APOLLO 10	
LM SYSTEMS ACTIVATION CHECKLIST	
PART NO	S/N
SKB32100079-360	1004

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

ACT-1

CDR LMP

********** LOS 81:41:52 **********

81:56

LMP 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 H20 - OPEN
DES 02 - 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

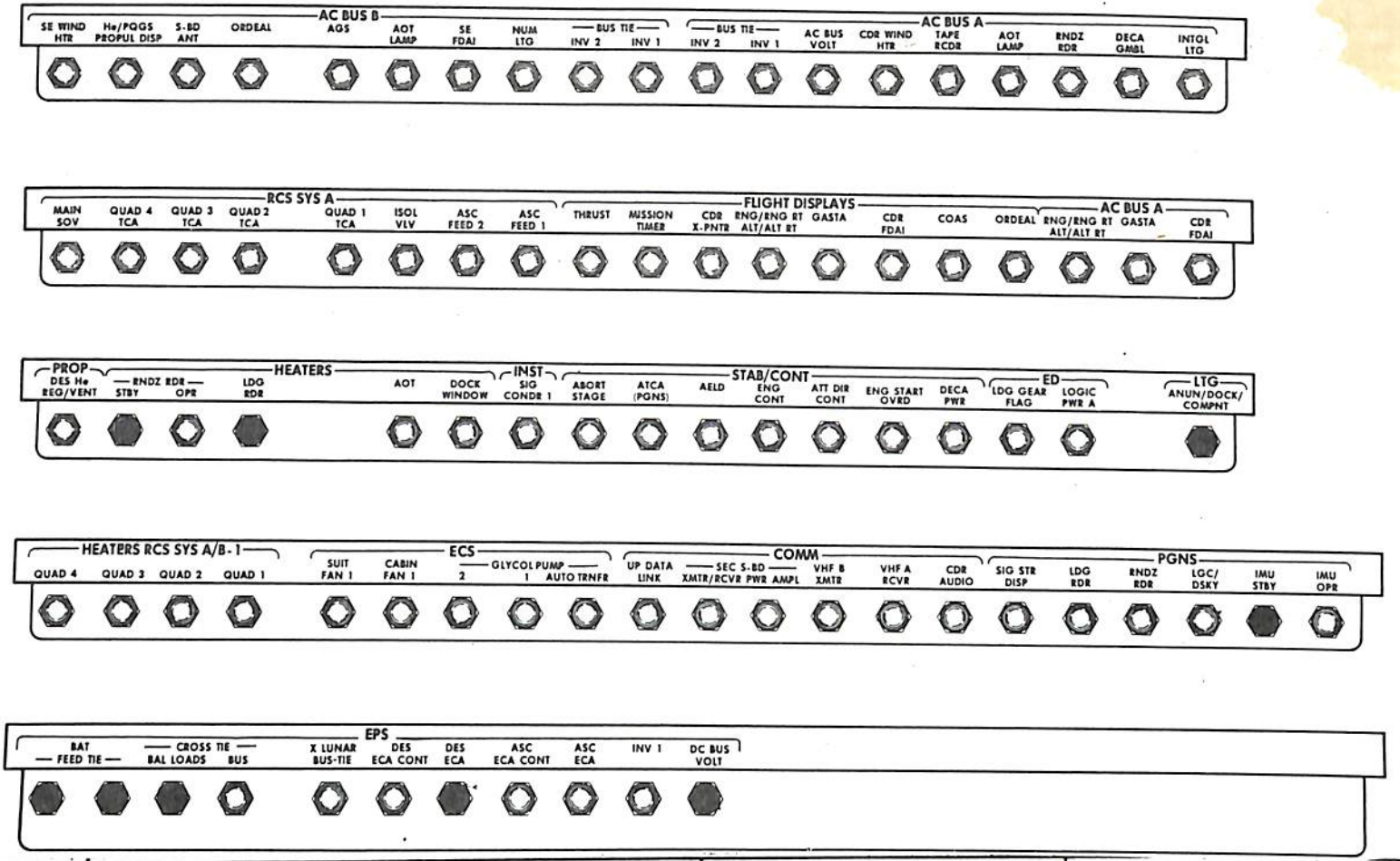
4. Remove ISA And Pass To CSM

5. Verify C.B. Status Per Chart

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

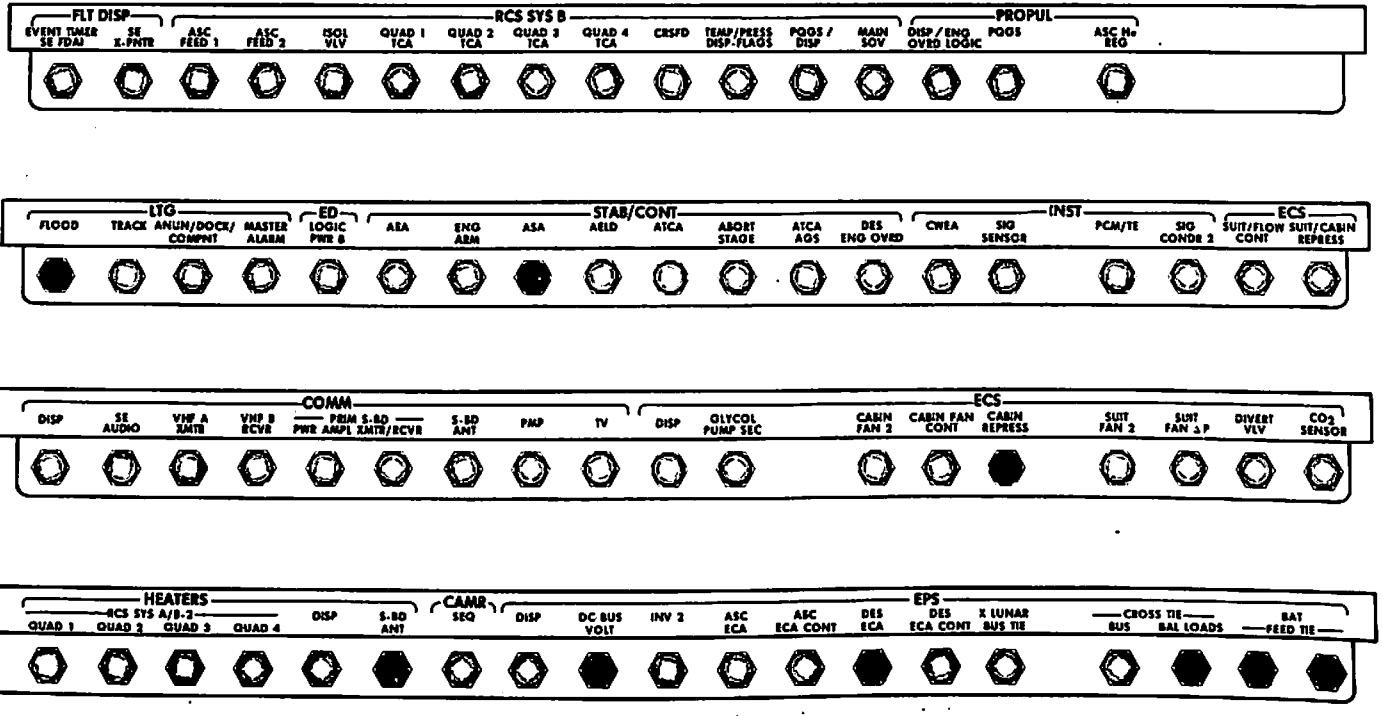
ACT-3

PANEL 11



ACT-4

PANEL 16



LM

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

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
THUMBWHELL 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 - ±50°
RATE SCALE - 25°/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

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 (vlv open)
CRSFD -tb-bp (vlv closed)
SYS A&B MAIN SOV - tb-gray (vlv open)
TEMP/PRESS MON - He
ACA PROP - ENABLE
RATE/ERR MON - LDG RDR/CMPTR
ATTITUDE MON - AGS
GLYCOL - PUMP 2
SUIT FAN - 1
02/H20 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

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

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

11
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

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

~~36~~
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

[redacted]

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

CDR 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 47
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:~~10~~ 51

* 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 11 18, 1969
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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* **********

16
83:03

* 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

83:20

* 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 April 18, 1969
