

APOLLO II

LM LUNAR SURFACE  
CHECKLIST

PART NO

S/N

SKB32100074-363

1002

SUR-1

102:55 TD + 8 1 REV "STAY" FROM MSFN  
 (PDI+20) OXID VENT-CLOSE (20-40Psi ~ 6 MIN.)  
 V37E00E FUEL VENT- OPEN  
 PRPLNT TEMP/PRESS MON - DES 1,2  
 MODE CONTROL (PGNS) - ATT HOLD  
 V76E  
 MODE CONTROL (AGS) - OFF  
 SYS A&B QUAD 1,2,3,4 (8)-OPEN, tb-gray  
 SYS A&B MAIN SOV(2)-OPEN, tb-gray

SEQ CAMERA-OFF

CB(16) EPS: ASC ECA CONT - Close  
 BAT 5,6 - OFF/RESET  
 INVERTER - 2  
 CB(11) EPS: INV 1 - Open

CB(11) STAB/CONT: DECA PWR - Open  
 CB(16) STAB/CONT: DES ENG OVRD - Open  
 EPS: ASC ECA CONT - Open  
 INST: CWEA - Open Then Close (DES REG-OFF)  
 Cycle Temp Monitor

\*047 R \_\_\_\_\_ Sin Az Comp To MSFN  
 \*053 R \_\_\_\_\_ Cos Az Comp To MSFN  
 \*623 R (+0 YAW Steering)  
 \*544 R \_\_\_\_\_ X Gyro Coeff  
 \*545 R \_\_\_\_\_ Y Gyro Coeff  
 \*546 R \_\_\_\_\_ Z Gyro Coeff

\*400 + 6E Calibrate Gyros

\*232 R +00600 Ins Alt  
 \*465 +00320 E Ins HDot  
 \*400R (+ 0 Calibration Complete In 5 min 2 sec)  
 Verify Cabin Press  
 PRESS REG A&B - CABIN  
 SUIT GAS DIVERTER - Push/CABIN  
 CABIN REPRESS - AUTO

DOFF HELMET & GLOVES

TD + 8 MIN

Basic Date June 16, 1969  
 Changed July 12, 1969 J

LM-5

~~OXID VENT = CLOSE~~~~(Press 20 40 psia ~ 6 min)~~~~FUEL VENT = OPEN~~~~PRINT TEMP/PRESS MOM = DES 1,2~~

103:08

PDI+32

TIG-1:20

P57E

04 06 00001

00003 REFSMMAT

PRO

05 06 00010

00001 REFSMMAT &amp; Gravity

00110

PRO

V16 N20E

Monitor Gravity Measurement

NO ATT Lt - On Then Off, Twice

+04200

+31800

+03500

KEY REL

06 04 + \_\_\_\_\_ Gravity Err Angle

V32E Remeasure Gravity

PRO

06 22 ICDU Angles

PRO

NO ATT Lt - On Then Off

06 05 \_\_\_\_\_ Angle Diff

PRO

06 93 \_\_\_\_\_ X Torque Angle

\_\_\_\_\_ Y Torque Angle

\_\_\_\_\_ Z Torque Angle

V34E

Basic Date June 16, 1969

Changed July 12 1969

LN

SUR-3

FUEL VENT-CLOSE (20-40 Psia. ~ 6 Min.)  
POOE

V40 N20E

\*544 R \_\_\_\_\_ X Gyro Coeff

\*545 R \_\_\_\_\_ Y Gyro Coeff

\*546 R \_\_\_\_\_ Z Gyro Coeff

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

\*400 + 3E AGS/PGNS Align, Wait For MSFN

\*400 + 4E Lunar Align

Notify MSFN of Approx Landing Site

Install Window Shades

103:18

PDI+42

TIG-1:10

If Star(s) In L, F, or R AOT

Detent, Position RR Antenna

Along (0°, 283°) Via V41N72

(9 min Thermal Constraint)

If Star In Rear Detent, No Redesignation Req'd,

Begin P57

CB(11) AC BUS A: RNDZ RDR - Close

Wait 30 Sec

PGNS: RNDZ RDR - Close

AC BUS B: AOT LAMP - Close

RR MODE - LGC

V41 N72E

21 73 +00000 TRUN

+28300 SHFT

04 12 00006

00002

PRO

CB(11) PGNS: RNDZ RDR - Open

AC BUS A: RNDZ RDR - Open

V44E

P57E

04 06 00001

00003 REFSMMAT

PRO

Basic Date June 16, 1969  
Changed July 12, 1969 J

LM

T.M-5

05 06 00010  
00002 2 Stars  
00110

PRO

06 22 ICDU Angles (If Torquing Angles > 5°)

PRO

NO ATT Lt - On Then Off

01 70 00CDE Detent, 1st Star

Load Desired Star Code

PRO

06 79 \_\_\_\_\_ Cursor  
\_\_\_\_\_ Spiral  
\_\_\_\_\_ Detent Position

PRO

01 71 00CDE Detent, 1st Star

PRO

Read Cursor Angle \_\_\_\_\_

54 71 MARK X OR Y \_\_\_\_\_

Read Spiral Angle \_\_\_\_\_

06 79 \_\_\_\_\_ Cursor, \_\_\_\_\_ Spiral, \_\_\_\_\_

Load Cursor & Spiral Angles \_\_\_\_\_

V32E Remark Star

PRO After 2 Recycles

01 70 000CDE Detent, 2nd star

Load Desired Star Code

PRO

06 79 \_\_\_\_\_ Cursor  
\_\_\_\_\_ Spiral  
\_\_\_\_\_ Detent Position

PRO

01 71 000CDE Detent, 2nd Star

PRO

Read Cursor Angle \_\_\_\_\_

54 71 MARK X OR Y \_\_\_\_\_

Read Spiral Angle \_\_\_\_\_

Basic Date June 16, 1969  
Changed June 25, 1969

06 79 \_\_\_\_\_ Cursor, \_\_\_\_\_ Spiral, \_\_\_\_\_  
 Load Cursor & Spiral Angles \_\_\_\_\_  
 V32E Remark Star \_\_\_\_\_  
 PRO After 2 Recycles

If RR Antenna Along 0°, 283°,  
 Position RR Along +X Axis  
 CB(11) AC BUS A: RNDZ RDR - Close  
 Wait 30 sec  
 PGNS: RNDZ RDR - Close

V41 N72E  
 21 73 +18000 TRUN  
           +27000 SHFT

04 12 00006  
           00002

PRO

CB(11) PGNS: RNDZ RDR - Open  
 AC BUS A: RNDZ RDR - Open  
 V44E

06 05 \_\_\_\_\_ Angle Diff  
 PRO

06 93 \_\_\_\_\_ X Torque Angle  
           \_\_\_\_\_ Y Torque Angle  
           \_\_\_\_\_ Z Torque Angle  
 PRO (Monitor Gyro Torquing)

50 25 00014  
 ENTR

06 89 \_\_\_\_\_ Lat  
           \_\_\_\_\_ Long/2  
           \_\_\_\_\_ Alt

Consult MSFN To Determine  
 Acceptance Of Position  
 (Accept) PRO  
 (Reject) V34E

POOE

Stow Window Shades And Photograph Surface

Basic Date June 16, 1969

Changed \_\_\_\_\_

LM-5

NOMINAL

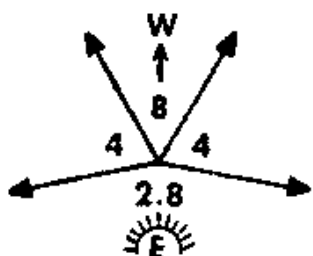
PAD (IF REQUIRED)

80MM/BW

f STOP

FAR  
FIELD-50'

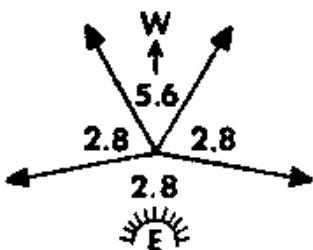
1/250



FULL SHADOW - 2.8/125  
CREW IN SUN - 8/250

NEAR  
FIELD-20'

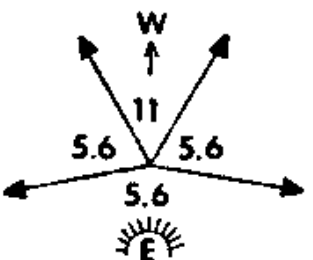
1/250



60MM/HCEX

FAR  
FIELD-50'

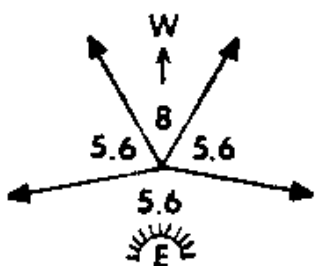
1/250



FULL SHADOW-5.6/125  
CREW IN SUN-11/250

NEAR  
FIELD-20'

1/125



Time	f STOP
9:00	_____
10:30	_____
12:00	_____ (2)
1:30	_____
3:00	_____
9:00	_____
10:30	_____
12:00	_____ (2)
1:30	_____
3:00	_____
9:00	_____
10:30	_____
12:00	_____ (2)
1:30	_____
3:00	_____

Basic Date: JULY 2, 1969  
Changed JULY 12, 1969 J

.6 FRAMES FAR FIELD (FOCUS 50') AND  
6 FRAMES NEAR FIELD (FOCUS 20')  
WITH EACH CAMERA

.REMOVE MAGS AND STOW

.INSTALL 60MM PROTECTIVE COVER  
AND STOW BOTH CAMERAS

SUR-7

\*400 + 3E AGS/PGNS Align

\*413 + 1E Store Azimuth

\*047 R \_\_\_\_\_ Sin Az Comp

\*053 R \_\_\_\_\_ Cos Az Comp

Transmit N04, N05, N93, Address 047,  
And 053 To MSFN

103:38

PDI+1:02

TIG-50

UP DATA LINK - DATA

MSFN Updates RLS & CSM

State Vectors (UPLINK ACTY

Lt - On Then OFF)

Copy Ascent Pad For

Simulated Countdown

Basic Date June 16, 1969  
Changed July 2, 1969 D



SUR-8

\*047 \_\_\_\_\_ E Sin Az Comp  
 \*053 \_\_\_\_\_ E Cos Az Comp  
 \*225 +58598 E αLower Limit  
 \*226 +58598 E αUpper Limit  
 \*231 \_\_\_\_\_ E RLS  
 \*465 +00320 E Ins H Dot  
 Install Window Shades

103:43  
 PDI+1:07  
 TIG-45

If Star In L,F, or R AOT Detent,  
 Position RR Antenna Along  
 (0°,283°) Via V41N72  
 (9 min Thermal Constraint)  
 If Star In Rear Detent,  
 No Redesignation Req'd  
 Begin P57  
 CB(11) AC BUS A: RNDZ RDR - Close  
 Wair 30 sec  
 PGNS: RNDZ RDR - Close  
 V41 N72E

21 73 +00000 TRUN  
+28300 SHFT

04 12 00006  
00002

PRO

CB(11) PGNS: RNDZ RDR - Open  
 AC BUS A: RNDZ RDR - Open  
 V44E

P57E

04 06 00001  
00004 Landing Site

PRO

06 34 T Align.  
 Load Simulated Countdown TIG  
 PRO

05 06 00010  
00003 Gravity & Star  
00110

PRO

Basic Date June 16, 1969  
 Changed July 7 REV "F"

V16 N20E

Monitor Gravity Measurement  
 NO ATT Lt - On Then Off, Twice

+04200
+31800
+03500

KEY REL

06 04 + \_\_\_\_\_ Gravity Err Angle  
 PRO

If Gyro Torquing Angles &gt; 5°:

06 22 ICDU Angles

PRO

NO ATT Lt - On Then Off

01 70 00CDE Detent, Star

Load Desired Star

PRO

06 79 \_\_\_\_\_ Cursor

Spiral

Detent Position

PRO

01 71 00CDE Detent, Star

PRO

Read Cursor Angle \_\_\_\_\_

54 71 MARK X OR Y

Read Spiral Angle \_\_\_\_\_

06 79 \_\_\_\_\_ Cursor, \_\_\_\_\_ Spiral \_\_\_\_\_

Load Cursor &amp; Spiral Angles \_\_\_\_\_

V32E Remark Star

PRO After 2 Recycles

If RR Antenna Along 0°, 283°,

Position RR Along +X Axis

CB(11) AC BUS A: RNDZ RDR - Close

Wait 30 sec

PGNS: RNDZ RDR - Close

Basic Date June 16, 1969  
 Changed July 2, 1969 "A"

V41 N72E

21 73 +18000 TRUN  
+27000 SHFT

04 12 00006  
00002

PRO  
CB(11) PGNS: RNDZ RDR - Open  
AC BUS A: RNDZ RDR - Open  
V44E

06 05 \_\_\_\_\_ Angle Diff  
PRO

06 93 \_\_\_\_\_ X Torque Angle  
\_\_\_\_\_ Y Torque Angle  
\_\_\_\_\_ Z Torque Angle  
PRO (Monitor Gyro Torquing)

