# STS-130 / 20A

## *FD 09 Execute Package*

| MSG | Page(s) | Title |
|---|---|---|
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| 113 | 17 - 26 | Stowage Locations for FD09 (GMT 047) |
| 114 | --- | IMMT Results - 2/15/10 |
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***Approved by FAO:***

*R. Smith*

*Last Updated: Feb 15 2010 8:54 PM GMT*

***JEDI*** *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

What to watch out for on crew off-duty days with the new Cupola.

MSG INDEX


| MSG NO. | TITLE |
|---|---|
| MSG-110 | FD09 Flight Plan Revision |
| MSG-111 | FD09 Mission Summary |
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| MSG-113 | Stowage Locations for FD09 (GMT 047) |
| MSG-114 | IMMT Results - 2/15/10 |
| MSG-116 | STS-130 (20A) EMU Story |
| MSG-117 | FD09 Crew Choice Downlink |
| MSG-118 | STS-130 Overview Timeline FD09 to EOM (14+2) |


1. Post-Sleep Cryo Config

For today's Post-Sleep cryo config, O2 tanks 1 and 2 and H2 tanks 1 and 4 will be active.

**R1 O2,H2 MANF VLV TK1 (two) - OP (tb-OP)**
**O2 TK2 HTR A - AUTO**

**A15 CRYO TK5 HTR O2 A - OFF**

Pre-Sleep Cryo Config

√MCC for deltas prior to configuring for Pre-Sleep.

For tonight's Pre-Sleep cryo config, Manifold 1 will be closed with O2 tanks 1 and 5 and H2 tanks 1 and 4 active.

**A15 CRYO TK5 HTR O2 A - AUTO**

**R1 O2 TK2 HTR A - OFF**
**O2,H2 MANF VLV TK1 (two) - CL (tb-CL)**

2. Defer Post-Sleep LiOH Changeout
PPCO2 continues to track predicts. Therefore, a LiOH can changeout is not required this morning. MCC will continue to monitor PPCO2 levels to determine if a changeout is required during the day.

3. EVA Deltas for Zambo
We've put together a summary story outlining the issues we've had with the EMUs and why we did each resize. Take a look at MSG 116 STS-130 EMU Story, and please let us know if you have any questions.

4. <u>EVA Deltas for Bob and Nick</u>
   Good news, all EMU gloves are declared GO for EVA. We're pulling together an updated story on the get-aheads for EVA 3. We'll uplink the latest and greatest version, and what we think you might be able to get done before Procedure Review. In the meantime, take a look at FS 7-120 in the EVA Checklist. From what is currently in your book, P1 FHRC P-clamps, P1 RBVM Thermal Bootie F151 Closure, and ESP-2 to Lab Gap Spanner Install seem to fit. We also have a few more requests from the program to go through, and we'll include those items in the get-aheads message.