Changed May 3, 1969

CDR ACT-17 LMP

83:20 31

* 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 41

* 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

**********LOS 83:40:00**********

83:~~40~~ 51

COMM DEACTIVATION

[HI GAIN: PITCH -90°
: YAW -0°]

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

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 [redacted] 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~~ 31

LMP IVT TO CSM

1 DES 02 - CLOSE
DES H20- 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

Basic Date APRIL 18, 1969
Changed

SECOND DAY

SECOND DAY

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

CDR ACT-19 37
********** UD - 3:45 ********** 94:25 **********

LMP IVT TO LM

1 Activate CABIN DUMP VALVE & 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 _____

CDR ACT-20 LMP

42
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

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CDR ACT-21 LMP

S-BAND ANT - AFT
Perform COMM Check with MSFN

4 Verify BAT 1,2,3,4 - tb-LO
DES BATS tb-gray (If bp-CONNECT)
BATS 5&6 NORMAL & BACKUP (4)-tb-bp
Check BAT and BUS Voltages (When BUS Volts $\leq$27V, Select High Voltage Taps)
CB(16) EPS: CROSS TIE BAL LOADS - OPEN
BAT 1 HI VOLTAGE-OFF-RESET
BAT 1 HI VOLTAGE-ON
Repeat for BATS 2,3,4
CB(16) EPS: CROSS TIE BAL LOADS - CLOSE

5 CB(11) AC BUS B&A: BUS TIE INV 2&1(4) - CLOSE
: AC BUS VOLT(1) - CLOSE
EPS: INV 1 - CLOSE
CB(16) EPS: INV 2 - CLOSE

6 POWER/TEMP MON - AC BUS
INV - 1 Then 2
Verify Voltage in GREEN BAND
CB(11) EPS: INV 1 - OPEN

CDR ACT-22 LMP

49
94:37

MISSION TIMER ACTIVATION

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

51
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 **********

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CDR

ACT-23

LMP
~~94:40~~ 52

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, H20 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

