APOLLO 11

LM SYSTEMS ACTIVATION CHECKLIST

Basic Date JULY 8, 1969
Changed JULY 8, 1969 REV H

CSM TO LM TRANSFER LIST

Suits And Ancillary Eqpt:
- IV Gloves
- Helmet
- Bio belt & Instrumentation
- Comm Cap — Molded Earpiece
- Chronograph - VOL A1 PRR
- ~~Stopwatch (CDR)~~
- Sunglasses in pouch
- Pens & Pencil
- Penlights
- Checklist & Scissors Pocket
- Scissors
- Checklist Pocket (LMP)
- CSRC Pocket (CDR)
- Personal Radiation Dosimeter

16 MM Magazines in Bag (6)

70 MM Magazines in Bag (3)

Flight Data In Bag:
- LM ACTIVATION CHECKLIST
- LM TIMELINE BOOK
- LM LUNAR SURFACE MAPS
- LM STRIP CHARTS
- LM STAR CHARTS
- LM sfc Book

TLC-1

IVT TO LM

1 Activate CABIN DUMP VALVE &
Open Hatch

2 Record Docking Tunnel Index
Angle _____

3 FLOOD LIGHT - ALL
EXTERIOR LTG - OFF

4 DES H_2O - OPEN
DES O_2 - OPEN
CABIN REPRESS - AUTO
CB(16) ECS: CABIN REPRESS - CLOSE
SUIT ISOL(2) - SUIT FLOW
SUIT ISOL(2) - ACTUATE OVERRIDE (SUIT DISCON)

TLC-2

IVT TO CSM

1 DES H_2O - CLOSE
DES O_2 - CLOSE
CABIN REPRESS - CLOSE
CB(16) ECS: CABIN REPRESS - OPEN
FLOOD LIGHT - OFF

2 OVHD CABIN REL & DUMP VLV - OPEN
IVT TO CSM
CLOSE LM HATCH

Basic Date May 26, 1969
Changed June 10, 1969

LOI DAY

Basic Date May 26, 1969
Changed JUNE 30, 1969 REV C

SYSTEMS ACTIVATION

CDR ACT-1 LMP

81:41

LMP IVT TO LM

1 Activate CABIN DUMP VALVE & Open Hatch
Carry Comm Carrier And CWG Connector

2 Record (Verify) 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

ACT-2

81:48

ENTRY STATUS CHECK

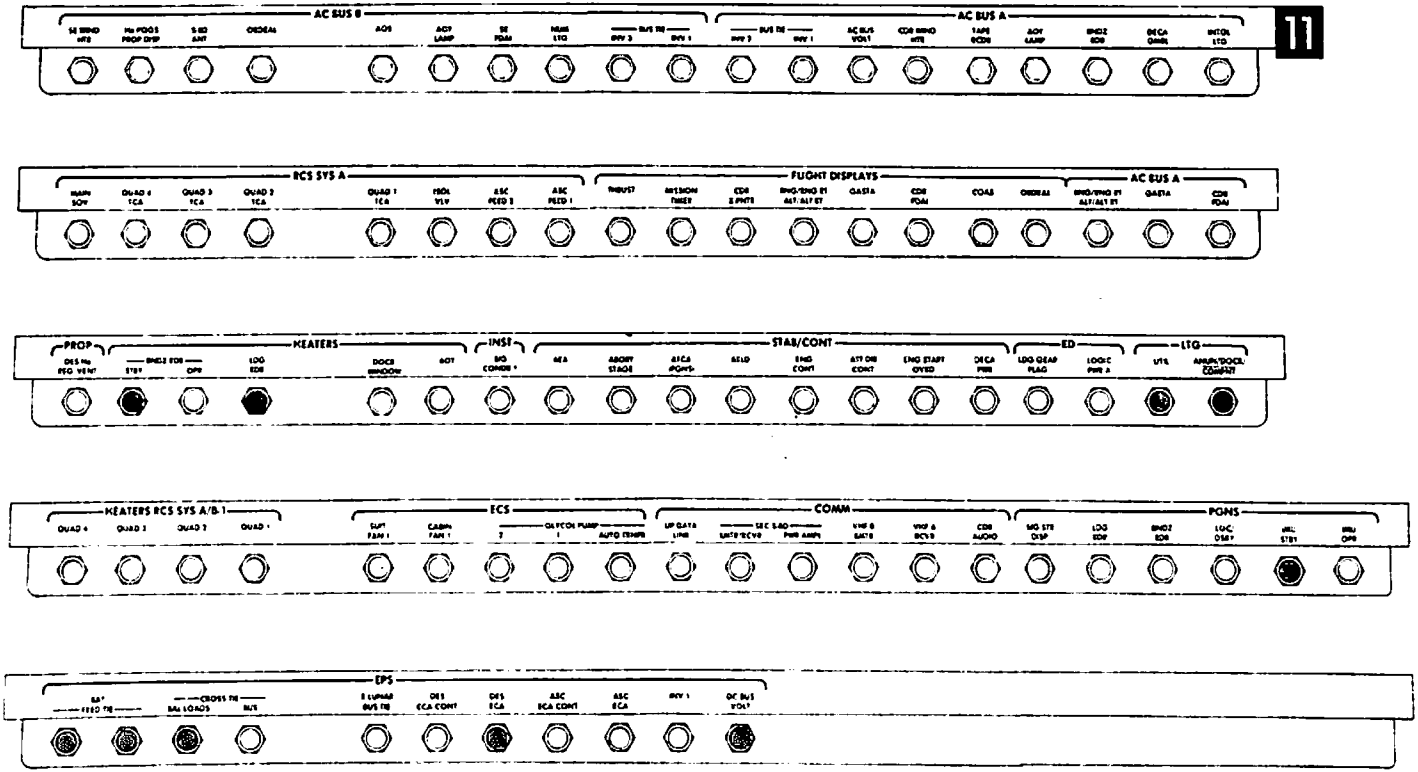
1 CB(11) LTG: UTIL - CLOSE
Activate UTILITY Lts

