

APOLLO 10

**LM SYSTEMS ACTIVATION
CHECKLIST**

PART NO	S/N
SKB32100079-360	1003

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

ACT-1

CDR

LMP

LOS 81:41:5281:45LMP IVT TO LM

- 1 Activate CABIN DUMP VALVE & Open Hatch
Carry Comm Carrier And CWG Connector
- 2 Record Docking Tunnel Index

Angle _____

- 3 FLOOD LIGHT - ALL
EXTERIOR LTG - OFF
- 4 DES H2O - OPEN
DES O2 - OPEN
CABIN REPRESS - AUTO
CB(16) ECS: CABIN REPRESS - CLOSE
SUIT ISOL VLV (2) - SUIT FLOW
SUIT ISOL VLV (2) - ACTUATE OVRD
(SUIT DISCON)

SR 81:49:50

ACT-2

CDR

LMP

81:50

ENTRY STATUS CHECK

1. Verify Norm Rad Level
Stow Meter
2. Activiate UTILITY Lts.
3. Unstow And Install Temp. Stow Bag
4. Remove ISA And Pass To CSM
5. Verify C.B. Status Per Chart

LMP

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969ACT-3

PANEL 11

SE WIND HTR	He/PQGS PROPUL DISP	S-BD ANT	ORDEAL	AC BUS B				AC BUS A			

MAIN SOV				QUAD 4 TCA				QUAD 3 TCA				QUAD 2 TCA				RCS SYS A				FLIGHT DISPLAYS				AC BUS A			

PROPS				HEATERS				INST				STAB/CONT				ED				LTG				

HEATERS RCS SYS A/B-1				ECS				COMM				PGNS						
QUAD 4	QUAD 3	QUAD 2	QUAD 1	SUIT FAN 1	CABIN FAN 1	2 GLYCOLPUMP	1 AUTO TRNFR	UP DATA LINK	SEC S-BD XMT/RXVR PWR ANPL	VHF B XMT	VHF A RXVR	CDR AUDIO	SIG STR DISP	LDG RDR	RNDZ RDR	LGC/DISKY	IMU STBY	IMU OPR

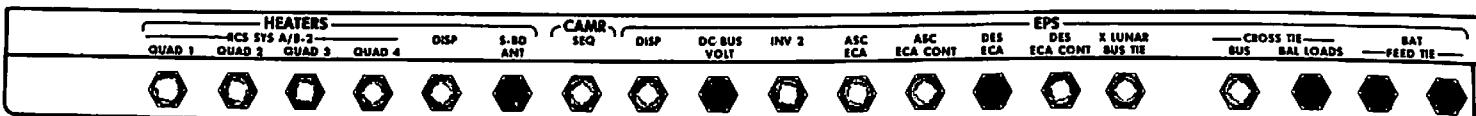
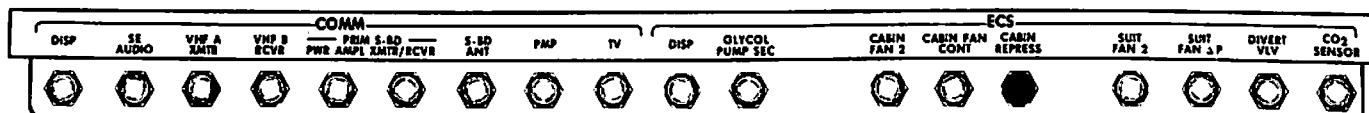
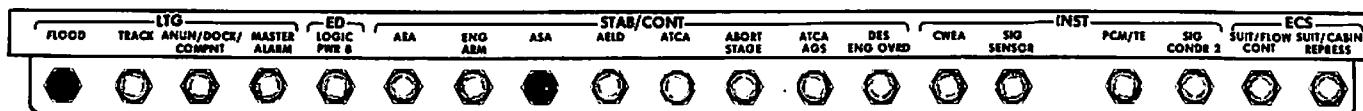
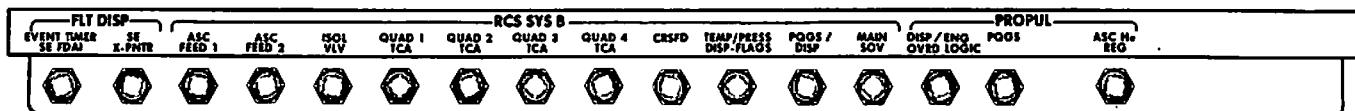
EPS							
BAT FEED TIE	CROSS TIE	X LUNAR BUS-TIE	DES ECA CONT	DES ECA	ASC ECA CONT	ASC ECA	INV 1 DC BUS VOLT

ACT-3,4

ACT-3, 4

ACT-4

PANEL 16



LM

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

Basic Date _____
Changed _____

ACT-5

CDR

LMP

- 5 FDAI 1&2 - INTRL
EARTH/LUNAR - PWR OFF
LTG - OFF
MODE - HOLD/FAST
ALT SET - 60

- 6 FUEL & OXID VENT-tb-bp (SL)
DES PROP ISOL-SAFE
MASTER ARM - OFF
DES VENT-SAFE (SL)
ASC He SEL - BOTH
LDG GEAR DEPLOY-SAFE (SL)
STAGE-SAFE (Guarded)
He PRESS(3)-SAFE (SL)
STAGE RELAY-OFF (SL)

- 7 S-BAND T/R - OFF
.ICS T/R - OFF
RELAY - OFF
MODE-ICS/PTT
AUDIO CONT - NORM
VHF A&B - OFF
VOX SENS - 7
COAS - OFF
THUMBWHEEL VOL(5)-6

- 8 TTCA (CDR) - JETS

- 9 TIMER CONT - STOP
LTG OVERRIDE (3) - OFF
SIDE PANELS - OFF
FLOOD OVHD/FWD - BRIGHT
ANUN/NUM - DIM
INTEGRAL - DIM
- 10 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 - $\pm 50^\circ$
RATE SCALE - $25^\circ/\text{SEC}$
ACA PROP - ENABLE
THR CONT - AUTO
MAN THROT - CDR
ENG ARM - OFF
X-TRANSL - 2 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

Basic Date APRIL 18, 1969
Changed _____

CDR

ACT-7

LMP

11 SYS A&B ASC FUEL & ASC OXID(4) -tb-bp
 (Feed 2-Closed, Feed 1-OPEN)
 SYS A&B QUADS (8)-tb-gray (v1v open)
 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 - AGS
 GLYCOL - PUMP 2
 SUIT FAN - 1
 O2/H2O QTY MON - ASC 2

12 ENG GMBL - ENABLE
 DES ENG CMD OVRD - OFF
 LDG ANT - DES
 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
 IMU CAGE - OFF (SL)
 EVENT TIMER - UP (SL)
 EVENT TIMER: TIMER CONT - STOP

TEMP MON - LDG
RCS SYS A/B-2:QUADS - OFF
LTG: SIDE PANELS - OFF
OVHD/FWD - BRIGHT
EXTERIOR LTG - OFF
LAMP/TONE TEST - OFF
X-POINTER SCALE - HI MULT

- 13 ACA/4 JET (2) - ENABLE
TTCA/TRANSL (2) - ENABLE
RDZ ANT RELEASE - STOWED
AOT - CL, ANGLE - 0000 (Pushed In)
TTCA (LMP) - JETS
AGS STATUS - OFF
- 14 ED VOLTS-OFF (SL)
PWR TEMP MON-ED/OFF
INV-OFF
DES PWR (5)-tb-bp
ASC PWR (4)-tb-bp
UPLINK SQUELCH-ENABLE
- 15 AUDIO CONT - NORM
S-BAND T/R - OFF
ICS T/R - OFF
RELAY - OFF
MODE - ICS/PTT
UPDATA LINK - OFF
VHF A&B - OFF

Basic Date APRIL 18, 1969
Changed _____

CDR

ACT-9

LMP

VOX SENS - 7
THUMBWHEEL VOL(5)-6

- 16 S-BAND MODULATE - PM
XMTR/RCVR - OFF
PWR AMPL - OFF
VOICE - OFF
PCM - OFF
RANGE - OFF/RESET
VHF A - OFF (SQUELCH-7)
VHF B - OFF (SQUELCH-7)
TELEMETRY - OFF/HI
RECORDER - OFF
VHF - AFT/PLSS
TRACK MODE - OFF
PITCH - +255°
YAW - 0°
S-BAND - AFT
- 17 SUIT GAS DIVERTER - PULL/EGRESS
CABIN REPRESS - AUTO
PLSS FILL - CLOSE
PRESS REGS - CLOSE
DES 02 - OPEN
ASC 02(2)-CLOSE
SUIT ISOL (2) - SUIT DISC
SUIT CIRCUIT RELIEF - AUTO
CABIN GAS RETURN - AUTO

HOUSEKEEPING

CDR

ACT-10

LMP

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
CABIN TEMP - MAX COOL

18 FWD CABIN RELIEF AND DUMP - AUTO

82:00

HOUSEKEEPING

- 1 Unsnap LMP's HSB And Stow Next To
CDR's HSB On Floor Velcro. Unsnap
CDR's HSB
- 2 Unstow Mirror And Mount On PANEL 16
- 3 Unstow Checklist - Place On DEDA Desk