50 25 00014  
PRO For Alignment Check

01 70 00CDE Detent, Star  
Load Desired Star  
PRO

GET	_____	:	_____	:	_____
PDI	+	_____			
TIG	-	_____			

06 79 \_\_\_\_\_ Cursor  
\_\_\_\_\_ Spiral  
\_\_\_\_\_ Detent Position  
Verify Detent & Star Position  
V34E

CB(11) AC BUS B: AOT LAMP - Open  
AOT - CL/0.0°

POOE

Basic Date ~~June 16, 1969~~  
Changed ~~June 25, 1969~~ "A"

104:07  
PDI+1:12  
TIG-35

Don Helmets & Gloves

LM-5

V48E  
01 46 12012 DAP Config  
PRO

06 47 \_\_\_\_\_ LM Wt  
\_\_\_\_\_ CSM Wt  
PRO

GUID CONT - PGNS  
MODE CONTROL (PGNS) - AUTO  
V77E

P12E  
06 33 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ TIG ASC  
(104:42:05.5)  
PRO

06 76 \_\_\_\_\_ VH Final  
( )  
\_\_\_\_\_ H Dot Final  
( )  
\_\_\_\_\_ Xrng  
( )  
PRO

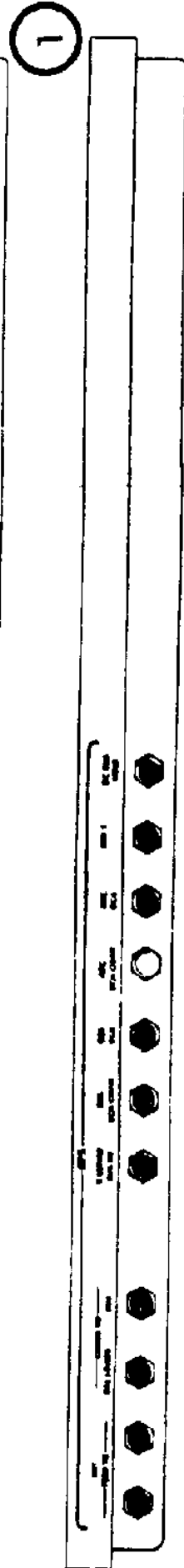
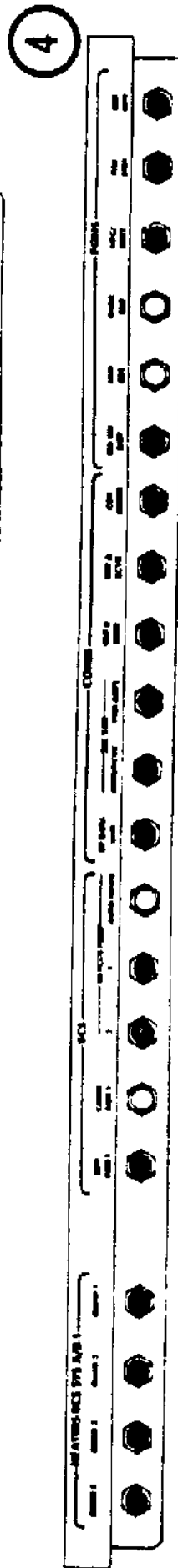
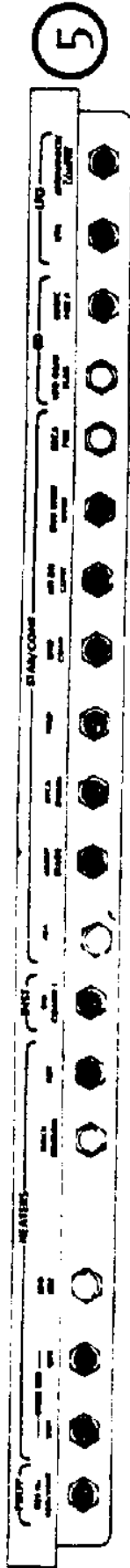
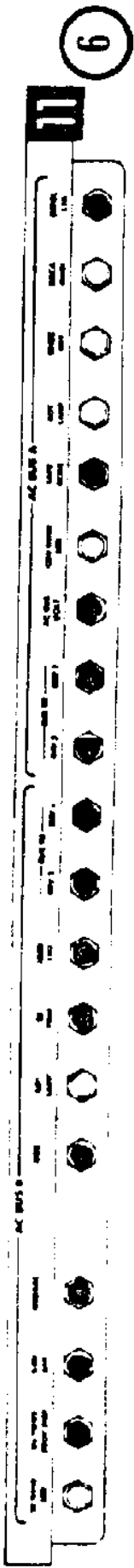
06 74 \_\_\_\_\_ : \_\_\_\_\_ TFI  
\_\_\_\_\_ Yaw  
\_\_\_\_\_ Pitch  
ET - Set/Up

\*547 R + 0 Lunar Align Az  
Corrections  
\*623 + 0E +Z Along CSM Plane

104:12  
TIG-30

\*400 + 4E Lunar Align  
Configure CB's Per Chart

Basic Date June 16, 1969  
Changed June 25, 1969 "A"



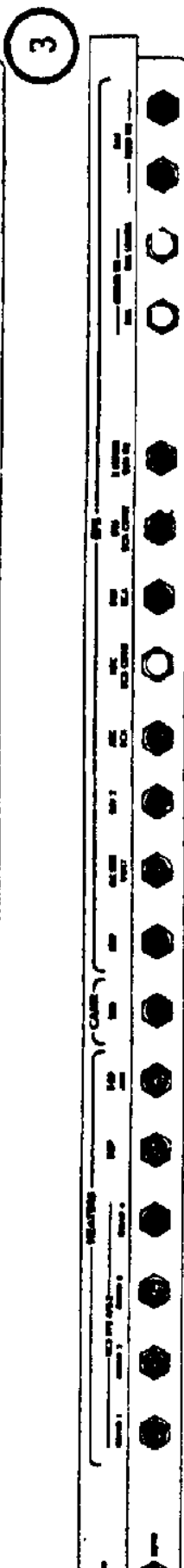
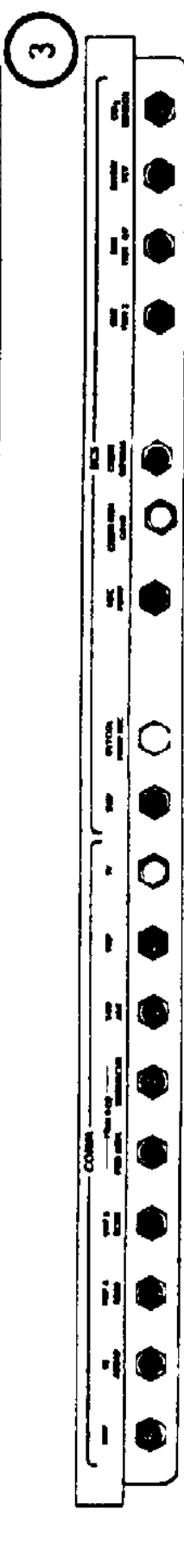
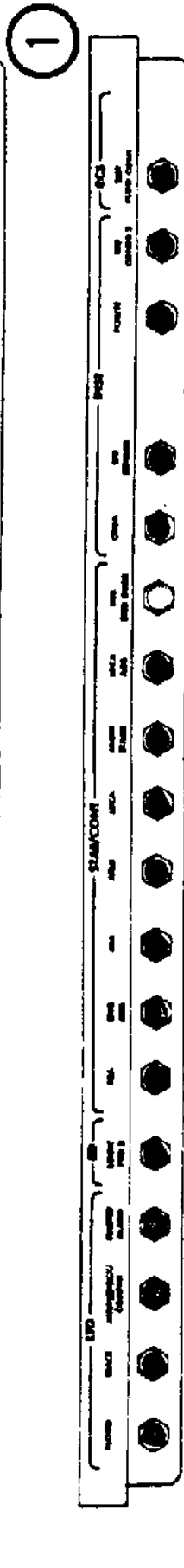
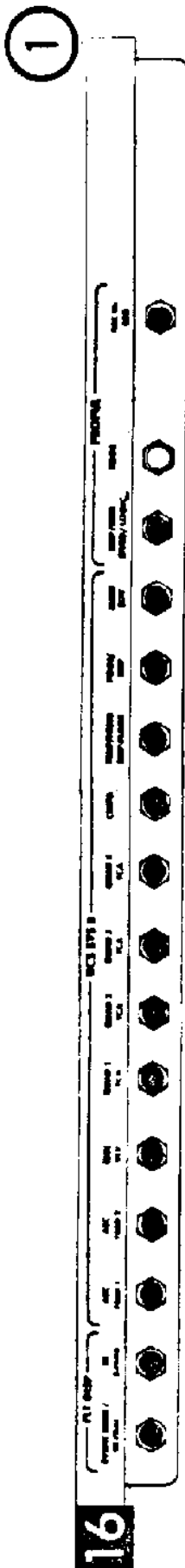
LM-5

Basic Date June 16, 1969  
 Changed July 2, 1969 D

Basic Date June 16, 1969

Changed

16



LM-

X POINTER SCALE (2) - HI MULT  
 RATE/ERR MON (2) - LDG RDR/CMPTR  
 ATT MON (CDR) - PGNS  
 GUID CONT - PGNS  
 MODE SEL - AGS  
 RNG/ALT MON - ALT/ALT RT  
 RATE SCALE - 25°/SEC  
 ACA PROP (2) - ENABLE  
 ENG ARM - OFF  
 ATT/TRANSL - 4 JETS  
 BAL CPL - ON  
 ASC He REG 1&2 tb (2) - gray  
 ABORT - Reset  
 ABORT STAGE - Reset  
 ENGINE STOP (2) - Reset  
 PRPLNT TEMP/PRESS - ASC  
 HELIUM MON - ASC PRESS 1

SYS A&B QUAD 1,2,3,4 (8) tb - gray  
 SYS A&B ASC FEED tb (4) - bp  
 SYS A&B MAIN SOV tb (2) - gray  
 CRSFD - tb-bp  
 TEMP/PRESS MON - OXID MANF  
 GLYCOL - PUMP 1  
 SUIT FAN - 1  
 O2/H2O QTY MON - ASC 1  
 ATTITUDE MON (LMP) - AGS

June 16, 1969

Basic Date

Changed

RADAR TEST - OFF  
 RR MODE - LGC  
 DEAD BAND - MIN  
 ATTITUDE CONTROL (3) - MODE CONT  
 MODE CONTROL (Both) - AUTO  
 TEMP MONITOR - RNDZ RDR  
 RCS SYS A/B-2 QUAD 1,2,3,4 - AUTO  
 ACA/4JET (CDR) - ENABLE  
 ACA/4 JET (2) - ~~ENABLE~~ (LMP) DISABLE  
 TTCA/TRANSL (2) - ~~ENABLE~~ DISABLE  
 TTCA (Both) - JETS

MASTER ARM - OFF  
 STAGE - SAFE/Guarded

DES H20 - CLOSE  
 WATER TANK SEL - ASC  
 ASC H20 - OPEN  
 DES 02 - CLOSE  
 ASC 02 No. 1 - OPEN  
 CABIN REPRESS - CLOSE  
 SUIT GAS DIVERTER - Pull/EGRESS  
 CABIN GAS RETURN - AUTO  
 SUIT CIRCUIT RELIEF - AUTO  
 PRESS REG A&B - EGRESS

Basic Date June 16, 1969  
 Changed ~~June 15, 1969~~ JULY 10 I



Launch Guidance System  
 Recommendation From MSFN

Extended STAY From MSFN

```

ASC He REG 1&2 - tb(2)-gray
MASTER ARM - ON
ASC He SEL - BOTH
ASC He PRESS - FIRE
MASTER ARM - OFF
SYS A FEED 2-OPEN
  tb(2)-gray
Monitor Sys A Manf Press
SYS A MAIN SOV-CLOSE
  tb-bp
CRSFD-OPEN, tb-gray
SYS B ASC FEED 2-OPEN
  tb(2)-gray
Monitor Sys B Manf Press
SYS B MAIN SOV-CLOSE
  tb-bp
BAT 5,6 - ON
BAT 1,3 - OFF/RESET
  tb-bp
CB(11)EPS: ASC ECA CONT-CLOSE
CB(16)EPS: ASC ECA CONT-CLOSE
  
```

```

VHF A: XMTR - VOICE/RNG
      B RCVR - ON
VHF A: XMTR - OFF
      B RCVR - ON
AUDIO (Both) VHF A - T/R
              VHF B - RCV
  
```

V47E  
 06 16 \_\_\_\_\_ PGNS/AGS Bias  
 \_\_\_\_\_  
 \_\_\_\_\_

```

*414 +1E
  PRO
*414R + 0 Complete
  50 16 Update Complete
  PRO
  
