Photo/TV Checklist

STS-129 Flight Supplement

Mission Operations Directorate
Operations Division

Final
October 8, 2009

National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas

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H/W SUMMARY (Concluded)
P/TV01 VIDEO SETUP (Continued)

SETUP

NOTE
Steps 1-7 minimum reqmt for OBSS RCC Inspection (focused and post undocked).
Step 8 required for ET Video DNLK

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

2. Perform the following for DTV Setup:

O19 TV PWR – OFF

L10:A1 Unstow AVIU and disconnect following cables:
   ASC/ENT/FD TV Pwr Cable from J2; pull Cable thru cutout in locker
   AVIU Adapter Cable from J5
   ASC/ENT FD V10 Cable from J1
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
Connect DTV Mon 2 Cable to C-IN

MON 2 SOURCE – C

Config Audio
A15 Connect DTV Audio Cable to P5 CCU
L9 Config PS ATU per Comm Plan
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 MON 1 V10 from MS1 Saddlebag
MON 2 V10 from MS4 Saddlebag (Left)
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
- Pre-routed MON 1 AVIU Cable to MON 1 AVIU J4
- Pre-routed MON 1 TV PWR Cable to MON 1 AVIU J2
- Pre-routed MON 2 Balanced Video Cable to MON 2 AVIU J4
- Pre-routed MON 2 TV PWR Cable to MON 2 AVIU J2
- Pre-routed MON 1 RPOP2 Repeater Cable String to MON 1 AVIU J6
- MON 1 WLES Repeater Cable string from MON 1 AVIU J5 to 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
5. Perform Analog Camcorder Setup for FD, MD

O19, MO58F  TV PWR – OFF

Retrieve FD AVIU from L10A1
MD AVIU from MS4 Saddlebag
Config G1 CCs per H/W SUMMARY, FS 1-4, as reqd

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
√ A/V1/V2 – V2
√ 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, as reqd

If MD Camcorder setup not performed, unstow MD AVIU from MS4 Saddlebag (Left)

Middeck  Connect MD TV Pwr Cable to MD AVIU J2
         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 on WLES machine
         Connect OPP-LCC Cable to A31p RJ45 Ethernet on WLES machine
P/TV01 VIDEO SETUP (Continued)

SETUP (Continued)

7. Perform SSV Setup

MF43E Unstow:
- SSV Compression Encoder Box
- SSV BNC-BNC Cable
- SSV to PDIP/CIP Cable
- SSV DC 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) \(\sqrt{cb}\) PDIP 2 PWR 1 – 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

8. Perform HDTV Setup for ET Photo DNLK

L10:A1 Unstow MPC
- White Brick
- MPC-DTV MUX Cbl (Fiber Optic Cable)
- MPC-G1 (Firewire Cable)

MA16J Stow-n-Go Bag

Configure H/W per H/W SUMMARY, FS 1-5
P/TV01  VIDEO SETUP (Continued)

 SETUP (Continued)

 9. Perform WVS Setup

   a. Activate WVS System

      A7             WIRELESS VID HTR – ON
                      PWR – ON

      MO58F           TV PWR – OFF

      MA9F 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)  \SYNC/VIDEO – VIDEO
                      \HI-Z/75 – 75
                      \PWR SELECT – LO
                      V10 (two)
                      TV PWR – ON

      MO58F           V10 (WVS 1,2)  PWR – ON
                      \Tape installed
                      \WVS Test Pattern displayed (color bars w/"No WVS Video")
                      PWR – OFF

      R10              Config MS ATU/CCU per Comm Plan

FS 1-10
9. Perform WVS Setup (Continued)

c. WVS PGSC Prep

PGSC Pwrup and Application Opening

PGSC
\~Pwr – ON
Sel Shuttle Apps icon
Sel WVS icon

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

If ‘Comm Port Configuration’ error displayed:
  Remove Quatech RS-422 Card
  Sel ‘Start’> ‘Shut Down’> ‘Shut Down’> ‘OK’
  Reinstall Quatech RS-422 Card in bottom PCMCIA slot
  Pwr – ON
  Sel Shuttle Apps icon
  Sel 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
Sel ‘File’ → ‘Assign Camera ID’
Verify following:

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<th>S/N</th>
<th>In Use</th>
<th>Label</th>
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<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>
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</table>

If Camr IDs not correct:
  Sel ‘Delete Entry’ until all deleted
  Perform CAMR ID ASSIGNMENT (Cue Card, WVS) as reqd
When complete, sel ‘OK’
SETUP (Concluded)

9. 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

MF43E 10. Unstow, set up BPSMU w/ BPSMU to CCU Adapter Cable at CDR CCU
Connect BPSMU Batt
H/W SUMMARY

Digital CC Vid/Pwr Cable (15 ft)
Wide Conversion Lens

Video FD AVIU J2 VIDEO J4 J6
J1 75 J5 LO J3 J7

75

RCA-BNC Adapter

MON 1 VPU Cable

MON 2 TV Pwr Cable (10 ft)

MON 2 Balanced Video Cable

WLES A31p Video Adapter

Digital CC Vid/Pwr Cable (15 ft)

Digital CC Vid/Pwr Cable (15 ft)

DTV Audio Cable

DTV MON 2 Cable

DVR Video Cable

Video Adapter

REPO2 A31p Video Adapter

MON 1 PWR Cable (10 ft)

Digital CC Vid/Pwr Cable (15 ft)

MON 2 TV Pwr Cable (10 ft)

MON 2 Balanced Video Cable

WLES A31p Video Adapter

Digital CC Vid/Pwr Cable (15 ft)

Digital CC Vid/Pwr Cable (15 ft)

DTV Audio Cable

DTV MON 2 Cable

DVR Video Cable

Video Adapter
SCENE SYNOPSIS

Scene contains procedures for obtaining video, still photos of ISS rendezvous, docking

SETUP

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

2. Perform D2Xs PROGRAM w/FLASH for in-cabin imagery

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

   SB-800 Flash Settings:
   ON/OFF pb – ON
   \( \sqrt{\text{Diffuser Dome installed}} \)
   \( \sqrt{\text{MODE – [ ]}} \)
   \( \sqrt{\text{Exp Comp – 0 EV}} \)
   Tilt – 45° (Direct)
P/TV02  DOCK (Continued)

SETUP (Continued)

3. Perform D2Xs MANUAL Exposure for docking/external imagery

Remove ovhd Window Shields
SB-800 Flash Settings:
   ON/OFF pb – OFF
Lens – 400mm(80-200mm)
      If 400mm:
         Focus Limit – ∞-6m
         Lens Focus Mode – A
      If 80-200mm:
         Focus Limit – full
         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 ( ) – 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
P/TV02  DOCK (Continued)

SETUP (Continued)

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

O19,MO58F  √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

For in-cabin views:

CC
            √Wide Conversion lens installed
            √ND FILTER – OFF
            √OUTPUT – CAM
            √A/V1/V2 – V2
            √STANDBY/LOCK – STANDBY
            PWR dial – “green”
            √Tape installed
            Open LCD
            “green” • displayed
            Install Audio Muting Plug (optional)
P/TV02  DOCK (Continued)

SETUP (Concluded)

4. Perform Hardware Verification for V10s, FD CC, DTV (Concluded)

For sunlit ISS views:

**CC**
- Remove Wide Conversion Lens
- Install fresh Batt as reqd
- ND FILTER – OFF
- AF/M – M
- AGC – OFF
- GAIN – L
- OUTPUT – CAM
- A/V1/V2 – V2
- AWB – ON
- \[ \text{CC,} \ \text{CC - CC} \]
- STANDBY/LOCK – STANDBY
- PWR dial – M
- Tape installed
- Open LCD
  - “green” •|| displayed
  - SS – 1/500
  - GAIN – 0dB
  - f/stop – F8.0
  - FOCUS – M \( \infty \) (adjust as reqd)
  - Install Audio Muting Plug (optional)

**MON 2**
- SOURCE – C

**L10 (MUX)**
- VTR/CC PWR – on (LED on)
- If dnlk, MUX/VTR/CC PWR – on (LED on)
- \( \text{(VIP)} \)
  - PWR – on (LED on)
- \( \text{(VTR)} \)
  - 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
<table>
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<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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<td>PAO Coverage</td>
<td>D2Xs (Interior)</td>
<td>As desired</td>
<td>G1</td>
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<td>12-24mm</td>
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<td>If exterior: Flash ON/OFF – OFF</td>
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<td>2.</td>
<td>ULF3-37</td>
<td>Rendezvous</td>
<td>D2Xs (Exterior)</td>
<td>A(B,C,D), ELB</td>
<td>G1</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>400mm (80-200mm) Flash ON/OFF – OFF</td>
<td></td>
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<tr>
<td>3.</td>
<td>ULF3-37</td>
<td>Approach, Dock</td>
<td>D2Xs (Exterior)</td>
<td>C/L Per RNDZ</td>
<td>G1</td>
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<td>400mm (80-200mm) Flash ON/OFF – OFF</td>
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<td>Overall</td>
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<td>Closeup</td>
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<td>Damage</td>
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<td>Deterioration</td>
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</tr>
</tbody>
</table>
P/TV02   DOCK (Continued)

OPS (Continued)

APPROACH/DOCKING RQMTS

Mapping of ISS Module Surfaces

PMA2 APDS Area

PAO Views

C/L Camr

Cmr A(D)

Cmr C(B)

