Photo/TV Checklist

STS-127 Flight Supplement

Mission Operations Directorate
Operations Division

Final
May 20, 2009
MISSION OPERATIONS DIRECTORATE

PHOTO/TV CHECKLIST
STS-127 FLIGHT SUPPLEMENT

FINAL
May 20, 2009

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# PHOTO/TV CHECKLIST

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P/TV01 VIDEO SETUP (Continued)

NOTE
Steps 1-7 minimum reqmt for FD2 OBSS Inspection

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd

2. Perform DTV Setup

O19 TV PWR – OFF

L10:A1 Unstow AVIU and disconnect following cables:
ASC/ENT/FD TV Pwr Cable from J2
AVIU Adapter Cable from J5
ASC/ENT FD V10 Cable from J1
Temp stow AVIU and attached Digital CC Vid/Pwr Cable for FD CC

A15 Connect DTV Audio Cable to PS CCU
Config DTV H/W per H/W SUMMARY, FS 1-4

Config Panels

L10 (MUX) VTR/CC PWR – on (LED on)
  If dnlk:
  MUX/VTR/CC PWR – on (LED on)
  MUX BYPASS – ACT

(VIP) ATU – REC
  CCTV VIDEO IN – J3
  PWR – on (LED on)

(VTR) ON/STANDBY LED – green
  Switches set to White Dot (seven)
  COUNTER SELECT – COUNTER (TC)

Config Video

MON 2 SOURCE – C
L9 Config PS ATU per Comm Plan
P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

3. Perform MON 1,2 V10 Setup

MA9F Remove MON 1,2 Desk Assy Hardware from Stow-n-Go CTB

O19 TV PWR – OFF

Config MON 1,2 V10s and Cables per H/W SUMMARY, FS 1-4
Retrieve V10s from MS1, Stow-n-Go CTB. Remove, mark, and stow MS1 ASC V10 TAPE

Connect:
- MON 1,2 Digital CC Vid/Pwr Cables to MON 1,2 V10s
- MON 1,2 AVIU-CC Video Cables to MON 1,2 V10s
- Multiuse Brkt to desk
- RWS #1 Drag-Thru Cable to MON 1 AVIU J6
- MON 1 AVIU Cable to MON 1 AVIU J4
- MON 2 Balanced Video Cable to MON 2 AVIU J4
- MON 1,2 TV PWR Cable to MON 1,2 AVIU J2
- MON 1 Repeater Cable string to MON 1 AVIU J5 and A31p Vid In port
- Multiuse Brkt to wall

AVIU (MON 1,2) √SYNC/VIDEO – VIDEO
√HI-Z/75 – 75
√PWR SELECT – LO

R12 (VPU) VPU PWR – ON (LED on)

O19 TV PWR – ON
V10 (MON 1,2) PWR – ON
DISPLAY pb – toggle to display tape counter
√Tape installed

4. √RSC Video Cable connected between R12/OPP-RSC Video (J105) and R12/WIB-CCTV PL3
P/TV01  VIDEO SETUP (Continued)

SETUP (Continued)

5. Perform Analog Camcorder Setup for FD, MD per H/W SUMMARY, FS 1-4, as reqd

O19, MO58F  TV PWR – OFF

Retrieve:
ASC/ENT/FD AVIU from temp stow for FD CC
MD AVIU from Stow-n-Go CTB for MD CC

AVIU (FD, MD)  SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO

O19, MO58F  TV PWR – ON

CC  Install Wide Conversion lens
ND FILTER – OFF
OUTPUT – CAM
STANDBY/LOCK – STANDBY
PWR dial – “green”
Tape installed
Viewfinder (LCD) displays “green”
Install Audio Muting Plug (optional)
Install Multiuse Brkt

6. Perform LCS Cable Connections per H/W SUMMARY, FS 1-4

A17  If MD Camcorder setup not performed, unstow AE/MD AVIU from Temp Stow

Middeck  Connect end of LCS Video Cable to MD AVIU J1

AVIU (MD)  HI-Z/75 – 75

FIt Deck  Connect other end of LCS Video Cable (A31p Video Adapter) to A31p Video Out port via PGSC Usage Chart
Connect OPP-LCC Cable to A31p RJ45 Ethernet port via PGSC Usage Chart
P/TV01  VIDEO SETUP (Continued)

SETUP (Continued)

7. Perform SSV Setup

Unstow:
- SSV Compression Encoder Box
- SSV BNC-BNC Cable
- SSV to PDIP/CIP Cable
- PGSC Pwr Cable
- Bal/Unbal Xfmr

Config SSV H/W per H/W SUMMARY, FS 1-4

**NOTE**
- Video Spare 1 controlled by MCC instead of pnl A7

L12 (SSP 2)  √ PDIP 2 PWR 1 (CB3) – cl
L11 (PDIP 2)  DC PWR 1 – ON

Config SSV settings
- IN SEL – NTSC
- Mode – 3
- OUTRATE – 4
- SSV Pwr – on
- √ Pwr LED illum
- √ ENC DATA LED flickering
- √ FRM DATA LED flickering
- √ FILL FRM pulsing

Inform MCC when SSV SETUP complete
P/TV01  VIDEO SETUP (Continued)

SETUP (Continued)

8. Perform WVS Setup
   a. Activate WVS System

   A7  WIRELESS VID HTR – ON
       PWR – ON

   MO58F  TV PWR – OFF

   b. Remove WVS Hardware from Stow-n-Go CTB

      Config WVS 1,2 V10s and Cables per H/W SUMMARY, FS 1-4
      Connect:
      WVS 1,2 Digital CC Vid/Pwr Cables to WVS 1,2 V10s
      WVS 1,2 AVIU-CC Vid Cables to WVS 1,2 V10s
      Multiuse Brkt to desk
      Pre-routed WVS 1,2 Balanced Video Cables from R12/VPU XCVR 1,2 BAL to WVS 1,2 AVIU J4
      Pre-routed WVS TV Pwr Cables to WVS 1,2 AVIU J2
      Balanced Video Cables stowed on WVS Stow-n-Go desk to WVS 1,2 AVIU J6
      ATU Recorder Cables to left (white) port per H/W SUMMARY, FS 1-4
      Multiuse Brkt to wall
      PCMCIA-to-WIB Remote Cable to R12/WIB J701
      RS-422 PCMCIA Card/Cable Assy and PCMCIA-to-WIB Remote Cable to bottom PCMCIA slot on A31p per
      PGSC Usage Chart

      AVIU (WVS 1,2)  \(\checkmark\)SYNC/VIDEO – VIDEO
                        \(\checkmark\)HI-Z/75 – 75
                        \(\checkmark\)PWR SELECT – LO

      V10 (two)  \(\checkmark\)TV PWR – ON

      MO58F  \(\checkmark\)PWR – ON

      V10 (WVS 1,2)  \(\checkmark\)Tape installed
                     \(\checkmark\)WVS Test Pattern displayed (color bars w/"No WVS Video")
                     PWR – OFF

      R10  Config MS ATU/CCU per Comm Plan

FS 1-9
8. Perform WVS Setup (Continued)

c. WVS PGSC Prep

PGSC Powerup and Application Opening

PGSC

Power – ON
Select Shuttle Apps icon
Select WVS icon

Select ‘No’ at ‘Restore To Previous Settings:’ window

If ‘Comm Port Configuration’ error displayed:
- Remove Quatech RS-422 Card
- Select ‘Start’ -> ‘Shut Down’ -> ‘Shut Down’ -> ‘OK’
- Reinstall Quatech RS-422 Card in bottom PCMCIA slot
- Power – ON
- Select Shuttle Apps icon
- Select WVS icon

RF Camera page will appear

Application Setup

If ‘Static XCVR’ (‘Bad Camera ID’, ‘Temp Alert’, ‘Temp Caution’) alert msg:
- Perform ALERT MSG TROUBLESHOOTING (Cue Card, WVS)

If ‘Static RF Camera’ alert msg:
- Disregard
- Select ‘File’ -> ‘Assign Camera ID’

Verify following:

<table>
<thead>
<tr>
<th>Camr Address</th>
<th>S/N</th>
<th>In Use</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>1010</td>
<td>1</td>
<td>EV1</td>
</tr>
<tr>
<td>18</td>
<td>1007</td>
<td>1</td>
<td>EV2</td>
</tr>
</tbody>
</table>

If Camr IDs not correct:
- Select ‘Delete Entry’ until all deleted
- Perform CAMR ID ASSIGNMENT (Cue Card, WVS) as reqd

When complete, select ‘OK’
P/TV01 VIDEO SETUP (Concluded)

8. Perform WVS Setup (Concluded)

c. WVS PGSC Prep (Concluded)
   Application Setup (Concluded)
   Sel ‘File’ → ‘Advanced Controls’
   On XVCR tab:
      √ IF – selected
      √ Other options not selected
   Sel RF Camera tab:
      √ Power Selections – selected
      √ Automatic Gain Control – selected
      √ S-Band Level – selected
      √ Other options not selected
   When complete, sel ‘OK’

d. PWRDN
   Sel ‘File’ → ‘Exit’
   A7 WIRELESS VID PWR – OFF
   HTR – OFF

L5 9. Unstow, set up BPSMU w/BPSMU to CCU Adapter Cable at CDR CCU
    Connect BPSMU Batt
SCENE SYNOPSIS
Scene contains procedures for obtaining video, still photos of ISS rndz, docking

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH for in-cabin imagery
   
   Lens – 12-24mm
   - Lens Focus Mode – M/A
   - Aperture – Min, locked
   - Body Focus Mode – S
   - √Batt installed
   - √Flash Card installed
   - Pwr – ON
   - Top LCD
     - √Batt
     - √Frames remaining sufficient
   - Exp Comp (       ) – 0.0
   - Exp Mode – P
   - Meter – Matrix (     )
   - Diopter – Adjust
   - Frame Rate – S
   - √BKT disabled – 0 F
   - Rear LCD
     - √ISO – 100
     - √QUAL – RAW
     - √WB – 0, A
   - AF Area Mode – [    ]
   - √Focus Area – Center
   - √Focus Selector Lock – L
   
   SB-800 Flash Settings
   - ON/OFF pb – ON
   - √Diffuser Dome installed
     - √MODE – [    ]
     - √Exp Comp – 0 EV
     - Tilt – 45° (Direct)
3. Perform D2Xs MANUAL for docking/external imagery

   Lens – 400mm (80-200mm)
   If 400mm:
     Focus Limit – ∞-6m
     Lens Focus Mode – A
   If 80-200mm:
     Focus Limit – full
     Lens Focus Mode – M/A

   Aperture – Min, locked
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient

   Exp Comp ( ) – 0.0
   Exp Mode – M
     SS – 500
     f/stop – 8
   Meter – Matrix ( )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0, A
   AF Area Mode – [ ]
   √Focus Area – Center
   √Focus Selector Lock – L

   SB-800 Flash Settings
     ON/OFF pb – OFF
P/TV02  DOCK (Continued)

SETUP  (Concluded)

4. Perform Hardware Verification for V10s, FD CC, DTV

O19, MO58F
\n\sqrt{TV PWR – ON}

R12 (VPU)
\sqrt{VPU PWR – ON (LED on)}
\sqrt{Green Jumper – SEC C/L}
\sqrt{SEC C/L Cap installed}

V10
\sqrt{PWR – ON (MON 1,2)}
\sqrt{Tape installed}
\sqrt{DISPLAY pb – Toggle to display tape counter}

CC
\sqrt{Wide Conversion lens installed}
\sqrt{ND FILTER – OFF}
\sqrt{OUTPUT – CAM}
\sqrt{A.. B.. – □□□}
\sqrt{STANDBY/LOCK – STANDBY}
\sqrt{PWR dial – “green” □□□}
\sqrt{Tape installed}
\sqrt{Viewfinder (LCD) displays “green” ●||}
\sqrt{Install Audio Muting Plug (optional)}
\sqrt{Install Multiuse Brkt}

MON 2
\sqrt{SOURCE – C}

L10 (MUX)
\sqrt{VTR/CC PWR – on (LED on)}
If dnlk, MUX/VTR/CC PWR – on (LED on)
\sqrt{VIP)
\sqrt{VTR)
\sqrt{ON/STANDBY LED – green}
\sqrt{Tape installed}

A31p
Double click ‘Shuttle Apps’ > ‘NASA Video Overlay’
\sqrt{NASA Video Overlay’ window displayed}
\sqrt{Sel ‘Full Screen’}
Press ‘ESC’ or ‘W’ key to minimize display as reqd
## P/TV02 DOCK (Continued)

### OPS

<table>
<thead>
<tr>
<th>√</th>
<th>Item # Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PLB</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2J/A-6</td>
<td>PAO Coverage</td>
<td>D2Xs 12-24mm, If exterior: Flash ON/OFF – OFF</td>
<td>As desired</td>
<td>G1 Tape installed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CC</td>
<td>LIVE (if avail)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dnlk</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plan for end of day crew choice video, DCS</td>
</tr>
<tr>
<td>2</td>
<td>2J/A-31</td>
<td>Rendezvous • Overall • Closeup • Damage • Deterioration</td>
<td>D2Xs (Manual) 400mm(80-200mm), Flash ON/OFF – OFF</td>
<td>A(B,C,D), ELB</td>
<td>G1 As desired</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Map ISS surfaces w/30% overlap</td>
</tr>
<tr>
<td>3</td>
<td>2J/A-31</td>
<td>Approach, Dock • PMA2 Docking Target • PMA2 Mating Surfaces • PMA2 TCS Planar and Hemispherical Retro Reflectors</td>
<td>D2Xs (Manual) 400mm(80-200mm), Flash ON/OFF – OFF</td>
<td>C/L Per RNDZ A(D) Per RNDZ C(B) Docking view</td>
<td>G1 As desired</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rcd C/L Camr video thru hard dock on DTV Continually focus sharpness</td>
</tr>
</tbody>
</table>
OPS (Continued)

APPROACH/DOCKING RQMTS

Mapping of ISS Module Surfaces

PMA2 APDS Area

PAO Views

C/L Camr

Camr A(D)

Camr C(B)

Docking View

D2Xs Camr w/400mm Lens

D2Xs Camr w/80-200mm Lens

D2Xs Camr w/12-24mm Lens

Range Ruler

MON 1, DTV (RCD)

MON 2

jso48037_127_003.cvx
P/TV02 DOCK (Concluded)

OPS (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. D2Xs
   √ Exp Mode – P
   √ Pwr – OFF
   √ Flash ON/OFF – ON

2. TV System
   R12 (VPU)  
   √ Green Jumper – SEC C/L
   √ SEC C/L Cap installed
   √ VPU PWR – ON (LED on)
   A7  
   √ VID OUT MON 1 pb – push
   IN PL2(VPU) pb – push
   CAMR CMD IRIS – CL
   L12 (SSP 2)  
   √ C/L CAM PWR – OFF

ODS
   Remove, stow C/L camr, Harness Assy, Bridge
   Go to DEACTIVATION (Cue Card, TV) as reqd
This Page Intentionally Blank
H/W SUMMARY

- Digital CC Vid/Pwr Cable (15 ft)
- Wide Conversion Lens
- MON 1 TV Pwr Cable (10 ft)
- MON 2 TV Pwr Cable (10 ft)
- MON 2 Balanced Video Cable
- MON 2 VPU Cable
- Handheld CC
- RCA-BNC Adapter
- FD CC Adapter
- World Map A31p Video Adapter
- Multiuse Arm
- DTV Audio Cable
- DTV MON 2 Cable
- DTV Audio Cable
- DTV Audio Cable
- DTV Audio Cable
- DTV Audio Cable
- DTV Audio Cable
P/TV03 UNDOCK (Continued)

