  
 PLSS AUX H2O - CLOSE  
 Disconnect And Stow LM H2O Hose  
 Verify HI PLSS O2 FILL - CLOSED  
 Disconnect And Stow LM O2 Supply Hose  
 Stow PLSS Connector Covers  
 Set LMP PLSS On Mid-step

LMP Repeat O2 & H2O RECHARGE \* \* \* \*

Set LMP PLSS Against Hatch  
 HTR CONT: URINE LINE - OFF  
 CB(11) HTR: URINE LINE - Open

135:10 MCC-H CONFERENCE (70 Min)

153:25 Change LM LHSSC AND  
 STOW CARG & bracket 5-6  
in jet bay  
 DATE 12/21/71

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LMP: Attach Straps To LHSSC & RHSSC  
 Adjust Strap Tension LHSSC  
 Route Inboard Center Support Strap Under LMP & CDR Comm Cables, Attach To Vertical Handhold, ECS Module

Attach Outboard Center Support Strap To Lower ISA Fitting, Straddle/Ingress

CDR: Attach Aft Straps - Z27  
 Route Hammock Under Comm Cable  
 Attach Fwd Straps, Panel 1 & 2  
 Adjust Strap Tension

Attach Outboard Center Support Strap To Horizontal Handhold, ECS Module  
 Ingress Hammock  
 Attach Inboard Center Support Strap To PLSS Donning Station, Upper Outboard  
 Adjust Strap Tension

154:35  
136:45 REST PERIOD (8:00 Hr)

154:10  
136:20 PRESLEEP (25 Min)

PRO, V37 06E, PRO  
(STBY LT - ON)

Configure ECS For Sleep  
 Stow LM 02 Hoses, R/R & B/B  
 SUIT ISOL - SUIT FLOW  
 CABIN GAS RETURN - AUTO (Verify) OPEN  
 SUIT GAS DIVERTER - PUSH - CABIN (Verify)  
 Install Other Glove On PGA's

Unroll CDR's Hammock With Sleep Restraint

Unroll LMP's Hammock With Sleep Restraint

Show B Rate  
Voice off  
open P.A. C/B  
Standby - for 4 minutes  
& return original

144:45 POSTSLEEP (25 Min)  
 Crew Awake - Verify CWEA Status:  
 Caution: PREAMPS

Stow Hammocks, Roll Up WITH  
Sleep Restraints Stow w/ SE in jet bay  
 Stow ISA Aft Engine Cover  
 Stow LCG's (ISA Big Pkt) On PGA's

✓ STAY/NO STAY FOR EVA 3 PREP

CREW STATUS REPORT	
CDR	LMP
FOOD	_____
MED	_____
SLEEP	_____

Copy Liftoff Time In Data Book For Rev 87-43  
46-5)

PRO, V37 06E, PRO  
(STBY LT - ON)

Check LCG's

145:10 EAT PERIOD (45 Min)

Stow Food Sticks (Food Compt) & Drink Bags (Top Boot Compt) On ISS  
Install ISS  
Top Off PLSS 02

145:55 EVA 3 PLANNING WITH HOU (15 Min)

Update EVA 2 & 3 Cuff Checklist As Reqd

Empty ETB As Follows:

- 1 - HCEX Mag C In Fwd RHSSC
- ~~1 - HCEX Mag D In LCG Compt~~
- ~~✓ 2 - B&W Mags H & I In LCG Compt~~
- ~~✓ 1 - 16mm Mag Q In RHSSC~~
- 2 - Padded Bags In Jett Bag & Urine Receptacle Compts
- ~~EVA 2 Maps As Reqd~~
- ~~Return Items In Purse~~

## Stow In ETB:

- ✓ CDR's Camr With HCEX Mag E (Aft RHSSC)
- ~~✓ 1 - HCEX Mag F (Aft RHSSC)~~
- ✓ LMP's Camr With B&W Mag J (LCG Compt) & Polarizing Filter (Camr Compt)
- ✓ 2 - B&W Mags K & M (LCG Compt)
- ✓ 1 - B&W Mag L (ETB)
- ~~✓ 4 - 16mm Mag S & T (ETB)~~
- ~~✓ 2 - 16mm Mags T & U (RHSSC)~~
- ✓ EVA 3 Maps ~~+ PICS + MEDS.~~
- ✓ HCEX MAGD

Unstow EVA 3 Prep & Post Card

5-8

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5/29/72146:10 DON SUITS (50 Min)

TLM BIOMED - OFF

\* \* \* \* LMP 1st: \* \* \* \*

AUDIO CB - OPEN

Stow LM Comm Cable

Stow Comm Carrier On ISS

Stow Gloves On Comm Panel

Stow Neckring Cover Aft RHSSC

CLEAN & LUB PGA

Wipe With Tissue, Lub With Pad From  
EMU Maint Kit - Neckring, Wristring, &  
Gas Connectors & PRV O' Ring

Lub Zipper With Pad

Install Drink Bag (On ISS)

Stow Used Bag In Jett Bag

Install Food Stick (On ISS)

DOFF ICG

Stow ICG (In ICG Bag (LHMS))

~~EMPTY POCKETS IN JETT BAGS~~

Stow In Jett Bag:

- 2 Spare LCG's (On PGA's)
- Used Food & Containers
- LCG ADAPTERS(2)
- URINE RECEPTICAL

DON PGA

- ✓ Stow Jett Bag On PGA Legs In LHSSC
- ✓ Stow LCG Plug In Purse
- ✓ Connect UCTA, Bio Belt & LCG
- ✓ Close Zippers & Lock
- ✓ Don & Connect Comm Carrier
- ✓ Stow PGA Elect Connector Cap In Purse

SUIT ISOL - ACT OVRD (SUIT DISC)

Connect LM 02 R/B & B/R, H2O & Comm

SUIT ISOL - SUIT FLOW

SUIT GAS DIVERTER - PULL - EGRESS

CABIN GAS RETURN - EGRESS

✓ AUDIO CB - CLOSE

✓ Verify Comm

✓ CDR Repeat DON SUITS \* \* \* \*

✓ TLM BIOMED - RIGHT

✓ S-BD VOICE - VOICE

5-9

146:55 BATT MGMT  
~~POWER/TEMP MON - ED/OFF~~  
 Check ED Volts A   , B    (To Hou)  
~~PWR AMP - PRIM~~  
~~TLM PCM - HI~~  
~~POWER/TEMP MON - BAT 1~~  
~~BAT 1 HI V-ON; tb - gray~~  
~~POWER/TEMP MON - BAT 2~~  
~~BAT L (LMP) - OFF/RESET; tb - bp~~  
~~BAT 2 - ON; tb - gray~~  
~~BAT 3 - OFF/RESET; tb - bp~~  
~~BAT L (CDR) - ON; tb - CDR~~  
~~BAT 4 - OFF/RESET; tb - bp~~  
~~POWER/TEMP MON - Check Bus Volts~~  
~~On Hou Cue: PWR AMP - OFF~~  
~~TLM PCM - LO~~

Battery Management at 164+45

BATT MNGT

5-10

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147:00 CABIN PREP EVA 3 (15 Min)

Stow All Loose Items Not Reqd For EVA

Report PRD Readings To Hou

Stow Lunar Surface Checklist

22059  
21123

6-1

147:15 EQUIPMENT PREP EVA 3 (16 Min)

Stow PGA Gas Conn Plugs In Purse  
 Empty PGA Pockets Into Purse  
 PGA Relief Valve Cap In Pkt  
 Verify Watch & Mirror On EV Glove

Perform OPS Check (Both)

Apply Antifog (Purse), Wipe Dry With Tissue (LHSSC)  
 Stow EMU Maintenance Kit In Purse  
 Stow LEVA'S & Helmets On ISS  
 Stow Helmet Bag

Stow ETB on RH Eng Cover  
 Tie Jett Bag, Stow On LH Eng Cover

FWD Hatch Handle - UNLOCK

147:31 PLSS DONNING (20 Min)

\* \* \* \* LMP 1st: \* \* \* \*  
 Set PLSS On Mid-Step  
 Verify OPS Reg Decay  
 Unstow O2 Nozzle & Antenna Lead  
 Secure Flaps

Attach OPS To PLSS  
 Connect Antenna Lead To PLSS  
 Verify Sublimator Exhausts Clear

Unstow PLSS Straps & Hoses  
 Remove Elect Dust Cap, Stow In Purse  
 Verify AUX H2O, DIVERTER, O2 &  
 PRIM H2O - OFF

Verify The Following Locked:  
 PLSS Battery Connection  
 OPS Antenna Lead To PLSS  
 OPS To PLSS

Don PLSS/OPS, Lift PLSS Hoses Above Lower Strap

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6-2

Connect PLSS O2 Hoses To PGA  
 Verify AUX H2O, DIVERTER, O2 &  
 PRIM H2O - OFF

Connect RCU To PGA & Upper Straps  
 Verify RCU Controls:  
 PUMP, FAN - OFF (Left) MODE SEL-0  
 Connect RCU To PLSS

Unstow OPS O2 Hose & Actuator, Route Hose Behind PGA  
 Connect Actuator To RCU

CDR Repeat PLSS DONNING \* \* \* \*

147:51 PLSS COMM CHECK (8 Min)

Verify Powerdown CB Configuration (White Dots Out)  
 Verify Voice Comm With Hou

Audio (LMP)

S-BAND - T/R  
 ICS - T/R  
 RELAY - ON  
 MODE - VOX  
 VOX SENS - MAX  
 VHF A - T/R  
 B - RCV

COMM:

VHF A XMTR - VOICE  
 A RCVR - ON  
 B XMTR - OFF  
 B RCVR - ON  
 TLM BIOMED - OFF  
 SQUELCH VHF A&B -  
 Noise Thres + 1 1/2  
 RECORDER - ON  
 VHF Antenna - EVA  
 UPLINK SQUELCH - ENABLE

Audio (CDR)

S-BAND - T/R  
 ICS - T/R  
 RELAY - OFF  
 MODE - VOX  
 VOX SENS - MAX  
 VHF A - T/R  
 B - RCV

CB(16) COMM: SE AUDIO - Open  
LMP Connect To PLSS Comm

CB(16) COMM: SE AUDIO - Close  
PLSS PTT (LMP) - MAIN (Rt), Verify  
PLSS Mode(LMP) - A, Wheel-CCW  
(Tone-On, Vent Flag-P,  
Press Flag-0, 02 Mom)  
PLSS 02 Press Gage >85%  
LMP Comm Check With CDR And Hou

NOTE: Unstow PLSS Antenna If It  
Transmits Garbled And/Or Loses TM  
Restow Before Egress

CB(11) COMM: CDR AUDIO - Open  
CDR Connect To PLSS Comm

CB(11) COMM: CDR AUDIO - Close  
Audio (CDR)  
VHF A - OFF  
VHF B - OFF

PLSS PTT(CDR) - MAIN (Rt), Verify  
PLSS Mode(CDR) - B, Blade-CCW  
(Tone-On, Vent Flag- P,  
Press Flag-0, 02 Mom)

PLSS 02 Press Gage >85%

NOTE: Crewman In Mode B Cannot  
Hear Hou

LMP Comm Check With CDR And Hou

PLSS Mode(LMP)-B, Blade-CCW(Tone-On)  
PLSS Mode(CDR)-A, Wheel-CCW(Tone-On)  
CDR Comm Check With LMP And HOU

PLSS Mode (Both) - AR (Tone-On)

NOTE: (AR) Wheel-Hou, Blade-EVA

Perform Comm & TM Check With Hou &  
Comm Check With Each Other  
Read PLSS 02 Qty To Hou *S A V E L C H V H F (B)*  
*L M P - F U L L D E C ,*

147:59 FINAL SYSTEMS PREP (1 Min)

CB(16) ECS: LCG PUMP - Close  
LCG - Cold, As Reqd  
CB(16) ECS: CABIN REPRESS - Close (Ver)  
SUIT FAN ΔP - Open  
SUIT FAN 2 - Open  
Verify ECS Caution & H2O SEP COMP  
Lts - On (~1 Min)

6-4

SUIT GAS DIVERTER - PULL-EGRESS(Verify)  
CABIN GAS RETURN - EGRESS (Verify)  
SUIT CIRCUIT RELIEF - AUTO (Verify)

148:00 OPS CONNECT (6 Min)

# # # # LMP 1st: # # # #  
SUIT ISOL - ACT OV RD (SUIT DISC)  
Discon LM 02 Hoses, Secure About PGA

Connect OPS 02 Hose To PGA B/B  
Retrieve Purge Valve (Purse) -  
Verify Closed, Lock Pin In & LO  
Install Purge Valve In PGA R/R  
PGA Diverter Valve - Vertical

CDR Repeat OPS CONNECT # # # #

Drink  
DES H2O VLV - CLOSE

148:06 HELMET/GLOVE DONNING (12 Min)

