



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

* APOLLO 17

DECEMBER 6 LAUNCH

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BASIC

LM ACTIVATION CHECKLIST

PREPARED BY

FLIGHT PROCEDURES BRANCH
CREW PROCEDURES DIVISION

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SEPTEMBER 11, 1972

R. Parker

SIGNATOR OC
080-446

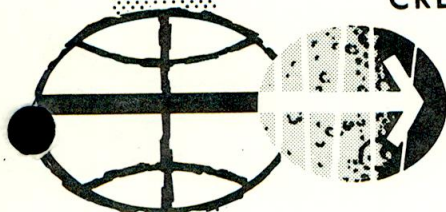
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SUBJECT *

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APOLLO 17

LM ACTIVATION CHECKLIST

SEPTEMBER 11, 1972

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LM ACTIVATION CHECKLIST

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TLC DAY

TLC DAY

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1-1

CSM TO LM TRANSFER LIST (TLC)

<u>CSM</u>	<u>ITEM</u>	<u>LM</u>
A2	Jettison Bag	Temp Stwg
ICG	Scissor (1)	Data File
CCU Cable	CWG Elect Adapter w/cap (2)	On Crew
On Crew	Comm Carrier (2)	On Crew
R5	Inflight Straps (4)	On CDR's Umbil
R5	Utility Straps (3)	LHSSC
A8	CWG's (2 pr)	AFT ENG COVER

TRANSFER LIST

1-2

R13	70mm Mag (4) In Bag	AFT RHSSC (B&W-L; HCEX-A, E&F)
R13	70mm Mag (3) In Bag	AFT Eng Cover (B&W-H&I; HCEX-D)
A8	70mm Mag (2) In Bag	AFT Eng Cover (B&W-J,K)
A8	70mm Mag (2) In Bag	BOT RHSSC (B&W-M&N)
R13	70mm Mag (3) In Bag	FWD RHSSC (B&W-G; HCEX-B&C)
R13	16mm Mag (3) In Bag	2 w/Bag-ISA Top Pkt (P&Q) 1 Window SEQ Camr (0)
R3	LM ACTIVATION C/L (2)	Data File

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1-3

40:00

IVT TO LM

- 1 Activate CABIN DUMP VALVE & Open Hatch
 Carry Comm Carrier, CWG Connector &
 CSM 02 Hose
- 2 Record Docking Tunnel Index Angle

 _____ Rc
- 3 FLOOD LIGHT - All
 EXTERIOR LTG - OFF
 Window Shades (3) - Open
- 4 DES H20 - OPEN
 DES 02 - OPEN
 CABIN REPRESS - AUTO
 CB(16) CABIN REPRESS - CLOSE
- 5 Check AOT Visibility

IVT TO LM

1-4

40:05ENTRY STATUS CHECK

- 1 Mount Purse (ISA Bottom Pocket)
Stow Drink Bags (2) (ISA Back Pkt) In Jett Bag
Stow LCG's (LHMS) In ISA Big Pkt
Unstow ISA And Install On AFT
Cabin Rest Station Fittings
Stow Food Stick (1) (Food Compt) In Jett Bag
- 2 Verify CB Status Per INITIAL ACTIVATION
status Chart

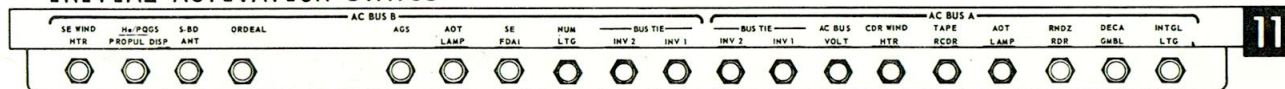
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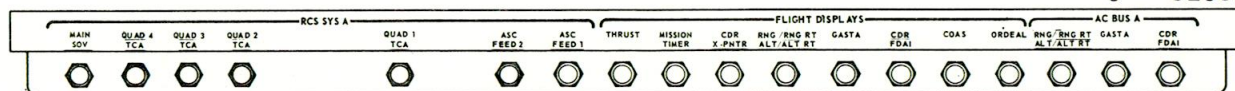
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INITIAL ACTIVATION STATUS

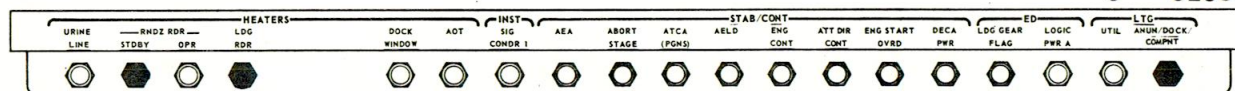
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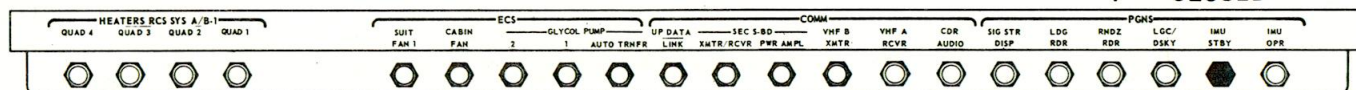
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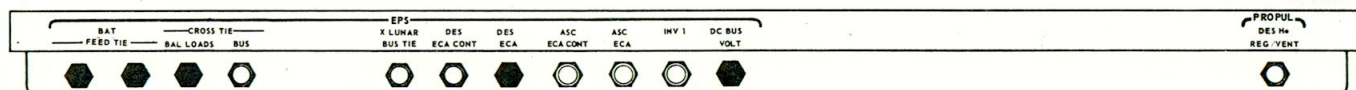
3 - CLOSED



1 - CLOSED

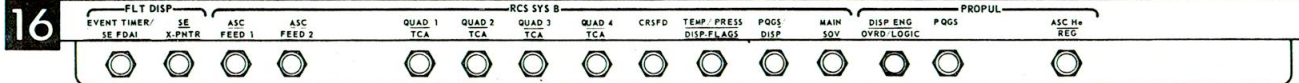


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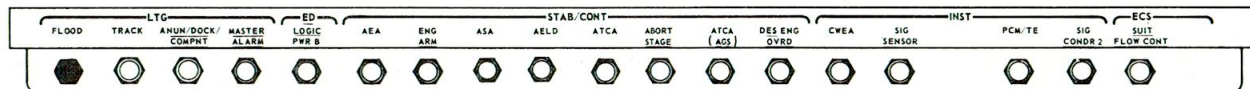


INITIAL ACTIVATION STATUS

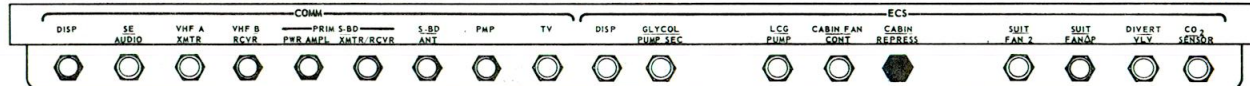
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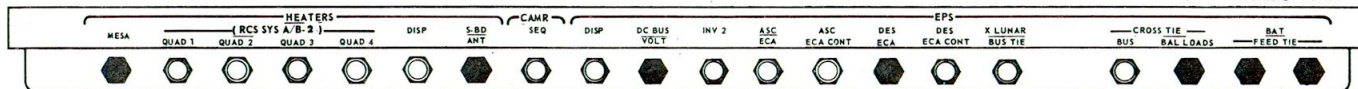
1 - CLOSED



1 - CLOSED



7 - CLOSED



DATE 9/11/72

1-7

- 3 UTILITY LIGHTS (2) - OFF
RR GYRO SEL - PRIM
- 4 FDAI 1&2 - INRTL
EARTH/LUNAR - PWR OFF
LTG - OFF
MODE - HOLD/FAST
ALT SET - 60
- 5 FUEL & OXID VENT (2) -tb-bp (Vlv Open)
LDG GEAR DEPLOY - tb-bp
MASTER ARM - OFF
ASC HE SEL - Both
MESA - LO
URINE LINE - OFF
STAGE - SAFE (Guarded)
- 6 S-BAND T/R - OFF
ICS T/R - OFF
RELAY - OFF
MODE - ICS/PTT
AUDIO CONT - NORM
VHF A&B - OFF
VOX SENS - 9
THUMBWHEEL VOL (5)-6
COAS - OFF
- 7 TTCA (CDR) - JETS

- 8 TIMER CONT - STOP
 LTG OVERRIDE (3) - OFF
 SIDE PANELS - OFF
 FLOOD OVHD/FWD - BRIGHT
 ANUN/NUM - DIM
 INTEGRAL - DIM
- 9 X-POINTER SCALE - HI MULT
 RATE/ERR MON - LDG RDR/CMPTR
 ATTITUDE MON - PGNS
 GUID CONT - PGNS
 MODE SEL - LDG RADAR
 RNG/ALT MON - ALT/ALT RT
 SHFT/TRUN - +50°
 RATE SCALE - 25°/SEC
 ACA PROP - ENABLE
 THR CONT - AUTO
 MAN THROT - CDR
 ENG ARM - OFF (SW GUARD - 12 o'clock)
 ATT/TRANSL - 4 JETS
 BAL CPL - ON
 ASC He REG 1&2 - tb - gray (vlv Open)
 DESCENT He REG 1 - tb - gray (vlv Open)
 DESCENT He REG 2 - tb - bp (vlv Closed)
 PRPLNT QTY MON - OFF
 PRPLNT TEMP/PRESS MON - ASC
 HELIUM MON - OFF
 ABORT and ABORT STAGE - Flush/Guarded