Basic Date APRIL 18, 1969
Changed _____

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-11

LMP

- 4 Unroll And Secure Disposal Assembly
(In LHSSC)
Stow ISA Over PLSS RECHG STN
Unstow 70mm Film Bag, Stow 2 Mags And
Bag (Bottom Left Of RHSSC)
Unstow Electric Hasselblad
Install Remaining Mag On Hasselblad
Unstow Camera Handle And Attach To
Hasselblad
Stow Hasselblad In ISA
Unstow 16mm Bag, Remove 1 Mag,
Stow Bag In Camera Compt
Install 16mm Mag On Camera
Stow/Deploy Flt. Data File Items
:Data Cards
:COAS Filter (Data Card Kit)
:Crew Log, Flight Plan, Checklists

82:25

COMM ACTIVATION

- 1 Transfer To LM POWER (FLOOD Lts.Blink,
C/W PWR Caution Lt - ON)
CB(11) EPS: XLUNAR BUS TIE - CLOSE

DTO'S

CDR

ACT-12

CB(16) EPS: XLUNAR BUS TIE - CLOSE

2 CB(11) COMM: UPDATA LINK - CLOSE
: CDR AUDIO - CLOSE
INST: SIG CONDR 1 - CLOSE

AC BUS B: S-BD ANT - CLOSE
: BUS TIE INV 2 - CLOSE
AC BUS A: BUS TIE INV 2 - CLOSE
: AC BUS VOLTS - CLOSE
ECS: GLYCOL PUMP 2 - CLOSE

3 Connect To LM COMM Umbilical Using
CWG Connector

*****AOS 82:28:06 *****

4 CB(16) INST: SIG CONDR 2 - CLOSE
EPS: DISP - CLOSE
: INV 2 - CLOSE
: DES ECA CONT-CLOSE

Verify BAT 1,2,3,4 tb(4)-LO,DES BATS-tb-gray
(If bp - CONNECT)

PWR/TEMP MON - Check Voltages
(When BUS VOLTS < 27V, Select
HI VOLTAGE Taps)

CB(16)EPS: CROSS TIE BAL LOADS - OPEN
BAT 1 HI VOLTAGE - OFF/RESET

M-4

Basic Date April 18, 1969
Changed May 3, 1969

CDR

Basic Date April 18, 1969
Changed May 3, 1969

ACT-13

LMP

BAT 1 HI VOLTAGE - ON

Repeat for BATS 2,3,4

CB(16) EPS: CROSS TIE BAL LOADS - CLOSE

CB(11) AC BUS B: NUM LTG-CLOSE

FLIGHT DISPLAYS: MISSION TIMER-CLOSE

ACTIVATE MSN TMR

CB(16) INST: SIG SENSOR - CLOSE

: PCM TE - CLOSE

COMM: DISP - CLOSE

: SE AUDIO - CLOSE

: VHF A XMTR - CLOSE

: VHF B RCVR - CLOSE

: PRIM S-BD(2) - CLOSE

: S-BD ANT - CLOSE

: PMP - CLOSE

ECS : DISP - CLOSE

INV - 2

Verify AC BUS Volts

82:36

* S-BAND/VHF VOICE TEST

1 AUDIO (LMP): S-BAND T/R - T/R

: VHF A - T/R

: VHF B - RCV

COMM: S-BAND-PM, PRIM, PRIM, DN VOICE BU, PCM
OFF/RESET, OFF, LO

VHF A XMTR - VOICE

VHF B RCVR - ON

S-BAND ANT - FWD

2 Perform Voice And LBR Check With MSFN

82:40* OMNI VOICE/TM TEST

- 1 S-BAND VOICE, RIGHT
- 2 Perform Voice And LBR Check With MSFN
- 3 S-BAND: VOICE - OFF
: RANGE - RANGE
TELEMETRY - OFF/HI
- 4 Note Loss Of DOWN VOICE
Perform HBR Check With MSFN Upon
MSFN Direction.
- 5 S-BAND: VOICE - VOICE
- 6 Perform Voice And HBR Check With MSFN

82:58* STEERABLE VOICE/TM TEST

- 1 CB(16) HEATERS: DISP - CLOSE
HTR CONT TEMP MON-S-BAND (-60° to +155°)
COMM ANT: TRACK MODE - SLEW

[HI GAIN: PITCH-90°]
: YAW-0°]

Basic Date April 18, 1969
Changed May 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-15

LMP

:PITCH _____ (+148°)

:YAW _____ (-4°)

ANTENNA :S-BAND - SLEW

- 2 Slew For MAX Signal
 TRACK MODE - AUTO
- 3 Perform Voice And HBR Check With MSFN
- 4 S-BAND - FM
 Perform Voice And HBR Check With MSFN
 S-BAND - PM

*****SS 83:01:51* *****83:05* B/U VOICE TEST

- 1 S-BAND: VOICE - DN VOICE B/U
 TELEMETRY - OFF/LO
 S-BAND: PWR AMPL - OFF
 UPDATA LINK - VOICE B/U
 AUDIO (CDR): ICS - T/R
 (LMP): ICS - RCV
- 2 Perform Voice And LBR Check With MSFN

3 S-BAND: PWR AMPL - PRIM
VOICE - VOICE
UPDATA LINK - OFF
TELEMETRY - OFF/HI
AUDIO(BOTH): ICS-OFF

83:10

* LM RELAY TEST

- 1 S-BAND: RANGE - OFF
AUDIO (CDR): RELAY - ON
: MODE - VOX
: VHF A - T/R
AUDIO (LMP): S-BAND - T/R
: MODE - VOX
: VHF A - RCV(T/R To Talk,
Relay Muted)
: VHF B - RCV
- 2 CSM Discontinue S-Band Voice And Perform
Voice Check Via LM Relay
- 3 CSM Reconfigure for S-BAND VOICE

Basic Date A 18, 1969
Changed May 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-17

LMP

83:20

* CSM RELAY TEST

- 1 CSM Configure For CSM RELAY
- 2 AUDIO(CDR): RELAY - OFF
 : MODE - ICS/PTT
 : VHF A - OFF
 AUDIO(LMP): S-BAND - OFF
 : MODE - ICS/PTT
 : VHF A - T/R
- 3 Perform Comm Check With MSFN Via
 CSM Relay

83:30

* MSFN RELAY TEST

- 1 AUDIO(LMP): S-BAND - T/R
 : VHF A - OFF
 : VHF B - OFF
- 2 Perform Comm Check With CSM Via
 MSFN Relay

CDR

ACT 18

LMP

LOS 83:40:00*****

83:40

COMM DEACTIVATION

- 1 AUDIO(LMP): S-BAND T/R - OFF
 S-BAND: TRACK MODE - SLEW
 : S-BAND ANT-AFT
 : PITCH - +190°
 : YAW- 0°
 : TRACK MODE - OFF

[HI GAIN: PITCH -90°]
: YAW -0°]

- 2 COMM: S-BAND - PM, OFF, OFF, OFF,
 OFF, OFF/RESET, OFF, LO
 : VHF A XMTR - OFF
 : VHF B RCVR - OFF

INV - OFF
Select LO Taps

- 3 Verify CB Status Per Chart (ACT-3,4)
 Disconnect From LM Comm Umbilical
- 4 Transfer To CSM Power, Observe
 C/W PWR Lt.

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-18A

LMP

83:45

OPS CHECKOUT

- 1 Perform OPS Checkout
Read And Record Source Pressures
CDR OPS _____
LMP OPS _____

*****SR 83:48:23*****

84:20

LMP IVT TO CSM :

- 1 DES 02 - CLOSE
DES H2O- CLOSE
CABIN REPRESS - CLOSE
CB(16) ECS: CABIN REPRESS - OPEN
VERIFY ISA TOP POCKET, EMPTY
Deploy Window Shades
- 2 FLOOD LIGHT - OFF
UTILITY Lts - OFF
- 3 IVT TO CSM
Close LM Hatch

LM-4

Basic Date APRIL 18, 1969
Changed _____

SECOND DAY

SECOND DAY

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

CDR

ACT-19

***** UD - 3:45 ***** 94:25 *****

LMP IVT TO LM

- 1 Activate CABIN DUMP VALUE & Open Hatch
Carry Comm Carrier and CWG Connector
- 2 Verify Docking Tunnel Index
Angle (See ACT-1)
- 3 FLOOD LIGHT - ALL
DES H2O - OPEN
DES O2 - OPEN
CABIN REPRESS - AUTO
CB(16) ECS: CABIN REPRESS - CLOSE
- 4 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
- 5 Recheck And Record OPS Source Pressures

CDR OPS _____

LMP OPS _____

LMP IVT TO LM

LMP IVT TO LM

CDR

ACT-20

LMP

94:30

EPS ACTIVATION

- 1 LTG: ANUN/NUM - BRIGHT (1 Caution, 9
Power Failure, GLYCOL,Lts - ON)
- 2 CB(11) INST: SIG CONDR 1 - CLOSE
EPS: DES ECA CONT- 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 Using CWG
Connector
AUDIO (LMP): S-BAND T/R - T/R
: ICS - T/R
CB(16) COMM: DISP - CLOSE
: S.E. AUDIO-CLOSE
: PRIM S-BD(2)-CLOSE
: S-BD ANT - CLOSE
: PMP-CLOSE
S-BAND-PM,PRIM,PRIM,DOWN VOICE BU,PCM
RANGE, OFF,LO