Position Mikes (Both)  
PLSS FAN - ON, Rt (Vent Flag - Clear)  
Don Helmets With LEVA's, Check Drink  
Bag Position  
Lower LEVA Protective Visor  
Secure Tool Harness Self Doff Straps  
To LEVA's

LCG - COLD, As Reqd  
CB(16) ECS: LCG PUMP - Open  
Disconnect LM H2O Hose  
Connect PLSS H2O Hose  
Stow LM Hoses (CDR's To ECS Handhold)

Verify The Following:

Helmet & Visor (1) - Aligned &  
Adjusted  
O2 Connectors (3) - Locked  
Purge Valves (1) - Locked  
H2O Connectors (1) - Locked  
Comm Connectors (1) - Locked  
PGA Diverter Vlv(1) - Vertical

Verify EVA CB Configuration  
(White Dots Out + EVA Decals)

6-5

Don EV Gloves & Verify:  
Wrist Locks (4) - Locked  
Glove Straps (4) - Adjusted

NOTE: If PGA Biting, PLSS 02 - ON/OFF

PLSS DIVERTER - MIN (Verify)  
PLSS PUMP - ON, Rt

PRESS REG A & B - EGRESS

148:18 PRESSURE INTEGRITY CHECK (4 Min)

PLSS 02 - ON (Tone-On, 02 Flag - 0)  
Press Flag Clear (3.1-3.4 Psid)  
Cuff Gage 3.7-4.0 Psig  
02 Flag Clear

PLSS 02 - OFF (Monitor Cuff Gage For  
1 Min, Report Decay)  
PLSS 02 - ON (Cuff Gage 3.7-4.0  
Psig, Tone & 02 Flag May Come On)  
Verify 02 Flag Clear

148:22 CABIN DEPRESS (3 Min)

Confirm Go For Depress From Hou  
CB(16)ECS: CABIN REPRESS - Open  
HTR: MESA - Open  
CABIN REPRESS VLV - CLOSE

Ovhd Or Fwd Dump Vlv - OPEN Then AUTO @  
3.5 Psia (Verify Cuff Gage Does  
Not Drop Below 4.6 Psig)

Verify:  
Cabin At 3.5 Psia  
LM Suit Circuit Lockup At 4.3 Psia  
PGA > 4.6 Psig & Decaying

148:25 Start Wrist Watch :00

Ovhd Or Fwd Dump Valve - OPEN

Verify:  
Tone-On & H2O Flag - A (1.2-1.7 Psia)  
PGA > 4.6 Psig & Decaying

Partially Open Fwd Hatch

6-6

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FINAL PREP FOR EGRESS :03

PLSS PRIM H2O - OPEN (H2O Flag -  
Clear In 2-4 Min)

Fwd Hatch - Open

Rest Until Cooling Sufficient

Verify:

PGA 3.7 To 4.6 Psig

CWEA Status:

Caution

PREAMPS

ECS

H2O SEP COMP Lt - ON

Lower EV Visor As Rqd :10

6-7

DATE 12/21/71POST EVA 3

PLSS PRIM H<sub>2</sub>O - CLOSE  
 Fwd Hatch - Close & Lock  
 Dump Valves (Both) - AUTO

NOTE: PLSS 02 & PRESS Flags May Come On During Repress. If PLSS 02 <10% Manually Control Cabin Repress To Maintain Positive PGA Pressure.  
 (Leave Cabin Repress CB Open For Manual Repress)

CABIN REPRESS - AUTO  
 CB(16)ECS: CABIN REPRESS - Close  
 MASTER ALARM & CABIN Warning Lt - On  
 Verify Cabin Press Increasing  
 PRESS REG A & B - CABIN

PLSS 02 - OFF @ Cabin > 2.5 Psia

CABIN Warning Lt - Off  
 Verify Cabin Press Stable At 4.6-5 Psia  
 Use Purge Valve To Depress PGA As Req'd

155:25 POST EVA SYSTEMS CONFIG (15 Min)

Verify EVA CB Configuration  
 (White Dots Out + EVA Decals)  
 CB(16) ECS: SUIT FAN 2 - Close  
 SUIT FAN ΔP - Close  
 ECS Caution & H<sub>2</sub>O SEP Comp Lts - Out

Doff Gloves, Stow On Comm Panel

Verify Safety On Dump Valve  
 DES H<sub>2</sub>O VLV - OPEN  
 Remove Purge Valves, Stow In Purse  
 Disconnect OPS 02 Hose

Connect LM 02 Hoses R/R & B/B

SUIT ISOL (Both) - SUIT FLOW  
 PLSS PUMP - OFF (Left)  
 PLSS FAN - OFF (Left)

Disconnect PLSS H<sub>2</sub>O From PGA  
 Connect LM H<sub>2</sub>O To PGA

## EVA 1 PREP

EVA 2 PREP

## EVA 3 POST

## EVA 3 PREP

## EVA 2 POST

PLSS Mode (Both) - 0  
 AUDIO CB - Open  
 Connect To LM Comm

AUDIO CB - Close  
 AUDIO (CDR & LMP)  
 VHF A - RCV  
 B - OFF  
 MODE - ICS/PTT  
 RELAY - OFF

COMM:  
 VHF A XMTR - OFF  
 A RCVR - ON  
 B XMTR & RCVR - OFF  
 TLM BIOMED - LEFT  
 PCM - HI  
 VHF ANTENNA - AFT

155:40 PLSS/OPS DOFFING (20 Min)

Disconnect OPS Actuator From RCU's  
 Disconnect RCU's From PGA  
 Verify Pump,Fan - OFF (Left) MODE SEL-0  
 Disconnect RCU From PLSS, Stow On Eng Cover

Disconnect PLSS O2 Hoses  
 Doff PLSS/OPS (LMP 1st)  
 Stow LMP PLSS On Floor  
 Stow CDR PLSS On Mid-Step  
 Stow OPS O2 Hose & Actuator

Install Gas Conn Plugs (Purse) In PGA  
 \* \* \* \* CDR 1st: \* \* \* \*  
 Disconnect OPS Antenna Lead  
 Remove OPS & Stow Antenna Lead  
 Perform OPS Checkout  
 Report OPS Press To Hou  
 Stow OPS On Eng Cover

Stow PLSS Hoses & Upper Straps  
 Remove Lower PLSS Straps, Clip Straps Together, D-Ring (Name-To-Name)  
 Remove Yo-Yo, Stow On Eng Cover

Stow Straps In Aft LHSSC  
 Stow PLSS On Floor

LMP PLSS To Mid-Step, Repeat Above \*\*\*\*

Verify Powerdown CB Configuration (White Dots Out)

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156:00 PREP FOR EQUIP JETT 1 (20 Min)

Stow Return Items In ISA Big Pkt  
 Unstow Scale (Bot RHSSC)

Weigh BSLSS/Rock Bag (35# Max) &  
 Collection Bags  
 Record On 2-2 & Report To Hou

Weigh ISA (18# Max)  
 Stow Scale In RHSSC  
 Stow Collection Bags & BSLSS/Rock Bag Aft Eng Cover

Verify Total DES O2 QTY (Tank 1+2) >31%  
 Fwd Hatch Handle - UNLOCK

Remove ISS, Wrap & Tie The Following:  
 Lunar Boots (4)  
 RCU's (2)  
 Armrest (1)  
 Yo-Yo's (2)

Position PLSS's For Jettison, Eng Cover & Mid-Step

Clean & Lub Wriststrings As Reqd  
 PGA Diverter V1vs - Horizontal

Audio (CDR & LMP)  
 Mode - VOX  
 VOX SENS - As Reqd

Don EV Gloves  
 Check PGA Connectors

156:20 PRESS INTEGRITY CHECK (4 Min)

NOTE: LM Suit Circuit Shall Not Be Maintained At Elevated Press >5 Min

SUIT GAS DIVERTER - PULL-EGRESS (Ver)  
 CABIN GAS RETURN - EGRESS (Verify)  
 SUIT CIRCUIT RELIEF - CLOSE

PRESS REG A - EGRESS  
 PRESS REG B - DIRECT O2  
 Monitor Cuff Gage To 3.7 - 4.0 Psig  
 Then PRESS REG B - EGRESS (Cuff Gage Decay <.3 Psig In 1 Min)

SUIT CIRCUIT RELIEF - AUTO (Suit Ckt Press Decays To 4.8 Psia)

7-3

EVA 2 PREP

EVA 3 POST

EVA 3 PRFP

156:24 CABIN DEPRESS FOR JETTISON (4 Min)

Confirm Go For DEPRESS From Hou  
 CB(16)ECS: CABIN REPRESS - Open  
 Ovhd Or Fwd Dump Valve - OPEN Then AUTO  
 At 3.5 Psia  
 (Verify Cabin Press 3.5 Psia  
 & LM Suit Circuit Lockup At 4.3  
 Psia & Decaying)

Ovhd Or Fwd Dump Vlv - OPEN (Verify LM  
 Suit Circuit 3.6 To 4.3 Psia)

156:28 HATCH OPENING (4 Min)

Partially Open Fwd Hatch  
 Ovhd Or Fwd Dump Valve - AUTO

Fwd Hatch - Full Open

Jettison The Following:

PLSS On Mid-Step  
 PLSS On Eng Cover  
 ISS

Verify Items Clear Of Ascent Stage

Fwd Hatch - Close & Lock



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~~Unstow Lunar Surface Checklist, 7-5  
 Stow EVA 3 Prep & Post Card~~

156:37 BATT MGMT

~~POWER/TEMP MON - ED/OFF  
 Check ED VOLTS, A \_\_\_\_\_, B \_\_\_\_\_ (To Hou)  
 POWER/TEMP MON - BAT 4  
 BAT 4 - ON; tb - gray  
 POWER/TEMP MON BAT 3  
 BAT L (CDR) - OFF/RESET; tb - bp  
 BAT 3 - ON; tb - gray  
 POWER/TEMP MON - Check BUS Volts~~

~~On Hou Cue: TLM PCM - LO~~

~~S-BD VOICE - DN VOICE BU~~

156:39 POST EVA CABIN CLEANUP (3 Min)

Stow On Floor:

CDR's OPS Under Purse  
 LMP's OPS Under Dump Vlv  
 ETB RH Corner, Fwd  
 ISA Against Hatch  
 BSLSS/Rock Bag Against Hatch

*Report PRD ready to Houston*

156:32 CABIN REPRESS (7 Min)

Dump Valves(Both)- AUTO (Verify)  
 CABIN REPRESS - AUTO (Verify)

CB(16)ECS: CABIN REPRESS - Close  
 MASTER ALARM & CABIN Warning Lt - On  
 Verify Cabin Press Increasing  
 PRESS REG A & B - CABIN

CABIN Warning Lt - Off  
 Verify Cabin Press Stable At 4.6-5 Psia

Doff Gloves, Stow On Comm Panel  
 Doff Helmets With Visors, Lower Shades,  
 Stow In Helmet Bags

Verify Safety On Dump Valve

Audio (CDR & LMP):  
 Mode - ICS/PTT

COMM: UPLINK SQUELCH - OFF

7-4

156:42 DOFF SUITS (40 Min)

~~TLM BIOMED - OFF (Only LMP Data Reqd)~~

~~\*\*\*\*\* CDR 1st: \*\*\*\*\*  
 Empty UCTA (HTR, WMS VALVE)  
 SUIT ISOL - ACT OVRD (SUIT DISC)  
 AUDIO CB - OPEN~~

DOFF PGA

~~Stow Comm Carrier On Comm Panel  
 Stow LM O2, H2O & Comm  
 Install PGA Elect Connector Cap (Purse)  
 Disconnect LCG, Bio Belt & UCTA  
 Insert LCG Plug (Purse)  
 Close Inner & outer Zipper  
 Attach Necking Cover (Aft RHSSC)  
 Stow On Eng Cover, Neck Aft &  
 CDR On RH, Face Up  
 LMP On LH, Face Down  
 Install One Glove  
 Cover PGA Legs With Jett Bag (LHSSE)~~

EVA 2 PREP

FVA 3 POST

FVA 3 PRFP

EVA 2 POST

~~DRY PGA (Or Perform Configure ECS For Sleep)~~  
 Connect LM O2 Hoses, R/B & B/R  
 CABIN GAS RETURN - AUTO  
 SUIT GAS DIVERTER - PUSH - CABIN  
 SUIT ISOL - SUIT FLOW

~~DON ICG (ICG Bag, LHMS)~~  
 Don Comm Carrier (Comm Panel)  
 Connect CWG Adapter (LHSSC)

~~Connect LM Comm  
 Audio CB - CLOSE  
 Verify Comm~~

~~Stow Heaviest Collection Bag Aft  
 Of Eng Cover (See 2-2)  
 Transfer Others To CDR's Station~~