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1-9

- 10 SYS A&B ASC FUEL & ASC OXID (4) - tb-bp
 (Feed 2 - Close, Feed 1 - Open)
 SYS A&B QUADS (8) - ENABLE; tb - gray
 CRSFD - tb - bp (v1v closed)
 SYS A&B MAIN SOV - tb - gray (v1v open)
 TEMP/PRESS MON - He
 ACA PROP - ENABLE
 RATE/ERR MON - LDG RDR/CMPTR
 ATTITUDE MON - PGNS
 GLYCOL - PUMP 2
 SUIT FAN - 1
 O2/H2O QTY MON - ASC 2
- 11 ENG GMBL - ENABLE
 DES ENG CMD OVRD - OFF
 LDG ANT - AUTO
 RADAR TEST - OFF
 TEST MONITOR - ALT XMTR
 SLEW RATE - HI
 RNDZ RDR - SLEW
 DEAD BAND - MIN
 GYRO TEST - ROLL
 ATTITUDE CONTROL (3) - MODE CONT
 MODE CONT: (Both) - OFF (SW GUARDS - 9 o'clock)
 EVENT TIMER: TIMER CONT - STOP
 TEMP MON - LDG

1-10

RCS SYS A/B-2 QUADS (4) - OFF
LTG: SIDE PANELS - OFF
FLOOD-A11
OVHD/FWD - BRIGHT
LAMP/TONE TEST - OFF
EXTERIOR LTG - OFF
X-POINTER SCALE - HI MULT

12 ACA/4 JET (2) - ENABLE

TTCA/TRANSL (2) - ENABLE

RNDZ RDR ANT - Stowed
AOT - CL, ANGLE - 0000 (Pushed In)
TTCA (LMP) - JETS
AGS STATUS - OFF

13 PWR TEMP MON-ED/OFF
INV-OFF
DES PWR (6)-tb-bp
ASC PWR (4)-tb-bp
UNLINK SQUELCH-ENABLE

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1-11

- 14 AUDIO CONT - NORM
 S-BAND T/R - OFF
 ICS T/R - OFF
 RELAY - OFF
 MODE - ICS/PTT
 UPDATA LINK - OFF
 VHF A&B - OFF
 VOX SENS - 9
 THUMBWHEEL VOL (5)-6
- 15 S-BAND MODULATE - PM
 XMTR/RCVR - OFF
 PWR AMPL - OFF
 VOICE - OFF
 PCM - OFF
 RANGE - OFF/RESET
 VHF A (2) - OFF (SQUELCH-3)
 VHF B (2) - OFF (SQUELCH-3)
 TELEMETRY - OFF/HI
 RECORDER - OFF (tb-bp)
 VHF - AFT
 TRACK MODE - OFF
 PITCH - -75°
 YAW - -12°
 S-BAND - AFT

1-12

- 16 SUIT GAS DIVERTER - PULL/EGRESS
 CABIN REPRESS - AUTO
 LO PLSS FILL - CLOSE
 PRESS REG A&B - CLOSE
 DES O2 - OPEN
 ASC O2(2) - CLOSE
 SUIT ISOL (2) - SUIT DISC
 SUIT CIRCUIT RELIEF - AUTO
 CABIN GAS RETURN - AUTO
 CO2 CANISTER SEL - PRIM
 PRIM & SEC CO2 CANISTER - CLOSE
 WATER SEP SEL - PULL/SEP 2
 ASC H2O - CLOSE
 SEC EVAP FLOW - CLOSE
 PRIM EVAP FLOW (2) - CLOSE
 DES H2O - OPEN
 WATER TANK SELECT - DES
 SUIT TEMP - COLD
 LIQUID COOLING GARMENT - COLD
 WMS Vlv - CLOSE
 HI PLSS O2 FILL - CLOSE
 DES COOLING VLV - ON
- 17 Verify (192 PKG) Lanyard
 Not Seated
- 18 FWD CABIN RELIEF AND DUMP - AUTO

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1-13

40:20

HOUSEKEEPING

- 1 Install 16mm Camr Wedge - RHSSC
- 2 Tape Broomclip On AOT
- 3 Tape Crash Bar
- 4 Position UTILITY LIGHTS On Back AOT GUARD

HOUSEKEEPING

1-14

- 5 Configure 1-70mm Camr (Top RHSSC):
 Stow Reseau Cover In Camr Compt
 Remove Polarizing Filter & Stow in Camr Compt
 Install HCEX MAG A (AFT RHSSC) f11,250, ∞
 Stow Dark Slide In Camr Compt
 Unstow Trigger and Handle (Camr Compt)
 Unstow RCU/Camr Brkt (AFT RHSSC)
 Install Trigger, RCU/Camr Brkt, Then Handle
 Install Bag Dispenser Brkt (Camr Compt)
 Stow Camr In RHSSC Camr Compt, 2 Snaps
- 6 Position Q-Cards

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1-15

41:16

COMM ACTIVATION

- 1 Transfer To LM POWER (FLOOD Lts. Blink,
 C/W PWR Caution Lt - On)

 CB(11) EPS: XLUNAR BUS TIE - Close
 CB(16) EPS: XLUNAR BUS TIE - Close
 CB(11) LTG: UTIL - Close
- 2 CB(11) COMM: VHF B XMTR - Close
 : VHF A RCVR - Close
 : CDR AUDIO - Close
 INST: SIG CONDR 1 - Close
 ECS: GLYCOL PUMP 2- Close
- 3 CB(16) INST: SIG CONDR 2-Close
 EPS: DISP - Close
 : DES ECA CONT-Close
 Verify DES POWER: BAT 1,4 - tb-L0
 2,3, LUN - tb-bp
 DES BAT - tb-gray

1-16

4 Check BAT and BUS Voltages

When BUS VOLT < 27V, Select HI Voltage Taps

CB(11) EPS: CROSS TIE BUS - Close

CB(16) EPS: CROSS TIE BUS - Close

BAT 1 HI-V-OFF/RESET; tb-bp, then ON; tb-gray

BAT 4 HI-V-OFF/RESET; tb-bp, then ON; tb-gray

CB(16) EPS: CROSS TIE BUS - Open

: CROSS TIE BAL LOADS - Open

When BAT 1 AMP MTR INDICATES > 30

BAT 2 - ON; tb-gray

When BAT 4 AMP MTR INDICATES >30

BAT 3 - ON; tb-gray

5 CB(11) COMM: SEC S-BD XMTR/RCVR - Close

CB(16) COMM: DISP - Close

: VHF A XMTR - Close

: VHF B RCVR - Close

: PRIM S-BD PWR AMPL - Close

: PMP - Close

INST: SIG SENSOR - Close

: PCM/TE - Close

ECS: DISP - Close

Check Glycol Pressure _____ Psia

6 Connect To LMP COMM Umbilical Using

CWG Connector

CB(16) SE AUDIO - Close

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1-17

41:29

* S-BAND/VHF SIMPLEX VOICE TEST

- 1 AUDIO (LMP): S-BAND T/R - T/R
 : VHF A - T/R
 : VHF B - OFF
 COMM: S-BAND-PM, SEC, PRIM, DN VOICE BU,
 PCM, OFF/RESET, OFF, LO
 VHF A XMTR - VOICE
 VHF A RCVR - ON
 VHF ANT - AFT
 S-BAND ANT - AFT
 Perform VHF A Voice Check With CSM

- 2 COMM: VHF A XMTR & RCVR - OFF
 : VHF B XMTR - VOICE
 : VHF B RCVR - ON
 AUDIO (LMP): VHF A-OFF
 : VHF B-T/R
 Perform VHF B Voice Check With CSM

- 3 Perform S-BD Voice & LBR Check With MSFN
 TLM-HI
 Perform Voice & HBR Check With MSFN

- 4 BIOMED-RIGHT
Perform Voice & HBR Check With MSFN
- 5 TLM-LO
Perform Voice & LBR Check With MSFN
- 6 S-BAND: VOICE-VOICE
Perform Voice & LBR Check With MSFN
- 7 TLM-HI
Perform Voice & HBR Check With MSFN
- 8 TLM-LO
S-BAND: RANGE-RANGE
Perform Voice & Ranging Check With MSFN
- 9 Record & Report ED BAT Voltage to MSFN
BAT A _____; BAT B _____
- 10 CB(16) CAMR: SEQ - Close
Check SEQ Camera Operation

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1-19

41:43

OPS CHECKOUT

1 Record Source Pressures & Report To MSFN

CDR OPS _____

LMP OPS _____

1-20

41:48

COMM DEACTIVATION

- 1 AUDIO (LMP): S-BAND T/R - OFF
: VHF B - OFF
- 2 COMM: S-BAND - PM,OFF,OFF,OFF,OFF,
OFF/RESET,OFF,LO
: VHF B XMTR - OFF
: VHF B RCVR - OFF
- 3 Select LO TAPS