```

Basic Date June 16, 1969  
 Changed July 10, 1969

LMC

104:25

TIG-17

CB(11) AC BUS A: RNDZ RDR - Close  
 Wait 30 sec  
 PGNS: RNDZ RDR - Close

104:32

TIG-10

Check APS, RCS, ECS, & EPS

104:37

TIG-5

BAT 2,4 - OFF/RESET, tb-bp  
 DES BATS - DEADFACE, tb-bp  
 If bp  
 CB(11) EPS: DES ECA-OPEN  
                   : DES ECA CONT-OPEN  
 CB(16) EPS: DES ECA-OPEN  
                   : DES ECA CONT-OPEN  
 Check APS START Card

TIG-2 \*400 + 1E Guid Steering

1st REV ABORT  
 TIG-1: MASTER ARM - ON  
       \*500R  
       V77E  
 TIG-35: DSKY BLANKS  
 TIG-30: 06 74 \_\_\_\_\_ TFI  
                               \_\_\_\_\_  
                               \_\_\_\_\_  
                               \_\_\_\_\_  
                               PITCH  
 TIG-05: ABORT STAGE-PUSH  
           ENG ARM-ASC  
           PRO

NO IGN:  
 GUID CONT-AGS  
 NO IGN: ~~GUID CONT-PA NS~~  
 ENGINE START-PUSH

ENGINE START-PUSH

END SIMULATED COUNTDOWN

Basic Date June 16, 1969  
 Changed July 17, 1969

LM

V37E  
 POOE  
 Doff Helmets & Gloves

POWERDOWN

ASC O2 No. 1 - CLOSE  
 DES O2 - OPEN  
 CABIN REPRESS - AUTO  
 WATER TANK SEL - DES  
 ASC H2O - CLOSE  
 DES H2O - OPEN  
 O2/H2O QTY MON - DES

CB(11) PGNS: RNDZ RDR - Open  
 AC BUS A: RNDZ RDR - Open  
 HEATERS: RNDZ RDR OPR - Open

ET - STOP

CB(16) STAB/CONT: AEA - Open  
 AGS STATUS - STBY  
 CB(16) STAB CONT: AEA - Close  
 VHF A&B XMTR & RCVR - OFF  
 AUDIO (Both): VHF A&B - OFF

~~FUEL VENT - CLOSE~~

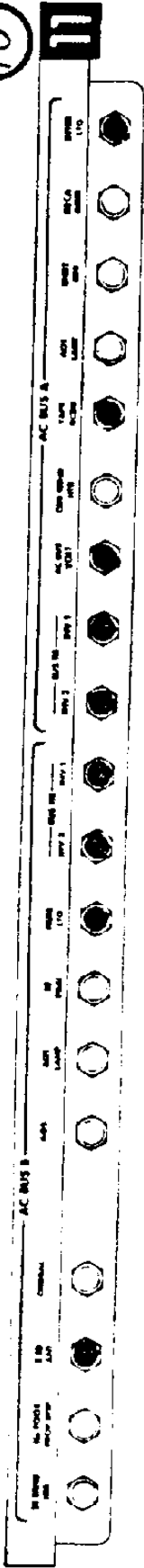
Configure CB's Per Chart

Basic Date June 16, 1969  
 Changed July 12, 1969 "J"

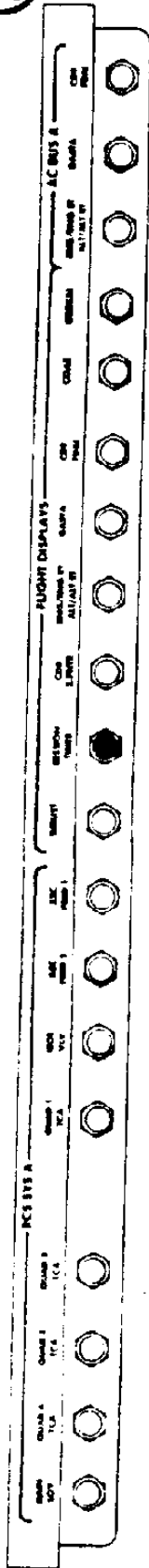
Basic Date June 16, 1969  
 Changed \_\_\_\_\_

LM-5

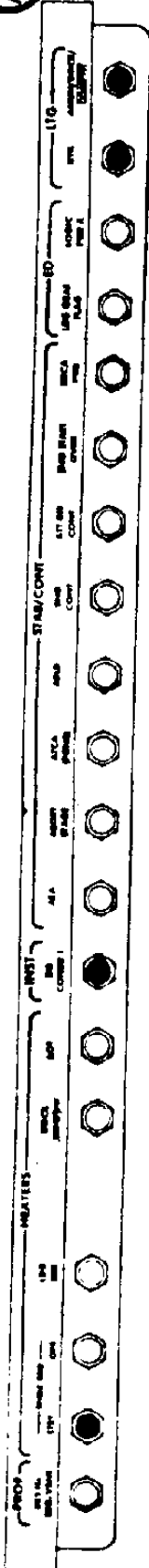
10



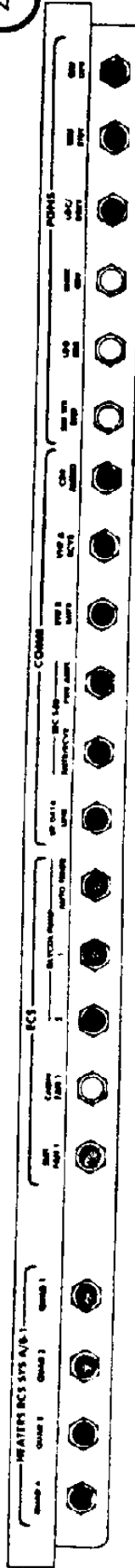
18



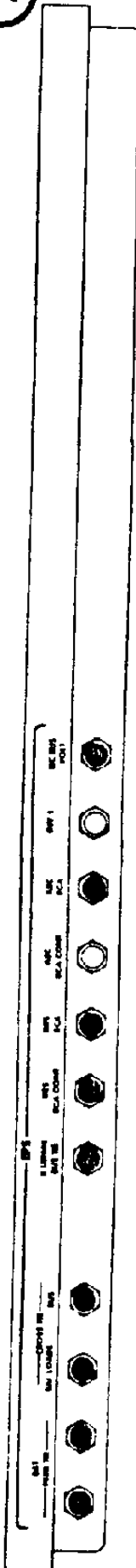
15



4



2

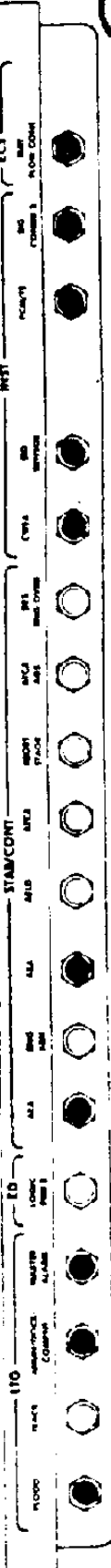


ALL

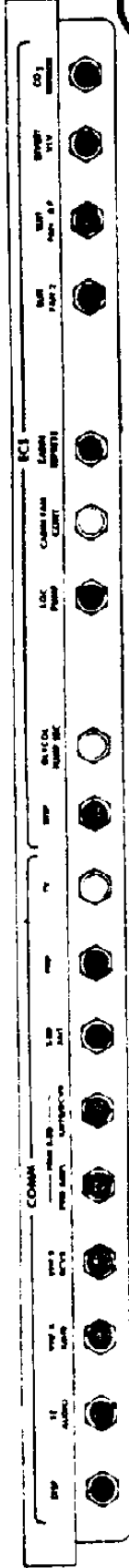
16



8



3



8



Basic Date June 16, 1969  
 Changed \_\_\_\_\_

LM

FDAI 1&2 - INRTL  
 EARTH/LUNAR - PWR OFF  
 LTG - OFF  
 MODE - HOLD/FAST  
 ALT SET - 45

FUEL & OXID VENT tb-bp  
 MASTER ARM - OFF  
 DES VENT - SAFE  
 ASC He SEL - BOTH  
 STAGE - SAFE (guarded)

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

TTCA (CDR) - JETS (Dn)

Eng STOP - Reset (guarded)  
 Eng START - Reset

TMR CONT - START  
 OVERRIDE ANUN - OFF  
 OVERRIDE NUM - OFF  
 OVERRIDE INTEGRAL - OFF  
 SIDE PANELS - Crew Opt  
 FLOOD OVHD/FWD - Crew Opt  
 ANUN/NUM - Crew Opt  
 INTEGRAL - Crew Opt

X POINTER SCALE - HI MULT  
 RATE/ERR MON - LDG RDR/CMPTR  
 ATTITUDE MON (CDR) - PGNS  
 GUID CONT - PGNS  
 MODE SEL - PGNS  
 RNG/ALT MON - RNG/RNG RT  
 SHFT/TRUN - +50°  
 RATE SCALE - 25°/SEC  
 THR CONT - AUTO  
 MAN THROT - CDR

ENG ARM - OFF  
 ATT/TRANSL - 4 JETS  
 BAL CPL - ON  
 PRPLNT QTY MON - OFF  
 PRPLNT TEMP/PRESS MON - ASC  
 HELIUM MON - PRESS 1  
 ABORT - Reset  
 ABORT STAGE - Reset (Guarded)

TEMP/PRESS MON - OXID MANF  
 ACA PROP - DISABLE  
 RATE/ERR MON - LDG RDR/CMPTR  
 ATTITUDE MON (LMP) - AGS  
 GLYCOL - PUMP 1  
 SUIT FAN - 1  
 O2/H2O QTY MON - DES

DES ENG CMD OVRD - OFF  
 TEST - OFF  
 TEST MON - AGC  
 SLEW RATE - HI  
 RR MODE - LGC  
 DEAD BAND - MIN

ATTITUDE CONTROL (3) - MODE CONT  
 MODE CONTROL (PGNS) - ATT HOLD  
 MODE CONTROL (AGS) - AUTO  
 IMU CAGE - OFF  
 EVENT TIMER - UP And STOP  
 TEMP MON - RNDZ RDR  
 RCS SYS A/B-2 QUAD 1,2,3,4 - AUTO  
 SIDE PANELS - Crew Opt  
 FLOOD - Crew Opt  
 OVHD/FWD - Crew Opt  
 EXTERIOR LTG - OFF  
 X POINTER SCALE - HI MULT

ACA/4 JET (2) - DISABLE  
 TTCA/TRANSL (2) - DISABLE  
 AOT - CL  
 RR GYRO SEL - PRIM

TTCA (LMP) - JETS (Dn)

Eng STOP - Reset  
 AGS STATUS - STBY

Basic Date June 16, 1969  
 Changed July 4 REV "E"

LM

POWER/TEMP MON - CDR BUS  
 INVERTER - 2  
 UP LINK SQUELCH - ~~ENABLE~~ OFF  
 UP DATA LINK - OFF

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

S BAND MODULATE - PM  
 XMTR/RCVR - PRIM  
 PWR AMPL - PRIM  
 VOICE - VOICE

PCM - PCM  
 RANGE - CWEA ENABLE  
 VHF A XMTR & RCVR (2) - OFF  
 VHF B XMTR & RCVR (2) - OFF  
 TLM BIOMED - As Required  
 TLM PCM - HI  
 RECORDER - As Desired  
 VHF - AFT TRACK MODE-SLEW  
 Peak SIG STR Meter  
 PITCH \_\_\_\_\_  
 YAW \_\_\_\_\_  
 S BAND - SLEW

PRESS REG A&B - CABIN  
 SUIT GAS DIVERTER - PUSH CABIN  
 CABIN REPRESS - AUTO  
 PLSS FILL - CLOSE  
 DES O2 - OPEN  
 #1,#2 ASC O2 - CLOSE  
 SUIT ISOL (Both) - SUIT FLOW  
 SUIT CIRCUIT RELIEF - AUTO  
 CABIN GAS RETURN - AUTO  
 CO2 CANISTER SEL - PRIM  
 PRIM & SEC CO2 CANISTER - CLOSE  
 WATER SEP SEL - PUSH SEP 1  
 ASC H2O - CLOSE  
 SEC EVAP FLOW - CLOSE  
 PRIM EVAP FLOW NO. 2 - CLOSE

Basic Date June 16, 1969  
 Changed July 5, 1969  
 REV 10



SUR-24

DES H2O - OPEN  
PRIM EVAP FLOW NO. 1 - OPEN  
WATER TANK SELECT - DES  
SUIT TEMP - As Required  
LIQUID GARMENT COOLING - As Required

CABIN RELIEF & DUMP (Both) - AUTO  
UTILITY LIGHTS (Both) - As Desired

OVHD FLOODS - As Desired

CWEA Status:

Caution  
PREAMPS

Warning  
CES AC (Reset via GYRO TEST Sw)  
CES DC (Reset via GYRO TEST Sw)  
ASC PRESS

EAT & REST PERIOD  
104:50 To 109:30

Crew Awake - Confirm No Change in CWEA Status

EAT PERIOD  
109:30 To 110:30

Change Prim LiOH Cartridge

Stay/No Stay For EVA Prep

Crew Status Report To MSFN (Sleep, Dosimeter)

Basic Date June 16, 1969  
Changed July 7 REV "F"