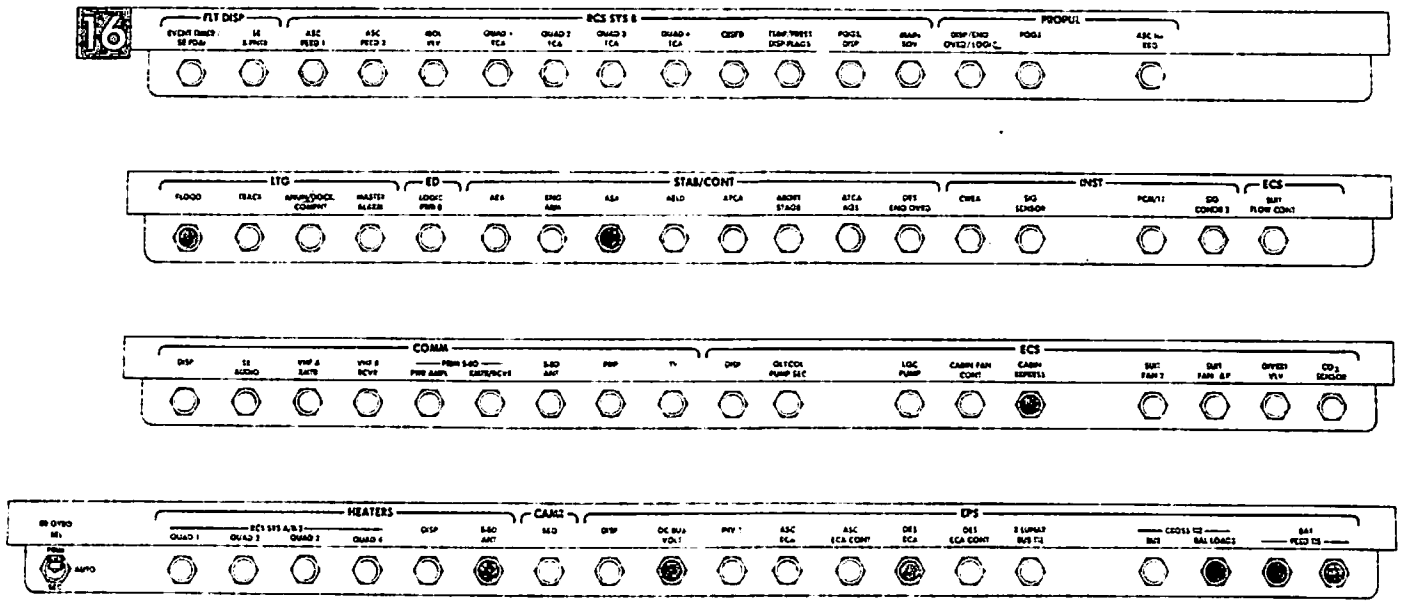
2 Unstow TSB And Give To CSM
Unstow ISA And Install Over PLSS
Recharge Station

3 Verify CB Status Per Chart

Basic Date May 26, 1969
Changed

ACT-3





Basic Date May 26, 1969
Changed June 20, 1969

Basic Date May 26, 1969
Changed

ACT-5

4 RR GYRO SEL - PRIM

5 FDAI 1&2 - INTGRL
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 - ±50°
RATE SCALE - 25°/SEC
ACA PROP - ENABLE
THR CONT - AUTO
MAN THROT - CDR
ENG ARM - OFF
ATT/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

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

Basic Date May 26, 1969
Changed

ACT-9

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
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
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
C02 CANISTER SEL - PRIM
PRIM & SEC C02 CANISTER - CLOSE
WATER SEP SEL - PULL/SEP 2
ASC H20 - CLOSE
SEC EVAP FLOW - CLOSE
PRIM EVAP FLOW (2)-CLOSE
DES H20-OPEN
WATER TANK SELECT -DES
SUIT TEMP - COLD
LIQUID GARMENT COOLING - COLD

18 FWD CABIN RELIEF AND DUMP - AUTO

********** SR 81:56 **********

82:10

HOUSEKEEPING

1 Unsnap LMP's HSB And Stow Next To CDR's HSB On Floor Velcro. Unsnap CDR's HSB

2 Unroll And Secure Disposal Assembly (In LHSSC)
Unstow 70mm Film Bag (Top Left of RHSSC)
Unstow 16mm Bag, Remove 1 Mag, Stow Bag (Top Right Of LHSSC), Install 16mm Mag, HCEX (f4,500,INF)6fps

********** AOS 82:35 **********

3 Stow:Lunar Surface Maps
Timeline Book
Strip Charts
Star Charts

83:00

COMM ACTIVATION

1 Transfer To LM POWER (FLOOD Lts. Blink, C/W PWR Caution Lt - ON)
GET ___ :___:____
CB(11) EPS: XLUNAR BUS TIE - CLOSE
CB(16) EPS: XLUNAR BUS TIE - CLOSE

2 CB(11) COMM: VHF B XMTR - CLOSE
: CDR AUDIO-CLOSE
INST: SIG CONDR 1 - CLOSE

ECS: GLYCOL PUMP 2 - CLOSE

3 Connect To LM COMM Umbilical Using CWG Connector

4 CB(16) INST: SIG CONDR 2-CLOSE

EPS: DISP - CLOSE
: DES ECA CONT-CLOSE

Basic Date May 26, 1969
Changed July 4 F

ACT-13

Verify DES BATS tb(4) - LO,DES BATS-
tb-gray
PWR/TEMP MON - Check Voltages
(When < 27V, Select HI 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(16) COMM: DISP - CLOSE
: SE AUDIO - CLOSE
: VHF B RCVR - CLOSE
: PRIM S-BD(2) - CLOSE