Act-ish

ACT-24

PANEL 11

5

AC BUS B: SE WIND HTR | He/PQGS PROPUL DISP | S-BD ANT | ORDEAL | AGS | AOT LAMP | SE FDAI | NUM LTG | BUS TIE: INV 2 | INV 1

BUS TIE: INV 2 | INV 1 | AC BUS VOLT | CDR WIND HTR | AC BUS A: TAPE RCDR | AOT LAMP | RNDZ RDR | DECA GMBL | INTGL LTG

6

RCS SYS A: MAIN SOV | QUAD 4 TCA | QUAD 3 TCA | QUAD 2 TCA | QUAD 1 TCA | ISOL VLV | ASC FEED 2 | ASC FEED 1

FLIGHT DISPLAYS: THRUST | MISSION TIMER | CDR X-PNTR | RNG/RNG RT ALT/ALT RT | GASTA | CDR FDAI | COAS | ORDEAL

AC BUS A: RNG/RNG RT ALT/ALT RT | GASTA | CDR FDAI

7

PROP: DES He REG/VENT | RNDZ RDR STBY | RNDZ RDR OPR

HEATERS: LDG RDR | AOT | DOCK WINDOW

INST: SIG CONDR 1

STAB/CONT: ABORT STAGE | ATCA (PGNS) | AELD | ENG CONT | ATT DIR CONT | ENG START OVRD | DECA PWR

ED: LDG GEAR FLAG | LOGIC PWR A

LTG: ANUN/DOCK/COMPNT

5

HEATERS RCS SYS A/B-1: QUAD 4 | QUAD 3 | QUAD 2 | QUAD 1

ECS: SUIT FAN 1 | CABIN FAN 1 | GLYCOL PUMP: 2 | 1 | AUTO TRNFR

COMM: UP DATA LINK | SEC S-BD XMTR/RCVR PWR AMPL | VHF B XMTR | VHF A RCVR | CDR AUDIO

PGNS: SIG STR DISP | LDG RDR | RNDZ RDR | LGC/DSKY | IMU STBY | IMU OPR

3

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

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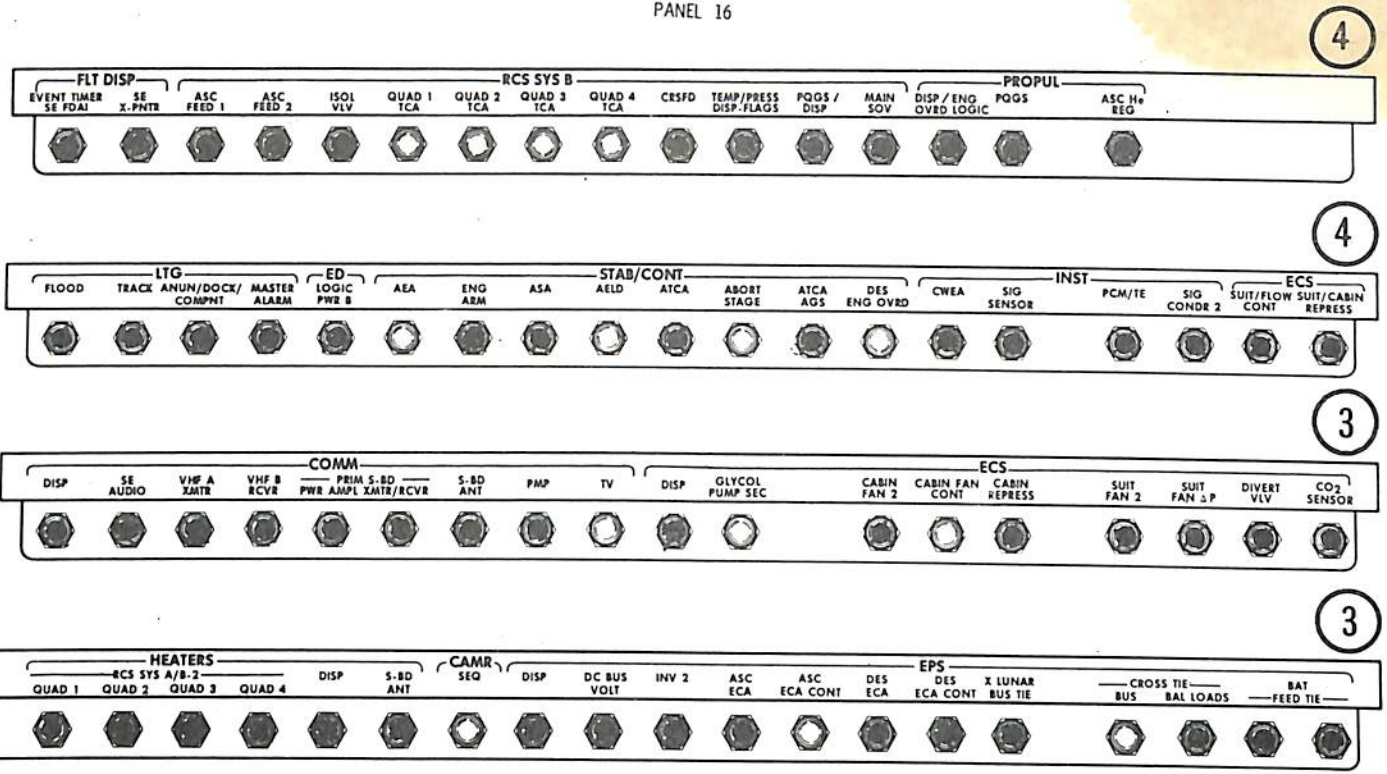
ACT-25