Docking View

D2Xs Camr

w/400mm Lens

D2Xs Camr

w/80-200mm Lens

D2Xs Camr

w/12-24mm Lens

MON 1, DTV (RCD)

MON 2

Range Ruler
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

3. G1
   PWR dial – “green”
   Install Wide Conversion Lens
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
   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 Exposure for undocking/external imagery

Remove ovhd Window Shields
SB-800 Flash Settings:
  ON/OFF pb – OFF
Lens – 400mm(80-200mm)
    If 400mm:
      Focus Limit – ∞-6m
      Lens Focus Mode – A
    If 80-200mm:
      Focus Limit – full
      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 (📸) – 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 – [ tà ]
√Focus Area – Center
√Focus Selector Lock – L
P/TV03  UNDOCK (Continued)

SETUP (Continued)

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

For in-cabin views:

CC  √Wide Conversion lens installed
  ND FILTER – OFF
  OUTPUT – CAM
  A/V1/V2 – V2
  C  DC – PC
  STANDBY/LOCK – STANDBY
  PWR dial – “green”
  Tape installed
  Open LCD:
    “green” •|| displayed
    Install Audio Muting Plug (optional)
P/TV03  UNDOCK (Continued)

SETUP (Concluded)

4. Perform Hardware Verification for V10s, FD CC, DTV (Concluded)

For sunlit ISS views:

CC
- Remove Wide Conversion Lens
- Install fresh Batt as reqd
- ND FILTER – OFF
- AF/M – M
- AGC – OFF
- GAIN – L
- OUTPUT – CAM
- AWB – ON
- [ ] [ ]
- STANDBY/LOCK – STANDBY
- PWR dial – M
- [ ] Tape installed
- Open LCD:
  - “green” •|| displayed
  - SS – 1/500
  - GAIN – 0dB
  - f/stop – F8.0
  - FOCUS – M ∞ (adjust as reqd)
- Install Audio Muting Plug (optional)

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)

<table>
<thead>
<tr>
<th>√</th>
<th>Item # Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>Dnlk</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D2Xs (Interior) 12-24mm</td>
<td>As desired</td>
<td>G1 Tape installed</td>
<td>Plan for end of day crew choice video, DCS</td>
</tr>
<tr>
<td>1.</td>
<td>ULF3-9</td>
<td>PAO Coverage</td>
<td>If exterior: Flash ON/OFF – OFF</td>
<td></td>
<td>LIVE (if avail)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>ULF3-21 ULF3-37</td>
<td>Undock and Flyaround D2Xs (Exterior) 80-200mm(400mm) Flash ON/OFF – OFF</td>
<td>A(D) Per RNDZ C/L Docking tgt and PAO view</td>
<td>G1 Tape installed</td>
<td>LIVE (if avail)</td>
<td>Map ISS surfaces w/30% overlap</td>
</tr>
</tbody>
</table>
P/TV03 UNDOCK (Continued)

UNDOCKING/FLYAROUND RQMTS

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

D2Xs Camr w/80-200mm Lens
D2Xs Camr w/400mm Lens
D2Xs Camr w/12-24mm Lens

MON 1
MON 2

FS 1-30
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

3. G1
   PWR dial – “green” 
   Install Wide Conversion Lens
SCENE SYNOPSIS

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
   R12 (VPU)
   Green Jumper – ISS
   √ VPU PWR – ON
   A7
   VID OUT DNLK pb – push
   IN PL2(VPU) pb – push

2. Perform Ingress Camcorder Setup

   Obtain two Batts, one for CC and one spare
   Install Batt
   CC
   Install Wide Conversion lens
   √ ND FILTER – OFF
   √ OUTPUT – CAM
   √ A/V1/V2 – V2
   √ ( ) – ( )
   √ STANDBY/LOCK – STANDBY
   PWR dial – “green”
   √ Tape installed
   √ Viewfinder (LCD) displays “green”
   Install Audio Muting Plug (optional)

   CAUTION
   Due to temp constraints, worklights at full pwr for 60 min; 90% pwr for unlimited time

   Worklights
   Install fresh Batts
   Mount light on CC
   PWR – as reqd
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 ((Console) – 0.0
   Exp Mode – P
   Meter – Matrix (Console)
   √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>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>ULF3-9</td>
<td>Hatch Opening, Ingress Hatch Close, Egress</td>
<td>D2Xs 12-24mm</td>
<td>G1</td>
<td>LIVE (if avail)</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)

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 1-40 and FS 1-41

Config RWS Vid Cables:
MON 1,2 (Stow-n-Go)
\[
\begin{align*}
\sqrt{RWS 1 \text{ Drag-Thru Cable connected to MON 1 AVIU J6}} \\
\sqrt{RWS 2 \text{ Drag-Thru Cable connected to DTV VTR OUT connector}}
\end{align*}
\]
L10:A1

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
\[
\begin{align*}
\sqrt{Pwr \text{ configured per P/TV121 DOCKED OPERATIONS, dwg USOS 120VDC –V10 VTRs (SODF: ISS PTV: SCENES)}}
\end{align*}
\]
V10 (RWS 1,2)

~ PWR – ON
P/TV05   ISS INTERNAL OPS (Continued)

SETUP (Continued)

BPSMU AND RWS CABLES (Concluded)

A31p

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
√ Input – ‘Composite (RCA)’
Control – press ‘Set to defaults’ pb
Commit Changes – ‘OK’
Sel ‘Full Screen’
Press ‘ESC’ to minimize display as reqd

A31p

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
STILL CAMR

1. 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 – 0A
      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>√</th>
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<th>Still Imagery</th>
<th>Video</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td>ULF3-9</td>
<td>General ISS IVA Activity</td>
<td>D2Xs</td>
<td>ISS G1</td>
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<tr>
<td></td>
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<td></td>
<td>• PAO Scenes of Interest</td>
<td>12-24mm</td>
<td>LIVE</td>
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<td></td>
<td></td>
<td></td>
<td>• Crew Photo</td>
<td>For Crew Photo:</td>
<td>(if avail)</td>
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<td></td>
<td>Perform D2Xs</td>
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<td></td>
<td>CREW PHOTO</td>
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<td></td>
<td></td>
<td>(Cue Card, D2Xs SETUP)</td>
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</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 and ODS CCU ports; stow cables on orbiter
   - Transfer Drag-Through QD Box and remaining attached cables to ISS

3. **TV System**
   Go to DEACTIVATION (Cue Card, TV) as reqd
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

\[ TV \text{ PWR} – \text{ON} \]

R12 (VPU)

\[ VPU \text{ PWR} – \text{ON} (\text{LED on}) \]
Green Jumper – ISS

\[ \text{Drag-Thru Cables configured as reqd} \]

V10 (MON 1,2)

\[ \text{Tape installed} \]
DISPLAY pb – Toggle to display tape counter

CC

\[ \text{Wide Conversion lens installed} \]
\[ \text{ND FILTER} – \text{OFF} \]
\[ \text{OUTPUT} – \text{CAM} \]
\[ \sqrt{A/V1/V2 – V2} \]
\[ \sqrt{\text{MON 2 SOURCE – C}} \]
\[ \sqrt{\text{L10 (MUX) VTR/CC PWR} – \text{on (LED on)}} \]
If dnlk, MUX/VTR/CC PWR – on (LED on)
\[ \sqrt{\text{VTR/CC PWR} – \text{on (LED on)}} \]
\[ \sqrt{\text{ON/STANDBY LED} – \text{green}} \]
\[ \sqrt{\text{Tape installed}} \]
## P/TV06  ROBOTICS OPERATIONS (Concluded)

### OPS

<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>1. ULF3-9</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>2. ULF3-28</td>
<td>ELC1 Unberth</td>
<td></td>
<td>Per SODF: ROBO FS</td>
<td>Rcd video</td>
</tr>
<tr>
<td>3. ULF3-29</td>
<td>ELC2 Unberth</td>
<td></td>
<td>Per SODF: ROBO FS</td>
<td>Rcd video</td>
</tr>
<tr>
<td>4. ULF3-30</td>
<td>ELC1 &amp; 2 Install</td>
<td></td>
<td>Per SODF: ROBO FS</td>
<td>Rcd video</td>
</tr>
</tbody>
</table>

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

### DEACTIVATION

1. **TV System**
   - Go to DEACTIVATION (Cue Card, TV) as reqd
P/TV07  EVA (Continued)

SCENE SYNOPSIS

Scene contains procedures for documenting ISS EVA and IVA ops w/video, still photos

SETUP

FOR ALL EVAs:
1. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
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 –
     - Exp Comp – 0 EV
     - Tilt – 45° (Direct)
P/TV07  EVA (Continued)

SETUP (Continued)

3. 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 1,2,    √Tape installed
      WVS 1,2)  DISPLAY pb – Toggle to display tape counter

CC  Install Wide Conversion lens
    √ND FILTER – OFF
    √OUTPUT – CAM
    √A/V1/V2 – V2
    √STANDBY/LOCK – STANDBY
    √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
SETUP (Concluded)

4. Config WVS and PGSC
   a. Activate WVS System
      WIRELESS VID HTR – ON
      PWR – ON
   b. WVS PGSC Prep
      PGSC Pwrup and Application Opening
      Pwr – ON
      Sel Shuttle Apps icon
      Sel WVS icon
      Sel ‘No’ at ‘Restore To Previous Settings’ window
      If ‘Comm Port Configuration’ error displayed:
         Remove Quatech RS-422 Card
         Sel ‘Start’ > ‘Shut Down’ > ‘Shut Down’ > ‘OK’
         Reinstall Quatech RS-422 Card
         Pwr – ON
         Sel Shuttle Apps icon
         Sel WVS icon
         RF Camera page will appear