: PMP - CLOSE
INST: SIG SENSOR - CLOSE
: PCM TE - CLOSE
ECS: DISP - CLOSE

********** SS 83:08 **********

83:10

* S-BAND/VHF B VOICE TEST

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

2 Perform Voice And LBR Check With MSFN

3 PCM - H1
Perform Voice And TM Check with MSFN

15 sec. of voice in each mode

4 S-BAND:VOICE - VOICE
Perform Voice And TM Check with MSFN

5 PCM - LO

do not go off until go from network

Basic Date May 26, 1969
Changed July 4 F

ACT-15

83:30

COMM DEACTIVATION

1 AUDIO (LMP): S-BAND T/R - OFF
: MODE - ICS/PTT

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

3 Configure CB'S Per Chart (ACT 3,4)
Disconnect From LM Comm Umbilical
UTILITY LTS - OFF
CB(11) LTG: UTIL - OPEN

4 Transfer To CSM Power, Observe
C/W PWR Lt
GET ___ : ___ : ___

83:35

OPS CHECKOUT

1 Perform OPS Checkout
Read And Record Source Pressures

CDR OPS _____

LMP OPS _____

83:40

LMP IVT TO CSM

1 DES 02 - CLOSE
DES H20 - CLOSE
CABIN REPRESS - CLOSE
CB(16) ECS: CABIN REPRESS - OPEN
Deploy Window Shades

2 FLOOD LIGHT - OFF

3 OVHD CABIN RELIEF & DUMP VALVE - OPEN
IVT TO CSM, Close LM Hatch

Basic Date May 26, 1969
Changed

Basic Date ____ May 26, 1969
Changed ____

ACT-17

95:50

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
CB(11) LTG UTIL: CLOSE
Activate Utility Lts
DES H20 - OPEN
DES 02 - OPEN
CABIN REPRESS - AUTO
CB(16) ECS: CABIN REPRESS - CLOSE

ACT-18

4 Transfer To LM PWR
GET ___:___:____
(FLOOD Lts. Blink, C/W PWR Caution Lt-ON)
CB(11) EPS: XLUNAR BUS TIE - CLOSE
CB(16) EPS: XLUNAR BUS TIE - CLOSE

********** AOS 96:22 **********

96:30

EPS ACTIVATION

1 LTG: ANUN/NUM - BRIGHT (1 Caution, 9 Power Failure, GLYCOL COMP Lts - ON)

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Changed June 30, 1969 REV C

ACT-19

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
OFF/RESET, OFF, LO
S-BAND ANT - AFT
Perform COMM Check with MSFN

4 Verify BAT 1,2,3,4 - tb-LO
DES BATS 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(16) EPS: CROSS TIE BAL LOADS - OPEN

ACT-20

BAT 1 HI VOLTAGE-OFF-RESET
BAT 1 HI VOLTAGE-ON
Repeat for BATS 2,3,4
CB(11) EPS: CROSS TIE BUS - 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

********** UD-3:45 **********

96:37

MISSION TIMER ACTIVATION

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

96:39

PRIMARY GLYCOL LOOP ACTIVATION

1 CB(16) ECS: DISP - CLOSE
GLYCOL - PUMP 1_____psia
- INST(SEC)_____psia
- PUMP 2
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

96:41

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: ASC PRESS Warning Lt)

ACT-22
CB(16) LTG: ANUN/DOCK COMPT - CLOSE
HEATER: DISP - CLOSE
CB(11) STAB/CONT: ENG CONT - CLOSE

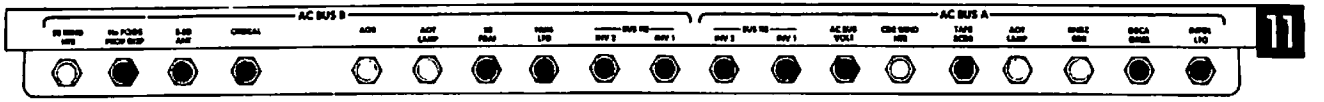
2 RCS SYS A/B-2: QUADS(4) - AUTO
HTR TEMP MONITOR - Cycle Then LDG (HEATER Lt - OFF)
LAMP/TONE TEST - Check All Positions

3 PRIM EVAP FLOW 1 - OPEN

4 Perform C.B. ACTIVATION Per Chart

Basic Date May 26, 1969
Changed June 20, 1969

ACT-23



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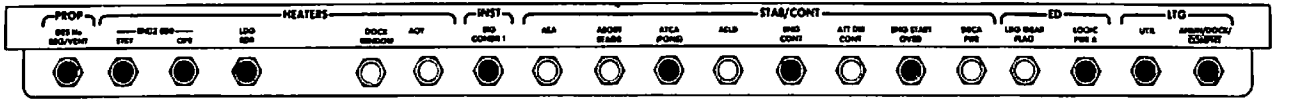
6



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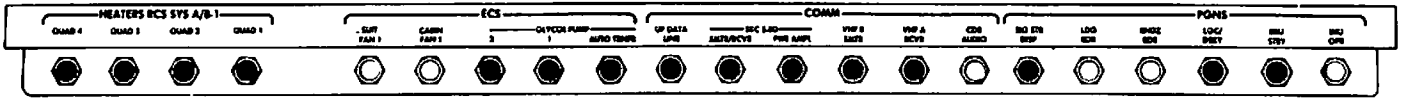

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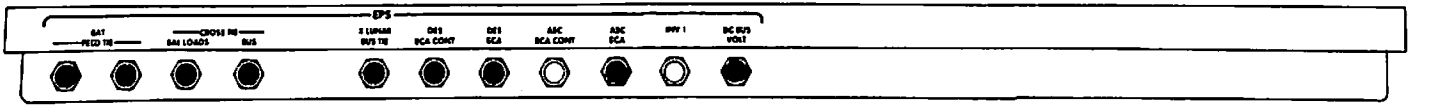