PANEL 16



TB VERIF

95
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

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

LM-4

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

ACT-27

CDR
95:02
~~94~~:50

LMP
95:02
94:50

1 CDR IVT TO LM

PGNS TURN-ON & SELF TEST

1 Check Bus Voltages

2 If STBY Lt - ON, PRO
V36E
V21 NO1E, 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 Registers, Lts and DSKY reset In 5 sec)
NO ATT Lt - OFF Wait 20 Sec
KEY RSET
V37E 00E

5 V25 NO1E 1365E
F 21 01
E,E,E

********** SS 94:52:43 **********

CDR ACT-28 LMP

95 07
94:55

ECS ACTIVATION & CHECKOUT

1 O2/H2O QTY MON - ASC 2, ASC 1, DES

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)

3 SUIT FAN - 2 (Master Alarm (Twice), SUIT/FAN Warning Lt-ON Momentarily, ECS Caution, H2O SEP Comp Lts - ON Then OFF In 2 Min)

94:57

CDR CONNECT TO LM ECS

1 Connect to CDR Hoses (Stow Gas Connector Plugs)

6 V15 NO1E 1365E
S 15 01
R1,R2,R3, All Zero

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≥3 Within 78 sec)

```
*PROG Lt-ON                    *
*          VO5 NO9E 01102 SELF-*
*          TEST ERROR          *
* NO8E     RECORD FOR MSFN     *
*                              *
*          R1_____             *
*                              *
*          R2_____             *
*                              *
*          R3_____             *
```

8 V21 N27E,OE TERMINATE SELF TEST

Basic Date APRIL 18, 1969
Changed MAY 3, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

CDR | ACT-29 | LMP

SUIT ISOL VLV - SUIT FLOW

2 Connect to LM Comm Umbilical
CB(11) COMM: CDR AUDIO - CLOSE
AUDIO (CDR): ICS - T/R
: S-BAND T/R

,2
95:00

,2
95:00

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

SUIT 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 CHECK

1 Verify HI VOLT Taps
Select HI Taps If LO TAPS ON
S-BAND XMTR/RCVR - SEC
S-BAND PWR AMPL - SEC
(up to 30 60 sec to Relock)

2 Perform Comm Check With MSFN

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

SUIT FAN/H2O SEP CK

CDR ACT-30 LMP

16
95:04

* 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 TRACK MODE - SLEW
PITCH _____ (+148°)

YAW _____ (-4°)
ANTENNA: S-BAND - SLEW

3 Voice Mark Initial Phase Lock, then Slew
For MAX Signal
TRACK MODE - AUTO

4 TELEMETRY - LEFT/HI

17
95:05

GLYCOL 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)

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

LM

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CDR

ACT-31

LMP

32
95:10

32
95:10

VHF-B ACTIVATION

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

29
95:17

VHF 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

LMP IVT TO CSM

1 CB(16) COMM: SE AUDIO - OPEN
Disconnect From LM Comm Umbilical
LMP IVT TO CSM

VHF B ACT

CDR ACT-32 LMP

33
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

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CDR ACT-33 LMP

36
95:24

*E-MEMORY DUMP

1 Verify MSFN Contact
V74E (42 sec)

37
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**********

CDR | ACT-34 | LMP

47
95:35

47
95:35

DOCKED IMU COARSE ALIGN

LMP IVT TO LM

1 Verify CSM in Min DEADBAND ATT HOLD

2 Calculate LM Gimbal Angles

OG	IG	MG
300.00	180.00	360.00

\- . .1 +RC (See ACT-1)