      NOTE
      During EVA prep, EMU TV assy will be pwrd

      Application Setup
      Select Page – XCVR
      Transceiver 1(2) CMD Power – ON (green CMD PWR:LVL- “ON:Min”)
      RF Camera 1 – One EVA crewmember (green “ON”)
      RF Camera 2 – Other EVA crewmember (green “ON”)
      If alert msg, perform ALERT MSG TROUBLESHOOTING (Cue Card, WVS)
      Select Page – RF CAMERA
      Near middle of RF Camera page, sel ‘Advanced Controls’
      When Post – A/L Depress:
         For center lens on each RF Camr Assy:
            Lens Iris Cntl – op(cl) until good video on V10(MON)
<table>
<thead>
<tr>
<th>Item #</th>
<th>Track #</th>
<th>Rqmts</th>
<th>Still Imagery</th>
<th>Video</th>
<th>PLB</th>
<th>CC</th>
<th>Dnlk</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ULF3-9</td>
<td>PAO Coverage</td>
<td>IVA D2Xs 12-24mm</td>
<td>As desired</td>
<td>WVS</td>
<td>G1</td>
<td>LIVE (if avail)</td>
<td>Plan for end of day crew choice video, DCS stills</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>If exterior; Flash ON/OFF – OFF</td>
<td>As desired</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>ULF3-22</td>
<td>MISSE-7 Install &amp; Deployment</td>
<td>EVA D2Xs 28mm</td>
<td>WVS</td>
<td></td>
<td></td>
<td></td>
<td>Live dnlk highly desired. Replay or post flight return reqd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tasking Imagery of PEC 7A,7B</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>PEC surfaces (4)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>ExPA from off angle to verify FSE undamaged</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>ULF3-24</td>
<td>HPGT</td>
<td>WVS, PLB as reqd</td>
<td>LIVE (if available)</td>
<td></td>
<td></td>
<td></td>
<td>Live dnlk highly desired. Replay or post flight return reqd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Closeout of HPGT Latches</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Quick Disconnect in mated configuration</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>ULF 3-27</td>
<td>Thermal Covers Closeout</td>
<td>EVA D2Xs 28mm</td>
<td>WVS, PLB as reqd</td>
<td>LIVE (if available)</td>
<td></td>
<td></td>
<td>Live dnlk highly desired. Replay or post flight return reqd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Obtain closeout images of thermal cover configs that were opened or closed or altered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>ULF3-35</td>
<td>Spare SASA Installation on Z1</td>
<td>WVS, PLB as reqd</td>
<td>LIVE (if available)</td>
<td></td>
<td></td>
<td></td>
<td>Live dnlk highly desired. Replay or post flight return reqd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SASA/ACRFG</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Item #</td>
<td>Track #</td>
<td>Rqmts</td>
<td>Still Imagery</td>
<td>Video</td>
<td>Notes</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
| 6. ULF3-39 | Closeout Imagery | - NH3 line routing bracket  
- FPMU after relocate  
- SGANT cable routing  
- AIS/GATOR antenna install  
- Node 2 Zenith window flaps  
- S3 L0 PAS  
- S3 P1 PAS  
- FGB LAN connector reposition  
- PMA 3 stowed umbilicals  
- Node 1 slidewire  
- WETA 3  
- GPS Antenna Install  
- Node 2 Gap Spanner | EVA D2xs  
28mm | WVS | LIVE (if available)  
Live dnlk highly desired.  
Replay or post flight return reqd |
| 7. ULF3-41  
ULF3-46 | JEM RMS EE Lubrication  
- Overview image  
- Bearing 1&6  
- Bearing 2&3  
- Bearing 4&5 | EVA D2xs  
28mm | WVS | LIVE (if available)  
Live dnlk highly desired.  
Replay or post flight return reqd |
| 8. ULF3-42 | POA Lubrication  
- Overview image  
- Bearing 1&6  
- Bearing 2&3  
- Bearing 4&5 | EVA D2xs  
28mm | WVS | LIVE (if available)  
Live dnlk highly desired.  
Replay or post flight return reqd |
## P/TV07 EVA (Concluded)

### 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>
<tbody>
<tr>
<td>9.</td>
<td>ULF3-45</td>
<td>SASA Removal&lt;br&gt;• Document SASAML1 Strapdown</td>
<td>EVA D2Xs&lt;br&gt;28mm</td>
<td>PLB</td>
<td>CC</td>
</tr>
<tr>
<td>10.</td>
<td>ULF3-53</td>
<td>R&amp;R Node 1 EVA HR 0111&lt;br&gt;• Document Handrail R&amp;R</td>
<td>WVS</td>
<td>LGE (if available)</td>
<td>Live dnlk highly desired. Replay or post flight return reqd</td>
</tr>
</tbody>
</table>

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:
   - SB-800 Flash Settings:
     - ON/OFF pb – OFF
   - Lens – 80-200mm at 200mm
     - Focus Limit – full
     - 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 (   ) – 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
SETUP (Continued)

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

~
If Earthshine OMS Pod, config D2Xs Program Mode:
  SB-800 Flash Settings:
    ON/OFF pb – OFF
    Lens – 80-200mm at 200mm
    Focus Limit – full
    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 (□) – 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
2. D2Xs Camr Config for ISS Still Survey (D2Xs Shutter Priority Mode)

   Lens – 50mm(80-200mm @ 200mm)
   SB-800 Flash Settings:
      ON/OFF pb – OFF
   If 80-200mm:
      Focus Limit – full
      Lens Focus Mode – A
      \( \sqrt{ } \) Aperture – Min, locked
      Body Focus Mode – S
      \( \sqrt{ } \) Batt installed
      \( \sqrt{ } \) Flash Card installed
      Pwr – ON
   Top LCD:
      \( \sqrt{ } \) Batt
      \( \sqrt{ } \) Frames remaining sufficient
   Exp Comp (\[ \square \]) – 0.0
   Exp Mode – S:
      SS – 500
   Meter – Matrix (\[ \square \])
   Diopter – Adjust
   Frame Rate – S
   \( \sqrt{ } \) BKT disabled – 0 F
   Rear LCD:
      \( \sqrt{ } \) ISO – 100
      \( \sqrt{ } \) QUAL – RAW
      \( \sqrt{ } \) WB – 0, A
      AF Area Mode – [ ]
      \( \sqrt{ } \) Focus Area – Center
      \( \sqrt{ } \) Focus Selector Lock – L
## P/TV08  EXTERNAL SURVEY (Continued)

### OPS

<table>
<thead>
<tr>
<th>√</th>
<th>Item #</th>
<th>Rqmts Still Imagery</th>
<th>Video PLB</th>
<th>Video CC</th>
<th>Video Dlnk</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>OMS Pod Survey</td>
<td></td>
<td>D2Xs 80-200mm @ 200mm</td>
<td></td>
<td></td>
<td>Download images to MCC once complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No shadows on OMS pod</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove Window Shields</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• 50 percent overlap mapping of both OMS pods and vertical stabilizer w/emphasis on Black Tile areas</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Repeat thru other window</td>
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<tr>
<td>2.</td>
<td>ISS Still Survey</td>
<td></td>
<td>D2Xs 50mm (80-200mm @ 200mm)</td>
<td></td>
<td></td>
<td>Map ISS surfaces w/30% overlap from all Flt Deck windows</td>
</tr>
<tr>
<td></td>
<td>ULF3-6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Surfaces</td>
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<td></td>
<td>• Solar Panels</td>
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<tr>
<td></td>
<td></td>
<td>• Handrails</td>
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<tr>
<td></td>
<td></td>
<td>• MISSE-7 or ELC2 on S3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SVS Targets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Plasma Arcing</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• S0, S1, S3, S4, S5, P1, P3, P4, P5, P6 Truss Radiators/Baseplates, SAWs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• ELC1 (P3, Nadir)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ELC2 (S3, Zenith)</td>
<td></td>
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<td></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
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 obtaining in-cabin video, still images of GLACIER payload

SETUP

1. Perform Camcorder Setup for MD per H/W SUMMARY, FS 1-70, as reqd
   √Batt installed
   CC Install Wide Conversion lens
   √ND FILTER – OFF
   √OUTPUT – CAM
   √A/V1/V2 – V2
   √STANDBY/LOCK – STANDBY
   PWR dial – “green”
   √Tape installed
   √Viewfinder (LCD) displays “green”
   Install Audio Muting Plug (optional)
   Install Multiuse Brkt (optional)
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 – ⬌ TTL BAL
- √Exp Comp – 0 EV
  - Tilt – 45° (Direct)
### P/TV09  GLACIER (Concluded)

#### OPS

<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>1. ULF3-33,34</td>
<td></td>
<td>DCS PLB CC Dnlk</td>
<td>PLAYBACK desired</td>
<td>There are two sample insertion/removal activities; both are to be recorded</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2Xs 12-24mm</td>
<td>G1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Still images of GLACIER installed in Middeck (2 images taken of wide view, and close-up of hardware and front panel)
- Video of crew performing an activity at the GLACIER in Middeck (hardware prep, sample insertion/removal)
- Video of GLACIER front panel configuration after transfer is complete
- Video of crew interaction with GLACIER (hardware status check, sample insertion/removal)
PCN SYNOPSIS