5. REPLACE PAGES 2-30 THROUGH 2-33 and 3-92 THROUGH 3-99.

**NO EXERCISE**
**[FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE]**

02/15/10 13:59:41 **REPLANNED**

**FD09**
GMT 02/15/10 (046)
MET Day 007

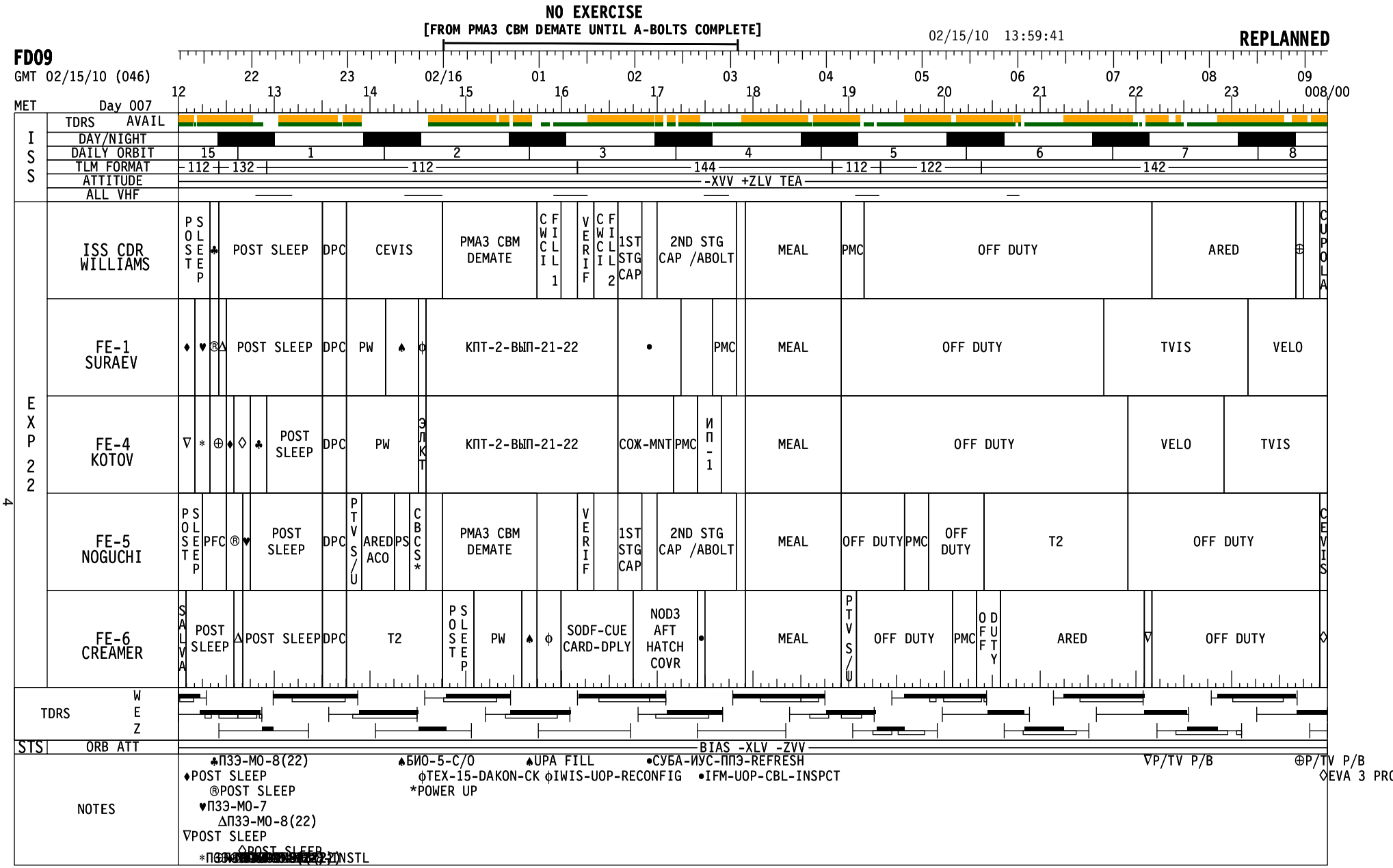
12 13 14 15 16 17 18 19 20 21 22 23 008/00
22 23 02/16 01 02 03 04 05 06 07 08 09

| | | |
|---|---|---|
| STS-130 | CDR ZAMKA | POST SLEEP; PFC OCA; PMA 3 PRESS CHECK; CWC INIT #4; POST SLEEP; P/TVO6 ROBO OPS; CWC TERM; CWC INIT #5; P/TVO6 ROBO OPS; CWC TERM; P/TVO6 ROBO OPS; MEAL; OFF DUTY; EXERCISE; OFF DUTY; EVA3 |
| STS-130 | PLT VIRTS | LOG; POST SLEEP; IMU; MCIU*; ILLUM-O; P/TVO6; S/U; CUPOLA VEST OUTFIT; CWC XFER (2); MEAL; OFF DUTY; EXERCISE; OFF DUTY; EVA3 |
| STS-130 | MS1 HIRE | POST SLEEP; PFC A/G; POST SLEEP; CUPOLA VEST OUTFIT; CBCS>; N3P*; MEAL; CBCS STOW; OFF DUTY; EXERCISE; OFF DUTY; CUPOLA |
| STS-130 | MS2 ROBINSON | POST SLEEP; LT-PPA LR-RMV; CCAA-AV MOUNT-RMVL; MEAL; OFF DUTY; EXERCISE; OFF DUTY; EVA3 |
| STS-130 | MS3 PATRICK EV2 | LOG; POST SLEEP; SSRMS>; PMA3 MNVR; PMA3 INSTL; LIMP; BRAKES; UNGRPL; MNVR#; MEAL; OFF DUTY; EXERCISE; OFF DUTY; EVA3 |
| STS-130 | MS4 BEHNKEN EV1 | POST SLEEP; MDKCK; PFC OCA; SSRMS>; PMA3 MNVR; PMA3 INSTL; LIMP; BRAKES; UNGRPL; MNVR#; MEAL; OFF DUTY; EXERCISE; EVA3 |
| STS | DAY/NIGHT | |
| STS | ORBIT | 119 120 121 122 123 124 125 126 127 |
| STS | TDRS W E Z | |
| STS | ORB ATT | BIAS -XLV -ZVV |
| ISS | TDRS AVAIL | |