138 .07 -CM 200.94 +CM 020.55 -CM

380 94

161.83 LM 820.94 LM 359 .45 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           *
```

1 Connect to LMP hoses
SUIT ISOL VLV - SUIT FLOW
Connect to LM Comm Umbilical

2 CB(16) COMM: SE AUDIO - CLOSE
AUDIO: VHF A - T/R
VHF B - RCV

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CDR ACT-35 LMP

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

	OG	IG	MG
CSM	138.01 CM	200.67 CM	000.48 CM
LM	160.70 LM	020.23 LM	359.73 LM
	160.70	020 23	359 73

GET 095:00:53
GET 095 18 59
135.52 193.71 00132
163.54 01299 359.06

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

CDR ACT-36 LMP

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

57
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

57
95:45

ASCENT BATTERY ACTIVATION & CHECKOUT

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

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CDR	ACT-37	LMP
	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 37 BAT B 37

6 07
~~98:55~~

ARS/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)

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

~~12~~ 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~~ open down open
CABIN REPRESS - ~~AUTO~~ close
PRESS REG B - EGRESS (Cabin Fans - OFF And SUIT GAS DIVERTER - EGRESS)

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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 $\pm$ .2 psia CABIN Warning Lt - OFF) CABIN GAS RETURN - AUTO SUIT GAS DIVERTER - PUSH/CABIN	

CDR ACT-40 LMP

********** 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-35

96:21

96:35

CSM LANDMARK TRACK

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

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ACT-41

CDR	LMP
~~96:40~~ 52	96:40

RATE GYRO CHECK

1 GYRO TEST - POS RT (RPY RATE +5°/sec)
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

CDR

ACT-42

57
96:45

LMP

57
96:45

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

57
96:45

1 Copy LM Angles

PITCH _____ (+193°)

YAW _____ (+64°)

* DOCKED IMU FINE ALIGN

1 Copy Ground Calculated Gyro Torquing Angles

X -00.739, Y -00.700, Z +00570

2 V42E Fine Align IMU
F 21 93 Load Gyro Torquing Angles X,Y,Z (.001°)

3 V16 N93E
S 16 93 Monitor Torquing

96:50

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

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CDR

07
~~96~~:55

* MSFN - UPDATE

1 Perform P-27 UPDATE (REFSMMAT/ STATE VECTOR)

97:00

* DRIFT CHECK

1 V06 N20