SCENE SYNOPSIS
Scene contains procedures for obtaining video, still photos of ISS undocking, flyaround

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH for in-cabin imagery

   - Lens – 12-24mm
   - Lens Focus Mode – M/A
   - Aperture – Min, locked
   - Body Focus Mode – S
   - √Batt installed
   - √Flash Card installed
   - Pwr – ON
   - Top LCD
     - √Batt
     - √Frames remaining sufficient
   - Exp Comp ( ⤴ ) – 0.0
   - Exp Mode – P
   - Meter – Matrix ( ⤍ )
   - Dioptr – Adjust
   - Frame Rate – S
   - √BKT disabled – 0 F
   - Rear LCD
     - √ISO – 100
     - √QUAL – RAW
     - √WB – 0, A
   - AF Area Mode – [ [] ]
   - √Focus Area – Center
   - √Focus Selector Lock – L
   - SB-800 Flash Settings
     - ON/OFF pb – ON
     - Diffuser Dome installed
     - √MODE – [ ]
     - √Exp Comp – 0 EV
     - Tilt – 45° (Direct)
P/TV03  UNDOCK (Continued)

SETUP (Continued)

3. Perform D2Xs MANUAL for undocking/external imagery

   Lens – 400mm(80-200mm)
   If 400mm:
   | Focus Limit – ∞-6m
   | Lens Focus Mode – A
   If 80-200mm:
   | Focus Limit – full
   | Lens Focus Mode – M/A
   Aperture – Min, locked
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp ( ☐ ) – 0.0
   Exp Mode – M
   SS – 500
   f/stop – 8
   Meter – Matrix ( ☐ )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0,A
   AF Area Mode – [ ]
   √Focus Area – Center
   √Focus Selector Lock – L

SB-800 Flash Settings
   ON/OFF pb – OFF
P/TV03  UNDOCK (Continued)

**SETUP** (Concluded)

4. Perform Hardware Verification for V10s, FD CC, DTV

**O19**
- √TV PWR – ON

**R12 (VPU)**
- √VPU PWR – ON (LED on)
- √Green Jumper – SEC C/L
- √SEC C/L Cap installed

**V10**
( MON 1,2 )
- PWR – ON
  - √Tape installed
  - DISPLAY pb – Toggle to display tape counter

**CC**
- √Wide Conversion lens installed
- √ND FILTER – OFF
- √OUTPUT – CAM
- √[C] 0 – [32]
- √STANDBY/LOCK – STANDBY
  - PWR dial – “green”
- √Tape installed
- √Viewfinder (LCD) displays “green”
  - Install Audio Muting Plug (optional)
  - Install Multiuse Brkt

**MON 2**
- SOURCE – C

**L10 (MUX)**
- VTR/CC PWR – on (LED on)
  - If dnlk, MUX/VTR/CC PWR – on (LED on)
- (VIP) PWR – on (LED on)
- (VTR) ON/STANDBY LED – green
- √Tape installed

**A31p**
- Double click ‘Shuttle Apps’ > ‘NASA Video Overlay’
- √’NASA Video Overlay’ window displayed
  - Sel ‘Full Screen’
  - Press ‘ESC’ or ‘W’ key to minimize display as reqd
## UNDOCK (Continued)

### OPS

<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
</table>
| ![√](https://example.com/checkbox.png) | 1. 2J/A-6 | PAO Coverage | D2Xs 12-24mm  
If exterior: Flash ON/OFF – OFF | As desired  
G1 Tape installed | Plan for end of day crew choice video, DCS |
| ![√](https://example.com/checkbox.png) | 2. 2J/A-32 | Undock  
- PMA-2 mating surfaces  
- PMA-2 hemispherical planar retroreflector | D2Xs (Manual)  
80-200mm(400mm) Flash ON/OFF – OFF | A(D) Per RNDZ  
C/L Docking tgt and PAO view | Map ISS surfaces w/30% overlap |
| ![√](https://example.com/checkbox.png) | 3. 2J/A-2 | Flyaround (External Payloads on Columbus Module)  
- EuTEF  
- SOLAR  
- MISSE 6  
- Surfaces  
- Handrails  
- SM thrusters on Zenith side near aft end  
- Trusses including radiators/baseplates and SAWs (in/outboard SABB insulation degradation)  
- Newly deployed hardware | D2Xs (Manual)  
80-200mm(400mm) Flash ON/OFF – OFF | | IVA still imagery returned post |
UNDOCKING/FLYAROUND RQMTS

- **PMA2 APDS Area**
- **Mapping of ISS Module Surfaces**
- **PAO Views**
- **C/L Camr**
- **Cmr C**
- **Cmr A(D) (flyaround at 400 ft)** (At 400 ft only)
- **Cmr A(D)**
P/TV03  UNDOCK (Concluded)

**OPS** (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

**DEACTIVATION**

1. **D2Xs**
   - √ Exp Mode – P
   - √ Pwr – OFF
   - √ Flash ON/OFF – ON

2. **TV System**
   - R12 (VPU)
     - √ Green Jumper – SEC C/L
     - √ SEC C/L Cap installed
     - √ VPU PWR – ON (LED ON)
   - A7U
     - √ VID OUT MON 1 pb – push
     - IN PL2(VPU) pb – push
     - CAMR CMD IRIS – CL
   - L12 (SSP 2)
     - √ C/L CAM PWR – OFF

**ODS**

Remove, stow C/L Camr, Harness Assy
Go to DEACTIVATION (Cue Card, TV) as reqd
INGRESS TV CONFIG

VIDEO PROCESSING UNIT

- Wide Conversion Lens
- Worklight
- Batt

(Ingress TV CONFIG)

(jso48038_127_005r1.cvx)
Scene contains procedures for documenting ISS ingress/egress w/video and still photos

**SETUP**

1. **Config ISS Video**
   - Perform ACTIVATION (Cue Card, TV) for DNLK OPS of ISS signal as reqd
   - Green Jumper – ISS
   - √ VPU PWR – ON

2. **Perform Ingress Camcorder Setup**
   - **CC**
     - Install:
       - Wide Conversion lens
       - CC Batt
       - √ ND FILTER – OFF
       - √ OUTPUT – CAM
       - √ [ ]
       - √ STANDBY/LOCK – STANDBY
         - PWR dial – “green”
         - Tape installed
       - √ Viewfinder (LCD) displays “green”
         - Install Audio Muting Plug (optional)
         - Install Multiuse Brkt

   - **CAUTION**
     - Worklights @ full pwr for 45 min.
     - half pwr for unlimited time

   - **Worklights**
     - Install BATTS
     - Mount light(s) w/Bracket (Velcro/tape)
     - Pwr – as reqd
P/TV04  INGRESS/EGRESS (Continued)

SETUP (Concluded)

3. Perform D2Xs PROGRAM w/FLASH

   Lens – 12-24mm
   √Aperture – Min, locked
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp ( [ ] ) – 0.0
   Exp Mode – P
   Meter – Matrix ( [ ] )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0,A
   AF Area Mode – [ [ ] ]
   √Focus Area – Center
   √Focus Selector Lock – L

SB-800 Flash Settings
   ON/OFF pb – ON
   √Diffuser Dome installed
   MODE – [ ]
   √Exp Comp – 0 EV
   Tilt – 45° (Direct)
## P/TV04 INGRESS/EGRESS (Concluded)

### OPS

<table>
<thead>
<tr>
<th>v</th>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hatch Opening, Ingress</td>
<td>D2Xs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hatch Close, Egress</td>
<td>12-24mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>2J/A-6</td>
<td></td>
<td>D2Xs</td>
<td></td>
<td>G1</td>
<td>LIVE (if avail)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

### DEACTIVATION

1. D2Xs
   - Pwr – OFF

2. TV System
   - Go to DEACTIVATION (Cue Card, TV) as reqd
P/TV05    ISS INTERNAL OPS (Continued)

H/W SUMMARY (Concluded)

Wireless Video System
Interface Box

VIDEO PROCESSING UNIT

(F12)

ISS

CCTV PL3

RWS 1, 2

Drag-Through Cables

CDR

CCU

BPSMU to CCU Adapter Cable

NOTE: For contingency use

L10

To Station and Drag-Through QD Box

22 ft BPSMU 1, 2 Audio Cables

RWS 1, 2 Drag-Thru Cables

22 ft BPSMU 1, 2 Audio Cables

4 ft BPSMU 1, 2 Audio Cables

BPSMU/ODS Adapters

RWS 2 Drag-Thru Cable

RWS 1 Drag-Thru Cable

L10

Bal/Unbal

MON 1 AVU

BPSMU

Temp stow BPSMU

CCU

CCU

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

RWS 1, 2 Drag-Thru Cables

BPSMU

BPSMU

L10

VTR/CC

MUX

VIP REC

MUX/TV/CO

ADT

MUX SYNAPSS

IEEE-114

VTR

BPSMU to CCU Adapter Cable

RWS 1 Drag-Thru Cable

NOTE: For contingency use

jso4838_127_008br1.cvx

FS 1-37

P/TV/127/FIN
SCENE SYNOPSIS

Scene contains procedures for setup, documenting ISS internal ops (surveys, PAO events, logistics, transfers, closeouts) w/video, still photos

SETUP

WARNING
Locate QDs at hatches for ease in locating, disconnecting during hatch closure. Route, restrain cables to prevent loose cable lengths which could entrap crew

BPSMU AND RWS CABLES

1. Config H/W per H/W SUMMARY, FS 1-36 and FS 1-37

   Config RWS Vid Cables:
   MON 1,2
   RWS 1 Drag-Thru Cable connected to MON 1 AVIU J6
   (Stow-n-Go)
   L10:A1
   RWS 2 Drag-Thru Cable connected to DTV VTR OUT connector
   MF71G
   Retrieve second BPSMU; connect internal batt; temp stow in ODS for contingency use

   Config BPSMU and RWS Cables:
   ODS/PMA2
   Connect orbiter RWS 1,2 Cables to Drag-Through QD Box
   Connect BPSMU Cables to orbiter A/L CCU 1,2 and Drag-Through QD Box
   Config A/L ATU per Comm Plan

   If V10:
   ISS
   Pwr configured per P/TV121 DOCKED OPERATIONS, dwg USOS 120VDC –V10 VTRs (SODF: ISS PTV: SCENES)
   V10 (RWS 1,2)
   -or-
   SSC (JEM)
   PWR– ON
P/TV05  ISS INTERNAL OPS (Continued)

SETUP (Continued)

BPSMU AND RWS CABLES (Concluded)

~

If A31p:

If A31p w/’NASA Video Monitor’ under Station Apps:

√ Drag-Thru Cable connected to A31p Video Adapter

√ PWR – ON

Sel ‘Station Apps: NASA Video Monitor’

√ NASA Video Monitor 1.0.0.0’ window displayed

Sel ‘Settings’

√ ‘Configuration’ window displayed

Video Input Standard: – NTSC

Video Input – ‘Composite (RCA)’

Video Control – press ‘Set to defaults’ pb

Commit Changes – ‘OK’

Sel ‘Full Screen’

Press ‘ESC’ to minimize display as reqd

If A31p w/’COSS Apps: Video Converter’ under Station Apps:

√ Drag-Thru Cable connected to A31p Video Adapter

√ PWR – ON

Sel ‘Station Apps: COSS Apps: Video Converter’

√ Video Converter’ window displayed

Sel ‘Set Properties’

√ Video Settings’ window displayed

Format: – NTSC

Close ‘Video Settings’ window

Sel ‘Full Screen’

Press ‘ESC’ or ‘W’ to minimize display as reqd

PAO EVENT

1. Config VPU

R12 (VPU)  √ Green Jumper – ISS

√ VPU PWR – ON (LED on)

2. Config Shuttle Video

A7  √ VID OUT DNLK pb – push

IN PL2(VPU) pb – push
P/TV05  ISS INTERNAL OPS (Continued)

SETUP (Concluded)

STILL CAMR

1. Perform D2Xs PROGRAM w/FLASH

   Lens – 12-24mm
   - Lens Focus Mode – M/A
   √Aperture – Min, locked
   - Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   - √Batt
   - √Frames remaining sufficient
   Exp Comp ( ) – 0.0
   Exp Mode – P
   Meter – Matrix ( )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   - √ISO – 100
   - √QUAL – RAW
   - √WB – 0.A
   AF Area Mode – [ ]
   √Focus Area – Center
   √Focus Selector Lock – L

SB-800 Flash Settings
   √Diffuser Dome installed
   ON/OFF pb – ON
   √MODE – [ ]
   √Exp Comp – 0 EV
   Tilt – 45° (Direct)
**OPS**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>√</td>
<td></td>
<td>General ISS IVA Activity</td>
<td>D2Xs 12-24mm</td>
<td>ISS G1</td>
<td>Plan for end of day crew choice video</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- PAO Scenes of Interest</td>
<td>For Crew Photo: Perform D2Xs CREW PHOTO (Cue Card, D2Xs SETUP)</td>
<td>LIVE (if avail)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Crew Photo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

**DEACTIVATION**

1. D2Xs
   - Pwr – OFF

2. Drag-Through QD Box
   - Disconnect:
     - RWS Cables (two) from orbiter side Video 1,2 ports. Stow cables on orbiter
     - BPSMU Cables from orbiter side BPSMU 1,2 ports and ODS CCU,TV ports; stow cables on orbiter
     - Transfer Drag-Through QD Box and remaining attached cables to ISS

3. Temp-Stowed BPSMU
   - Unstow BPSMU; restow in MF71G

4. TV System
   - Go to DEACTIVATION (Cue Card, TV) as reqd
P/TV06  ROBOTICS OPERATIONS

H/W SUMMARY

Digital CC Vid/Pwr Cable (15 ft)

AVIU-CC Video Cable (Not Used)

MON 1 AVIU Cable

MON 2 Balanced Video Cable

RWS 1 Drop-Thru Cable

RWS 2 Drop-Thru Cable

RWS 1 BNC Vid Cable

RWS 2 BNC Vid Cable

A31p Video Adapter

NOTE: MO6P MD Piggy J2 port configured for KEEL 2 (AE) video input

To MON 2 CI N

NOTE: MO58F MD Pigmy J2 port configured for KEEL 2 (JLE) video input

Wide Conversion Lens

Multiuse Arm

FD CC

RCA-BNC Adapter

P/TV/127/FIN
SCENE SYNOPSIS

Scene contains procedures for obtaining video of SSRMS activities

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd

2. Perform Hardware Verification for V10s, FD CC, DTV, Keel Camr

O19

√TV PWR – ON

R12 (VPU)

√VPU PWR – ON (LED on)
Green Jumper – ISS

√Drag-Thru Cables configured as reqd

V10

PWR – ON

√Tape installed
DISPLAY pb – Toggle to display tape counter

(CC)

√Wide Conversion lens installed
√ND FILTER – OFF
√OUTPUT – CAM
√STANDBY/LOCK – STANDBY
PWR dial – “green”
√Tape installed
√Viewfinder (LCD) displays “green”
Install Audio Muting Plug (optional)
Install Multiuse Brkt

MON 2

SOURCE – C

L10 (MUX)