LM

LM PREP FOR EVA*2/10/69*CREW STATUS

BTH UCTA empty  
 Helmets stowed  
 Gloves stowed  
 PGA flow diverter valves - horizontal  
 LM O<sub>2</sub>, COMM, AND H<sub>2</sub>O hose connected to PGA  
 Inspect PGA Zipper-Verify lock-lock

SYSTEMS PREPARATION FOR EGRESS

BTH Adjust interior lgt to desired level  
 Enable DSEA as required  
 Unstow One Man Transition card and clip to  
 AOT guard (page SUR-36)  
 Unstow and tape Final EVA Configuration Cards  
 (Pages SUR-34 and 35)

PREPARATION FOR EGRESS

BTH Clear PGA pockets (Ball point & marker pens)  
 Stow adjustable pockets  
 Stow loose items not require for EVA

CDR Stow RH armrest  
 BTH Remove CDR's LH and LMP's RH and LH  
 Armrest and stow on mid-section step  
 LM restraints stowed for SSC access

CDR Transfer coas to fwd window mount  
 LMP Stow DEDA desk  
 Verify bacteria filter installed on FWD  
 hatch dump valve  
 Remove 16mm data acquisition camera from  
 bracket over window  
 Verify cable to camera connection, fresh  
 magazine installed, 10mm lens installed,  
 and adjust settings: per 16mm mag decal

CDR Remove Hang-down and EVA Card no.1 from  
 flite data file and temp stow

PREP FOR EVA

Basic Date June 16, 1969  
 Changed July 10, 1969

SUR-26

CDR Remove clamp and brackets from utility lights,  
 stow on AOT guard, and secure utility lights  
 and cords to AOT guard  
 Unstow Rt. angle bkt from LHSSC & attach to one  
 clamp and bracket  
 Unstow RCU camera brkts (2) from lower overshoe  
 comp and place on engine cover  
 LMP Install 16mm camera on univ brkt  
 Mount 16mm camera on mirror mount (Temp stow as  
 desired)  
 Route cable around brkts to remove slack  
 Camera seq C/B - close  
 Verify camera operation  
 Mount Rt. angle/univ bkt on crash bar  
 Remove 2 16mm mags/stow in ISA botm pocket  
 Remove 60mm Hasselblad & Fresh HCEX mag fm RHSSC  
 (Stow drk slide & prot cvr in LHSSC) & hnd to  
 CDR  
 CDR Assemble camera-attach RCU camera brkt.  
 LMP Remv EVA cam hndl fm RHSSC & hand to CDR  
 CDR Attach hndl to HBLAD-Adjust settings: per mag decal  
 Take phot - ver cam ops & place on engine cover  
 (Cam fail - try manual  
 LMP Ass 80mm HBLAD with HCEX mag-attach RCU camera bkt  
 Adjust settings: per mag decal  
 Take phot-ver cam ops & rstw in RHSSC  
 Unstow LEC/TTHR pkg fm RHSSC - remv LEC,  
 waist TTHR, & 2 hks - restw LEC/TTHR pkg  
 Att hooks to tiedown  
 Att LEC pulley to PLSS upr donng sta pin & hks  
 to 60mm HBLAD  
 Stw HBLAD in ISA top pkt & LEC  
 bag above flite data file  
 Att waist tether to 80mm HBLAD  
 Unstow YO YO from feedwater compt bag and stow in  
 ISA mid pkt  
 Position mirror as desired  
 Secure util lt & cable for PLSS/OPS donning

Basic Date June 16, 1969  
 Changed June 30, 1969 B

LM

PLSS/OPS DONNING

106 49

- BTH Remove PLSS fm floor, stow floor mounts  
and position PLSS against forward hatch  
Transfer helmet stowage bags to cabin floor
- CDR Transfer to AFT cabin area  
Remv top OPS & adap fm SRC rk & hand to LMP  
Remove 2nd OPS and adapter from SRC rack
- BTH Remv OPS fm brkts & temp stow brackets  
Verify OPS O2 press 5880+500 psia &  
O2 hose nozzle locked  
Open OPS O2 Shut off valve and verify O2 flow  
and regulation 3.70+0.30 psig  
Press heatr tst butt - Note lites on  
Close OPS O2 shut-off valve  
Unstw OPS antenna lead-snap thermal covers  
Stow OPS on cabin floor
- CDR Stow brackets with armrests in SRC rack  
Grasp EVA antenna "T" handle, pull down  
and rotate handle to detent, release handle  
Remove both RCU's from housing and pass to  
LMP for stowage on LHSSC  
Unstow top pair of lunar overshoes from L.H.  
mid-sect & hand to LMP (leave door open)  
Restow helmets in RCU stowage area
- LMP Remove purge valve & stow in ISA middle pocket
- CDR Don lunar overshoes with LMP's assistance  
Unstw 2nd pair overshoes fm LH mid-sect  
Remove purge valve-stow in ISA middle pocket
- LMP Don lunar overshoes with CDR's assistance  
Remv spent ECS cann & brkt-stow at crew station
- BTH Remove LEVA's and EV gloves from helmet  
bags and stow aft of engine  
Attach chronometers to RH EV glove
- CDR Remove anti-fog fm main kit and stow  
Stow helmet bags in top lunar overshoe comp  
Unstw CSRC fm LHSSC & stow in PGA leg pkt
- BTH Remove and stow PGA plugs in purse

Basic Date June 16, 1969  
Changed June 30, 1969

LMP Move PLSS in floor to engine cover  
 Route LM umbilicals behind PGA  
 BTH Attach OPS to top of PLSS - lock  
 CDR Hold PLSS/OPS for donning prep  
 LMP Remove cover from EVCS antenna connector  
 Connect OPS antenna lead to EVCS and lock  
 Verify sublimator exhausts are clear  
 Unstow upper and lower PLSS donning straps  
 Unstow PLSS elec umb O2 & H2O hoses  
 Unstow battery cable  
 Xfer batt prot cover to cable stowage cnctr  
 Connect battery cable to battery  
 Remove PLSS RCU cnctr cover & stow in LHSSC  
 Verify OPS reg checkout gage reads <2.5 psi  
 Unstow OPS O2 hose nozzle  
 BTH Secure PLSS thermal cover  
 Rmv YO YO fm ISA Midl pkt & atch to lwr  
 RH PLSS strap  
 LMP Turn right and back into PLSS  
 Don PLSS/OPS by securing PLSS upper and  
 lower straps to PGA  
 CDR Connect PLSS O2 hoses - lock  
 Unstow RCU

107:31

WARNING

Before connecting RCU to  
 PLSS all elec PLSS cont  
 must be in off position

Pump - off  
 Fan - off  
 Mode sel sw - 0 (off)

BTH Connect RCU electrical to PLSS  
 LMP Attach RCU to PLSS straps and PGA - lock  
 Verify these PLSS switch & valve positions  
 Diverter vlv - min (up)  
 O2 shutoff valve - off (up)  
 Feedwater valve - closed (up)  
 Pump - off  
 Fan - off  
 Mode sel sw - 0 (off)

Basic Date June 16, 1969  
 Changed June 30, 1969

CDR      Remv PLSS fm rechrg sta & put on cab flr  
           Secure ISA  
           Transfer helmets to recharge station  
           Place PLSS on engine cover  
           Route LM umbilicals in front of PGA  
 BTH      Attach OPS to top of PLSS - lock  
 LMP      Hold PLSS/OPS for donning prep  
 CDR      Remove cover from EVCS antenna connector  
           Connect OPS antenna lead to EVCS and lock  
           Verify sublimator exhausts are clear  
           Unstow upper and lower PLSS donning straps  
           Unstow PLSS elec umb O2 & H2O hoses  
           Unstow battery cable  
           Xfer batt prot cover to cable stowage cnctr  
           Connect battery cable to battery  
           Remov PLSS RCU cnctr cover and stow in LHSSC  
           Ver OPS reg checkout gage reads <2.5 psi  
           Unstow OPS O2 hose nozzle  
           Secure PLSS thermal cover  
           Turn left and back into PLSS  
           Don PLSS/OPS by securing PLSS upper and  
               lower straps to PGA  
 LMP      Unstow RCU, hold, and turn right to face LMP  
           Connect PLSS O2 hoses - lock

WARNING

Before connecting RCU to PLSS,  
 all elec PLSS cont must be in  
 off position

Pump - off

Fan - off

Mode sel sw - 0 (off)

Connect RCU electrical to PLSS

BTH      Attach RCU to PLSS straps and PGA - lock  
 CDR      Verify these PLSS sw and valve positions

Diverter vlv - min (up)

O2 shutoff vlv - off (up)

Feedwater vlv - closed (up)

Pump - off

Fan - off

Mode sel sw - 0 (off)

Basic Date June 16, 1969  
 Changed June 30, 1969 B

LM-5

PLSS/EVCS ELECTRICAL CHECKOUT

108 01

LMP Comm panel -  
 S-band Modulate - FM  
 TV C/B - Close  
 Verify voice comm with MSFN  
 LMP Audio panel -  
 S-band - T/R  
 ICS - T/R  
 Relay - on  
 Mode - VOX  
 VOX sens - max increase  
 VHF A - T/R  
 VHF B - RCV

CDR CDR audio panel -  
 S-band - T/R  
 ICS - T/R  
 Relay - off  
 Mode - VOX  
 VOX sens - max increase  
 VHF A - T/R  
 VHF B - RCV

LMP Verify LM EVA antenna deployed  
 VHF ANT SEL sw - EVA  
 Comm panel -  
 VHF A XMTR - voice  
 VHF A RCVR - on  
 VHF B XMTR - off  
 VHF B RCVR - on  
 Squelch A-noise threshold + 1 1/2 div  
 Squelch B-noise threshold + 1 1/2 div  
 Recorder-on  
 Biomed sw - off  
 SE audio C/B - open  
 Disconnect LM comm cable from PGA and secure  
 Connect PLSS electrical umbilical to PGA  
 SE audio C/B - close

Basic Date June 16, 1969  
 Changed July 8, 1969 E H

LMP RCU PTT - MAIN  
 PLSS mode sel sw - A  
 Verify -  
     PLSS warning tone - on (10 sec)  
     RCU press window - 0 (OPS act-abort)  
     RCU vent window - P (purge-abort)  
 Verify PLSS O2 bottle press >85%  
 Verify voice comm with CDR

NOTE

Unstow antenna of PLSS  
 which transmits Garbled  
 and/or loses TM.

NO MSFN Reception when PLSS mode sel in POS B

CDR Audio C/B - open  
 Disc LM comm cable fm PGA and secure  
 Connect PLSS electrical umbilical to PGA  
 CDR audio C/B - close  
 CDR audio panel -  
     VHF A - off  
     VHF B - off  
 RCU PTT-MAIN  
 PLSS mode sel sw - B  
 Verify -  
     PLSS warning tone - on (10 sec)  
     RCU press window - 0 (OPS act-abort)  
     RCU vent window - P (purge-abort)  
 Verify PLSS O2 bottle press >85%  
 Verify voice comm with LMP

LMP PLSS mode sel sw - B  
 PLSS warning tone - on (10 sec)

CDR PLSS mode sel sw - A  
 PLSS warning tone - on (10 sec)  
 Verify voice with LMP

Basic Date June 16, 1969  
 Changed June 30, 1969 B



BTH PLSS mode sel sw - AR  
 PLSS warning tone - on (10 sec)  
 Verify PLSS O2 bottle press > 85%  
 Verify voice with each other  
 Verify voice and TM comm with MSFN

NOTE

If comm with MSFN is "NO GO" -  
 S-band Modulate - PM  
 Verify voice & TM comm with MSFN

LMP TV C/B - open

FINAL EVA EQUIPMENT PREP FOR EGRESS

BTH Unstow OPS O2 hose and OPS O2 actuator  
 Attach O2 actuator to RCU  
 Snap OPS O2 hose to side of PLSS with  
 RCU connector flap

FINAL SYSTEMS PREP FOR EGRESS

BTH Confirm "GO" for cabin depress with MSFN  
 LMP Verify Cabin fan cont C/B - open  
 Verify cabin repress C/B - close  
 Suit fan Delta-P C/B - open  
 Des H2O vlv - close  
 CDR Verify Cabin fan 1 C/B - open  
 Suit fan 1 C/B - open  
 Verify suit ckt relief vlv - auto  
 Suit gas div vlv - egress (pull)  
 Cabin gas return vlv - egress  
 Verify master alarm-master alarm pb-lt-Reset  
 Verify ECS caut lt & H2O sep comp caut lt on