Scene contains procedures for documenting the SEITE and SIMPLEX OMS burns

SETUP

1. Remove window shields prior to setup
2. Perform ACTIVATION, OPERATION (Cue Card, TV) as reqd
3. D2Xs Camr Config for SEITE, SIMPLEX (D2Xs Shutter Priority Mode)
   
   SB-800 Flash Settings
   
   ON/OFF pb – OFF
   
   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
3. D2Xs Camr Config for SEITE, SIMPLEX (D2Xs Shutter Priority Mode) (Concluded)

Menu Settings:
- MENU pb – press
- Navigate Pad sel – Shooting Menu ( ) Hi-speed Crop > On
- Navigate Pad sel – Custom Settings Menu > d Shooting/Display > d1 Shooting Speed > 4 fps

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

Technique
- Frame image per picture at right
- Focus on OMS pod
- Body Focus Mode – M

4. Perform Hardware Verification for DTV

L10 (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
- √Switches set to white dot (seven)
- √COUNTER SELECT – COUNTER (TC)
- √Tape installed (tape icon LED on)
P/TV10  SEITE,SIMPLEX PAYLOADS (Continued)

SETUP (Concluded)

4. Perform Hardware Verification for DTV (Concluded)

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:
L9
PS AUD PWR – AUD
Desired Loops – RCV, Vol tw 5
Other Loops – OFF

A7
VID OUT DTV pb – push
VID IN pb – A(D)

L10 (VTR)
REC pb – push, hold
PLAY pb – push, simo (red dot displayed)

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>CC</td>
</tr>
<tr>
<td>1.</td>
<td>SEITE, SIMPLEX</td>
<td></td>
<td>D2Xs 28mm</td>
<td>A(D)</td>
<td>LIVE</td>
</tr>
<tr>
<td></td>
<td>(if avail)</td>
<td></td>
<td></td>
<td>(if avail)</td>
<td></td>
</tr>
</tbody>
</table>

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 ( ) Hi-speed Crop > OFF
   Navigate Pad sel – Custom Settings Menu > d Shooting/Display > d1 Shooting Speed > 3 fps

2. TV System
   Remove, mark tape for SEITE(SIMPLEX)
   Go to DEACTIVATION (Cue Card, TV) as reqd
REFERENCED PROCEDURES

CENTERLINE (C/L) CAMR
C/L CAMR INSTALL .......................................................... FS 2-4

DTV
VTR CLOCK SET .......................................................... FS 2-8

D2Xs
DATE/TIME SET .......................................................... FS 2-10

CANON G1
ANALOG (SD DTV) CC REC,DNLK ...................................... FS 2-12
HD CC DNLK .......................................................... FS 2-14

FCS CHECKOUT CAMR SETUP
SETUP .......................................................... FS 2-18
DEACTIVATION .......................................................... FS 2-19

MINI-CAM
MINI-CAM ASCENT CONFIG ............................................ FS 2-22
ENTRY VIDEO SETUP – FLT DECK ..................................... FS 2-23
ENTRY VIDEO SETUP – MIDDECK ..................................... FS 2-24
ENTRY VIDEO SETUP .......................................................... FS 2-25

LASER CAMR SYSTEM (LCS)/INTEGRATED SENSOR INSPECTION SYSTEM DIGITAL CAMR (IDC)
LCS/IDC (HEATER ONLY MODE)/(OPERATIONAL PWR MODE) DATA AND PWR INTERFACES .......................................................... FS 2-30
CENTERLINE (C/L) CAMR

C/L CAMR INSTALL

1. ODS C/L Camr Config
   L12 (SSP 2) √ C/L CAM PWR – OFF

   R12 (VPU) √ SEC C/L Cap installed
   √ Green Jumper – SEC C/L
   √ 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, √ pins to socket connection

ODS √ ODS C/L Camr Brkt mounted securely
Mount PRI C/L Camr to ODS C/L Camr Brkt
√ Flex Duct attached to Camr brkt
Config cable per dwg at right

C/L Camr √ SSF/STS sw – STS

L12 (SSP 1) √ cb SSP2 SEC C/L CAM – cl
(SSP 2) C/L CAM PWR – SEC ON
2. Camr Position Verification

NOTE
This view in ODS looking up from Camr bottom

PRI C/L TV Camr Harness Assy (8.5 ft)
V828–774057–004
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)
   - \sqrt\ Vertical xhairs coincide w/vertical alignment wire and are parallel. If xhair marks overlay each other, no yaw(axial) alignment needed (see dwg above)

   - \sqrt\ 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
DTV

VTR CLOCK SET

1. Activate VTR

R1
√PL AUX – ON

L10 (MUX) VTR/CC PWR – on (LED on)
(VTR) √ON/STANDBY LED – green

2. Set VTR clock to 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

3. Deactivate VTR,VIP as reqd

ON/STANDBY pb – push (red LED on)
(VIP) 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
CANON G1

ANALOG (SD DTV) 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)
- OUTPUT – CAM
- √ AV1/V2 – V2
- √ (L – 75 – R)
- √ STANDBY/LOCK – STANDBY PWR dial – “green” 
- If rec to tape:
  - Tape – Install
  - √ Viewfinder (LCD) displays “green” •||
- Multiuse Brkt, Clamp

CAUTION
Due to temp constraints, worklights at full pwr for 60 min; 90% pwr for unlimited time

Worklights
- Install fresh Batts
- Mount light(s) w/brkts (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 (Continued)

ANALOG (SD DTV) 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
      PWR CNTL – PNL
      CONTR UNIT – MNA(B)
      CNTL – CMD (wait 10 sec for system initialization)

If Analog, on MCC GO:
   VID OUT DNLK pb – push
   IN FLT DECK(MIDDECK) pb – push
If Digital, on MCC GO:

   L10 √Cables connected
      (MUX) MUX/VTR/CC PWR – on (LED on)
      (MUX) MUX BYPASS – ACT
      (VIP) PWR – on (LED on, DATA FLOW LED flashes twice)
      (VTR) ON/STANDBY LED – green
      A7 /INPUT SELECT – VIDEO
      L10 (MUX) CH 3 DATA LED – on

When dnlk complete:

CC PWR dial – OFF
Worklights PWR – off
L10 (MUX) MUX/VTR/CC PWR – off (LED off)

Go to DEACTIVATION (Cue Card, TV) as reqd
CANON G1 (Continued)

**HD 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

√ OUTPUT – CAM

√ (IEEE 1394)

√ STANDBY/LOCK – STANDBY

PWR dial – “green”

Mount Camcorder

**L10 (MUX)**

√ MUX/VTR/CC PWR – on (LED on)

√ MUX BYPASS – ACT

√ CH 0,1 RATE SEL – 1

√ 2 RATE SEL – 8

(VTR) ON/STBY pb – push (LED red)

(VIP) PWR – off (LED off)

**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)
CANON G1 (Continued)

HD CC DNLK (Continued)

L10 (MUX)  √CH 2 F/O OK, DATA LEDs on

CAUTION
Due to temp constraints, worklights at full
pwr for 60 min; 90% pwr for unlimited time

Worklights  Install fresh Batts
Mount light(s) w/brkts (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)

√MCC if Black video and color bars reqd
If reqd:
PWR dial – Av
Aperture – close
√Av CLOSE displayed on top left of LCD
AGC – OFF
√GAIN sw – L
±0dB displayed on LCD
OUTPUT – BARS

When MCC says done w/bars:
OUTPUT – CAM

When MCC says done w/black screen test:
PWR dial – “green” 
CANON G1 (Concluded)

**HD CC DNLK** (Concluded)

When dnlk complete:

- **CC**
  - PWR dial – OFF

- **Worklights**
  - PWR – OFF

- **O19**
  - TV PWR – OFF as reqd

- **MPC**
  - PWR – OFF
  - DC PWR SPLY PWR SW1 – OFF

- **O19**
  - DC UTIL PWR MNA – OFF

- **L10 (MUX)**
  - MUX/VTR/CC PWR – off (LED off)

- **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
FCS CHECKOUT CAMR SETUP

SETUP

1. **D2Xs**
   - Lens – 400mm

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

SB-800 Flash Settings:
- ON/OFF pb – OFF
- Aperture – Min, locked
- Lens Focus Limit – ∞-6m
- Lens Focus Mode – A
- Body Focus Mode – S
- \(\sqrt{\text{Batt installed}}\)
- \(\sqrt{\text{Flash Card installed}}\)
- Pwr – ON
- Top LCD:
  - \(\sqrt{\text{Batt}}\)
  - \(\sqrt{\text{Frames remaining sufficient}}\)
- Exp Comp – 0.0
- Exp Mode – M:
  - SS – 500
  - f/stop – f/8
- Meter – Matrix
- Diopter – Adjust
- Frame Rate – S
- \(\sqrt{\text{BKT disabled – 0 F}}\)
- Rear LCD:
  - \(\sqrt{\text{ISO – 100}}\)
  - \(\sqrt{\text{QUAL – RAW}}\)
  - \(\sqrt{\text{WB – 0,A}}\)
- AF Area Mode – [ ]
- \(\sqrt{\text{Focus Area – Center}}\)
- \(\sqrt{\text{Focus Selector Lock – L}}\)
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
   - SS – 1/500
   - STANDBY/LOCK – STANDBY
   - PWR dial – M
   - 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

1. Remove the following:
   Mini-Cam Bag  “Entry” Ziploc Bag
   W9 Mini-Cam and Bracket

2. Acquire eight (8) V10 Li-ION batts

   NOTE
   One Batt will be used for each V10 Rcdr for system c/o; Batts will be
   removed after c/o and used for Entry. Remaining Batts are spare