LM-4

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

CDR

ACT-21

LMP

S-BAND ANT - AFT

Perform COMM Check with MSFN

MSN TMR ACT

CDR

ACT-22

LMP

94:37

MISSION TIMER ACTIVATION

- 1 CB(11) AC BUS B: NUM LTG - CLOSE
FLIGHT DISPLAYS: MISSION TIMER-CLOSE
SET MSN TMR

94:39

PRIMARY GLYCOL LOOP ACTIVATION

- 1 CB(16) ECS: DISP - CLOSE
CB(11) ECS: GLYCOL PUMP AUTO TRNER - CLOSE
: GLYCOL PUMP 1 - CLOSE
: GLYCOL PUMP AUTO TRNER-OPEN
GLYCOL - PUMP 1
CB(11) ECS: GLYCOL PUMP 2 - CLOSE
: GLYCOL PUMP AUTO TRNER - CLOSE

***** UD - 3:30 *****

L

Basic Date APRIL 18, 1969
Changed May 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-23

LMP

94:40

CAUTION/WARNING CHECKOUT

- 1 CB(16) LTG: MASTER ALARM - CLOSE
 INST: CWEA - CLOSE (LGC,CES AC,
 CES DC, RCS A&B REG, Warning,HEATER, PREAMP,
 ECS, Caution, H2O SEP Comp Lts - ON)
 (POSSIBLE: DES REG, RCS TCA
 Warning Lts and RCS QUAD tb-RED,
 ASC PRESS Warning Lt - ON)
 CB(16) LTG: ANUN/DOCK COMPT - CLOSE
 HEATER: DISP - CLOSE
 STAB/CONT: ATCA - CLOSE
 CB(11) STAB/CONT: ENG CONT - CLOSE
- 2 RCS TEMP/PRESS MON - Cycle Then HE
 (Resets CWEA)
 RCS SYS A/B-2: QUADS(4) - AUTO
 HTR TEMP MONITOR - Cycle Then LDG
 (HEATER Caution Lt - OFF)
 LAMP/TONE TEST - Check All Positions
- 3 PRIM EVAP FLOW 1 - OPEN
- 4 Perform C.B. ACTIVATION Per Chart

CWEA C/O

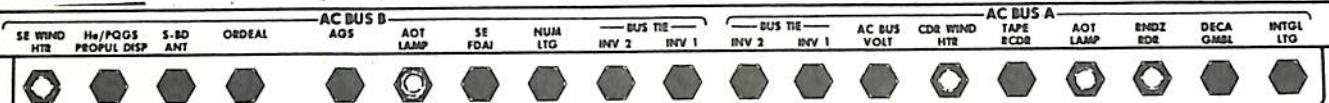
CWEA C/O O

ACT=alt

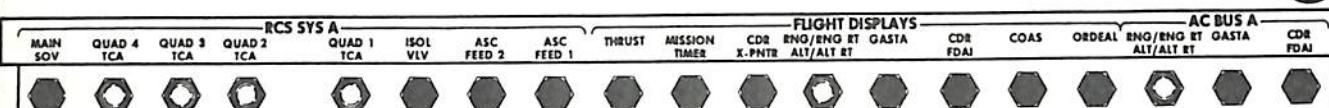
ACT-24

PANEL 11

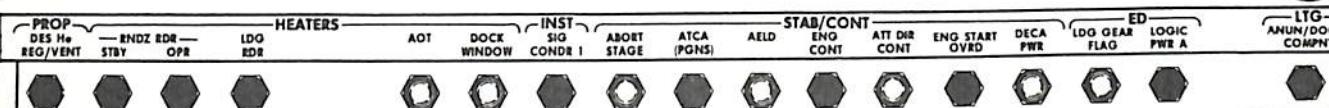
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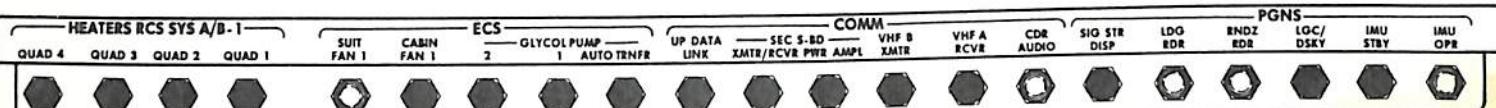
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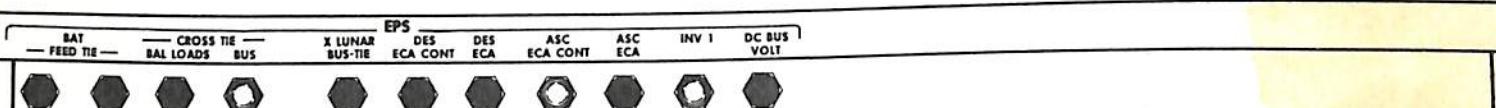
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3



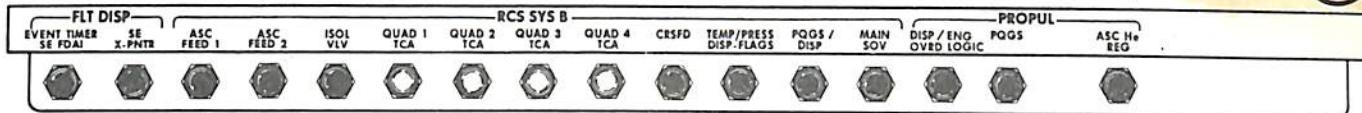
Basic Date April 18, 1969
Changed May 3, 1969

LM-4

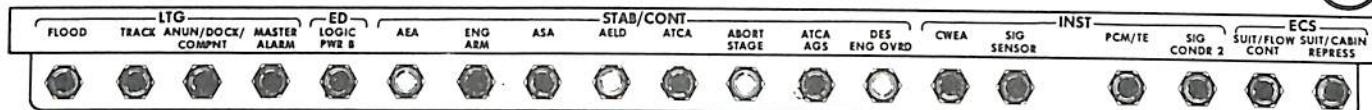
Basic Date APRIL 18, 1969
Changed MAY 2, 1969ACT-25

PANEL 16

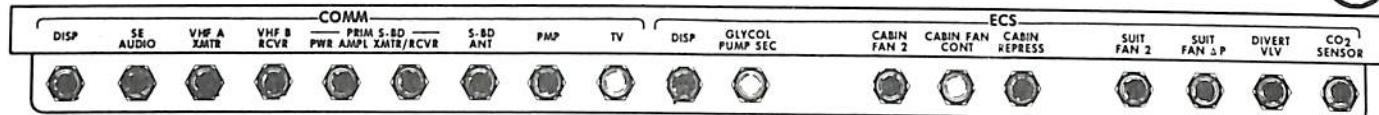
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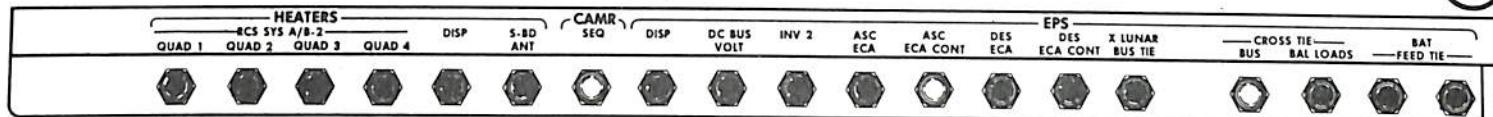
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3



3



TB VERIF

TB VERIF

CDR

ACT-26

LMP

94:48

TB VERIFICATION

- 1 CB(16) INST: CWEA - OPEN
- CLOSE
(CES AC, CES DC Warning, ~~PREAMP~~ Caution
Lts-OFF)
- 2 FUEL & OXID VENT (2) -tb-bp
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
- 5 RECORDER: TAPE - tb-bp

LM

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

LM-4

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

CDR

ACT-27

LMP

94:50

94:50

1 CDR IVT TO LM

PGNS TURN-ON & SELF TEST

- 1 Check Bus Voltages
- 2 If STBY Lt - ON, PRO
V36E
V21 N01E, 3000E, 1672E, E
333E, 10000E
- 3 CB(11) PGNS: IMU OPR - CLOSE
(No ATT Lt - ON 90 Sec)
- 4 V35E
F 88 88
(Master Alarm, LGC Warning, ISS Warning
and ALL DSKY Lts - ON, 8's in ALL Reg-
isters, Lts and DSKY reset In 5 sec)
NO ATT Lt - OFF Wait 20 Sec
KEY RSET
V37E 00E
- 5 V25 N01E 1365E
F 21 01
E,E,E

SS 94:52:43

CDR IVT TO LM

CDR

ACT-28

LMP

94:55ECS ACTIVATION & CHECKOUT

1 02/H20 QTY MON - ASC 2, ASC 1, DES

6 V15 N01E 1365E
S 15 01
R1,R2,R3, A11 Zero

2 SUIT ISOL (2) - SUIT FLOW

SUIT ISOL (2)-ACTUATE OVRD (Suit Discon)
SUIT GAS DIVERTER - PUSH/CABIN
PRESS REG A - EGRESS (Suit Gas Diverter
Automatically Extends)7 V21 N27E 77777E (Test)
Fixed And Erasable Memory)

R1, NUMBER OF ERRORS

R2, NUMBER OF TESTS STARTED
R3, NUMBER OF TESTS SUCCESSFUL(Test Successful If R2 \geq 3 Within 78 sec)