S 06 20 ON LM MARK - ENTER
Copy OG, IG, MG, CSM & LM

OG	IG	MG
_____ CM	_____ CM	_____ CM
_____ LM	_____ LM	_____ LM

Voice Gimbal Angles To MSFN

ACT-43

LMP

96:52

1 S-BAND ANTENNA - SLEW
ACQUIRE MSFN
TRACK MODE - AUTO
TELEMETRY - RIGHT/HI
FUNCTION: VOICE - VOICE

12
97:00

AGS INITIALIZATION

1 V16 N65E
S 16 65 LGC TIME (hr,min,.01 sec)
*377+04220
ENTR At 97:02:00

2 V47E
F 06 16 GET OF AGS CLOCK (hr,min,.01 sec)
LOAD PGNS/AGS TIME BIAS = 90 hrs.

CDR

ACT-44

LMP

3 *414+1
PRO (20 sec before step 5)

4 *414R (+0)

5 F 50 16 Downlink Complete
PRO

6 *400+3 AGS ALIGN

16
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 ____ : ____ : ____

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CDR | ACT-45 | LMP

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

RCS PRESS

CDR ACT-46 LMP

21

97:09

RCS 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

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CDR | ACT-47 | LMP

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

26
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

CDR | ACT-48 | LMP

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

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Changed

CDR ACT-49 LMP

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

[redacted]

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

~~36~~
~~97:24~~

~~36~~
~~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°
RNDZ RDR - SLEW
TEMP MONITOR - RNDZ (+10° To ~~+150~~ +145°) (~~75°~~)

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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)

- 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
R1 00004 Specify Radar
R2 00001 Rndz Radar
PRO
NO TRACK, TRACKER Lts-ON-OFF After 12 sec

38
97:26

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 **********

38

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

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CDR	ACT-53	LMP

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

46
97:~~34~~

CDR | ACT-54 | LMP

49

********** 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)

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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° from 0°
45°,90° etc. Rates <.1°/sec
DISABLE CSM & LM THRUSTERS

3 V40 N20E CDU ZERO

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

DPS PRESS AND C/O

CDR

~~97:50~~
94:00

DPS PRESSURIZATION AND CHECKOUT

1 PRPLNT TEMP/PRESS MON - DES 1&2
(50°-84° FUEL, 50°-75° OXID/
102-255 psi FUEL, 72-202 psi