NOTES

*FILTER CK ^LEE CUE CARD REVIEW

^POWERDOWN
*HATCH LATCH
#TRRJ VIEW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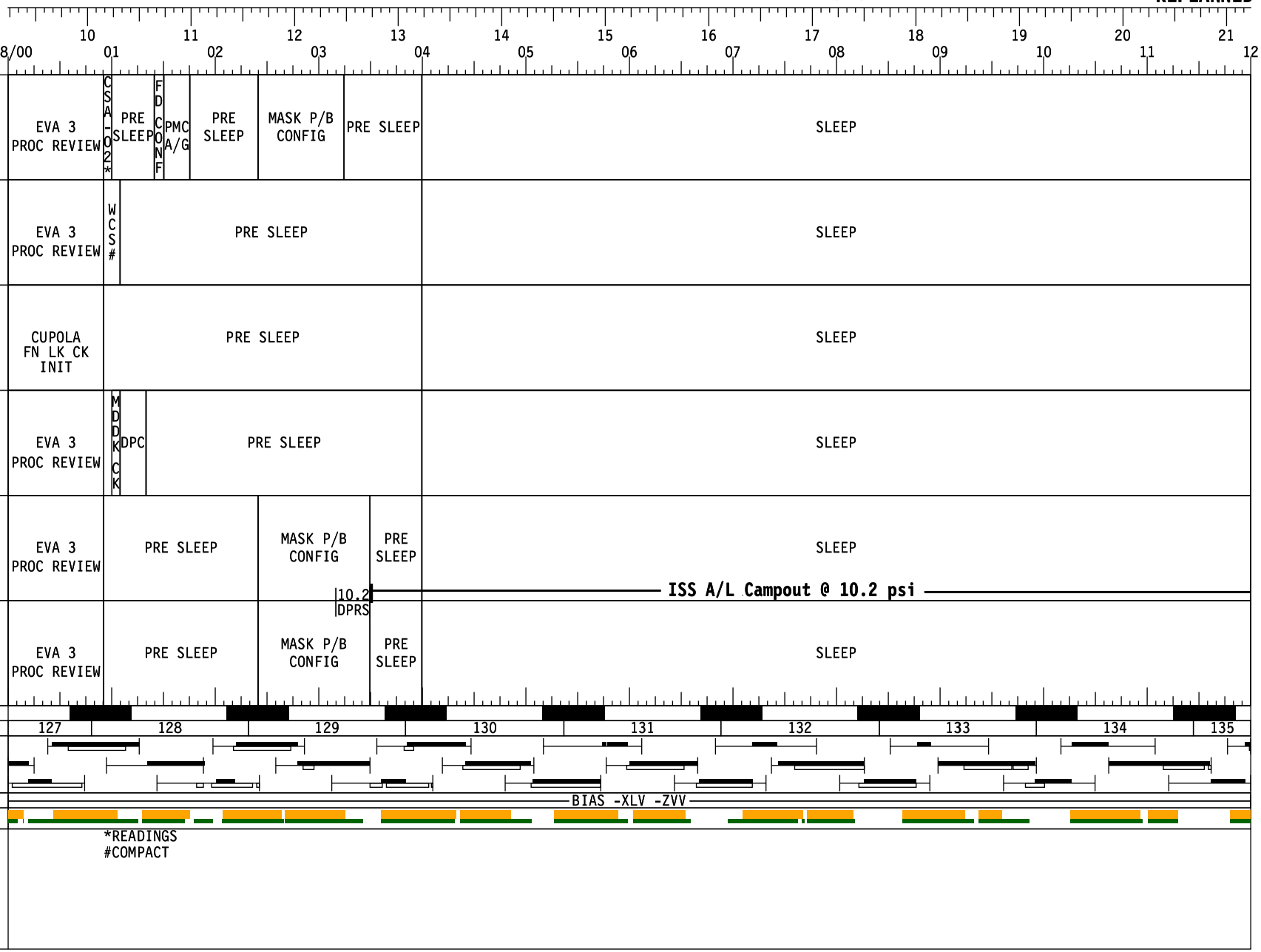
[FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE]
02/15/10 13:59:41
REPLANNED
FD09
GMT 02/15/10 (046)
MET Day 007
22 23 02/16 01 02 03 04 05 06 07 08 09
12 13 14 15 16 17 18 19 20 21 22 23 008/00
ISS
TDRS AVAIL
DAY/NIGHT
DAILY ORBIT 15 1 2 3 4 5 6 7 8
TLM FORMAT 112 132 112 144 112 122 142
ATTITUDE -XVV +ZLV TEA
ALL VHF
EXP 22
ISS CDR WILLIAMS
POST SLEEP ♣ POST SLEEP DPC CEVIS PMA3 CBM DEMATE CWCI FILL 1 VERIF CWCI FILL 2 1ST STG CAP 2ND STG CAP /ABOLT MEAL PMC OFF DUTY ARED ⊕ CUPOLA
FE-1 SURAEV
♦ ♥ ®Δ POST SLEEP DPC PW ♠ ϕ КПТ-2-ВЫП-21-22 • PMC MEAL OFF DUTY TVIS VELO
FE-4 KOTOV
∇ * ⊕ ♦ ◇ ♣ POST SLEEP DPC PW ЭЛКТ КПТ-2-ВЫП-21-22 СОЖ-MNT PMC ИП-1 MEAL OFF DUTY VELO TVIS
FE-5 NOGUCHI
POST SLEEP PFC ® ♥ POST SLEEP DPC PTVS/U ARED ACO PS CBCS* PMA3 CBM DEMATE VERIF 1ST STG CAP 2ND STG CAP /ABOLT MEAL OFF DUTY PMC OFF DUTY T2 OFF DUTY CEVIS
FE-6 CREAMER
SALVA POST SLEEP Δ POST SLEEP DPC T2 POST SLEEP PW ♠ ϕ SODF-CUE CARD-DPLY NOD3 AFT HATCH COVR • MEAL PTVS/U OFF DUTY PMC OFF DUTY ARED ∇ OFF DUTY ◇
TDRS W E Z
STS ORB ATT BIAS -XLV -ZVV
NOTES
♣ПЗЭ-МО-8(22)
♦POST SLEEP
®POST SLEEP
♥ПЗЭ-МО-7
ΔПЗЭ-МО-8(22)
∇POST SLEEP
◇POST SLEEP
*ПЗЭ-МО-8(22)
♠БИО-5-С/О
ϕTEX-15-DAKON-CK
*POWER UP
♠UPA FILL
ϕIWIS-UOP-RECONFIG
•СУБА-ИУС-ППЭ-REFRESH
•IFM-UOP-CBL-INSPCT
∇P/TV P/B
⊕P/TV P/B
◇EVA 3 PRO