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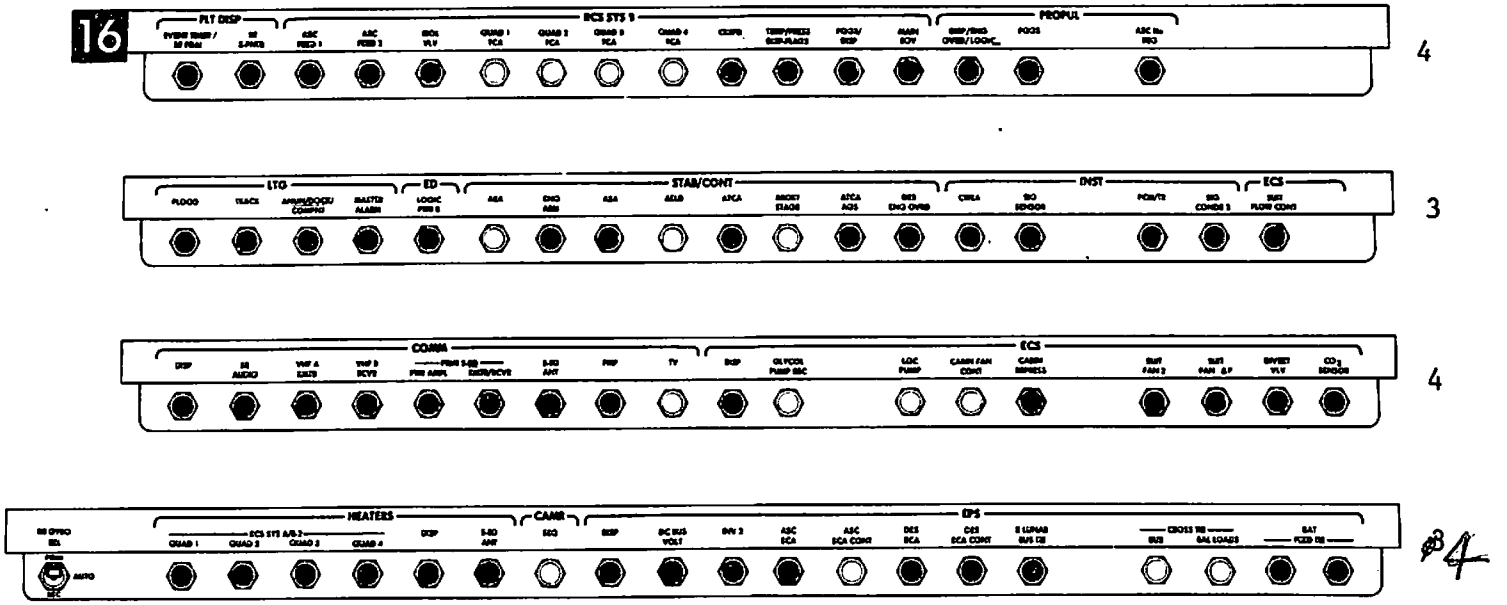

Basic Date May 26, 1969
Changed June 30, 1969 REV C

ACT-25

UD-3:30

96:48

TB VERIFICATION

1 CB(16) INST: CWEA - OPEN
- CLOSE
(CES AC, CES DC Warning Lts-OFF)
CYCLE TEMP MONITOR

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

96:50

CDR IVT TO LM

1 CDR IVT TO LM

96:50

PGNS TURN-ON & SELF TEST

1 Check Bus Voltages

2 If STBY Lt - ON, PRO

3 V36E
V21 NO1E, 3000E, 2343 E,E
333E, 10000E

4 CB(11) PGNS: IMU OPR - CLOSE
(No ATT Lt - ON 90 Sec)

5 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
V37E00E

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

Basic Date May 26, 1969
Changed June 30, 1969 REV C

ACT-27

96:55

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 & SUIT FAN Comp Lt-ON Momentarily, ECS Caution, H2O SEP Comp Lts - ON Then OFF In 2 Min)

7 V15 N01E 1365E
S 15 01
R1,R2,R3 All Zero

8 V21 N27E 10E (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		*
*	V05 N09E 01102 SELF-	*
*	TEST ERROR	*
* N08E	RECORD FOR MSFN	*
*		*
*	R1 _____	*
*		*
*	R2 _____	*
*		*
*	R3 _____	*

9 V21 N27E 0E TERMINATE SELF TEST

96:57

CDR CONNECT TO LM ECS

1 Connect to CDR Hoses (Stow Gas Connector Plugs)
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

********** SS 96:58 **********

97:00

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

97:00

* 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 60 sec to Relock)

2 Perform Comm Check (With MSFN)

3 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

97:05

GLYCOL PUMP CHECK

1 CB(11) ECS: GLYCOL PUMP 1 - OPEN
(Master Alarm, ECS Caution Lt - ON Momentarily)
: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 (21-37 psi)
GLYCOL Comp Lt - OFF
CB(11) ECS: GLYCOL PUMP AUTO TRNFR-OPEN
GLYCOL - PUMP 1 (21-37 psi)

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

97:04

* S-BAND STEERABLE ANTENNA ACTIVATION

1 HTR CONT TEMP MONITOR - S-BAND (-52° to +135°) S-BAND -PM,PRIM,PRIM,VOICE,PCM, OFF/RESET,LEFT,LO CSM MNVR TO PROPER ATTITUDE. Verify CSM Thrusters B3 and C-4 Inhibited.