3. Acquire four (4) 40 min video tapes

4. Config ENTRY VIDEO SETUP – FLIGHT DECK
   Config H/W per dwg, FS 2-23
   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
      Focus – ∞
      Aperture – f/5.6 (Dot between 4 and 8)
      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 Flight Deck Handheld Mini-Cam w/3.5mm Lens
      Aperture:
      If night landing:  f/1.8
      If daylight landing:  f/5.6 (dot between 8 and 4)
MINI-CAM (Continued)

ENTRY VIDEO SETUP (Continued)

c. Config additional Mini-Cam H/W

<table>
<thead>
<tr>
<th>L10:A1</th>
<th>AVIU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SYNC/VIDEO – VIDEO</td>
</tr>
<tr>
<td></td>
<td>HI-Z/75 – HI-Z</td>
</tr>
<tr>
<td></td>
<td>PWR SELECT – HI</td>
</tr>
</tbody>
</table>

| O19   | TV PWR – ON |

| PS ATU | Config audio as reqd for entry audio |

| L10 (MUX) (VTR) | VTR/CC PWR – on (LED on) |
|                | ON/STANDBY LED – green |

| V10 (FD, MD Repeater) | Install fresh Batt |
|                       | PWR – ON |
|                       | HUD 12mm Lens/Mini-Cam producing good video |
|                       | Change config to Flight Deck Handheld 3.5mm Lens/Mini-Cam |
|                       | In-cabin 3.5mm Lens/Mini-Cam producing good video |
|                       | PWR – OFF |

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

| O19   | TV PWR – OFF |
MINI-CAM (Concluded)

ENTRY VIDEO SETUP (Concluded)

5. Config ENTRY VIDEO SETUP – MIDDECK
   Config H/W per dwg, FS 2-24

   a. Config W9 Mini-Cam w/3.5mm lens
      3.5mm Lens
      Aperture:
      If night landing:  f/1.8
      If daylight landing:  f/5.6 (dot between 8 and 4)

   b. Config additional MD Mini-Cam H/W

      MS4 FDF Bag  AVIU
      SYNC/VIDEO – VIDEO
      HI-Z/75 – HI-Z
      Pwr SELECT – HI

      MO58F  √TV PWR – ON
      ◎W9 video displayed on V10
      PWR – OFF

      MS ATU  Config audio as reqd for entry audio

      NOTE
      TV,VTR pwr will be re-enabled per ENT AFT FLT DECK
      CONFIG [T5] (DEORB, NOMINAL DEORBIT PREP); recording
      will be initiated via ENTRY 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 FD,MD V10s 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
CUE CARD CONFIGURATION

TV ............................................................................................................................................................................................................ FS CC 3-3
ANALOG PLAYBACK .............................................................................................................................................................................. FS CC 3-5
ET PHOTO .............................................................................................................................................................................................. FS CC 3-7
WVS......................................................................................................................................................................................................... FS CC 3-8
PLBD VTR RECORDING ........................................................................................................................................................................ FS CC 3-10
LDRI/ITVC ............................................................................................................................................................................................... FS CC 3-12
LCS .......................................................................................................................................................................................................... FS CC 3-14
IDC........................................................................................................................................................................................................... FS CC 3-16
VIDEO SETUP ......................................................................................................................................................................................... FS CC 3-18
D2Xs SETUP ........................................................................................................................................................................................... FS CC 3-20
LDRI/ITVC A7 PLACARD ........................................................................................................................................................................ FS CC 3-22
DIGITAL PLAYBACK ............................................................................................................................................................................... FS CC 3-23
G1 CC SETUP CUE CARD ..................................................................................................................................................................... FS CC 3-25
This Page Intentionally Blank
**ACTIVATION**

A3 MON 1/2 PWR – ON (LED ON)
A7 <TV DNLX – ENA
   PWR CONTR UNIT – MNA(B)
   CNTRL – PNL, wait 10 sec for system initialization, CMD

**OPERATION**

**Auto Ops (Auto Exposure)**

- MCC has commanded sync config
- VID OUT MON 1(2) pb – push
- A7 TV CAMR PWR A(B,C,D,RMS) – OFF (tb-OFF), wait 10 sec
  - MUX PWR – on (LED on)
  - VTR/CC PWR – on (LED on)
  - ON/STANDBY pb – push
  - INPUT SELECT – VIDEO

**MANUAL Ops – CTVC/ITVC (Manual Exposure)**

*CAUTION*

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

**Manual Exposure ON**

A7 MON CAMR pb – push
   0(+12,+24) dB pb – push
   CAMR CMD IRIS – OP,CL

**Return to Auto Exposure**

- ALC pb – push
- AVG pb – push

**MUX Ops**

*NOTE*

Although dnlk/rcd is in color, MON will display MUX in B&W

**DEACTIVATION**

If Illuminator ON:

- Refer to Illuminator Ops and perform Illuminator OFF

A7 PORT RMS CAMR – WRIST
   TV CAMR PWR A(B,C,D,RMS) – OFF (tb-OFF), wait 10 sec
   TV CAMR PWR RMS – ON (tb-ON), wait 10 sec
   TV PWR CONT UNIT – PNL
   CNTRL – CMD
   A3 MON 1/2 PWR – OFF

*NOTE*

Although drive is in color, MON will display MUX in B&W

L10 (MUX)
   MUX/VTRCC PWR – off (LED off)
   VTRCC PWR – off (LED off)

(reduced copy)
**Illuminator Ops**

**Illuminator ON**
- If Wrist Illuminator:
  - R14:D(E)
  - WRIST ILLUM/CAHR HTR – cl
  - op.cl
- If Elbow Illuminator:
  - cb TV RMS CAMR/PTU – cl
  - ELB ILLUMPTU HTR – cl
  - op.cl
- If A(B,C,D,ELB) Illuminator:
  - cb TV A(B,C,D,RMS,ELB) CAMR/PTU – cl
  - ILLUMPTU HTR – cl
  - op.cl

**Illuminator OFF**
- If Wrist Illuminator:
  - R14:D(E)
  - cb TV RMS WREST ILLUM/CAMR HTR – op.cl
- If Elbow Illuminator:
  - cb TV RMS ELB ILLUMPTU HTR – op.cl
- If A(B,C,D,ELB) Illuminator:
  - cb TV A(B,C,D,RMS,ELB) ILLUMPTU HTR – op.cl
- If RSC Illuminator:
  - Go to LDRI/ITVC (Cue Card)
ANALOG PLAYBACK

ANALOG VIA CC

**ACTIVATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>Setup per diagram (back of cue card)</td>
</tr>
<tr>
<td>A7</td>
<td>Perform ACTIVATION (Cue Card, TV) as reqd</td>
</tr>
<tr>
<td>O19</td>
<td>TV PWR – ON</td>
</tr>
<tr>
<td>AVIU</td>
<td>SYNC/VIDEO – VIDEO</td>
</tr>
<tr>
<td>Hi-Z75 – 75</td>
<td></td>
</tr>
<tr>
<td>PWR SELECT – LO</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>PWR – VTR/PLAY</td>
</tr>
<tr>
<td>√AV1/V2 – V2</td>
<td></td>
</tr>
</tbody>
</table>

**OPERATIONS**

**PLBK or DNLK VIDEO**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>Install tape, if reqd</td>
</tr>
<tr>
<td>If audio reqd:</td>
<td></td>
</tr>
<tr>
<td>CCU</td>
<td>If MHA, COMM PWR – ON</td>
</tr>
<tr>
<td>ATU</td>
<td>PWR – AUD</td>
</tr>
<tr>
<td>Desired Loops – T/R</td>
<td></td>
</tr>
<tr>
<td>Other Loops – RCV(Off)</td>
<td></td>
</tr>
<tr>
<td>XMIT/COM Mode – VOX/VOX</td>
<td></td>
</tr>
<tr>
<td>VOX SENS – MAX</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>Speaker Vol Max</td>
</tr>
<tr>
<td>A7</td>
<td>VID OUT MON pb – as reqd</td>
</tr>
<tr>
<td>In FLT DECK(MIDDECK) pb – push</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>VTR pb – REW(FF) to cue tape</td>
</tr>
<tr>
<td><strong>if Dnlk</strong></td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>McC has commanded async config</td>
</tr>
<tr>
<td>TV DNLK – ENA</td>
<td></td>
</tr>
<tr>
<td>VID OUT DNLK pb – push</td>
<td></td>
</tr>
<tr>
<td>In FLT DECK(MIDDECK) pb – push</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>PLAY pb – push (green • displayed)</td>
</tr>
<tr>
<td>If PLBK(DNLK) complete:</td>
<td></td>
</tr>
<tr>
<td>STOP pb – push</td>
<td></td>
</tr>
<tr>
<td>If CC ops complete, go to DEACTIVATION</td>
<td></td>
</tr>
</tbody>
</table>

**DEACTIVATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>Remove, mark, stow tape as reqd</td>
</tr>
<tr>
<td>ATU</td>
<td>Reconfig as desired</td>
</tr>
<tr>
<td>O19</td>
<td>TV PWR – OFF, as reqd</td>
</tr>
<tr>
<td>Go to DEACTIVATION (Cue Card, TV) as reqd</td>
<td></td>
</tr>
</tbody>
</table>