VTR/CC PWR – on (LED on)
If dnlk, MUX/VTR/CC PWR – on (LED on)
(VIP)

PWR – on (LED on)
(VTR)

ON/STANDBY LED – green
√Tape installed
P/TV06  ROBOTICS OPERATIONS (Continued)

SETUP (Concluded)

If KEEL 1 (ICC) desired:

<table>
<thead>
<tr>
<th>R12 (VPU)</th>
<th>3. √VPU PWR – ON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Green Jumper – ISS</td>
</tr>
<tr>
<td></td>
<td>Disconnect RSC Video Cable at P/L3</td>
</tr>
<tr>
<td></td>
<td>Remove, temp stow KEEL 1 Blue Jumper</td>
</tr>
<tr>
<td></td>
<td>Connect Keel 1-P/L3 Video Assy Cable to P/L3 input and KEEL 1 “From” port</td>
</tr>
<tr>
<td>(SSP 2)</td>
<td>√cb CB2 – cl</td>
</tr>
<tr>
<td></td>
<td>√KEEL 1 PWR (ICC) – ON</td>
</tr>
<tr>
<td>A7U</td>
<td>VID OUT MON1(2) pb – push</td>
</tr>
<tr>
<td></td>
<td>IN P/L3 pb – push</td>
</tr>
<tr>
<td></td>
<td>Cycle KEEL 1 ILL.PWR (ICC) for desired illum</td>
</tr>
</tbody>
</table>

If KEEL 2 (JLE) desired:

| MO58F     | 4. √KEEL 2 (JLE) Cable connected to J2 MD Pigmy port |
| R12 (VPU) | √KEEL 2 (JLE) Cable connected to VPU KEEL 2 port |
| (SSP 2)   | √cb CB1 PDIP 2 PWR 2 – cl |
|           | √KEEL 2 PWR (JLE) – ON |
| A7U       | VID OUT MON1(2) pb – push |
|           | IN MIDDECK pb – push |
|           | Cycle KEEL 2 ILL.PWR (JLE) for desired illum |

OPS

<table>
<thead>
<tr>
<th>Item #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PAO Coverage</td>
<td>D2Xs</td>
<td>As desired</td>
<td>LIVE (if avail) Plan for end of day crew choice video,DCS</td>
</tr>
<tr>
<td>2J/A-6</td>
<td></td>
<td>12-24mm</td>
<td>G1 Tape installed</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>JLE Removal From JEF</td>
<td></td>
<td>A(B,C,D),ELB, EE KEEL 2, P1 LOOB, S1 LOOB</td>
<td>Live dnlk highly desired Replay or post-flt return reqd</td>
</tr>
<tr>
<td>2J/A-10</td>
<td>• Obtain video of JLE being removed from JEF during JLE berthing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>JLE Berthing</td>
<td></td>
<td>A(B,C,D),ELB, EE KEEL 2, P1 LOOB, S1 LOOB</td>
<td>Live dnlk highly desired Replay or post-flt return reqd</td>
</tr>
<tr>
<td>2J/A-11</td>
<td>• Obtain video of JLE berthing in PLB during JLE install</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## P/TV06 ROBOTICS OPERATIONS (Continued)

### OPS (Concluded)

<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 4.     | 2J/A-20 | JLE Install Onto JEF  
- Obtain video of JLE install onto JEF | | A(B,C,D),ELB, EE,P1 LOOB, S1 LOOB, JEM EE (SRMS RSC) | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 5.     | 2J/A-19 | JLE Unberth  
- Obtain video of JLE unberth from PLB | | A(B,C,D),ELB, KEEL 2 | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 6.     | 2J/A-15 | JEF to JPM EFBM Install  
- Obtain video of JEF install to JPM via EFBM | | A(B,C,D),ELB, EE,P1 LOOB, S1 LOOB, JEM EE, EXTA | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 7.     | 2J/A-8  | JRMS Payload Xfer  
- ICS EF Install (removal from JLE and install on JEF)  
- MAXI Install (removal from JLE and install on JEF)  
- SEDA AP Install (removal from JLE and install on JEF) | | ELB,EE, P1 LOOB, S1 LOOB, JEM EE, EXTA | LIVE (if avail) | Replay or post-flt return reqd |

If OPS temporarily suspended, perform DEACTIVATION as reqd  
If OPS completed, go to DEACTIVATION
P/TV06   ROBOTICS OPERATIONS (Concluded)

DEACTIVATION

1. TV System
   L12 (SSP 2) KEEL 1 PWR (ICC) – OFF
      √1 ILL.PWR (ICC) – ON
      2 PWR (JLE) – OFF
      √2 ILL.PWR (JLE) – ON

   Go to DEACTIVATION (Cue Card, TV) as reqd

   MO58F √TV PWR – OFF
      Disconnect Keel 2 (JLE) Cable from MD Pigmy J2 port
      Reconnect MD TV Pwr Cable to MD Pigmy J2 port

   R12 (VPU) Disconnect Keel 1-P/L3 Video Assy Cable from P/L3
      Reconnect RSC Video Cable to P/L3 input
SCENE SYNOPSIS
Scene contains procedures for documenting ISS EVA and IVA ops w/video, still photos

SETUP

FOR ALL EVA:
1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
2. Perform D2Xs PROGRAM w/FLASH
   - Lens – 12-24mm
     - Lens Focus Mode – M/A
   - Aperture – Min, locked
   - Body Focus Mode – S
   - Batt installed
   - Flash Card installed
   - Pwr – ON
   - Top LCD
     - Batt
     - Frames remaining sufficient
   - Exp Comp ( ) – 0.0
   - Exp Mode – P
   - Meter – Matrix ( )
   - Diopter – Adjust
   - Frame Rate – S
   - BKT disabled – 0 F
   - Rear LCD
     - ISO – 100
     - QUAL – RAW
     - WB – 0, A
   - AF Area Mode – [ ]
     - Focus Area – Center
     - Focus Selector Lock – L
   - SB-800 Flash Settings
     - Diffuser Dome installed
       - ON/OFF pb – ON
     - MODE –
     - Exp Comp – 0 EV
       - Tilt – 45° (Direct)
3. Perform Hardware Verification for V10s, FD CC, DTV

<table>
<thead>
<tr>
<th>O19</th>
<th>TV PWR – ON</th>
</tr>
</thead>
</table>
| R12 (VPU) | VPU PWR – ON (LED on)  
|         | Green Jumper – ISS |
| V10 (MON 1,2, WVS 1,2) | PWR – ON |
|     | Tape installed  
|     | DISPLAY pb – Toggle to display tape counter |

- **CC**
  - Install Wide Conversion lens
  - ND FILTER – OFF
  - OUTPUT – CAM
  - STANDBY/LOCK – STANDBY
  - PWR dial – “green”
  - Tape installed
  - Viewfinder (LCD) displays “green”
  - Install Audio Muting Plug (optional)
  - Install Multiuse Brkt

<table>
<thead>
<tr>
<th>MON 2</th>
<th>SOURCE – C</th>
</tr>
</thead>
</table>
| L10 (MUX) | VTR/CC PWR – on (LED on)  
| (VIP) | PWR – on (LED on)  
| (VTR) | ON/STANDBY LED – green |
|       | Tape installed |
P/TV07  EVA (Continued)

SETUP (Concluded)

4. Config WVS and PGSC

a. Activate WVS System

\[A7\]

\[\sqrt{\text{WIRELESS VID HTR – ON}}\]

\[\text{PWR – ON}\]

b. WVS PGSC Prep

\[\text{PGSC Pwrup and Application Opening}\]

\[\text{Pwr – ON}\]

\[\text{Sel Shuttle Apps icon}\]

\[\text{Sel WVS icon}\]

\[\text{Sel ‘No’ at ‘Restore To Previous Settings’ window}\]

If ‘Comm Port Configuration’ error displayed:

\[\text{Remove Quatech RS-422 Card}\]

\[\text{Sel ‘Start’ > ‘Shut Down’ > ‘Shut Down’ > ‘OK’}\]

\[\text{Reinstall Quatech RS-422 Card}\]

\[\text{Pwr – ON}\]

\[\text{Sel Shuttle Apps icon}\]

\[\text{Sel WVS icon}\]

\[\text{RF Camera page will appear}\]

\[\text{NOTE}\]

\[\text{During EVA prep, EMU TV assy will be pwrd}\]

Application Setup

Select Page – XCVR

\[\text{Transceiver 1(2) CMD Power – ON (green CMD PWR:LVL- “ON:Min”)}\]

\[\text{RF Camera 1 – One EVA crewmember (green “ON”)}\]

\[\text{RF Camera 2 – Other EVA crewmember (green “ON”)}\]

If alert msg, perform ALERT MSG TROUBLESHOOTING (Cue Card, WVS)

Select Page – RF CAMERA

\[\text{Near middle of RF Camera page, sel ‘Advanced Controls’}\]

For center lens on each RF Camr Assy:

\[\text{Lens Iris Cntl – op(cl) until good video on V10(MON)}\]
## P/TV07  EVA (Continued)

### OPS

<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2J/A-6</td>
<td>PAO Coverage</td>
<td>IVA D2X, 12-24mm</td>
<td>PLB</td>
<td>G1 As desired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If exterior: Flash ON/OFF -- OFF</td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>2J/A-5</td>
<td>Closeout Imagery of Thermal Covers • All Thermal covers that were opened (closed, altered)</td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>2J/A-26</td>
<td>ICC Unberth, Install • ICC-VLD unberth and cable disconnect from ECSH • ICC-VLD Install on POA (ICC-VLD translation, install from PLB to POA) • ICC-VLD POA Uninstall; SSRMS translation • ICC-VLD berthing in PLB</td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td>WVS video desired (live or replay)</td>
</tr>
<tr>
<td>4.</td>
<td>2J/A-18</td>
<td>JEF Aft and FWD Camr install and Thermal Cover Removal</td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td>WVS highly desired</td>
</tr>
<tr>
<td>5.</td>
<td>2J/A-22</td>
<td>ICC Payload Transfer • SGANT Antenna Transfer (removal from ICC-VLD and install on ESP-3) • LDU Transfer (removal from ICC-VLD and install on ESP-3) • Pump Module Transfer (removal from ICC-VLD and install on ESP-3)</td>
<td>WVS, ELB EE, P1 LOOB, S1 LOOB, JEM EE, EXTA</td>
<td>LIVE (if avail)</td>
<td>Replay or post-flt return reqd</td>
</tr>
</tbody>
</table>
## P/TV07 EVA (Continued)

### OPS (Continued)

<table>
<thead>
<tr>
<th>Item # Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. 2J/A-23</td>
<td>JEF Payload Prep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• JEM RMS arm calibration (video while arm in motion)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• MAXI thermal cover removal (video of thermal and contamination covers)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ICS Antenna Prep (video of removal of four ICS thermal covers; release of two ICS antenna hold mechanisms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• SEDA-AP Prep (video of SEDA-AP launch lock mechanism release)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 2J/A-25</td>
<td>P6 Batt Removal, Replace Task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WVS</td>
<td>LIVE (if avail)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Live dnlk highly desired
Replay or post-flt return reqd
<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Dnlk</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 8.     | 2J/A-12 | JEF Install on JPM  
* Video of LTA Cable disconnect from JEF during unberth, install | WVS, JEM IVA, JEM RMS, JPM EXT, JPM AFT, JPM FWD | JPM PORT END CONE | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 9.     | 2J/A-13 | JEM EFBM  
* Video of cover removal | WVS, JEM IVA, JEM RMS, JPM EXT, JPM AFT, JPM FWD | JPM PORT END CONE | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 10.    | 2J/A-14 | JEF Passive EFBM  
* Video of cover removal, surface prior to install on JPM | WVS, JEM IVA, JEM RMS, JPM EXT, JPM AFT, JPM FWD | JPM PORT END CONE | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 11.    | 2J/A-35 | Grounding Tabs Removal  
* Video of grounding Tabs removal on JEM RMS End Effector | WVS | | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |
| 12.    | 2J/A-34 | JPM EVA OIH and OIW install  
* Video of JPM on-orbit installed Handrails (OIH) and On-orbit installed worksite Interfaces (OIW) installation | WVS | | LIVE (if avail) | Live dnlk highly desired  
Replay or post-flt return reqd |

If OPS temporarily suspended, perform DEACTIVATION as reqd  
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. **IVA D2Xs**  
   Pwr – OFF  
   √Flash ON/OFF – ON  
   Download images
2. **TV System**  
   Perform PWRDN (Cue Card, WVS)  
   Go to DEACTIVATION (Cue Card, TV) as reqd
P/TV08  EXTERNAL SURVEY

SCENE SYNOPSIS

Scene contains procedures for documenting STS, ISS external structures w/still photos during general survey activities

SETUP

1. D2Xs Camr Configuration for OMS Pod Survey

   Remove aft window shields
   If Sunlit OMS Pod, config D2Xs Manual Mode
   - Lens – 80-200mm at 200mm
     - Focus Limit – full
     - Lens Focus Mode – M/A
   - Aperture – Min, locked
   - Body Focus Mode – S
   - √Batt installed
   - √Flash Card installed
   - Pwr – ON
   - Top LCD
     - √Batt
     - √Frames remaining sufficient
   - Exp Comp (       ) – 0.0
   - Exp Mode – M
     - SS – 1000
     - f/stop – F8
   - Meter – Matrix (     )
   - Diopter – Adjust
   - Frame Rate – S
   - √BKT disabled – 0 F
   - Rear LCD
     - √ISO – 100
     - √QUAL – RAW
     - √WB – 0,A
   - AF Area Mode – [   ]
   - √Focus Area – Center
   - √Focus Selector Lock – L
   - SB-800 Flash Settings
     - ON/OFF pb – OFF

~
### Setup (Continued)

**1. D2Xs Camr Configuration for OMS Pod Survey (Concluded)**

- If Earthshine OMS Pod, config D2Xs Program Mode
  - Lens – 80-200mm at 200mm
  - Focus Limit – full
  - Lens Focus Mode – M/A
  - Aperture – Min, locked
  - Body Focus Mode – S
  - Batt installed
  - Flash Card installed
  - Pwr – ON
  - Top LCD
  - Batt
  - Frames remaining sufficient
  - Exp Comp (Exposure Compensation) – 0.0
  - Exp Mode – P
  - Meter – Matrix
  - Diopter – Adjust
  - Frame Rate – S
  - BKT disabled – 0 F
  - Rear LCD
  - ISO – 100
  - QUAL – RAW
  - WB – 0,A
  - AF Area Mode – [1 1]
  - Focus Area – Center
  - Focus Selector Lock – L

**SB-800 Flash Settings**
- ON/OFF pb – OFF
P/TV08  EXTERNAL SURVEY (Continued)

SETUP (Continued)

2. D2Xs Camr Config for ISS Still Survey (D2Xs Shutter Priority Mode)

   Lens – 50mm(80-200mm @ 200mm)
       If 80-200mm:
           Focus Limit – full
           Lens Focus Mode – M/A
   √Aperture – Min, locked
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp (            ) – 0.0
   Exp Mode – S
       SS – 500
   Meter – Matrix (          )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0,A
   AF Area Mode – [ ]
   √Focus Area – Center
   √Focus Selector Lock – L

   SB-800 Flash Settings
       ON/OFF pb – OFF
### P/TV08 EXTERNAL SURVEY (Continued)