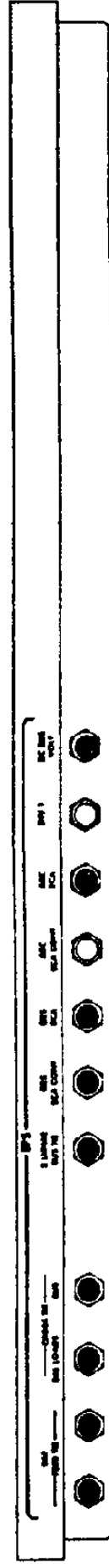
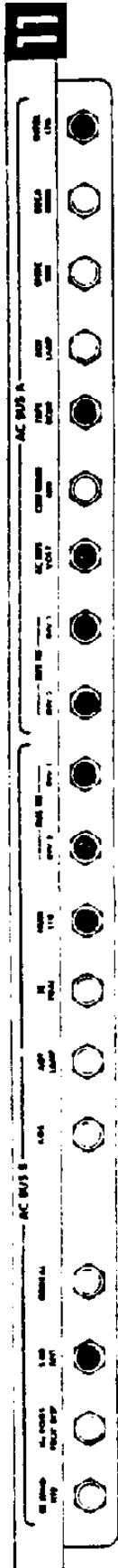
Basic Date June 16, 1969  
 Changed June 30, 1969 B

PREP FOR CABIN DEPRESS

- CDR Both suit isol vlv - suit disc  
 Disconnect LM O2 hoses  
 BTH Connect OPS O2 hose to RH PGA blue connector-lock  
 Retrv purg vlvs fm mid ISA pkt-verif clos & lkd pin  
 Anstl-instl in RH PGA red cnctr - lock  
 PGA flow diverter valves - vertical  
 Unstow helmet  
 Verify feed port cover installed and locked  
 apply anti-fog to helmet  
 Position mikes  
 - Verify PLSS mode sel sw - AR  
 LMP PLSS fan - on  
 CDR Place LMP's helmet on LMP, and "LOCK"  
 LMP Verify - RCU vent window - clears  
 CDR Remove LEVA from engine cover, verify  
 EV visor up, and attach to LMP's helmet  
 BTH Verify helmet/neck ring align  
 CDR PLSS fan - on  
 LMP Place CDR's helmet on CDR, and "LOCK"  
 CDR Verify - RCU vent window - clears  
 LMP Remove LEVA from engine cover, verify  
 EV visor up, and attach to CDR's helmet  
 BTH Verify helmet/neck ring align  
 CDR Unstow cue cards: Hang-down, Final EVA  
 Configuration, & EVA Card No. 1  
 Attach Hang-down to upper hatch  
 LMP Attach EVA Card No.1 overhead  
 BTH Position Final EVA Configuration Cards as desired  
 CDR Stow Lunar Surface Checklist in purse

Basic Date June 16, 1969  
 Changed June 30, 1969 B

# FINAL EVA CONFIGURATION

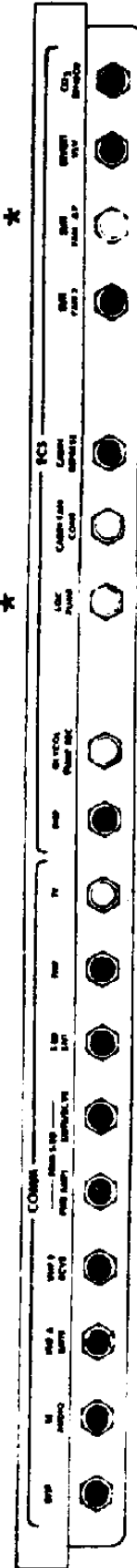
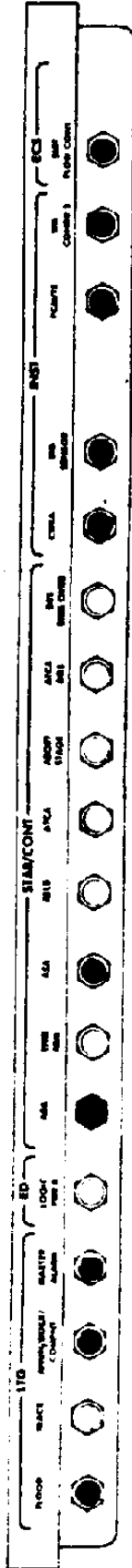


\* CLOSED FOR 1 MAN EVA

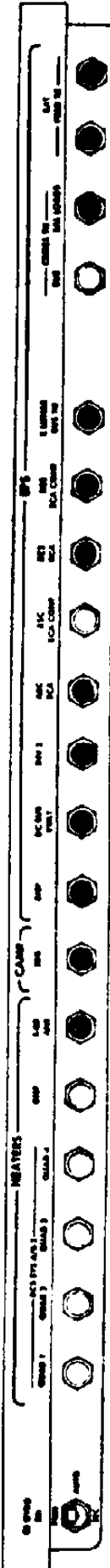
Basic Date \_\_\_\_\_  
 Changed \_\_\_\_\_

FINAL EVA CONFIGURATION

16



CLOSE TV AFTER CDR EGRESS



\*CLOSED FOR 1 MAN EVA

Basic Date \_\_\_\_\_  
Changed \_\_\_\_\_

TRANSITION TO ONE MAN EVA

BTH VERIFY/PERFORM-AS REQ'D AT TIME OF NO GO  
 PLSS FEEDWATER VLV-CLOSE (UP)  
 FWD HATCH CLOSED  
 REPRESS CABIN (USE HANG-DOWN CUE CARD)  
 PLSS O<sub>2</sub> SHUTOFF VLV-OFF  
 SUIT FAN 1 C/B-CLOSE  
 SUIT FAN DELTA-P C/B-CLOSE  
 ECS CAUT LT & H<sub>2</sub>O SEP COMP CAUT LT-OFF  
 PGA PRESS EQUAL TO CABIN (USE PURGE VLV, IF REQ'D)  
 DOFF GLOVES AND HELMETS WITH EV VISORS  
 PLSS PUMP-OFF  
 PLSS FAN-OFF

## NO GO CREWMAN

PLSS MODE SEL SW-0 (OFF)  
 DISCONNECT-OPS O<sub>2</sub> HOSE  
   -PURGE VLV-STOW IN ISA MID PKT  
   -OPS ACTUATOR FROM RCU  
   -RCU FROM PGA AND PLSS  
   -PLSS COMM, H<sub>2</sub>O, AND O<sub>2</sub>  
 DOFF PLSS/OPS  
 AUDIO C/B - OPEN  
 BIOMED SW - OFF  
 CONNECT LM COMM, O<sub>2</sub>, AND H<sub>2</sub>O  
 AUDIO C/B - CLOSE  
 COMM SWS - AS REQ'D

## OTHER CREWMAN

DISCONNECT PLSS H<sub>2</sub>O  
 CONNECT LM H<sub>2</sub>O  
 LCG PUMP C/B - CLOSE

BTH REVIEW ONE MAN PROCEDURES TO TIME OF "TWO MAN  
 NO GO" AND PROCEED

Basic Date June 16, 1969  
 Changed July 1, 1969 C

LM

TRANSITION TO  
 ONE MAN EVA

## ONE MAN EVA

CREW STATUS- Perform Planned  
 SYSTEMS PREP FOR EGRESS- Perform Planned  
 PREP FOR EGRESS- Perform Planned  
 PLSS/OPS DONNING- Perform following:

<u>VERIFY/PERFORM-</u>	<u>EVA CREWMAN</u>	<u>NON EVA CREWMAN</u>
1 Crew Stations	At CDR's	At LMP's
2 EVA Hook	Don	* LHSSC
3 OPS(Perform Checkout)		
OPS NO GO FOR EVT	N/A	Engine
Other	Cabin Floor	SRC Rack
4 Armrests (3)	In OPS BRACKETS, SRC Rack	
5 OPS Brackets	SRC Rack	
6 LM EVA Antanna	Deploy	
7 RCU-RCU NO GO FOR EVT	N/A	ON LHSSC
Other	ON LHSSC	RCU Comp
8 Helmets	Over RCU Stowage	
9 Purge Valves	ISA Mid Pkt	HSB
10 Lunar Boots	Don	* LHSSC
11 ECS Cannister and Bkt		Cabin Flr
12 LEVA	Engine Cover	* HSB
13 EV Gloves	Engine Cover	Engine Cvr
14 Chronometer	RH EV Glove	RH EV Glove
15 Anti-Fog	Temp Stow	
16 HSB	Top Lunar Boot Compt	Engine Cvr
17 CSRC	PGA Leg Pkt	N/A
18 PGA Connec Plugs	Purse	LH PGA
19 PLSS Straps (lower)		
PLSS NO GO FOR EVT	N/A	ISA Mid
Other	On PLSS-Exchange If Req'd	On PLSS
20 PLSS-PLSS NO GO FOR EVT	N/A	Rechg Sta
Other	Cabin Floor	Rechg Sta
21 ISA	Secured	

\* If Donned, Leave On

Basic Date June 16, 1969  
 Changed ~~June 16, 1969~~ July 8, 1969

- 22 PLSS/OPS PREP For DONNING - OPS ANT Lead - UNSTOWED  
 OPS Attached to PLSS - LOCKED  
 OPS ANT Lead to PLSS - LOCKED  
 Sub Exhaust - CLEAR  
 Donning Straps, ELEC, O2 and UMB - UNSTOWED  
 Battery - CONNECTED  
 RCU Connec Cover - In LHSSC  
 OPS Checkout Gage <2.5 psig  
 OPS O2 Hose Nozzle - UNSTOWED
- 23 PLSS/OPS DONNING - PLSS/OPS Donned - Straps Connected (4)  
 PLSS O2 to PGA LH connect - LOCKED  
 RCU (All Elec CNTLS-OFF) to PLSS,  
 PGA and PLSS Straps-lock  
 Diverter VLV - MIN (up)  
 O2 Shutoff VLV - OFF (up)  
 Feedwater - Closed (up)  
 Pump - OFF  
 Fan - OFF  
 MODE SEL sw - 0 (OFF)

PLSS/EVCS ELECTRICAL CHECKOUT

- Set Comm panel -  
 S-band Modulate - FM  
 TV C/B - Close  
 Verify voice comm with MSFN
- Non EVA Crewman Audio Panel -  
 S-band - T/R  
 ICS - T/R  
 Relay - off  
 Mode - VOX  
 VOX sens - max increase  
 VHF A - RCV  
 VHF B - T/R
- EVA Crewman audio panel -  
 S-band - T/R  
 ICS - T/R  
 Relay - on  
 Mode - VOX  
 VOX sens - max increase  
 VHF A - RCV  
 VHF B - T/R

Basic Date ONE 16, 1969  
 Changed JULY 25, 1969 # I

Verify LM EVA antenna deployed  
Set VHF ANT SEL sw - EVA

Set comm panel -  
VHF A XMTR - off  
VHF A RCVR - on  
VHF B XMTR - voice  
VHF B RCVR - on  
Squelch A - noise threshold +1 1/2 div  
Squelch B - noise threshold +1 1/2 div

Recorder - on  
Biomed sw - Non EVA Crewman

EVA Crewman Audio C/B - open

Disconnect LM comm - connect PLSS comm to PGA

EVA Crewman Audio C/B - close  
RCU PTT-MAIN  
PLSS mode sel sw - B

Verify -  
PLSS warning tone - on (10 sec)  
RCU press window - 0 (OPS act - abort)  
RCU vent window - P (PURGE - ABORT)  
Verify PLSS O2 bottle press > 85%  
Voice comm with other crewman and MSFN

NOTE

Unstow antenna if PLSS  
transmits Garbled and/or  
loses TM.

Non EVA Crewman Audio panel -  
VHF A - T/R  
VHF B - RCV

EVA Crewman Audio panel -  
VHF A - T/R  
VHF B - RCV

Set comm panel -  
VHF A XMTR - voice  
VHF B XMTR - off

Basic Date June 16, 1969

Changed July 4, 1969

B E

A

4



PLSS mode sel sw - A

Verify -

PLSS warning tone - on (10 sec)

PLSS O2 bottle press > 85%

Voice with other crewman

Voice and TM comm with MSFN

NOTE

IF COMM with MSFN

is NO GO -

S-band Modulate - PM

Verify voice and TM

with MSFN

Non EVA Crewman

TV C/B - open

FINAL EVA EQUIPMENT PREP FOR EGRESS

Unstow OPS O2 Hose and Actuator

Attach O2 Actuator to RCU

Snap OPS O2 Hose to side of PLSS with  
RCU connector flap

FINAL SYSTEMS PREP FOR EGRESS

Confirm "GO" for cabin depress with MSFN

Verify Cabin fan 1 C/B - open

Verify Cabin fan cont C/B - open

Verify - cabin repress C/B - close

Des H2O vlv - close

Verify - suit ckt relief vlv - auto

Suit gas div vlv - egress (pull)

Cabin gas return vlv - egress

Basic Date June 16, 1969 B  
Changed June 30, 1969

PREP FOR CABIN DEPRESS**EVA CREWMAN (Other Crewmen Assist)-**

Suit isol vlv - suit disc

Disconnect LM O2 hoses

Connect OPS O2 hose to RH PGA blue conn-lock

Get purge vlv from ISA mid pkt - verify closed & lkd  
pin instl

Install in RH PGA red conn - lock

PGA flow diverter vlvs - vertical

Verify helmet feed port cover installed and locked-

Apply anti-fog to helmet

Position mikes

Verify PLSS mode sel sw - A

PLSS fan - on

Don helmet and "lock"

Verify - RCU vent window - Clears

Attach LEVA to helmet

Verify helmet/neck ring align

Don EV gloves and "lock"