55 1446 OXID)

2 HELIUM MON: AMB PRESS (~~1430~~-1750
:SUPCRIT PRESS
(700-1430 psi)

3 DES HE REG 1-tb-gray
DES HE REG 2-tb-bp
OK as is ~~CB(16) ED: LOGIC PWR B - OPEN~~

4 MASTER ARM - ON
DES PRPLNT ISO VLV - FIRE
HE PRESS/DES START - FIRE
MASTER ARM-OFF (Master Alarm-ON)
OK as is ~~CB(16)ED: LOGIC PWR B - CLOSE~~

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)

ACT-56

4 *400 + 6 CALIBRATE GYRO & ACCEL
After 32 Sec Enable CSM Thrusters
Max Deadband Attitude Hold (CSM)
Read and Record

*540R _____ (octal)

*541R _____ (octal)

*542R _____ (octal)

Values Should Not Change From Step 1 By More Than 20 Octal Digits In Least Significant Digit.

*400R + 0 When Calibration Complete (302 Sec) Read and Record

*544R _____ (.01°/hr)

*545R _____ (.01°/hr)

*546R _____ (.01°/hr)

Values Should Not Change From Step 1 By More Than 2.5°/hr

LMP

LM-

Basic Date APRIL 18, 1969
Changed

ACT-57

CDR

98 07
~~97:55~~

LANDING 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

LMP

98:07
~~97:55~~

AGS UPDATE

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

CDR | ACT-58 | LMP

12
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

Basic Date APRIL 18, 1969
Changed

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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

PANEL 11

ACT-60

5

AC BUS B: SE WIND HTR | He/PQGS PROPUL DISP | S-BD ANT | ORDEAL | AGS | AOT LAMP | SE FDAI | NUM LTG | BUS TIE: INV 2 | INV 1

BUS TIE: INV 2 | INV 1 | AC BUS VOLT | CDR WIND HTR | AC BUS A: TAPE RCDR | AOT LAMP | RNDZ RDR | DECA GMBL | INTGL LTG

0

RCS SYS A: MAIN SOV | QUAD 4 TCA | QUAD 3 TCA | QUAD 2 TCA | QUAD 1 TCA | ISOL VLV | ASC FEED 2 | ASC FEED 1

FLIGHT DISPLAYS: THRUST | MISSION TIMER | CDR X-PNTR | RNG/RNG RT ALT/ALT RT | GASTA | CDR FDAI | COAS | ORDEAL

AC BUS A: RNG/RNG RT ALT/ALT RT | GASTA | CDR FDAI

5

PROP: DES He REG/VENT | RNDZ RDR: STBY | OPR | LDG RDR

HEATERS: AOT | DOCK WINDOW | INST: SIG CONDR 1

STAB/CONT: ABORT STAGE | ATCA (PGNS) | AELD | ENG CONT | ATT DIR CONT | ENG START OVRD | DECA PWR

ED: LDG GEAR FLAG | LOGIC PWR A

LTG: ANUN/DOCK/COMPNT

3

HEATERS RCS SYS A/B-1: QUAD 4 | QUAD 3 | QUAD 2 | QUAD 1

ECS: SUIT FAN 1 | CABIN FAN 1 | GLYCOL PUMP: 2 | 1 | AUTO TRNFR

COMM: UP DATA LINK | SEC S-BD: XMTR/RCVR PWR | AMPL | VHF B XMTR | VHF A RCVR | CDR AUDIO

PGNS: SIG STR DISP | LDG RDR | RNDZ RDR | LGC/DSKY | IMU STBY | IMU OPR

1

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

L

Basic Date April 25, 1969

Changed May 2, 1969