**FD09**

GMT 02/16/10 (047)

MET Day 008



02/15/10 13:59:41 **REPLANNED**

**FD09**

GMT 02/16/10 (047)

MET Day 008

008/00 10 11 12 13 14 15 16 17 18 19 20 21 01 02 03 04 05 06 07 08 09 10 11 12

| | | |
|---|---|---|
| ISS | TDRS AVAIL | |
| | DAY/NIGHT | |
| | DAILY ORBIT | 8 9 10 11 12 13 14 15 16 |
| | TLM FORMAT | 142 142 |
| | ATTITUDE | -XVV +ZLV TEA |
| | ALL VHF | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EXP 22 | ISS CDR WILLIAMS | CUPOLA | PW | DPC | PW | PRE SLEEP-ISS | SLEEP |
| | FE-1 SURAEV | VELO ♣ | PW | DPC | PW | PRE SLEEP-ISS | SLEEP |
| | FE-4 KOTOV | TVIS ЭЛКТ | PW | DPC | PW | PRE SLEEP-ISS | SLEEP |
| | FE-5 NOGUCHI | CEVIS | PW | DPC | PW | PRE SLEEP-ISS | SLEEP |
| | FE-6 CREAMER | EVA 3 PROC REVIEW | ⊕ | DPC | PW | PRE SLEEP-ISS | SLEEP |

