FINAL EVA PROCEDURES
APOLLO 11

MAY 26, 1969

PREPARED BY
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TECHNICAL LIBRARY
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
APOLLO 11 EVA PROCEDURES

MAY 26, 1969

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1.0 PURPOSE

This document contains the detailed crew procedures to support planned and contingency EVA on Apollo 11.

These procedures are under the control of the Crew Procedures Change Board. Requests for procedural changes should be submitted on the Crew Procedures Change Request (MSC Form 482) to the EVA Branch, Flight Crew Support Division, CF25.
SECTION 2.1 LM PREP FOR EVA

LM PREP FOR EVA

CREW STATUS (2 min)

BTH
- UCTA empty
- Helmets stowed
- Gloves stowed
- PGA flow diverter valves – horizontal
- LM H2O hose connected to PGA
- Inspect PGA Zipper - Verify lock - lock

SYSTEMS PREPARATION FOR EGRESS (5 1/2 min)

BTH
- Verify status of LM caut and warn lt
- Adjust interior ltg to desired level
- Read Radiation Dosimeter - report to MSFN
- Enable DESA as required

CDR
- Perform status check with CMP

PREPARATION FOR EGRESS (9 min)

BTH
- Clear PGA pockets - stow adjustable
- 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 to (TBD)

CDR
- Remove clamp and bracket from LMP's utility light, stow clamp and bracket on AOT guard, and secure utility light and cord to AOT guard
- Unstow RCU/camera brkts (2) from lower overshoecomp and place on engine cover
LMP
- Install 16mm camera on univ brkt
- Mount 16mm camera on RH crash bar
- Route cable around brkts to remove slack
- Camera seq C/B - close
- Verify camera operation
- Remove 2 16mm mags/stow in ISA botm pocket
- Remove 60mm Hasselblad & 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
- Attach hndl to HBLAD
- take phot - ver cam ops & stow in ISA top pkt (Cam fail - try manual)

LMP
- Ass 80mm HBLAD-attach RCU/camera brkt- take phot- ver cam ops & rstw in RHSSC
- Unstw LEC/TTHR pkg fm RHSSC - Remv LEC, waist TTHR, & 2 hks - Restw LEC/TTHR pkg att LEC hks to 60mm HBLAD & pulley to PLSS upr donng sta pin & stw LEC bag in ISA top pkt - Att waist tether to 80mm HBLAD, hooks to tiedwn
- Unstow YO YO from food bag (rite side) and stow in ISA mid pkt
- Position mirror as desired
- Secure util lt & cable for PLSS/OPS donning

PLSS/OPS DONNING (58 1/2 min)

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 02 press 5880 ± 500 psia & 02 hose nozzle locked
- Open OPS 02 Shut off valve and verify 02 flow and regulation 3.70±0.30 psig
- Press heatr tst butt = Ver at least one lt on
- Close OPS 02 shut-off valve
- Unstw OPS antenna lead-snap thermal covers
- Stow OPS on cabin floor
CDR  Stow brackets with armrest in SRC rack
BTH  Remove and stow PGA plugs in flite data file
CDR  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 LEVVA's and EV gloves from helmet
     bags and stow aft of engine
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
LMP  Move PLSS fm floor to engine cover
     Route LM umbilicals behind PGA
BTH  Attach OPS to top of PLSS, verify locked
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 02 & 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 02 hose nozzle
BTH  Secure PLSS thermal cover
     Remv YO YO fm ISA Midl pkt & attch 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 02 hoses and verify lock
      Unstow RCU

   **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 and lock

BTH  Attach RCU to PLSS straps and PGA

LMP  Verify these PLSS switch & valve positions
      Diverter vlv - min (up)
      02 shutoff valve - off (up)
      Feedwater valve - closed (up)
      Pump - off
      Fan - off
      Mode sel sw - 0 (off)

BTH  Remv PLSS fm rechrg sta & put on cab flr
      Transfer helmets to recharge station
      Place PLSS on engine cover
      Route LM umbilicals in front of PGA

BTH  Attach OPS to top of PLSS, verify locked

LMP  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 02 & H20 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 02 hose nozzle
      Secure PLSS thermal cover

CDR  Hold PLSS/OPS for donning prep
Turn left and back into PLSS
Don PLSS/OPS by securing PLSS upper and lower straps to PGA
Unstow RCU, hold, and turn right to face LMP
Connect PLSS O2 hoses and verify 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 and lock
Attach RCU to PLSS straps and PGA

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)

PLSS/EVCS ELECTRICAL CHECKOUT (6 1/2 min)

LMP LMP Audio panel -
S-band - T/R
ICS - T/R
Relay - on
Mode - VOX
VHF A - off
VHF B - T/R

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

VHF ANT SEL sw - EVA
Comm panel -
  VHF A XMTR - off
  VHF A RCVR - on
  VHF B XMTR - voice
  VHF B RCVR - off
  Squelch A-noise threshold + 1/2 div
  Squelch B-noise threshold + 1/2 div
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
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)
Read PLSS 02 bottle press
Verify voice comm with CDR and MSFN

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

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
LMP
PLSS mode sel sw - A
PLSS warning tone - on (10 sec)
CDR
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)
Read PLSS 02 bottle press
Verify voice comm with LMP and MSFN
LMP

LMP audio panel -
VHF A - T/R
VHF B - off
Comm panel -
VHF A XMTR - voice
VHF A RCVR - on
VHF B XMTR - off
VHF B RCVR - on
Verify voice and TM comm with MSFN
Verify voice with CDR
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 and TM comm with MSFN
Verify voice with LMP

BTH
PLSS mode sel sw - AR
PLSS warning tone - on (10 sec)
Verify voice and TM comm with MSFN

CDR
Verify voice with LMP

FINAL EVA EQUIPMENT PREP FOR EGRESS (4 min)

BTH
Unstow OPS 02 hose and OPS 02 actuator
Attach 02 actuator to RCU
Snap OPS 02 hose to side of PLSS with
RCU connector flap
FINAL SYSTEMS PREP FOR EGRESS  
(4 min)

NOTE
Do not proceed with the following
until T-(TBD) min from sched cabin
depressurization

BTH  Confirm "GO" for cabin depress with MSFN
LMP  Cabin fan cont C/B - open
Verify cabin repress C/B - close
Suit fan Delta-P C/B - open
Des H20 vlv - close

CDR  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 ECS caut lt & H2O sep comp caut lt on

PREP FOR CABIN DEPRESS  
(25 min)

CDR  B suit isol vlv - suit disc
BTH  Disconnect LM O2 hoses
Connect OPS O2 hose to RH PGA blue connector
Retrv purg vlv's fm mid ISA pkt-verif clos &
  lkd-inst1 in RH PGA red cnctr - ver lkd.
LMP  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
PLSS fan - on

CDR  Place LMP's helmet on LMP, and "LOCK"
LMP  Verify - RCU vent window - clears
CDR  Remove EVVA from engine cover, verify
  EV visor up, and attach to LMP's helmet
Unstow helmet
Verify feed port cover installed and locked
  apply anti-fog to helmet
Position mikes
Verify PLSS mode sel sw - AR
PLSS fan - on
LMP
Place CDR's helmet on CDR, and "LOCK"

CDR
Verify - RCU vent window - clears

LMP
Remove EVVA from engine cover, verify
EV visor up, and attach to CDR's helmet

CDR
Stow S/suit cklist-unstw hrdsuit cklist
& EVA CARD No. 1 (AOT Guard)

LMP
LCG pump C/B - open

BTH
Disconnect LM H20 hose

LMP
Stow CDR's and LMP's ECS hoses and comm umb

BTH
Connect PLSS H20 hose to PGA

Don EV gloves and "LOCK"

Inspect EMU

Check connectors and lock-locks

CDR
Press reg A - egress

Press reg B - egress

PRESSURE INTEGRITY CHECK

NOTE
Integrity checks to be performed simultaneously

BTH
PLSS 02 shutoff valve - on (down)

Verify -
PLSS warning tone - on (10 sec)
RCU 02 window - O (OPS act-abort)

Verify -
RCU press window - clears
RCU 02 window - clears

Verify 3.85+0.15 psig on PGA gage

PLSS 02 shutoff valve - off (up)

Read PGA gage & monitor press decay
one min-exercise suit joints during decay period

EMU circuit decay not to exceed 0.3 psid

PLSS 02 shutoff valve - on (down) (PLSS HI 02 flow warn may come on)

Verify stable PGA press of 3.85+0.15 psig
Verify PLSS diverter vlv - min (up)

PLSS pump - on

Verify audible notice of pump operation
CABIN DEPRESS

CDR  Cabin repress valve - close
     Monitor PGA cuff gage during cab depress &
     Verif PGA press does not drop blow 4.5 psig

BTH  Monitor PGA cuff gage during cab depress &
     Verif PGA press does not drop blow 4.5 psig

WARNING
If PGA press drops below 4.5 psid,
CDR return dump valve to auto. If
PGA press is below 4.5 psid and de-
caying, LMP activate cabin repress
valve when PGA press drops to 3.7 psid

LMP  FWD hatch relief/dump vlv-dump

CDR  Monitor cabin pressure to 3.5 psia
     Verify cabin pressure at 3.5 psia, and
     LM suit circuit pressure 3.6 to 4.3 psia

LMP  At 3.5 psia, place forward hatch relief
     and dump valve to auto

BTH  Verify PGA press above 4.5 psig and de-
caying slowly

LMP  Fwd Hatch relief/dump vlv - dump

BTH  Verify -
     PLSS warning tone - on (10 sec)
     RCU H20 window - A (abort)

CDR  Monitor cabin pressure decrease to
     0 psia, and verify LM suit circuit 3.6
     - 4.3 psia

BTH  Verify PGA press >4.5 psig & decaying slowly
HATCH OPENING

LMP Rotate hndl on fwd hatch to unlock position
   Partially open forward hatch
   Fwd hatch relief/dump valve - auto
BTH PLSS feedwater shutoff valve - open (down)
LMP Pull forward hatch to full open
BTH After RCU H2O window clears (~4min), place PLSS
diverter valve to max cooling (down).
   Rest until cooling sufficient
   Verify stable PGA pressure of 3.85±0.15 psia
   Verify all RCU windows clear
LMP Verify LM suit ckt maintaining press of 3.6-4.3
   psia
BTH Verify status of LM caut and fail lt
   Release PLSS antenna
CDR Face aft to commence egress
   Attach LEC to PGA
LMP Attach pully to overhead handhold
BTH Lower EV visor as required

SECTION 2.2 EVA

EVA

Reference Lunar Surface Operations Plan
SECTION 2.3 LM POST EVA AND EQUIPMENT JETTISON

LM POST EVA AND EQUIPMENT JET

EXISTING CONDITIONS -

1. SRC'S stacked in SRC rack
2. 60mm HBLAD mag & 80mm HBLAD & CSC Cassette in SRC rack
3. ECS canister and bracket, OPS Brackets, LEC, 60mm HBLAD and armrests (3) jettisoned during EVA

HATCH CLOSING

BTH PLSS feedwater valve - closed (up)
Stow PLSS antenna
LMP Close forward hatch

CABIN REPRESS

LMP Verify fwd hatch relief/dump valve - auto
CDR Verif ovrhd hatch relief/dump valve - auto

NOTE:

PLSS HI O2 flow and LOW PGA press warnings may come on during repress. If PLSS O2 less than 150 psi, manually control cabin repress to maintain positive PGA pressure

CDR Cabin repress valve - auto
Press Reg A - cabin
Verify Master Alarm - on
Cabin warn lt - on
Verify cabin repress vlv opens
Master Alarm PB/LT - reset
Press Reg B - cabin

BTH Verify cabin press increasing normally
CDR Verify cabin repress valve closes
Verify cabin warn lt - off

BTH Monitor cabin pressure until it stabilizes at 4.8 ± 0.2 psia
PLSS 02 shutoff valve - off(up)
POST EVA SYSTEMS CONFIGURATION