CB(16) EPS: CROSS TIE BUS - Close
: CROSS TIE BAL LOADS - Close
BAT 2 - OFF/RESET; tb-bp
BAT 3 - OFF/RESET; tb-bp
BAT 4 LO-V-OFF/RESET; tb-bp, then ON; tb-LO
BAT 1 LO-V-OFF/RESET; tb-bp, then ON; tb-LO
- 4 Configure CB Panels Per INT ACT STATUS
Chart (1-5, 1-6)
Disconnect From LMP Comm Umbilical
- 5 Transfer To CSM Power, Observe C/W
PWR Lt - Off

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DATE 9/11/72

1-21

42:00

IVT TO CSM

- 1 DES 02 - CLOSE
DES H20 - CLOSE
CABIN REPRESS - CLOSE
CB(11) EPS: DC BUS VOLT - Open
CB(16) ECS: CABIN REPRESS - Open
Window Shades (3) - Close
- 2 FLOOD LIGHT - OFF
- 3 CABIN RELIEF & DUMP (OVHD) - Open
IVT TO CSM, Close LM Hatch

LM TO CSM TRANSFER LIST

<u>LM</u>		<u>ITEM</u>		<u>CSM</u>
On Crew	-	Comm Carriers (2)	-	On Crew
On Crew	-	CWG Adptr w/cap(2)	-	CCU Cable
Temp Stwg	-	Jettison Bag	-	A2
Temp Stwg	-	LM ACTIVATION C/L (1)	-	R3
Jett Bag	-	Drink Bag (2)	-	Temp Stwg
Jett Bag	-	Food Stick (1)	-	Temp Stwg

TELEMETRY ACTIVATION

TELEMETRY ACTIVATION

DATE 9/11/72

2-1

IVT TO LM

- 1 Activate CABIN DUMP VALVE & Open Hatch
 Carry CSM 02 Hose
 Verify Docking Tunnel Index Angle (See 1-3)
- 2 FLOOD LIGHT - ALL
 Window Shades (3) - Open
- 3 DES H2O - OPEN
 DES 02 - OPEN
 CABIN REPRESS - AUTO
 CB(16) CABIN REPRESS - CLOSE

IVT TO LM
TLM ACT

2-2

TELEMETRY ACTIVATION

- 1 Transfer To LM POWER (FLOOD Lts. Blink,
 C/W PWR Caution Lt - On)

 CB(11) EPS: XLUNAR BUS TIE - Close
 CB(16) EPS: XLUNAR BUS TIE - Close
- 2 CB(11) INST: SIG CONDR 1 - Close
 ECS: GLYCOL PUMP 2 - Close
 EPS: DC BUS VOLT - Close
- 3 CB(16) INST: SIG CONDR 2 - Close
 EPS: DISP - Close
 : DES ECA CONT - Close
 Verify DES POWER: BAT 1,4 - tb-LO
 2,3,LUN - tb-bp
 DES BAT - tb-gray
- 4 Record & Report ED BAT Voltage to MSFN
 BAT A _____; BAT B _____

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DATE 9/11/72

2-3

4 Check BAT and BUS Voltages

When BUS VOLT $\leq$ 27V, Select HI Voltage Taps

CB(11) EPS: CROSS TIE BUS - Close

CB(16) EPS: CROSS TIE BUS - Close

BAT 1 HI-V-OFF/RESET; tb-bp, then ON; tb-gray

BAT 4 HI-V-OFF/RESET; tb-bp, then ON; tb-gray

CB(16) EPS: CROSS TIE BUS - Open

: CROSS TIE BAL LOADS - Open

When BAT 1 AMP MTR INDICATES $>$ 30

BAT 2 - ON; tb-gray

When BAT 4 AMP MTR INDICATES $>$ 30

BAT 3 - ON; tb-gray

5 CB(11) COMM: SEC S-BD XMTR/RCVR - Close

CB(16) COMM: DISP - Close

: PRIM S-BD PWR AMPL - Close

: PMP - Close

INST: SIG SENSOR - Close

: PCM/TE - Close

ECS: DISP - Close

Check Glycol Pressure _____ Psia

6 COMM: S-BAND - PM, SEC, PRIM, OFF, PCM, OFF/RESET, OFF, HI

7 Allow _____ Minutes For Data Observation

TELEMETRY DEACTIVATION

- 1 COMM: S-BAND - PM,OFF,OFF,OFF,OFF,
OFF/RESET,OFF,LO
- 2 Select LO TAPS

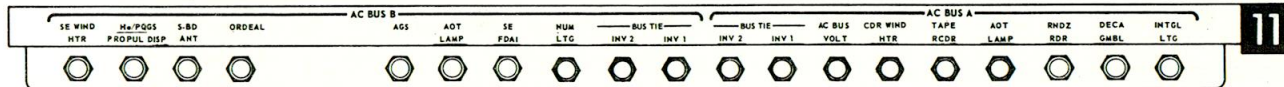
CB(16) EPS: CROSS TIE BUS - Close
 : CROSS TIE BAL LOADS - Close
BAT 2 - OFF/RESET; tb-bp
BAT 3 - OFF/RESET; tb-bp
BAT 4 LO-V-OFF/RESET; tb-bp, then ON; tb-LO
BAT 1 LO-V-OFF/RESET; tb-bp, then ON; tb-LO
- 4 Configure CB Panels Per INT ACT STATUS
Chart (2-5, 2-6)
- 5 Transfer To CSM Power, Observe C/W
PWR Lt Off

DATE 9/11/72

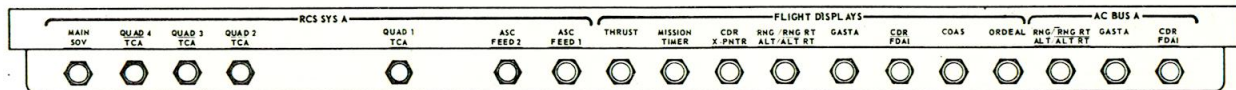
2-5

INITIAL ACTIVATION STATUS

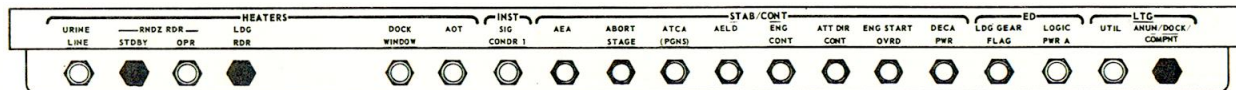
0 - CLOSED



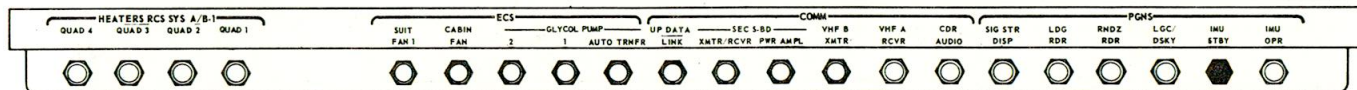
0 - CLOSED



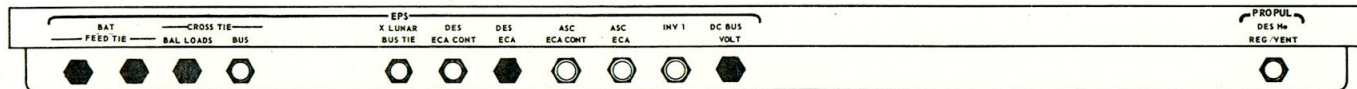
3 - CLOSED



1 - CLOSED



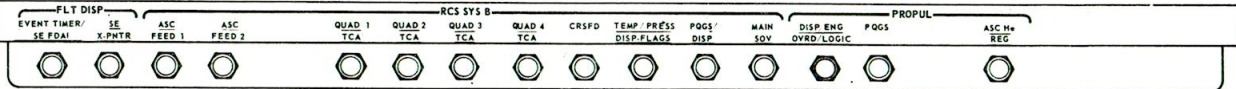
5 - CLOSED



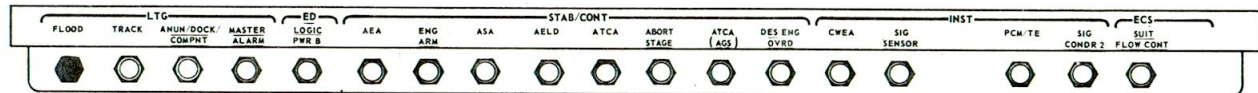
INITIAL ACTIVATION STATUS

0 - CLOSED

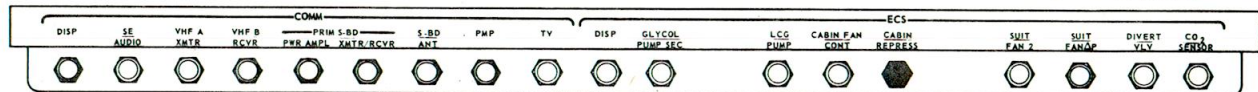
16



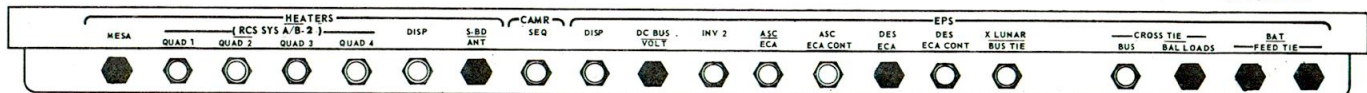
1 - CLOSED



1 - CLOSED



7 - CLOSED

DATE 9/11/72

DATE 9/11/72

2-7

DON SUITS

1 IVT TO CSM
Don PGA Without Helmet & Gloves

2 IVT To LM
Zip PGA's

IVT TO CSM

1 DES 02 - CLOSE
DES H20 - CLOSE
CABIN REPRESS - CLOSE
CB(11) EPS: DC BUS VOLT - Open
CB(16) ECS: CABIN REPRESS - Open
Window Shades (3) - Close