#### OPS

<table>
<thead>
<tr>
<th>√</th>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D2Xs 80-200mm @ 200mm (400mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>OMS Pod Survey</td>
<td>√</td>
<td>No shadows on OMS pod tiles&lt;br&gt;• Remove window shields&lt;br&gt;• 50 percent overlap mapping of both OMS pods and vertical stabilizer w/emphasis on Black Tile areas&lt;br&gt;• Repeat thru other window</td>
<td></td>
<td></td>
<td>Download images to MCC once complete</td>
</tr>
<tr>
<td>2</td>
<td>ISS Still Survey</td>
<td>2J/A-21</td>
<td>Surfaces&lt;br&gt;Solar Panels&lt;br&gt;Handrails&lt;br&gt;MISSE&lt;br&gt;SVS Targets&lt;br&gt;Plasma Arcing&lt;br&gt;S0,S1,S3,S4,S5,P1,P3,P4,P5,P6 Truss Radiators/Baseplates, SAWs&lt;br&gt;ESP-2&lt;br&gt;P6 Fwd PVR Base Bubble&lt;br&gt;Newly deployed hardware&lt;br&gt;EuTEF and Solar&lt;br&gt;Module Surfaces</td>
<td></td>
<td></td>
<td>Map ISS surfaces w/30% overlap from all Flt Deck windows</td>
</tr>
</tbody>
</table>
Priority of ISS Photographic Targets During Docked Phase:
1. P6, P5, P3/P4, ESP 3, P1, JEM, JLP, Columbus, S1, S3/S4, S5, S6, Solar Arrays – W1, W6
2. Node 2, Columbus, JEM, JLP – W7, W8
3. PMA2 – W9, W10
P/TV08  EXTERNAL SURVEY (Concluded)

OPS (Concluded)

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

DEACTIVATION

1. √D2Xs
   √Exp Mode – P
   PWR – OFF
   Flash ON/OFF – ON
This Page Intentionally Blank
SCENE SYNOPSIS

Scene contains procedures for recording TBD motion during reboost

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd

2. Perform Hardware Verification for V10s, FD CC, DTV

O19

√ TV PWR – ON

R12 (VPU)

√ VPU PWR – ON (LED on)
√ Green Jumper – ISS

V10

PWR – ON

(MON 1)

√ Tape installed
DISPLAY pb – Toggle to display tape counter

CC

Install Wide Conversion lens
√ ND FILTER – OFF
√ OUTPUT – CAM
√ STANDBY/LOCK – STANDBY
PWR dial – “green” 
√ Tape installed
√ Viewfinder (LCD) displays “green” •||
Install Audio Muting Plug (optional)
Install Multiuse Brkt
PWR dial – OFF

MON 2

SOURCE – C

L10 (MUX)

√ VTR/CC PWR – on (LED on)
If dnlk, MUX/VTR/CC PWR – on (LED on)
(VIP)

√ PWR – on (LED on)
(VTR)

√ ON/STANDBY LED – green
√ Tape installed
### Operational Support (OPS)

<table>
<thead>
<tr>
<th>Item #</th>
<th>Rqmts</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1.     | REBOOST – SDTO 13005-U  
- Video of S4 or S6 radiator during shuttle-mated reboost | G1  
Tape installed | External video w/replay dnlk |
| 2.     | Camr FOV Setup Prior to Test  
- Frame per values but use pictures for final pan, tilt  
- Pan/tilt settings approx and assume zeroed, PTU angles  
- TBD Illuminators – on | TBD  
PAN: TBD  
TILT: TBD  
FOV: TBD  
Actual FOV: ________ | Frame as shown. Focus on TBD |
|        | TBD  
PAN: -TBD  
TILT: TBD  
FOV: TBD  
Actual FOV: ________ | Frame as shown. Focus on TBD |
<table>
<thead>
<tr>
<th>√</th>
<th>Item #</th>
<th>Rqmts</th>
</tr>
</thead>
</table>
| 3. | Start Recorders (two) | V10 REC pb (two) – push to begin recording
\LCD displays RED DOT
L10 (VTR) REC pb – push, hold
PLAY pb – push, simo (RED dot displayed) |
| 4. | Route FD CC Video to Recorders (two) and Downlink | VID OUT MON 1 pb – push
IN FLT DECK pb – push
Frame GMT clock in FD CC FOV using MON 1
VID OUT DTV pb – push
IN FLT DECK pb – push
GMT clock on DTV V10
VID OUT DNLK pb – push
IN FLT DECK pb – push |
| 5. | Route Views to Recorders (two) and Downlink | VID OUT MON 1 pb – push
IN A pb – push
VID OUT DTV pb – push
IN C pb – push
VID OUT DNLK pb – push
IN A pb – push |
| 6. | Re-route FD CC Video to Recorders (two) and Downlink Before Tape Ends | VID OUT MON 1 pb – push
IN FLT DECK pb – push
Frame GMT clock in FD CC FOV using MON 1
VID OUT DTV pb – push
IN FLT DECK pb – push
GMT clock on DTV V10
VID OUT DNLK pb – push
IN FLT DECK pb – push |

**NOTE**
To maintain Time sync, once video recorders started, do not stop tape until test completed

<table>
<thead>
<tr>
<th>Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rqmts Video Notes</td>
</tr>
<tr>
<td>LCD displays RED DOT</td>
</tr>
<tr>
<td>PLAY pb – push, simo (RED dot displayed)</td>
</tr>
<tr>
<td>VID OUT MON 1 pb – push</td>
</tr>
<tr>
<td>IN FLT DECK pb – push</td>
</tr>
<tr>
<td>Frame GMT clock in FD CC FOV using MON 1</td>
</tr>
<tr>
<td>VID OUT DTV pb – push</td>
</tr>
<tr>
<td>IN FLT DECK pb – push</td>
</tr>
<tr>
<td>GMT clock on DTV V10</td>
</tr>
<tr>
<td>VID OUT DNLK pb – push</td>
</tr>
<tr>
<td>Dnlk GMT clock, if comm</td>
</tr>
<tr>
<td>VID OUT DNLK pb – push</td>
</tr>
<tr>
<td>Dnlk view if comm</td>
</tr>
</tbody>
</table>

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION
P/TV09  STRUCTURAL DYNAMICS (Concluded)

DEACTIVATION

1. TV System
   Label tapes as “REBOOST”
   Go to DEACTIVATION (Cue Card, TV) as reqd
P/TV10  DEPLOYABLE PAYLOADS – DRAGONSAT, ANDE2

H/W SUMMARY

- Digital CC Vid/Pwr Cable (15 ft)
- AVIU-CC Video Cable
- MON 1 AVIU Cable
- MON 2 TV Pwr Cable (10 ft)
- MON 2 Balanced Video Cable
- DTV Audio Cable
- Wide Conversion Lens
- RCA-BNC Adapter
- Multiuse Arm
- Handheld CC
- Wide Conversion Lens
- Digital CC Vid/Pwr Cable (15 ft)
- AVIU-CC Video Cable
- Digital CC Vid/Pwr Cable (15 ft)
- AVIU-CC Video Cable
- DTV Audio Cable
- Wide Conversion Lens
- RCA-BNC Adapter
- Multiuse Arm
- Handheld CC
SCENE SYNOPSIS

Scene contains procedures for documenting deployable payloads (DRAGONSAT, ANDE2) with video, still photos.

SETUP

1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd

   Handheld
   CC (G1)

   2. Remove Wide Conversion Lens

   Install Batt
   ND FILTER – OFF
   AF/M – M
   AGC – OFF
   GAIN – L
   OUTPUT – CAM
   AWB – ON
   STANDBY/LOCK – STANDBY
   PWR dial – M
   Tape installed
   Viewfinder (LCD) displays “green” ■■
   SS – 1/500
   GAIN – ±0 dB
   F/stop – F8.0
   FOCUS – M ∞-
   Install Audio Muting Plug (optional)

   R12 (VPU)
   VPU PWR – ON
SETUP (Continued)

3. Perform Hardware Verification for V10s, FD CC, DTV

O19,MO58F

√ TV PWR – ON

V10 (MON 1,2)

√ Tape installed
  DISPLAY pb – Toggle to display tape counter

FD CC

√ ND FILTER – OFF
√ OUTPUT – CAM
√ (MON 1,2)
√ STANDBY/LOCK – STANDBY
  PWR dial – “green”  
√ Tape installed
√ Viewfinder (LCD) displays “green” •||
  Install Audio Muting Plug (optional)
  Install Multiuse Brkt

MON 2

SOURCE – C

L10 (MUX) VTR/CC PWR – on (LED on)
  If dnlk, MUX/VTR/CC PWR – on (LED on)
(VIP) PWR – on (LED on)
(VTR) ON/STANDBY LED – green
√ Tape installed
4. D2Xs Setup in W9
   Lens – 28-70mm @ 70mm
   Lens Focus Mode – M/A
   Aperture – Min, locked
   Body Focus Mode – M
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp ( ⫦ ) – 0.0
   Exp Mode – S
   SS – 500
   Meter – Matrix ( ⎕)
   Diopter – Adjust
   Frame Rate – CL
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – FINE
   √WB – 0, A
   AF Area Mode – [ [ ] ]
   √Focus Area – Center
   √Focus Selector Lock – L

Menu Settings
   MENU pb – press
   Navigate Pad sel – Shooting Menu ( ⤑ ) Hi-speed Crop > On
   – Custom Settings Menu > d Shooting/Display > d1 Shooting Speed > 5 fps

SB-800 Flash Settings
   ON/OFF pb – OFF
   Remote Release – install
   Multiuse Base Plate – install in W9 sill
   Multiuse Brkt
   Mount Carr Vertically

Frame and FOCUS on DRAGONSAT(ANDE2)
5. D2Xs Setup for Post-Deploy Photos in Ovhd Window

- Lens – 80-200mm (FOR DRAGONSAT)
  - Focus Limit – full
  - Lens Focus Mode – M/A
- Lens – 80-200mm (FOR ANDE2)
  - Focus Limit – full
  - Lens Focus Mode – M/A
- Aperture – Min, locked
- Body Focus Mode – S
- Batt installed
- Flash Card installed
- Pwr – ON
- Top LCD
  - Batt
  - Frames remaining sufficient
- Exp Comp ( ) – 0.0
- Exp Mode – M
  - SS – 500
  - Aperture – f/8
- Meter – Matrix ( )
- Diopter – Adjust
- Frame Rate – S
- BKT disabled – 0 F
- Rear LCD
  - ISO – 100
  - QUAL – RAW
  - WB – 0, A
- AF Area Mode – [ ]
- Focus Area – Center
- Focus Selector Lock – L

SB-800 Flash Settings
- ON/OFF pb – OFF
<table>
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<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PLB</td>
<td>CC</td>
</tr>
<tr>
<td>1.</td>
<td>DRAGONSAT DEPLOY</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Install Fresh Tape in V10s Handheld CC, VTR, FD CC</td>
<td></td>
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<tr>
<td>2.</td>
<td>PLB CAMR SETUP &amp; ROUTING</td>
<td></td>
<td></td>
<td>DNLK (if comm avail)</td>
<td>Start wide, then zoom in to track DRAGONSAT Track for 4 min or until out of view</td>
</tr>
<tr>
<td></td>
<td>• D2Xs in W9 Setup</td>
<td></td>
<td>C</td>
<td>VID OUT pb – DTV IN pb – C View on Recorder</td>
<td></td>
</tr>
</tbody>
</table>

(DRAGONSAT) (Rcd on DTV)

C (Tracking Camr)
P = 0; T = -6

(Continued next page)
### DRAGONSAT (Continued)

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<tr>
<th>Item #</th>
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<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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<tr>
<td>2.</td>
<td></td>
<td>PLB CAMR SETUP &amp; ROUTING (Concluded)</td>
<td></td>
<td>D,RMS ELB MUX</td>
<td>RMS CRADLED (Rcd on MON1 V10)</td>
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<tr>
<td></td>
<td></td>
<td>• D2Xs in W9 Setup</td>
<td></td>
<td>VID OUT pb – MON 1</td>
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<td></td>
<td></td>
<td></td>
<td>IN pb – MUX 1L</td>
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<td>IN pb – D</td>
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<td></td>
<td></td>
<td>OUT pb – MUX 1R</td>
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<td></td>
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<td></td>
<td>IN pb – RMS ELB</td>
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<td></td>
<td></td>
<td>√View on MON 1 V10</td>
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<th>PLB</th>
<th>CC</th>
<th>Dnlk</th>
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</tbody>
</table>

(Rcd on MON1 V10)

D (MUX 1L)

P = -8; T = -13

RMS ELB (MUX 1R)

P = -141; T = 7

(Continued next page)
### DRAGONSAT (Continued)

<table>
<thead>
<tr>
<th>√</th>
<th>Item # Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td>PLB</td>
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<td>CC</td>
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<td></td>
<td></td>
<td>Dnlk</td>
<td></td>
</tr>
</tbody>
</table>

- **RMS IN PRECRADLE**
  - (Rcd on MON1 V10)
  - D2Xs 28-70mm Mounted in W9 sill

- **D (MUX 1L)**
  - P = -8; T = -13
- **RMS ELB (MUX 1R)**
  - P = -129; T = -7
### DRAGONSAT (Concluded)

<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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<td></td>
<td>PLB</td>
<td>CC</td>
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<tr>
<td>3.</td>
<td></td>
<td>5 MIN PRIOR TO DEPLOY</td>
<td></td>
<td>FD CC</td>
<td>V10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Start V10,VTR,Handheld, FD CCs</td>
<td></td>
<td>Rcd in-cabin activities</td>
<td>REC pb – press to begin recording LCD displays RED DOT</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>~1 SEC PRIOR TO DEPLOY</td>
<td>D2Xs 28-70mm</td>
<td></td>
<td>G1 CCs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Start Camr, using remote cable</td>
<td></td>
<td>REC pb – press LCD displays RED DOT</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>POST DEPLOY</td>
<td>D2Xs 400mm</td>
<td>Handheld CC Rcd DRAGONSAT in ovhd window</td>
<td>VTR REC pb – press,hold PLAY pb – press simo (red dot displayed)</td>
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</table>

If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION
## ANDE2

<table>
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<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1.</td>
<td></td>
<td>ANDE2 DEPLOY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Install Fresh Tapes in V10s (wo) Handheld CC, VTR, FD CC</td>
<td></td>
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</tr>
<tr>
<td>2.</td>
<td></td>
<td>PLB CAMR SETUP &amp; ROUTING</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• D2Xs in W9 Setup</td>
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<td></td>
</tr>
</tbody>
</table>

- **VID OUT pb – DTV**
- **IN pb – D**
- **View on Recorder**
- **DNLK (if comm avail)**
- **Start wide, then zoom in to track ANDE2 Track for 4 min; keep all objects in FOV as Sep 1, Sep 2 occur**

ANDE2
(Rcd on DTV)

D (Tracking Camr)
P = 0; T = 22

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<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>2.</td>
<td></td>
<td>PLB CAMR SETUP &amp; ROUTING (Concluded)</td>
<td></td>
<td>B/ELB MUX,C</td>
<td>View entire can w/Camr B with ~4 ft viewable above can</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• D2Xs in W9 Setup</td>
<td></td>
<td>VID OUT pb – MON 1</td>
<td>RMS CRADLED (Rcd on MON1 V10)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IN pb – MUX 1L</td>
<td></td>
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<td></td>
<td>OUT pb – MUX 1R</td>
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<td>IN pb – RMS ELB</td>
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<td>Muxed view on MON 1 V10</td>
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<td>VID OUT pb – MON 2</td>
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<td></td>
<td></td>
<td></td>
<td>IN pb – C</td>
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<td></td>
<td>PAN: 0°</td>
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<td></td>
<td></td>
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<td>TILT: +90°</td>
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<tr>
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<td></td>
<td></td>
<td>View on MON 2 V10</td>
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</table>