CDR
Suit fan 1 C/B - close
LMP
Suit fan DELTA-P C/B - close
CDR
Verify ECS caut lt and H2O sep comp
   Caut lt goes off
BTH
Open purge vlv if req & equal PGA
   & Cabin pres. Close purge vlv.
   Doff gloves as desired
   Disconnect RCU from PLSS straps and PGA
   Disconnect OPS O2 hose from PGA
   Disconnect purge valves from PGA
LMP
Stow purge valves in ISA middle pockt
BTH
Unstw LM O2 hoses/connect to RH PGA
   Connectors & lock (red/red blue/blue)
CDR
LMP suit ISOL vlv - suit flow
   CDR suit ISOL vlv - suit flow
BTH
PLSS pump - off
   PLSS fan - off
   Disc PLSS H2O hose and connect LM H2O hose
LMP
LCG pump C/B - close
   SE audio C/B - open
   PLSS mode sel sw - O(off)
CDR
Disc LMP'S PLSS elec umbil from PGA
   Connect LMP'S LM comm cable to PGA
LMP
SE audio C/B - close
   Biomed sw - right
CDR
CDR audio C/B - open
   PLSS mode sel sw - O(off)
LMP
Disc CDR'S PLSS elec umbil from PGA
   Connect CDR'S LM comm cable to PGA
CDR
CDR audio C/B - close
BTH
Comm sws - as desired
PLSS/OPS DOFFING

LMP
Disconnect OPS 02 actuator from RCU

WARNING
Before disconnecting RCU from PLSS,
all electrical PLSS controls must be in off position -
pump - off
fan - off
mode sel sw - 0 (off)

CDR
Disconnect LMP RCU from PLSS/place on eng cvr

LMP
Disconnect LMP's PLSS 02 hoses from PGA
Remove lower then upper PLSS straps from PGA-XFER to eng cvr-
route LM umb in front of PGA
Stow OPS 02 actuator and hose
Stow PLSS umbilicals
Stow YO YO in SRC rack
Remove lower PLSS straps/stow in ISA mid pkt
Stow PLSS/OPS on cabin floor

CDR
Disconnect OPS 02 actuator from RCU

WARNING
Before disconnecting RCU from PLSS,
all electrical PLSS controls must be in off position -
pump - off
fan - off
mode sel sw - 0 (off)

LMP
Disconnect CDR RCU from PLSS/place on eng cvr
Disconnect CDR's PLSS 02 hoses from PGA
Remove lower then upper plss straps from PGA-XFER to eng cvr-
route LM umb in front of PGA
Stow OPS 02 actuator and hose
Stow PLSS umbilicals
Remove lower PLSS straps/stow in ISA mid pkt
Stow PLSS/OPS on cabin floor
FINAL SYSTEMS CONFIGURATION

BTH
Verify status of LM sys for cabin depress
ECS ind pwr fail lts(3) - off
Comp caut lts(4) - off
GLYCOL temp ind - 32 deg to 50 deg F
GLYCOL press ind - 15 to 30 psia
O2 quantity ind - >20%

Read Radiation Dosimeter - report to MSFN

PREP FOR EQUIPMENT JETTISON

BTH
Remove OPS from PLSS, perform OPS checkout
and place OPS on engine cover
Perform feedwater collection procedures

CDR
Remove CDR RH armrest/stow in recharge stat
Remove LHSSC and place on engine cover
Stow YO YO, EVA hooks(2), and RCU's(2)
in LHSSC
Remove mag and waist tether fm HBLAD and
leave in SRC rack
Stow Hasselblad, RCU/camera bkt and handle
in LHSSC

BTH
Doff lunar overshoes

CDR
Stow lunar overshoes in LHSSC

BTH
Verify/stow the following in LHSSC-
food waste
used defecation collection devices
used EMESIS bags
used small urine collection assy

CDR
Place LHSSC on cabin floor

BTH
Remove PGA protective plugs from Flight Data
File and install in LH PGA connectors
PRESSURE INTEGRITY CHECK

CAUTION
To prevent overheat of suit circuit fan and/or brktrh of HTS prim sublimator, the ARS/PGA shall not be maint at elev press >5 min

BTH
Verify/perform-PGA diverter valves-Horizontal
 Helmets and IV golves donned
 Check connections and lock-locks

CDR
Suit circuit relief vlv - close

LMP
Press reg A - close
Press reg B - direct O2
Monit LM suit ckt press ind til suit ckt press <8.85 psia & immed set press reg B - close

BTH
Read PGA cuff gage/monitor press decay for 1 min-xrcise suit joints during decay period
LM suit circuit decay not to exceed 0.3 psig

CDR
Suit circuit relief valve - auto

LMP
Press reg B - egress
Press reg A - egress

CABIN DEPRESS

CDR
Place one PLSS on engine cover and second PLSS on mid-section step
Place LHSSC on engine cover

LMP
Cabin repress valve - close

BTH
Monitor suit circuit press during cabin depress and verify press 3.6 - 4.3 psia

LMP
Fwd hatch relief/dump vlv-dump

CDR
Monitor cabinet press decrease to 3.5 psia

LMP
At 3.5 psia place forward hatch relief and dump valve to auto

CDR
Verify cab press at 3.5 psia & LM suit ckt press 3.6 - 4.3 psia & decay slwly

LMP
Rot hndl on fwd hatch to unlock position

CDR
Monitor cabinet pressure decrease to 0 psia and verify LM suit circuit 3.6 - 4.3 psia
HATCH OPENING

**LMP**  Partially open forward hatch
          Fwd hatch relief/dump vlv - auto
          Pull forward hatch to full open

**BTH**  Lower EV visor at required

EQUIPMENT JETTISON

**CDR**  Jettison the following -
          (Verify items clear ascent stage)
          PLSS on mid-section step
          PLSS on engine cover
          LHSSC
          armrest(l)

**LMP**  Close forward hatch and lock

CABIN REPRESS

**LMP**  Verify fwd hatch relief/dump vlv - auto
**CDR**  Verify ovrhed hatch relief/dump vlv - auto
**LMP**  Cabin repress valve - auto
          Press reg A - cabin
          Verify Master Alarm - on
          Cabin warn lt - on
          Verify cabin repress valve opens
          Master Alrm PB/lt - reset
          Press reg B - cabin

**BTH**  Verify cabin press increasing normally
**LMP**  Verify cabin repress valve closes
          Cabin warn lt - off

**BTH**  Monit cab press until stabil at 4.8 ± 0.2 psia
POST EVA SYSTEMS CONFIGURATION

LMP  Cabin gas return valve - auto
     Suit gas diverter valve - cabin (push)
BTH  Doff IV gloves and place on engine cover
     Doff helmets and EV visors
LMP  Stow helmet with visor/gloves on mid-sec step
     Cabin fan 1 C/B - close
LMP  Cabin fan cont C/B - close

FINAL SYSTEMS CONFIGURATION

BTH  Verify ECS basic(unstaged)
     Verify EPS basic(unstaged)
     Verify Comm basic(unstaged)
LMP  Verify ATT dir cont C/B - open
     Verify ED Master Arm sw - off
     Verify ED stage sw - safe
CDR  Verify Eng Arm sw - off
     Verify PGNS sw - off
POST EVA CABIN CONFIGURATION

LMP
Stow HBLAD mag(2), waist tether & lwr PLSS STRPS(4)RHSSC

CDR
Stow CSC Cassette in ISA

BTH
Transfer OPS to cabin floor

CDR
XFER to aft cabin area (move SRC's as req'd)

LMP
Secure OPS thermal covers and stow OPS on cabin floor

CDR
Stow SRC's in SRC rack
Remove CSRC from PGA and stow in lower lunar overshoe compartment

Stow LM EVA antenna
Snap RCU stowage flaps
XFER helmet stowage bags to engine cover
Transfer to CDR's station

LMP
Remove 16mm camera from crash bar and stow bracket on AOT guard
Remove film magazine from camera and stow in 16mm magazine container in RHSSC
Install new magaz & adj settings to (TBD)
Install camera on bracket over RH window

CDR
Stow purge valves, EV gloves, and EV visors in helmet bags
Snap helmet stowage bags to engine cover
Attach light to clamp & brkt on AOT guard and position as req'd
Stow EVA onboard data in Flite Data File Cont
### 3.1 LM PREP FOR EVA - ONE MAN EVA

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>CREW STATUS</td>
<td>Perform Planned</td>
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<tr>
<td>SYSTEMS PREP FOR EGRESS</td>
<td>Perform Planned</td>
<td></td>
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<tr>
<td>PREP FOR EGRESS</td>
<td>Perform Planned</td>
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<tr>
<td>PLSS/OPS DONNING</td>
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<tr>
<td><strong>VERIFY/PERFORM</strong></td>
<td><strong>EGRESSING CREWMAN</strong></td>
<td><strong>OTHER</strong></td>
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<tr>
<td>1 Crew Stations</td>
<td>At CDR's</td>
<td>At LMP's</td>
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<tr>
<td>2 EVA Hook</td>
<td>Don</td>
<td>LHSSC</td>
</tr>
<tr>
<td>3 OPS(Perform Checkout)</td>
<td>OPS NO GO FOR EVT</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>Engine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SRC Rack</td>
</tr>
<tr>
<td>4 Armrests (3)</td>
<td>In OPS Brackets, SRC Rack</td>
<td>Cabin Floor</td>
</tr>
<tr>
<td>5 OPS Brackets</td>
<td>SRC Rack</td>
<td></td>
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<tr>
<td>6 PGA Connect Plugs</td>
<td>Flight Data File</td>
<td>LH PGA</td>
</tr>
<tr>
<td>7 LM EVA Antenna</td>
<td>Deploy</td>
<td></td>
</tr>
<tr>
<td>8 RCU-RCU NO GO FOR EVT</td>
<td>N/A</td>
<td>ON LHSSC</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>RCU Comp</td>
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<tr>
<td>9 Lunar Boots</td>
<td>Don</td>
<td>LHSSC</td>
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<tr>
<td>10 Purge Valves</td>
<td>ISA Mid Pkt</td>
<td>HSB</td>
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<tr>
<td>11 ECS Cannister and Bkt</td>
<td>Engine Mid Pkt</td>
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<tr>
<td>12 LEVVA</td>
<td>Engine Cover</td>
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<td>13 EV Gloves</td>
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<td>HSB</td>
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<td>14 Anti-Fog</td>
<td>Temp Stow</td>
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<tr>
<td>15 HSB</td>
<td>Top Lunar Boot Compt</td>
<td>Engine</td>
</tr>
<tr>
<td>16 CSRC</td>
<td>PGA Leg Pkt</td>
<td>N/A</td>
</tr>
<tr>
<td>17 PLSS Straps</td>
<td>PLSS NO GO For EVT</td>
<td>ISA Mid</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>On PLSS-Exchange</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If Req'd</td>
</tr>
<tr>
<td>18 Helmets</td>
<td>Over RCU Stowage</td>
<td></td>
</tr>
</tbody>
</table>
19 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 H2O
   UMB - UNSTOWED
   Battery - CONNECTED
   RCU Connec Cover - In LHSSC
   OPS Checkout Gage <2.5 psig
   OPS O2 Hose Nozzle - UNSTOWED

20 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
   Diverter VLV - MIN (up)
   O2 Shutoff VLV - OFF (up)
   Feedwater - OFF (up)
   Pump - OFF
   Fan - OFF
   MODE SEL sw - 0 (OFF)
PLSS/EVCS ELECTRICAL CHECKOUT

Set LMP Audio panel -
  S-band - T/R
  S-band tw-as desired
  ICS - T/R
  Relay - off
  Mode - VOX
  VOX sens - max increase
  VHF A - RCV
  VHF B - T/R

Set CDR audio panel -
  S-band - off
  ICS - T/R
  Relay - on
  Mode - VOX
  VHF A - off
  VHF B - T/R

Set VHF ANT SEL sw - EVA

Set comm panel (12) -
  VHF A XMTR - off
  VHF A RCVR - on
  VHF B XMTR - voice
  VHF B RCVR - off
  Squelch A - noise threshold + 1/2 div
  Squelch B - noise threshold + 1/2 div

Biomed sw - right
CDR Audio C/B - open
Disconnect LM comm - connect plss comm to PGA
CDR Audio C/B - close
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)
  Read PLSS 02 bottle press
  Voice comm with other crewman and MSFN
Set LMP Audio panel -
  VHF A - T/R
  VHF B - RCV