~~Change LM ECS LiOH Cart  
 Stow Used Cart In Bkt Aft Of Eng  
 Cover~~

~~LMP Repeat DOFF SUITS \* \* \*~~

~~TLM BIOMED - RIGHT~~

~~Stow Collection Bags In Covers (Camr Compt)  
 Stow Collection Bags, See 2-2  
 Report Bag Location To Hou~~

~~PRO, V96E, DATA (MSFN  
 UPLINK CSM S.V.), OFF  
 V37E 06E, PRO(STBY Lt - On)~~

~~Configure ECS For Sleep  
 Stow LM O2 Hoses, R/R & B/B  
 SUIT ISOL - SUIT FLOW  
 CABIN GAS RETURN - AUTO (Verify)  
 SUIT GAS DIVERTER - PUSH - CABIN (Verify)  
 Install Other Glove~~

~~Stow LM EVA Antenna~~

~~Unroll CDR's Hammock With Sleep  
 Restraint~~

~~Unroll LMP's Hammock With Sleep  
 Restraint~~

LAUNCH PREP

EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

~~157:22 EVA DEBRIEFING WITH HOU (15 Min)~~

~~Copy Liftoff Time In Data Book  
 For Rev 44-49~~

~~157:37 EAT PERIOD (45 Min)~~

~~158:22 PRESLEEP & EQUIPMENT STOWAGE (48 Min)~~

~~172:32 Equipment stowage (27 min)~~

~~Empty ETB As Follows:~~

~~3 - B&W Mags J, K & M In LCG Compt  
 Stow Mags In LCG Compt In Bot Boot~~

~~Compt, IV Gloves To Comm Panel~~

~~1 - B&W Mag L In Aft RHSSC~~

~~2 - HCEX Mags E & F In Aft RHSSC~~

~~16mm Mags In RHSSC~~

~~EVA 3 Maps As Req'd~~

~~Penetrometer Drum In Top Boot Compt~~

~~Far UV Cassette In Top Boot Compt~~

~~Cosmic Ray Bag In LHMS~~

~~Solar Wind In ISA Bot Pkt~~

~~C/B not closed~~

~~Stow ETB Against Hatch~~

*In ISP big pocket*

~~Stow Cuff Checklists (2 In Purse, 2 On PGA's)~~

~~In ISA Big Pkt~~

~~Stow Purge Valves (Purse) In Aft LHSSC~~

7-6

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~~Stow Collection Bags In Covers (Camr Compt)  
 Stow Collection Bags, See 2-2  
 Report Bag Location To Hou~~

~~PRO, V96E, DATA (MSFN  
 UPLINK CSM S.V.), OFF  
 V37E 06E, PRO(STBY Lt - On)~~

~~Configure ECS For Sleep  
 Stow LM O2 Hoses, R/R & B/B  
 SUIT ISOL - SUIT FLOW  
 CABIN GAS RETURN - AUTO (Verify)  
 SUIT GAS DIVERTER - PUSH - CABIN (Verify)  
 Install Other Glove~~

~~Stow LM EVA Antenna~~

~~Unroll CDR's Hammock With Sleep  
 Restraint~~

~~Unroll LMP's Hammock With Sleep  
 Restraint~~

~~LMP: Attach Straps To LH & RHSSC  
 Adjust Strap Tension LHSSC  
 Route Inboard Center Support Strap  
 Under LMP & CDR Comm Cables,  
 Attach To Vertical Handhold, ECS  
 Module~~

~~Attach Outboard Center Support  
 Strap To Lower ISA Fitting,  
 Straddle/Ingress~~

~~CDR: Attach Aft Straps - Z27  
 Route Hammock Under Comm Cable  
 Attach Fwd Straps, Panel 1 & 2  
 Adjust Strap Tension~~

~~Attach Outboard Center Support Strap  
 To Horizontal Handhold, ECS Module  
 Ingress Hammock  
 Attach Inboard Center Support Strap  
 To PLSS Donning Station, Upper  
 Outboard  
 Adjust Strap Tension~~

~~159:10 REST PERIOD (8:00 Hr)~~

7-7

EVA 2 PREP

EVA 3 POST

EVA 3 PREP

EVA 2 POST

167:10 POSTSLEEP (25 Min)

Crew Awake - Verify CWEA Status  
 Caution: PREAMPS

~~CB(11) HEATERS: RR OPR - Close  
 RR STBY - Open~~

~~CB(11) MTRS: AOT - Close~~

~~Stow Hammocks & Sleep Restraints In  
 Jett Bag (On PGA)  
 Stow ETB In Jett Bag~~

~~STAY/NO STAY FOR FINAL JETTISON~~

CREW STATUS REPORT

CDR

LMR

~~FOOD \_\_\_\_\_  
 MED \_\_\_\_\_  
 SLEEP \_\_\_\_\_~~

~~Check LCG's~~

7-8

DATE 3/13/72DATE 3/13/72~~RNDV RADAR OP: CLOSE~~~~STANDBY open CB~~167:35 LGC/IMU POWER UP

~~BRO (Hold In Until STBY Lt-Off) Possible  
 PROG, RESTART Lts-On, M.A., LGC Warn-On/Off  
 (NO ATT, NO DAP, & GIMBAL LOCK Lts-On)~~

~~RSET, V96E~~~~CB(11) GASTA (AC/DC) - Close (2)~~~~CDR FDAI (AC/DC) - Close (2)~~~~IMU OPR - Close~~~~(GIMBAL LOCK Lt-Off, NO ATT Lt-Off In 90s)~~

*Delay 16-N65 Mission Timer decked out after capsule*

V16 N65E

MISSION TIMER - Check

~~V25 N01E, 1365E, E,E,E~~~~V15 N01E, 1365E, (All Zero)~~~~421 N27E, 10E~~~~15 01 Test Successful When~~~~R2 > 3 (78 sec)~~~~421 N27E, 0E~~*Wait for go ahead from MSFN*~~Notify MSFN of E-Dump~~~~TLM-HI (over 180) VOICE - VOICE~~~~V74E (42 sec)~~

UPDATA LINK - DATA (MSFN)

~~Uplinks CSM S.V. & RLS~~

UPDATA LINK - OFF

V05 N01E 1706E Verify Tephon

~~PWR AMPL - PREM  
 TLM - HI SEC  
 VOICE VOICE~~

~~(H) MISSION TIMER - CLOSE  
 CB 16 inverter 2 close  
 Select inverte 2~~

~~Copy:  
 P22 Acq Time~~

~~: : : (169:46)~~

*left off time update*  
*time increment update*  
L75 : 44 : . (171:45:08.60)

LO TIME (P57)

7-9

LAUNCH PREP

EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

Park RR Ant For P57 Use  
 CB(11) AOT LAMP - Close  
 P57E, R2 00004, PRO  
 N34 (Load LO Time), PRO  
 N06 00010

00003 175 43,35,18  
 00010

PRO (NO ATT Lt - On/Off, Twice)  
 N04 Grav. Err. (.01°) + 00009  
 V32E (NO ATT Lt - On/Off, Twice)  
 N04 Grav. Err. (.01°) + 00000  
 PRO  
 N22 ICDU Angles (.01°) + 245  
 PRO (NO ATT Lt - On/Off) + 124  
 N71 Align Star, 4 Marks, Achernar 3515  
 N05 Angle Diff (.01°)  
 PRO  
 N93 Torq. Angles (.001°) + 00003  
 PRO

60011  
13347  
65620

A/T 3 STAR INFO	
(Data Star 1)	Peacock (142)
(Data Star 2)	Dabih (241)
(Data Star 3)	Acamar (606)
(Data Star 4)	Alpheratz (401)

ENTER DO ETR  
 DATA STAR MARKS  
 N70 Data Star Code (From Table)  
 PRO  
 N71 Verify Detent & Star Code  
 PRO  
 V52/3 Mk, Load 4 Mk Pairs via N79  
 PRO  
 N05 Angle Diff. (.01°)  
 V32E For Remaining Data Stars  
 (After Last Star) V34E, 00E  
 CB(11) AOT LAMP - Open  
 Window Shades - Open  
 Park RR Ant. Along +X o

IF Adjacent Detent Desired:  
 V21 NO/E, 373E, 32533E,  
 PRO To N79

Wear 0000  
 shaft + 0 3000

7-10

DATE 3/29/72  
 3/13/72

DATE 3/13/72

173:29  
168:40 EAT PERIOD (45 Min)  
168:55 DON SUITS (45 Min)  
 TLM BIOMED - OFF  
 \* \* \* \* LMP 1st: \* \* \* \*  
 AUDIO CB - OPEN  
 Stow LM Comm Cable  
 Stow Comm Carrier On Comm Panel  
 Stow Gloves On Comm Panel  
 Stow Neckring Cover Aft RHSSC

#### CLEAN & LUB PGA

Wipe With Tissue, Lub With Pad From  
 EMU Maint Kit - Neckring, Wristring &  
 Gas Connectors  
 Lub Zipper With Pad

Remove Drink Bag, Stow In Jett Bag

#### DOFF ICG

Stow ICG (Empty Pkts) In Jett Bag

Stow In Jett Bag:  
 2 LCG Adapters (Aft RHSSC)  
 Urine Receptacle  
 LM ECS LiOH Cart & Bkt  
 DON PGA

Stow Jett Bag On PGA Legs In LHSSC  
 Stow LCG Plug In Purse  
 Connect UCTA, Bio Belt & LCG  
 Close Zippers & Lock  
 Don & Connect Comm Carrier  
 Stow PGA Elect Connector Cap In Purse

SUIT ISOL - ACT OVRD (SUIT DISC)  
 Connect LM 02 R/R & B/B, H2O & Comm

SUIT ISOL - SUIT FLOW

SUIT GAS DIVERTER - PULL - EGRESS

CABIN GAS RETURN - EGRESS

AUDIO CB - CLOSE

Verify Comm

AUDIO (CDR & LMP)

VHF A - OFF

B - ON

COMM:

VHF A RCVR - OFF

B RCVR - ON

7-11

EVA 2 PREP

EVA 3 POST

EVA 3 PRFP

EVA 2 POST

169:38 P22  
(Acq-:08)

CB(11) RR (2) - Close  
 R/RDOT H/HDOT (AC/DC) - Close  
 CDR X-PNTR - Close  
 SIG STR DISP - Close  
 RR MODE - LGC (Wait 10 sec Before V37E)  
 RATE/ERR MON (CDR) - RNDZ RDR  
 V95E  
 P22E  
 N06 R2 00001  
 PRD (N54 R, R; If R>400 & R<0)  
 DSKY Blanks, V83E, N54, PRO By 130 nmi  
 V16 N72E (+18000, +33500)  
 NO TRACK Lt-Off at ~103nmi  
 (N78E, Rng, Rng Rt)  
 NO TRACK Lt-On At ~80nmi  
 (N72 Goes To +18000, +27000)  
 P00E  
 CB (11) RR (2) - Open

Copy Ascent Pads  
 CSI Pad  
 LM DAP Wt

7-12

DATE 3/13/72DATE 3/13/72CDR Repeat DON SUITS \* \* \* \*COMM: TLM BIOMED - LEFT  
UPLINK SQUELCH - ENABLE169:50 PREP FOR EQUIPMENT JETTISON 2 (5 Min)

Report PRD Readings To Hou

Stow Purse In ISA Bot Pkt  
Stow ISA Aft Of Eng Cover  
Stow BSLSS/ROCK Bag Aft Of Eng Cover  
Stow Both OPS On Aft Eng CoverStow Helmets With LEVA's On OPS  
Stow Helmet Bag In Jett Bag  
Tie Jett Bag, Stow On Eng Cover

Fwd Hatch Handle - UNLOCK

169:55 HELMET/GLOVE DONNING (5 Min)Position Mikes (Both)  
Don Helmets With LEVA's  
Lower LEVA Protective Visor

Verify The Following:

Helmet &amp; Visor

O2 Connectors  
Connector Plugs  
Comm Connector  
PGA Diverter Vlv

- (1) - Aligned & Adjusted
- (2) - Locked
- (2) - Locked
- (1) - Locked
- (1) - Horizontal

Audio (CDR & LMP):  
MODE - VOX  
VOX SENS - As Reqd

7-13

LAUNCH PREP

EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

~~Doff EV Gloves & Verify  
Wrists Locks (4) - Locked  
Glove Straps (4) - Adjusted~~

~~170:00 PRESS INTEGRITY CHECK (4 Min)~~

~~NOTE: LM Suit Circuit Shall Not Be  
Maintained At Elevated Press > 5 Min~~

~~SUIT GAS DIVERTER - PULL - EGRESS (Ver)  
CABIN GAS RETURN - EGRESS (Verify)  
SUIT CIRCUIT RELIEF - CLOSE~~

~~PRESS REG A - EGRESS  
PRESS REG B - DIRECT 02  
Monitor Cuff Gage To 3.7 - 4.0 Psig  
Then PRESS REG B - EGRESS (Cuff  
Gage Decay <.3 Psig In 1 Min)~~