| | | |
|---|---|---|
| TDRS | W E Z | |
| STS | ORB ATT | BIAS -XLV -ZVV |
| NOTES | | ♣TVIS MNT<br>⊕UPA FILL |

6

# STS-130 FD09

GMT Date 02/15 (046) | W | TDRSE | Z | D/N | ORB | MET Day 007 | STS ATI

## CDR ZAMKA

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
√HUM SEP for H2O Accumulation

A Omit steps 1.2 and 3
Use A/G 2 for audio
Inform MCC which PGSC will be used

L9 PAYLOAD STATION AUDIO A/G (two) - OFF
NETMEETING VIDEO CONFERENCING
(ORB OPS, PGSC) Private Family Conference
KU TDRE (13:53-14:29) A Gimbal Flip:14:20

ECLSS: 2.810 PMA LEAK CHECK
Steps 1-3.12,4
VAJ/ISA setup will be used for
CUP fine leak check.

CWC FILL (ORB OPS, CWC OPS)
Init Fill #4
Ref. MSG 027

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

P/TV06 ROBOTICS OPERATIONS
(PHOTO/TV, SCENES)

## PLT VIRTS

SLEEP LOGBOOK (ORB OPS, SDBI)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

**FD09 EZ ACTIVITIES:**
√OCAC FILTER & MDDK DUCT SCREEN
TEPC (STATUS CHECK)
(ORB OPS, CREW SYS)
HARD REBOOT ALL PGSCs EXCEPT:
STS-6(WLES),STS-5(RPOP2),&
OCA ROUTER.
Return all Shuttle IFM tools
used on ISS, per MSG 052, to
Endeavour prior to sleep.

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

L17 Check MCIU filter screen

TV (ILLUMINATOR OPS) (PHOTO/TV, CC)
ILLUMINATORS OFF - A & D

P/TV06 ROBOTICS OPERATIONS
(PHOTO/TV, SCENES)
Perform SETUP

1.156 VESTIBULE OUTFITTING N3-CUPOLA
(ASSY OPS, ACT&C/O)
Steps 4-7,9-10,13-22
Ref. MSG 093

## MS1 HIRE

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

PRIVATE FAMILY CONFERENCE
L9 PAYLOAD STATION AUDIO A/G (two) - OFF
Perform via A/G 2

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

1.156 VESTIBULE OUTFITTING N3-CUPOLA
(ASSY OPS, ACT&C/O)
Steps 4-7,9-10,13-22
Ref. MSG 093

## Notes

**NO EXERCISE FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE**

# STS-130 FD09

GMT Date 02/15 (046) | W | TDRSE | Z | D/N | ORB | MET Day 007 | STS ATI

12:00 13:00 14:00 15:00 16:00 22:00 23:00 00:00 01:00

119 120 121 122

BIAS - XLV - ZVV

## MS2 ROBINSON

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

1.134 NODE 3 LTL PUMP PACKAGE ASSEMBLY (PPA)LAUNCH BRACKET REMOVAL
(ASSY OPS, ACT&C/O)
Prior to step 5.3, replace FDS Closeout removed in step 1.4. After step 5.3 replace Beta Cloth on NOD3D1-02.

## MS3 PATRICK

SLEEP LOGBOOK (ORB OPS, SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

A Omit steps 1.2 and 3
Use A/G 2 for audio
Inform MCC which PGSC will be used

SSRMS LEE CUE CARD Review

ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE
Steps 6-12

## MS4 BEHNKEN

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

GLACIER STATUS CHECK (ASSY OPS,CC)
L9 PAYLOAD STATION AUDIO A/G (two) - OFF
NETMEETING VIDEO CONFERENCING
(ORB OPS, PGSC) Private Family Conference
KU TDRW (14:48-15:19) A