Set CDR Audio panel -
  VHF A - T/R
  VHF B - off

Set comm panel (12) -
  VHF A XMTR - on
  VHF A RCVR - off
  VHF B XMTR - off
  VHF B RCVR - on

PLSS mode sel sw - A

Verify -
  PLSS warning tone - on (10 sec)
  Voice and TM comm with MSFN
  Voice with other crewman

FINAL EVA EQUIPMENT PREP FOR EGRESS

Unstow OPS 02 Hose and Actuator
Attach 02 Actuator to RCU
Snap OPS 02 Hose to PLSS side

FINAL SYSTEMS PREP FOR EGRESS

NOTE
Do not proceed until
(TBD) min from schedule
  cabin depress

Confirm "GO" for cabin depress with MSFN
Cabin fan 1 C/B - open
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
PREP FOR CABIN DEPRESS

EGRESSING CREWMAN (Other Crewmen Assist) -
   Suit isol vlv - suit disc
   Disconnect LM O2 hoses
   Connect OPS O2 hose to RH PGA blue conn
   Get purge vlv from ISA mid pkt - verify closed -
   Install in RH PGA red conn - verify locked -
   PGA flow diverter vlv - 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 EVVA to helmet
   Don EV gloves and "lock"

OTHER CREWMEN -
   Verify helmet feed port cover installed and locked -
   Apply anti-fog
   Position mikes
   Don Helmet and "lock"
   Stow soft/suit checklist - unstow hardsuit checklist and EVA card NO. 1 (AOT GUARD)

LCG PUMP C/B - OPEN
FOR EGRESSING CREWMEN -
   DISCONNECT LM H2O HOSE
   STOW LM HOSES
   CONNECT PLSS H2O HOSE

LCG PUMP C/B - CLOSE
DON IV GLOVES AND "LOCK"
BOTH - INSPECT EMU - CHECK ALL CONNECTIONS AND LOCK - LOCKS
PRESSURE INTEGRITY CHECK

ARS/PGA- CAUTION
TO PREVENT OVERHEATING SUIT
CKT FAN AND/OR BREATHTHRU OF
HTS PRIM SUBLIMATOR, THE ARS/
PGA SHALL NOT BE MAINTAINED AT
ELEVATED PRESS >5 MIN

SUIT CIRCUIT RELIEF VALVE - CLOSE
PRESS REG A - CLOSE
PRESS REG B - DIRECT O2
MONITOR LM SUIT CKT PRESS IND UNTIL
SUITS CKT PRESS ~8.85 PSIA & IMMEDIATE SET
PRESS REG B CLOSED

READ PGA CUFF GAGE/MONITOR PRESS DECAY
FOR 1 min - EXERCISE SUIT JOINTS DURING
DECAY PERIOD, LM SUIT CIRCUIT DECAY NOT
TO EXCEED 0.3 PSIG
SUIT CIRCUIT RELIEF VALVE - AUTO
PRESS REG B - CABIN
PRESS REG A - CABIN

PLSS/OPS/PGA-

PLSS 02 SHUTOFF VALVE - ON (DOWN)

VERIFY -
PLSS WARNING TONE - ON (10 sec)
RCU 02 WINDOW - 0 (OPS ACT - ABORT)

VERIFY -
RCU PRESS WINDOW - CLEARS
RCU 02 WINDOW - CLEARS
3.85 ± 0.15 psig on PGA gage
PLSS 02 SHUTOFF VLV - OFF (up)
READ PGA GAGE & MONITOR PRESS DECAY 1 min
EXERCISE SUIT JOINTS DURING DECAY PERIOD
EMU CIRCUIT DECAY NOT TO EXCEED 0.3 PSID
PLSS 02 SHUTOFF VALVE - ON (DOWN)
(PLSS Hi 02 FLOW WARN MAY COME ON)
VERIFY - STABLE PRESS OF 3.85 ± 0.15 psig
- PLSS DIVERTER VLV - MIN (up)
PLSS PUMP - ON
VERIFY - AUDIBLE NOTICE OF PUMP OPERATION
PRESS REG A - EGRESS
PRESS REG B - EGRESS

CABIN DEPRESS

CABIN REPRESS VLV - CLOSE
EGRESSING CREWMAN - MONITOR PGA CUFF
GAGE DURING CABIN DEPRESS AND VERIFY
PGA PRESS >4.5 psig

WARNING
IF PGA PRESS DROPS BELOW 4.5 PSID, RETURN DUMP VALVE TO AUTO
IF PGA PRESS IS BELOW 4.5 psid and DECAYING, ACTIVATE CABIN REPRESS VALVE WHEN PGA PRESS DROPS TO 3.7 psid

FWD HATCH RELIEF/DUMP VLV- DUMP
MONITOR CABIN PRESS TO 3.5 PSIA
AT 3.5 PSIA, FWD HATCH RELIEF AND DUMP VALVE - AUTO
VERIFY - CABIN PRESS - 3.5 psia
- LM SUIT CKT PRESS -3.6-4.3 psia, DECAYING SLOWLY
- PLSS/OPS/PGA >4.5 psig, DECAYING SLOWLY
FWD HATCH RELIEF/DUMP VLV - DUMP
VERIFY - PLSS WARNING TONE - ON (10 sec)
RCU H2O WINDOW -A (ABORT)
MONITOR CABIN PRESS DECREASE TO 0 PSIA
VERIFY - LM SUIT CKT PRESS - 3.6-4.3 psia
- PLSS/OPS/PGA > 4.5 psig, DECAYING SLOWLY

HATCH OPENING

ROTATE HANDLE ON FWD HATCH TO UNLOCK
PARTIALLY OPEN FWD HATCH
FWD HATCH RELIEF/DUMP VLV - AUTO
PLSS FEEDWATER SHUTOFF VLV - OPEN (Down)
PULL FWD HATCH FULL OPEN
AFTER RCU H2O WINDOW CLEARS (~4 min.), PLACE
PLSS DIVERTER VLV - MAX COOLING (Down)
REST UNTIL COOLING SUFFICIENT
VERIFY - PLSS/OPS/PGA PRESS -3.85 ± 0.15
PSIA, STABLE
- ALL RCU WINDOWS - CLEAR
VERIFY - LM SUIT CKT MAINTAINING PRESS -
3.6-4.3 psia
- STATUS OF LM CAUT AND FAIL LTS
RELEASE PLSS ANTENNA
FACE AFT - ATTACH LEC TO PGA
ATTACH PULLEY TO OVERHEAD HANDHOLD
LOWER EV VISOR AS REQUIRED

SECTION 3.2 ONE MAN EVA

ONE MAN EVA

REFERENCE LUNAR SURFACE OPERATIONS PLAN -
CONTINGENT EVA 1 AND 2
SECTION 3.3 LM POST EVA AND EQUIPMENT JETTISON - ONE MAN EVA

LM POST EVA AND EQUIPMENT JET

EXISTING CONDITIONS-

(1) SRC'S STACKED IN SRC RACK IF PREPARED
(2) 60MM HBLAD MAG & 80MM HBLAD IN SRC RACK
(3) ECS CANSTR & BRACKET, OPS BRACKETS, LEC, 60MM HBLAD, ARMRESTS (3), PLSS,OPS,OR RCU, WHICH IS "NO GO" FOR EVT JETTISONED DURING EVA

HATCH CLOSING

PLSS FEEDWATER VALVE - CLOSED (up)
STOW PLSS ANTENNA
CLOSE FORWARD HATCH

CABIN REPRESS

VERIFY FWD HATCH RELIEF/DUMP VALVE - AUTO
VERIFY OVRHD HATCH RELIEF/DUMP VALVE - AUTO

NOTE
PLSS HI 02 FLOW & LOW PGA PRESS WARN MAY COME ON DURING REPRESS. IF PLSS 02 LESS THAN 150 PSI, MANUALLY CONTROL CABIN REPRESS TO MAINTAIN POSITIVE PGA PRESSURE
CABIN REPRESS VALVE - AUTO
PRESS REG A - CABIN
VERIFY MASTER ALARM - ON
CABIN WARN LT - ON
VERIFY CABIN REPRESS VLV - OPENS
MASTER ALARM PB/LT - RESET
PRESS REG B - CABIN
VERIFY CAB PRESS INCRSNG NORMAL
VERIFY CABIN REPRESS VLV - CLOSES
VERIFY CABIN WARN LT - OFF
MONITOR CABIN PRESSURE UNTIL
IT STABILIZES AT 4.8 ± 0.2 PSIA
PLSS 02 SHUTOFF VALVE - OFF (up)

POST EVA SYSTEMS CONFIGURATION
OPEN PURGE VLV IF REQ'D & EQUAL
PGA & CAB PRESS CLOSE PURGE VLV
DOFF GLOVES AS DESIRED
DISC RCU FM PLSS STRAPS & PGA
DISCONNECT OPS O2 HOSE FROM PGA
DISCONNECT PURGE VALVE FROM PGA
STOW PURGE VLV IN ISA MID PKT
UNSTOW LM O2 HOSES AND CONNECT
TO RIGHT SIDE PGA CONNECTORS
AND VERIFY LOCKED (RED TO RED,
BLUE/TO BLUE)
CDR SUIT ISOL VLV - SUIT FLOW
PLSS PUMP - OFF
PLSS FAN - OFF
LCG PUMP C/B - OPEN
DISCONNECT PLSS H2O HOSE AND
CONNECT LM H2O HOSE
LCG PUMP C/B - CLOSE
CDR AUDIO C/B - OPEN
PLSS MODE SEL SW - 0 (OFF)
DISCT PLSS ELEC UMB FM PGA
CONNECT LM COMM CABLE TO PGA
CDR AUDIO C/B - CLOSE
BIOMED SW - LEFT
COMM SWS - AS DESIRED
PLSS/OPS DOFFING

DISC OPS 02 ACTUATOR FM RCU

WARNING
B4 DISC RCU FM PLSS ALL
ELEC PLSS CONT MUST BE IN
OFF POSITION

PUMP - OFF
FAN - OFF
MODE SEL SW - 0 (OFF)

DISCONNECT RCU FROM PLSS
AND PLACE ON ENGINE COVER
DISC PLSS 02 HOSES FROM PGA
REMV LWR THEN UPR PLSS STRPS
FM PGA-XFER PLSS TO ENG CVR
ROUT LM UMBILICALS IN FRONT
OF PGA
STOW OPS 02 ACTUATOR AND HOSE
STOW PLSS UMBILICALS
REMOVE LOWER PLSS STRAPS AND
STOW IN ISA MIDDLE POCKET
STOW PLSS/OPS ON CABIN FLOOR
CDR AND LMP AT CREW STATIONS (DOFF
HELMETS OR GLOVES, AS REQ'D, IF
CHANGEOVER IS REQ'D)

FINAL SYSTEMS CONFIGURATION

B VERIFY STATUS OF LM SYSTEMS FOR
CABIN DEPRESS
ECS IND PWR FAIL LTS (3) - OFF
COMP CAUT LTS (4) - OFF
GLYCOL TEMP IND - 32 DEG TO 50 DEG F
GLYCOL PRESS IND - 15 TO 30 PSIA
02 QUANTITY IND - >20%

B READ RADIATION DOSIMETER - REPORT
TO MSFN
PREP FOR EQUIPMENT JETTISON

REMOVE OPS FROM PLSS, PERFORM OPS CHECK & PLACE OPS ON ENG COVER
PERFORM FEEDWATER COLLECTION PROCEDURES
C REMOVE CDR RH ARMREST AND STOW IN RECHARGE STATION (OR ENGINE COVER)
C REMOVE LHSSC AND PLACE ON ENGINE COVER
C STOW YOYO, EVA HOOKS (2) AND RCU'S (2) IN LHSSC
C REM MAG AND WAIST TETHER FM HBLAD & LV IN SRC RCK
C STOW HBLAD, RCU/CAM BRKT & HANDLE IN LHSSC DOFF LUNAR OVERSHOES
C STOW LUNAR OVERSHOES IN LHSSC
B VERIFY/STOW FOLLOWING IN LHSSC FOOD WASTE
USED DEFECATN COLLECTN DEVICES
USED EMESIS BAGS
USED SMALL URINE COLLECTION ASSY
C PLACE LHSSC ON CABIN FLOOR
REMOVE PGA PROTEC PLUGS FM FLITE DATA FILE & INST IN LH PGA CNCTRS
PRESSURE INTEGRITY CHECK