Basic Dat APRIL 18, 1969
Changed MAY 2, 1969

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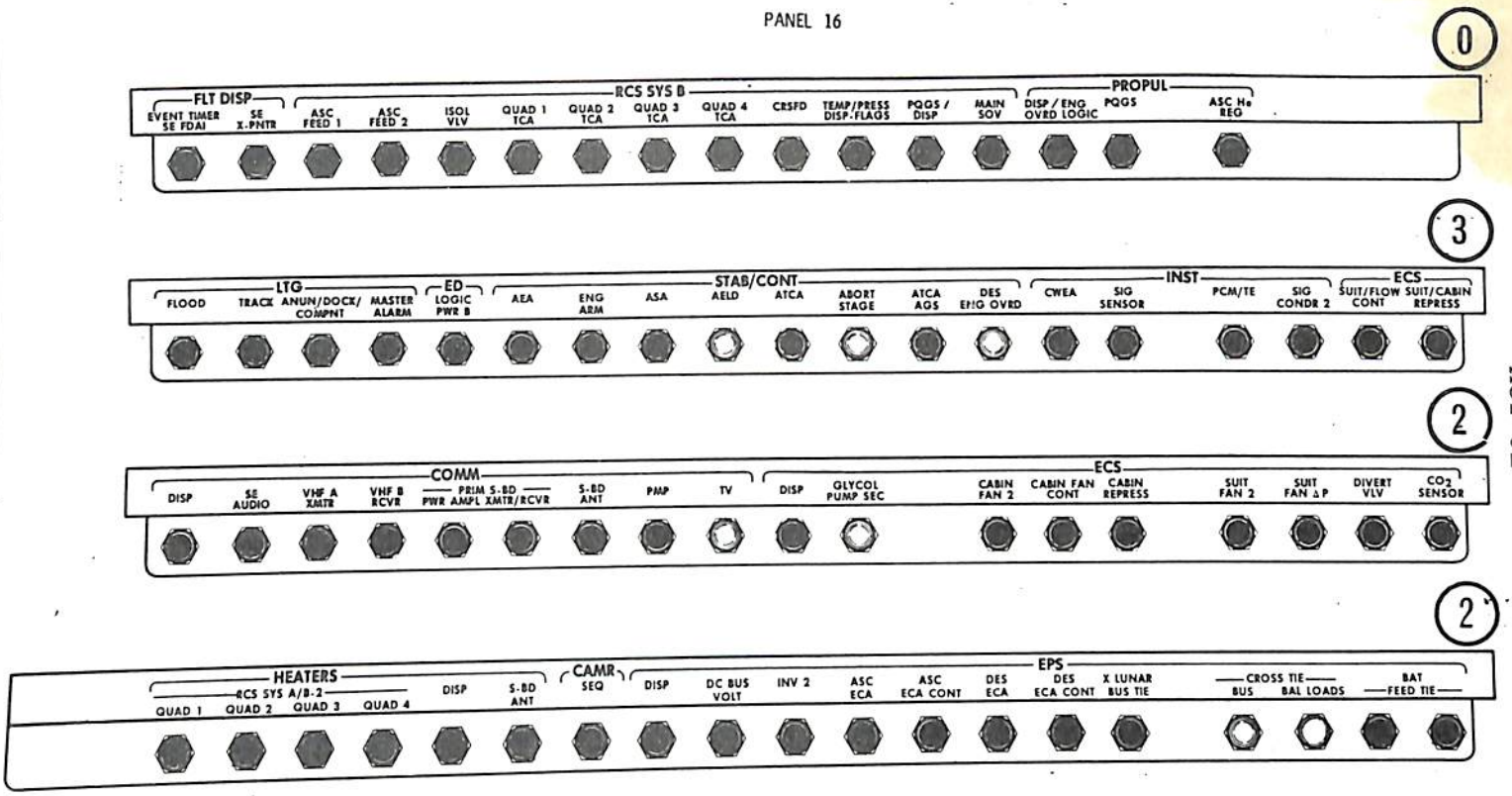
PANEL 16



ACT-61

CDR ACT-62 LMP

Go TO RNDZ BOOK

98:10

UNDOCKING

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

Basic Date APRIL 18, 1969
Changed MAY 2, 1969

APS BURN TO DEPLETION

APS BURN TO DEPLETION

32
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, 10011
PRO

3 F 06 47 LM,CSM WT (lbs)'
R1, 07544 (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

ACT-64
34
106:22

PREP 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, 1969
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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

ACT-66

106:25

1 Copy APS BURN PAD

+ 0 0 .	HR N33
+ 0 0 0 .	MIN TIG
.	SEC
.	ΔVX N81
.	ΔVY LOCAL
.	ΔVZ VERT
+ .	ΔVR
X X X .	BT
X X X	R FDAI
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 [redacted] 3, 1969

ACT-67

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

106:~~45~~ 57

CSM MNVRS TO Burn Attitude

CONFIG S-BAND

ACT-68

12
~~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

17
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.

17
107:05
~~170:05~~

TARGET APS BURN

1 V37E 30E
F 06 33 TIG (hrs,min,.01sec)
PRO

2 F 06 81 ΔV XYZ (LV) (.1fps)
PRO

ACT-69

3 F 06 42 HA,HP ΔV (.1nm,.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)

*404+0

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

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)

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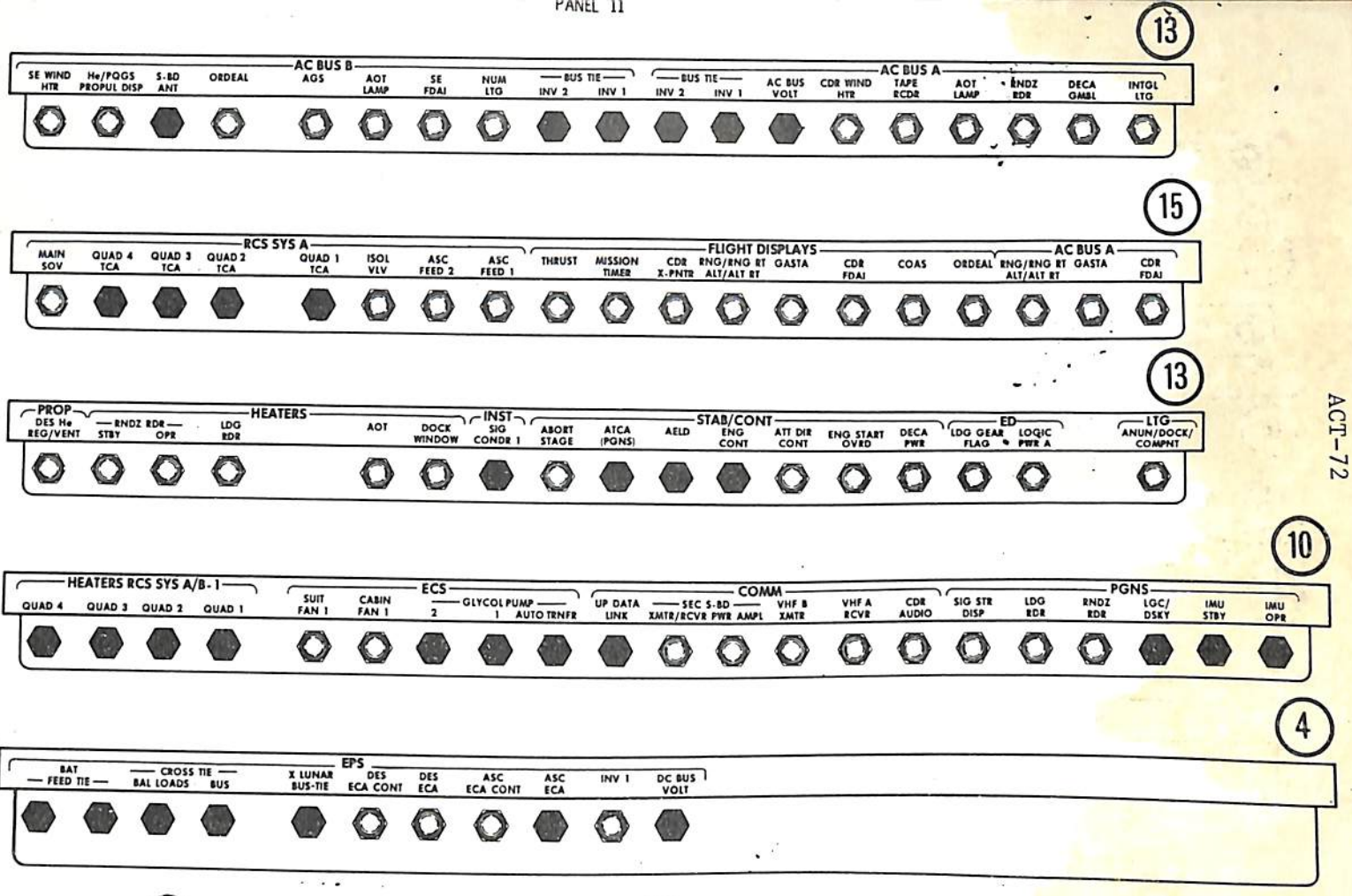
ACT-71

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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LM

Basic Date APRIL 18, 1969

Changed MAY 2, 1969

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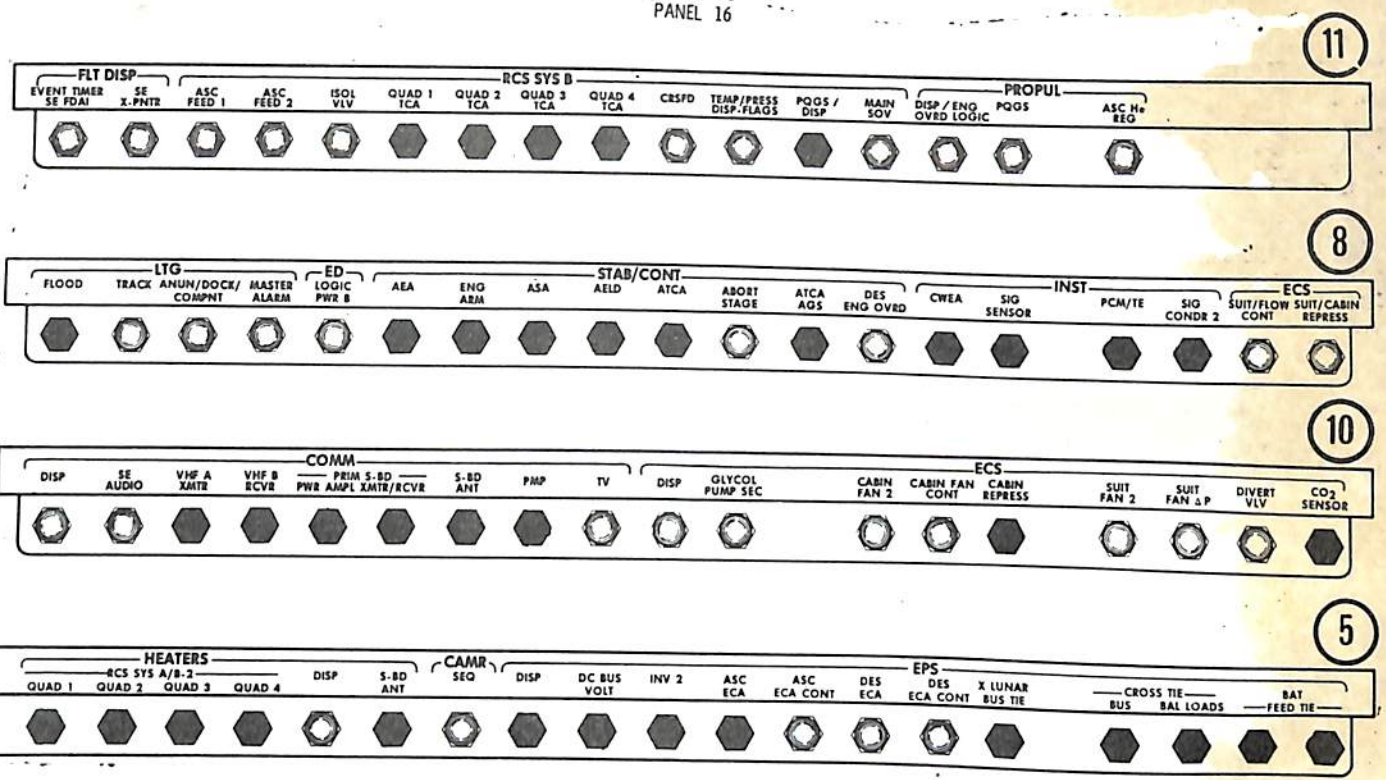
Changed MAY 2, 1969

ACT-73

PANEL 16



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 stowed

LCL RECOVERY CHECKLIST

	ITEM	LOCATION	TOOLS REQ'D
1.	COAS	COAS BRACKET	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 } Juggle		#1 Phillips
10.	RHC HANDLE - LMP } Juggle		#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 } Tissue section of A-1	CDR TTCA	None
20.	ARM REST } Tissue section of A-1	CDR RHC	None
21.	ARM REST } Tissue section of A-1	LMP TTCA	None
22.	ARM REST - A8 w/extension } Tissue section of A-1	LMP RHC	None

all others in single bag on outboard side of A-6 ~~&B~~ - strapped down (between A-6 & bulkhead)