SSRMS LEE CUE CARD Review

ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE
Steps 6-12

## Notes

**NO EXERCISE FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE**

8

# STS-130 FD09

GMT Date 02/16 (047) | W | TDRSE | Z | D/N | ORB | MET Day 007 | STS ATI

| CDR ZAMKA | PLT VIRTS | MS1 HIRE | Notes |
|---|---|---|---|
| CWC FILL (ORB OPS, CWC OPS) Perform FILL TERMINATION | 1.156 VESTIBULE OUTFITTING N3-CUPOLA (ASSY OPS, ACT&C/O) Steps 4-7,9-10,13-22 Ref. MSG 093 | 1.156 VESTIBULE OUTFITTING N3-CUPOLA (ASSY OPS, ACT&C/O) Steps 4-7,9-10,13-22 Ref. MSG 093 | NO EXERCISE FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE |
| CWC FILL (ORB OPS, CWC OPS) Init Fill #5 Ref. MSG 027 | | | |
| P/TV06 ROBOTICS OPERATIONS (PHOTO/TV, SCENES) | | | |
| | B 1. Verify Node 3 Port Hatch Ratchet in LATCH Position. 2. Engage Crank Handle. 3. Turn Crank Handle in LATCH direction until fully latched. 4. Stow Crank Handle. | | |
| CWC FILL (ORB OPS, CWC OPS) Perform FILL TERMINATION | | | |
| P/TV06 ROBOTICS OPERATIONS (PHOTO/TV, SCENES) | CWC TRANSFER Transfer 2 CWCs to ISS | 1.180 CBCS INSTL/RMVL-PMA INSTL (ASSY OPS, ACT&C/O) Step 5 | |
| | | N3P HATCH LATCH B | |
| | | MEAL | |
| MEAL | MEAL | 1.180 CBCS INSTL/RMVL-PMA3 INSTL (ASSY OPS, ACT&C/O) Steps 6-end | |
| OFF DUTY | OFF DUTY | OFF DUTY | |

Time scale: 02:00, 03:00, 04:00, 05:00; 16:00, 17:00, 18:00, 19:00, 20:00

BIAS-XLV-ZVV

6

# STS-130 FD09

GMT Date 02/16 (047) | W E Z | DO/N RB | MET Day 007 | STS ATI

| MET | MS2 ROBINSON | MS3 PATRICK | MS4 BEHNKEN | Notes |
|---|---|---|---|---|
| 16:00 | 1.134 NODE 3 LTL PUMP PACKAGE ASSEMBLY (PPA)LAUNCH BRACKET REMOVAL (ASSY OPS, ACT&C/O) Prior to step 5.3, replace FDS Closeout removed in step 1.4. After step 5.3 replace Beta Cloth on NOD3D1-02. | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Steps 6-12 | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Steps 6-12 | |
| | | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 13 EXERCISE CONSTRAINTS | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 13 EXERCISE CONSTRAINTS | NO EXERCISE FROM PMA3 CBM DEMATE UNTIL A-BOLTS COMPLETE |
| 17:00 | 1.132 NODE 3 CCAA ANTI-VIBRATION MODULE(AVM)LAUNCH BRACKET REMOVAL (ASSY OPS, ACT&C/O) | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 14 EXERCISE CONST | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 14 EXERCISE CONST | |
| 18:00 | | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 15 | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 15 | |
| | | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 16-16.3 | ROBO: 1.510 SSRMS CUPOLA RELEASE AND PMA3 RELOCATE Step 16-16.3 | |
| | | ROBO: 1.520 SSRMS MNVR TO TRRJ VIEWING & NODE 2 GRAPPLE Steps 1-2 | ROBO: 1.520 SSRMS MNVR TO TRRJ VIEWING & NODE 2 GRAPPLE Steps 1-2 | |
| 19:00 | MEAL | MEAL | MEAL | |
| 20:00 | OFF DUTY | OFF DUTY | OFF DUTY | |

BIAS-XLV-ZVV

# STS-130 FD09

GMT Date 02/16 (047) | W | T D R S E | Z | D/N | O R B | MET Day 007 | STS ATI | CDR ZAMKA | PLT VIRTS | MS1 HIRE | Notes