CAUTION
TO PREVENT OVRHEATG SUIT CKT
FAN AND/OR BRKTHRU OF HTS
PRIM SUBL, THE ARS/PGA SHALL
NOT BE MAINT AT ELEV PRESS >
5 MIN
B VERIFY/PERFORM-PGA DIV VLVS - HORIZONTAL
HELMETS AND IV GLOVES DONNED
CHECK CONNECTIONS AND LOCK-LOCKS
C SUIT CIRCUIT RELIEF VLV - CLOSE
L PRESS REG A - CLOSE
L PRESS REG B - DIRECT O2
L MONIT LM SUIT CKT PRESS IND
UNTIL SUIT CKT PRESS 8.85 PSIA
& IMMED SET PRESS REG B - CLOSE
B READ PGA CUFF GAGE/MONITOR
DECAY FOR ONE MIN
XRCISE SUIT JOINTS DURING DECAY
PERIOD
B LM SUIT CKT DCAV NOT TO EXCEED 0.3 PSIG
C SUIT CKT RELIEF VALVE - AUTO
L PRESS REG B - EGRESS
L PRESS REG A - EGRESS
CABIN DEPRESS

C PLACE ONE PLSS ON ENG CVR AND
SECOND PLSS ON MID-SECTION
STEP (STOW PLSS LOWER STRAPS (2)
IN ISA MID PKT)
C PLACE LHSSC ON ENGINE COVER
L CABIN REPRESS VALVE - CLOSE
B MONITOR SUIT CIRCUIT PRESS DURING
CABIN DEPRESS AND VERIFY PRESS
3.6-4.3 PSIA
L FWD HATCH RELIEF/DUMP VLV - DUMP
C MONITOR CABIN PRESS DECREASE
TO 3.5 PSIA
L AT 3.5 PSIA PLACE FORWARD HATCH
RELIEF AND DUMP VALVE TO AUTO
C VERIFY CABIN PRESSURE AT 3.5
PSIA AND LM SUIT CIRCUIT
PRESSURE 3.6-4.3 PSIA AND DE-
CAYING SLOWLY
L ROT HNDL ON FWQ HTCH TO UNLCK POS
L FWD HATCH RELIEF/DUMP VLV-DUMP
C MONITOR CAB PRESS DECR TO 0 PSIA
& VER LM SUIT CKT 3.6-4.3 PSIA

HATCH OPENING

L PARTIALLY OPEN FORWARD HATCH
L FWD HATCH RELIEF/DUMP VLV - AUTO
L PULL FORWARD HATCH TO FULL OPEN
B LOWER EV VISOR AS REQUIRED

EQUIPMENT JETTISON

C JETTISON THE FOLLOWING-
(VERIFY ITEMS CLEAR ASCENT STAGE)

PLSS ON MID-SECTION STEP
PLSS ON ENGINE COVER
LHSSC
ARMREST (1)

L CLOSE FORWARD HATCH AND LOCK
CABIN REPRESS

L VERIFY FWD HTCH RELIEF/DUMP VLV - AUTO
C VERIFY OVRHD HATCH RELIEF/DUMP VLV - AUTO
L CABIN REPRESS VALVE - AUTO
L PRESS REG A - CABIN
L VERIFY MASTER ALARM - ON
L CABIN WARN LT - ON
L VERIFY CABIN REPRESS VALVE - OPENS
L MASTER ALARM PB/LT - RESET
L PRESS REG B - CABIN
B VERIFY CAB PRESS INCREASG NORMAL
L VERIFY CABIN REPRESS VALVE - CLOSES
L CABIN WARN LT - OFF
B MONITOR CABIN PRESSURE UNTIL
IT STABILIZES AT 4.8 ± 0.2 PSIA

POST EVA SYSTEMS CONFIGURATION

L CABIN GAS RETURN VALVE - AUTO
L SUIT GAS DIV VLV - CABIN (PUSH)
B DOFF IV GLOVES/PLACE ON ENG COVER
B DOFF HELMETS AND EV VISORS
L STOW HELMET WITH VISOR AND
GLOVES ON MID-SECTION STEP
C STOW HELMET WITH VISOR AND GLOVES
IN RECHARGE STATION
C CABIN FAN 1 C/B - CLOSE
L CABIN FAN CONT C/B - CLOSE

FINAL SYSTEMS CONFIGURATION

B VERIFY ECS BASIC (UNSTAGED)
B VERIFY EPS BASIC (UNSTAGED)
B VERIFY COMM BASIC (UNSTAGED)
L VERIFY ATT DIR CONT C/B - OPEN
L VERIFY ED MASTER ARM SW - OFF
L VERIFY ED STAGE SW - SAFE
C VERIFY ENG ARM SW - OFF
C VERIFY PGNS SW - OFF
POST EVA CABIN CONFIGURATION

L STW HBLAD MAGS (2) WAIST TETHER
   LWR PLSS STRAPS RHSSC
B TRANSFER OPS TO CABIN FLOOR
C XFER TO AFT CAB AREA (MOVE SRC
   AS REQ'D)
L SECURE OPS THERMAL COVERS AND
   STOW OPS ON CABIN FLOOR
C STOW SRC'S IN SRC RACK
   REMOVE CSRC FROM PGA AND STOW
   IN LOWER LUNAR OVERSHOE COM-
   PARTMENT
C STOW LM EVA ANTENNA
C SNAP RCU STOWAGE FLAPS
C XFER HELMET STOW BAGS TO
   ENG COVR
C TRANSFER TO CDR'S STATION
L REMOVE 16MM CAMERA FROM CRASH
   BAR AND STOW BRACKET ON AOT
   GUARD
L REMOVE FILM MAG FM CAM & STOW
   IN 16MM MAG CONT IN RHSSC
L INSTL NEW MAG & ADJ SETTINGS
   TO (TBD)
L INST CAM ON BRKT OVER RH WINDOW
C STOW PURGE VALVES, EV GLOVES,
   AND EV VISORS IN HELMET BAGS
C SNAP HELMET STWAG BAGS TO ENG CVR
C ATT UTIL LT TO CLAMP & BRKT
   ON AOT GUARD & POSITION AS REQ'D
C STOW ALL EVA ONBOARD DATA IN
   FLIGHT DATA FILE CONTAINER
PLSS RECHARGE IN LM

POWER SUPPLY

If PLSS RCU is connected electrically to the PLSS, verify or perform the following before connecting or disconnecting battery cable:

A. PUMP SW - OFF
B. FAN SW - OFF
C. MODE SEL SW - POS o

Rotate battery cable connector 90 degrees CCW and remove from battery connector. Remove protective cover from battery cable stowage connector and stow on battery. Stow battery cable.

Depress and rotate latching device 90° CCW to unlock battery.

Remove battery from PLSS and stow (TBD)

Obtain replacement battery from stowage (TBD) and align battery on battery foot and slide into place in PLSS.

Depress and rotate latching device 90° CW to lock battery in PLSS.

Verify replacement battery has protective cover installed on battery cable connector.
LIOH CARTRIDGE

Verify PLSS 02 shutoff vlv - off (up)

Unstow PLSS 02 red hose and equalize the pressure in the PLSS 02 loop by depressing the valve in the hose nozzle

Stow PLSS 02 red hose

Remove thermal insulation from the canister cover

Depress cover lock

Rotate canister cover CCW until alignment mark on cover is aligned with the open mark on canister

Remove cover from canister

Grasp drop handle and rotate contaminant control cartridge CCW until lugs on cartridge are aligned with slots in canister

Pull spent contaminant cartridge out of canister and stow (TBD)

Obtain replacement cartridge from stowage (TBD), grasp drop handle, and insert replacement cartridge into canister until it bottom

Rotate cartridge CW approximately 120 degrees to lock it in position

Ascertaint that alignment marks on both parts of the cover are aligned
Grasp cover by its handle and depress cover lock

Align the alignment mark on canister cover with the open mark on cover

Insert cover in canister

Rotate cover CW until alignment mark on cover is aligned with closed mark on canister

Release cover lock

Replace thermal insulation over canister cover

**OXYGEN**

Verify the following -
A. PLSS 02 shutoff valve - off(up)
B. PLSS in recharge station
C. LM ECS 02 quantity greater than 35 per cent

Connect the vehicle oxygen supply line to the PLSS oxygen fill fitting

**PLSS FILL VLV - OPEN**

Partial charge - 2 min (approx. 3/4 full) or Full charge - 70 min

**PLSS FILL VLV - CLOSE**

Disconnect vehicle oxygen supply line
Replace dust caps on the PLSS oxygen fill fitting and the vehicle oxygen recharge connector, restow vehicle oxygen recharge line.

Replace thermal cover.

**FEEDWATER RESERVOIR**

Verify the following -
A. PLSS water shutoff and relief valve - close (up)
B. PLSS in recharge station
C. Gravity environment

Connect LM urine transfer hose to PLSS drain connector

**DESCENT H20 VLV - CLOSE**

Connect LM water supply hose to PLSS fill connector

**WMS VLV - OPEN AND HOLD**

**DESCENT H20 VLV - OPEN (3 MIN)**

**DESCENT H20 VLV - CLOSE**

**WMS VLV - CLOSE**

Disconnect LM water supply hose from drain and connect to PLSS vent connector

**WMS VLV - OPEN AND HOLD**

**DESCENT H20 VLV - OPEN**
When water is observed in vent flow indicator:
  DES H2O VLV - CLOSE
  WMS VLV - CLOSE

Disconnect and stow hoses
Replace all dust covers
Return to O2 recharge for completion, if required
Secure PLSS thermal covers
SECTION 3.5  LM REPRESS FAILURE

LM REPRESS FAILURE PROCEDURE

BTH
Verify LM suit ckt press 3.6-4.0 psia (EGRESS MODE)
Verify OPS 02 - off
Disc OPS 02 hose/purge vlv
Place purge vlvs on eng cover
Cnct to LM ECS, blu/blu red/red

LMP
Suit fan sel - 1
Suit fan DELTA-P C/B - close
Verify ECS caution lite and H2O
  sep comp caution lite goes off

BTH
Suit ISOL - Suit flow
PLSS fan - off
PLSS 02 shutoff - off
Verify PGA press 3.6 - 4.0 psi
PGA flow diverter vlvs-horizontal
PLSS mode sel - 0 (off)
Connect to LM comm
Comm sws as desired
PLSS feedwater - close
PLSS pump - off
Disconnect OPS 02 actuator
Disc't RCU from PGA and PLSS
Stow RCU on engine cover
Disconnect PLSS H2O hose
Doff PLSS/OPS - set on floor
Stow OPS 02 hose and actuator
As req'd-connect LM H2O hose
  LCG Pump C/B-close
LM REPRESS FAILURE - ONE MAN EVA

LM REPRESS FAILURE PROCEDURE

VERIFY LM SUIT CKT PRESS-3.6-4.0 psia
(EGRESS MODE)
VERIFY OPS 02 - OFF
DISC OPS 02 HOSE/PURGE VLV
PLACE PURGE VLVS ON ENG CVR
CONCT TO LM ECS, BLUE/BLUE,RED/RED
SUIT ISOL - SUIT FLOW
PLSS FAN - OFF
PLSS 02 SHUTOFF - OFF (up)
VERIFY PGA PRESS 3.6 - 4.0 PSI
PGA FLOW DIVERTER VLVS - HORIZONTAL
PLSS MODE SEL - 0 (OFF)
CONNECT TO LM COMM
COMM SWS AS DESIRED
PLSS FEEDWATER - CLOSE
PLSS PUMP - OFF
DISCONNECT OPS 02 ACTUATOR
DISC'T RCU FROM PGA AND PLSS
STOW RCU ON ENGINE COVER
DISCONNECT PLSS H2O HOSE
DOFF PLSS/OPS - SET ON FLOOR
STOW OPS 02 HOSE AND ACTUATOR
AS REQ'D - LCG PUMP C/B - OPEN
CONNECT LM H2O HOSE
LCG PUMP C/B - CLOSE
SECTION 4.1 LM PREP FOR CONTINGENCY EVA (2 OPS)