2 HI GAIN: PITCH ~~90°~~ 255°
YAW 0°
TRACK MODE - SLEW
PITCH (From MSFN) _____ (+152°) (+175°)
YAW (From MSFN) _____ (~~-9°~~) (-5°)
ANTENNA: S-BAND - SLEW

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

4 S-BD: RANGE - CWEA ENABLE
TELEMETRY - LEFT/HI

97:10

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

97:10

LMP IVT TO CSM

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

97:14

* E MEMORY DUMP

1 Verify MSFN Contact
V74E (42 sec)

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

97:15

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

97:18

LGC/CMC CLOCK SYNC/TEPHEM UPDATE

1 V37E 00E

2 V25 N36E

3 Load CSM Time _____:_____:_____

4 On CSM Mark - ENTR

5 06 ~~V16~~ N65E - Compare With CSM N65
V55E - Load ΔT
Check Mission Timer

6 CSM V05 N01E, 1706E Read And Record TEPHEM

R1 00000

R2 20017

R3 20616

7 V25 N01E,1706E Load TEPHEM (Octal)

8 V05 N01E,1706E Verify TEPHEM

Basic Date May 26, 1969
Changed

ACT-33

97:21

DOCKED IMU COARSE ALIGN

1 Verify CSM in Min DEADBAND ATT HOLD

2 Calculate LM Gimbal Angles

OG	IG	MG
300.00	180.00	360.00

2.05 +RC (See ACT 1)