~~Suit Circuit Relief - AUTO (Suit Ckt  
Press Decays To 4.8 Psia)~~

170:04 CABIN DEPRESS FOR JETTISON (4 Min)

~~Confirm Go For DEPRESS From Hou  
CB(16) ECS: CABIN REPRESS - Open  
Ovhd Or Fwd Dump Valve - OPEN Then Auto  
At 3.5 Psia  
(Verify Cabin Press 3.5 Psia  
& LM Suit Circuit Lockup At 4.3  
Psia & Decaying)~~

~~H20 SEP SEL - PULL SEP 2~~

~~Ovhd Or Fwd Dump Vlv - OPEN (Verify LM  
Suit Circuit 3.6 To 4.3 Psia)~~

170:08 HATCH OPENING (3 Min)

~~Partially Open Fwd Hatch  
Ovhd Or Fwd Dump Valve - Auto~~

~~Fwd Hatch - Full Open~~

~~Jettison The Jett Bag~~

~~Verify Items Clear Of Ascent Stage~~

~~Fwd Hatch - Close & Lock~~

7-14

170:11 CABIN REPRESS (4 Min)

~~Dump Valves (Both) - Auto (Verify)  
Cabin REPRESS - Auto (Verify)~~

~~CB(16) ECS: CABIN REPRESS - Close  
MASTER ALARM & CABIN Warning Lt - On  
Verify Cabin Press Increasing  
PRESS REG A & B - CABIN~~

~~CABIN Warning Lt - Off  
Verify Cabin Press Stable At 4.6-5 Psia~~

~~Doff Gloves, Stow On Comm Panels  
Doff Helmets With Visors, Stow On  
Eng Cover~~

~~Verify Safety On Dump Valve~~

~~Audio (CDR & LMP):  
MODE - ICS/PTT~~

170:15 CABIN CLEAN UP FOR LAUNCH (15 Min)

~~Secure OPS (2) On Floor  
Stow EV Gloves & Visors (Remove Helmets)  
In LEVA Bags (Visors Aft)  
Place LEVA Bags On Floor, 1 Rt, 1 Left~~

~~Install ISA In Aft Cabin, High  
Attach BSLSS/Rock Bag To +Z27  
Place Double Cue Card Between Bag &  
Blkhd If Reqd, Use Tape (LHSSC)~~

~~Secure LEVA Bags On Eng Cover  
Secure Utility Lights On AOT  
Stow All EVA Onboard Data  
In Flt Data File~~

FVA 3 PREP

FVA 3 POST

FVA 3 DPOB

FVA 3 PRFP

FVA 2 POST

DATE 12/21/71

\*\*\*\*\* L0-1:15 (170:30) \*\*\*\*\*  
174:29

Verify:

MASTER ARM - OFF  
GUID CONT - PGNS  
ENG ARM - OFF  
ATTITUDE CONT (3) - MODE CONT  
MODE CONT (Both) - ATT HOLD

Configure CB's Per PWR UP Charts

EVA 1 DDDED

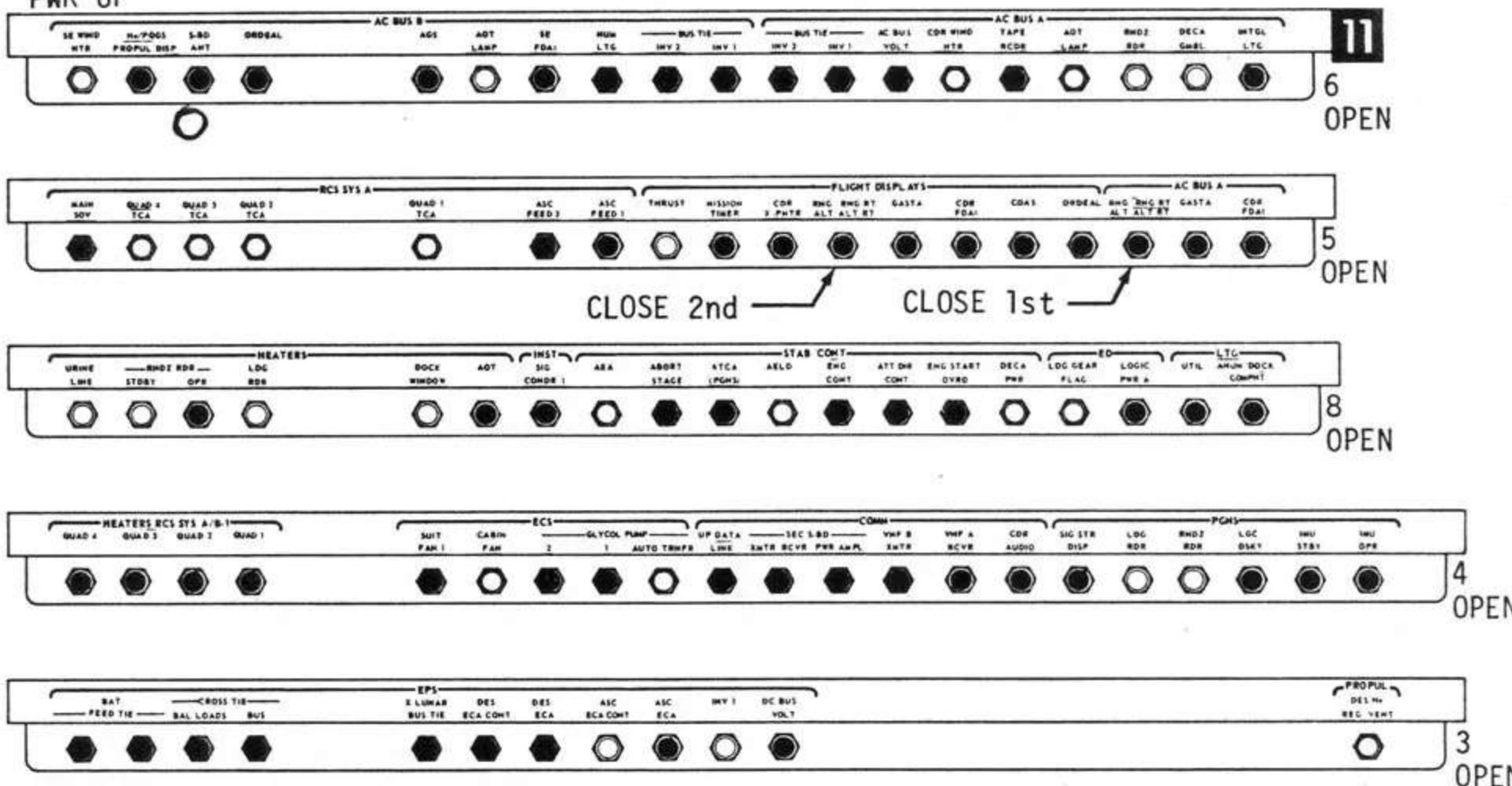
EVA 2 POST

LAUNCH PREP

EVA 3 POST

EVA 3 PRFP

PWR UP



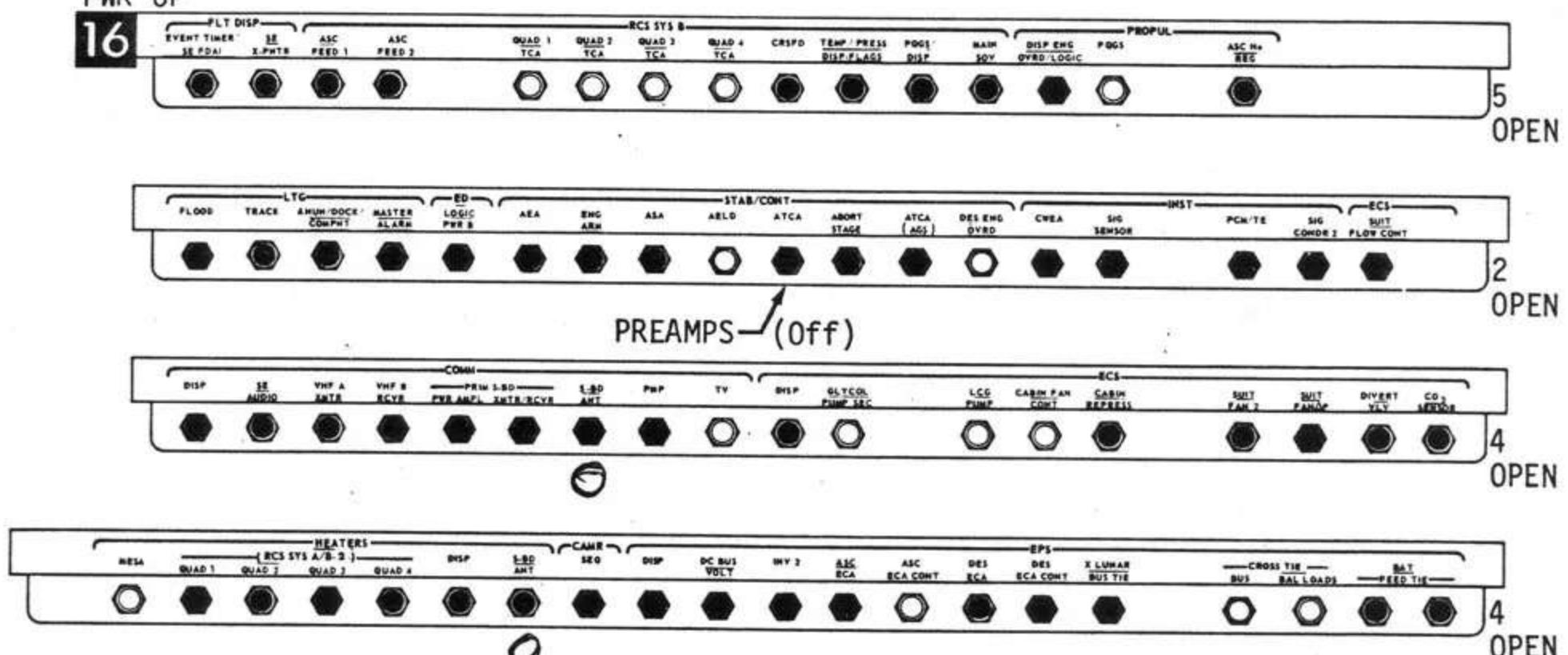
DATE 12/21/71

8-2

DATE 12/21/71



PWR UP



8-3

EMER LIFTOFF  
(TIME CRITICAL)EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

LAUNCH PREP

FVA 3 POST

FVA 3 PRFP

FVA 2 POST

[If P22 Performed Omit Self Test To]  
 RADAR TEST - OFF  
 CB(11) RR (2) - Close (NO TRACK Lt-On)  
 X-POINTER SCALE (2) - HI MULT  
 RATE/ERR MON (2) - RNDZ RDR  
 ATTITUDE MON (CDR) - PGNS, (LMP) - AGS  
 RNG/ALT MON - RNG/RNG RT  
 SHFT/TRUN - +50°  
 TEMP MONITOR - RNDZ (+10° To +75°)  
 RR MODE - AUTO TRACK  
 RADAR TEST - RNDZ (Rng Rt Tape  
 Drives, X-POINTERS Oscillate,  
 After 12 sec Rng Tape Drives  
 NO TRACK & PWR FAIL Lts - Off)

TEST/MONITOR - AGC 1.2 To 1.6  
 - XMTR PWR 2.8 To 3.2  
 - SHAFT ERR 2.2 To 2.6  
 - TRUN ERR 2.2 To 2.6  
 - AGC

V25 N07E (Set NORRMON Flg)  
 101E, 10E, 1E

RR MODE - LGC (NO TRACK Lt - On)

CB(16) Cycle CWEA

AGS STATUS-OPERATE  
 (AGS Warn Lt-On)

000 +888888 (OPR ERR Lt-On)

123 -45679  
 412R +1 Satisfactory

574R +Not Staged  
 604R -On Surface  
 612R +0 Attitude Hold At ABORT STAGE

400 + 4 Lunar Align (Wait 30 sec  
 Before 400 + 6)

544R \_\_\_\_\_ X Gyro Coeff (.01°/hr)  
 545R \_\_\_\_\_ Y Gyro Coeff  
 546R \_\_\_\_\_ Z Gyro Coeff

400 + 6E Calibrate Gyros  
 (Calib. Complete in 5m 2s)

8-4

DATE 12/21/71

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V63E, R2 00001, PRO  
 (TRACKER & NO TRACK Lts - Off After 12 sec)  
 N72 Varying @ 1/2 cps,  
 PRO  
 N78 +194.68 To +195.08 Rng (TM 193 To 197)  
 -0479.5 To -0519.5 Rng Rt (TM 477 to 517)  
 V34E  
 (PWR FAIL & NO TRACK Lts - On, X-PNTRS Center) 673R +0  
 RADAR TEST - OFF