B (MUX 1L)
P = 82; T = -7
RMS ELB (MUX 1R)
P = -29; T = 10
<table>
<thead>
<tr>
<th>√</th>
<th>Item # Track #</th>
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<td></td>
<td></td>
<td></td>
<td>PLB</td>
<td>CC</td>
</tr>
<tr>
<td>RMS IN PRECRADLE (Rcd on MON1 V10)</td>
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</tr>
</tbody>
</table>

B (MUX 1L)
P = 82; T = -7

RMS ELB (MUX 1R)
P = -37; T = -4

D2Xs
28-70mm Mounted in W9 sill
## ANDE2 (Concluded)

<table>
<thead>
<tr>
<th>Item #</th>
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<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
</tr>
</thead>
</table>
| √ 3.   |         | 5 MIN PRIOR TO DEPLOY  
  • Start V10s (MON1,2), VTR, Handheld, FD CCs |     | FD CC  
  Rcd in-cabin activities | V10s (MON1,2)  
  REC pb – press to begin recording  
  LCD displays RED DOT  
  G1 CCs  
  REC pb – press  
  LCD displays RED DOT  
  VTR  
  REC pb – press,hold  
  PLAY pb – press simo  
  (red dot displayed) |
| 4.     |         | ~1 SEC PRIOR TO DEPLOY  
  • Start Camr, using remote cable | D2Xs  
  28-70mm |     |       |
| 5.     |         | POST DEPLOY  
  • Start V10s (MON1,2), VTR, Handheld, FD CCs | D2Xs  
  80-200mm | Handheld CC  
  Rcd ANDE2 in ovhd window | Obtain photos, video of ANDE2 as long as it is visible  
  Image spheres  
  If anomalies observed, continue imaging to capture anomalies |

If OPS temporarily suspended, perform DEACTIVATION as reqd  
If OPS completed, go to DEACTIVATION
DEACTIVATION

1. **D2Xs**
   
   Body Focus Mode – S
   
   Exp Mode – P
   
   Frame Rate – S

   **Menu Settings**
   
   MENU pb – press
   
   Navigate Pad sel – Shooting Menu (              ) > Reset Shooting Menu > Yes > OK
   
   Custom Settings Menu > Menu Reset > Yes > OK

   Flash ON/OFF – ON

2. **Handheld G1**
   
   AF/M – AF
   
   AGC – ON
   
   PWR dial – OFF

3. **FD G1**
   
   REC pb – press
   
   Viewfinder (LCD) displays “green” •||

   Remove, mark tape for DRAGONSAT(ANDE2)

4. **TV System**
   
   Remove, mark tapes for DRAGONSAT(ANDE2)

   Go to DEACTIVATION (Cue Card, TV) as reqd
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P/TV11  GLACIER (Continued)

SCENE SYNOPSIS

Scene contains procedures for obtaining in-cabin video, still images of GLACIER payload

SETUP

1. Perform Camcorder Setup for MD per H/W SUMMARY, FS 1-88, as reqd

   √Batt installed

   CC  Install Wide Conversion lens
   √ND FILTER – OFF
   √OUTPUT – CAM
   √STANDBY LOCK – STANDBY
   PWR dial – “green” ■
   √Tape installed
   √Viewfinder (LCD) displays “green” ■
   Install Audio Muting Plug (optional)
   Install Multiuse Brkt (optional)
P/TV11  GLACIER (Continued)

SETUP (Concluded)

2. Perform D2Xs PROGRAM w/FLASH

   Lens – 12-24mm  
   Aperture – Min, locked  
   Body Focus Mode – S  
   √Batt installed  
   √Flash Card installed  
   Pwr – ON  
   Top LCD  
   √Batt  
   √Frames remaining sufficient  
   Exp Comp (      ) – 0.0  
   Exp Mode – P  
   Meter – Matrix (     )  
   Diopter – Adjust  
   Frame Rate – S  
   √BKT disabled – 0 F  
   Rear LCD  
   √ISO – 100  
   √QUAL – RAW  
   √WB – 0,A  
   AF Area Mode – [ ]  
   √Focus Area – Center  
   √Focus Selector Lock – L

   SB-800 Flash Settings  
   Diffuser Dome installed  
   ON/OFF pb – ON  
   √MODE – [IN]  
   √Exp Comp – 0 EV  
   Tilt – 45° (Direct)
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<th>Still Imagery</th>
<th>Video</th>
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<td>GLACIER Installation Video, Still Photography</td>
<td>D2Xs</td>
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<tr>
<td>1.</td>
<td>2J/A-37</td>
<td>• Still images of GLACIER installed in Middeck (2 images taken of wide view, and close-up of hardware and front panel)</td>
<td>12-24mm</td>
<td></td>
<td>Required post GLACIER swap prior to any sample insertions</td>
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<tr>
<td></td>
<td></td>
<td>• Video of crew performing an activity at the GLACIER in Middeck (hardware prep, sample insertion/removal)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Video of GLACIER front panel configuration after transfer is complete</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>• Video of crew interaction with GLACIER (hardware status check, sample insertion/removal)</td>
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P/TV12 SEITE, SIMPLEX PAYLOADS

SCENE SYNOPSIS
Scene contains procedures for documenting the SEITE and SIMPLEX OMS burns

SETUP

1. D2Xs Camr Config for SEITE, SIMPLEX (D2Xs Shutter Priority Mode)

   Lens – 28mm
   √Aperture – Min, locked
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp (         ) – 0.0
   Exp Mode – S
   SS – 500
   Meter – Matrix (     )
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0, A
   AF Area Mode – [    ]
   √Focus Area – Center
   √Focus Selector Lock – L

   Accessory Equipment
   Shutter Release Cable – install
   Multiuse Base – install in W9/10
   Multiuse Brkt – install on Base

   SB-800 Flash Settings
   ON/OFF pb – OFF
### OPS

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<td>SEITE, SIMPLEX</td>
<td>• Obtain minimum of one photo at beginning, middle, end of OMS burn</td>
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<td>Initial photo within 5 sec of burn</td>
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If OPS temporarily suspended, perform DEACTIVATION as reqd
If OPS completed, go to DEACTIVATION

### DEACTIVATION

1. D2Xs
   Pwr – off
# REFERENCED PROCEDURES

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<td>PTU 2/MMAIN BUS B SYSTEM DETAILS</td>
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CENTERLINE (C/L) CAMR

C/L CAMR INSTALL

1. ODS C/L Camr Config
   L12 (SSP 2) \(\sqrt{\text{C/L CAM PWR – OFF}}\)

R12 (VPU)
   \(\sqrt{\text{SEC C/L Cap installed}}\)
   \(\sqrt{\text{Green Jumper – SEC C/L}}\)
   \(\sqrt{\text{VPU PWR – ON (LED on)}}\)

ML60B
   Unstow PRI C/L Camr, PRI C/L TV Camr Harness Assy

NOTE
   When connecting ODS C/L TV Camr Harness Assy, verify pins to socket connection

ODS
   \(\sqrt{\text{ODS C/L Camr Brkt mounted securely}}\)
   Mount PRI C/L Camr to ODS C/L Camr Brkt
   \(\sqrt{\text{Flex Duct attached to Camr brkt}}\)
   Config cable per dwg at right

C/L Camr
   \(\sqrt{\text{SSF/STS sw – STS}}\)

L12 (SSP 1)
   \(\sqrt{\text{cb SSP2 SEC C/L CAM – cl}}\)
   (SSP 2) \(\sqrt{\text{C/L CAM PWR – SEC ON}}\)
2. Camr Position Verification

This view in ODS looking up from Camr bottom

NOTE
This view in ODS looking up from Camr bottom

PRI C/L TV Camr Harness Assy (8.5 ft)
V828–774057–004

Existing Shims for Pitch/Yaw Alignment

Bracket Mounting Subplate

Axial Adjustment Screw

Axial Adjustment Screw
C/L CAMR INSTALL (Concluded)

3. ODS C/L Camr Alignment Check  
   Perform ACTIVATION (Cue Card, TV) as reqd

   A7  VID OUT MON 1(2) pb – push  
       IN PL2(VPU) pb – push  
       ALC pb – push  
       AVG pb – push

   MON 1(2)  LDATA – ON  
             CDATA – GRN  
             XHAIR – GRN

   A7  Zoom to 10° ± 0.5°  
       Focus to see Xhair target

   NOTE  
   Green xhairs on monitor may move off center in calibration target when zooming in,out. Xhair will be closest to center at full zoom in position

   MON 1(2)  √ Vertical xhairs coincide w/vertical alignment wire and are parallel. If xhair marks overlay each other, no yaw(axial) alignment needed (see dwg above)

   √ Intersection of monitor vertical, horizontal xhair falls within target circular opening from ~10-40° zoom range of Camr

   Report results of both alignment verifications (at 10° and 40°) to MCC

4. Deactivation

   A7  CAMR CMD IRIS – CL  
       L12 (SSP 2)  C/L CAM PWR – OFF

   Go to DEACTIVATION (Cue Card, TV) as reqd
**VTR CLOCK SET**

1. Activate VTR

   R1 \( \sqrt{\text{PL AUX – ON}} \)

   L10 (MUX) \( \sqrt{\text{VTR/CC PWR – on (LED on)}} \)
   \( \sqrt{\text{VTR/CC PWR – on (LED on)}} \)

   L10 (VTR) \( \sqrt{\text{ON/STANDBY LED – green}} \)

2. Set VTR clock to GMT

   DISPLAY SELECT – MENU
   \( \downarrow \) pb – ETC, EXEC pb – push
   \( \downarrow \) pb – CLOCK SET, EXEC pb – push
   Use \( \uparrow, \downarrow, \text{EXEC} \) to set Y,M,D,hr,min to GMT

   DISPLAY SELECT – DATA

3. Deactivate VTR as reqd

   ON/STANDBY pb – push (red LED on)

   MUX \( \sqrt{\text{VTR/CC PWR – off (LED off)}} \)
D2Xs

DATE/TIME SET

1. MENU pb – press
2. Navigate pad – sel Menu icon $ setup menu
   – press (right)
   – sel WORLD TIME (up,down)
   – press (right)
   – sel DATE (up,down)
   – press (right)
3. Set TIME/DATE to GMT
   Navigate pad – sel desired field (left,right)
   – sel desired setting (up,down)
4. ENTER pb – press
5. MENU pb – press twice
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CANON G1

ANALOG CC REC.DNLK

Config H/W per dwg at right

AVIU
- SYNC/VIDEO – VIDEO
- HI-Z/75 – 75
- PWR SELECT – LO

O19(MO58F)
- TV PWR – ON

CC
- Wide Conversion lens installed
- ND FILTER – OFF
- Install Audio Muting Plug (optional)
- AF/M – AF
- AGC – OFF
- GAIN – L(M)
- OUTPUT – CAM
- A/V1/V2 – V2
- AWB – ON
- [ ]..[ ] – [ ]
- STANDBY/LOCK – STANDBY
- PWR dial – A
- [ ]CP(2-9) displayed
  - If rec to tape:
  - Tape – Install
  - Viewfinder (LCD) displays “green” •||
  - Multiuse Brkt, Clamp

CAUTION
  - Worklights @ full pwr for 45 min.
  - half pwr for unlimited time

Worklights
- Install BATTS
- Mount light(s) w/Bracket (Velcro/tape)
- Pwr – as reqd

Cabin Lts
- Flt Deck – ON
- Lts in FOV – OFF as reqd
- Lt Shades – install as reqd
- Window Shades – install as reqd

CANON G1
CANON G1 (Continued)

ANALOG CC REC. DNLK (Concluded)

CC
√ Scene composition

Adjust Camr angle for best framing

CCU
CCU PWR – ON

ATU
PWR – AUD
A/G 1(2) – T/R
All Other Loops – OFF
XMIT/ICOM MODE SEL – PTT/PTT
MSTR SPKR VOL SEL – as reqd

When ready for dnlk:

A7
√ TV DNLK – ENA
  TV PWR CNTL – PNL
  TV PWR CONTR UNIT – MNA(B)
  TV PWR CNTL – CMD (wait 10 sec for system initialization)
  VID OUT DNLK pb – push
  VID IN FLT DECK(MIDDECK) pb – push


CANON G1 (Continued)

HD DIGITAL CC DNLK

Notify MCC, configuring for HD TV dnlk

Config H/W per dwg at right

CC
For cable strain relief attach MPC-to-G1 Cable
Velcro strap to CC strap

AVIU
SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO

O19
√TV PWR – ON

CC
√Wide Conversion Lens installed
Install LAV MIC
√ND FILTER – OFF
√AF/M – AF
√AGC – OFF
√GAIN – L(M)
√OUTPUT – CAM
√AWB – ON
√STANDBY/LOCK – STANDBY
PWR dial – A
√CP1(2-9) displayed
Mount Camcorder

L10 (MUX)
√MUX/VTR/CC PWR – on (LED on)
√MUX BYPASS – ACT
√CHANNEL 0,2 RATE SEL – 1
√1 RATE SEL – 8
(VTR) ON/STANDBY pb – push (LED red)
(VIP) PWR – off (LED off)
CANON G1 (Concluded)

**HD DIGITAL CC DNLK** (Concluded)

O19 DC UTIL PWR MNA – ON  
MPC PWR DC PWR SPLY PWR SW1 – ON  
SPLY MPC PWR-ON (HDV, TAXI, 5V, 3V green LEDs on)  
L10 (MUX) √CHANNEL 1 F/O OK, DATA LEDS on

**CAUTION**
Worklights @ full pwr for 45 min.  
half pwr for unlimited time

Worklights  Install BATTS  
Mount light(s) w/Bracket (Velcro/tape)  
Pwr – as reqd

Cabin Lts  Flt Deck – ON  
Lts in FOV – OFF as reqd  
Lt Shades – install as reqd  
Window Shades – install as reqd

CC √Scene composition  
Adjust Camr angle for best framing

LAV MIC  PWR – ON (talk), OFF (listen)

When dnlk complete:

CC  PWR dial – OFF  
O19 TV PWR – OFF as reqd  
MPC PWR – OFF  
PWR DC PWR SPLY PWR SW1 – OFF  
SPLY

O19 DC UTIL PWR MNA – OFF  
L10 (MUX) MUX/VTR/CC PWR – off (LED off)  
√VTR/CC PWR – on (LED on  
(VIP) PWR – on (LED on, DATA FLOW LED flashes twice)  
(VTR) ON/STANDBY pb – push (LED green)  
Notify MCC, returned to SD TV dnlk  
Go to DEACTIVATION (Cue Card, TV) as reqd
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FCS CHECKOUT CAMR SETUP

SETUP

1. D2Xs

   Lens – 400mm

   NOTE
   If auto focus unachievable:
   Lens Focus Mode – M

   Aperture – Min, locked
   Lens Focus Mode – A
   Body Focus Mode – S
   √Batt installed
   √Flash Card installed
   Pwr – ON
   Top LCD
   √Batt
   √Frames remaining sufficient
   Exp Comp – 0.0
   Exp Mode – M
   SS – 500
   f/stop – f/8
   Meter – Matrix
   Diopter – Adjust
   Frame Rate – S
   √BKT disabled – 0 F
   Rear LCD
   √ISO – 100
   √QUAL – RAW
   √WB – 0,A
   AF Area Mode – [[]]
   √Focus Area – Center
   √Focus Sleector Lock – L