CONTINGENCY EVT (2 OPS)

CREW STATUS

1. UCTA'S Empty
   Helmets And Gloves Stowed, If Req'd

2. Verify PGA Flow Diverter (Both) - HORIZONTAL
   LM H2O Hoses Connected To PGA

3. Inspect PGA Zipper, Verify Lock-locks

4. Check Status of CMP Prep
   for Egress

PREPARATION FOR EGRESS

1. Stow Loose Items
   Stow DEDA Desk
   Remove EVVA and Purge Valve From LMP's
   Helmet Bag
   Attach EVVA to LMP's Helmet
   Install Purge Valve in LMP's LH PGA
   Red Connector
   Stow SRC Samples in LMP's Helmet Bag
   Attach Strap-On Pocket to PGA Leg

2. (LMP) Unstow PLSS Straps (4) From RHSSC

3. Don PLSS Straps

4. (LMP) Unstow Waist Tethers and Lifeline From
   RHSSC and Stow in ISA - Mid Pocket

5. Stow Magazines, Flt Data, Flag Kit
   In PGA Pockets

6. (CDR) Remove CSC From Lower Overshoe Compartment
   and Stow in PGA Pocket
DON OPS

1 (LMP) Verify OPS 02 PRESS - 5380 to 6380 psia and 02 Hose Locked
   OPS 02 SOV - ON
   Verify Reg Press - 3.4 to 4.0 psig
   HEATER TEST - PRESS (One or more lts - ON)
   OPS 02 SOV - OFF
   Verify Reg Press < 2.5 psig
   Unstow 02 Hose (Nozzle end)

2 Secure OPS to LMP's PGA
   Remove PGA Connector Plugs, Stow in ISA Lower Pocket

3 (LMP) Connect OPS 02 Hose to LH PGA Blue Connector

4 (CDR) Verify OPS 02 Press - 5380 to 6380 psia and 02 Hose Locked
   OPS 02 SOV - ON
   Verify Reg Press - 3.4 to 4.0 psig
   HEATER TEST - PRESS (One or more lts - ON)
   OPS 02 SOV - OFF
   Verify Reg Press < 2.5 psig
   Unstow 02 Hose (Nozzle end)

5 Secure OPS to CDR's PGA

6 (CDR) Connect OPS 02 Hose to LH PGA Blue Connector
FINAL PREP FOR EVT

1. CB(11) ECS: CABIN FAN 1 - OPEN
   & CB(16) ECS: CABIN FAN CONT - OPEN
   : CABIN REPRESS - CLOSE

2. Unstow Waist Tethers From ISA

3. (CDR) Attach Tether To PGA LH Attach Point

4. (LMP) Attach Tether to PGA RH Attach Point

5. Unstow Life Line From ISA
   Attach To Waist Tether Hooks, Lock
   Bag Secured To LMP's OPS
   Slide Hook At LMP And Attached to HSB/
   Samples

PREP FOR CABIN DEPRESS

1. PGA Flow Diverters - Vertical
   If Helmet And Gloves Donned, Proceed With
   Prep For Depress As Required

2. (CDR) Unstow LMP Helmet
   Verify Feed Port Cover Installed and
   Locked

3. (LMP) Position Mikes

4. (CDR) Place Helmet on LMP, Lock

5. (CDR) Unstow Helmet
   Verify Feed Port Cover Installed and
   Locked
   Position Mikes

6. (LMP) Place Helmet on CDR, Lock
7 (CDR) Unstow Purge Valves (2) From Helmet Bags

8 Install Purge Valves in LH PGA Red Connectors

9 (LMP) Unstow EV Visors From Helmet Bags

10 (CDR) Attach LMP's EV Visor - UP

11 (LMP) Attach CDR's EV Visor - UP

12 Don EV Gloves, Lock

13 (CDR) Give CSM "GO" For Depress

14 Inspect EMU
   Check Connectors and Lock-locks

**PRESSURE INTEGRITY CHECK**

1 (CDR) SUIT CIRCUIT RELIEF - CLOSE
   SUIT GAS DIVERTER - PULL/EGRESS
   CABIN GAS RETURN - EGRESS

2 (LMP) PRESS REG A - CLOSE
   PRESS REG B - DIRECT O2
   When ECS: SUIT PRESS - 8.85 psia
   PRESS REG B - CLOSE

3 Exercise Suit Joints and Monitor
   Cuff Gage Pressure Decay for One Minute
   Verify Decay <.3 psig

4 (CDR) SUIT CIRCUIT RELIEF - AUTO
   PRESS REG A And B - CABIN
   Confirm CSM Side Hatch Open And
   CMP "GO" For LM Depress

5 (LMP) PRESS REG A And B - EGRESS
   CB(16) ECS: LCG PUMP - OPEN
6 Disconnect LM H2O Hoses

7 Inspect EMU
Check Connectors and Lock-locks
Disconnect and Stow LM Restraints

CABIN DEPRESS

1 (LMP) CABIN REPRESS - CLOSE

2 Monitor Suit Circuit Press During Depress
Verify Press 3.6 to 4.3 psia

3 (LMP) Forward Dump Valve - DUMP

4 (CDR) ECS: CABIN PRESS - Observe decrease
to 3.5 psia

5 (LMP) When ECS: CABIN PRESS = 3.5 psia
Forward Dump Valve - AUTO

6 (CDR) Verify ECS: CABIN PRESS - 3.5 psia
:SUIT PRESS - 3.6 to 4.3 psia
And Decaying Slowly

7 (LMP) Forward Hatch Handle - UNLOCK
Forward Dump Valve - DUMP

8 (CDR) ECS: CABIN PRESS - Observe decrease
to 0 psia
:SUIT PRESS - 3.6 to 4.3 psia

HATCH OPENING

1 (LMP) Open Hatch

2 Verify: CSM In Position
CMP "GO" For
Transfer To OPS And EVT

3 OPS 02 SOV - ON
Note Time With CMP and Determine T + 20 min
4 (CDR) SUIT ISOL VALVES (BOTH) - SUIT DISC

5

PURGE VALVES - OPEN
Verify O2 Flow
Verify Reg Press - 3.4 to 4.0 psig
LM O2 Hoses - Disconnect
Verify PGA Press - 3.4 to 4.0 psig
EV Visors - Lower as Required
LM Comm Umbilical - Disconnect

EVT (DOCKED)

1

CDR Egress Feet First and Transfer To CSM
LMF Tend Lifeline

2

CDR Ingress CSM Head First, Face To MDC,
and Move To LEB
Retrieve O2 Hoses and Comm Umbilical

3

CMP Connect C Comm Umbilical to CDR

4

CDR Configure Audio Panel As Desired

5

CDR Secure Position In LEB And Tend
Lifeline for LMP
LMP Egress Feet First and Transfer to CSM

6

LMP Ingress CSM Feet First, Face Down,
and Assume Position for Closing Side Hatch

EVT (UNDOCKED, STABLE)

1

CSM Maneuver Apex to LM Forward Hatch

2

CDR, Then LMP, Egress Feet First, Move
Along Handrails to CSM
LMF Tend Lifeline

3

CDR Ingress CSM, Head First, Face to MDC,
And Move To LEB
Retrieve O2 Hoses And Comm Umbilical
CMP Connect C Comm Umbilical To CDR

5
CDR Configure Audio Panel As Desired
Secure Position In LEB And Tend Lifeline
   For LMP
LMP Ingress CSM Feet First, Face Down,
   and Assume Position for Closing Side Hatch

EVT (UNDOCKED, UNSTABLE)

1
CSM Maneuver to LM

2
CDR Egress Feet First, Move to EVA
   Handrail Clear of Hatch
   LMP Tend Lifeline

3
LMP Egress, Move Up EVA Handrail

4
CDR and LMP Push Away from LM at
   Same Time (Give Signal, Pull In, Push Off)

5
CSM Maneuver Apex to CDR and LMP

6
CDR and LMP Use CSM Handholds to Move
   To Side Hatch

7
CDR Ingress CSM, Head First, Face To MDC, And
   Move To LEB
   Retrieve C 02 Hoses And Comm Umbilical

8
CMP Connect C Comm Umbilical To CDR

9
CDR Configure Audio Panel As Desired
Secure Position in LEB And Tend Lifeline
   For LMP
LMP Ingress CSM Feet First, Face Down,
   and Assume Position for Closing Side Hatch
EV HATCH OPENING

1. Attach Restraints As Required

2. Unstow Tool B
   Insert Tool B Into Dump Valve
   Depress, Rotate CW to Stop
   Vent for 30 Sec

3. Insert Tool B Into Actuation Socket
   Rotate CCW (368°) Until Hatch Can Be
   Opened

4. Partially Open Hatch

5. Remove Tool B and Stow On PGA

6. Open Hatch
SECTION 4.2  LM PREP FOR CONTINGENCY EVA (OPS-PLSS)

CONTINGENCY EVT (CDR/OPS-IMP/PLSS)

CREW STATUS

1  UCTA'S Empty
   Helmets And Gloves Stowed, If Req'd

2  Verify PGA Flow Diverter (Both) - HORIZONTAL
   LM H2O Hoses Connected To PGA

3  Inspect PGA Zipper, Verify Lock-locks

4  Check Status of CMP Prep
    for Egress

PREPARATION FOR EGRESS

1  Stow Loose Items
   Stow DEDA Desk
   Remove EVVA and Purge Valve From CDR'S
   Helmet Bag
   Attach EVVA to CDR's Helmet
   Install Purge Valve in CDR's LH PGA
   Red Connector
   Stow Anti-Fog For Later Use
   Stow SRC Samples in CDR's Helmet Bag
   Attach Strap-On Pocket to PGA Leg

2  (IMP) Unstow PLSS Straps From RHSSC

3  (CDR) Don PLSS Straps

4  (IMP) Unstow Waist Tethers and Lifeline From
   RHSSC and Stow in ISA - Mid Pocket

5  Stow Magazines, Flt Data, Flag Kit
   In PGA Pockets

6  (CDR) Remove CSC From Lower Overshoe Compartment
   and Stow in PGA Pocket

7  Remove PGA Connector Plugs, Stow in
   ISA Lower Pocket
DON PLSS

1 (LMP) Unstow Upper and Lower PLSS Donning Straps
Unstow O2 and H2O Hoses, and Battery Cable
Connect Battery Cable to Battery
Don PLSS by Securing PLSS Upper and Lower
Straps to PGA
Connect PLSS O2 Hoses and Verify Lock
RCU (All Elec Cnts-OFF)-Connect Elec to
PLSS and Lock
Attach RCU to PLSS Straps and PGA
Verify these Switch and Valve Positions
  Diverter Valve - MIN (up)
  O2 Shutoff Valve - OFF (up)
  Feedwater Valve - CLOSED (up)
  Pump - OFF
  Fan - OFF
  Mode SEL sw - POS 0

DON OPS

1 (CDR) Verify OPS O2 PRESS -5380 to 6380 psia
  and O2 Hose Locked
OPS O2 SOV - ON
Verify REG Press -3.4 to 4.0 psig
Heater Test - PRESS (One or More Lts - ON)
OPS O2 SOV - OFF
Verify REG PRESS <2.5 psig
Unstow O2 Hose (Nozzle End)
Secure OPS to PGA
Connect OPS O2 Hose to LH PGA Blue
  Connector

FINAL PREP FOR EVT

1 CB(11) ECS: CABIN FAN 1 - OPEN
  & CB(16) ECS: CABIN FAN CONT-OPEN
  : CABIN REPRESS -CLOSE

2 (CDR) Verify Suit CKT Relief VLV - AUTO
Suit Gas Div VLV - EGRESS (PULL)
Cabin Gas Return VLV-EGRESS
3 Unstow Waist Tethers From ISA
4 (CDR) Attach Tether To PGA LH Attach Point
5 (LMP) Attach Tether To PGA RH Attach Point
6 Unstow Lifeline From ISA
   Attach To Waist Tether Hooks, Lock
   Bag Secured To LMP
   Slide Hook At LMP And Attached to HSB/Samples