224 \_\_\_\_\_ LOW LIM (+58663)  
 226 \_\_\_\_\_ RETGT VAL FOR TERM IN  $\alpha L$  (+58663)  
 231 \_\_\_\_\_ RLS (+57015)  
 232 \_\_\_\_\_ INS ALT (+00600)  
 410+0 \_\_\_\_\_ ORB INS  
 465 \_\_\_\_\_ INS HDOT (+00320)  
 662R +0 (4K10)

373 \_\_\_\_\_ TIG L/0 (+03440)  
 400R (+0 Calib Complete)

554R \_\_\_\_\_ X (.01°/hr)  
 545R \_\_\_\_\_ Y  
 546R \_\_\_\_\_ Z

If Gyro Drift Changes >2.0°/hr,  
 AGS Failed

Park RR Ant For P57 Use

EMER LIFTOFF  
 (TIME CRITICAL)

EMER LIFTOFF  
 (CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

GYRO TEST - POS RT (RPY RATE +5°/SEC)  
 GYRO TEST - NEG RT (YPR RATE -5°/SEC)

RATE SCALE -5°/SEC  
 Repeat Tests

V16 N65E LGC TIME  
 377 (Bias 170)

*EVA 2 POST D30%*  
 TRACK MODE - AUTO

V48, 12102, PRO, +10863 LM, PRO

V77E  
 V15NOTE, 42E(Rate Cmd Hot Fire Check  
 ACA to Jets)  
 CB(11 & 16) QUAD TCA (8)-Close  
 CDR ACA (Out-Of-Detent, Pause 2 sec At  
 Roll Rt R3 000XX Null)  
 Lt 777XX  
 Pitch Up Rt 000XX  
 Dn 777XX  
 Yaw Rt R2 777XX  
 Lt 000XX  
 CB(11&16) QUAD TCA (8)-Open

V76E(Min Imp Check of CDR ACA To LGC, ACA  
 Cold Fire CES Voltage, SEC RCS Coil Hot  
 Fire 4-JET In AGS)

8-6

DATE 3/13/72

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V77 N10E, 31E, RI 67777

GUID CONT-AGS  
 ATTITUDE CONT (3)-MODE CONT  
 CDR ACA (Deflect Slowly To Hardover, Pause  
 2 sec At Null)  
 Roll Rt R1 27757 (QUAD Flag & RCS  
 Lt 27737 TCA Warm Lt-On)  
 Pitch Up 27776  
 Dn 27775  
 Yaw Rt 27767  
 Lt 27773  
 GUID CONT - PGNS  
 MODE CONT (AGS) - AUTO

Cycle CB(16) CWEA

+0170 +000 +00004

UPDATA LINK - DATA

(MSFN Uplinks CSM S.V., RLS,  
 & Zeros POS/NEG Cells)

UPDATA LINK - OFF

(174+59)

LO-45

Window Shades - Close  
 CB(11) AOT LAMP - Close  
 P57E, R2 00004, PRO  
 N34 Load LO Time, PRO  
 N06 00010  
 00003  
 00110  
 PRO (NO ATT Lt - On/Off, Twice)

8-7

NO4 Grav. Err. (.01°)  
 V32E (NO ATT Lt - On/Off, Twice)  
 NO4 Grav. Err. (.01°)  
 PRO  
 N22 ICDU Angles (.01°)  
 PRO (NO ATT Lt - On/Off)  
 N71 Star, 4 Marks, Achernar (104)

If Adjacent Defeat Desired:  
V21 N01E, 373E, 3253E,  
PRO To N71

N05 Angle Diff. (.01°)  
 PRO  
 N93 Torq. Angles (.001°)  
 PRO  
 N25 00014, ENTR  
 POOE  
 CB(11) AOT LAMP - Open  
 Window Shades - Open

CB(11) RR(2) - Close

GYRO SEL - PRIM

SLEW RATE - HI

Position RR Ant (+18000,+33300)  
via V41 N72

RR MODE - SLEW

Manually Slew Up For 3 sec

CB(11) RR (2) - Open

BAT 5,6 - ON, tb - gray  
BAT 1,3 - OFF/RESET, tb-bp  
CB(11&16) ASC ECA CONT(2)-Close

Set Camr For Ascent (LM3/DAC/10/CEX (T4,1/500, 500)  
Mag (0), ISA Top Pkt, 12fps, 6 min)

DATE 3/29/72  
3/13/72

8-8

DATE 3/13/72

(175+09)

10-35 (+71-10)

V48E  
N46 12102 PRO  
N47 (+10892) LM Wt  
PRO

Possible MSFN Voice Update  
Of PIPA BIAS and/or LGC  
Gyro Compensation

GUID CONT - PGNS  
MODE CONTROL (PGNS) - AUTO

P12E  
N33 : : TIG (175+44  
PRO : : 60)

Copy & Load:  
047 \_\_\_\_\_ (From MSFN)  
053 \_\_\_\_\_ (From MSFN)

N76 VH Final (+55408)  
HDot Final (+00320)  
Xmg (+00000)  
PRO

Copy Updated AGS K Factor  
: : :

N74 TFI, YAW, PITCH  
DET - Set/DN  
V77E

\*\*\*\*\* LO-:30 (171+5) \*\*\*\*\*  
 (175+14)  
 400 + 4E Lunar Align

CB(11) QUAD 4,3,2,1 TCA (4) - Close  
 DES He REG/VENT - Close  
 AELED - Close  
 INV 1 - Close  
 CB(16) QUAD 1,2,3,4 TCA (4) - Close  
 AELED - Close  
 MASTER ARM - OFF  
 STAGE - SAFE/Guarded

X-POINTER SCALE (CDR) - LO MULT  
 RATE/ERR MON (CDR) - LDG RDR/CMPTR  
 ATTITUDE MON (CDR) - PGNS  
 GUID CONT - PGNS  
 MODE SEL - AGS  
 RNG/ALT MON - ALT/ALT RT  
 RATE SCALE - 25°/SEC  
 ACA PROP (CDR) - ENABLE  
 ENG ARM - OFF  
 ATT/TRANSL - 4 JETS  
 BAL CPL - ON  
 ABORT - Reset  
 ABORT STAGE - Reset

8-10

DATE 12/21/71DATE 12/21/71

PRPLNT TEMP/PRESS MON - ASC  
 HELIUM MON - ASC PRESS 1  
 SYS A&B ASC FUEL & OXID tb(4)-bp  
 SYS A&B QUAD 1,2,3,4, (8) tb-gray  
 CRSFD tb-bp  
 SYS A&B MAIN SOV tb(2)-gray  
 TEMP/PRESS MON - OXID MANF  
 ACA PROP (LMP) - ENABLE  
 GLYCOL - PUMP 1  
 SUIT FAN - 1  
 O2/H2O QTY MON - ASC 1  
 RATE/ERR MON (LMP) - LDR RDR/CMPTR  
 ATTITUDE MON (LMP) - AGS  
 RADAR TEST - OFF  
 TEST MONITOR - AGC  
 SLEW RATE - HI  
 RR MODE - SLEW  
 DEAD BAND - MIN  
 ATTITUDE CONTROL (3) - MODE CONT  
 MODE CONTROL (2) - AUTO  
 TEMP MONITOR - RNDZ RDR  
 RCS SYS A/B-2 QUAD 1,2,3,4 - AUTO  
 X-POINTER SCALE (LMP) - LO MULT  
 ACA/4 JET (2) - ENABLE  
 TTCA/TRANSL (2) - ENABLE  
 TTCA (2) - JETS (Dn)  
 Eng STOP (2) - Reset

8-11

Verify O2 Hoses R/R, B/B  
 Don Helmets, Gloves (Bot Boot Comp)  
 & Restraints

DES H2O - CLOSE  
 ASC H2O - OPEN  
 WATER TANK SEL - ASC  
 CABIN REPRESS - CLOSE  
 DES O2 - CLOSE  
 ASC O2 No. 1 - OPEN

PRESS REG A&B - EGRESS  
 SUIT GAS DIVERTER - PULL/EGRESS  
 CABIN GAS RETURN - AUTO  
 SUIT CIRCUIT RELIEF - AUTO

DES FUEL & OXID VENTS (2) - OPEN  
 (tb(2)-gray)  
 DES He REG 1&2 - OPEN  
 (tb-gray)  
 CB(11) DES HE REG/VENT - OPEN  
 ASC He REG 1&2 - tb(2) -gray

\*\*\*\*\* LO-17 (177-28), \*\*\*\*\*  
 V47E, 414 + 1

8-12

DATE 12/21/71

DATE 12/21/71

VHF A: XMTR - VOICE/RNG (HOT MIKE TO CSM)  
 RCVR - OFF  
 VHF B: XMTR - OFF  
 RCVR - ON  
 AUDIO (Both) VHF A - T/R  
 VHF B - RCV  
 MODE - ICS/PTT  
 VHF ANT - AFT  
 RECORDER - ON

(175+29)

\*\*\*\*\* LO-15 (177-30) \*\*\*\*\*

Guidance Recommendation From MSFN

BAT 2,4 - OFF/RESET, tb-bp  
 DES BATS - DEADFACE, tb-bp  
 If tb-bp,  
 CB(11 & 16) DES ECA - Open  
 CB(11 & 16) DES ECA CONT - Open

CB(11 & 16) ASC ECA CONT - Open

Verify CB's Per LAUNCH Configuration Charts

8-13

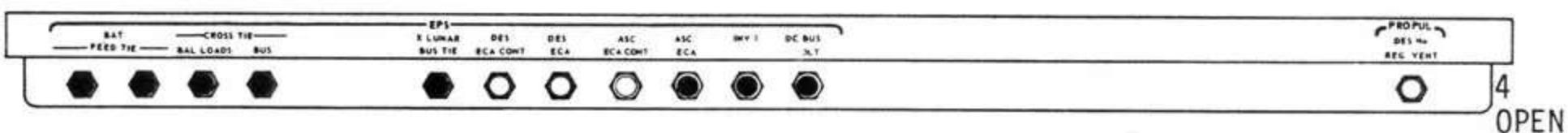
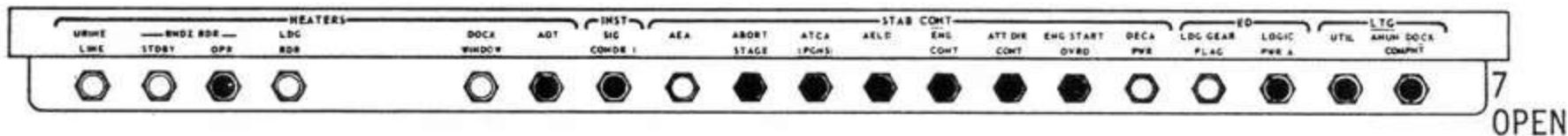
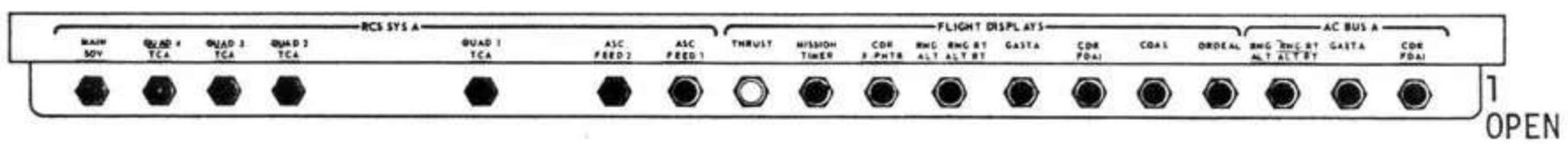
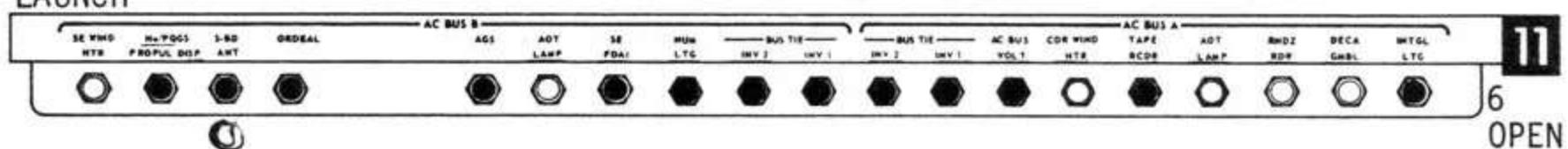
EVA 1 PREP