302.05
112.02 -CM 207.41 +CM 002.11 -CM

+190.03 LM +027.41 LM 357.89 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 00211 COARSE     *
*         ALIGN ERROR, GO*
*         TO 3             *
```

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
Note Time Copy OG, IG, MG, CSM & LM GET 97:14:21

	OG	IG	MG
CM	111 .54	207 .92	002.30
LM	189 .95	028 52	358.63

8 VOICE GIMBAL ANGLES AND TIME TO MSFN

97:31

1 HI GAIN: PITCH - 90°
: YAW - 0°
TRACK MODE - SLEW
PITCH _____ (~~+187~~°) 165
YAW _____ (+ 70°) 66

PCM - LO, OFF
ANT - OMNI, FWD
S-BD - DN VOICE B/U

97:31

LMP IVT TO LM

1 CB(16) COMM: SE AUDIO - OPEN
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

********** LOS 97:34 **********

97:35

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.

3 Verify Dipstick Visible In
RED or GREEN Band
CB(16) ECS: LCG PUMP - CLOSE

4 Don Helmet

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

********** SR 97:44 **********

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

97:48

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

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ACT-37

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

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: ASC ECA CONT - OPEN
~~: CROSS TIE BAL LOADS-OPEN~~

9 RECORD ED BAT VOLTAGE FOR MSFN

BAT A 32.0

BAT B 36.9

ACT-38

98:00

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~~

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ACT-39

98:05

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
(SUIT GAS DIVERTER - EGRESS)

3 FWD CABIN DUMP VALVE - OPEN Then AUTO At 3.5 psi (Master Alarm, CABIN Warning Lt - ON, And Auto Cabin Repress At 4.45 to 3.7 psi)

4 As Soon as Possible:
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)

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Changed June 30, 1969 REV C

ACT-40

5 PRESS REG B - CLOSE (Possible Master Alarm,
CABIN Warning Lt - ON (Momentarily)

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, Possible Master Alarm &
CABIN Warning Lt - ON (Momentarily),

CABIN REPRESS - AUTO

6 PRESS REG A&B - CABIN (CABIN Warning Lt-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 98:21 **********

CSM MANEUVERS TO LDMK TRACK ATT

98:40

RATE GYRO CHECK

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

2 RATE SCALE - 5°/SEC
Repeat Tests

98:40

AGS ACTIVATION & SELF-TEST

1 AGS STATUS - STBY (Master Alarm, AGS Warning Lt-ON)

CB(16) STAB/CONT: AEA-CLOSE
CB(11) AC BUS B: AGS - CLOSE (AGS Warn Lt-OFF)
AGS STATUS - OPERATE (AGS Warn Lt-OFF)
02/H20 QTY MON - C/W RESET
(AGS Warning Lt-OFF)

2 *6666 (OPR ERR Lt-ON)

3 *000+88888

4 *123-45679

5 *412+0 REINITIATE TEST
*412R +1 SELF TEST SATISFACTORY
+3 LOGIC TEST FAILURE
+4 MEMORY TEST FAILURE
+7 LOGIC AND MEMORY TEST FAILURE

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ACT-42

6 *574R DESCENT STAGE FLAG (+ Not Staged)

7 *604R LUNAR SURFACE FLAG (+ Not On Lunar Surface)

8 *612R STAGING SEQ COUNTER (+0 Nom)

98:45

CSM LDMK TRACK

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

DOCKED IMU
FINE ALIGN

ACT-43

AFTER LANDMARK TRACKING

CSM MNVRS TO ACQUIRE MSFN
ON LM HI GAIN ANTENNA

98:48

* DOCKED IMU FINE ALIGN

1 Copy Ground Calculated Gyro Torquing Angles

X -00060, Y +00620, Z +01050

2 V42E Fine Align IMU
F 21 93 Load Gyro Torquing Angles X,Y,Z (.001°) 97:26:15

3 V16 N93E
S 16 93 Monitor Torquing

98:48

1 Copy LM Angles

PITCH _____ (+ ~~187~~°) 165

YAW _____ (+ 70°) 66

98:50

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

********** SS 98:56 **********

98:56

* MSFN - UPDATE

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

99:00

* DRIFT CHECK

1 V06N20
S 06 20 ON LM MARK - ENTR
Copy OG, IG, MG, CSM & LM GET 99 : 04 : 00

OG		IG		MG	
358.64	CM	020.73	CM	339.54	CM
303.74	LM	200.78	LM	000.53	LM

2 Voice Gimbal Angles And Time To MSFN

99:05

LANDING GEAR DEPLOY

1 CB(11) ED: LDG GEAR FLAG-CLOSE
: LOGIC POWER A-OPEN
MASTER ARM-ON