*PROG Lt-ON *

* V05 N09E 01102 SELF-*

* TEST ERROR *

* N08E RECORD FOR MSFN *

* *

* R1 _____ *

* *

* R2 _____ *

* *

* R3 _____ *

94:57

8 V21 N27E,OE TERMINATE SELF TEST

CDR CONNECT TO LM ECS

1 Connect to CDR Hoses (Stow Gas Connector Plugs)

LM-4

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR

ACT-29

LMP

2

SUIT ISOL VLV - SUIT FLOW

Connect to LM Comm Umbilical

CB(11) COMM: CDR AUDIO - CLOSE

AUDIO (CDR): ICS - T/R

: S-BAND T/R

95:0095:00SUIT FAN/H2O SEP CHECK1 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 1SUIT FAN - 1 (SUIT/FAN Warning,
FAN comp Lts-OFF,ECS Caution,
H2O SEP Comp Lts -OFF in 2 Min)
CB(16) ECS: SUIT FAN 2 - CLOSE* SEC S-BAND T/R AND PWR AMPL CHECK1 Verify HI VOLT Taps
Select HI Taps If LO TAPS ON
S-BAND XMTR/RCVR - SEC
S-BAND PWR AMPL - SEC
(up to 30 sec to Relock)
60

2 Perform Comm Check With MSFN

3 S-BAND XMTR/RCVR - PRI
S-BAND PWR AMPL - PRI
(Up to 30 Sec to Relock)
60

SUIT FAN/H2O SEP CK

CDR

ACT-30

LMP

95:0495:05GLYCOL PUMP CHECK

- 1 CB(11) ECS: GLYCOL PUMP 1 - OPEN
(Master Alarm, ECS Caution
Lt - 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
- 3 GLYCOL - PUMP 2 (15-30 psi)
CB(11) ECS: GLYCOL PUMP AUTO TRNFR - OPEN
GLYCOL - PUMP 1 (15-30 psi)

- * S-BAND STEERABLE ANTENNA ACTIVATION
- 1 HTR CONT TEMP MONITOR - S-BAND (-60° to +155°
S-BAND -PM, PRIM, PRIM, VOICE, PCM, RANGE, LEFT, LO
CSM MNVR TO PROPER ATTITUDE
 - 2 *HI GAIN: PITCH-90°, YAW-0°*
TRACK MODE - SLEW
PITCH _____ (+148°)
 - 3 YAW _____ (-4°)
ANTENNA: S-BAND - SLEW
 - 4 Voice Mark Initial Phase Lock, then Slew
For MAX Signal
TRACK MODE - AUTO
 - 4 TELEMETRY - LEFT/HI

***** UD 3:00 *****

LM

Basic Date APRIL 18, 1969
 Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed _____

CDR

ACT-31

LMP

95:1095:10VHF-B ACTIVATIONLMP IVT TO CSM

- 1 VHF-B XMTR - VOICE
- 1 VHF-B RCVR - ON
- 1 VHF ANT - FWD
- 1 AUDIO (BOTH): RELAY - OFF
: MODE - ICS/PTT
: VHF-A - OFF
: VHF-B - T/R

95:17VHF CHECKOUT

- 1 CSM CONFIGURE FOR VHF SIMPLEX-B
Perform Voice Check on VHF Simplex-B
- 2 CSM Configure For VHF Simplex A
VHF-A XMTR - VOICE
VHF-A RCVR - ON
VHF-B XMTR - DATA
AUDIO (CDR): VHF-B-RCV
: VHF-A-T/R
- 3 Perform Comm Check with CSM

VHF B ACT

VHF B ACT

CDR

ACT-32

LMP

95:21

LGC/CMC CLOCK SYNC/TEPHEM UPDATE

- 1 V37E 00E
- 2 V25 N36E
- 3 Load CSM Time _____ : _____ : _____
- 4 On CSM Mark - ENTR
- 5 V16 N65E - Compare With CSM N65
V55E - Load ΔT
Set Mission Timer
- 6 CSM V05 N01E, 1706E Read And Record TEPHEM

R1 _____

R2 _____

R3 _____

- 7 V25 N01E, 1706E Load TEPHEM (Octal)
- 8 V05 N01E, 1706E Verify TEPHEM

1

Basic Date APRIL 18, 1969
Changed _____

2

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR

ACT-33

LMP

95:24

*E-MEMORY DUMP

1

Verify MSFN Contact
V74E (42 sec)

95:25

CSM MANEUVERS TO LDMK TRACK ATT

1 HI GAIN: PITCH - 90°
 : YAW - 0°
S-BAND TRACK MODE - SLEW
TM - OFF/LO
ANT - OMNI, FWD
S-BAND - DN VOICE BU

***** LOS 95:28:55 *****

E - MEM DUMP

CDRACT-34LMP95:3595:35DOCKED IMU COARSE ALIGNLMP IVT TO LM

- | | | | |
|---|--|---------------|---|
| 1 | Verify CSM in Min DEADBAND ATT HOLD | 1 | Connect to LMP hoses
SUIT ISOL VLV - SUIT FLOW |
| 2 | Calculate LM Gimbal Angles | | Connect to LM Comm Umbilical |
| | <u>OG</u> | <u>IG</u> | <u>MG</u> |
| | <u>300.00</u> | <u>180.00</u> | <u>360.00</u> |
| | 2 CB(16) COMM: SE AUDIO - CLOSE
AUDIO: VHF A - T/R
VHF B - RCV | | |

..... +RC (See ACT-1)..... -CM +CM -CM..... LM LM LM

- 3 V41 N20E COARSE ALIGN IMU
 F 21 22 LOAD ICDU ANGLES OG,IG,MG (.01°)
 (NOT ATT Lt - ON, FDAI TORQUES)

*PROG Lt-ON *

V05 N09E R1 00211 COARSE

* ALIGN ERROR, GO*

* TO 3 *

LM

Basic Date APRIL 18, 1969
 Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed _____CDRACT-35LMP

4 V40 N20E ZERO CDU (NO ATT Lt-OFF)
Notify CSM ATT HOLD No Longer Required.

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
S 06 20 ON LM MARK - ENTR
Copy OG, IG, MG, CSM & LM

OGIGMG

_____ . CM _____ . CM _____ . CM

_____ . LM _____ . LM _____ . LM

***** SR 95:39:21 *****

ACT-35
DROGUE AND PROBE

CDR

ACT-36

LMP

***** UD - 2:30 *****

95:45

DROGUE AND PROBE INSTALLATION

1 **VERIFY:**

Both Electrical Umbilicals
Disconnected & Secured
Drogue Lock Lever Engaged & Flush
Three Capture Latches Engaged & Locked
LM Hatch Exterior Insulation O.K.
Flaps Secured Around Handles.

2 Close & Secure Hatch

OVHD CABIN DUMP VLV - AUTO
PRESS REG A&B - CABIN
SUIT GAS DIVERTER - PUSH/CABIN

1 CB(16) EPS: ASC ECA CONT - CLOSE

2 POWER/TEMP MON SEL - BAT 5
BAT 5 NORMAL FEED-ON (Verify BAT Current)

3 POWER/TEMP MON SEL -SE BUS Then BAT 6
BAT 6 NORMAL FEED-ON (Verify BAT Current)

4 BAT 1,2 HI-VOLT-OFF/RESET
BAT 3,4 HI-VOLT-OFF/RESET
Verify BAT Current = 0
POWER/TEMP MON SEL-CDR BUS Then SE BUS

5 BAT 5 BACKUP FEED-ON
BAT 6 BACKUP FEED-ON
BAT 5 NORMAL FEED-OFF/RESET
BAT 6 NORMAL FEED-OFF/RESET
POWER/TEMP MON SEL-CDR BUS THEN SE BUS
Verify BAT Current

104

Basic Date APRIL 18, 1969
Changed _____

105

Basic Date APRIL 18, 1969
Changed MAY 2, 1969CDRACT-37LMP

- 6 BAT 1&2 HI VOLT-ON
BAT 3&4 HI VOLT-ON
POWER/TEMP MON SEL-BAT 1,2,3,4
Verify BAT Current
- 7 BAT 5 BACKUP FEED-OFF/RESET
BAT 6 BACKUP FEED-OFF/RESET
Verify BAT Current = 0
- 8 CB(16) EPS: CROSS TIE BAL LOADS - OPEN
- 9 REPORT ED BAT VOLTAGE TO MSFN

BAT A _____

BAT B _____

95:55ARS/PGA PRESSURE INTEGRITY CHECK

- 1 CDR And LMP DON HELMET And GLOVES
SUIT GAS DIVERTER - PULL/EGRESS
CABIN GAS RETURN - EGRESS
SUIT CIRCUIT RELIEF - CLOSE
PRESS REG A - CLOSE
PRESS REG B - DIRECT 02 (Suit Press to 8.85 PSIA)

ARS/PGA PRESS CK

CDRACT-38LMP

PRESS REG B- CLOSE (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
CB(16) ECS: CABIN FAN CONT - CLOSE

96:05

REGULATOR CHECK

- 1 Verify CSM Tunnel Hatch, PRESS EQUILIZATION,
And TUNNEL VENT VLVS Closed, and Tunnel Vented
- 2 CABIN GAS RETURN - EGRESS
Verify OVHD CABIN DUMP VALVE - AUTO
CABIN REPRESS - AUTO
PRESS REG B - EGRESS (Cabin Fans - OFF
And SUIT GAS DIVERTER - EGRESS)