EVA 3 POST

EVA 3 PRFP

EVA 2 POST

LAUNCH



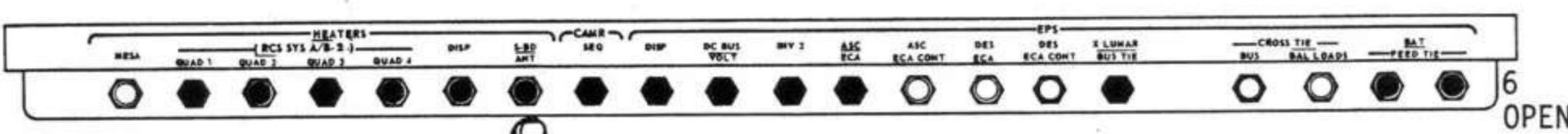
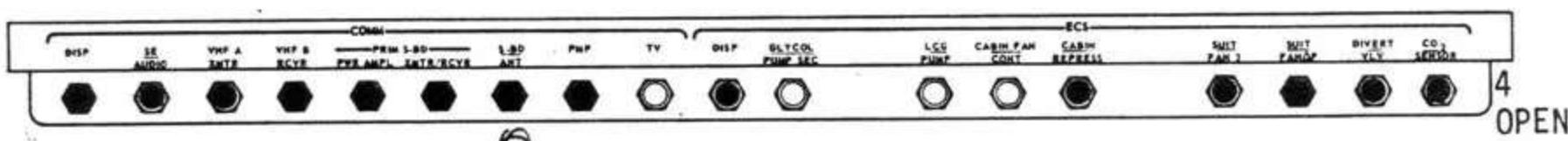
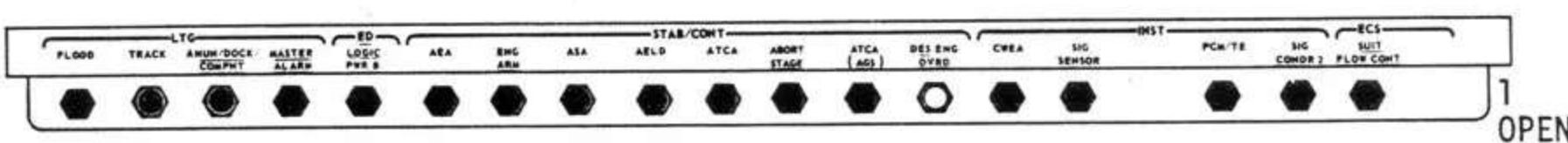
8-14



DATE 12/21/71



LAUNCH



8-15

EMER LIFTOFF  
(TIME CRITICAL)EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

ONE MAN EVA PREP

\*\*\*\*\* LO-12 (751-3) \*\*\*\*\*

V83E, 440R ( $\Delta R \leq 1.0$  fpm)

\*\*\*\*\* LO-10 (751-3) \*\*\*\*\*

(751-3+)

MASTER ARM - ON  
 ASC He SEL - TANK 1  
 ASC He PRESS - FIRE  
 ASC He SEL - TANK 2  
 HELIUM MON - ASC PRESS 2  
 ASC He PRESS - FIRE  
 MASTER ARM - OFF

*Close M>OV A just before opening except fuel*

SYS A ASC FEED 2 - OPEN, tb(2)-gray (Unless CDR BUS Loss)  
 Monitor SYS A Manf Press  
 SYS A MAIN SOV - CLOSE, tb-bp (Loss)  
 SYS B ASC FEED 2 - OPEN, tb(2)-gray (Unless LMP BUS Loss)  
 Monitor SYS B Manf Press  
 SYS B MAIN SOV - CLOSE, tb-bp

GO/NO GO For LO

8-16

DATE 3/13/72

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\*\*\*\*\* LO-5 (751-40) \*\*\*\*\*

(751-3A)

CB(11) RR (AC) - Close

Check APS START CARD  
 Check APS, RCS, EPS, ECS

GO To LM TIMELINE BOOK

TWEAK APOLINES (315R) FOR EARLY L.O. FOLLOWED BY LOSS OF COMM (COELLIPTIC SEQ.)

L.O. -	H <sub>A</sub>	$\Delta V_X$	CSI IS INS +	H <sub>A</sub> MIN (CSM RESCUE)
8	165	~165	60	96
7	154		59	91
6	143		59	86
5	132		58	80
4	122		58	74
3	111		57	69
2	101		57	63
1	91	~ 50	56	58

BURN TO HA

TPI (LM ACTIVE): NOM PAD

TPI (CSM ACTIVE): NOM PAD (-) 4 min

20% LM RCS REQ FOR NAV ATT CONT

8-17

DATE 12/21/71

## ONE MAN EVA PREP

CABIN PREP-Perform EVA 1,2 Or 3 As RqdEQPT PREP-Perform EVA 1,2 Or 3 As RqdPLSS DONNING-Perform EVA 1,2Or3 As RqdPosition Post EVA 1, 2 Or 3 Cue Card  
For Post EVANON EVA CREWMAN-Connected To LM 02,  
Comm, & H2OGas Connector Plugs In PGA  
PGA Diverter Vlv - HorizontalEVA CREWMAN: PGA Diverter Vlv -  
VerticalPLSS COMM CHECKVerify Powerdown CB Configuration  
(White Dots Out)Verify LM EVA Antenna Deployed  
For TV Thru LM, COMM: MODULATE - FM  
PWR AMP-PRIM

Verify Voice Comm With Hou

## Audio (Non EVA Crewman)

S-BAND - T/R  
ICS - T/R  
RELAY - OFF  
MODE - VOX  
VOX SENS - MAX  
VHF A - RCV  
B - T/R

## Audio (EVA Crewman)

S-BAND - T/R  
ICS - T/R  
RELAY - ON  
MODE - VOX  
VOX SENS - MAX  
VHF A - RCV  
B - T/R

## COMM:

VHF A XMTR - OFF  
A RCVR - ON  
B XMTR - VOICE  
B RCVR - ON  
TLM BIOMED - NON EVA CREWMAN  
SQUELCH VHF A&B -  
Noise Thres + 1 1/2  
RECORDER - ON  
VHF Antenna - EVA

AUDIO CB - Open  
EVA Crewman Connect to PLSS Comm

AUDIO CB - Close  
RCU PTT - MAIN (Rt), Verify

PLSS Mode-B, Blade-CCW  
(Tone-On, Vent Flag-P,  
Press Flag-0, 02 Mom)  
PLSS 02 Press Gage >85%

Comm Check With Each Other & Hou

NOTE: Unstow PLSS Antenna If It  
Transmits Garbled And/Or Loses TM  
Restow Before Egress

Audio (CDR & LMP)  
VHF A - T/R  
VHF B - RCV

**COMM:**  
VHF A XMTR - VOICE  
VHF B XMTR - OFF

PLSS Mode - A, Wheel-CCW (Tone-On)

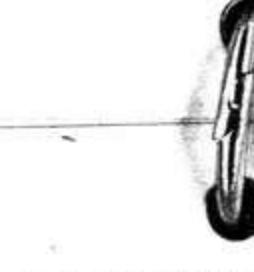
Perform Comm Check With Each Other &  
Comm & TM Check With Hou  
Read PLSS 02 Qty To Hou

NOTE: If Comm Is NO GO With Hou  
S-BD MOD - PM  
Verify Comm & TM

#### FINAL SYSTEMS PREP

CB(16) ECS: LCG PUMP - Close  
LCG - Cold, As Reqd  
CB(16) ECS: CABIN REPRESS - Close (Ver)  
SUIT FLOW CONT- Open

SUIT GAS DIVERTER - PULL-EGRESS(Verify)  
CABIN GAS RETURN - EGRESS (Verify)  
SUIT CIRCUIT RELIEF - AUTO (Verify)



DATE 12/21/71

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#### OPS CONNECT

SUIT ISOL - ACT OVRD (SUIT DISC)  
Discon LM 02 Hoses, Secure About PGA

Connect OPS 02 Hose To PGA B/B  
Retrieve Purge Valve (Purse) -  
Verify Closed, Lock Pin In & LO  
Install Purge Valve In PGA R/R

Drink  
DES H2O VLV - CLOSE

#### HELMET/GLOVE DONNING

Position Mikes (Both)  
PLSS FAN - ON, Rt (Vent Flag - Clear)  
Don Helmets, Check Drink Bag Position  
Don LEVA And Lower Protective Visor

EVA Crewman:  
LCG - COLD, As Reqd  
Disconnect LM H2O Hose  
Connect PLSS H2O Hose  
Stow LM Hoses



Verify EVA Crewman in CDR's Station

Verify The Following (Both):  
Helmet & Visor (2) - Aligned &  
Adjusted  
02 Connectors (7) - Locked  
Purge Valve (1) - Locked  
H2O Connectors (2) - Locked  
Comm Connectors(2) - Locked

Don EV Gloves & Verify:  
Wrist Locks (4) - Locked  
Glove Straps (4) - Adjusted

NOTE: If PGA Biting, PLSS 02 - ON/OFF

PLSS DIVERTER - MIN (Verify)  
PLSS PUMP - ON (Rt)



PRESSURE INTEGRITY CHECK

(Non EVA Crewman)

NOTE: LM Suit Circuit Shall Not Be Maintained At Elevated Press &gt;5 min

SUIT GAS DIVERTER - PULL-EGRESS(Verify)  
CABIN GAS RETURN - EGRESS (Verify)  
SUIT CIRCUIT RELIEF - CLOSEPRESS REG A - EGRESS  
PRESS REG B - DIRECT 02  
Monitor Cuff Gage To 3.7 - 4.0 Psig  
Then PRESS REG B - EGRESS (Cuff Gage Decay <.3 Psig In 1 min)

SUIT CIRCUIT RELIEF - AUTO (Suit Ckt Press Decays To 4.8 Psia)

(EVA Crewman)

PLSS 02 - ON (Tone-On, 02 Flag-0)  
Press Flag Clear (3.1-3.4 Psid)  
Cuff Gage 3.7-4.0 Psig  
02 Flag ClearPLSS 02 - OFF (Monitor Cuff Gage For 1 Min, Report Decay)  
PLSS 02 - ON (Cuff Gage 3.7-4.0 Psig, Tone & 02 Flag May Come On)  
Verify 02 Flag Clear

9-4

DATE 12/21/71

DATE 3/13/72

CABIN DEPRESS

Confirm Go For Depress From Hou CB(16)ECS: CABIN REPRESS - Open For TV Thru LM, CB(16) Comm: TV - Close CABIN REPRESS VLV - Close

Ovhd Or Fwd Dump Valve - OPEN Then AUTO At 3.5 Psia (Verify EVA Crewman Cuff Gage Does Not Drop Below 4.6 Psig)

Verify:  
Cabin At 3.5 Psia  
LM Suit Circuit Lockup At 4.3 Psia & Decaying  
PLSS/OPS/PGA > 4.6 Psig & Decaying

Start Wrist Watch :00

Ovhd Or Fwd Dump Valve - OPEN

Verify:  
Tone-On & H2O Flag - A (1.2-1.7 Psia)  
LM Suit Circuit 3.6 To 4.3 Psia & Decaying  
PLSS/OPS/PGA > 4.6 Psig & DecayingFINAL PREP FOR EGRESS :03

PLSS FEEDWATER - OPEN (H2O Flag - Clear In 2-4 Min)

Fwd Hatch - Open

Rest Until Cooling Sufficient  
Verify:  
PLSS/OPS/PGA 3.7 To 4.6 Psig  
CWEA Status:  
Caution  
PREAMPSLower EV Visor As Reqd  
Release PLSS Antenna :10POST ONE-MAN EVA

Perform POST EVA 1,2 Or 3 As Applicable

Partially Open Fwd hatch

9-5

ONE MAN EVA PREP

Emergency Launch Stowage  
Before EVA 1

EVA 1 DPER      EVA 2 POST      EVA 3 PRFP

CDR's PLSS(Remove Adjustable Strap)		Launch Stowage
		Before EVA 1
OPS (Both)	Recharge Station	Stowage
ISS	SRC Compt Or Floor(Temporary)	ISA Big Pkt
ETB & Contents		ISA Big Pkt
Jett Bag & Contents		ISA Big Pkt
Purse & Contents		ISA Big Pkt
Tool Harnesses		ISA Big Pkt
LM EVA Antenna	Stow	ISA Big Pkt
RCU's	RCU Shelf Or LCG Bag, LHMS	ISA Big Pkt
Sleep Restraints	BSLSS Bag	ISA Big Pkt
ISA	Hang Aft	ISA Big Pkt
EV Gloves	LEVA Bags	ISA Big Pkt
LEVA's	LEVA Bags	ISA Big Pkt
LEVA Bags	Floor, 1 Lt, 1 Rt	ISA Big Pkt
Helmet Bag	ISA Bot Pkt	ISA Big Pkt
LMP's PLSS	Floor Or Donning Sta.-Use 2 Adjustable Straps On Bottom: Break 2 Stitches, Re- move Keeper, Extend To Max Length, Hang PLSS Upside Down, Conformal Pad Aft. Attach 2 Waist Tethers (LEC Kit, RHSSC) To Handhold On Back Of PLSS Using Small Hooks. Route One Tether To Vertical Handhold On ECS Module And One Tether To Bracket Supporting PLSS In Recharge Station. Pull Straps Tight.	ISA Big Pkt
OPS(Both)	OPS Rack Or Floor (Secure) BSLSS Bag & Contents	ISA Big Pkt
	Attach To Floor. Place Double Cue Card On +Z27 Blkhd If Reqd	ISA Big Pkt
Fwd Hatch	Verify Locked	
Verify Snaps On LHMS, LH & RHSSC		