PREP FOR CABIN DEPRESS
1 PGA Flow Diverters - Vertical
   If Helmet And Gloves Donned, Proceed With
   Prep For Depress As Required
2 (CDR) Unstow LMP Helmet
   Verify Feed Port Cover Installed and
   Locked
   Apply Anti-Fog
3 (LMP) Position Mikes
4 (CDR) Place Helmet on LMP, Lock
5 (CDR) Unstow Helmet
   Verify Feed Port Cover Installed and
   Locked
   Position Mikes
6 (LMP) Place Helmet on CDR, Lock
7 (CDR) Unstow Purge Valves (1) From Helmet Bag
8 Install Purge Valve in LH PGA Red Connector
9 (CDR) Unstow EV Visors From Helmet Bags
10 (CDR) Attach LMP's EV Visor - UP
11 (LMP) Attach CDR's EV Visor - UP
PLSS Mode SEL sw - POS A (Min PWR)
PLSS WARNING TONE - ON (10 sec)
RCU PRESS Window - 0 (OPS ACT-ABORT)
Verify PLSS 02 Bottle Press
Confirm CSM Side Hatch
Open and CMP "GO" for LM Depress
PLSS Fan - ON
Suit ISOL vlv - Suit Disc
Verify -RCU vent window - CLEAR
LCG PUMP C/B - OPEN
Disconnect LM 02 and H2O Hoses, Secure
Connect PLSS H2O hose

12 (CDR) Disconnect LM H2O Hose, Secure

13
Don EV Gloves, Lock

14
Inspect EMU
Check Connectors and Lock-locks
Disconnect and Stow LM Restraints

PRESSURE INTEGRITY CHECK

1 (CDR) SUIT CIRCUIT RELIEF - CLOSE
PRESS REG A - CLOSE
PRESS REG B - DIRECT 02
When ECS: SUIT PRESS - 8.85 psia
PRESS REG B - CLOSE

Exercise Suit Joints and Monitor
Cuff Gage Pressure Decay for One Minute
Verify Decay <.3 psig

SUIT CIRCUIT RELIEF - AUTO
PRESS REG A and B - CABIN
2 (LMP) PLSS 02 Shutoff VLV - ON (Down)
   Verify -PLSS Warning Tone - ON (10 sec)
   -RCU 02 Window - ) (OPS ACT-ABORT)
   -RCU PRESS Window - CLEARs
   -RCU 02 Window - CLEARs
   -PGA GAGE READS 3.85 ± 0.15 psig
PLSS 02 Shutoff VLV-OFF (up)
Read PGA Gage and Monitor Press Decay
1 min.
Exercise Suit Joints During Decay Period
EMU CKT Decay Not to Exceed 0.3 psid
PLSS 02 Shutoff Valve - ON(Down)(PLSS Hi
02 Flow Warn May Come ON)
Verify -PGA Gage Reads 3.85 ± 0.15 psig
-PLSS Diverter Vlv - Min (UP)
PLSS Pump -ON
Verify Audible Notice of Pump Operation

3 (CDR) PRESS REG A AND B -EGRESS

CABIN DEPRESS

1 (CDR) CABIN REPRESS - CLOSE
Monitor Suit Circuit Press
   During Depress
Verify Press 3.6 to 4.3 psia

2 (LMP) Monitor PGA Gage During Depress-
   Verify PGA PRESS >4.5 psig

3 (LMP) Forward Dump Valve - DUMP

4 (CDR) ECS: CABIN PRESS - Observe decrease
   to 3.5 psia

5 (LMP) When ECS: CABIN PRESS = 3.5 psia
   Forward Dump Valve - AUTO

6 (CDR) Verify ECS: CABIN PRESS - 3.5 psia
   - SUIT PRESS - 3.6 to 4.3 psia
   And Decaying Slowly
7 (LMP) Verify: PGA PRESS $>4.5$ psig, decaying slowly

8 (LMP) Forward Hatch Handle - UNLOCK
Forward Dump Valve - DUMP
Verify: PLSS Warning Tone-ON (10 sec)
RCU H20 Window -A (ABORT)

9 (CDR) ECS: CABIN PRESS - Observe decrease to 0 psia
          : SUIT PRESS - 3.6 to 4.3 psia

10 (LMP) Verify: PGA Press $>4.5$ psig, decaying slowly

HATCH OPENING

1 (LMP) Open Hatch
PLSS Feedwater Shutoff Vlv-OPEN (Down)
After RCU H20 Window Clears ($\sim 4$ min), PLSS Diverter Vlv - Max Cooling (Down)

2 Verify: CSM In Position
          CMP "GO" For Transfer To
          OPS And EVT

3 (CDR) OPS 02 SOV - ON
Note Time With CMP and Determine $T + 20$ min
SUIT ISOL VALVE - SUIT DISC

PURGE VALVE - OPEN
Verify 02 Flow
Verify Reg Press - 3.4 to 4.0 psig
LM 02 Hoses - Disconnect
Verify PGA Press - 3.4 to 4.0 psig

4 EV Visors - Lower as Required
LM Comm Umbilical - Disconnect
EVT (DOCKED)

1  CDR Egress Feet First and Transfer To CSM
   LMP Tend Lifeline

2  CDR Ingress CSM Head First, Face To MDC, and Move To LEB
   Retrieve C O2 Hoses and Comm Umbilical

3  CMP Connect C Comm Umbilical to CDR

4  CDR Configure Audio Panel As Desired

5  CDR Secure Position In LEB And Tend Lifeline for LMP
   LMP Egress Feet First and Transfer to CSM

6  LMP Ingress CSM Feet First, Face Down, and Assume Position for Closing Side Hatch

EVT (UNDOCKED, STABLE)

1  CSM Maneuver Apex to LM Forward Hatch

2  CDR, Then LMP, Egress Feet First, Move Along Handrails to CSM
   LMP Tend Lifeline

3  CDR Ingress CSM, Head First, Face to MDC, And Move to LEB
   Retrieve C O2 Hoses And Comm Umbilical

4  CMP Connect C Comm Umbilical To CDR

5  CDR Configure Audio Panel As Desired
   Secure Position In LEB And Tend Lifeline For LMP
   LMP Ingress CSM Feet First, Face Down, and Assume Position for Closing Side Hatch
EVT (UNDOCKED, UNSTABLE)

1. CSM Maneuver to LM

2. CDR Egress Feet First, Move to EVA
   Handrail Clear of Hatch
   LMP Tend Lifeline

3. LMP Egress, Move Up EVA Handrail

4. CDR and LMP Push Away from LM at
   Same Time (Give Signal, Pull In, Push Off)

5. CSM Maneuver Apex to CDR and LMP

6. CDR and LMP Use CSM Handholds to Move
   To Side Hatch

7. CDR Ingress CSM, Head First, Face To MDC,
   And Move to LEB
   Retrieve C 02 Hoses And Comm Umbilical

8. CMP Connect C Comm Umbilical To CDR

9. CDR Configure Audio Panel As Desired
   Secure Position in LEB And Tend Lifeline
   For LMP
   LMP Ingress CSM Feet First, Face Down,
   and Assume Position for Closing Side Hatch
EV HATCH OPENING

1. Attach Restraints As Required

2. Unstow Tool B
Insert Tool B Into Dump Valve
Depress, Rotate CW to Stop
Vent for 30 Sec

3. Insert Tool B Into Actuation Socket
Rotate CCW (368°) Until Hatch Can Be
Opened

4. Partially Open Hatch

5. Remove Tool B and Stow On PGA

6. Open Hatch
SECTION 4.3 LM PREP FOR CONTINGENCY EVA (2 PLSS/OPS)

CONTINGENCY EVT (2 PLSS/OPS)

1  Use Planned EVA Procedures

2  Perform the following sections as applicable and with changes as noted.

CREW STATUS

SYSTEMS PREP FOR EGRESS

PREPARATION FOR EGRESS

(1) Stow SRC Samples in HSB

PLSS/EVCS ELECTRICAL CHECKOUT- OMIT

(1) Both Connect PLSS COMM to PGA (LMP First)

(2) Both - PLSS Mode SEL - AR

(3) Both - Verify COMM With CMP and each other

FINAL EVA EQUIPMENT PREP FOR DEPRESS

FINAL SYSTEMS PREP FOR EGRESS

PREP FOR CABIN DEPRESS

(1) Connect Waist Tethers and Lifeline and HSB

(2) Before Leaving LM Cooling - LCG Pump C/B - OPEN - Verify CMP "GO" For LM Depress

PRESSURE INTEGRITY CHECK

CABIN DEPRESS

HATCH OPENING

(1) Do Not Deploy PLSS Antenna
SECTION 4.4 CM PREP FOR CONTINGENCY EVA

CM PREP FOR CONTINGENCY EVA
1. C and R SUIT FLOW - OFF
2. L SUIT FLOW - CAB FLOW
3. C and R 02 hoses interconnected with A-1 interconnects
4. C hoses routed through handhold under Panel 10 for EVT
5. R hoses secured around RH Couch headrest for EVT
6. TSB's installed on R&L girth ring & LEB
7. Seat, leg, and foot pans folded against back pan with seat pan locked
8. PGA bag disconnected from center couch
9. Couch straps unstowed
10. Center couch removed and stowed under LH couch
11. L and R couch - 270°
12. Marmon clamps closed and locked
13. PGA bag secured to aft bulkhead
14. Jack screws (Al) fully opened and taped near hatch
15. Tool B (Al) taped near hatch
16. Hatch counterbalance piston chamber vented
17. Counter balance disengaged (Pull pin, stow in R-10)
18. MDC INGRESS BAR STOWED
19. CABIN FAN (Both) - OFF
20. REPRESS PKG vlv - FILL

CREW STATUS
UCTA Donned and empty
Helmet stowed in helmet bag
Comm carrier donned
Gloves stowed
L 02 PGA LOCK - LOCK
L elec umb connected to PGA
SUIT FLOW vlv - CAB FLOW
SUIT RET vlv - open (pull)
EMER CAB PRESS sel - BOTH
Chronometer on left PGA sleeve
Verify PGA zipper lock - lock

SYSTEM PREPARATION FOR DEPRESS
Verify REPRESS 02 press 865-935 psi
EMERG 02 vlv - closed
Verify REPRESS O2 vlv - closed
Verify surge tank vlv - on
O2 PRESS IND sw - SURGE TK
Verify surge tank pressure 865-935 psi
Select attitude control mode and maneuver spacecraft to EVT attitude (TBD)
AUTO RCS SELECT - undocked transfer
  A/C ROLL - A1,A2 - OFF
  PITCH - A3 - OFF
  YAW - B3 - OFF
AUTO RCS SELECT - Docked transfer
  All - OFF
Check status of LM prep for egress

Stow loose items
  NOTE: Perform PLSS Comm check if required
  On request by LM,
    VHF A - Duplex
    VHF B - OFF (verify)
    VHF RANGING - OFF (verify)
  Verify Comm with,
    2 PLSS - CDR (EVCS #1) and then
    LMP (EVCS #2)
  or
    1 PLSS - EVCS #1 or #2

FINAL SYSTEMS PREP FOR DEPRESS
Verify surge tank pressure 865-935 psi
EXT LTS - RUN/EVA - on (up) (IF REQ'D)
EXT LTS - RNDZ/SPOT - off (ctr)

PREP FOR CABIN DEPRESS
Verify L O2 hoses connected Red/Red, Blue/Blue
Unstow helmet
Verify feed port cover installed and locked, wipe helmet with anti-fog
Verify PGA flow diverter valve horizontal
Place helmet attaching neck ring in
the "ENGAGE" position
Position mike, don helmet (with shield) and lock
Secure helmet stowage bag
Place suit wrist disconnects to "ENGAGE" position
Don gloves and lock
SUIT RET vlv - close (push)
EMERG CAB PRESS sel - off
Check all PGA connections and verify locked.
Ingress LH couch