2 FLOOD LIGHT - OFF

3 CABIN RELIEF & DUMP (OVHD) - Open
IVT TO CSM, Close LM Hatch

PDI DAY

PDI DAY

DATE 9/11/72

3-1

CSM TO LM TRANSFER LIST(PDI)

<u>CSM</u>	<u>ITEM</u>	<u>LM</u>
A2	Jettison Bag (1)	Temp Stwg
On Crew	Bio Instrumentation (2)	On Crew
PGA Bag	UCTA (2)	On Crew
A2	FCS (2)	On Crew
U1	LCG (2)	On Crew
Temp Stwg	Drink Bag (2)	On PGA
Temp Stwg	Food Stick (1)	On PGA
PGA Bag	Suit ITSLA-EV (2)	On Crew
ICG	Sunglasses In Pouch (2)	PGA Pocket
On Crew	Watch/Wrist Mirror/Watchband (2)	On PGA
On Crew	Pen (2)	PGA Pocket
On Crew	Pen - Felt Tip (2)	PGA Pocket
On Crew	Pencil (2)	PGA Pocket
On Crew	Pocket, C/L & Scissor (2)	On PGA
On Crew	Pocket, Data (2)	On PGA
On Crew	Scissor	On Crew
On Crew	Pen Light (2)	PGA Pocket
On Crew	Earplug (2 Pr)	PGA Pocket
On Crew	Dosimeter - Personal (2)	PGA Pocket
	Passive (6)	

TRANSFER LIST

TRANSFER LIST

3-2

On Crew
Helmet Acc Bag
Helmet Bag
R8
CCU Cable
A8
In Jett Bag
On PGA
On PGA
R3

Comm Carrier (2)
IV Gloves (2 Pr) - CDR Transfer
Helmet (2) - CDR Transfer
CWG Elect Adptr Cap (2)
CWG Elect Adptr (2)
Lt/Wt Headsets (2)
LCG Plug (2)
Gas Connector Plugs (4)
PGA Elect Conn Cap (2)
LM XFER DATA CARD KIT
LM TIMELINE BOOK
LM DATA CARD BOOK
LM LUNAR SURFACE C/L
ORBIT MONITOR CHART (LM)
ASCENT MONITOR CHART
LM STAR CHARTS (3)
LM ACTIVATION C/L (1)
(RETURN JETTISON BAG TO CSM)

On Crew
Temp Stwg
Temp Stwg
On CWG Adptr
LHSSC
LHSSC
Purse
On PGA
Purse
Data File

DATE 9/11/72

DATE 9/11/72

3-3

107:57

LMP IVT TO LM

- 1 Activate CABIN DUMP VALVE & Open Hatch
Carry Comm Carrier & CSM 02 Hose
- 2 Verify Docking Tunnel Index
Angle (See 1-3)
Window Shades (3) - Open
Deploy LMP Crash Bar
- 3 Transfer To LM PWR
(FLOOD Lts. Blink, C/W PWR Caution Lt-On)
CB(11) EPS: XLUNAR BUS TIE - Close
CB(16) EPS: XLUNAR BUS TIE - Close
- 4 FLOOD LIGHT - All
CB(11) LTG: UTIL - Close
- 5 DES H20 - OPEN
DES 02 - OPEN
CABIN REPRESS - AUTO
CB(16) ECS: CABIN REPRESS - Close

108:00

CDR IVT TO LM

CDR IVT To LM With CDR &
LMP Helmet & Gloves

Connect To LM Comm Umbilical
CB(11) COMM: CDR AUDIO - Close
AUDIO (CDR): S-BAND-T/R
: ICS - T/R

ZIP SUITS & ATTACH RESTRAINTS

***** SR 108:06 *****

IVT TO LM
EPS ACT

3-4

108:17

EPS ACTIVATION

- 1 LTG: ANUN/NUM - BRIGHT (1 Caution, 9
Power Failure, Glycol COMP Lt-On)
- 2 CB(11) INST: SIG CONDR 1 - Close
EPS: DES ECA CONT - Close
: DC BUS VOLT - Close
CB(16) INST: SIG SENSOR - Close
: PCM/TE - Close
: SIG CONDR 2 - Close
EPS: DISP - Close
: DES ECA CONT - Close
- 3 Connect To LM Comm Umbilical
AUDIO (LMP): S-BAND T/R - T/R
: ICS - T/R
CB(11) COMM: SEC S-BD PWR AMPL - Close
CB(16) COMM: DISP - Close
: S.E. AUDIO - Close
: PRIM S-BD XMTR/RCVR - Close
: S-BD ANT - Close
: PMP - Close
S-BAND - PM, PRIM, SEC, VOICE, PCM, RANGE, OFF, LO
S-BAND ANT - APT

DATE 9/11/72

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3-5

- 4 Verify DES POWER: BAT 1,4 tb-LO
2,3,LUN tb-bp
: DES BAT tb-gray
BATS 5&6 NORMAL & BACKUP (4)-tb-bp
Check BAT and BUS Voltages

When BUS Volts $\leq$ 27V, Select High Voltage
Taps

CB(11) EPS: CROSS TIE BUS - Close

CB(16) EPS: CROSS TIE BUS - Close

: CROSS TIE BAL LOADS - Close

BAT 1 HI-V-OFF/RESET;tb-b/p, then ON;
tb-gray

BAT 4 HI-V-OFF/RESET; tb-b/p, then ON;
tb-gray

CB(16) EPS: CROSS TIE BUS - OPEN

CROSS TIE BAL LOADS - OPEN

When BAT 1 AMP MTR INDICATES $>$ 30

BAT 2 - ON; tb gray

When BAT 4 AMP MTR INDICATES $>$ 30

BAT 3 - ON; tb gray

- 5 CB(11) AC BUS B&A: BUS TIE INV 2&1(4)-
Close

AC BUS A : AC BUS VOLT -Close

EPS: INV 1 - Close

CB(16) STAB/CONT: ASA - Close

EPS: INV 2 - Close

3-6

- 6 POWER/TEMP MON - AC BUS
INV -1 Then 2
Verify Voltage in GREEN Band
CB(11) EPS: INV 1 - Open
Power Temp Mon SEL - CDR BUS

108:20

MISSION TIMER ACTIVATION

- 1 CB(11) AC BUS B: NUM LTG - Close
FLIGHT Displays: MISSION TIMER-Close
Set MSN TMR On CSM Mark

108:23

PRIMARY GLYCOL LOOP ACTIVATION

- 1 CB(16) ECS: DISP - Close (3 ☐)
GLYCOL - PUMP 1 _____ psia
- INST(SEC) _____ psia
- PUMP 2
CB(11) ECS: GLYCOL PUMP AUTO TRNFR-Close
: GLYCOL PUMP 1 - Close
: GLYCOL PUMP AUTO TRNFR-Open
GLYCOL - PUMP 1 (Glycol Comp Lt - off)
Verify Press _____ psia
CB(11) ECS: GLYCOL PUMP 2 - Close

DATE 9/11/72

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3-7

108:25

CAUTION/WARNING CHECKOUT

- 1 CB(16) LTG: MASTER ALARM - Close
 INST: CWEA - Close

WARN

CES AC

CES DC

LGC

RCS A REG

RCS B REG

CAUT

PREAMP H2O SEP

ECS

GLYCOL(ON IF TEMP
> 50°)

- CB(16) LTG: ANUN/DOCK/COMPT - Close
 STAB/CONT: ATCA - Close
CB(11) STAB/CONT: ENG CONT - Close

- 2 LAMP/TONE TEST - Check All Positions

C/W CHECKOUT
ECS C/O

3-8

108:27

ECS ACTIVATION & CHECKOUT

- 1 02/H2O QTY MON - ASC 2, ASC 1,
DES 1, DES 2
- 2 SUIT ISOL (2) - SUIT FLOW
SUIT ISOL (2) - ACTUATE OVRD (Suit Disc)
SUIT GAS DIVERter - PUSH/CABIN
- 3 CB(16) ECS: SUIT FAN 2 - Close
DIVERter VLV - Close

SUIT FAN - 2 (ECS Caution, H2O SEP Comp
Lts Off In 2 Min)
- 4 PRIM EVAP FLOW NO 1 - Open
GET _____:_____:

***** UD-2:00(108:29) *****

DATE 9/11/72

DATE 9/11/72

3-9

108:29

CDR CONNECT TO LM ECS

(DO NOT CONNECT LCG IF LANYARD STOPPER SEATED)