   SB-800 Flash Settings
   ON/OFF pb – OFF
FCS CHECKOUT CAMR SETUP (Concluded)

SETUP (Concluded)

2. **G1 CC**
   - Remove Wide Conversion Lens
   - Install Batt
   - ND FILTER – OFF
   - AF/M – M
   - AGC – OFF
   - GAIN – L
   - OUTPUT – CAM
   - AWB – ON
   - STANDBY/LOCK – STANDBY
   - Tape installed
   - Open LCD
     - ‘green’ •|| displayed
     - SS – 1/500
     - GAIN – 0dB
     - f/stop – F8.0
     - FOCUS – M ∞-

DEACTIVATION

1. **D2Xs**
   - Lens focus mode – A
   - EXP Mode – P
   - Pwr – OFF

2. **G1**
   - Install Wide Conversion Lens
   - AF/M – AF
   - AGC – ON
   - Pwr dial – OFF
   - Remove Batt
   - Connect Dig/CC Vid Pwr Cable
   - PWR dial – ‘green’
   - Place G1 on brkt
MINI-CAM (Continued)

ENTRY VIDEO SETUP (Continued)

1. Remove “Entry” Ziplock Bag from DTV Bag

2. Config Mini-Cam, VTR for Audio, Video Recording
   Config H/W per dwg, FS 2-22
   a. Config HUD Mini-Cam w/12mm Lens
      Using two (2) captive screws, attach HUD Brkt to installation holes for protective cover w/HUD Brkt tab pointing up
      Attach Tie Wrap thru holes on captive screws to prevent screw from coming loose; cut off extra length on Tie Wrap
      Attach Mini-Cam Extension Cable to Mini-Cam
   
   12mm Lens
   Focus – ∞
   Aperture – f/5.6
   Velcro Mini-Cam w/12mm Lens to HUD Brkt. (Top of black Velcro on front of Camr should be at top edge of HUD Brkt. Only yellow Velcro should be visible above HUD Brkt)

   b. Config in-cabin Mini-Cam w/3.5mm Lens

   3.5mm Lens
   Aperture – f/1.8

   c. Config additional Mini-Cam H/W

   L10:A1
   AVIU
   SYNC/VIDEO – VIDEO
   HI-Z/75 – HI-Z
   PWR SELECT – HI

   O19
   TV PWR – ON

   PS ATU
   Config audio as reqd for entry audio

   L10 (MUX)
   VTR/CC PWR – on (LED on)
   ON/STANDBY LED – green
MINI-CAM (Concluded)

ENTRY VIDEO SETUP (Concluded)

Acquire one V10 Li-ION batt

V10 (FD)  Install fresh Batt
PWR – ON
√HUD 12mm Lens/Mini-Cam producing good video

Change config to in-cabin 3.5mm Lens/Mini-Cam
√In-cabin 3.5mm Lens/Mini-Cam producing good video

PWR – OFF

L10 (VTR) ON/STANDBY pb – push (red LED off)
(MUX) VTR/CC PWR – off (LED off)

O19 TV PWR – OFF

NOTE
TV,VTR pwr will be re-enabled per ENT AFT FLT DECK
CONFIG [15] (DEORB, NOMINAL DEORBIT PREP); recording
will be initiated via ENT C/L

Start w/3.5mm Lens/Mini-Cam video in-cabin and reconfig for 12mm Lens/Mini-Cam when exterior scene available

When exterior avail:
Focus – Adjust per V10
Aperture – Adjust per V10
If needed, turn down brightness on HUD display

Turn off V10 when not needed
LASER CAMR SYSTEM (LCS)/INTEGRATED SENSOR INSPECTION SYSTEM DIGITAL CAMR (IDC)

LCS/IDC (HEATER ONLY MODE)/(OPERATIONAL PWR MODE) DATA AND PWR INTERFACES

*See PTU 2/MAIN BUS B for detailed system dwg

jsc48038_127_134cr1.cvx
LA9ER CAMR SYSTEM (LCS)/INTEGRATED SENSOR INSPECTION SYSTEM DIGITAL CAMR (IDC) (Concluded)

PTU 2/MAIN BUS B SYSTEM DETAILS

PTU 2

PTU/MAIN BUS

B - ON

PWR TO
OTHER
SYSTEMS

ESS2CA

MNB

PWR
TO BE
CONVERTED
BY APCU 2

MNB CONTR

MNC

CNTL PWR
PTU 2

ON
OFF

A15

MNB CONTR

O13

O15

ESS2CA

MNB
# CUE CARD CONFIGURATION

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ACTIVATION
A3 MON 1(2) PWR – ON (LED ON)
A7 TV DNK – ENA
PWR CNVR (UNIT – MNAD)
CNTL – PNL, wait 10 sec for system initialization, CMD

OPERATION

Auto Ops (Auto Exposure)
A7 TV CAMR PWR A(B,C,D,RMS) – ON (b-ON)
VID MON 1(2) pb – push
If CTVC:
TL pb – push
√ AVG pb – push
TV ACTIVATION A7 MON 1(2) PWR – ON (LED ON)
√ TV DNLK – ENA
TV PWR CONTR UNIT – MNA(B)
TV PWR CNTL – PNL, wait 10 sec for system initialization, CMD

DNLK Ops

Coordinate dnlk and sync config w/MCC

If analog, on MCC GO:
A7 VID OUT DNK pb – push
L10 (MUX) √ Cables connected
MUX/VTR/CC PWR – on (LED on)
MUC BYPASS – ACT
VID OUT DTV pb – push
L10 (MUX) √ DATA FLOW LED – on
CHANEL 3 DATA LED – on

DEACTIVATION

If illuminator ON:
Refer to Illuminator Ops and perform Illuminator OFF
A7 PORT RMS CAMR – WRTST
TV CAMR PWR A(B,C,D,RMS) – OFF (b-OFW), wait 10 sec
PORT RMS CAMR – ELBOW
TV CAMR PWR RMS – ON (b-on), wait 10 sec, OFF (b-OFF)
If Keel 1 (ICC)
L12 √ cb CB2 – cl
L2 (SSP 2) √ KEEL 1 PWR (ICC) – ON
R12 Green Jumper – KEEL 1
MOSIF √ KEEL 1 (JLE)
L12 √ cb CB1 PDP 2 PWR 2 – cl
L2 (SSP 2) √ KEEL 2 PWR (JLE) – ON
MO2F √ KEEL 2 (JLE) Cable connected to J2 MD Pigmy port

MUC Ops

NOTE
Although dnlk/rcd is in color, MON will display MUX in B&W
A7 VID OUT MON pb – as reqd
VID OUT MUX 1(2) pb – push
OUT MUX 1(2) pb – push
OUT MUX 1(2) pb – push
L12 (MUX) √ CHANNEL 3 DATA LED – on

Manual Ops – CTVC/ITVC (Manual Exposure)

DO NOT LEAVE CAMRS UNATTENDED IN MANUAL MODE. DIRECT SUNLIGHT WILL DAMAGE CAMRS

Manual Exposure ON
A7 MAN/GAIN pb – push
VID OUT MON pb – as reqd
IN pb – as reqd
VID OUT MUX 1(2) pb – push
OUT MUX 1(2) pb – push
L12 (MUX) √ CHANNEL 3 DATA LED – on

Return to Auto Exposure
A7 TV CAMR PWR A(B,C,D,RMS) – OFF (tb-OFF)
L12 (MUX) √ PORT RMS CAMR – RED
A7 TV PWR CNTL – PNL
TV PWR CONTR UNIT – MNA(B)
TV PWR CNTL – CMD

Keel Camr

If Keel 1 (ICC)
L12 √ cb CB2 – cl
L2 (SSP 2) √ KEEL 1 PWR ( ICC) – ON
R12 Green Jumper – KEEL 1
MOSIF √ KEEL 1 (JLE)
L12 √ cb CB1 PDP 2 PWR 2 – cl
L2 (SSP 2) √ KEEL 2 PWR (JLE) – ON
Illuminator Ops

Illuminator ON

L12
(SSP 2)

If Kee1 1 (ICC):
\[ \text{cb CB2 - cl} \]
- Kee1 1 PWR (ICC) – ON
- ILL.PWR (ICC) – OFF, ON for HI (repeat for MED,LOW,OFF)

If Kee1 2 (JLE):
\[ \text{cb CB1 PWR 2 PWR 2 – cl} \]
- Kee1 2 PWR (JLE) – ON
- ILL.PWR (JLE) – OFF, ON for HI (repeat for MED,LOW,OFF)

If Wrist Illuminator:
\[ \text{cb TV RMS CAMR/PTU – cl} \]
- WRIST ILLUM/CAMR HTR – cl
  - op,cl

If Elbow Illuminator:
\[ \text{cb TV RMS CAMR/PTU – cl} \]
- IELB ILLUM/PTU HTR – cl
  - op,cl

If A,B,C,D,ELB) Illuminator:
\[ \text{cb TV A,B,C,D,RMS,ELB CAMR/PTU – cl} \]
- \( \text{\textbackslash \textbackslash \textbackslash } \) ILLUM/PTU HTR – cl
  - op,cl

Illuminator OFF

L12
(SSP 2)

KEE1 1 ILL.PWR (ICC) – toggle sw 4 OFF, ON until ILL.OFF (leave sw in ON posn)

If Kee1 2 (JLE):
KEE1 2 ILL.PWR (JLE) – toggle sw 7 OFF, ON until ILL.OFF (leave sw in ON posn)

If Wrist Illuminator:
\[ \text{cb TV RMS WRIST ILLUM/CAMR HTR – op,cl} \]

If Elbow Illuminator:
\[ \text{cb TV RMS ELB ILLUM/PTU HTR – op,cl} \]

If A,B,C,D,ELB) Illuminator:
\[ \text{cb TV A,B,C,D,RMS,ELB ILLUM/PTU HTR – op,cl} \]

If RSC Illuminator:
Go to LDRI/ITVC (Cue Card)
ANALOG PLAYBACK

ANALOG VIA CC

NOTE
Analog Playback from CC only possible for CC Video recordings

ACTIVATION

CC Setup per diagram (back of cue card)
O19 Perform ACTIVATION ( Cue Card, TV), as reqd
AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
CC PWR – VTR/PLAY
\*AV1/2 – V2

OPERATIONS

PLBK or DNLK VIDEO
CC Install tape, if reqd
If audio reqd:
CCU If MHA, COMM PWR – ON
ATU PWR – AUD
Desired Loops – T/R
Other Loops – RCV(Off)
XMTR/COM Mode – VOX/VOX
VOX SENS – MAX
CC Speaker Vol Max
A7 VID OUT MON pb – as reqd
CC VTR pb – REV(FF) to cue tape
\*Dnk If Dnk
\*MCC has commanded async config
\*TV DNLK – ENA
\*VID OUT DNLK pb – push
\*IN FLT DECK(MIDDECK) pb – push
CC PLAY pb – push (green • displayed)

DEACTIVATION

CC Remove, mark, stow tape as reqd
PWR – OFF
ATU Recconfig as desired
O19 TV PWR – OFF, as reqd
Go to DEACTIVATION (Cue Card, TV), as reqd

ANALOG VIA VTR

ACTIVATION

Setup per diagram (back of cue card)
Disconnect CC Video input from AVIU J3
O19 Perform ACTIVATION ( Cue Card, TV), as reqd
AVIU SYNC/VIDEO – VIDEO
HI-Z/75 – 75
PWR SELECT – LO
L10 (MUX) VTR/CC PWR – on (LED on)
(VTR) ON/STANDBY LED – green

OPERATIONS

PLBK or DNLK VIDEO
L10 (VTR) Install tape if reqd
\*DISPLAY SELECT – DATA
If audio reqd:
(VIP) PWR – on (LED on, DATA FLOW LED flashes twice)
ATU PBK/KEY MIC (Amber LED on)
CCU If MHA, COMM PWR – ON
ATU PWR – AUD
Desired Loops – T/R
Other Loops – OFF
XMTR/COM Mode – VOX/VOX
VOX SENS – MAX
A7 VID OUT Desired MON pb – push
CC VTR pb – push (green • displayed)
L10 (VTR) REW(FF), PLAY, PAUSE pb – push as reqd to cue tape

DEACTIVATION

Connect CC video input to AVIU J3
L10 (VTR) Remove, mark, stow tape as reqd
ATU Recconfig as desired
O19 TV PWR – OFF, as reqd
Go to DEACTIVATION (Cue Card, TV), as reqd
LENS SETTINGS
- √ APERTURE – MIN, LOCKED
- √ LENS FOCUS MODE – A

CAMR SETTINGS
- PWR – ON
- TOP LCD
- √ BATT
- √ EXP MODE – M
- √ SS – 1000
- √ F/STOP – 8

DIOPTER – ADJUST
- FRAME RATE – S
- BODY FOCUS MODE – S

REAR LCD
- √ ISO – 100
- √ QUAL – RAW

CRITICAL FOCUS REQD EACH FRAME

LENS CAP – REMOVE
- √ ND FILTER – OFF
- √ AF/M – M
- √ AGC – OFF
- √ GAIN – L
- √ OUTPUT – CAM
- √ AWB – ON
- √ POWER dial – M
- √ LOCK (handle) – off (aft)
- STANDBY/LOCK – STANDBY

OPEN LCD
- √ BATT SUFFICIENT
- √ EXP MODE – M
- √ SS – 1/1000
- √ GAIN – ±0dB
- √ F/STOP – F8.0
- √ FOCUS MODE – MF ∞

ZOOM – WIDE TO FIND TANK, THEN TIGHT
START RECORDING
- LCD DISPLAYS RED DOT
## MEDIA ALLOCATIONS

### DVCAM

<table>
<thead>
<tr>
<th>10</th>
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</table>

3 hr/tape

### MINI DVCAM

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</tbody>
</table>

40 min/tape

(reduced copy)
ADJUST BRIGHTNESS

Course Adjustment
PGSC Select Page – RF Camera
   Lens Iris Control – cl(op)

Fine Adjustment
PGSC Select Page – RF Camera
   Electronic Shutter – Manual
   Brightness – Dec(Inc)
(# to right: 100 = brightest; 0 = darkest)

DARK SUBJECT
PGSC Select Page – RF Camera
   √Advanced Controls displayed
   Automatic Gain Control – Enabled
   (Disabled preferred)

PWRDN
For all lens (three) on each RF Camera Assy:
PGSC Lens Iris Control – Close until view black
V10 Select RF Camr 1,2 – None (black “OFF”)
PWRFN
V10 Test Pattern displayed (color bars w/“No WVS Video”)
PGSC Select Page – XCVR
   Transceiver 1(2) CMD Pwr – Off
   (black CMD PWR:LVL-“OFF:Min”)
   Sel File → Exit
V10 STOP pb – push
   Mark, stow tapes
   PWR – OFF
A7 WIRELESS VID PWR – OFF
   HTR – OFF

CAMR ADJUSTMENTS

VIDEO SIGNAL PROBLEMS
For problem EMU TV:
EMU EMU TV Pwr pb – push (no LED), wait 10 sec, push
   (green LED)

If no joy:
PGSC Select Page – XCVR
   √Advanced Controls displayed
   For XCVR w/video problem: IF – Narrow