PRESSURE INTEGRITY CHECK
DIRECT O2 - closed (CW)
Verify suit press – 4.7-5.3 psia
Verify O2 flow ind – 0.2-0.4 lb/hr

CAUTION
Suit test vlv should remain in press position until suit circuit pressure is stabilized to preclude seal scarring.
If repositioning of suit test vlv from press is required prior to suit pressure & O2 stabilization, perform the following:
  a Demand reg sel - off
  b Allow 15 sec (min) stabilization time
  c Reposition suit test vlv - depress or off as applicable
  d When suit pressure stabilized, demand reg sel - both

SUIT TEST vlv - press
O2 FLOW ind - 1.0 lb/hr (pegged)
Verify O2 FLOW HI lt - on
Verify MA pb/lt(3) and tone - on, push, verify tone and lts off after push
Cycle Suit Circuit Ret vlv open and closed at suit pressure of 1.5 to 2.0 psig
SUIT PRESS ind – 8.8-9.8 psia
PGA PRESS gage – 4.1-4.5 psig
Verify O2 FLOW HI lt - out
Allow O2 flow to stabilize 15 sec
O2 flow will remain below 0.8 lbs/hr
  for 30 sec after stabilization
SUIT TEST vlv - depress
O2 FLOW ind - 0.2-0.4 lb/hr
SUIT PRESS ind - slightly > CAB PRESS
SUIT TEST vlv - OFF
Verify DEMAND REG SEL - BOTH

CABIN DEPRESS
Confirm GO for cabin depress with MSFN and CDR
Verify CABIN FAN (Both) - OFF
Verify REPRESS PKG vlv - FILL
Verify CAB PRESS REL vlv (2) - NORMAL (safety latch on)
Egress LH couch and transfer to hatch
Adjust RH strut mirror to read cabin pressure
SIDE HATCH DUMP vlv - open (CCW)

  NOTE - O2 FLOW HI warning light
       may come on prior to cabin
       press reg lock-up

Monitor cabin pressure to 3.25 psia
At 3.25 psia, SIDE HATCH DUMP vlv - CLOSE
Verify O2 FLOW ind - <0.5 lb/hr
Verify cabin pressure at 3.25 psia
  and CM suit circuit pressure stable at 3.5-4.0 psia
SIDE HATCH DUMP vlv - open
Cabin Press ind - 0.0 psia

HATCH OPENING
Verify hatch counterbalance vented
Lock pin release knob - unlock (Down)
Verify lock pin indicator released
Gear box sel - un latch
BPC JETT - 180° from BPC JETT (verify)
ACTR handle sel - U
Unstow ACTR handle
Unlock hatch
Verify hatch unlocked
ACTR handle sel - L
SECTION 4.5 CM POST CONTINGENCY EVA (2 OPS)

Stow ACTR handle
Gear box sel - latch
Open hatch to the full open position

EVT (DOCKED)
Give GO for TRANSFER TO OPS & EVT
RECORD OPS start time

EVT (UNDOCKED, STABLE)
Maneuver CSM APEX to LM forward hatch
Give GO for transfer to OPS & EVT
Record OPS start time

EVT (UNDOCKED, UNSTABLE)
Maneuver CSM to LM
Give GO for transfer to OPS & EVT
Record OPS start time
After CDR & LMP push away from LM, maneuver
APEX to CDR and LMP

4.5 INGRESS (2 OPS)
CDR Ingress CM, head first, face to MDC,
and move to LEB
Retrieve C O2 hoses and ELEC UMB
CMP Connect C electrical umbilical to CDR
CDR Audio panel sws - as desired
Secure position in LEB and manage
lifeline for LMP
LMP Ingress CM, feet first, face down,
and assume position for closing side hatch

INGRESS (CDR - OPS, LMP - PLSS or 2 PLSS/OPS), pg 4-28

VAC TRANSFER TO CM ECS
(If 20 minutes elapsed from
OPS start time, perform the following)

CDR Verify C and R SUIT FLOW vlv - OFF
Remove interconnect and hand C O2
hoses to CMP
CMP Connect C O2 hoses to CDR PGA (RED/RED, BLUE/BLUE)
CDR Close purge valve
C SUIT FLOW vlv - adjust for comfort
OPS O2 shutoff vlv - close
LMP Verify R SUIT FLOW vlv - OFF
Remove interconnect and hand R O2 hoses to CDR

CDR Connect R O2 hoses to LMP PGA (RED/RED, BLUE/BLUE)
Close purge valve
SUIT FLOW vlv (3) - FULL FLOW
Verify flow and close OPS O2 shutoff valve
Connect R electrical umbilical
Audio panel sws - as desired

HATCH CLOSING
LMP Verify hatch seals are clear
Pull hatch to the ajar position
Verify ACTR handle sel - L
Verify gear box sel - latch
Verify latch strikers inboard of hatch sill
Unstow ACTR handle
Lock hatch
Verify lock pin has automatically engaged and that lock pin indicator in not extended
Stow ACTR handle
ACTR handle sel - N
Verify gear box sel - LATCH

CDR Stow lifeline in temporary stowage bag
Secure transfer TSB

CABIN REPRESS
LMP SIDE HATCH DUMP vlv - close
CMP Verify CAB PRESS REL vlv (2) - NORMAL (safety latch on)
Verify O2 PRESS IND sw - SURGE TK
Verify REPRESS PKG vlv - FILL
LMP REPRESS O2 vlv - open/10 seconds/close
Cabin press approx. 1.0 psia
Adjust RH strut mirror
CABIN PRESS IND - monitor for gross leakage (30 sec)
REPRESS O2 vlv - open
CRYO O2 PRESS ind - maintain 150 psi min
CMP REPRESS PKG vlv - OFF
LMP CAB PRESS ind ~3.0 psia
REPRESS O2 PRESS ind - 0.0 psig
REPRESS O2 vlv - CLOSE
CDR CAB REPRESS vlv - OPEN (CW)
CRYO 02 PRESS ind - maintain 150 psi min
Verify cabin pressure above 3.0 psia
Verify C and R SUIT FLOW vlv - OFF
OPS 02 shutoff vlv - close
As PGA press equalizes with cabin, remove interconnect from C 02 hoses and connect hoses to PGA (red to red, blue to blue)
C SUIT FLOW vlv - adjust for comfort
L SUIT FLOW vlv - increase for comfort
Close purge valve
LMP OPS 02 shutoff vlv - close
As PGA press equalizes with cabin, remove interconnect from R 02 hoses and connect hoses to PGA connectors (red to red, blue to blue)
CDR SUIT FLOW vlv (3) - FULL FLOW
LMP Close purge valve
Verify SUIT PWR - OFF
Verify PWR sw - OFF
Verify AUDIO CONT - NORM
Connect R electrical umbilical to PGA AUDIO PANEL sws - as desired
NOTE - If CDR and LMP desire to doff OPS at this point, refer to doffing procedures. CMP continue monitoring cabin repress

POST EVA SYSTEMS CONFIGURATION
CMP CAB PRESS ind - 4.7-5.3 psia
CAB FAN (Both) - on (up)
02 PRESS IND sw - TK 1
CDR CAB REPRESS vlv - OFF (CCW)
Doff gloves, helmets, and EVVA's, if req'd
If helmets and gloves doffed:
EMERG CAB PRESS sel - BOTH
SUIT RET vlv - open (pull)

OPS DOFFING
Remove waist tethers and stow in TSB
Remove purge valves and stow in TSB
Verify PLSS antenna stowed
Verify OPS 02 shutoff vlv - close
Verify OPS 02 actuator stowed
Disconnect OPS 02 hose and stow
Secure thermal cover
Doff OPS and PLSS straps
Secure OPS with PLSS straps
Stow interconnects in A-1

FINAL SYSTEM CONFIGURATION
02 PRESS IND sw - SURGE TK
CRYO 02 PRESS 1 ind - 500 psia
Verify CAB REPRESS vlv - OFF (CCW)
Verify REPRESS 02 - CLOSE
REPRESS PKG VLV - FILL
Verify repress 02 press increasing
CRYO 02 PRESS 1 ind - 865-935 psia
02 PRESS IND sw - TK 1
REPRESS PKG VLV - OFF

POST EVA CABIN CONFIGURATION
Remove CSC from PGA pocket and stow in A-5
EXT LTS - RUN/EVA - OFF (down)
Perform as desired
   (a) change crew stations
   (b) Restow tool B & jack screws
   (c) Unstow & install PGA bag
   (d) Reinstall center couch
   (e) Connect counterbalance (Pip pin in R-10)

EVT EQUIPMENT STOWAGE FOR ENTRY

I. CM reentry without suits:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>STOWAGE LOCATION FOR REENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. OPS (2)</td>
<td>In PGA</td>
</tr>
<tr>
<td>b. Purge Valve (2)</td>
<td>In PGA</td>
</tr>
<tr>
<td>c. Life Line</td>
<td>In PGA Bag</td>
</tr>
</tbody>
</table>
d. EV Gloves  On PGA

e. EV Visor (2)  2 on Helmet attached to Suits, in RH & LH sleep restraints

f. Waist tether (2)  In PGA Bag

g. CSC  Vol A5

h. HSB/Samples  In PGA bag toward LEB

i. Suits  1 Suit with OPS's in PGA Bag w/tie down rope.

j. Helmets  2 Suits in Sleep Restraint under LH & RH Couch w/tie down rope.

II. CM reentry with suits:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>STOWAGE LOCATION FOR REENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. OPS (2)</td>
<td>LH &amp; RH Sleep Restraint in PGA Bag w/tie down rope.</td>
</tr>
<tr>
<td>b. HSB/Samples</td>
<td>In sleep restraint with OPS's</td>
</tr>
<tr>
<td>c. Purge Valve (2)</td>
<td>LH &amp; RH Sleep Restraint in PGA Bag w/tie down rope.</td>
</tr>
<tr>
<td>d. Life Line</td>
<td>In PGA Bag</td>
</tr>
<tr>
<td>e. EV Gloves</td>
<td>On PGA</td>
</tr>
<tr>
<td>f. EV Visor (2)</td>
<td>1 in Vol B1, 1 in Vol L3.</td>
</tr>
<tr>
<td>g. Waist Tether (2)</td>
<td>In PGA Bag</td>
</tr>
</tbody>
</table>
SECTION 4.6 CM POST CONTINGENCY EVA (OPS-PLSS, 2 PLSS/OPS)

h. CSC Vol A5

III. The following equipment may be transferred in PGA pockets during the EV transfer:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>STOWAGE LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Film Magazines</td>
<td>Vol R13</td>
</tr>
<tr>
<td>b. Log Books</td>
<td>Vol R1, R2 and R3</td>
</tr>
<tr>
<td>c. Flag Kit</td>
<td>Food Box - L3</td>
</tr>
</tbody>
</table>

4.6 INGRESS (CDR-OPS, LMP-PLSS or 2 PLSS/OPS)

CDR Ingress CM, head first, face to MDC, and move to LEB (WITH PLSS/OPS -FEET FIRST, FACE DOWN)
Retrieve C 02 Hoses and Elec Umb

CMP Connect C electrical umbilical to CDR (WITH PLSS/OPS DISCONNECT PLSS COMM IF REQ'D-PLSS MODE SEL-POS O)

CDR Audio panel sws - as desired
Secure Position in LEB and Manage Lifeline for LMP

LMP Ingress CM, feet first, face down, and assume position for closing side hatch

VAC TRANSFER TO CM ECS
(If 20 Minutes Elapsed from OPS Start Time, Perform the following)

CDR Verify C and R SUIT FLOW vlv - OFF
Remove interconnect and hand C 02 hoses to CMP

CMP Connect C 02 hoses to CDR PGA (red to red, blue to blue) (WITH PLSS/OPS-REMOVE OPS 02 HOSE AND PURGE VLV)

CDR Close purge valve:
C SUIT FLOW vlv - adjust for comfort
OPS 02 shutoff vlv - close (WITH PLSS/OPS-PLSS 02 vlv-CLOSE - PLSS FAN - OFF)