**Non EVA CREWMEN-**

Verify helmet feed port cover installed and locked-

Apply anti-fog

Position mikes

Don Helmet and "lock"

Verify helmet/neck ring align

Unstow Cue Cards: Hang-down, Final EVA Configuration  
& EVA Card No. 1

Attach Hang-down to upper hatch

Position Final EVA Configuration Card as desired

Stow Lunar surface checklist in purse

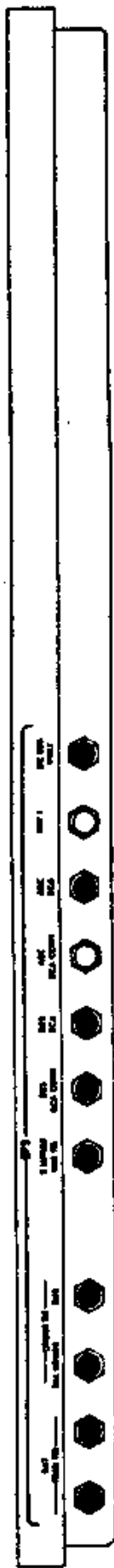
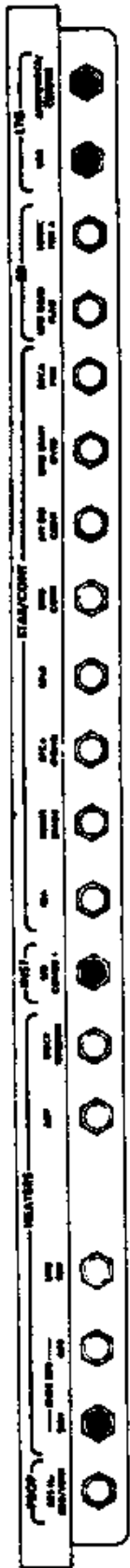
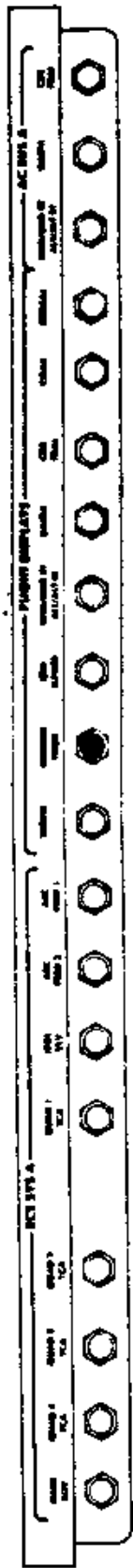
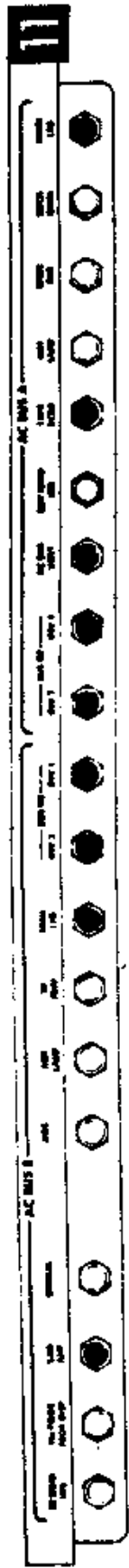
Basic Date June, 1969 16  
Changed June 30, 1969 B

POST EVA Hardsuit Checklist Complete

Verify CB Status Per Chart

POST EVA

Basic Date \_\_\_\_\_ June 16, 1969  
Changed \_\_\_\_\_ June 18, 1969



LM-5

Basic Data                      June 16, 1969  
 Changed                      June 18, 1969



AUDIO (CDR): S-BAND T/R - T/R  
 VHF A - OFF  
 VHF B - OFF

AUDIO (LMP): S-BAND T/R - T/R  
 VHF A - OFF  
 VHF B - OFF

S-BAND: PM, PRIM, PRIM, VOICE, PCM, CWEA ENABLE, LEFT, HI

VHF A XMTR & RCVR (2) - OFF  
 VHF B XMTR & RCVR (2) - OFF

Verify:

MASTER ARM - OFF  
 ENG ARM - OFF  
 ATTITUDE CONT (3) - MODE CONT  
 MODE CONT: PGNS - ATT HOLD  
 MODE CONT: AGS - AUTO

POWER TEMP MON - Check BAT, BUS Volts

EAT PERIOD

116:40 To 117:20

CB(11) HEATERS: RNDZ RDR OPR - Close  
 BIOMED - LEFT

REST PERIOD

117:20 To 122:00

121:53  
 TIG-2:30

CB(11) AC BUS B: AGS - Close  
 AGS STATUS - OPERATE

Configure CB's Per chart

Basic Date: June 16, 1969  
 Changed: July 13 1969 K

Basic Date \_\_\_\_\_  
Changed \_\_\_\_\_  
June 16, 1969  
July 7 REV "P"

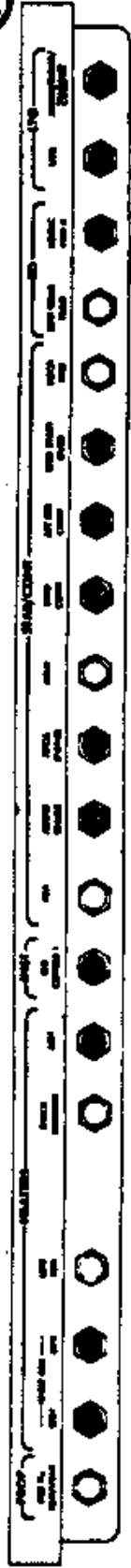
6



5



7



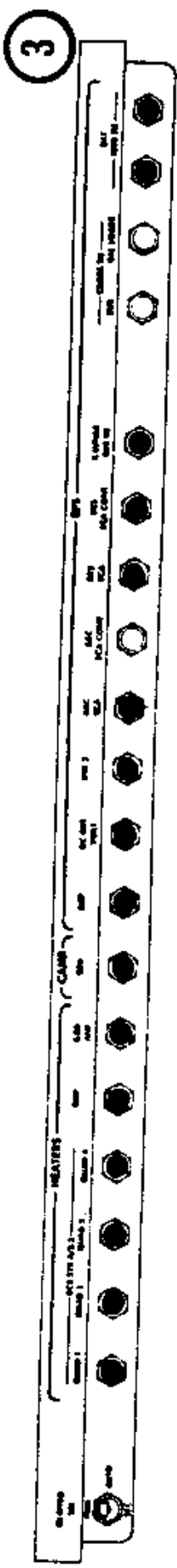
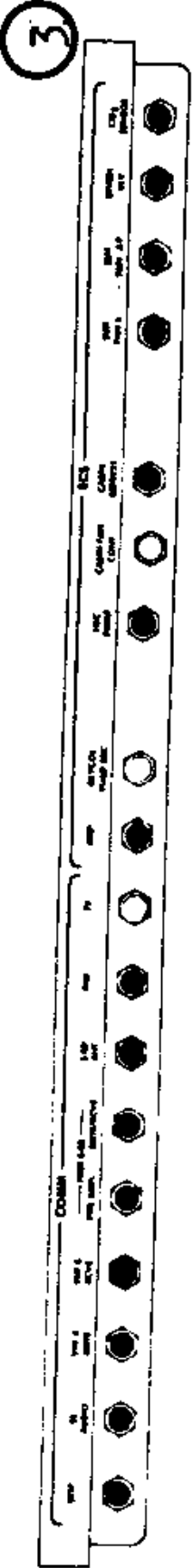
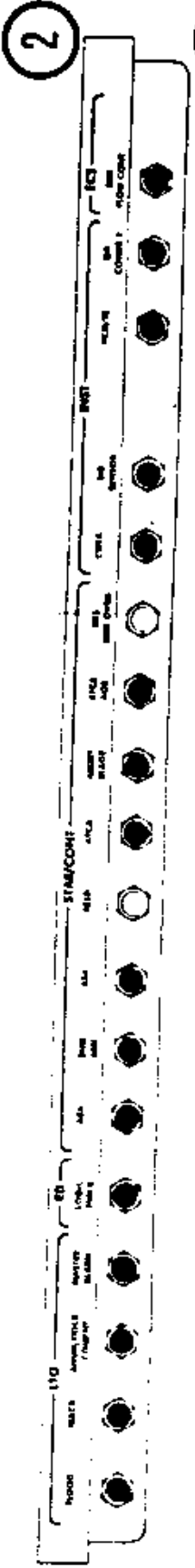
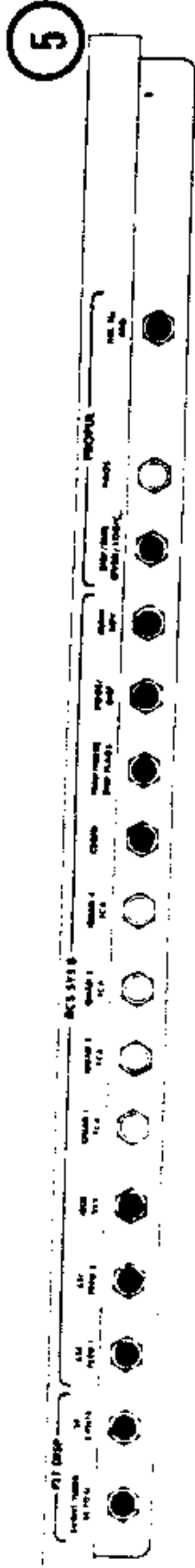
4



2



16



LM-5

Basic Date June 16, 1969  
Changed July 2, 1969



POOE

V35E

88 88 All Eights  
 Master Alarm, LGC, ISS  
 Warning & DSKY Lts - On (5 sec)

RSET

V25 NO1E, 1365E  
 E,E,E

V15 NO1E, 1365E

V21 N27E, 10E

15 01 Test Successful When  
 R2 > 3 (78 sec)

V21 N27E, 0E

\*6666 OPR ERR Lt - On

\*000 + 88888

\*123 - 45679

\*412+0E Reinitiate Self Test

\*412 + 1 Satisfactory

\*574R + Not Staged

\*604R - On Surface

\*612R + 0 ATT HOLD At  
 ABORT STAGE

UP DATA LINK - DATA

TELEMETRY PCM - HI

MSFN Uplinks CSM State Vector  
 (UPLINK ACTY Lt - On Then Off)

UPDATA LINK - OFF

V16 N65E LGC TIME

\*377 +

\*ENTR At Correct Time

Basic Date June 16, 1969  
 Changed June 25, 1969  
 "A"

V47E

06 16 : : PGNS/AGS Bias

Load Bias Time

\*414 + 1E

PRO

\*414R + 0 Complete

50 16 Update Complete

PRO

122:03

TIG-2:20

If Star In L,F, or R AOT Detents,  
Position RR Antenna Along (0°, 283°)

Via V41N72:

If Star In Rear Detent, No Redesignation  
Req'd, Begin P57

CB(11) AC BUS A: RNDZ RDR - CLOSE

Wait 30 sec

PGNS: RNDZ RDR - Close

RR MODE - LGC

V41 N72E

21 73 +00000 TRUN  
+28300 SHFT

04 12 00006  
00002

PRO

CB(11) PGNS: RNDZ RDR - Open

AC BUS A: RNDZ RDR - Open

V44E

P57E

04 06 00001  
00003 REFSMMAT

PRO

05 06 00010  
00003 Gravity & Star  
00110

PRO

Basic Date June 16, 1969 "A"  
June 25, 1969  
Changed

(13 ref.)