If still no joy:
A7 WIRELESS VID PWR – OFF, wait 10 sec, ON

If still no joy:
PGSC For XCVR w/video problem: IF – Wide
   For XCVR w/good video: Sel RF Camr – None (black ‘OFF’)
   If video acceptable, other EMU TV interfering w/signal
   Alternately sel EMU TVs to acquire video

If still no joy:
   For XCVR with good video:
   Sel RF Camr – reselect original EVA crewmember
   For XCVR w/video problem: Antenna – Manual
   Sel desired antenna

If still no joy:
   For XCVR w/video problem: Antenna – Auto
   √MCC

COMMANDING PROBLEM (UHF)

If commanding of WVS not visually seen:
PGSC Select Page – XCVR
   Sel Transceiver 2(1) CMD Pwr – On
   (green CMD PWR:LVL-“ON:Min”)

ANTENNA LOCATIONS

AFT BULKHEAD

Bay 3
Bay 5
Bay 10
Bay 4
Bay 3

FWD BULKHEAD

Inboard of sill
(Bay 1)

(jac48037_108r1.cxx)

(reduced copy)
TOP
BACK OF 'WVS'

ALERT MSG TROUBLESHOOTING

STATIC XCVR
Condition: No comm between PGSC & PLB XCVR
PGSC 1. Cable connections between WIB and PGSC
A7 2. WIRELESS VID PWR – OFF, wait 10 sec, ON
If no joy:
PGSC 3. Sel 'Start' > 'Shut Down' > 'Restart' > 'OK'
   When reboot complete:
   - Sel Shuttle Apps icon > WVS icon
   - Sel 'Yes' at 'Restore To Previous Settings' window
   RF Camera page will appear
If still no joy:
4. √MCC

STATIC RF CAMERA
Condition: No telemetry and video received by PLB XCVR from EMU TV
EMU 1. EMU TV Pwr pb pushed (green LED)
If no joy:
PGSC 2. Correct RF Camera selected via pulldown menu
   - RF Camera (two) – ON (green "ON")
   If not ON:
   - RF Camera (of static EMU TV) – sel "None" via
     pulldown menu, then sel original EMU TV
If still no joy:
3. RF Camera 1(2) – sel "None"
   Perform CAMR ID ASSIGNMENT
   Reattempt RF Camr selections
If still no joy:
4. CMD PWR:LVL - green "ON:Min" for XCVR 1(2)
   If not ON:
   - Select Page – XCVR
   - Transceiver 1(2) CMD Power – On (green CMD PWR:LVL - "ON:Min")
If still no joy:
5. EMU TV Pwr pb (of static EMU TV) – push (no LED),
   wait 10 sec, push (green LED)
If still no joy:
6. √MCC

BAD CAMERA ID
Condition: Mismatch between EMU TV Camera ID and software camera ID
PGSC 1. Select Page – XCVR
   Transceiver 1(2) CMD Power – On (green CMD PWR:LVL - "ON:Min")
   Sel RF Camera 1.2 – None
   Sel File > Assign Camera ID
   Camera IDs match data under CAMR ID ASSIGNMENT
   If not a match,
   - Highlight entry, then sel 'Delete Entry' option
   - Perform CAMR ID ASSIGNMENT
   - Sel RF Camera 1,2 – EVA crewmembers
If still no joy:
2. √MCC

TEMP ALERT (blue text)
Condition: EMU TV -35 °C to -30 °C OR 80 °C to 85 °C range
PLB XCVR -40 °C to -35 °C OR 80 °C to 85 °C range
Select Page – Telemetry
Identify component w/temperature alert (blue text)
√MCC

TEMP CAUTION (yellow text)
Condition: EMU TV < -35 °C OR > 85 °C
PLB XCVR < -40 °C OR > 85 °C
Select Page – Telemetry
Identify component w/temperature alert (yellow text)
√MCC

CAMR ID ASSIGNMENT
Sel File → Assign Camr ID
√All EV crewmembers listed as options on pulldown ‘Label’ menu under CAMERA ID SETUP
If label entry reqd:
   Type label into space next to “Add Label” icon
   Sel “Add Label” icon to add to listing
Under CAMERA ID SETUP:
   Camera Address – As reqd via left/right arrows
   Serial Number – As reqd via left/right arrows
   Label – As reqd via pulldown menu
   “In Use” Box – Check via single click
   Sel “Save Entry” icon to right of Camr ID table (top)
   √Data entry visible in Camr ID table
Sel OK

Camr ID Data
<table>
<thead>
<tr>
<th>Camr Address</th>
<th>16</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
<td>1010</td>
<td>1007</td>
</tr>
<tr>
<td>Label</td>
<td>EV1</td>
<td>EV2</td>
</tr>
</tbody>
</table>

(reduced copy)

FS CC 3-11

P/TV-5b/127/O/A
P/TV/127/FIN
PLBD VTR RECORDING

L10  VIP, VTR covers removed
R1   PL AUX – ON
MA73C:E cb AC2 PL3Φ – cl

L10  Cables config'd per dwg (back of cue card)
(MUX) VTR/CC PWR – on (LED on)

(VIP) ATU – REC
       CCTV VIDEO IN – J3
       PWR – on (LED on, DATA FLOW flashes twice)

(VTR) ON/STANDBY LED – green
Swiches set to white dot (seven)
COUNTER SELECT – COUNTER (TC)
Tape installed (tape icon LED on)

Set GMT:
DISPLAY SELECT – MENU
↓ pb – ETC, EXEC pb – push
↓ pb – CLOCK SET, EXEC pb – push
Use ↓↓↓↑↑, EXEC to set Y,M,D,hr,min to GMT
DISPLAY SELECT – DATA

If Audio desired:
A15  Conntct DTV Audio Cable
L9   PS AUD PWR – AUD
     Desired Loops – RCV, Vol tw 5
     Other Loops – OFF
A7   VID OUT DTV pb – push
     IN pb – as reqd
L10  REC pb – push, hold
     PLAY pb – push, simo (red dot displayed)

(reduced copy)
**ACTIVATION**

1. **Config CCTV Sys**
   - L10 (MUX) √
   - R12 (VPU) √
   - MON 1,2 √

2. **Apply SPEE Pwr**
   - A6U EVENT TIMER MODE – UP
   - R12 (OBSS) SPEE PWR – ON

3. **Config RSC Illum to HI**
   - R12 (OBSS) SPEE PWR – OFF, wait 10 sec, ON

4. **Enable ITVC**
   - R12 (OBSS) ITVC ENA – OFF

5. **Turn LDRI Laser On**
   - A7 VID OUT MUX 1 L pb – push

**GENERAL LDRI CONTROL**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1</td>
<td>LDRI MODE 1 pb – push&lt;br&gt;ITVC video displayed</td>
</tr>
<tr>
<td>Mode 2</td>
<td>LDRI MODE 2 pb – push&lt;br&gt;ITVC video displayed</td>
</tr>
<tr>
<td>Mode 3</td>
<td>LDRI MODE 3(4,5,6) pb – push&lt;br&gt;LDRI w/rounded corners displayed&lt;br&gt;To adjust brightness: A7 CAMR CMD IRIS – OP,CL, as reqd</td>
</tr>
</tbody>
</table>

**DEACTIVATION**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 1</td>
<td>VID OUT MUX 1 L pb – push&lt;br&gt;ITVC video displayed&lt;br&gt;LDRI MODE 1 pb – push</td>
</tr>
</tbody>
</table>

**PAN/TILT OPS WITH LDRI ACTIVE**

- **NOTE**<br>When adjusting pan/tilt in Modes 3(4,5,6), ITVC FOCUS (ZOOM, IRIS) cntls functional

**LDRI MODE SUMMARY**

<table>
<thead>
<tr>
<th>Mode 1</th>
<th>Standby&lt;br&gt;ITVC video&lt;br&gt;LDRI in standby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 2</td>
<td>Illuminator&lt;br&gt;ITVC video&lt;br&gt;LDRI laser active, LDRI camera inactive</td>
</tr>
<tr>
<td>Mode 3</td>
<td>2D&lt;br&gt;Similar to ITVC video</td>
</tr>
<tr>
<td>Mode 4</td>
<td>2D Gamma&lt;br&gt;LDRI 2D video with Gamma Black Stretch&lt;br&gt;Similar to ITVC video</td>
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<tr>
<td>Mode 5</td>
<td>3D&lt;br&gt;LDRI 3D video&lt;br&gt;Flicker on MON</td>
</tr>
<tr>
<td>Mode 6</td>
<td>3D Gamma&lt;br&gt;LDRI 3D video with Gamma Black Stretch&lt;br&gt;Flicker on MON</td>
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</tbody>
</table>
RSC CAMR OPS

NOTE
Camr nominally pwrd in Block 3 of POST INSERT
R12 (OPP)  cb OBSS SW PWR CB1 – cl
OBSS SW PWR – ON
RSC PWR – ON

RSC ILLUMINATOR OPS

NOTE
RSC illuminator OFF when SPEE PWR sw initially taken to ON. A cycle of the SPEE PWR sw takes RSC illuminator to HIGH. Subsequent pwrs cycles take illuminator to MED, LOW, OFF and then back to HIGH. Config may req alt Camr view of RSC

R12 (OBSS)
SPEE PWR – ON
RSC PWR – ON
ITVC ENA – OFF
A7  VID OUT MON 1 pb – push
IN A(B,C,D) pb – push
PAN,TILT – Adjust to see RSC Camr

NOTE
SPEE pwrs cycle will reset LDRI/ITVC to Mode 1 and reset the PTU angles

R12 (OBSS)
SPEE PWR – OFF, wait 10 sec, ON
RSC PWR – ON
MON 1
RSC illum on

To cycle thru illuminator modes:

Perform LDRI/ITVC ACTIVATION, step 4
Return to original LDRI/ITVC Mode, continue OPS

CONTINGENCY LDRI CLEARANCE VIEW

NOTE
Do not apply RMS brakes

A8U  AUTO SEQ – STOP (READY lt on)
L10(VTR)  STOP pb – push (no red •)
A7  VID OUT MUX 1 L pb – push (MIDDECK lt on)
LDRI MODE 3(4) pb – push (steady LDRI video)
VID OUT MON 1 pb – push
IN PL2(VPU) pb – push
Record PTU Pan ________ and Tilt ________
CAMR CMD PAN/TILT – HI RATE
PAN: 0 (left, to hard stop)
TILT: 0 (up, to hard stop)

ORBITER IN THIS SPACE

Note clearance thru LDRI FOV

Return PTU to Pan and Tilt values recorded above
VID OUT MUX 1 L pb – push (MIDDECK lt on)
LDRI MODE 6 pb – push (flickering LDRI video)
VID OUT MON 1 pb – push
IN pb – as desired (not PL2)

L10(VTR)  REC pb – push, hold
PLAY pb – push, simo (red dot)
A8U  AUTO SEQ – PROCEED (IN PROG lt on)

LDRI PAN/TILT RESET

Reset PTU
A7  VID OUT MON 1 pb – push
IN PL2(VPU) pb – push
CAMR CMD PAN/TILT – HI RATE
PAN – L (to hard stop)
TILT – UP (to hard stop)
PAN/TILT – RESET

SPEE PWR DEACT CLEANUP ACTIONS

Config RSC Illum to HI
R12 (OBSS)  SPEE PWR – OFF
ITVC ENA – OFF
RSC PWR – OFF, wait 10 sec, ON
SPEE PWR – ON, OFF, wait 10 sec, ON

Config ITVC
ITVC ENA – ON
A7  VID OUT DTV pb – push
IN PL2(VPU) pb – push
If MAN GAIN pb not illuminated:
R12 (OBSS)  ITVC ENA – OFF, wait 10 sec, ON
Repeat until MAN GAIN pb illuminated
A7  LT LEVEL pb – push
DAY (NIGHT) pb – push
ALC pb – push
AVG pb – push

Reset PTU
A7  CAMR CMD PAN/TILT – HI RATE
PAN – L (to hard stop)
TILT – UP (to hard stop)
PAN/TILT – RESET
PAN and TILT ITVC to values needed for Survey

Return LDRI to Mode 6
A7  VID OUT MUX 1 L pb – push
IN MIDDECK pb – push
LDRI MODE 6 pb – push
VID OUT DTV pb – push, to return to ITVC control

P/TV-7b/127/O/A

(reduced copy)
LCH ACTIVATION

Activate SSPTS APCU(s)

If JEF in PLB:
- PTU 1.2 lb (two) – ON
- APCU 2 OUTPUT – ON
- 1,2 CONV (two) – ON

If JEF not in PLB:
- PTU 2 lb – ON
- APCU 2 OUTPUT – ON
- CONV – ON

SM 179 POWER TRANSFER
- PTU 1.2 APCU OUT VOLTS: 123V to 126V
- OUTPUT – ON

PTU 2 APCU OUT VOLTS: 123V to 126V

LCC ACTIVATION

1. LCC Setup
   - Hardware and cables configured per diagram below:

2. LCC Startup
   - PGSC Pwr – ON
   - Yellow ‘RJ-45 Port Configured for LCS Ops’ displayed on desktop crew patch
   - Set ‘Shuttle Apps’ > ‘LCC’ (wait 2-3 min from APCU CONV – ON for GUI Status)
   - Laser off – blue
   - Comm – green

3. Verify LCC Desktop Video
   - TV PWR – ON
   - AVIU
   - PWR SELECT – LO
   - CC PWR – OFF

   *(For SSPTS APCU 2 flights only)*

TOP

LCS

3. Verify LCC Desktop Video (Concluded)
   - Minimize all programs
     - Right click on ATI icon on system tray
     - Sel ‘Schemes’
     - Sel ‘ENABLE DESKTOP DOWNLINK’, ‘ATI Property Page’ displayed
     - Sel ‘Yes’
     - Maximize program windows as desired

   - PTU 2 lb – ON
   - APCU 2 OUTPUT – ON
   - CONV – ON

   SM 179 POWER TRANSFER
   - PTU 2 APCU OUT VOLTS: 123V to 126V
   - OUTPUT – ON

A31p

1. Load Database (if reqd)
   - MCC for desired LCS database
     - ‘DB Name’: Field on upper left-hand side of LCS GUI
   - If ‘DB Name’ incorrect:
     - Sel ‘Load Database’ from File menu
     - MCC desired database file
     - Sel ‘OK’

2. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

A31p

1. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

3. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

OPERATION

NOTE

PDRS OPS will call for appropriate scan steps on LCC.
MCC may have limited insight if desktop dnlk avail

1. Load Database (if reqd)
   - MCC for desired LCS database
     - ‘DB Name’: Field on upper left-hand side of LCS GUI
   - If ‘DB Name’ incorrect:
     - Sel ‘Load Database’ from File menu
     - MCC desired database file
     - Sel ‘OK’

2. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

A31p

1. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

3. LCS System Status
   - LCS SYSTEM STATUS
     - Laser On/Off
     - Comm
     - LCS State

   *(For SSPTS APCU 2 flights only)*

(For SSPTS APCU 2 flights only)
LCC DEACTIVATION

NOTE
Shutting down LCC software also puts LCH in keep-alive heater mode. No LCH scans/insight or IDC ops available. APCU Converter pwr cycle reqd to reinitialize LCH for scanning and IDC ops.