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR

ACT-39

LMP

- 3 FWD CABIN DUMP VALVE - OPEN Then AUTO At
4.0 psi (Master Alarm, CABIN Warning Lt,
And AUTO CABIN REPRESS - ON At 4.45 to 3.7 psi)
- 4 As Soon as CABIN REPRESS Starts:
PRESS REG A - CLOSE
(CABIN Warning Lt - OFF, CABIN
REPRESS STOPS)
CABIN REPRESS - CLOSE
FWD CABIN DUMP VALVE - OPEN THEN AUTO
AT 3.5 psi (Verify SUIT PRESS 3.6
to 4.3 psi)
- 5 PRESS REG B - CLOSE (Master Alarm,
CABIN Warning Lt - ON (Momentarily)
CABIN FANS - ON)
SUIT CIRCUIT RELIEF - OPEN Then
AUTO at SUIT PRESS of 3.5 psi
PRESS REG B - EGRESS (SUIT PRESS
3.6 to 4.0 psi, Master Alarm &
CABIN Warning Lt - ON Momentarily,
CABIN FANS - OFF)
CABIN REPRESS - AUTO
- 6 PRESS REG A&B - CABIN (CABIN Warning Lt-ON
CABIN FANS - ON, CABIN PRESS RISES to 4.8 + .2 psia
CABIN Warning Lt - OFF)
CABIN GAS RETURN - AUTO
SUIT GAS DIVERTER - PUSH/CABIN

*****UD - 2:00*****

7 CDR And LMP DOFF HELMET And GLOVES

*****AOS 96:15:18*****96:20

1 *VOICE GIMBAL ANGLES To MSFN

See ACT-3596:2196:35

CSM LANDMARK TRACK

*****UD - 1:30*****

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969CDRACT-41LMP96:4096:40RATE GYRO CHECK

- 1 GYRO TEST - POS RT (RPy RATE +5°/sec)
- 1 GYRO TEST - NEG RT (RPy RATE -5°/sec)
- 2 RATE SCALE - 5°/SEC
Repeat Tests

AGS ACTIVATION & SELF-TEST

- 1 AGS STATUS - STBY (Master Alarm, AGS Warning Lt - ON)
CB(16) STAB/CONT: AEA - CLOSE
(AGS Warning Lt - OFF)
AGS STATUS - OPERATE (Master Alarm, AGS Warning Lt - ON Momentarily)
- 2 *6666(OPR ERR Lt-ON)
- 3 *000+88888
- 4 *123-45679
- 5 *412R +1 SELF TEST SATISFACTORY
+3 LOGIC TEST FAILURE
+4 MEMORY TEST FAILURE
+7 LOGIC AND MEMORY TEST FAILURE
(*412+0 to Reinitiate Test)
- 6 *574R DESCENT STAGE FLAG (+ Not Staged)
- 7 *604R LUNAR SURFACE FLAG (+ Not On Lunar Surface)
- 8 *612R STAGING SEQ COUNTER (+0 Nom)

ACT-41
RATE GYRO CK

CBR

ACT-42

LMP

96:45

96:45

AFTER LANDMARK TRACKING CSM
MNVRs TO ACQUIRE MSFN ON LM
HI GAIN ANTENNA

1 Copy LM Angles

PITCH _____ ($+193^\circ$)

YAW _____ ($+64^\circ$)

96:45

* DOCKED IMU FINE ALIGN

- 1 Copy Ground Calculated Gyro
Torquing Angles

X _____, Y _____, Z _____

- 2 V42E Fine Align IMU
F 21 93 Load Gyro Torquing
Angles X,Y,Z ($.001^\circ$)

- 3 V16 N93E
S 16 93 Monitor Torquing

96:50

***** SS 96:51:22 *****

LM

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

LM-4

Basic Date APRIL 18, 1969
Changed May 3, 1969CDRACT-43LMP96:5596:52* MSFN - UPDATE1 Perform P-27 UPDATE (REFSMMAT/
STATE VECTOR)1 S-BAND ANTENNA - SLEW
ACQUIRE MSFN
TRACK MODE - AUTO
TELEMETRY - RIGHT/HI
FUNCTION: VOICE - VOICE97:0097:00* DRIFT CHECKAGS INITIALIZATION1 V06 N20
S 06 20 ON LM MARK - ENTER
Copy OG, IG, MG, CSM & LM1 V16 N65E
S 16 65 LGC TIME (hr,min,.01 sec)
*377+04220
ENTR At 97:02:00OGIGMG

2

V47E

F 06 16 GET OF AGS CLOCK (hr,min,.01 sec)
LOAD PGNS/AGS TIME BIAS = 90 hrs.CMCMCMLMLMLM

Voice Gimbal Angles To MSFN

MSFN - UPDATE

CDRACT-44LMP

- 3 *414+1
PRO (20 sec before step 5)
- 4 *414R (+0)
- 5 F 50 16 Downlink Complete
PRO
- 6 *400+3 AGS ALIGN
- 97:04
- 7 V83E
F 16 54 R, RDOT, THETA (.01nm, .1fps, .01°)
SET ORDEAL

* DAP SET, THROTTLE TEST

- 1 CB(11) STAB/CONT: DECA PWR-CLOSE
MODE CONT: PGNS - AUTO
Verify GUID CONT - PGNS
THR CONT - MAN
MAN THROT - CDR
TTCA(CDR)-THROTTLE (MIN)

- 8 *440R RANGE RATE (+2.5 fps) (.1fps)
- 9 *317R RANGE (.1nm)

97:05

- 2 VERIFY MSFN CONTACT
V48E
F 01 46
R1 32012
PRO

- 1 COPY AGS K FACTOR

K _____ : _____ :

LM-

Basic Date APRIL 18, 1969
 Changed MAY 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

CDRACT-45LMP

3 F 06 47 LM, CSM Wt (Lbs)

R1 _____ (31793)

R2 _____ (37700)

PRO

4 F 06 48 GMBL TRIM: PITCH, ROLL (.01°)

R1 _____ (+00501)

R2 _____ (+00547)

ENG ARM - DES (DES REG Warning Lt - ON)

V34E

5 TTCA(CDR)-(Min, Then Soft Stop (53%), Check
Thrust Meter, Then Max (98%), Then Min)

6 ENG ARM - OFF (DES REG Warning Lt - OFF)

MSFN Verifies Final GDA Position

CB(11) STAB/CONT: DECA PWR - OPEN

THR CONT - AUTO

TTCA(CDR)-JETS

MODE CONT: PGNS - OFF

CDR

ACT-46

LMP97:09RCS PRESSURIZATION

- 1 RECYCLE: SYS A&B ASC FEED 2(2) - CLOSE
SYS A&B ASC FEED 1(2) - OPEN
- 2 RCS QUANTITY A&B - 100%
SYS A&B ASC FUEL & ASC OXID - tb (4) Remain-bp
SYS A&B THRUSTER PAIR QUADS - tb (8) gray
(Possible tb-Red, Cycle CWEA CB If Necessary)
RECYCLE: CRSFD-CLOSE
: SYS A&B MAIN SOV - OPEN
HTR CONT TEMP MON - CHECK RCS QUADS (113° - 241°)

***** UD - 1:00 *****

- 3 TEMP/PRESS MON - He
RCS A&B PRESS - 2625-3480 psia
TEMP/PRESS MON - PRPLNT (40° - 100° /10-50 psi)
FUEL MANF (25-130 psi)
OXID MANF (25-130 psi)
- 4 MASTER ARM - ON
HE PRESS RCS - FIRE

LM-4

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969CDRACT-47LMP

- 5 RECYCLE: SYS A&B ASC FEED 2(2) - CLOSE
: SYS A&B ASC FEED 1(2) - OPEN
: CRSFD - CLOSE
: SYS A&B THRUSTER PAIR QUADS-OPEN
: SYS A&B MAIN SOV - OPEN
MASTER ARM - OFF (Master Alarm - ON,
RCS A&B REG Warning Lts - OFF)
- 6 TEMP/PRESS MON - OXID MANF (175-184 psi)
- FUEL MANF (175-184 psi)
- PRPLNT (40°-100°/178-184 psi)
- He (2550-3400 psi)

Read He Pressure To MSFN

97:14*RCS CHECKOUT

- 1 CB(16) INST: CWEA - OPEN
- CLOSE
CB(11) STAB/CONT: ATT DIR CONT - CLOSE
- 2 GUID CONT - PGNS
DEADBAND - MAX
X-TRANSL - 4 JET
MODE CONT: PGNS - ATT HOLD
ATTITUDE CONTROL (3) - PULSE
ACA/4 JET (CDR) - DISABLE
TTCA/TRANSL - ENABLE

CDRACT-48LMP

CSM Min Deadband, ATT Hold
Verify HBR with MSFN

3 V48E

F 01 46 Verify DAP Configuration
(32012)

PRO

V34E

4 V77E

V15 N01E, 42E (RATE CMD CHECK OF CDR
ACA TO LGC, ACA PULSE COLD FIRE IN CES)
CDR ACA (To soft stop, pause at null)

Roll Right - R3 00051

Roll Left - 77726

Pitch Up - R1 00051

Pitch Down - 77726

Yaw Right - R2 77726

Yaw Left - 00051

CSM Wide Deadband ATT HOLD

5 V76E (MIN IMP CHECK OF CDR ACA TO LGC,
ACA COLD FIRE CES VOLTAGE, SEC
RCS COIL HOT FIRE 4-JET IN AGS)

V11 N10E, 31E R1 67777

GUID CONT - AGS

MODE CONT: AGS - ATT HOLD

Basic Date APRIL 18, 1969
Changed _____CDRACT-49LMP

ATTITUDE CONTROL (3) - MODE CONT
ACA/4 JET (CDR) - ENABLE
CDR ACA (Deflect slowly to hardover,
pause at Null)
Roll Right - R1 27757
Roll Left - 27737
Pitch Up - 27776
Pitch Down - 27775
Yaw Right - 27767
Yaw Left - 27773