ANALOG VIA VTR

**ACTIVATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>Setup per diagram (back of cue card)</td>
</tr>
<tr>
<td>A7</td>
<td>Disconnect CC Video input from AVIU J3</td>
</tr>
<tr>
<td>O19</td>
<td>Perform ACTIVATION (Cue Card, TV) as reqd</td>
</tr>
<tr>
<td>AVIU</td>
<td>SYNC/VIDEO – VIDEO</td>
</tr>
<tr>
<td>Hi-Z75 – 75</td>
<td></td>
</tr>
<tr>
<td>PWR SELECT – LO</td>
<td></td>
</tr>
<tr>
<td>L10</td>
<td>VTR/CC PWR – on (LED on)</td>
</tr>
<tr>
<td>(MUX)</td>
<td></td>
</tr>
<tr>
<td>(VTR)</td>
<td>ON/STANDBY LED – green</td>
</tr>
</tbody>
</table>

**OPERATIONS**

**PLBK or DNLK VIDEO**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L10</td>
<td>Install tape if reqd</td>
</tr>
<tr>
<td>(VTR)</td>
<td>DISPLAY SELECT – DATA</td>
</tr>
<tr>
<td>If audio reqd:</td>
<td></td>
</tr>
<tr>
<td>(VIP)</td>
<td>PWR – on (LED on, DATA FLOW LED flashes twice)</td>
</tr>
<tr>
<td>ATU</td>
<td>PWR – AUD</td>
</tr>
<tr>
<td>Desired Loops – T/R</td>
<td></td>
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<tr>
<td>Other Loops – RCV(Off)</td>
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<td>XMIT/COM Mode – VOX/VOX</td>
<td></td>
</tr>
<tr>
<td>VOX SENS – MAX</td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>VID OUT Desired MON pb – push</td>
</tr>
<tr>
<td>In FLT DECK pb – push</td>
<td></td>
</tr>
<tr>
<td>L10</td>
<td>REW(FF),PLAY,PAUSE pb – push as reqd to cue tape</td>
</tr>
<tr>
<td>If Dnlk</td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>McC has commanded async config</td>
</tr>
<tr>
<td>TV DNLK – ENA</td>
<td></td>
</tr>
<tr>
<td>VID OUT DNLK pb – push</td>
<td></td>
</tr>
<tr>
<td>In FLT DECK pb – push</td>
<td></td>
</tr>
<tr>
<td>L10</td>
<td>PLAY pb – push (green • displayed)</td>
</tr>
<tr>
<td>If PLBK(DNLK) complete:</td>
<td></td>
</tr>
<tr>
<td>STOP pb – push</td>
<td></td>
</tr>
<tr>
<td>If VTR ops complete, go to DEACTIVATION</td>
<td></td>
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</tbody>
</table>

**DEACTIVATION**

<table>
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<tr>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>L10</td>
<td>Connect CC video input to AVIU J3</td>
</tr>
<tr>
<td>(VTR)</td>
<td>Remove, mark, stow tape as reqd</td>
</tr>
<tr>
<td>ATU</td>
<td>Reconfig as desired</td>
</tr>
<tr>
<td>O19</td>
<td>TV PWR – OFF, as reqd</td>
</tr>
<tr>
<td>Go to DEACTIVATION (Cue Card, TV) as reqd</td>
<td></td>
</tr>
</tbody>
</table>
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
INSTALL MUTING PLUG
- √ 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
**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
- Sel RF Camr 1.2 – None (black “OFF”)
- V10: Test Pattern displayed (color bars w/“No WVS Video”)

**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

**COMMANING 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**
- Slightly above sill (Bay 4)
- UHF CMD
- Antenna (Bay 3)
- Inboard of sill (Bay 1)

**FWD BULKHEAD**
- P/TV-5a/129/O/B

(reduced copy)
**STATIC XCVR**

Condition: No comm between PGSC & PLB XCVR

**PGSC**
1. √ Cable connections between WIB and PGSC
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”)
       - 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:

**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

P/TV-5b/129/O/A

(reduced copy)
PLBD VTR RECORDING

L10  √VIP, VTR covers removed
R1   √PL AUX – ON
MA73C:E cb AC2 PL3Φ – cl
   √Cables config’d per dwg (back of cue card)
L10  (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
   √Switches 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:
           L9  PS AUD PWR – AUD
               Desired Loops – RCV, Vol tw 5
               Other Loops – OFF
           A7  VID OUT DTV pb – push
               IN pb – as req’d
           L10  (VTR) REC pb – push, hold
               PLAY pb – push, simo (red dot displayed)
ACTIVATION

1. Config CCTV Sys
   A7 VOUT MUX 1 L pb – push
      IN MUX pb – push
   L10 (MUX) VOUT MUX/TV/CC PWR – on (LED on)
   C-N VOUT MUX/TV/CC PWR – on (LED on)
   R12 (VPU) VOUT MUX/TV/CC PWR – on (LED on)
   MON 1,2 C-DATA – ON
   X-HAIR – GRN
   MON 2 SOURCE – C

2. Apply SPEE Pwr
   R12 (OPP) SPEE SW PWR – cl
   R12 (OBSS) SPEE SW PWR – ON
   A6U EVENT TIMER CNTL – STOP
   MON 2 SPEE SW PWR – ON
   (15 min LDRI calibration warmup)

3. Config RSC Iillum to HI
   A7 VOUT MUX 1 L pb – push
   R12 (OBSS) SPEE SW PWR – ON
   MON 1 RSC Iillum on HI (three rings)

4. Enable ITVC
   R12 (OBSS) ITVC ENA – OFF, wait 10 sec, ON
   A7 ITVC ENA – OFF, wait 10 sec, ON
   MON 2 ITVC ENA – OFF, wait 10 sec, ON
   Repeat until MAN GAIN pb not illuminated:
   R12 (OBSS) ITVC ENA – OFF, wait 10 sec, ON
   MON 2 ITVC ENA – OFF, wait 10 sec, ON
   A7 MAN GAIN pb – push
   CAMR CMD PAN,TILT – as reqd
   A7 CAMR CMD IRIS – OP,CL, as reqd

5. Turn LDRI Laser On
   A7 VOUT MUX 1 L pb – push
   IN MUX pb – push
   LDRI MODE 2 pb – push
   VID OUT MUX 1 pb – push, to return to LDRI control

GENERAL LDRI CONTROL

Mode 1 (default at power)

A7 LDRI MODE 1 pb – push
MON 2 ITVC video displayed

Mode 2

A7 LDRI MODE 2 pb – push
MON 2 ITVC video willum displayed

Mode 3 (4,5,6)

A7 LDRI MODE 3(4,5,6) pb – push
MON 2 ITVC video w/illum displayed
To adjust brightness:
A7 CAMR CMD IRIS – OP,CL, as reqd

PAN/TILT OPS WITH LDRI ACTIVE

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

A7 VID OUT MUX 1 pb – push
IN MUX pb – push
CAMR CMD PAN,TILT – as reqd
VID OUT MUX 1 L pb – push, to return to LDRI control

DEACTIVATION

A7 VOUT MUX 1 L pb – push
IN MUX pb – it on
LDRI MODE 1 pb – push
R12 (OBSS) ITVC ENA – OFF, pause 10 sec
A6U EVENT TIMER MODE – UP

LDRI MODE SUMMARY

Mode 1 – Standby
• ITVC video
• LDRI in standby

Mode 2 – Illuminator
• ITVC video willum
• LDRI laser active, LDRI camera inactive

Mode 3 – 2D
• LDRI 2D video
• Similar to ITVC video

Mode 4 – 2D Gamma
• LDRI 2D video w/Gamma Black Stretch
• Similar to ITVC video

Mode 5 – 3D
• LDRI 3D video
• Flicker on MON

Mode 6 – 3D Gamma
• LDRI 3D video w/Gamma Black Stretch
• Flicker on MON
**RSC CAMR OPS**

**NOTE**
Carr nominally pwrd in Block 3 of POST INSERT

R12 (OPP) - cb OBSS SW PWR CB1 - cl
OBSS SW 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 Carr 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 Carr

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

R12 (OBSS) - SPEE PWR - OFF, wait 10 sec, ON
RSC illum on

R12 (OBSS) - SPEE PWR - OFF, wait 10 sec, ON
To cycle thru illuminator modes:
RSC illum 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:
A7 - LT LEVEL pb - push
DAY (NIGHT) pb - push
ALC pb - push
AVG pb - push

Return PTU
A7 - CAMR CMD PAN/TILT - HI RATE
PAN - L (to hard stop)
TILT - UP (to hard stop)
PAN/TILT - RESET

Reset 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

**CONTINGENCY LDRI CLEARANCE VIEW**

**NOTE**
Do not apply RMS brakes

A8U - AUTO SEQ - STOP (READY it on)

L10(VTR) - STOP pb - push (no red •)

A7 - VID OUT MUX 1 L pb - push (MIDDECK It on)
LDRI MODE 6 pb - push (flickering LDRI video)
VID OUT MON 1 pb - push
IN PL2(VPU) pb - push
Record PTU Pan and Tilt values
CAMR CMD PAN/TILT - HI RATE
PAN: 0 (left, to hard stop)
TILT: 0 (up, to hard stop)

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

R12 (OBSS) - SPEE PWR - OFF, wait 10 sec, ON
RSC PWR - OFF, wait 10 sec, ON

Return PTU to Pan and Tilt values recorded above
VID OUT MUX 1 L pb - push (MIDDECK It 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 it on)

Note clearance thru LDRI FOV
Return to original LDRI/ITVC Mode, continue OPS

**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 It 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 it on)
LCH ACTIVATION