1. LCC Software Shutdown
A31p  Set ‘File’ > ‘Exit’
When ‘Shutdown’ dialog box opens:
√ ‘Shutdown LCH and Exit LCC Software’ selected
Sel ‘OK’
When ‘Shutdown?’ dialog box opens: Sel ‘OK’

2. A31p Screen Resolution Reset
A31p  Right click on ATI icon on system tray
Set ‘Schemes’
Set ‘DISABLE DESKTOP DOWNLINK, ATI Property Settings’
Set ‘Yes’
Arrange program windows as desired

LCH DEACTIVATION

CAUTION
Deactivating SSPTS APCU 1,2 will remove critical keep-alive pwr to LCH and IDC. Pwr must be reapplied with 105 min.

1. Deactivate SSPTS APCU(s)LCH
   If JEF in PLB:
   A15  PTU 1,2 CONV (two) – ON
       APCU 1,2 CONV (two) – OFF
       OUTPUT – OFF
       SM 179 POWER TRANSFER
       PTU 1,2 APCU OUT VOLTS (two): <10V
   If JEF not in PLB:
   APCU 2 CONV – OFF
   OUTPUT – OFF
   SM 179 POWER TRANSFER
   PTU 2 APCU OUT VOLTS: <10 V

TROUBLESHOOTING

Temp or Elec Status Yellow
A31p  Set ‘System’ page
Report ‘Elec’ or ‘Temp’ values backlit in yellow to MCC

Comm Status Yellow and LAN2 Network cable unplugged (red X on A31p system tray)

NOTE
LCC GUI Comm status will be yellow and A31p Local Area Network status (wired X on A31p system tray) cable unplugged tool tip will appear if LCH is in keep-alive heater mode

A31p  If unexpected red X w/Local Area Network Connection tool tip shown on A31p system tray:

R12  OPP to LCC Cable connected to LCS CMD/TLM(J107) port
A31p  OPP to LCC Cable connected to LCC RJ45 port
Exit LCC software and shut down Windows
If JEF in PLB:
A15  APCU 1,2 CONV (two) – OFF, wait 10 sec
    ×2 OUTPUT – ON
    APCU 1,2 CONV (two) – ON
    SM 179 POWER TRANSFER
    PTU 2 APCU OUT VOLTS: 123V to 126V
If JEF not in PLB:
A15  APCU 2 CONV – OFF, wait 10 sec, ON
    SM 179 POWER TRANSFER
    PTU 2 APCU OUT VOLTS: 123V to 126V
A31p  LCC PGSC Pwr – ON
A31p  OPP to LCC Cable connected to LCC RJ45 Network Interface Card LED green
A31p  Local Area Network Connection status icon (with red X) in Windows system tray not displayed
A31p  MCC if LCC GUI Comm status still yellow

Message Area Entry
Report LCC GUI message area log entry(ies) to MCC

Yellow ‘RJ-45 Port Configured for LCS Ops’ Not Displayed on Desktop Crew Patch
A31p  Set ‘Shuttle Apps’ > ‘Network Configuration’ > ‘LCS RJ-45 Network Setup’
Enter ‘1’ in network window
Set ‘OK’
Set ‘OK’ in LCS window
Allow 20 sec for program to execute
Yellow text displayed on desktop
Resume LCS Ops

For SSPTS APCU 2 flights only

(reduced copy)
IDC ACTIVATION

1. LCC Setup
   - Hardware configured per LCC ACTIVATION steps 1,2 (Cue Card: LCS)
     A31p PGSC Pwr – ON

2. IDC connectivity Check
   A31p A31p internal RJ45 Network Interface Card LED green
   If JEF in PLB and RJ45 Network Interface Card LED not green:
     A31p APCU 1.2 CONV (two) – OFF, wait 10 sec
          1.2 OUTPUT – ON
     SM 179 POWER TRANSFER
          PTU 1,2 APCU OUT VOLTS: 123V to 126V
   If JEF not in PLB and RJ45 Network Interface Card LED not green:
     APCU 2 CONV – OFF, wait 10 sec, ON
     SM 179 POWER TRANSFER
          PTU 2 APCU OUT VOLTS: 123V to 126V

IDC SOFTWARE ACTIVATION

1. IDC Software Startup
   A31p Sel ‘Shuttle Apps’ > ‘IDC’

2. Verify GMT
   A31p GMT within 3 sec of SM-GPC GMT
        * If GMT not within 3 sec:
           * Double click on GMT box on GUI
           * Adjust GMT as reqd
           * Set ‘OK’ on MTU Time dialogue box

3. IDC Pwr on and self test
   CAUTION Pwr off IDC when not imaging. Pointing IDC at Sun when pwr on will damage Camr
   A31p Set ‘Power On’
   Black and White self-test image displayed
   ‘Waiting for User Command’ displayed
        * If red backlit error msg displayed:
           * Perform appropriate TROUBLESHOOTING
           * steps on this cue card

OPERATION

NOTE

PDRS OPS will call for IDC image steps on LCC A31p. Limited MCC real-time insight avail if configured for desktop dnlk

1. Configure LDRI Illumination
   R12 (VPU) Green Jumper – LDRI/ITVC
   A7 VID OUT MUX 1L pb – push
          IN MIDDECK pb – push
       LDRI MODE 2 pb – push
       VID OUT MON 2 pb – push
       IN PL2 (VPU) pb – push
       CAMR CMD PAN/TILT – HI RATE
          PAN – L (to hard stop)
          TILT – UP (to hard stop)
          PAN/TILT – RESET
       PTU 2 APCU OUT VOLTS: 123V to 126V

NOTE

If IDC GUI GMT does not update during Ops, an attempt to shut down/restart A31p should be made

2. Auto Exposure (AE) Ops
   A31p Use AE checked
          Sel ‘Scan Lo-Res’
          Resize and posn AE box as reqd (pause 2 sec)
          MCC for AOI FOV
          Sel ‘Scan Hi-Res’  If Scanning w/no RMS Motion:
          Sel ‘Stop Scan’ after 30 sec
          If scanning w/RMS motion:
          Move box to maintain RCC in AE box (using keyboard arrows)
          Sel ‘Stop Scan’ at pause point
          ‘Waiting for User Command’ displayed

3. Scenario File Ops
   A31p From Scenario File drop-list, sel appropriate lighting condition
          Sel ‘Acquire Set’
          ‘Acquiring Set’ displayed
          ‘Waiting for User Command’ displayed after set
          MCC content w/data take

(For SSPTS APCU 2 flights only)

(reduced copy)

FS CC 3-18
IDC DEACTIVATION

1. IDC and Software Shutdown
   A31p
   Sel ‘Power off on IDC GUI’
   IDC software > ‘YES’
   Close (X) IDC software > ‘YES’

2. A31p Screen Resolution Reset
   A31p
   Right click on ATI icon on system tray
   Sel ‘Schemes’
   Sel ‘DISABLE DESKTOP DOWNLINK, ATI Property Settings’
   Sel ‘Yes’
   Arrange program windows as desired

IDC HOT KEY COMMANDS

F5 – Toggle Summary View
F6 – Toggle Image Mode
F7 – Zoom In
F8 – Zoom Out
F9 – Reset Brightness and Contrast
F10 – Reset AE Box to Default
F11 – Toggle AE Box Visibility
F12 – Find AE Box

IDC SOFTWARE ERROR MESSAGES

**Can’t connect to LCH**: Perform TROUBLESHOOTING, steps 1,2
   Condition: Possible heater only mode or Network failure

**Iport probe failed**: Perform TROUBLESHOOTING, step 2
   Condition: Iport startup check failed. Expected during first pwrr on attempt-resend pwrr on

**Iport not responding**: Perform TROUBLESHOOTING, step 2
   Condition: Iport connection lost

**Camera not responding**: Perform TROUBLESHOOTING, step 2
   Condition: Camera connectivity lost

**Image acquisition failed**: Perform TROUBLESHOOTING, steps 1,2
   Condition: Camera connectivity lost during imaging

**Network recovery failed**: Perform TROUBLESHOOTING, steps 1,2
   Condition: LCH network switch connection lost

**Bad initialization file**: Perform TROUBLESHOOTING, step 3
   Condition: Software will not launch due to severe ini file corruption

TROUBLESHOOTING

1. LCC to LCH Connectivity Check
   A31p
   If Local Area Network Connection (with red X) tool tip on system tray:
   Reset OPP to LCC Cable (20 ft) to LCC RJ45 port
   Local Area Network Connection Speed 10 nps
   If no connection:
   Perform LCH, LCC, and IDC Reset, step 2
   Continue nominal ops

2. LCH, LCC, and IDC Reset
   A31p
   Exit IDC software and shut down Windows
   OPP to LCC Cable (20 ft) connected to LCC RJ45 port and LCS CMD/TLM port
   If JEF in PLB:
   APCU 1,2 CONV (two) – OFF, wait 10 sec
   1,2 OUTPUT – ON
   1,2 CONV (two) – ON
   SM 179 POWER TRANSFER
   PTU 2 APCU OUT VOLTS: 123V to 126V
   If JEF not in PLB:
   APCU 2 CONV – OFF, wait 10 sec, ON
   SM 179 POWER TRANSFER
   PTU 2 APCU OUT VOLTS: 123V to 126V
   A31p
   LCC PGSC Pwr – ON
   A31p internal RJ45 Network Interface Card LED green
   Perform IDC SOFTWARE ACTIVATION
   Continue nominal ops

3. LCC Swap
   A31p
   Exit IDC software and shut down Windows
   Swap LCC with other A31p
   Perform IDC Activation
   Perform IDC Software Activation
   Continue nominal ops
## D2Xs SETUP

### D2Xs PROGRAM

- **In Cabin**
  - Lens – as reqd
  - Aperture – Min, locked
  - Body Focus Mode – S
  - √Batt installed
  - √Flash Card installed
  - Pwr – ON
  - Top LCD
  - √Batt
  - √Frames remaining sufficient
  - Exp Mode ( umiejętn ) – 0.0
  - Exp Mode – P
  - Meter – Matrix ( )
  - Diopter – Adjust
  - Frame Rate – S
  - √BKT disabled – 0 F
  - Rear LCD
  - √ISO – 100
  - √QUAL – RAW
  - √WB – 0, A
  - √Focus Area – Center
  - √Focus Selector Lock – L
  - AF Area Mode – [ ]
  - SB-800 Flash Settings
    - √Diffuser Dome installed
    - ON/OFF pb – ON
    - √MODE –  
    - √Exp Comp – 0 EV
    - Tilt – 45° (Direct)

### D2Xs Aperture Priority

- “Earth Obs, RNDZ and flyaround”
  - Lens – as reqd
  - Aperture – Min, locked
  - Body Focus Mode – S
  - √Batt installed
  - √Flash Card installed
  - Pwr – ON
  - Top LCD
  - √Batt
  - √Frames remaining sufficient
  - Exp Mode (专门为专用 ) – 0.0
    - Exp Mode – A
      - f/stop – as reqd
    - Meter – Matrix ( )
    - Diopter – Adjust
    - Frame Rate – S
    - √BKT disabled – 0 F
    - Rear LCD
    - √ISO – 100
    - √QUAL – RAW
    - √WB – 0, A
    - AF Area Mode – [ ]
    - √Focus Area – Center
    - √Focus Selector Lock – L

### D2Xs Shutter Priority

- SB-800 Flash Settings
  - √Diffuser Dome installed
  - ON/OFF pb – OFF
  - √MODE –  
  - √Exp Comp – 0 EV
  - Tilt – 45° (Direct)

(reduced copy)
### D2Xs MANUAL
**“SUNLIT OBJECTS”**

- **Lens** – as reqd

  **NOTE**
  If auto focus unachievable:
  - Lens Focus Mode – M

- Lens Focus Mode – A
- Aperture – Min, locked
- Body Focus Mode – S
- √Batt installed
- √Flash Card installed
- Pwr – ON
- Top LCD
- √Batt
- √Frames remaining sufficient

  **Exp Comp (่อ) – 0.0**

  **Exp Mode – M**
  - SS – 500
  - f/stop – f/8
  - Meter – Matrix (NECT)
  - Diopter – Adjust
  - Frame Rate – S
  - √BKT disabled – 0 F
  - Rear LCD
  - √ISO – 100
  - √QUAL – RAW
  - √WB – 0,A
  - AF Area Mode – [ [ ] ]
  - Focus Area – Center
  - Focus Selector Lock – L

- SB-800 Flash Settings
  - √Diffuser Dome installed
  - ON/OFF pb – ON
  - √MODE –  offsetX
  - Exp Comp – 0 EV
  - Tilt – 45° (Direct)

  **Technique**
  1. Fill FOV w/sunlit subject
  2. Activate D2Xs Camr
  3. Auto Exp Lock – Depress hold
  4. Expect values such as 250,f/11

### D2Xs EXPOSURE MATCH
**“HERO SHOT”**

- **Lens** – 12-24mm @ 18mm
- Aperture – Min, locked
- Body Focus Mode – S
- √Batt installed
- √Flash Card installed
- Pwr – ON
- Top LCD
- √Batt
- √Frames remaining sufficient

  **Exp Comp (่อ) – 0.0**

  **Exp Mode – P**
  - Meter – Matrix (NECT)
  - Diopter – Adjust
  - Frame Rate – S
  - √BKT disabled – 0 F
  - Rear LCD
  - √ISO – 100
  - √QUAL – RAW
  - √WB – 0,A
  - AF Area Mode – [ [ ] ]
  - Focus Area – Center
  - Focus Selector Lock – L

- SB-800 Flash Settings
  - √Diffuser Dome installed
  - ON/OFF pb – ON
  - √MODE –  offsetX
  - Exp Comp – 0 EV
  - Tilt – 45° (Direct)

  **Technique**
  1. Fill FOV w/sunlit subject
  2. Activate D2Xs Camr
  3. Auto Exp Lock – Depress hold
  4. Expect values such as 250,f/11

### D2Xs CREW PHOTO

- **Lens** – 17-35mm @ 17mm
- Aperture – Min, locked
- Body Focus Mode – S
- √Batt installed
- √Flash Card installed
- Pwr – ON
- Top LCD
- √Batt
- √Frames remaining sufficient

  **Exp Comp (่อ) – 0.0**

  **Exp Mode – A**
  - f/stop – f/8
  - Meter – Matrix (NECT)
  - Diopter – Adjust
  - Frame Rate – Selftimer
  - √BKT disabled – 0 F
  - Rear LCD
  - √ISO – 100
  - √QUAL – RAW
  - √WB – 0,A
  - AF Area Mode – [ [ ] ]
  - Focus Area – Center
  - Focus Selector Lock – L

- SB-800 Flash Settings
  - √Diffuser Dome installed
  - ON/OFF pb – ON
  - √MODE –  offsetX
  - Exp Comp – 0 EV
  - Tilt – 45° (Direct)

  **Technique**
  1. Focus on crewmember
  2. **Body Focus Mode – M**
  3. Frame, Fire

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(reduced copy)
LDRI/ITVC A7 PLACARD

1. ITVC-VIDEO LDRI-OFF
2. ITVC-VIDEO LDRI-ILLUM
3. LDRI-2D VIDEO
4. 2D +GAMMA
5. 3D +FLICKER
6. 3D +GAMMA +FLICKER

P/TV-12a/127/O/A

HOOK VELCRO

BACK OF ‘LDRI/ITVC A7 PLACARD’

TOP

HOOK VELCRO

P/TV-12b/127/O/A
NOTE
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NOTE
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K-10 stock in crew copies only