1 Connect To CDR Hoses (R/R & B/B)
PGA DIVERter VLV - IV(HORIZ)
SUIT ISOL - SUIT FLOW

108:29

LMP CONNECT TO LM ECS

1 Return CSM 02 Hose To CSM
Connect To LMP Hoses (R/R & B/B)
PGA DIVERter VLV - IV (HORIZ)
SUIT ISOL - SUIT FLOW
PRESS REG A - EGRESS (SUIT GAS DIVERter
Automatically Extends)
CABIN GAS RETURN - EGRESS

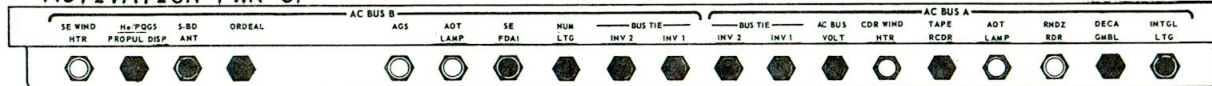
Configure CB's Per ACTIVATION PWR UP Chart

3-10

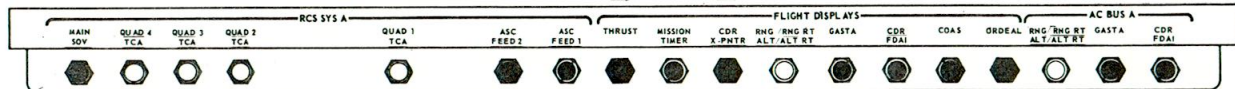
ACTIVATION PWR UP

6 - OPEN

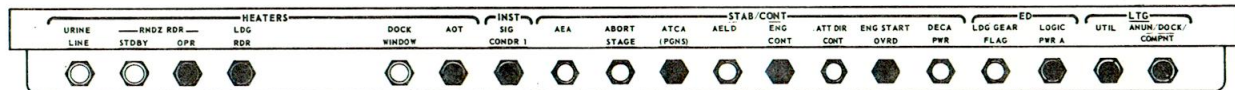
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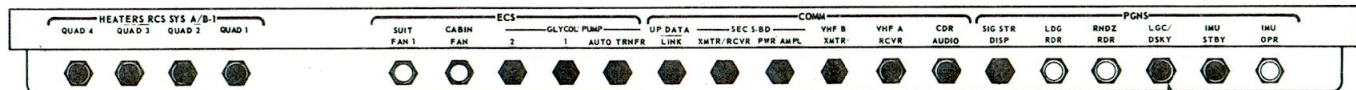
6 - OPEN



9 - OPEN

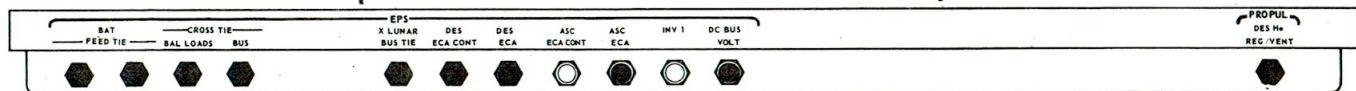


5 - OPEN



M.A., LGC ON THEN OFF,
RESTART, NO DAP

2 - OPEN



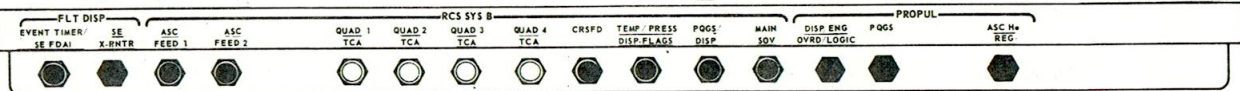
DATE 9/11/72

DATE 9/11/72

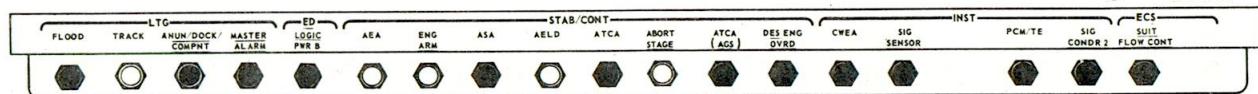
3-11

ACTIVATION PWR UP

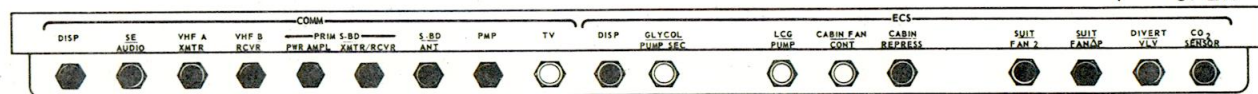
16



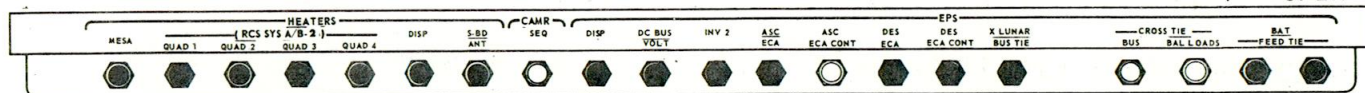
4 - OPEN



5 - OPEN



4 - OPEN



4 - OPEN

RCS HTR T/O
T/B VERIFICATION

3-12

108:33ACTIVATE RCS HEATERS

- 1 RCS SYS A/B - 2: QUADS(4)-AUTO

When BUS Volts $\leq$ 27V, Select High Voltage
Taps

CB(11) EPS: CROSS TIE BUS - Close

CB(16) EPS: CROSS TIE BUS - Close

: CROSS TIE BAL LOADS - Close

BAT 1 HI-V-OFF/RESET; tb-b/p, then ON;
tb-gray

BAT 4 HI-V-OFF/RESET; tb-b/p, then ON;
tb-gray

CB(16) EPS: CROSS TIE BUS - OPEN
CROSS TIE BAL LOADS - OPEN

When BAT 1 AMP MTR INDICATES $>$ 30
BAT 2 - ON; tb-gray

When BAT 4 AMP MTR INDICATES $>$ 30
BAT 3 - ON; tb-gray

108:33TB VERIFICATION

- 1 CB(16) INST: CWEA - Open Then Close

WARNCAUTCOMP

RCS A REG

RCS B REG

- 2 FUEL & OXID VENT (2) -tb-gray
LDG GEAR DEPLOY - tb-bp

- 3 ASCENT He REG 1&2 -tb-gray
DESCENT He REG 1-tb-gray
DESCENT He REG 2 -tb-bp

- 4 SYS A&B ASC FUEL & OXID (4)-tb-bp
SYS A&B QUADS (8)-tb-gray
CRSFD tb-bp
SYS A&B MAIN SOV -tb-gray

DATE 9/11/72

108:35PGNS TURN-ON & SELF TEST

- 1 Check Bus Voltages
RSET (RESTART LT - OFF)
- 2 V96E
V35E
F 88 88
(Master Alarm, LGC & ISS Warning,
And All DSKY Lts - On, 8's In All
Registers; All Lts Except NO DAP
Reset In 5 sec, LGC Warning Resets
Within 20 Sec)
- 3 CB(11) PGNS: IMU OPR - Close
NO ATT Lt - On (Off In 90 sec)
- 4 V25 NO1E 1365E
E,E,E,
- 5 V15 NO1E 1365E
R1,R2,R3 All Zero

PGNS T/O
VHF C/O108:35VHF B CHECKOUT

- 1 CSM Configure for VHF Simplex B
VHF B XMTR - VOICE
VHF B RCVR - ON
VHF ANT - FWD
AUDIO (Both): VHF B - T/R
TAPE RECORDER - ON
- 2 Both CDR & LMP Perform Voice Check
On VHF Simplex B

108:38VHF A CHECKOUT

- 1 CSM Configure For VHF Simplex A
VHF A XMTR - VOICE
VHF A RCVR - ON
VHF B XMTR - OFF
AUDIO (Both): VHF B - RCV
: VHF A - T/R
- 2 Both CDR & LMP Perform Voice Check On
VHF Simplex A

3-14

- 6 V21 N27E 10E (Test
Erasable And Fixed Memory)
R1 Number Of Errors
R2 Number Of Tests Started
R3 Number Of Erasable Tests Successful
Test Successful If $R2 > 3$ (Minimum
78 sec)

```
*PROG Lt-On *
* V05 N09E 01102 SELF-*
* TEST ERROR *
* N08E Record For MSFN *
* *
* R1 _____ *
* *
* R2 _____ *
* *
* R3 _____ *
```

- 7 V21 N27E 0E TERMINATE SELF TEST

DATE 9/11/72

DATE 9/11/72

3-15

108:41

LGC/CMC CLOCK SYNC/TEPHEM UPDATE

- 1 V25 N36E
- 2 Load Mission Time _____:_____:_____
- 3 V06 N65, On Mark - ENTR
Compare With CSM N65

CSM Time _____:_____:_____
- LM Time _____:_____:_____
- V55E - Load ΔT
Check Mission Timer
- 4 Record CSM TEPHEM
R1 _____
R2 _____
R3 _____
- 5 V25 N01E, 1706E Load TEPHEM (Octal)
- 6 V05 N01E, 1706E Verify TEPHEM