6 ATTITUDE CONTROL (3)-PULSE

CB(11) RCS SYS A: QUAD TCA(4) -CLOSE
CB(16) RCS SYS B: QUAD TCA(4) -CLOSE
CB(16) INST: CWEA - OPEN
- CLOSE

→ HTR TEMP CONT - Cycle Then LDG
[RCS TCA Warning Lt - OFF]
(CDR TTCA HOT FIRE IN AGS)
CDR TTCA: UP(+X), Dn(-X), Right(+Y), Left(-Y)
Fwd (+Z), Aft (-Z)

7 V11 N10E, 5E (CDR TTCA HOT FIRE PGNS)

GUID CONT - PGNS

CDR TTCA

UP(+X) - R1 00252
DN(-X) - 00125

RR C/O

CDR

ACT-50

LMP

8 E, 6E
CDR TTCA
RIGHT (+Y)-R1 00220
LEFT (-Y)- 00140
FWD (+Z)- 00011
AFT (-Z)- 00006

9 X-TRANSL - 2 JET
V77E
GUID CONT - AGS

97:24

97:24

RNDZ RDR SELF TEST

1 VERIFY: CSM RCS THRUSTER B3 - OFF
: RADAR XPONDER - OFF

RNDZ RDR ANT - RELEASED

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 - $+50^\circ$

RNDZ RDR - SLEW

TEMP MONITOR - RNDZ ($+10^\circ$ To $+145^\circ$) (-75°)

L

Basic Date APRIL 18, 1969
Changed _____

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR

ACT-51

LMP

CB(11) AC BUS A: RNDZ RDR - Close
: RNG/RNG RT/ALT RT - CLOSE
(Wait 30 sec)

PGNS: RNDZ RDR - Close
(NO TRACK Lt-On)

FLIGHT DISPLAYS: RNG/RNG RT/ALT/ALT
RT-CLOSE

SLEW ANT. LEFT TO MODE 1 REGION

3 Slew Right And Down, Left And Up
(FDAI Needles Right And Down, Left And Up)

SLEW RATE - LO

SHFT/TRUN - + 5°

Slew Right And Down, Left And Up
(FDAI Needles Right And Down, Left And Up)

4 RNDZ RDR - AUTO TRACK (RNDZ RDR

Caut Lt And Master Alarm-On)

RADAR TEST - RNDZ RDR (Rng Rt Tape
Drives, X-Pointers And FDAI Needles
Vary Between Limits. After 12 sec
Rng Tape Drives, NO TRACK, RDR Caut
Lts-OFF)

5 TEST MONITOR - AGC (1.0 To 1.8)(1.5)
- XMTR PWR(2.1/To 4.1)(2.9)
-SHAFT ERR(2.2 To 2.6)
@1/2 cps)

CDRACT-52LMP

- TRUN ERR (2.1 To 2.6)
@1/2 cps)
- AGC 1.5

6 V25 N07E
F 21 07 Set NORRMON Flag
101E, 10E, 1E
RNDZ RDR - LGC (NO TRACK Lt - On, Wait 10sec)

7 V63E Start RR Self Test
F 04 12 97:26
R1 00004 Specify Radar
R2 00001 Rndz Radar
PRO
NO TRACK, TRACKER Lts-ON-OFF After 12 sec 1 HI GAIN: PITCH - 90°
 : YAW - 0°
 S-BAND TRACK MODE - SLEW
 TM - OFF/LO
 ANT - OMNI, FWD
 S-BAND - DN VOICE BU

***** LOS 97:26:58 *****

8 F 16 72 TRUNNION And SHAFT (.01°)
R1 Varying At 1/2 cps
R2 Varying At 1/2 cps
PRO

9 F 16 78 RANGE, RANGE RATE (.01nm, fps)
R1, 176 To 201 nm (195)
R2, -00468 To -00508 (-488)
RNG/RNG RT +196nm/-488 fps

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed _____CDRACT-53LMP

- 10 V34E
- 11 RADAR TEST - OFF(NO TRACK Lt-ON,
X-Pntr-Center)
- 12 V40 N72E RR CDU ZERO (10 sec)
- 13 V41 N72E COARSE ALIGN RR CDU
F 21 73 LOAD TRUNNION AND SHAFT (.01°)
R1 +00000E
R2 +28300E
- 14 F 04 12
R1 00006 RR Function
R2 00002 CONT DESIG
PRO
- 15 V16 N72E Monitor RR Position
S 16 72 RR Position (.01°)
CB(11) PGNS: RNDZ RDR-OPEN
(NO TRACK, Lt-OFF)
AC BUS A: RNDZ RDR - OPEN
V44E TERM CONT DESIG

97:34

AGS CAL

CDR

ACT-54

LMP

SR 97:37:38 *****

UD - 0:30 *****

97:45

AGS CALIBRATION

1 Read and Record: ACCEL BIAS COEFF

*540R X _____ (octal)

*541R Y _____ (octal)

*542R Z _____ (octal)

GYRO DRIFT COEFF

*544R X _____ (.01°/hr)

*545R Y _____ (.01°/hr)

*546R Z _____ (.01°/hr)

LMP

Basic Date APRIL 18, 1969
Changed _____

LM-4

Basic Date April 18, 1969
Changed May 3, 1969

CDR

ACT-55

LMP

2 V16 N20E
S 16 20 ICDU ANGLES O,I,M
CSM MNVR Unitl ICDU's >
 11.25° and $>5^\circ$ from 0°
 $45^\circ, 90^\circ$ etc. Rates $<.1^\circ/\text{sec}$
DISABLE CSM & LM THRUSTERS

3 V40 N20E CDU ZERO

*****UD - 0:20*****

DPS PRESS AND C/O

DPS PRESS AND C/O

<u>CDR</u>	<u>ACT-56</u>	<u>LMP</u>
<u>97:50</u>	4	*400 + 6 CALIBRATE GYRO & ACCEL After 32 Sec Enable CSM Thrusters Max Deadband Attitude Hold (CSM) Read and Record
<u>DPS PRESSURIZATION AND CHECKOUT</u>		
1 PRPLNT TEMP/PRESS MON - DES 1&2 (50°-84° FUEL, 50°-75° OXID/ 102-255 psi FUEL, 72-202 psi 55 1448 OXID)		*540R _____ (octal)
2 HELIUM MON: AMB PRESS (1430-1750 :SUPCRIT PRESS (700-1430 psi)		*541R _____ (octal)
3 DES HE REG 1-tb-gray DES HE REG 2-tb-bp CB(16) ED: LOGIC PWR B - OPEN		*542R _____ (octal) Values Should Not Change From Step 1 By More Than 20 Octal Digits In Least Significant Digit.
4 MASTER ARM - ON DES PRPLNT ISO VLV - FIRE HE PRESS/DES START - FIRE MASTER ARM-OFF (Master Alarm-ON) CB(16)ED: LOGIC PWR B - CLOSE		*400R + 0 When Calibration Complete (302 Sec) Read and Record
5 PRPLNT TEMP/PRESS MON: DES 2&1 (50°-84° FUEL, 50°-75° OXID/ 200-253 psi) HELIUM MON: AMB PRESS (200- 750 ⁹⁰⁰ psi) : SUPCRIT PRESS (700-1430 psi)		*544R _____ (.01°/hr) *545R _____ (.01°/hr) *546R _____ (.01°/hr) Values Should Not Change From Step 1 By More Than 2.5°/hr

LM-

Basic Date APRIL 18, 1969
Changed _____CDRACT-57LMP97:5597:55LANDING GEAR DEPLOY

1 CB(11) ED: LDG GEAR FLAG - CLOSE
CB(11) ED: LOGIC PWR A - OPEN
MASTER ARM - ON
CB(16) CAMR: SEQ-CLOSE
SEQ CAMERA - ON
LDG GEAR DEPLOY - FIRE
SEQ CAMERA - OFF
CB(11) ED: LOGIC PWR A - CLOSE
LDG GEAR DEPLOY - FIRE
MASTER ARM - OFF (Master Alarm-ON)
CB(11) LDG GEAR FLAG - OPEN

- 1 TELEMETRY - RIGHT/HI
V47E
F 06 16 GET OF AGS CLOCK ZERO
- 2 *414 + 1
PRO (20 Sec Until Step 4)
- 3 *414R (+0)
- 4 F 50 16 DOWNLINK COMPLETE
PRO
- 5 *400 + 3 AGS ALIGN
- 6 V83E
F 16 54 R, RDOT, THETA (.01nm,.1fps,.01°)
- 7 *440R RANGE RATE (±2.5fps) (.1fps)
- 8 *317R RANGE (.1nm)

***** UD - 10 *****

LDG GEAR DEPLOY

LDG GEAR DEPLOY

CDR

ACT-58

LMP

98:00

PREP FOR UNDOCKING

- 1 CDR And LMP DON HELMET And GLOVES
Verify Basic Comm With VHF B backup
- 2 MISSION TIMER-SET
EVENT TIMER-SET
OVHD HATCH-LOCKED
OVHD CABIN RELIEF & DUMP VLV-AUTO
REGS A&B - CABIN
- 3 GUID CONT - AGS
MODE SEL - LDG RADAR
RNG/ALT MON - RNG/RNG RT
RATE ERR MON (LMP) - LDG RDR/CMPTR
(CDR) - RNDZ RDR
ATTITUDE MON (CDR) - PGNS
(LMP) - AGS
RATE SCALE - 5°/SEC
- 4 X-TRNSI. - 2 JET
BAL CPL - ON
DEADBAND - MAX
ATTITUDE CONTROL (3)- PULSE
MODE CONT (BOTH) - ATT HOLD
TTCA (BOTH) - JET