10-1

EMER LIFTOFF  
(TIME CRITICAL)EMER LIFTOFF  
(CSM PHASED)

EMER LAUNCH STOW

MANUAL ASCENT

## ONE MAN EVA PREP

## EMER LAUNCH STOW

EVA 3 POST

	Emergency Launch Stowage <u>Before EVA 2</u>
ICG's	On Crew Or ICG Bag, LHMS
PGA's	Don Or Tie To Eng Cover
CDR's	PLSS(Remove Adjustable Strap)
OPS(Both)	Recharge Station
RCU's	Floor(Temporary)
SRC's	LCG Bag, LHMS
1 Collection Bag	Box Aft Of Eng Cover
LM ECS LiOH Cart	Bkt Aft Of Eng Cover
ISS	ISA Big Pkt
Food Bag	ISA Big Pkt
ETB & Contents	ISA Big Pkt
Purse & Contents	ISA Big Pkt
Tool Harnesses	ISA Big Pkt
LM EVA Antenna	Stow
CDR's Hammock & Sleep	10-2
Restraint	Boot Compts
ISA	Hang Aft
EV Gloves	LEVA Bags
LEVA's	LEVA Bags
LEVA Bags	Floor, 1 Lt, 1 Rt
Helmet Bag	ISA Bot Pkt
LMP's PLSS	Donning Station. Same As <u>Before EVA 1</u> Chart
OPS(Both)	Floor (Secure)
BSLSS Bag & Contents	Attach to Floor. Place Double Cue Card On +Z27 Blkhd If Rqrd
Fwd Hatch	Verify Locked
Verify Snaps on LHMS, LH & RHSSC	

DATE 3/13/72

DATE 3/13/72

	Emergency Launch Stowage <u>Before EVA 3</u>
ICG's	On Crew Or ICG Bag, LHMS
PGA's	Don Or Tie To Eng Cover
CDR's	PLSS(Remove Adjustable Strap)
OPS(Both)	Recharge Station
RCU's	Floor (Temporary)
SRC's	LCG Bag, LHMS
1 Collection Bag	Box Aft Eng Cover
LM ECS LiOH Cart	Bkt Aft Of Eng Cover
Spare LCG's	ISA Big Pkt
ISS	ISA Big Pkt
Food Bag	ISA Big Pkt
ETB & Contents	ISA Big Pkt
Purse & Contents	ISA Big Pkt
Tool Harnesses	ISA Big Pkt
LMP's Hammock & & Sleep Restraint	ISA Big Pkt
LM EVA Antenna	Stow
CDR's Hammock & Sleep	Boot Compts
Restraint	Hang Aft
ISA	Mags & Bags In LCG. . . . .
	Compt, RHSSC
	Hammock Compt, LHSSC
	LCG Compt, RHSSC
	On LCG Bag, LHMS
EV Gloves	LEVA Bags
LEVA's	LEVA Bags
LEVA Bags	Floor, 1 Lt, 1 Rt
Helmet Bag	ISA Bot Pkt
LMP's PLSS	Donning Station. Same As <u>Before EVA 1</u> Chart
OPS(Both)	Floor (Secure)
Jett Bag & Contents	Tie To Floor, Place Double Cue Card On +Z27 Blkhd If Rqrd
Fwd Hatch	Verify Locked
Verify Snaps on LHMS, LH & RHSSC	

10-3

EMER LIFTOFF  
(TIME CRITICAL)EMER LIFTOFF  
(CSM PHASED)

MANUAL ASCENT

Emergency Launch Stowage  
Before Equipment Jettison 1

## EMER LAUNCH STOW

CDR's PLSS(Remove)	• • •	Recharge Station
Adjustable Strap)		
OPS(Both)	• • •	Floor(Temporary)
Lunar Boots	• • •	Donned
RCU's	• • • • •	LCG Bag, LHMS
1 Armrest	• • • • •	Installed Or ISA Big Pkt
Yo-Yo's	• • • • •	ISA Big Pkt
1 Collection Bag(Heaviest)	•	Box Aft Of Eng Cover
ISS	• • • • •	ISA Big Pkt
ETB & Contents	• • • • •	ISA Big Pkt
Purse & Contents	• • • • •	ISA Big Pkt
LMP's Hammock & Sleep	• •	ISA Big Pkt
Restraint		
LM EVA Antenna	• • •	Stow
CDR's Hammock & Sleep	• •	Boot Compts
Restraint		
ISA	• • •	Hang Aft
Mags & Bags In LCG	• • •	Camr Compt, RHSSC
Compt, RHSSC		
2 Collection Bags	• • •	CDR & LMP Crew Stations Secure Against Floating (Lightest)
1 Collection Bag	• • •	Hammock Compt, LHSSC
1 Collection Bag	• • •	LCG Compt, RHSSC
1 Collection Bag	• • •	On LCG Bag, LHMS
EV Gloves	• • •	LEVA Bags
LEVA's	• • •	LEVA Bags
LEVA Bags	• • •	Floor, 1 Lt, 1 Rt
Helmet Bag	• • •	ISA Bot Pkt
LMP's PLSS	• • •	Donning Station. Same As Before EVA 1 Chart
OPS (Both)	• • •	Floor (Secure) Attach To Floor. Place Double Cue Card On +Z27 Blkhd If Req'd
BSLSS/Rock Bag	• • •	Verify Locked
Fwd Hatch	• • •	
Verify Snaps On LHMS, LH & RHSSC		

10-4

DATE 3/13/72

DATE 3/13/72

EMERGENCY LIFTOFF (NO COOLING)

This Procedure Can Be Used For A Loss Of Circulation In Both Glycol Loops

## Notes:

- \* These Steps To Be Performed ONLY For Loss of Glycol
- \*\* CB(11) IMU STBY May be Cycled Open/Close On MSFN Request For IMU Temp Management (TM)

\* At Time Of Glycol Failure Perform The Following:

CB(11) AGS (AC) - Open	CB(16) AEA - Open
GASTA(AC/DC)- Open	ASA - Open
IMU OPR - Open	ATCA- Open
LGC/DSKY - Open	INV2- Open
**IMU STBY - Open	
NUM LTG (AC)- Open	
CB(11&16) ANUN/DOCK/COMPNT (2) - Open	

(L/0-:45)

PGNS ACT  
 \*(If Loss Of Glycol, Delay  
 \* PGNS ACT Until LO-:30)  
 \* CB(11or16) ANUN/DOCK/COMPNT-Close  
 \* CB(11) LGC/DSKY - Close Or If  
 \* Closed:  
 PRO(Hold In Until STBY Lt Off)  
 Possible RESTART Lt On, NO DAP  
 Lt On C BDU LGC/DSKY-CLOSE  
 PRO

\* CB(16) INV 1 - Close  
 \* ~~CB(11)~~ CB(16) - close Inv - 2  
 BAT 5&6 - ON, tb-gray  
 (If BAT L-On, Remove One DES  
 BAT & Skip Next Line)  
 BAT 1&3 - OFF/RESET, tb-bp

11-1

EMER LIFTOFF  
(TIME CRITICAL)EMER LIFTOFF  
(CSM PHASED)

MANUAL ASCENT

EMER LIFTOFF  
(CSM PHASED)

## EMER LAUNCH STOW

ONE MAN EVA PREP

RSET  
V96E  
CB(11) IMU OPR - Close  
(NO ATT Lt-Off In 90 Sec)  
\* CB(11&16) ANUN/DOCK/COMPNT - Open

*T-epoch update if available  
from MSN A*

V25 NOPE  
1706E

*note T-epoch  
to be used  
only in event  
of LGC/CMC  
clock sync  
R<sub>1</sub> 00011  
R<sub>2</sub> 13346  
R<sub>3</sub> 25621*

IF TIME PERMITS:  
Verify 02 Hoses R/R, B/B  
Don Helmets And Gloves  
PRESS REG A&B - EGRESS  
SUIT GAS DIV - PULL/EGRESS  
SUIT CIRCUIT RELIEF - AUTO

DES H2O - CLOSE  
ASC H2O - OPEN  
WATER TANK SEL - ASC  
\* WATER TANK SEL - SEC  
\* SEC EVAP FLOW - OPEN  
CABIN REPRESS - CLOSE  
DES 02 - CLOSE  
ASC 02 No. 1 - OPEN

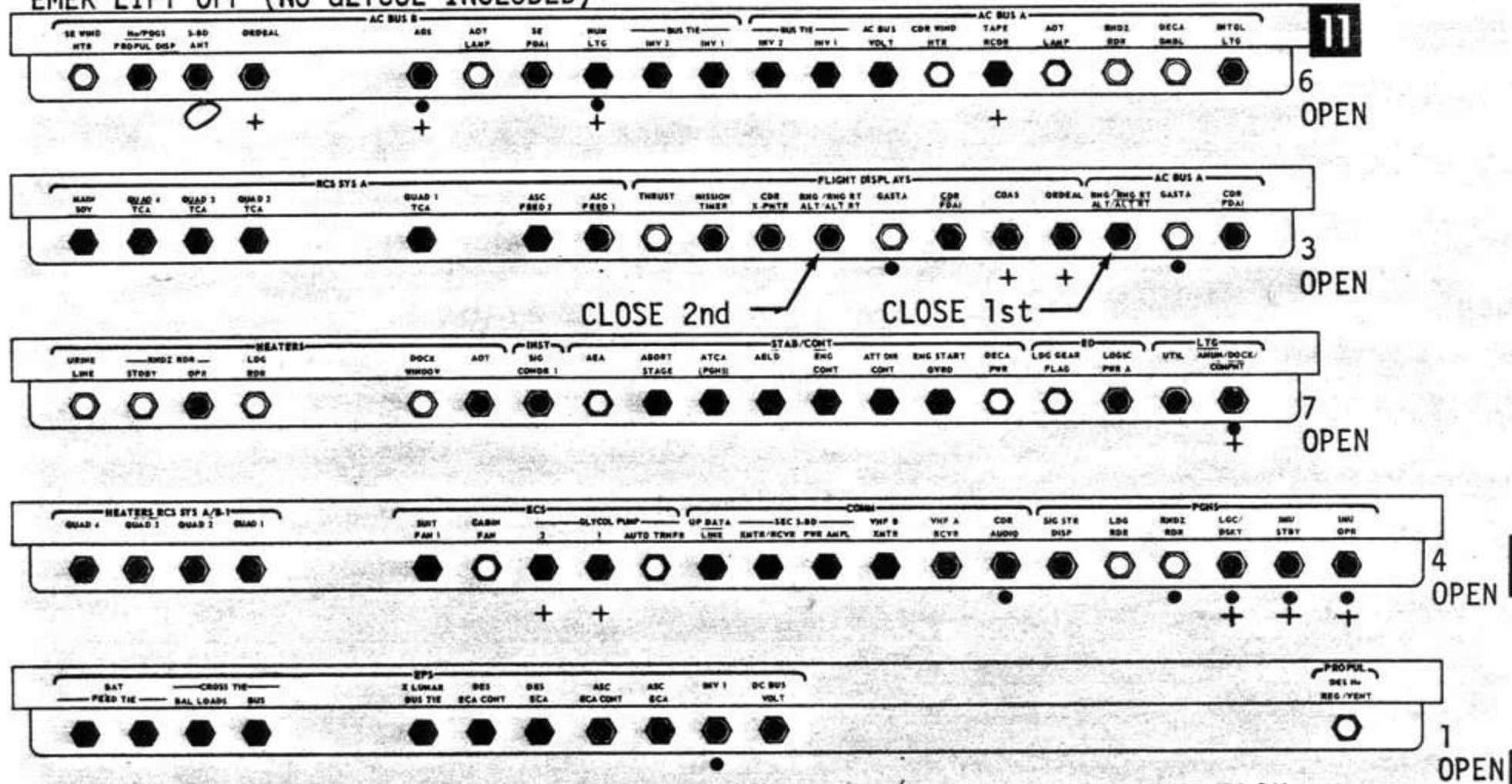
Configure CBs Per EMER LIFT OFF Status Charts

DATE 3/13/72

11-2

DATE 3/13/72

## EMER LIFT OFF (NO GLYCOL INCLUDED)



EMER LIFTOFF  
(NO GLYCOL INCLUDED)