108:41

SUIT FAN/H2O SEP CHECK

- 1 CB(16) ECS: SUIT FAN 2 - Open
(Master Alarm, SUIT/FAN Warning
SUIT FAN Comp Lts - On)
- 2 CB(11) ECS: SUIT FAN 1 - Close
H2O SEP SEL - PUSH SEP 1
- 3 SUIT FAN - 1 (SUIT/FAN Warning, SUIT
FAN Comp Lts - Off
CB(16) ECS: SUIT FAN 2 - Close

LGC/CMC CLOCK SYNC
SUIT FAN/H₂O CK

3-16

108:45

GLYCOL PUMP CHECK

- 1 CB(11) ECS: GLYCOL PUMP 1 - Open
(Master Alarm, ECS Caution & Glycol
Comp Lts - On Momentarily)
CB(11) ECS: GLYCOL PUMP 1 - Close
(GLYCOL Comp Lt-On)
- 2 GLYCOL - INST (SEC) (8 psia)
CB(16) ECS: GLYCOL PUMP SEC - Close
(10-20 psi Rise)
: GLYCOL PUMP SEC - Open
(Press Decrease)
- 3 GLYCOL - PUMP 2 (21-37 psi)
(GLYCOL Comp Lt - On Then Off)
CB(11) ECS: GLYCOL PUMP AUTO
TRNFR-Open
GLYCOL - PUMP 1 (21-37 psi)

DATE 9/11/72

DATE 9/11/72

3-17

***** AOS - 108:47 *****

108:49

SET DAP

- 1 V48E
F 04 46 Codes (Octal)
R1 _____ (32022)
R2 _____ (00011)
PRO _____
- 2 F 06 47 LM, CSM Wt. (LBS)
R1 _____ (+36744)
R2 _____ (+37831)
PRO _____
- 3 F 06 48 GMBL TRIM, PITCH, ROLL (.01°)
R1 _____ (+00648)
R2 _____ (+00646)
(TERM) V34E

*E-MEMORY DUMP

- 1 Verify MSFN Contact
V74E (Erasable Dump) (42 sec)

108:49

*PRIM S-BD T/R & SEC PWR AMPL CK

- 1 Perform PRIM T/R & SEC PWR AMPL
VOICE CK With MSFN
(Up To 60 sec To Lock)
- 2 Notify MSFN of SEC T/R & PRIM PWR AMPL CK

108:54

*SEC S-BD T/R & PRIM PWR AMPL CK

- 1 S-BAND XMTR/RCVR - SEC
S-BAND PWR AMPL - PRIM
(Up To 60 Sec To Relock)
- 2 Report PRIM EVAP FLOW TIME (3-8)
- 3 MSFN UPDATE
Copy AGS Abort Constants
Copy DOI - 2 PAD

LDG GEAR DEPLOY
S-BD ANT ACT

3-18

***** UD - 1:30 (108:58) *****

108:58

LANDING GEAR DEPLOY

- 1 CB(11) ED: LDG GEAR FLAG - Close
: LOGIC POWER A - Open
MASTER ARM-ON (SYS B Lt-On)
LDG GEAR DEPLOY-FIRE, tb - gray
CB(11) ED: LOGIC POWER A - Close
(SYS A Lt - On)
LDG GEAR DEPLOY - FIRE
MASTER ARM - OFF (SYS A&B Lts - OFF)
CB(11) ED: LDG GEAR FLAG - Open

109:00

*MSFN UPLINK

- 1 UPDATA LINK - DATA
MSFN P-27 Updates LS REFSMMAT, LM
STATE VECTOR AND V66, AND LGC ABORT
CONSTANTS
UPDATA LINK - OFF

108:58

* S-BAND STEERABLE ANTENNA ACTIVATION

- 1 HTR CONT TEMP MONITOR - S-BAND
(-52° to +135°)
S-BAND -PM,SEC,PRIM,VOICE,PCM,
RANGE,OFF,HI
- 2 STEERABLE: PITCH - -75°
YAW - -12°
TRACK MODE - SLEW (Wait 30 sec)
PITCH (From MSFN) (+125)CCW
YAW (From MSFN) (-22)CCW
ANTENNA S-BAND - SLEW
- 3 Verify Signal Strength > 3.0
TRACK MODE - AUTO
UPLINK SQUELCH - OFF
- 4 S-BAND CHECK WITH MSFN
BIOMED SW - RIGHT

9/11/72

DATE 9/11/72

3-19

109:02DOCKED IMU COARSE ALIGN

- 1 Verify CSM In Min DEADBAND ATT HOLD
- 2 Calculate LM Gimbal Angles

<u>OG</u>	<u>IG</u>	<u>MG</u>
300.00	180.00	360.00

Rc (1-3) +

$$\text{CM} \quad - \frac{\dot{}}{(000.00)} + \frac{\dot{}}{(104.70)} - \frac{\dot{}}{(360.00)}$$

$$\text{LM} \quad \frac{\dot{}}{(300.00)} \quad \frac{\dot{}}{(284.70)} \quad \frac{\dot{}}{(000.00)}$$

- 3 V41 N20E COARSE ALIGN IMU
F 21 22 LOAD ICDU ANGLE OG,IG,MG (.01°)
(NO ATT LT - ON, FDAI Torques)
FDAI ANGLES 000,285,060
- 4 V40 N20E ZERO CDU (NO ATT Lt-Off)

109:02* ASCENT/LUNAR BAT CHECKOUT

- 1 CB(16) EPS: ASC ECA CONT - CLOSE
- 2 POWER/TEMP MON SEL-LUN
LMP LUNAR BAT OFF/RESET; tb - b/p,
then ON; tb - LMP
(VERIFY LUNAR BAT CURRENT)
LMP LUNAR BAT - OFF/RESET; tb - b/p
POWER TEMP MON SEL-BAT 5
BAT 5 NORMAL LMP FEED - ON; tb - gray
(VERIFY BAT 5 CURRENT)
LMP BAT 1 HI V - OFF/RESET; tb - b/p
- 3 CDR LUNAR BAT OFF/RESET; tb - b/p,
then ON; tb - CDR
(VERIFY LUNAR BAT CURRENT)
CDR LUNAR BAT - OFF/RESET; tb - b/p
POWER TEMP MON SEL - BAT 6
BAT 6 NORMAL CDR FEED - ON; tb - gray
(VERIFY BAT 6 CURRENT)
CDR BAT 4 HI V - OFF/RESET; tb - b/p
POWER/TEMP MON SEL - CDR BUS, LMP BUS

IMU C/A
BAT C/O

3-20

5 V25 N07E
F 21 07 SET REFSMFLG
77E,10000E,1E, V01 N01E,77E Confirm
Bit 13 Is Set (Set If 1st Digit Is
1,3,5, or 7)

6 V37E 51E
PRO
V37E 00E

7 V06 N20; On LM Mark - ENTR
Note Time, Copy CSM & LM Angles
GET _____:_____:

OGIGMG

CM _____.

LM _____.

8 Verify MSFN Copies Angles & Time

4 BAT 5 BACKUP CDR FEED - ON; tb - gray
BAT 6 BACKUP LMP FEED - ON; tb - gray
BAT 5 NORMAL LMP FEED-OFF/RESET; tb-b/p
BAT 6 NORMAL CDR FEED-OFF/RESET; tb-b/p
POWER/TEMP MON SEL - LMP BUS, CDR BUS

5 LMP BAT 1 HI V - ON; tb - gray
(VERIFY BAT 1 CURRENT)
LMP BAT 2 - ON; tb - gray
(VERIFY BAT 2 CURRENT)
CDR BAT 3 - ON; tb - gray
(VERIFY BAT 3 CURRENT)
CDR BAT 4 HI V - ON; tb - gray
(VERIFY BAT 4 CURRENT)
BAT 5 BACKUP CDR FEED-OFF/RESET; tb-b/p
BAT 6 BACKUP LMP FEED-OFF/RESET; tb-b/p

6 CB(16) EPS: ASC ECA CONT - OPEN

7 RECORD & REPORT ED BAT VOLTAGE TO MSFN

BAT A _____

BAT B _____

DATE 9/11/72

DATE 9/11/72

3-21

***** SS - 109:13 *****

109:13

P52 ALIGN

- 1 CB(11) AC BUS B: AOT LAMP - Close
V37E 52E
F 04 06 R2 00003
PRO
- 2 F 50 25 R1 00015
V32E
- 3 F 01 70 R1 00XXX (Load Star Code)
PRO (300 - DUBHE #52
111 - ALDEBARAN)
- 4 F 06 79 CUR/Spir (.01°), PRO
- 5 F 01 71 R1 00XXX (Verify Detent)
PRO
- 6 F52/3 71 MARK, Load Cur/Spir, PRO
PRO, To 3 For 2nd Star (RECORD GET)
- 7 F 06 05 STAR Angle Difference (.01°)
PRO

DUBHE #52
N88 X -45598
Y +11790
Z +88215

If Adjacent Detent Desired:
V21 N01E, 373E, 32533E,
PRO To 4

3-22

- 8 F 06 93 XYZ Torquing Angles (.001°)
PRO (Gyro Torquing)
- 9 F 50 25 R1 00014
ENTR
OOE
AOT-CL, ANGLE - 0000 (PUSHED IN)
- 10 CB(11) AC BUS B: AOT LAMP - Open
Notify CSM Min Deadband No Longer Required
- 11 V06 N20; On LM Mark - ENTR
NOTE TIME, Copy CSM & LM Angles
GET _____:_____:_____