LDG GEAR DEPLOY-FIRE tb-gray

CB(11) ED: LOGIC POWER A-CLOSE
LDG GEAR DEPLOY-FIRE
MASTER ARM-OFF
CB(11) ED: LDG GEAR FLAG-OPEN

99:08

AGS INITIALIZATION

1 V16 N65E
S 16 65 LGC TIME (hr,min,.01 sec)
*377+05500
ENTR At 99:10:00

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

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

4 *414R (+0)

5 F 50 16 Downlink Complete
PRO

6 *400+3 AGS ALIGN

7 V83E
F 16 54 R,RDOT,THETA (.01nm,.1fps,.01°)
SET ORDEAL

8 *440R RANGE RATE (±2.5 fps) (.1fps)

9 *317R RANGE (.1nm)

10 *277R THETA (.01°)

99:10

* DAP SET, GIMBAL/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(BOTH)-THROTTLE (MIN), Set Friction

2 VERIFY MSFN CONTACT
V48E
F 01 46
R1 32012
PRO

99:10

1 COPY AGS K FACTOR AND ABORT CONSTANTS

K 90 : 00 : 0015

*224 _____

*225 _____

*226 _____

*227 _____

LM

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3 F 06 47 LM,CSM Wt. (lbs)
R1 _____ (33710)
R2 _____ (36470)
PRO

4 F 06 48 GMBL TRIM, PTICH, ROLL (.01°)
R1 _____ ~~(00454)~~ (00470)
R2 _____ ~~(00605)~~ (00589)
ENG STOP - PUSH
ENG ARM - DES (DES REG Warn Lt - on)
MSFN Verify GDA Position
(TRIM) PRO, ENG GMBL Lt - on, F 50 48, PRO
(TERMINATE) V34E

5 TTCA (BOTH) - (Min, Then Soft Stop),
Check THRUST Meter (50%), Then Max
(98%), Then Min)
Adjust Friction
MAN THROT - SE (For LMP TTCA)

6 ENG ARM - OFF (GMBL LT - OFF)
ENG STOP - RESET
MAN THROT - CDR
TTCA (BOTH) - JETS

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

ACT-49

99:18

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
MAIN SOV SYS A&B - OPEN
HTR CONT TEMP MON - CHECK RCS QUADS (>119°)

3 TEMP/PRESS MON - He
RCS A&B PRESS - 2725-3375 psia
TEMP/PRESS MON - PRPLNT (40°-100°/10-50 psi)
FUEL MANF (28-130 psi)
OXID MANF (28-130 psi)

4 MASTER ARM - ON
HE PRESS RCS - FIRE
MASTER ARM - OFF
RCS A&B REG Warning Lts - OFF

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ACT-50

5 RECYCLE: SYS A&B ASC FEED 2(2) - CLOSE
: SYS A&B ASC FEED 1(2) - OPEN
: SYS A&B THR PAIR
QUADS(8)-OPEN
: CRSFD - CLOSE
: SYS A&B MAIN SOV-OPEN

6 TEMP/PRESS MON - OXID MANF (172-186 psi)
- FUEL MANF (172-186 psi)
- PRPLNT (40°-100°/172-186 psi)
- He (2670-3300 psi)
Read He Pressure To MSFN

99:24

* RCS CHECKOUT

1 CB(16) INST: CWEA - OPEN
- CLOSE
DES REG Warning Lt - OFF
Cycle TEMP MONITOR
CB(11) STAB/CONT: ATT DIR CONT-CLOSE

2 GUID CONT - PGNS
DEADBAND - MAX
ATT/TRANSL - 4 JET

MODE CONT: PGNS - ATT HOLD
ATTITUDE CONTROL (3) - PULSE
ACA/4 JET (CDR) - DISABLE
TTCA/TRANSL - ENABLE
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 Verify CSM Roll Jets OFF And Tunnel Vented To Zero
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
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
~~(RCS TCA Warning Lt - OFF)~~
Cycle TEMP MONITOR
(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

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

9 ATT/TRANSL - 2 JET
GUID CONT - AGS
V77E

99:30

RNDZ RDR SELF TEST possible delete

1 VERIFY: CSM RCS THRUSTER B3 & C4 - 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

99:30

HI GAIN: PITCH - 90°
: YAW - 0°
TRACK MODE - SLEW

PITCH _____ ~~(+143°)~~ ~~(+122°)~~

YAW _____ ~~(-29°)~~ (-39°)

PCM-LO
ANT - OMNI, ~~FWD~~ ~~AFT~~
S-BD - DN VOICE BU

********** LOS 99:32 **********

2 RNG/ALT MON - RNG/RNG RATE
SHFT/TRUN - ±50°
RNDZ RDR - SLEW
TEMP MONITOR - RNDZ (+10° To +50)

CB(11) AC BUS A: RNDZ RDR - Close
: RNG/RNG RT/ALT RT - CLOSE
(Wait 30 sec)
RR GYRO SEL - SEC
CB(11) PGNS: RNDZ RDR - Close
(NO TRACK Lt-On)
FLIGHT DISPLAYS: RNG/RNG RT/ALT/ALT
RT-CLOSE

3 SLEW RATE - HI
Slew Left To Mode I Region (18 sec)
Slew Right, Down, Left, Up
(FDAI Needles Right, Down, Left, Up)
SLEW RATE - LO
SHFT/TRUN - ± 5°
Slew Right, Down, Left, Up
(FDAI Needles Right, Down, Left, Up, Approx 3 mr/sec)

4 RNDZ RDR - AUTO TRACK
RADAR TEST - RNDZ RDR (Rng Rt Tape
Drives, X-Pointers and FDAI Needles
Vary Between Limits. After 12 sec
Rng Tape Drives, NO TRACK Lt - OFF)

5 TEST MONITOR - AGC ~~(1.0 To 1.8)~~ ~~(1.5)~~ (1.8)