APCU/ LCH Pwrup
R1  1. FL PRI MNC – ctr (tb-ON)
    AUX – ON
L12 (SSP 1)  2. APCU 2 OUTPUT RLY – CL
    CONV – ON (tb-gray)
    OUTPUT RLY tb – gray

SM 200/APCU STATUS
APCU 1,2 OUT VOLT RES HIGH: 122V to 126.5V

LCC ACTIVATION

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

2. LCC Status
   A31p
   PGSC Pwr – ON
   Yellow ‘RJ-45 Port Configured for LCS Ops’ displayed on desktop crew patch
   If yellow text not displayed, perform TROUBLESHOOTING. Yellow ‘RJ-45 Port Configured for LCS Ops’ Not 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
   If Laser off and Comm status not correct: \( MCC \)

3. Verify LCC Desktop Video
   AVIU
   Hi-Z/75 – 75
   PWR SELECT – LO
   CC PWR – OFF

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:
   Select ‘Load Database…’ from File menu
   Select MCC desired database file
   Select ‘OK’

2. LCS System Status

LCS SYSTEM STATUS

<table>
<thead>
<tr>
<th>Laser On/Off</th>
<th>Comm</th>
<th>LCS State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser ? (gray)</td>
<td>No Comm (yellow)</td>
<td>Unknown or Keep Alive Heater Only Mode</td>
</tr>
<tr>
<td>Laser Off (blue)</td>
<td>Comm (green)</td>
<td>Operational</td>
</tr>
<tr>
<td>Laser On (green)</td>
<td>Comm (green)</td>
<td>Scan in progress</td>
</tr>
</tbody>
</table>

While Scan in progress (‘Scan Status’ counter incrementing):
Laser On – green
Comm – green
Temp – green
Elec – green
Scan complete when ‘Scan Status: Complete’ displayed
If LCS system status out of config, perform appropriate TROUBLESHOOTING section of this cue card
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  Select ‘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
   Sel ‘Schemes’
   Sel ‘DISABLE DESKTOP DOWNLINK, ATI Property Settings’
   Sel ‘Yes’
   Arrange program windows as desired

LCH DEACTIVATION

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

1. APCU Converters Off/LCH Pwrdn
   L12 (SSP 1)  APCU 2 CONV – OFF (tb-bp)
   NOTE
   Expect ‘S200 APCU 1(2) VOLT LMT’ msg

2. Open APCU Output Relay
   L12 (SSP 1)  APCU 2 OUTPUT RLY – OP (tb-bp)

TROUBLESHOOTING

Temp or Elec Status Yellow
A31p  Select ‘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 (w/red 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

NOTE
Expect ‘S200 APCU 1(2) VOLT LMT’ msgs
L12 (SSP 1)  APCU 2 CONV – OFF (tb-bp)
OUTPUT RLY – OP, wait 10 sec, CL
CONV – ON (tb-gray)

SM 200 APCU STATUS
APCU 1,2 OUT VOLTS RES HIGH: 122V to 126.5V
A31p  LCC PGSC Pwr – ON
   LCC 31m internal RJ45 Network Interface Card LED green
   Perform LCC ACTIVATION, step 2
   Local Area Network Connection status icon (with red X) in Windows system tray not displayed
   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  Select ‘Shuttle Apps’ > ‘Network Configuration’ > ‘LCS RJ-45 Network Setup’
   Enter ‘1’ in network window
   Sel ‘OK’
   Sel ‘OK’ in LCS window
   Allow 20 sec for program to execute
   Yellow text displayed on desktop
   Resume LCS Ops

(reduced copy)

FS CC 3-15  P/TV-8b/129/O/B  P/TV/129/FIN
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 internal RJ45 Network Interface Card LED green
   - If RJ45 Network Interface Card LED not green:
     - NOTE
       - Expect ‘S200 APCU 1(2) VOLT LMT’ msgs

   | L12 (SSP 1) | APCU 2 CONV – OFF, ON
   - ✅ | CONV tb – gray
   - ✅ | OUTPUT RLY tb – gray
   - SM 200 APCU STATUS
     - APCU 1,2 OUT VOLT RES HIGH: 122V to 126.5V

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 Sel '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 1(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
       - LO RATE within 10°
     - PAN: +85 (right)
     - TILT: -57 (down)

   - 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
     - ✅ 'Acquiring Set' displayed
     - ✅ MCC content w/data take
IDC DEACTIVATION

1. IDC and Software Shutdown
   A31p Set ‘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

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<thead>
<tr>
<th>Key</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>F5</td>
<td>Toggle Summary View</td>
</tr>
<tr>
<td>F6</td>
<td>Toggle Image Mode</td>
</tr>
<tr>
<td>F7</td>
<td>Zoom In</td>
</tr>
<tr>
<td>F8</td>
<td>Zoom Out</td>
</tr>
<tr>
<td>F9</td>
<td>Reset Brightness and Contrast</td>
</tr>
<tr>
<td>F10</td>
<td>Reset AE Box to Default</td>
</tr>
<tr>
<td>F11</td>
<td>Toggle AE Box Visibility</td>
</tr>
<tr>
<td>F12</td>
<td>Find AE Box</td>
</tr>
</tbody>
</table>

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

- **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:
   Perform TROUBLESHOOTING, steps 1,2

   **NOTE**
   Expect ‘S200 APCU 1(2) VOLT LMT’ msgs

   L12 (SSP 1) APCU 2 CONV – OFF ON
   \CONV tb – gray
   \OUTPUT RLY lb – gray

   SM 200 APCU STATUS
   \APCU 1,2 OUT VOLTS: 122V to 126.5V

   A31p LCC PGSC Pwr – ON
   \A31p internal RJ45 Network Interface Card LED green
   Perform IDC SOFTWARE ACTIVATION
   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 no connection:
   Perform LCH, LCC, and IDC Reset, step 2
   Continue nominal ops

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

<table>
<thead>
<tr>
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<th>D2Xs Aperture Priority</th>
<th>D2Xs Shutter Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Cabin</strong></td>
<td><strong>“Earth Obs”</strong></td>
<td><strong>SB-800 Flash Settings:</strong></td>
</tr>
<tr>
<td>Lens – as reqd</td>
<td>Lens – as reqd</td>
<td>Lens – as reqd</td>
</tr>
<tr>
<td>Aperture – Min, locked</td>
<td>Aperture – Min, locked</td>
<td>Aperture – Min, locked</td>
</tr>
<tr>
<td>Body Focus Mode – S</td>
<td>Body Focus Mode – S</td>
<td>Body Focus Mode – S</td>
</tr>
<tr>
<td>( \sqrt{\text{Batt installed}} )</td>
<td>( \sqrt{\text{Batt}} )</td>
<td>( \sqrt{\text{Batt}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{Flash Card installed}} )</td>
<td>( \sqrt{\text{Flash Card}} )</td>
<td>( \sqrt{\text{Flash Card}} )</td>
</tr>
<tr>
<td>Pwr – ON</td>
<td>Pwr – ON</td>
<td>Pwr – ON</td>
</tr>
<tr>
<td>Top LCD:</td>
<td>Top LCD:</td>
<td>Top LCD:</td>
</tr>
<tr>
<td>( \sqrt{\text{Batt}} )</td>
<td>( \sqrt{\text{Batt}} )</td>
<td>( \sqrt{\text{Batt}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{Frames remaining sufficient}} )</td>
<td>( \sqrt{\text{Frames remaining sufficient}} )</td>
<td>( \sqrt{\text{Frames remaining sufficient}} )</td>
</tr>
<tr>
<td>Exp Comp (( \mathbb{Z} )) – 0.0</td>
<td>Exp Comp (( \mathbb{Z} )) – 0.0</td>
<td>Exp Comp (( \mathbb{Z} )) – 0.0</td>
</tr>
<tr>
<td>Meter – Matrix (( \mathbb{K} ))</td>
<td>Meter – Matrix (( \mathbb{K} ))</td>
<td>Meter – Matrix (( \mathbb{K} ))</td>
</tr>
<tr>
<td>Diopeter – Adjust</td>
<td>Diopeter – Adjust</td>
<td>Diopeter – Adjust</td>
</tr>
<tr>
<td>Frame Rate – S</td>
<td>Frame Rate – S</td>
<td>Frame Rate – S</td>
</tr>
<tr>
<td>( \sqrt{\text{BKT disabled – 0 F}} )</td>
<td>( \sqrt{\text{BKT disabled – 0 F}} )</td>
<td>( \sqrt{\text{BKT disabled – 0 F}} )</td>
</tr>
<tr>
<td>Rear LCD:</td>
<td>Rear LCD:</td>
<td>Rear LCD:</td>
</tr>
<tr>
<td>( \sqrt{\text{ISO – 100}} )</td>
<td>( \sqrt{\text{ISO – 100}} )</td>
<td>( \sqrt{\text{ISO – 100}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{QUAL – RAW}} )</td>
<td>( \sqrt{\text{QUAL – RAW}} )</td>
<td>( \sqrt{\text{QUAL – RAW}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{WB – 0,A}} )</td>
<td>( \sqrt{\text{WB – 0,A}} )</td>
<td>( \sqrt{\text{WB – 0,A}} )</td>
</tr>
<tr>
<td>AF Area Mode – [ ]</td>
<td>AF Area Mode – [ ]</td>
<td>AF Area Mode – [ ]</td>
</tr>
<tr>
<td>( \sqrt{\text{Focus Area – Center}} )</td>
<td>( \sqrt{\text{Focus Area – Center}} )</td>
<td>( \sqrt{\text{Focus Area – Center}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{Focus Selector Lock – L}} )</td>
<td>( \sqrt{\text{Focus Selector Lock – L}} )</td>
<td>( \sqrt{\text{Focus Selector Lock – L}} )</td>
</tr>
<tr>
<td>SB-800 Flash Settings:</td>
<td>SB-800 Flash Settings:</td>
<td>SB-800 Flash Settings:</td>
</tr>
<tr>
<td>( \sqrt{\text{Diffuser Dome installed}} )</td>
<td>( \sqrt{\text{Diffuser Dome installed}} )</td>
<td>( \sqrt{\text{Diffuser Dome installed}} )</td>
</tr>
<tr>
<td>ON/OFF pb – ON</td>
<td>ON/OFF pb – ON</td>
<td>ON/OFF pb – ON</td>
</tr>
<tr>
<td>( \sqrt{\text{MODE – ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{E} )}} )</td>
<td>( \sqrt{\text{MODE – ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{E} )}} )</td>
<td>( \sqrt{\text{MODE – ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{H} ) ( \mathbb{E} )}} )</td>
</tr>
<tr>
<td>( \sqrt{\text{Exp Comp – 0 EV}} )</td>
<td>( \sqrt{\text{Exp Comp – 0 EV}} )</td>
<td>( \sqrt{\text{Exp Comp – 0 EV}} )</td>
</tr>
<tr>
<td>Tilt – 45° (Direct)</td>
<td>Tilt – 45° (Direct)</td>
<td>Tilt – 45° (Direct)</td>
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</table>