 OG IG MG

CM _____· _____· _____·
LM _____· _____· _____·
- 12 Verify MSFN Copies Angles & Time

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109:23

RCS PRESSURIZATION

- 1 RECYCLE: SYS A&B ASC FEED 2(2) - CLOSE
: SYS A&B ASC FEED 1(2) - OPEN
: SYS A&B ASC FUEL & ASC OXID - tb (4) Remain - bp
RECYCLE; CRSFD-CLOSE
: MAIN SOV SYS A&B - OPEN
HTR CONT TEMP MON - Check RCS QUADS ($\geq 120^\circ$)
- 2 TEMP/PRESS MON - He (2820-3280 psia)
PRPLNT (40°-100°/10-50 psi)
FUEL MANF (25-90 psi)
OXID MANF (25-90 psi)
RCS QUANTITY A&B - 100%

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- 3 CB(16) LOGIC PWR B - Open
 MASTER ARM - ON (SYS A Lt - ON)
 HE PRESS RCS - FIRE
 (RCS A&B REG Warning Lts - Off)
 MASTER ARM-OFF (SYS A Lt - OFF)
- 4 RECYCLE: SYS A&B ASC FEED 2(2) - CLOSE
 : SYS A&B ASC FEED 1(2) - OPEN
 : CRSFD - CLOSE
 : SYS A&B MAIN SOV-OPEN
 CB(16) LOGIC PWR B - CLOSE
- 5 TEMP/PRESS MON - OXID MANF (175-188 psi)
 - FUEL MANF (175-188 psi)
 - PRPLNT (40°-100°/178-188 psi)
 - He (2750-3200 psi)

***** UD - 1:00 (109:28) *****

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109:29

*RCS CHECKOUT

- 1 GUID CONT - PGNS
ATT/TRANSL - 4 JET
ATT CONT (3) - PULSE
MODE CONT (Both) - ATT HOLD (SW GUARDS - 6 o'clock)
(NO DAP Lt - OFF)
ACA/4 JET (CDR) - DISABLE
TTCA (BOTH) - JETS
Verify HBR With MSFN & CSM In
Wide Deadband & Attitude Hold
QUAD Flags - Red & RCS TCA Lt - On Will
Occur During Cold Fire Checks

- 2 TTCA (Cold Fire) Check

V76E (NO DAP Lt - ON)

V11N10E, 5E

CDR TTCA

UP (+X) - R1 00252 (4 Flags)

DN (-X) - 00125 (4 Flags)

Repeat For LMP

E, 6E

RIGHT (+Y) - R1 00220

LEFT (-Y) - 00140

FWD (+Z) - 00011

AFT (-Z) - 00006

RCS C/O

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- 3 PGNS RATE CMD (Cold Fire), AGS PULSE (Cold Fire) Check
CB(11) ATT DIR CONT - CLOSE
V77E (NO DAP Lt - OFF)
V15 NOTE, 42E

CDR ACA (To Soft Stop, Pause 2 sec At Null)
ROLL RIGHT R3 00045-00057
ROLL LEFT 77720-77732
PITCH UP R1 00045-00057
PITCH DN 77720-77732
YAW RIGHT R2 77720-77732
YAW LEFT 00045-00057

- 4 AGS RATE CMD (Cold Fire), 4 JET SEC
COIL (Hot Fire) Check

Verify CMC MODE - FREE
GUID CONT - AGS
ATT CONT (3) - MODE CONT
ACA/4 JET (CDR) - ENABLE
CDR ACA (Deflect Slowly To Hardover, Pause 2 sec At Null)
ROLL - RIGHT
ROLL - LEFT
PITCH - UP
PITCH - DN
YAW - RIGHT
YAW - LEFT

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5 PGNS MIN IMP (Hot Fire) Check

GUID CONT - PGNS

V76E (NO DAP Lt-ON)

CB(11) RCS SYS A: QUAD TCA (4) - Close

CB(16) RCS SYS B: QUAD TCA (4) - Close

CB(16) INST: CWEA - Open Then Close

(RCS TCA Lt - OFF
QUAD FLAGS (8) - Gray)

V11N10E, 31E R1 67777

CDR ACA (Out Of Detent (2 1/2°), Pause 2 sec At Null)

ROLL RIGHT - R1 27757

ROLL LEFT - R1 27737

YAW RIGHT (Twice) - R1 27767

YAW LEFT (Twice) - R1 27773

V48E, V21E, 31022E, PRO, V34E

V11N10E, 31E

CDR ACA(Out of Detent (2 1/2°), Pause 2 sec At Null)

PITCH UP - R1 27776

PITCH DN - R1 27775

Notify CSM Hot Fire Checks Complete

CSM - WIDE Deadband ATT/Hold

6 V37E 00E

RR SELF TEST
DROGUE & PROBE

3-28

109:38RNDZ RDR SELF TEST

- 1 CB(11) RR(2) - Close (NO TRACK Lt-On)
Verify: CSM RCS Thruster B3 - Off
: Radar Xponder - Off
RNDZ RDR ANT - Pull Pin & Release
X-POINTERS (Both) - HI MULT
RATE/ERR MON (Both) - RNDZ RADAR
ATTITUDE MON (Both) - PGNS
MODE SEL - LDG RDR
- 2 RNG/ALT MON - RNG/RNG RATE
SHFT/TRUN - +50°
RR MODE - SLEW
TEMP MONITOR - RNDZ (+10° To +75°)
RR GYRO SEL-SEC
CB(11) AC BUS A: RNG/RNG RT/ALT/ALT
RT - Close
FLIGHT DISPLAYS: RNG/RNG RT/ALT/ALT RT-
Close

109:38DROGUE AND PROBE INSTALLATION

- 1 Verify:
Both Electrical Umbilicals Removed
Drogue Lock Lever Engaged & Flush
Three Capture Latches Engaged & Locked
LM Hatch Exterior Insulation O.K.
Flaps Secured Around Handles
- 2 Close & Secure Hatch
CABIN DUMP (OVHD) - AUTO & LOCKED
PRESS REG A&B - CABIN
Secure LEVA Bags On Engine Cover

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- 3 SLEW RATE-HI
Slew Left To Mode I Region (+Z) (18 sec)
Slew Right, Down, Left, Up
(FDAI Needles Right, Down, Left, Up)
SLEW RATE - LO
SHFT/TRUN - $+5^\circ$
Slew Right, Down, Left, Up
(FDAI Needles Right, Down, Left, Up,
1°/sec; X-Pointer-3 mr/sec)
- 4 RR MODE - AUTO TRACK
RADAR TEST - RNDZ (Rng Rt Tape Drives
To -468 to -508 fps, X-Pointers Oscillate
and FDAI Needles Vary Between $+5^\circ$.
After 12 sec Rng Tape Drives to
193 to 197NM, NO TRACK & PWR FAIL Lts-Off)
- 5 TEST MONITOR - AGC (1.5 To 1.9)
- XMTR (2.8 To 3.2)
- SHAFT ERR (2.2 To 2.6
@1/2cps)
- TRUN ERR (2.2 To 2.6
@1/2 cps)
- AGC

- 6 Set NORRMON Flag
V25 N07E
101E, 10E, 1E
RR MODE - LGC (NO TRACK & PWR FAIL Lts - On)
- 7 V63E Start RR Self Test
F 04 12
R1 00004 Specify Radar
R2 00001 Rndz Radar
PRO (TRACKER LT - ON)
(TRACKER, NO TRACK & PWR FAIL Lts Off After 12 sec)
- 8 F 16 72 TRUN, SHAFT (.01°)
R1 Varying At 1/2 cps
R2 Varying At 1/2 cps
PRO
- 9 F 16 78 RANGE, RANGE RATE, TFI (.01nm,
.1fps, min-sec)
R1 +195.10 To +195.50 (TM 193 To 197)
R2 -0470.5 To -0510.5 (TM -468 To -508)
- 10 V34E (PWR FAIL & NO TRACK Lt-On,
X-PNTR-Center)

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- 11 RADAR TEST -OFF
- 12 V40 N72E RR CDU ZERO (10 sec)
SHFT/TRUN - +50°
- 13 V41 N72E (+04000, +04000)
F 04 12
PRO
V16N72E
- 14 SHFT/TRUN - +5°
RR GYRO SEL - PRIM
V41 N72E (+35600, +35600)
F 04 12
PRO
V16N72E
- 15 V41 N72E (+00000, +28300)
F 04 12
PRO
V16N72E
CB(11) RR(2) - Open
(NO TRACK Lt-Off)
V44E
RR MODE - SLEW
Notify CSM That Thruster B3-Off, And
Radar Xponder-Off Are No Longer Required