- XMTR PWR ~~(2.1 To 4.1)~~ ~~(3.7)~~ (2.6)
-SHAFT ERR(2.1 To 2.6)
@1/2 cps)
- TRUN ERR (2.2 To 2.6)
@1/2 cps)
- AGC ~~1.5~~ (1.8)

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

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

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, +195.48 To +195.88 (TM Within ±1.2 of R1)
R2, -00467 To -00507 (TM = 2 ≤ R2)

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 +04000E
R2 +04000E

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°)
V44E TERM CONT DESIG

16 RR GYRO SEL - PRIM
V41N72E
F 21 73 LOAD TRUNNION AND SHAFT (.01°)
R1 - 00400E
R2 - 00400E

17 F 04 12
R1 00006 RR Function
R2 00002 CONT DESIG
PRO

18 V16N72E
S 16 72 RR Position (.01°)
V44E TERM CONT DESIG

19 V41N72E
F 21 73 LOAD TRUNNION AND SHAFT (.01°)
R1 + 00000E
R2 + 28300E

20 F 04 12
R1 00006 RR Function
R2 00002 CONT DESIG
PRO

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ACT-58

21 V16N72E
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

********** SR 99:43 **********

********** UD - 0:30 **********

99:50

AGS CALIBRATION

1 V16 N20E
16 20 ICDU ANGLES, O,I,M
CSM MNVR Until LM ICDU'S:
292.5° (OG)
202.5° (IG)
22.5° (MG)
Rates <.075°/sec

2 V40 N20E ICDU ZERO

3 Read and Record: ACCEL BIAS COEFF

*540R X _____ (.001ft/sec^2)
(00000)

should be +.00001 →
*541R Y _____ (.001ft/sec^2)
(-00001)

" " +.00002 →
*542R Z _____ (.001ft/sec^2)
(-00002)

GYRO DRIFT COEFF

get correct values (signs)

*544R X _____ (.01°/hr)
(-00027)

*545R Y _____ (.01°/hr)
(-00003)

*546R Z _____ (.01°/hr)
(-00041)

Verify CSM Thrusters Disabled And
LM In AGS PULSE Mode

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

Basic Date May 1969
Changed July 1969

Basic Date May 26, 1969
Changed July 3, 1969

ACT-60

99:55

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 OXID)

2 HELIUM MON: AMB PRESS (1448-1750 psi)
: SUPCRIT PRESS (700-1430 psi)

3 DES HE REG 1-tb-gray
DES HE REG 2-tb-bp

4 MASTER ARM - ON
DES PRPLNT ISO VLV - FIRE
HE PRESS/DES START - FIRE
MASTER ARM-OFF

5 PRPLNT TEMP/PRESS MON: DES 2&1
(50°-84° FUEL,50°-75° OXID/
200-253 psi)
HELIUM MON: AMB PRESS (200-900 psi)
: SUPCRIT PRESS (800-1430 psi)

4 *400 + 6 CALIBRATE GYRO & ACCEL
After 32 Sec:
Read and Record

*540R X _____ (.001ft/sec^2)

*541R Y _____ (.001ft/sec^2)

*542R Z _____ (.001ft/sec^2)
Values Should Not Change From Step 3
By More Than .039 ft/sec^2 (.008
Nominal)

*400R (+0 After 302 Sec)
Notify CSM To Enable Thrusters
Read And Record

*544R X _____ (.01°/hr)

*545R Y _____ (.01°/hr)

*546R Z _____ (.01°/hr)
Values Should Not Change From Step 3
By More Than 2.0°/hr (.5 Nominal)

ACT-61

100:00

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)

9 *277R THETA (.01°)

10 PCM - LO

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Changed June 20, 1969

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Changed June 20, 1969

ACT-62

UD - 10

100:05

PREP FOR UNDOCKING

1 CDR And LMP DON HELMET And GLOVES
Verify Basic Comm With VHF B backup

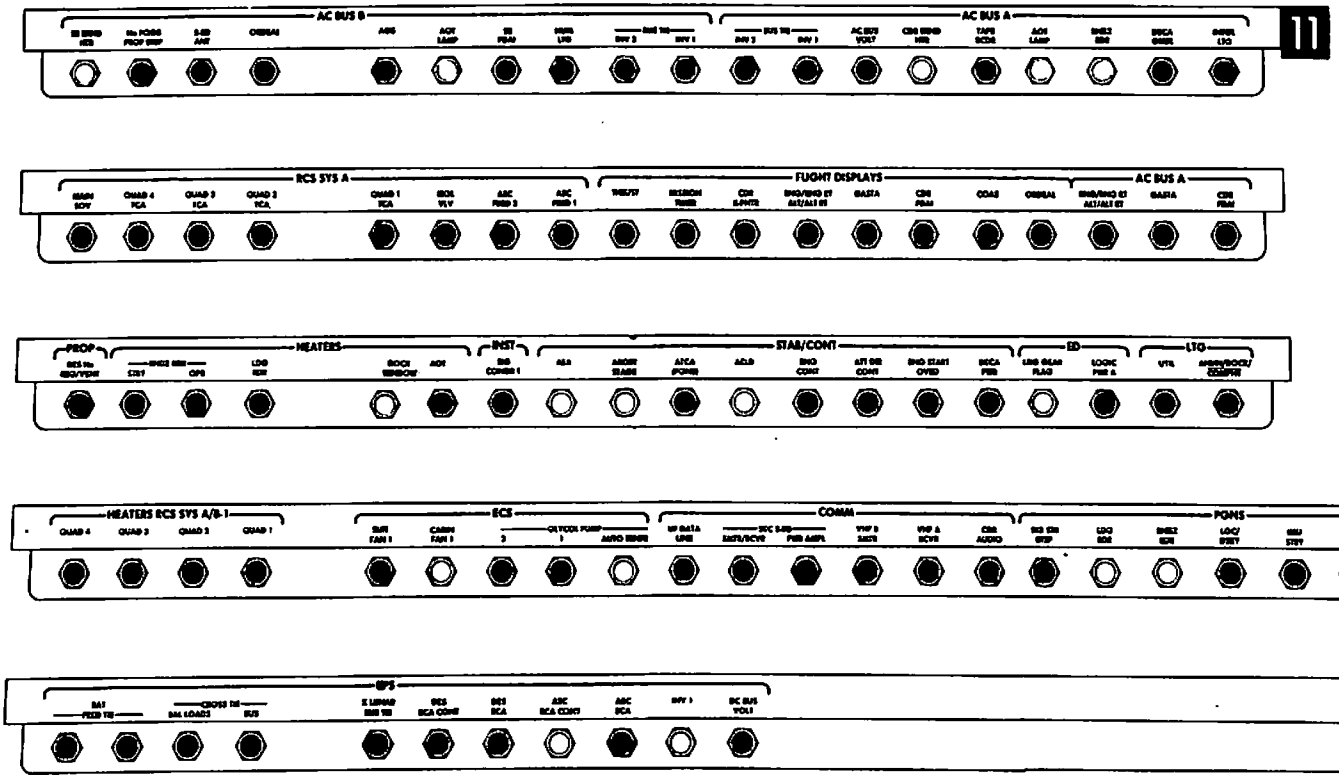
2 MISSION TIMER-SET
EVENT TIMER-SET, Count Up To 100:40
OVHD HATCH-LOCKED
OVHD CABIN RELIEF & DUMP VLV-AUTO
REGS A&B - CABIN

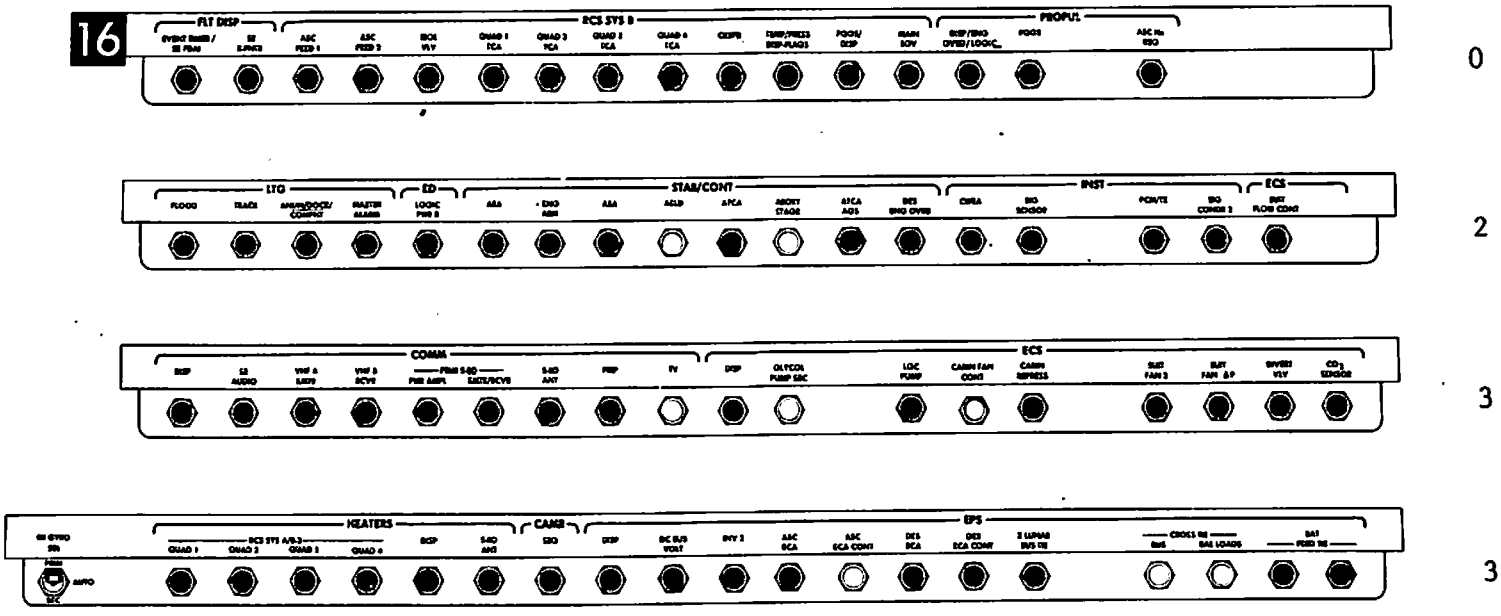
3 GUID CONT - AGS
MODE SEL - LDG RADAR
RNG/ALT MON - RNG/RNG RT
RATE ERR MON (CDR) - LDG RDR/CMPTR
(LMP) - RNDZ RDR
ATTITUDE MON (CDR) - PGNS
(LMP) - AGS
RATE SCALE - 5°/SEC

4 ATT/TRANSL - 2 JET
BAL CPL - ON
DEADBAND - MAX
ATTITUDE CONTROL (3)-PULSE
MODE CONT (BOTH) - ATT HOLD
TTCA (BOTH) - JET
RNDZ RDR - SLEW
ACA/4 JET(BOTH) - DISABLE
TTCA/TRANSL (CDR)- ENABLE
TTCA/TRANSL (LMP)- DISABLE
CB(11) HTRS: AOT - CLOSE
Mount Camera on Window Bar
Install COAS
Verify CB Status Per Chart

Basic Date May 26, 1969
Changed July 4 F

ACT-64





0

2

3

3

Basic Date May 26, 1969
Changed June 20, 1969

Basic Date May 26, 1969
Changed June 20, 1969

ACT-66

5 V48E
N46 21102

PRO
N47 _____ LM WT ( )

_____ CSM WT

V34E

GO TO DESCENT PROCEDURES