L-4

Basic Date APRIL 18, 1969
Changed _____

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR

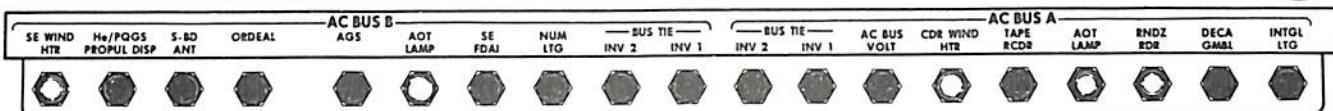
ACT-59

LMP

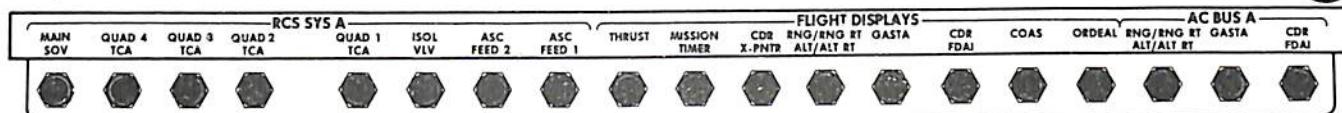
RNDZ RDR - SLEW
ACA/4 JET(BOTH) - ENABLE
TTCA/TRANSL - ENABLE
CB(11)HTRS: AOT - CLOSE
EXTERIOR LTG - TRACK
Verify CB Status Per Chart

5

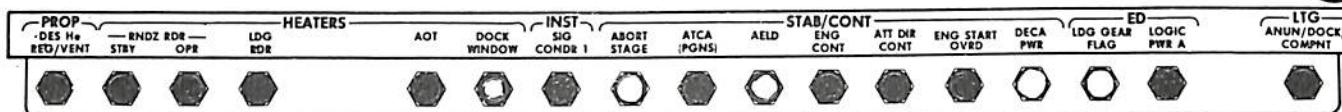
ACT-60



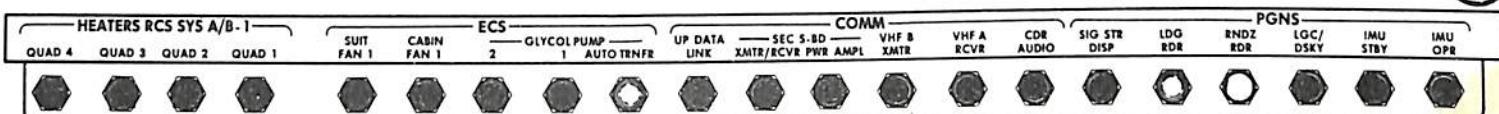
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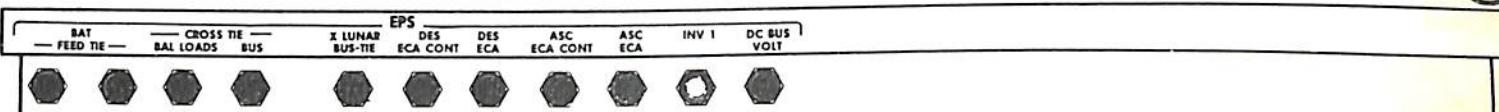
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3



1



L

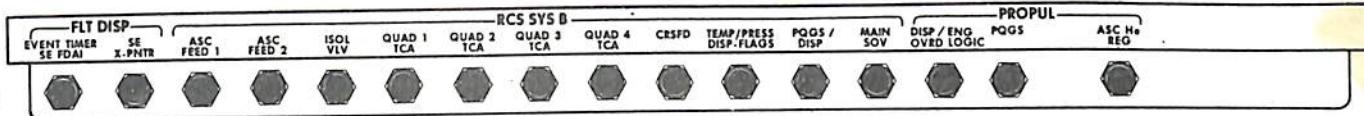
Basic Date April 25, 1969
 Changed May 2, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

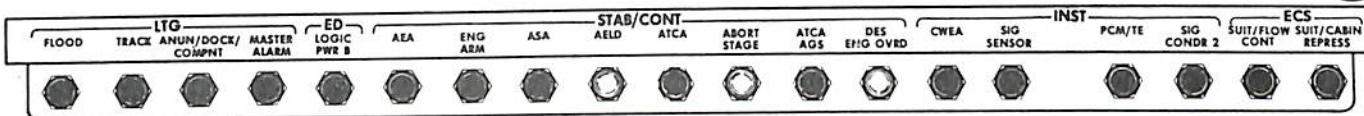
ACT-61

PANEL 16

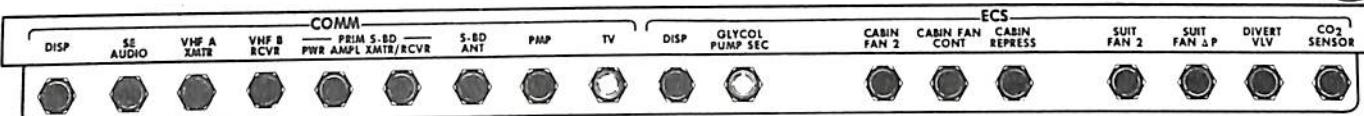
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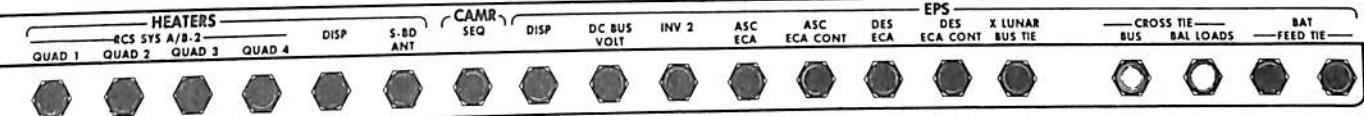
3



2



2



ACT-61

CDR

ACT-62

LMP

Go TO RNDZ BOOK

98:10

UNDOCKING

104

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

APS BURN TO DEPLETION

APS BURN TO DEPLETION

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

ACT-63

106:20

CONFIGURE PGNS And AGS

1 ATTITUDE CONTROL (3) - PULSE

GUID CONT - AGS

DEADBAND - MAX

ABORT - SET (IN)

BAL CPL - ON

2 V48E

F 01 46

R1, 11011

PRO

3 F 06 47 LM, CSM WT (1bs)

R1, _____ (TBD)

R2, _____ (TBD)

PRO

4 V37E 00E

V76E

MODE CONT: PGNS - ATT HOLD

GUID CONT - PGNS

MODE CONT: AGS - AUTO

ATTITUDE CONTROL(3) - MODE CONT

Verify ENGINE STOP PB(2)-RESET (OUT)

CONFIG G&N

106:22PREP FOR TRANSFER

- 1 STOW THE FOLLOWING IN ISA:
 - ✓ Rndz Charts
 - Film
 - Radiation Survey Meter
 - RNDZ Checklist
 - P.P.K.(2)
 - DSEA
- 2 Verify Tunnel Pressurized From CSM
PRESS REGS A&B - EGRESS
OVHD CABIN DUMP vlv - OPEN, Then AUTO
When PRESSURES Equal
- 3 Stow HSB's On Floor In Earth Launch
Position
- 4 Open Hatch
Stow: Probe On Left Hand Side Using
Outboard (Double) Restraint
Cable
: Drogue Over Probe Using Inboard
(Single) Restraint Cable Through
Drogue Handles

Basic Date April 18, 1969Changed May 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

ACT-65

- 5 Lock CDR's Restraint System
- 6 Raise PLSS Floor Mounts And Lock Fwd
Mounts
Stow PLSS And HSB'S On Floor
Stow ISA In LM Over Panels 1&2

1 Copy APS BURN PAD

+ 0 0				HR	N33	
+ 0 0 0				MIN	TIG	
			•	SEC		
			•	ΔVX	N81	
			•	ΔVY	LOCAL	
			•	ΔVZ	VERT	
+ X X X		•		ΔVR		
X X X	•			BT		
X X X				R	FDI	
X X X				P	INER	
			•	ΔVX	AGS	N86
			•	ΔVY	AGS	
			•	ΔVZ	AGS	
X X X				COAS		
X X	■			AZ		
X X	■		•	EL		

Basic Date APRIL 18, 1969
 Changed MAY 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

ACT-67

***** SS 106:43:47 *****

106:45

CSM MNVRS TO Burn Attitude

CONFIG S-BAND

ACT-68

107:00

CONFIGURE S-BAND

- 1 S-BAND- PM,PRIM,PRIM OFF,PCM,RANGE,OFF,HI
VHF A XMTR - VOICE/RANGE
VHF A RCVR - OFF
VHF B XMTR - OFF
VHF B RCVR - ON
TRACK MODE - SLEW
PITCH _____ (+180°)

YAW _____ (-8°)

ANTENNA: S-BAND - SLEW
Slew For MAX Signal
UPDATA LINK - DATA

107:05
170:05

CDR IVT TO CSM

- 1 CB(11) COMM: CDR AUDIO - OPEN
CDR SUIT ISOL - SUIT DISC
- 2 Disconnect LM Hoses and Stow
Transfer To CSM With ISA.