EMER LAUNCH STOW

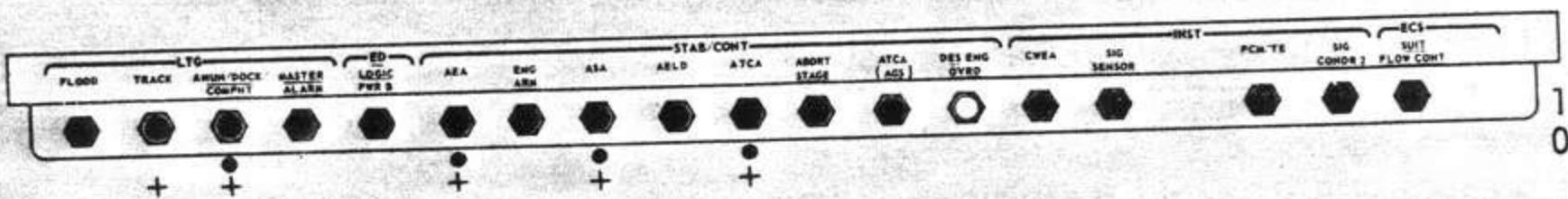
ONE MAN EVA DRFD

EMER LIFT OFF (NO GLYCOL INCLUDED)

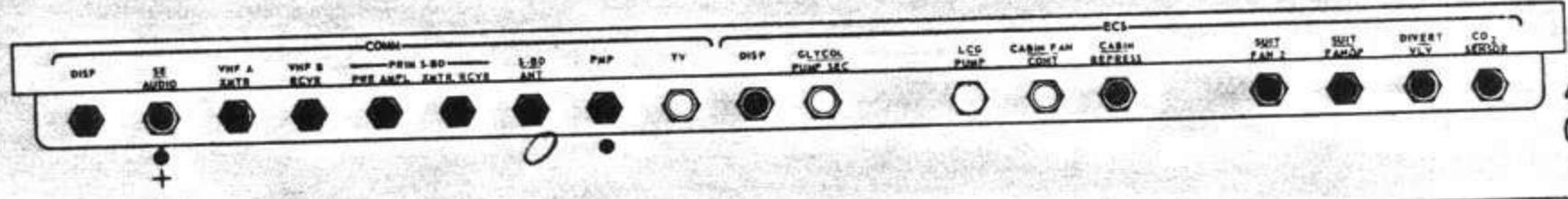
16



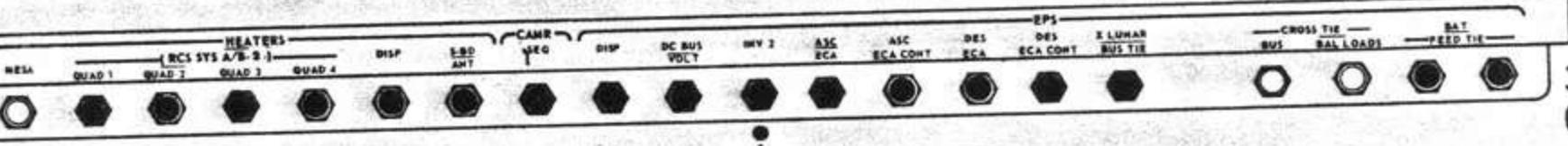
1  
OPEN



1  
OPEN



4  
OPEN



3  
OPEN

• } REF EQUIP CYCLING PLAN  
CONTINGENCY C/L PG 4-5  
+ — OPEN FOR LOSS OF GLYCOL

11-4

DATE 3/13/72

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\*\*\*\*\* L/0- :30 \*\*\*\*\*

MSFN-UPDATE

UPDATA LINK - DATA  
(MSFN Updates State Vector &  
Increments LGC Clock)  
UPDATA LINK - OFF

\*NOTE Clock Incremented  
Only For A Loss Of Glycol.

V16 N65E  
MISSION TIMER - Set

ALIGN PGNS

CB(11) GASTA (AC/DC) - Close  
P57E, OPT 4, PRO  
N34 Load Time From MSFN, PRO  
N06 R1 00010  
00001  
00010  
PRO (NO ATT Lt - On/Off, Twice)  
N04 Grav. Err. (.01°)  
PRO  
N22 ICDU ANGLES (.01°)  
PRO (NO ATT Lt - On/Off)  
N05 Angle Diff (.01°)  
PRO

11-5

EMER LIFTOFF  
(TIME CRITICAL)

MANUAL ASCENT

EMER LIFTOFF  
(TIME CRITICAL)

FVA LAUNCH STOW

ONE MAN FVA PREP

N93 Torq Angles (.001°)

PRO

N25 00014 ENTR

POOE

\*\*\*\*\* (L/0-:17) \*\*\*\*\*

P ~~X~~, ✓ (+80/-32)  
S-BAND ANT-SLEW (>3.0)  
~~TRACK MODE - AUTO~~

RCS HOT FIRE

V77E

CDR ACA (Deflect Out-of-Detent)

Roll Rt, Lt

Pitch Up, Dn

Yaw Rt, Lt

DAP LOAD

V48E, 12102, PRO

N47 LM Wt (+10,892)

PRO

11-6

DATE 3/13/72

DATE 3/13/72

TARGET PGNS

GUID CONT - PGNS

MODE CONT (2) - AUTO

P12E

N33 : : TIG LO  
PRO

N76 VH Final (+55095)  
HDot Final (+00195)  
Xrng (+00000)

PRO

N74 TFI, YAW, PITCH  
DET - Set/DN

\*\*\*\*\* (L/0-:15) \*\*\*\*\*

AGS ACT AND INITIAL

- \* CB(11) NUM LTG - Close (Open For Non-Use)
- \* AGS - Close
- \* CB(16) AEA - Close
- \* ASA - Close
- \* ATCA - Close
- AGS STATUS - OPERATE  
(M.A., & AGS Warn Lt - On)

11-7

EMER LIFTOFF  
(TIME CRITICAL)

MANUAL ASCENT

V16 N65E, 377 \_\_\_\_\_

V47E, 414+1E  
400 + 3E  
413 + 1E  
400 + 4E

If V47 Inoperative:  
400 + 4E Lunar Align  
240 +57015 X Position Comp  
261 -00026E Y Velocity Comp  
262 -00148E Z Velocity Comp  
254 + \_\_\_\_\_ E Epoch Time (377R)  
414 + 2E LM S.V. Via DEDA

TARGET AGS

224 + \_\_\_\_\_ (+58222)  
226 + \_\_\_\_\_ (+58222)  
232 + \_\_\_\_\_ (+00600)  
410 + 0  
465 + \_\_\_\_\_ (+00195)  
662 + 0E  
673 + 0E

- \* CB(11) INV 2 - Close
- \* INV - 2

11-8

DATE 3/13/72

DATE 3/13/72

APS PRESS

MASTER ARM - ON  
ASC He SEL - TANK 1  
ASC He PRESS - FIRE  
HELIMON MON - ASC PRESS 2  
ASC He SEL - TANK 2  
ASC He PRESS - FIRE  
MASTER ARM - OFF  
SYS A&B ASC FEED 2 (2) - OPEN  
SYS A&B MAIN SOV (2) - CLOSE

ENABLE CONTROLS

ACA PROP (2) - ENABLE  
ACA/4 JET(2) - ENABLE  
ATT CONT (3) - MODE CONT  
MODE CONT(2) - AUTO  
TTCA/TRANSL (2) - ENABLE  
MODE SEL - AGS  
RNG/ALT MON - ALT/ALT RT

CONFIGURE COMM

- \* S-BD: XMTR/RCVR - SEC
- \* : PWR AMPL - PRIM
- VHF A: XMTR - VOICE/RNG  
    : RCVR - OFF
- VHF B: XMTR - OFF  
    : RCVR - ON
- AUDIO (Both): VHF A - T/R  
              VHF B - RCV
- RECODER - ON

- \* CB(16) SE AUDIO - Close
- \* AUDIO CONT (CDR) - BU
- \* (LMP) - NORM
- \* CB(11) CDR AUDIO - Open

11-9

\*\*\*\*\* (L/0-:05) \*\*\*\*\*

BEGIN FINAL COUNTDOWN

BATS 1,2,3,4,L - OFF/RESET, tb-bp  
DES BATS - DEADFACE, tb-bp

If tb-bp:

CB(11&16) DES ECA (2) - Open  
DES ECA CONT (2) - Open

CB(11&16) ASC ECA CONT - Open  
Check APS START Card  
Go To LM TIMELINE BOOK

11-10

DATE 12/21/71

DATE 12/21/71

EMERGENCY L/O (TIME CRITICAL) SAFE ORBIT ONLY

PRO (Hold In Until STBY Lt - Off)  
RSET  
V96E  
CB(11)IMU OPR - Close  
(NO ATT Lt - Off In 90 sec)  
GASTA (AC/DC) - Close (2)

Configure CB(11)Per 11-3

Verify NO ATT Lt - Off  
V37E 57E, OPT 4, PRO  
N34 (Load LO Time) Don't PRO  
V01N25E, Copy R1  
V21N01E, 1570E, Load  
Copied Value

PRO  
N06 00010  
00000  
00010

PRO  
N22, PRO  
N25 00014, ENTR, 12E

GUID CONT - PGNS  
MODE CONT (P) - AUTO

Verify INVERTER -2  
BAT 5, 6 - ON, tb - gray  
(If BAT L - On, Remove One  
Des Bat & Skip Next Line)  
BAT 1 & 3 - OFF/RESET, tb-bp

Configure CB(16)Per 11-4

AGS STATUS - OPERATE  
(M.A., AGS Warn Lt - On)  
400 + 4E (30sec minimum)  
342 + 0E

EMER LIFTOFF  
(TIME CRITICAL)

EMER LIFTOFF

EMER LAUNCH STOW

ONE MAN EVA PREP

(P12)  
N33, PRO  
N76, +55095  
+00195  
+00000

PRO  
N74 TFI, YAW, PITCH

V48E, 12102, PRO  
N47 LM Wt (+10,892), PRO

MASTER ARM - ON  
ASC He SEL - 1, 2, or BOTH  
ASC He PRESS - FIRE

GUID CONT - PGNS or AGS  
RNG/ALT MON - ALT/ALT RT  
MODE CONT (2) - AUTO  
ATT CONT (3) - MODE CONT  
ACA PROP (2) - ENABLE  
ACA/4JET (2) - ENABLE  
TTCA/TRANSL (2) - ENABLE

VHF A: XMTR - VOICE/RNG (Hot Mike to CSM)  
: RCVR - OFF  
VHF B: XMTR - OFF  
: RCVR - ON  
AUDIO (Both): VHF A - T/R  
: VHF B - RCV

12-2

DATE 3/13/72

DATE 12/21/71

BAT 1, 2, 3, 4, L - OFF/RESET  
DES BATS - DEADFACE, tb-bp  
If tb-bp:  
CB(11 & 16) DES ECA (2) - Open  
DES ECA CONT (2) - Open

CB(11 & 16) ASC ECA CONT (2) - Open

If Time Permits:  
Verify O2 Hoses R/R, B/B  
Don Helmets & Gloves  
PRESS REGS A & B - EGRESS  
SUIT GAS DIVERTER - PULL/EGRESS  
SUIT CIRCUIT RELIEF - AUTO

Go To TIMELINE BOOK

EMER LIFTOFF  
(TIME CRITICAL)

EMER LIFTOFF

EMER LAUNCH STOW

ONE MAN EVA PREP

DATE 12/21/71

MANUAL ASCENT

CB(11) INV 2 - Close  
INVERTER - 2  
BAT 5,6 - ON, tb-gray  
BAT 1,2,3,4,L - OFF/RESET, tb-bp

PRO (Hold In Until STBY Lt-Off)  
RSET  
V96E

CB(11) IMU OPR - Close  
(NO ATT Lt-Off in 90 sec)  
GASTA (AC/DC) - Close (2)

If AEA & ASA Available:  
CB(11) AGS - Close  
AGS STATUS - OPERATE  
(M.A., AGS Warn Lt-On)

400 + 4E Lunar Align  
Wait 30 sec Before:  
400 + 0E  
342 + 0E  
400 + 1E

If Time Allows:  
V41N20E Load ICDU Angles That  
Existed At Landing (See DATA  
CARD BOOK, LUNAR SURFACE CARD)  
V40N20E (Releases IMU)  
NO DAP For 11sec

MODE CONTROL (2) - ATT HOLD

Configure CB's Per EMER LIFT OFF  
Charts (Pages 11-3 & 11-4)

EMER LIFTOFF  
(TIME CRITICAL)

EMER LIFTOFF

EMER LAUNCH STOW

MANUAL ASCENT

V48E, 12102, PRO  
N47 LM Wt (+04855)  
PRO

P , Y (+80/-32)  
S-BAND - SLEW (>3.0)  
TRACK MODE - AUTO

V77E  
CDR ACA (Deflect Out of Detent)  
Roll-Rt, Lt  
Pitch-Up, Dn  
Yaw-Rt, Lt

MASTER ARM - ON  
ASC He SEL-BOTH  
ASC He PRESS - FIRE

For AGS L/O: 604+OE  
Check APS START Card  
ABORT STAGE - Push  
ENG ARM - ASC  
DET - RESET & START At IGN  
ENGINE START - Push  
Go To TIMELINE BOOK For Attitude Profile

13-2

DATE 3/13/72

NASA — MSC