V16 N20E ICDU Angles  
Monitor Gravity Measurement  
NO ATT Lt - On Then Off, Twice

+ 04200  
+ 31800  
+ 03500

KEY REL

06 04 + \_\_\_\_\_ Gravity Err Angle  
PRO

*drift w/body slip  
from T<sub>3</sub> exercise*

06 22 ICDU Angles  
PRO  
NO ATT Lt - On Then Off  
CB(11) AC BUS B: AOT LAMP-CLOSE

01 70 OOCDE <sup>LV</sup> Detent, Star  
Load Desired Star  
PRO

06 79 \_\_\_\_\_ Cursor  
\_\_\_\_\_ Spiral  
\_\_\_\_\_ Detent Position  
PRO

01 71 OOCDE Detent, Star  
PRO

Read Cursor Angle \_\_\_\_\_  
54 71 MARK X OR Y \_\_\_\_\_  
Read Spiral Angle \_\_\_\_\_

06 79 \_\_\_\_\_ Cursor, \_\_\_\_\_ Spiral \_\_\_\_\_  
Load Cursor & Spiral Angles \_\_\_\_\_  
V32E Remark Star \_\_\_\_\_  
PRO After 2 Recycles

122' 15"

**Do P22 AC PER PGNS-20 OF GFW Diet**

*180 WPM  
270 STAFF*

If RR Antenna Along (0°, 283°)  
Slew RR Along +X Axis Via V41N72:

CB(11) AC BUS A: RNDZ RDR - Close  
Wait 30 sec  
PGNS: RNDZ RDR - Close

Basic Date June 16, 1969  
Changed June 25, 1969 "A"

V41 N72 E  
21 73 +18000 TRUN  
+27000 SHFT

04 12 00006  
00002  
PRO

RR MODE - SLEW  
V44E

06 05 \_\_\_\_\_ Angle Diff  
PRO

06 93 \_\_\_\_\_ X Torque Angle  
\_\_\_\_\_ Y Torque Angle  
\_\_\_\_\_ Z Torque Angle  
PRO (Monitor Gyro Torquing)

50 25 00014 (star ck option)  
V34E

POOE

X-POINTER SCALE (Both) - HI MULT  
RATE/ERR MON (Both) - RNDZ RDR  
ATTITUDE MON (Both) - PGNS  
MODE SEL - AGS  
RNG/ALT MON - RNG/RNG RT  
SHFT/TRUN - +50°

TEMP MONITOR - RNDZ (+10° To +145°)

RR MODE - AUTO TRACK

RADAR TEST - RNDZ (Rng Rt Tape Drives,  
X-Pointers & FDAI Needles Vary  
Between Limits. After 12 sec  
Rng Tape Drives, NO TRACK - Out)

TEST/MONITOR - AGC 1.0 to 1.8 (1.8)  
- XMTR PWR 2.1 to 4.1 (2.6)  
- SHAFT ERR 2.1 to 2.6  
- TRUN ERR 2.2 to 2.6  
- AGC

Basic Date( \_\_\_\_\_ )  
Changed \_\_\_\_\_  
June 16, 1969  
July 27, 1969

LM-5

V25 N07E  
 F21 07, 101E, 10E, 1E  
 RR MODE - LGC (NO TRACK Lt - On)

V63E  
 04 12 00094  
00001 RR  
 PRO (NO TRACK Lt - Out  
 After 12 sec)

16 72 Varying @ 1/2 cps  
 PRO

16 78 +19548 To +19588 Rng (TM Within +1.2 of R1)  
 -00467 To -00507 Rng Rt (TM=2<R2)

V34E  
 RADAR TEST - OFF (NO TRACK  
 Lt - On, X-Pointers - Center)

V40N72E  
 \*400 + 3E AGS/PGNS Align *(1st of 2 with new inv align)*

V77E  
 V15N01E, 42E (Rate CMP Hot Fire Check ACA To Jets)

CB (11) RCS SYS A: QUAD TCA (4) - Close } *enables pri fire*  
 CB (16) RCS SYS B: QUAD TCA (4) - Close } *enables sec fire*

CDR ACA (OUT OF DETENT, PAUSE AT NULL)

ROLL Rt 000XX

Lt 777XX

PITCH Up 000XX

Dn 777XX

YAW Rt 777XX

Lt 000XX

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

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

V76E (MIN IMP Check of CDR ACA to LGC, ACA Cold  
 Fire CES Voltage, SEC RCS Coil Hot Fire 4-Jet  
 In AGS)

V11N10E, 31E, R1 67777

GUID CONT - AGS

MODE CONT: AGS - ATT HOLD

Basic Date June 16, 196  
 Changed July 8, 1969 G

LM-5

ATTITUDE CONTROL (3) - MODE CONT

ACA/4 JET (CDR) - ENABLE

CDR ACA (Deflect slowly to Hardover, Pause at Null)

ROLL Rt - R1 27757

Lt - 27737

PITCH Up- 27776

Dn- 27775

YAW Rt- 27767

Lt- 27773

GUID CONT-PGNS

MODE CONT: AGS - AUTO

122:13

TIG-2:10

V41N72E

21 73 +18000 TRUN

+27000 SHFT

04 12 00006

00002

PRO

CB (11) PGNS: RNDZ RDR - Open

AC BUS A: RNDZ RDR - Open

V44E

\*413 + 1E Store Azimuth (for *force*)

\*544R \_\_\_\_\_ X Gyro Coeff

\*545R \_\_\_\_\_ Y Gyro Coeff

\*546R \_\_\_\_\_ Z Gyro Coeff

\*400 +6E Calibrate Gyros

\*400R (+ 0 Calibrate Complete In 5 min 2 sec)

\*544R \_\_\_\_\_ X

\*545R \_\_\_\_\_ Y

\*546R \_\_\_\_\_ Z

If Gyro Coeff Changes More Than 2.0°/hr, AGS Failed

Basic Date June 16, 1969  
 Changed July 2, 1969 D

LM-5

LM-5

\*400+3E AGS/PGNS Align  
\*413+1E Store Azimuth

\*047R \_\_\_\_\_ Sin Az Comp  
\*053R \_\_\_\_\_ Sin Az Comp

Transmit The Following To MSFN:

NO4, NO5, N93, 047, 053

*grad. error*

*4.45 2.45 165*  
UP DATA LINK - DATA  
TELEMETRY PCM - HI

MSFN Uplinks CSM State Vector *insertion 1/18 min*  
& LGC Gyro Compensation

122:53  
TIG-1:30

Copy Ascent And CSI Pads

\*047 \_\_\_\_\_ E Sin Az Comp  
\*053 \_\_\_\_\_ E Cos Az Comp  
\*225 \_\_\_\_\_ E αLower Limit } *same*  
\*226 \_\_\_\_\_ E αUpper Limit }  
\*231 \_\_\_\_\_ E RLS

123:38  
TIG-45

If Star In L, F, or R AOT Detent,  
Position RR Antenna Along (0°, 283°)  
Via V41N72:

CB(11) AC BUS A: RNDZ RDR - Close  
Wait 30 sec  
PGNS: RNDZ RDR - Close

V41N72E

21 73 +00000 TRUN  
+28300 SHFT

04 12 00006  
00002

PRO

Basic Date June 16, 1969  
Changed July 2, 1969 D

LM-5

CB(11) PGNS: RNDZ RDR - Open  
AC BUS A: RNDZ RDR - Open  
V44E

P57E

04 06 00001  
00004 Landing Site  
PRO

06 34 T Align  
Load TIG  
PRO

05 06 00010  
00003 Gravity & Star  
00110  
PRO

V16 N20E  
Monitor Gravity Measurement  
NO ATT LT - On Then Off, Twice

+04200  
+31800  
+03500

KEY REL

Basic Date June 16, 1969  
Changed July 2, 1969 D

06 04 + \_\_\_\_\_ Gravity Error Angle  
PRO



If Gyro Torquing Angles  $>5^\circ$ : - *mis lco question*

06 22 ICDU Angles

PRO

NO ATT Lt - On Then Off

01 70 OOCDE Detent, Star

Load Desired Star

PRO

06 79 \_\_\_\_\_ Cursor

\_\_\_\_\_ Spiral

\_\_\_\_\_ Detent Position

PRO

01 71 OOCDE Detent, Star

PRO

Read Cursor Angle \_\_\_\_\_

54 71 MARK X OR Y

Read Spiral Angle \_\_\_\_\_

06 79 \_\_\_\_\_ Cursor, \_\_\_\_\_ Spiral \_\_\_\_\_

Load Cursor & Spiral Angles \_\_\_\_\_

V32E Remark Star

PRO After 2 Recycles

06 05 \_\_\_\_\_ Angle Diff

PRO

06 93 \_\_\_\_\_ X Torque Angle

\_\_\_\_\_ Y Torque Angle

\_\_\_\_\_ Z Torque Angle

PRO (Monitor Gyro Torquing)

50 25 00014

PRO For Alignment Check

01 70 OOCDE Detent, Star

Load Desired Star

PRO

Basic Date ( June 16, 1969  
Changed ( June 25, 1969 "A"

06 79 \_\_\_\_\_ Cursor  
\_\_\_\_\_ Spiral  
\_\_\_\_\_ Detent Position  
Verify Detent & Star Position  
V34E

POOE

If RR Antenna Along (0°, 283°)  
Slew RR Along +X Axis Via V41N72

CB(11) AC BUS A: RNDZ RDR - Close  
Wait 30 sec  
PGNS: RNDZ RDR - Close

V41N72E

21 73 +18000 TRUN  
+27000 SHFT  
375

04 12 00006  
00002  
PRO

CB(11) PGNS: RNDZ RDR - Open  
AC BUS A: RNDZ RDR - Open  
V44E

CB(11) AC BUS B: AOT LAMP - Open  
AOT - CL/0.0°

SET CAMERA  
FOR ASCENT  
16mm/HCEX/OVERHEAD  
(F4,500,INF)12 fps

LM CONSUMABLES UPDATE	
GET _____:	_____
RCS A _____	B _____
DESC O <sub>2</sub> _____	
DESC A-H _____	
ASC A-H _____	

Basic Date ( June 16, 1969 "J"  
Changed JULY 12, 1969

123:47  
TIG-35

Don Helmets & Gloves  
Attach Restraints

V48E

01 46 12012 DAP Config  
PRO

06 47 \_\_\_\_\_ LM Wt  
\_\_\_\_\_ CSM Wt  
PRO

GUID CONT - PGNS  
MODE CONTROL (PGNS) - AUTO  
V77E

P12E

06 33 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ TIG ASC <sup>PAO</sup>  
(124:23:21.3)  
PRO

06 76 \_\_\_\_\_ VH Final <sup>PAO</sup>  
( )  
\_\_\_\_\_ H Dot Final <sup>PAO</sup>  
( )  
\_\_\_\_\_ Xrng <sup>compare w/ job of load  
no larger than 8 mi</sup>  
( )  
PRO

06 74 \_\_\_\_\_ : \_\_\_\_\_ TFI  
\_\_\_\_\_ Yaw  
\_\_\_\_\_ Pitch

ET - Set/Up

\*232 R +00600 Ins Alt  
\*465 R +00320 Ins H Dot  
\*410 R +00000 Orb Ins *guidance mode*

\*547 R +0 Lunar Align Az } *one & sine viscos?*  
Correction } *0.57*

\*623 + 0E +Z Along CSM Plane

Basic Date ( June 16, 1969 )  
Changed ( June 25, 1969 ) "A"

123:53  
TIG-30

## \*400 + 4E Lunar Align

CB(11) RCS SYS A: QUAD 4,3,2,1 TCA (4)-Close  
 STAB/CONT: AELD - Close ~~PROP~~  
 EPS: INV 1 - Close ~~PROP: DES HE REG/VENT - CLOSE~~  
 CB(16) RCS SYS B: QUAD 1,2,3,4 TCA (4)-Close  
 STAB/CONT: AELD - Close ~~PROP~~  
 PROPUL: DISP/ENG OVRD/LOGIC - CLOSE  
 X POINTER SCALE (2) - HI MULT  
 RATE/ERR MON (2) - LDG RDR/CMPTR  
 ATT MON - PGNS  
 GUID CONT - PGNS  
 MODE SEL - AGS  
 RNG/ALT MON - ALT/ALT RT  
 RATE SCALE - 25°/SEC  
 ACA PROP (2) - ENABLE  
 ENG ARM - OFF  
 ATT/TRANSL - 4 JETS  
 BAL CPL - ON  
 ASC He REG 1&2 tb(2)-gray  
 ABORT - Reset  
 ABORT STAGE - Reset  
 ENGINE STOP (2) - Reset  
 PRPLNT TEMP/PRESS - ASC  
 HELIUM MON - ASC PRESS 1

SYS A&B QUAD 1,2,3,4 (8) tb-gray  
 SYS A&B ASC FEED 1&2 tb(4)-bp  
 SYS A&B MAIN SOV tb(2)-gray  
 CRSFD tb-bp  
 TEMP/PRESS MON - OXID MANF  
 GLYCOL - PUMP 1  
 SUIT FAN - 1  
 O2/H2O QTY MON - ASC 1  
 ATTITUDE MON - AGS  
 RADAR TEST - OFF  
 RR MODE - LGC -  
 DEAD BAND - MIN  
 ATTITUDE CONTROL (3) - MODE CONT  
 MODE CONTROL (Both) - AUTO  
 TEMP MONITOR - RNDZ RDR  
 RCS SYS A/B-2 QUAD 1,2,3,4 - AUTO

Basic Date ( ) June 16, 1969 "A"  
 Changed ( ) June 25, 1969

LM-5 ( )

ACA/4 JET (CDR)- <sup>SUR-60</sup> ~~ENABLE~~  
ACA/4 JET (2) - ~~ENABLE~~ (LMP)DISABLE  
TTCA/TRANSL (2) - ~~ENABLE~~ DISABLE  
TTCA (Both) - JETS (Dn)

MASTER ARM - OFF  
STAGE - SAFE/Guarded

DES H2O - CLOSE  
WATER TANK SEL - ASC  
ASC H2O - OPEN  
DES O2 - CLOSE  
ASC O2 No. 1 - OPEN  
CABIN REPRESS - CLOSE  
SUIT GAS DIVERTER - PULL/EGRESS  
CABIN GAS RETURN - AUTO  
SUIT CIRCUIT RELIEF-AUTO  
PRESS REG A&B - EGRESS

Launch Guidance System  
Recommendation From MSFN  
~~DES PROPULSION FUEL VENT: OPEN~~  
~~DES PROPULSION OXID VENT: OPEN~~ - Verify TB - Gray  
ASC He REG 1&2 - tb(2)-gray