LMP Verify R SUIT FLOW vlv - OFF
Remove interconnect and hand R 02 hoses to CDR

CDR Remove LMPs OPS 02 hose and purge vlv if connected
CDR Connect R 02 hoses to LMP PGA (red to red, blue to blue)
LMP Close purge valve
CDR SUIT FLOW vlv (3) - FULL FLOW
LMP Verify flow
   PLSS 02 vlv - CLOSE
   PLSS FAN - OFF
   Connect R electrical umbilical (WITH PLSS/OPS-
   DISCONNECT PLSS COMM IF REQ'D - PLSS MODE
   SEL - POS 0)
   Audio panel sws - as desired

HATCH CLOSING
   PLSS FEEDWATER VLV - CLOSE
   LMP Verify hatch seals are clear
   Pull hatch to the ajar position
   Verify ACTR handle sel - L
   Verify gear box sel - latch
   Verify latch strikers inboard of hatch sill
   Unstow ACTR handle
   Lock hatch
   Verify lock pin has automatically
   engaged and that lock pin indicator is
   not extended
   Stow ACTR handle
   ACTR handle sel - N
   Verify Gear box sel - Latch

CDR Stow lifeline in temporary stowage bag
Secure transfer TSB

CABIN REPRESS
   LMP SIDE HATCH DUMP vlv - close
   CMP Verify CAB PRESS REL vlv (2) -
      NORMAL (safety latch on)
      Verify 02 PRESS IND sw - SURGE TK
      Verify Repress PKG vlv - FILL
   LMP REPRESS 02 vlv - open/10 SEC/close
   Cabin PRESS APPROX 1.0 PSIA
   Adjust RH strut mirror
   CABIN PRESS IND-monitor for gross leakage (30sec)
   REPRESS 02 vlv - open
   CYRO 02 PRESS l ind - maintain 150 psi min
   CMP REPRESS PKG vlv - OFF
LMP CAB PRESS ind ~3.0 psia
   REPRESS 02 PRESS ind - 0.0 psig
   REPRESS 02 vlv - CLOSE

CDR CAB REPRESS vlv - OPEN (CW)(CMP PERFORM IF REQ'D)
   CRYO 02 PRESS 1 IND - maintain 150 psi min
   Verify cabin pressure above 3.0 psia
   Verify C and R SUIT FLOW vlv - OFF
   OPS 02 shutoff vlv - close(WITH PLSS/OPS-PLSS
   02 vlv - CLOSE)
   (OPEN PURGE VLV IF ATTACH TO EQUALIZE PRESS)
   As PGA press equalizes with
   cabin, remove interconnect
   from C 02 hoses and connect
   hoses to PGA (red to red, blue to blue)
   (WITH PLSS/OPS - REMOVE OPS 02 AND PURGE VLV)
   C SUIT FLOW vlv - adjust for comfort
   L SUIT FLOW vlv - increase for comfort
   Close purge valve (WITH PLSS/OPS - PLSS FAN-OFF)

LMP PLSS 02 vlv-CLOSE
   (OPEN PURGE VLV IF ATTACH TO EQUALIZE PRESS)
   As PGA press equalizes with cabin,
   remove interconnect from R 02 hoses
   and connect hoses to PGA connectors (WITH
   PLSS/OPS-REMOVE OPS 02 HOSE AND PURGE VLV)
   (red to red, blue to blue)
   CDR SUIT FLOW vlv (3) - FULL FLOW
   LMP Close purge valve if attach
   PLSS FAN - OFF
   Verify SUIT PWR - OFF
   Verify PWR sw - OFF
   Verify AUDIO CONT - NORM
   Connect R electrical umbilical to PGA
   (WITH PLSS/OPS-DISCONNECT PLSS COMM-
   PLSS MODE SEL - POS 0)
   AUDIO PANEL sws - as desired

NOTE - If CDR and LMP desire to doff
   PLSS/OPS at this point, refer
   to doffing procedures. CMP
   continue monitoring cabin repress
POST EVA SYSTEMS CONFIGURATION
CMF CAB PRESS ind - 4.7-5.3 psia
   CAB FAN (Both) - on (up)
   O2 PRESS IND sw - TK 1
CDR CAB REPRESS vlv - OFF (CCW)
   Doff gloves, helmets, and EVVA's, if req'd
   If helmets and gloves doffed - EMERG CAB PRESS
   SEL - BOTH
   SUIT RET VLV - OPEN (PULL)

OPS DOFFING
Remove waist tethers and stow in TSB
Remove purge valves and stow in TSB
Verify PLSS antenna stowed
Verify OPS 02 shutoff vlv - close
Verify OPS 02 actuator stowed
Disconnect OPS 02 hose and stow
Secure thermal cover
Doff OPS and PLSS straps
Secure OPS with PLSS straps
Stow interconnects in A-1

PLSS/OPS DOFFING
Remove waist tethers and stow in TSB
All RCU ELEC CNTLS-OFF
Disconnect RCU stow in TSB
Disconnect PLSS 02 and H2O Hoses
Disconnect lower then upper PLSS straps-DOFF-PLSS
Stow PLSS-02,H2O, and COMM Umbilicals
Stow OPS-02 Actuator and 02 hose
Temp stow PLSS/OPS

FINAL SYSTEM CONFIGURATION
O2 PRESS IND sw - SURGE TK
CRYO O2 PRESS 1 ind - 500 psia
Verify CAB REPRESS vlv - OFF (CCW)
Verify REPRESS 02 - CLOSE
REPRESS PKG VLV - FILL
Verify repress 02 press increasing
CRYO O2 PRESS 1 ind - 865-935 psia
O2 PRESS IND sw - TK 1
REPRESS PKG vlv - OFF
SECTION 4.7 CM EQUIPMENT JETTISON

CM EQUIPMENT JETTISON

CREW STATUS
At crew stations
UCTA donned and empty
Helmets stowed in helmet stowage bag
Gloves stowed
Comm carrier donned
O2 hoses connect red/red, blue/blue
SUIT FLOW vlv - SUIT FULL FLOW
SUIT RETURN vlv - OPEN (PULL)
EMER CAB PRESS sel - BOTH
Chronometers on left PGA sleeve
Inspect PGA zipper-verify lock-lock

SYSTEMS PREPARATION FOR DEPRESS
Verify repress O2 pressure
865-935 psi
EMERGENCY O2 valve - CLOSED
REPRESS O2 valve - CLOSE
Verify surge tank vlv - ON
O2 Press ind sw - SURGE TANK
Verify surge tank pressure
865-935 PSIA

EQUIPMENT PREPARATION FOR DEPRESS
Stow loose items
Prepare all equipment to be jettisoned and secure
- PLSS (1-2)
- RCU (1-2)
- OPS (1-2)
- PURGE VALVE (1-2)
- LIFELINE (1)
- EV VISORS (2)
- WAIST TETHERS (2)

PREP FOR CABIN DEPRESS
Verify PGA diverter valves - horizontal
Unstow helmet
Verify feed port cover installed
   and locked, wipe helmet with
   anti-fog
Position mikes, don helmet and "lock"
Secure helmet stowage bags
Don gloves and lock
SUIT RETURN vlv - CLOSE (PUSH)
EMER CAB PRESS sel - OFF
Check all PGA connections and verify
   lock-lock

PRESSURE INTEGRITY CHECK
DIRECT O2 - closed (CW)
Verify suit press - 4.7-5.3 psia
Verify O2 flow ind - 0.2-0.4 lb/hr

CAUTION
Suit test vlv should remain in
press position until suit cir-
cuit pressure is stabilized to
preclude seal carring.
If repositioning of suit test
vlv from press is required prior
to suit pressure & O2 stabiliza-
tion, perform the following:
   a Demand reg sel - off
   b Allow 15 sec (min) stabliza-
tion time
   c Reposition suit test vlv -
depress or off as applicable
   d When suit pressure stabilized,
demand reg sel - both

SUIT TEST vlv - press
O2 FLOW ind - 1.0 lb/hr (pegged)
Verify O2 FLOW HI lt - on
Verify MA pb/lt (3) and tone - on,
push, verify tone and lts off
after push
Cycle Suit Circuit RET vlv open
   and closed at suit pressure of
   1.5 to 2.0 psig
SUIT PRESS ind - 8.8-9.8 psia
PGA PRESS gage - 4.1-4.5 psig
Verify 02 FLOW HI lt - out
All 02 flow to stabilize 15 sec
02 flow will remain below 0.8 lbs/hr
for 30 sec after stabilization
SUIT TEST vlv - depress
02 FLOW ind - 0.2-0.4 lb/hr
SUIT PRESS ind - slightly > CAB PRESS
SUIT TEST vlv - OFF
Verify DEMAND REG SEL - BOTH

CABIN DEPRESS
Confirm GO for cabin depress
with MSFN
CABIN FAN (BOTH) - OFF
REPRESS PKG vlv - OFF
Verify CABIN PRESS REL vlv (BOTH)-
NORMAL (safety latch - ON)
SIDE HATCH DUMP vlv - OPEN (CCW)

NOTE - 02 FLOW HI WARNING LIGHT MAY
COME ON PRIOR TO CABIN PRESS
REG LOCK-UP

Monitor cabin pressure to 3.25 psia
At 3.25 psia, SIDE HATCH DUMP vlv - CLOSE
Verify 02 FLOW ind - Less Than 0.5 lb/hr
Verify cabin pressure at 3.25 psia
and CM suit circuit pressure stable
at 3.5-4.0 psia
SIDE HATCH DUMP vlv - OPEN
CABIN PRESS ind - 0.0 PSIA

HATCH OPENING
Verify hatch counterbalance - VENTED
Lock pin release knob - UNLOCK (DOWN)
Verify lock pin indicator released
Gear box sel - UNLATCH
BPC JETT -180° from BPC JETT (VERIFY)
ACTR handle sel - U
Unstow ACTR handle
Unlock hatch
Verify hatch unlocked
ACTR handle sel - L
Stow ACTR handle
Gear box sel - LATCH
Open hatch to full open

EQUIPMENT JETTISON

JETTISON EQUIPMENT -
- PLSS (1-2)
- RCU (1-2)
- OPS (1-2)
- PURGE VALVE (1-2)
- LIFELINE (1)
- EV VISORS (2)
- WAIST TETHERS (2)

HATCH CLOSING
Verify hatch seals are clear
Pull hatch to the ajar position
Verify ACTR handle sel - L
Verify gear box sel - LATCH
Verify latch strikers inboard of hatch sill
Unstow ACTR handle
Lock hatch
Verify lock pin had automatically engaged and that lock pin indicator in not extended
Stow ACTR handle
ACTR handle sel - N
Verify gear box sel - LATCH

CABIN REPRESS
SIDE HATCH DUMP vlv - CLOSE
Verify CABIN PRESS REL vlv (BOTH) - NORMAL (safety latch on)
Verify 02 PRESS IND sw - SURGE TANK
REPRESS PKG vlv - FILL
REPRESS 02 vlv - OPEN/10sec/CLOSE
Cabin press approx 1.0 psia
CABIN PRESS ind - monitor for gross leakage (30 sec)
REPRESS 02 vlv - OPEN
CRYO 02 PRESS 1 IND - maintain 150 psi min
PLSS 02 vlv - OFF
CABIN PRESS ind ~ 3.0 PSIA
REPRESS 02 PRESS ind - 0.0 PSIG
REPRESS 02 vlv - CLOSE
CABIN REPRESS vlv - OPEN (CW)
CRYO 02 PRESS 1 ind - maintain 150 psi min

SYSTEM CONFIGURATION
CAB PRESS ind - 4.7 - 5.3 PSIA
CAB FAN (BOTH) - ON (UP)
02 PRESS IND sw - TANK 1
CAB REPRESS vlv - OFF (CCW)

DOFF GLOVES AND HELMETS, IF REQ'D
If helmets and gloves doffed - EMERG CAB PRESS sel - BOTH
SUIT RET vlv - OPEN (PULL)

POST EVA CABIN CONFIGURATION
Remove CSC from PGA pocket and stow in A-5
EXT LTS - RUN/EVA - OFF (down)
Perform as desired
(a) Recharge Repress PKG
(b) Change crew stations
(c) Restow tool B & jack screws
(d) Unstow & install PGA bag
(e) Reinstall center couch
(f) Connect counterbalance (Pip pin in R-10)