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

<table>
<thead>
<tr>
<th>SB-800 Flash Settings:</th>
<th>Lens - 12-24mm @ 18mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON/OFF pb – OFF</td>
<td>Aperture – Min, locked</td>
</tr>
<tr>
<td></td>
<td>Body Focus Mode – S</td>
</tr>
<tr>
<td></td>
<td>Batt installed</td>
</tr>
<tr>
<td></td>
<td>Flash Card installed</td>
</tr>
<tr>
<td></td>
<td>Pwr – ON</td>
</tr>
<tr>
<td></td>
<td>Top LCD:</td>
</tr>
<tr>
<td></td>
<td>Batt</td>
</tr>
<tr>
<td></td>
<td>Frames remaining sufficient</td>
</tr>
<tr>
<td>Exp Comp ([]) – 0.0</td>
<td>Exp Mode – M:</td>
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<tr>
<td></td>
<td>SS – 500</td>
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<tr>
<td></td>
<td>f/stop – f/8</td>
</tr>
<tr>
<td>Meter – Matrix ([])</td>
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</tr>
<tr>
<td>Diopeter – Adjust</td>
<td></td>
</tr>
<tr>
<td>Frame Rate – S</td>
<td></td>
</tr>
<tr>
<td>BKT disabled – 0 F</td>
<td></td>
</tr>
<tr>
<td>Rear LCD:</td>
<td></td>
</tr>
<tr>
<td>ISO – 100</td>
<td></td>
</tr>
<tr>
<td>QUAL – RAW</td>
<td></td>
</tr>
<tr>
<td>WB – 0.A</td>
<td></td>
</tr>
<tr>
<td>AF Area Mode – [ [ ] ]</td>
<td></td>
</tr>
<tr>
<td>Focus Area – Center</td>
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</tr>
<tr>
<td>Focus Selector Lock – L</td>
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</table>

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

<table>
<thead>
<tr>
<th>Lens – 17-35mm @ 17mm</th>
<th>Aperture – Min, locked</th>
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<tbody>
<tr>
<td></td>
<td>Body Focus Mode – S</td>
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<tr>
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<td>Batt installed</td>
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<td>Flash Card installed</td>
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<td>Pwr – ON</td>
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<td>Top LCD:</td>
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<td>Batt</td>
</tr>
<tr>
<td></td>
<td>Frames remaining sufficient</td>
</tr>
<tr>
<td>Exp Comp ([]) – 0.0</td>
<td>Exp Mode – A:</td>
</tr>
<tr>
<td></td>
<td>f/stop – f/8</td>
</tr>
<tr>
<td>Meter – Matrix ([])</td>
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<tr>
<td>Diopeter – Adjust</td>
<td></td>
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<tr>
<td>Frame Rate – Selftimer</td>
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</tr>
<tr>
<td>BKT disabled – 0 F</td>
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</tr>
<tr>
<td>Rear LCD:</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>Focus Selector Lock – L</td>
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</tbody>
</table>

### D2Xs CREW PHOTO

<table>
<thead>
<tr>
<th>Lens – 17-35mm @ 17mm</th>
<th>Aperture – Min, locked</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Body Focus Mode – S</td>
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<tr>
<td></td>
<td>Batt installed</td>
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<tr>
<td></td>
<td>Flash Card installed</td>
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<td></td>
<td>Pwr – ON</td>
</tr>
<tr>
<td></td>
<td>Top LCD:</td>
</tr>
<tr>
<td></td>
<td>Batt</td>
</tr>
<tr>
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<td>Frames remaining sufficient</td>
</tr>
<tr>
<td>Exp Comp ([]) – 0.0</td>
<td>Exp Mode – A:</td>
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<td></td>
<td>f/stop – f/8</td>
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<tr>
<td>Meter – Matrix ([])</td>
<td></td>
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<td>Diopeter – Adjust</td>
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<tr>
<td>Frame Rate – Selftimer</td>
<td></td>
</tr>
<tr>
<td>BKT disabled – 0 F</td>
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<tr>
<td>Rear LCD:</td>
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</tr>
<tr>
<td>QUAL – RAW</td>
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<tr>
<td>WB – 0.A</td>
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<td>AF Area Mode – [ [ ] ]</td>
<td></td>
</tr>
<tr>
<td>Focus Area – Center</td>
<td></td>
</tr>
<tr>
<td>Focus Selector Lock – L</td>
<td></td>
</tr>
</tbody>
</table>

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

#### Accessory Equipment:
- Shutter Release Cable – Install
- Multiuse Brkt – Install
- Multiuse Brkt Clamp – Install as reqd

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

LDRI/ITVC A7 PLACARD
1 ITVC-VIDEO
2 ITVC-VIDEO
3 LDRI-2D VIDEO
4 2D +GAMMA
5 3D +FLICKER
6 3D +GAMMA +FLICKER

P/TV-12a/129/O/A

TOP
BACK OF ‘LDRI/ITVC A7 PLACARD’

HOOK VELCRO

P/TV-12b/129/O/A

HOOK VELCRO
## G1 CC SETUP CUE CARD

**ASSUMPTION:** G1 is powered by either direct or battery power

### WELL LIT SCENE ("green"

<table>
<thead>
<tr>
<th>Action</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Install Wide Conversion Lens as reqd</td>
<td></td>
</tr>
<tr>
<td>ND FILTER – OFF (per CC prompt)</td>
<td></td>
</tr>
<tr>
<td>√OUTPUT – CAM</td>
<td></td>
</tr>
<tr>
<td>√A/V1/V2 – V2</td>
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</tr>
<tr>
<td>√Tape installed</td>
<td></td>
</tr>
<tr>
<td>Open LCD</td>
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</tr>
<tr>
<td>Tape installed</td>
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### SUN-LIT SCENE (M)

<table>
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<tr>
<td>√ND FILTER – OFF</td>
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</tr>
<tr>
<td>AF/M – AF(M)</td>
<td></td>
</tr>
<tr>
<td>AGC – OFF</td>
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</tr>
<tr>
<td>GAIN – L</td>
<td></td>
</tr>
<tr>
<td>√OUTPUT – CAM</td>
<td></td>
</tr>
<tr>
<td>√AWB – ON</td>
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</tr>
<tr>
<td>√AUDIO LEVEL – A</td>
<td></td>
</tr>
<tr>
<td>√A/V1/V2 – V2</td>
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</tr>
<tr>
<td>√Tape installed</td>
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<tr>
<td>Open LCD</td>
<td></td>
</tr>
<tr>
<td>Tape installed</td>
<td></td>
</tr>
<tr>
<td>√GAIN – 0dB</td>
<td></td>
</tr>
<tr>
<td>SS – 1/500 (Small Wheel)</td>
<td></td>
</tr>
<tr>
<td>f/stop – F8.0 (Aft Ring)</td>
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</tr>
<tr>
<td>Adjust focus if AF/M – M (Fwd Ring)</td>
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### DIM-LIT SCENE (A)

<table>
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<tr>
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<tr>
<td>√ND FILTER – OFF</td>
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</tr>
<tr>
<td>AF/M – AF</td>
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</tr>
<tr>
<td>AGC – OFF</td>
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</tr>
<tr>
<td>√OUTPUT – CAM</td>
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</tr>
<tr>
<td>√AWB – ON</td>
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</tr>
<tr>
<td>√AUDIO LEVEL – A</td>
<td></td>
</tr>
<tr>
<td>√A/V1/V2 – V2</td>
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<tr>
<td>√STANDBY/LOCK – STANDBY</td>
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<tr>
<td>PWR dial – M</td>
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<tr>
<td>Open LCD</td>
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<tr>
<td>Tape installed</td>
<td></td>
</tr>
<tr>
<td>√GAIN – L (M,H) per Scene</td>
<td></td>
</tr>
</tbody>
</table>
NOTE
Replace this page with four (4) sheets of blue K-10 stock in crew copies only
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Replace this page with four (4) sheets of blue K-10 stock in crew copies only