3-32

109:48

Verify Cap Off PGA Relief VLV
Don Helmet & Gloves

109:48

Verify Cap Off PGA Relief VLV
Don Helmet & Gloves

***** GO/NO GO FOR UNDOCKING *****

109:52

1 Match Indicated Angles
TRACK MODE - SLEW
S-BD ANT-AFT
Set P _____ (+9)
Y _____ (-37)

VHF B XMTR - DATA
BIOMED-OFF, PCM-LO
UPLINK SQUELCH - ENABLE

***** LOS (109:54) *****

***** UD -:30 (109:58) *****

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109:59

PGA PRESSURE INTEGRITY CHECK

(DO NOT PERFORM UNTIL SUBLIMATOR ACTIVATED >40 MIN
SUIT LOOP SHOULD NOT BE MAINTAINED AT ELEVATED PRESSURE >5 MIN)

- 1 SUIT GAS DIVERTER - PULL/EGRESS
CABIN GAS RETURN - EGRESS
SUIT CIRCUIT RELIEF - CLOSE
PRESS REG A - EGRESS
PRESS REG B - DIRECT O2 (Monitor Cuff
Gage To 3.7 - 4.0 Psig)
PRESS REG B - EGRESS (Monitor Cuff Gage,
Decay <.3 Psi in 1 min)
- 2 CO2 CANISTER SEL - SECONDARY (CO2 Comp
Lt-On, Monitor Cuff Gage, <.3 psi In
1 min)
CO2 CANISTER SEL - PRIMARY (CO2 Comp
Lt-Off)
- 3 SUIT CIRCUIT RELIEF - AUTO
PRESS REG A&B - CABIN
CABIN GAS RETURN - AUTO
SUIT GAS DIVERTER - PUSH/CABIN

***** SR (110:02) *****

PGA CK
REG CK

3-34

110:03

REGULATOR CHECK

- 1 Verify CSM TUNNEL HATCH, PRESS EQUALIZATION, AND TUNNEL VENT VLVS CLOSED, AND TUNNEL VENTED
- 2 CABIN REPRESS VLV - MANUAL (VERIFY FLOW), then AUTO
- 3 VERIFY: OVHD CABIN DUMP VALVE - AUTO
CB(16) ECS: CABIN REPRESS - OPEN
PRESS REG A&B - EGRESS
(SUIT GAS DIVERter - EGRESS)
CABIN GAS RETURN - EGRESS
- 4 FWD CABIN DUMP VALVE - OPEN then AUTO at 4.5 psia
- 5 SUIT CIRCUIT RELIEF - OPEN (VERIFY SUIT PRESS 4.5 psia),
then CLOSE
PRESS REG A - CABIN
VERIFY SUIT PRESSURE Rises to 4.6-5.0 psia
- 6 PRESS REG A - EGRESS
SUIT CIRCUIT RELIEF - OPEN (SUIT PRESS 4.5 psia), then
CLOSE
PRESS REG B - CABIN
VERIFY SUIT PRESSURE RISES TO 4.6-5.0 psia

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- 7 SUIT CIRCUIT RELIEF - AUTO
CABIN GAS RETURN - AUTO
PRESS REG A - CABIN
SUIT GAS DIVERter - PUSH/CABIN
(CABIN PRESS WILL RISE TO 4.6-5.0 psia IN
APPROXIMATELY 5 MIN.)
CB(16) ECS: CABIN REPRESS - CLOSE

110:09

RATE GYRO CHECK

- 1 Verify CSM Holding Attitude
GYRO TEST - POS RT (RPY RATE +5°/sec)
GYRO TEST - NEG RT (YPR RATE -5°/sec)
- 2 RATE SCALE-5°/SEC
REPEAT Tests
- 3 Notify CSM ATT/HOLD No Longer Required

RATE GYRO CK
PREP FOR UNDOCK

RATE GYRO
PREP FOR UNDOCK

3-36

***** UD - :15 (110:13) *****

110:13

PREP FOR UNDOCKING

- 1 S-BD-PM, SEC, PRIM, VOICE,
PCM, RANGE
VHF-VOICE, ON, DATA, ON, OFF, LO
AUDIO (Both): VHF A-T/R
: VHF B-RCV
- 2 MISSION TIMER-SET
EVENT TIMER-SET, Count DN to 110:27:55 (Undocking)
OVHD HATCH-LOCKED
OVHD CABIN RELIEF & DUMP - AUTO
PRESS REG A&B - CABIN
- 3 RATE ERR MON (CDR) - LDG RDR/CMPTR
ATTITUDE MON (CDR) - PGNS
GUID CONT - PGNS
MODE SEL - LDG RADAR
RNG/ALT MON - RNG/RNG RT
RATE SCALE - 5°/SEC
ATT/TRANSL - 4 JET
BAL CPL - ON
RATE ERR MON (LMP) - LDG RDR/CMPTR

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ATTITUDE MON (LMP) - PGNS
RR MODE - SLEW
DEADBAND - MIN
ATTITUDE CONTROL (3) MODE CONT
MODE CONT (Both) - ATT HOLD
TTCA (Both) - JET

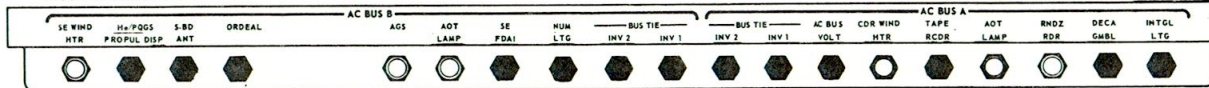
- 4 Mount Camera On Window Bar
LM 3 /DAC/10/CEX (0) - ULC
(T8,250,6) 6 fps, .06 Mag (1 min)
LM /DC/60/HCEX (A)
(fTT,250,focus) 10 Pictures
Mount TIMELINE Book
- 5 Configure CB Panels Per UNDOCKING Chart
And Then Go To LM TIMELINE BOOK

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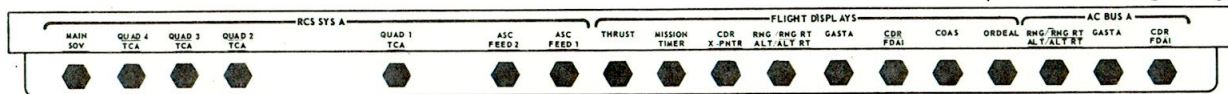
UNDocking

6 - OPEN

11

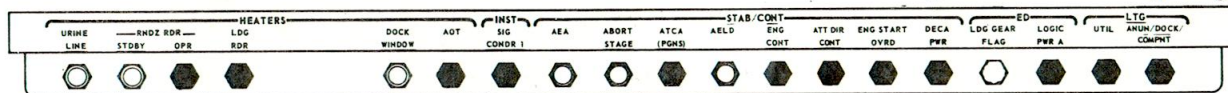


0 - OPEN

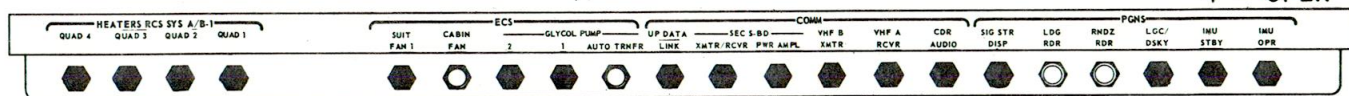


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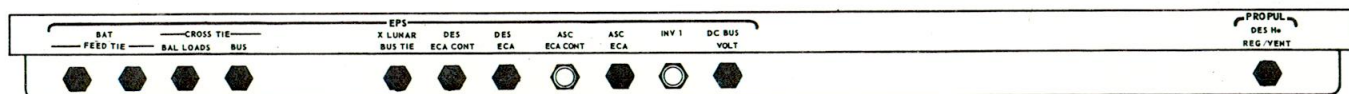
7 - OPEN



4 - OPEN



2 - OPEN



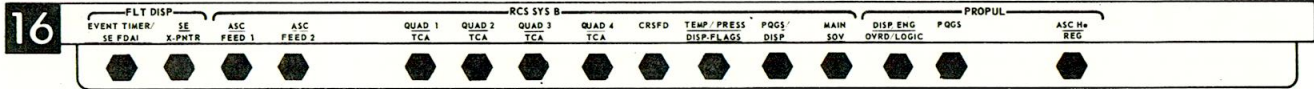
* Closed At This Time

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UNDOCKING

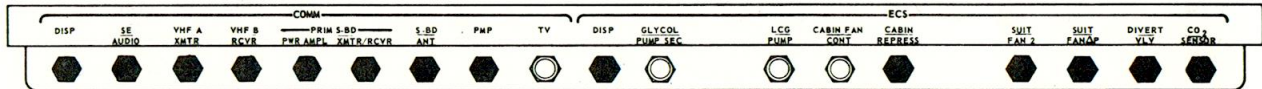
0 - OPEN



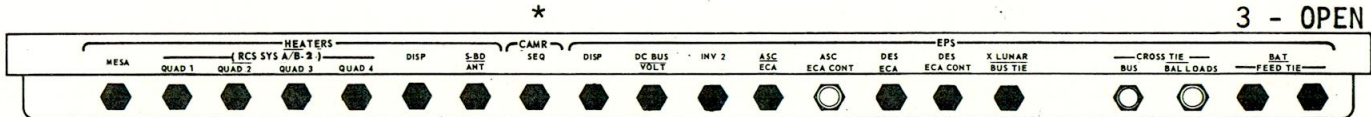
5 - OPEN



4 - OPEN



3 - OPEN



* Closed At This Time