TARGET APS BURN

- 1 V37E 30E
F 06 33 TIG (hrs,min,.01sec)
PRO
- 2 F 06 81 ΔV XYZ (LV) (.1fps)
PRO

Basic Date April 18, 1969
Changed May 3, 1969

Basic Date April 18, 1969
Changed May 3, 1969

ACT-69

- 3 F 06 42 HA,HP ΔV (.lnm,.1fps)
- 4 F 16 45 M,TFI,MGA (Marks,min-sec,.01°)
CSM SET EVENT TIMER
PRO (MGA Set To - 00002 If NO
REFSMMAT Set)
- 5 *410 +5 EXTERNAL ΔV
*407 +0
*450 (TBD) (.1fps)
*451 (TBD) (.1fps)
*452 (TBD) (.1fps)
*267R (TOTAL ΔV) (.1fps)
*616 +0
*411 +1 APS BURN

107:10

LM CLOSEOUT FOR LM JETTISON

- 1 GLYCOL - PUMP 1
CB(11) ECS: GLYCOL PUMP AUTO TRNFR-CLOSE
EXTERIOR LTS - OFF

LM-CLOSEOUT

ACT-70

- 2 BAT 5 BACKUP FEED - ON
BAT 6 BACKUP FEED - ON
BAT 6 NORMAL FEED - OFF/RESET
BAT 5 NORMAL FEED - OFF/RESET
- 3 EPS: POWER/TEMP MON - ED/OFF
- 4 V37E 00E
V47E
F 06 GET OF AGS CLOCK ZERO
(hrs,min.,.01sec)
- 5 *414 + 1
PRO (20 Sec Until Step 7)
- 6 *414R (+0)
- 7 F 50 16 Downlink Complete
PRO
- 8 *400 + 3 AGS ALIGN
*400 + 1 GUIDANCE STEERING
- 9 V83E
F 06 54 R,RDOT,THETA (.01nm,.1fps,.01°)
*440R RANGE RATE (+2.5fps) (.1fps)

Basic Date April 18, 1969
Changed May 3, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

ACT-71

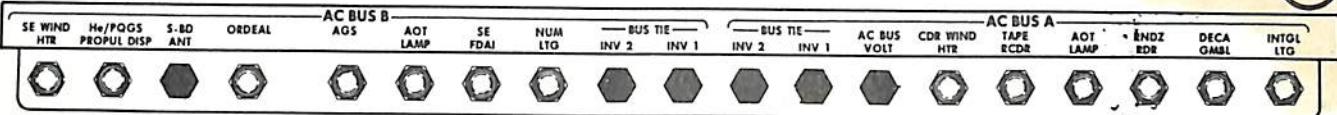
10 *407 +0
*500R ΔVGX (.1fps)

11 Verify CSM CMC ATT HOLD, 2.5° Deadband
MODE CONT: PGNS - AUTO

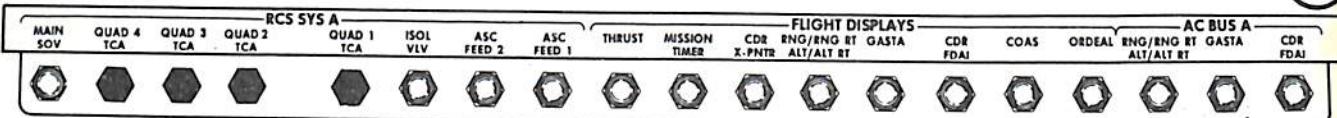
12 CONFIGURE RCS Per MSFN

13 Configure CB's Per Chart

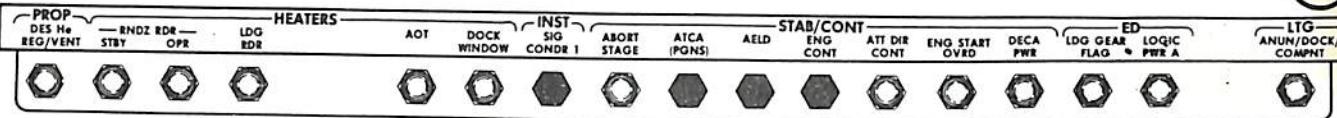
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15

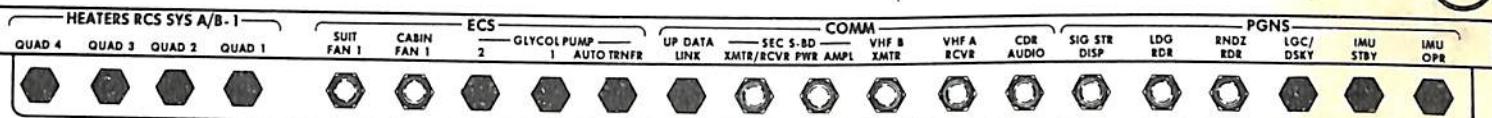


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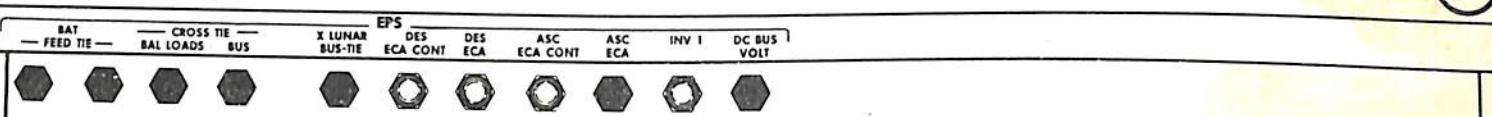


ACT-72

10



4



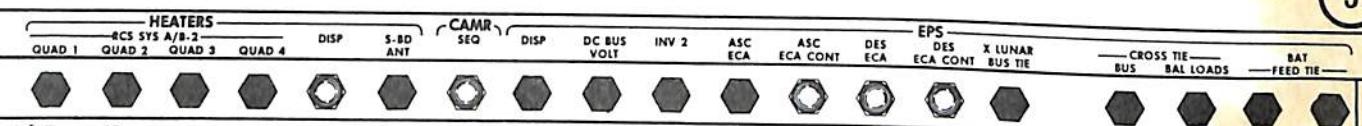
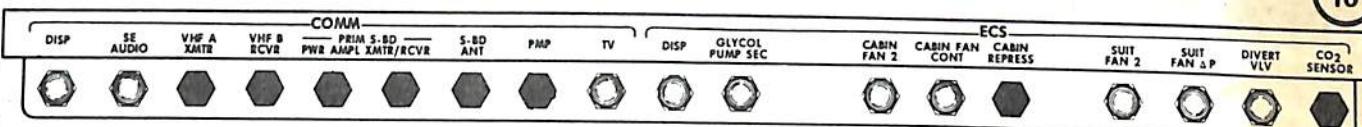
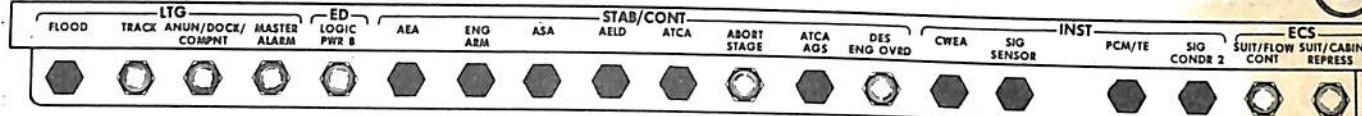
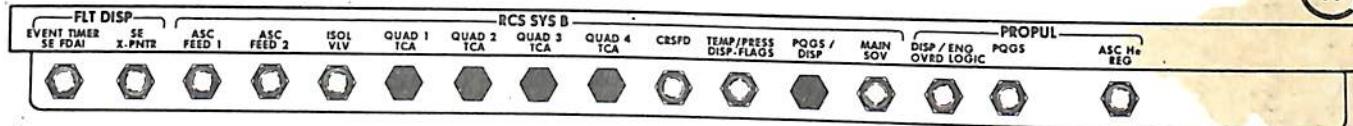
LM

Basic Date APRIL 18, 1969
 Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

ACT-73

PANEL 16



LM-4

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

ACT-74

LOS 107:18:17

107:20

LMP IVT TO CSM

- 1 LMP SUIT ISOL - SUIT DISC
Disconnect LM Hoses And
Stow
- 2 FLOOD Lt - OFF
- 3 TRANSFER TO CSM

SR 107:30:18

Items to be recovered

LCL RECOVERY CHECKLIST

<u>ITEM</u>	<u>LOCATION</u>	<u>TOOLS RECD</u>
1. COAS	COAS MNT	None
2. WATER GUN		None
3. FILTER WATER GUN		None
4. UTILITY LIGHT	CEILING	None
5. UTILITY LIGHT	CEILING	None
6. AOT EYEPIECE & FILTER	RHSSC	None
7. TOOL B	AFT-LMP RT LEG	None
8. MIRROR	RHSSC	None
9. RHC HANDLE - CDR	Junction	#1 Phillips
10. RHC HANDLE - LMP		#1 Phillips
11. CAMERA CORD	ABOVE LMP WINDOW	DYKES
12. RF HARDLINE	AFT-LMP RT LEG	DYKES
13. DSKY TABLE	DSKY	#2 Phillips
14. TTCA - CDR		#2 Phillips
15. TTCA - LMP		#2 Phillips
16. EVA TETHERS	RHSSC	None
17. PLSS REMOTE CONTROL UNIT	AFT BLKHD	None
18. LCL TOOL KIT	IN YOUR PAW	None
19. ARM REST	CDR TTCA	None
20. ARM REST { Tissue section	CDR RHC	No.
21. ARM REST } of A-1	LMP TTCA	None
22. ARM REST - A8 w/extension	LMP RHC	None

all others in single leg
on outboard side of
A-6 #6 - strapped down
(between A-6 & bulkhead)