MASTER ARM - ON  
ASC He SEL - BOTH  
ASC He PRESS - FIRE  
MASTER ARM - OFF  
SYS A ASC FEED 2-OPEN  
tb (2) - gray  
Monitor Sys A Manf Press  
SYS A MAIN SOV - CLOSE J  
tb-bp  
CRSFD-OPEN, tb-gray  
SYS B ASC FEED 2-OPEN  
tb (2)-gray  
Monitor Sys B Manf Press  
SYS B MAIN SOV-CLOSE  
tb-bp

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

Basic Date - June 16, 1969  
Changed - ~~June 25, 1969~~ JULY 10

V47E

06 16 \_\_\_\_\_ PGNS/AGS BIAS  
\_\_\_\_\_  
\_\_\_\_\_

\*414 + 1E

PRO

\*414R + 0 Complete

50 16 Update Complete

PRO

124:06

TIG-17

FROM \_\_\_\_\_

~~CB(11) AT BUS A - ENGINE RDR - G1000~~~~Wait 30 sec~~~~ENGINE RDR - G1000~~

UPDATE LINK SW - VOICE 0/4

VHF A: XMTR - VOICE/RNG

RCVR - ON

VHF B: XMTR - OFF

RCVR - ON

AUDIO (Both) VHF A - T/R

VHF B - RCV

TRACK MODE - AUTO

124:13

TIG-10

Verify CB Status Chart

**NOTE: Do NOT USE TAPEMETER IN PGNS; i.e.  
do NOT PLACE MODE SELECT SW TO PGNS**

**NOTE: IF ENG ARM CB DOES NOT CLOSE  
THEN DO NOT PLACE ENG ARM TO OFF  
AT 50 FPS. STOP ENGINE VIA STOP PB  
AT OFFS.**

Basic Date \_\_\_\_\_ June 16, 1969  
Changed \_\_\_\_\_ July 2, 1969 D

Basic Date June 16, 1969  
Changed July 2, 1969 D

LM-5

5



1

OPEN



6

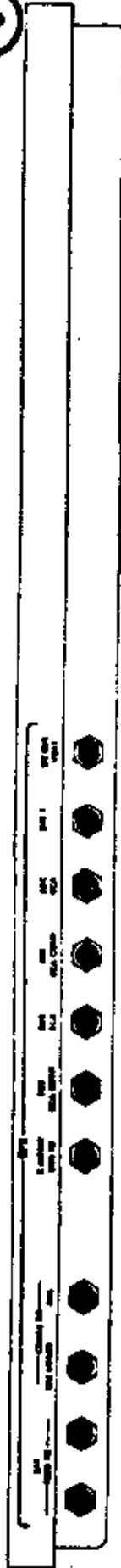


3



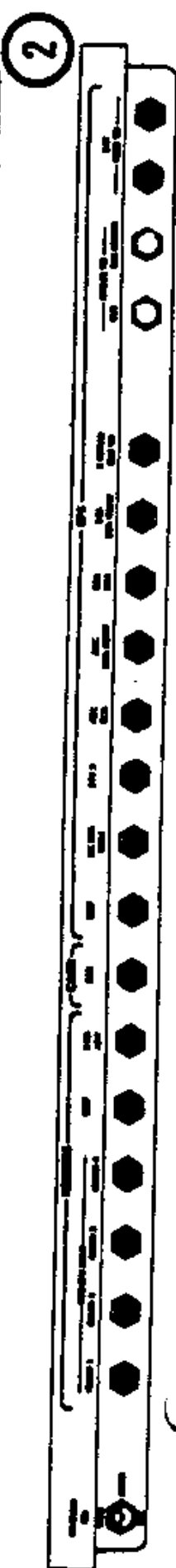
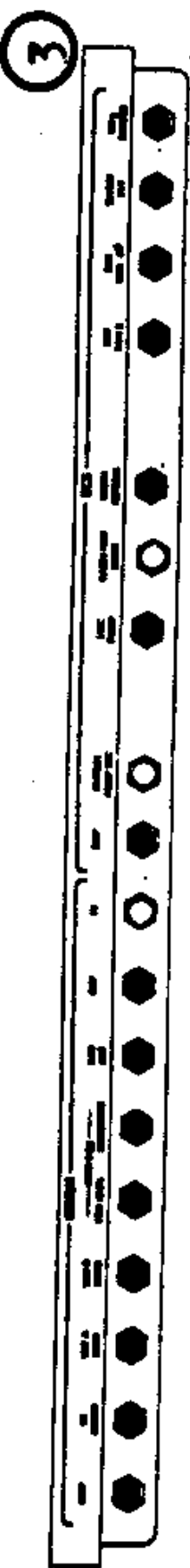
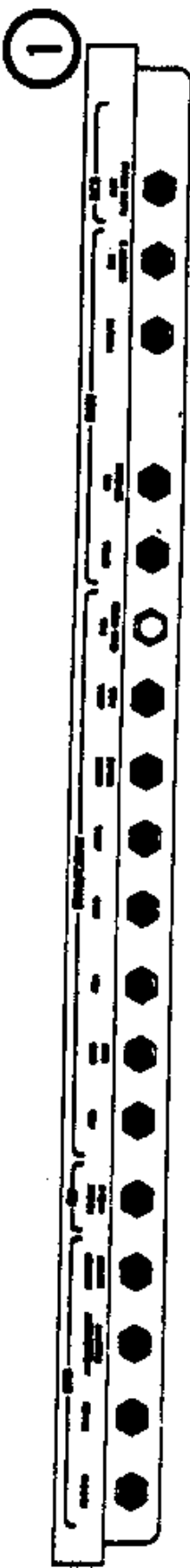
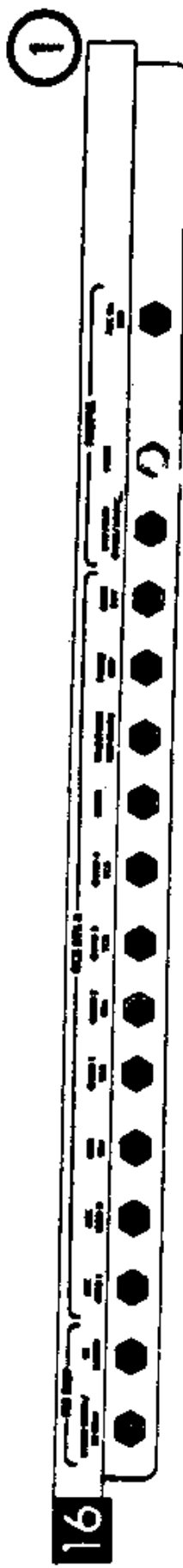
0

OPEN



Basic Date June 16, 1969  
Changed July 2, 1969 D

LM-5



C C



Check APS, RCS, ECS & EPS

TIG-5 BAT 2,4 - OFF/RESET, tb-bp  
DES BATS - DEADFACE, tb-bp

If tb-bp

CB(11) EPS: DES ECA-OPEN  
: DES ECA CONT-OPEN

CB(16) EPS: DES ECA-OPEN  
: DES ECA CONT- OPEN

Check APS START Card

TIG-2 CAMERA ON

Check APS Configuration Card  
\*400 + 1E Guid Steering

TIG-1 MASTER ARM - ON  
\*500 R

TIG-35 DSKY BLANKS

TIG-30 06 74 \_\_\_\_\_ TFI  
\_\_\_\_\_ YAW  
\_\_\_\_\_ PITCH

TIG-05 ABORT STAGE - PUSH  
ENG ARM - ASC  
PRO

NO IGN:  
GUID CONT - AGS  
NO IGN: GUID CONT-P&NS  
ENGINE START - PUSH

ENGINE START - PUSH

Basic Date June 16, 1969  
Changed JULY 12, 1969 "J"

EMERGENCY LIFT-OFF

1 Bat 5&6: NORM - ON tb-gray  
BAT 1&3 - OFF/RESET tb-bp

2 DES H20 - CLOSE  
WATER TANK SEL - ASC  
ASC H20 - OPEN  
DES 02 - CLOSE  
#1 ASC 02 - OPEN  
CABIN REPRESS - CLOSE

3 CLOSE ALL CB's EXCEPT:

CB(11) STAB/CONT: DECA PWR - OPEN  
ECS: CABIN FAN 1 - OPEN  
PGNS: LDG RDR - OPEN  
STAB/CONT: AEA - OPEN  
CB(16) PROPUL: PQGS - OPEN  
STAB/CONT: DES ENG OVRD - OPEN  
COMM: TV - OPEN  
ECS: GLYCOL PUMP SEC-OPEN  
CABIN FAN CONT-OPEN  
EPS: CROSS TIE BUS - OPEN  
: CROSS TIE BAL LOADS-OPEN

1 Perform P-27 Update  
(REFSMAT/STATE VECTOR)

AGS ACTIVATION

1 AGS STATUS - OPERATE (Master Alarm,  
AGS Warning Lt-ON)  
02/H20 QTY MON - C/W RESET Then ASC 1  
(AGS Warning Lt - OFF)

ALIGN PGNS

P57E

04 06 00001  
00004 LANDING SITE

PRO

06 34 00000,00000,00000 Present Time

PRO

05 06 00010  
00001 REFSMAT & Gravity  
00110

PRO

<p>IF TIME PERMITS: Don Helmets And Gloves SUIT GAS DIVERTER -PULL/EGRESS CABIN RELIEF-AUTO PRESS REG A&amp;B-EGRESS</p>
--

EMERGENCY LIFT-OFF

Basic Date June 16, 1969  
Changed July 3, 1969 D

V16 N20E ICDU Angles  
Monitor Gravity Measurement  
No ATT Lt - ON, Then OFF, Twice

KEY REL

06 04 + \_\_\_\_\_ Gravity Err Angle  
PRO

06 22 ICDU Angles  
PRO  
NO ATT LT - ON, Then OFF

06 05 Angular Error/Difference  
PRO

06 93 Gyro Torquing Angles  
PRO (Monitor Gyro Torquing)

50 25 00014  
V34E

AGS INITIALIZATION

1 V16 N65E  
16 65 LGC Time

2 Compute AGS Time (GET - 90:00:00)  
\_\_\_\_\_ (.1min)

\*377 + \_\_\_\_\_  
\*ENTR At 90 + \_\_\_\_\_

3 V47E  
F 06 16

4 \*414+1E  
PRO

5 \*414R (+0)  
6 F 50 16 Downlink Complete, PRO

7 \*400+3  
8 413+1E

*240	_____	E X Position Comp
*262	_____	E Z Velocity Comp
*254	_____	E Epoch Time
*414+2E	Nav. Initial via DEDA	

EMERGENCY LIFT-OFF

Basic Date June 16, 1969  
Changed July 8, 1969 G

TARGET PGNS

- 1 V77E  
GUID CONT - PGNS  
MODE CONT (BOTH) - AUTO
  
- 2 P 12 E  
06 33 \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ TIG ASC  
PRO
  
- 06 76 \_\_\_\_\_ VH FINAL  
\_\_\_\_\_ HDOT FINAL  
\_\_\_\_\_ XRNG  
PRO
  
- 06 74 \_\_\_\_\_ TFI  
\_\_\_\_\_ YAW  
\_\_\_\_\_ PITCH

TARGET AGS

- 1 \*232 + \_\_\_\_\_  
\*465 + \_\_\_\_\_  
\*225 + \_\_\_\_\_  
\*226 + \_\_\_\_\_  
\*410 + 0  
\*411 + 1  
MASTER ARM-ON  
ASC He SEL-BOTH  
ASC He PRESS-FIRE  
MASTER ARM-OFF  
SYS A&B ASC FEED 2(2) - OPEN  
SYS A&B MAIN SOV (2) - CLOSE  
CRSFD - OPEN

ENABLE CONTROLS

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

Basic Date June 16, 1969  
 Changed July 8, 1969 G

68

CONFIGURE COMM

1 P = \_\_\_\_\_ (+49)  
 Y = \_\_\_\_\_ (-35)  
 TRACK MODE - AUTO  
 VHF A: XMTR - VOICE/RNG  
           RCVR - ON  
 VHF B: RCVR - ON  
 AUDIO (BOTH): VHF A - T/R  
                   VHF B - RCV  
BEGIN FINAL COUNTDOWN

TIG-5:00  
 BATS 2&4 - OFF/RESET tb-bp  
 DES BATS - DEADFACE tb-bp  
 Check APS START Card

TIG-2:00  
 \*400 + 1

TIG-1:00  
 MASTER ARM - ON  
 \*500 R

TIG-:35  
 DSKY BLANKS

TIG-:30  
 06 74 \_\_\_\_\_ TFI  
                   \_\_\_\_\_ YAW  
                   \_\_\_\_\_ PITCH

TIG-:05  
 ABORT STAGE-PUSH  
 ENG ARM-ASC  
 PRO

NO IGN:
GUID CONT - AGS
NO IGN: <del>GUID CONT - P&amp;MS</del>
ENG START - PUSH

ENGINE START - PUSH



Basic Date June 16, 1969  
 Changed July 7, 1969

LM-5

69