06:00 07:00 08:00 09:00

20:00 21:00 22:00 23:00 00:00

124 125 126 127

BIAS -XLV -ZVV

| CDR ZAMKA | PLT VIRTS | MS1 HIRE |
|---|---|---|
| OFF DUTY | OFF DUTY | OFF DUTY |
| EXERCISE | EXERCISE | EXERCISE |
| OFF DUTY | OFF DUTY | OFF DUTY |
| EVA PROCEDURE REVIEW<br>See Page 3-98 | EVA PROCEDURE REVIEW<br>See Page 3-98 | 1.188 CUPOLA FINE LEAK CHECK ON NODE3 DECK<br>See Page 3-98 |



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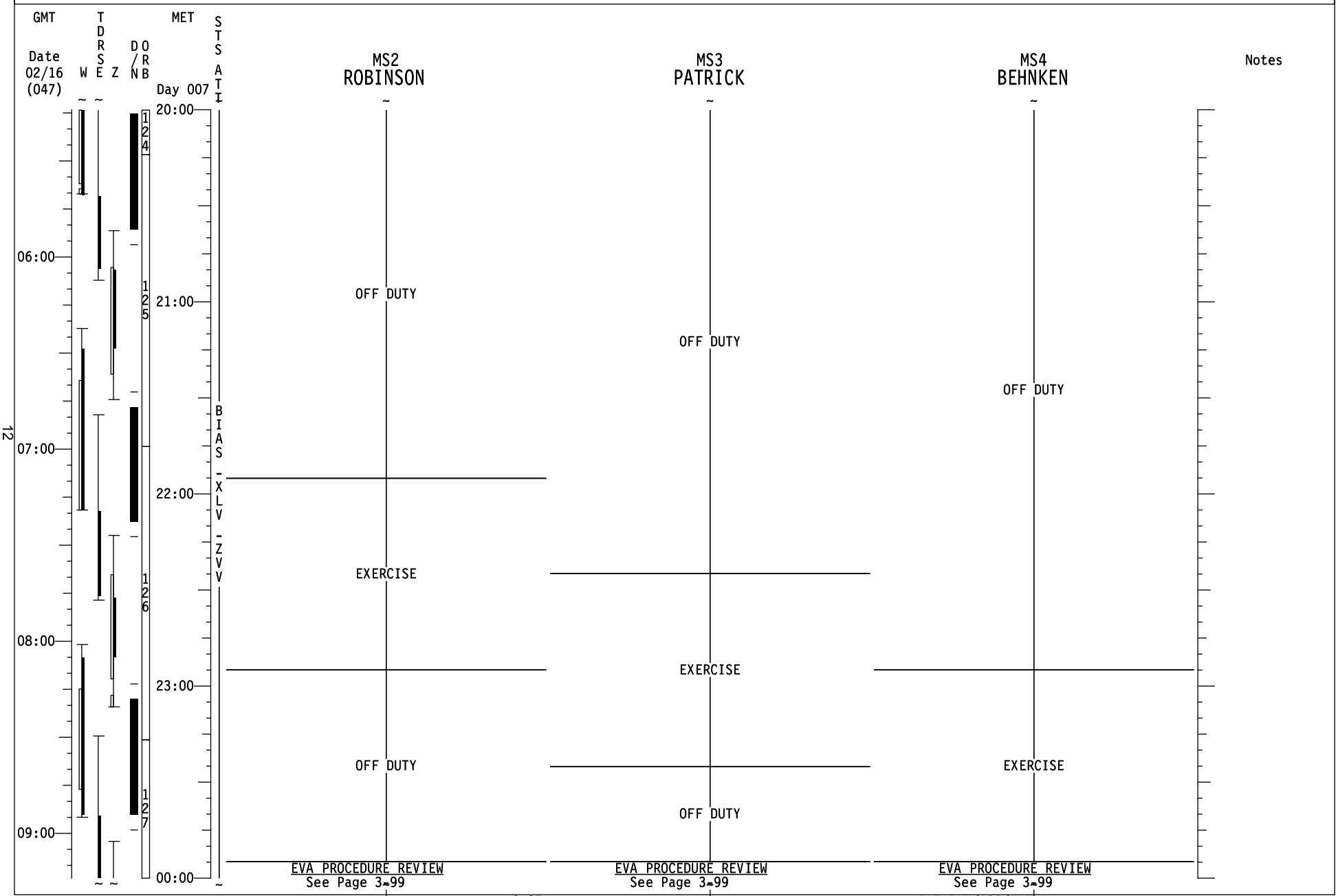
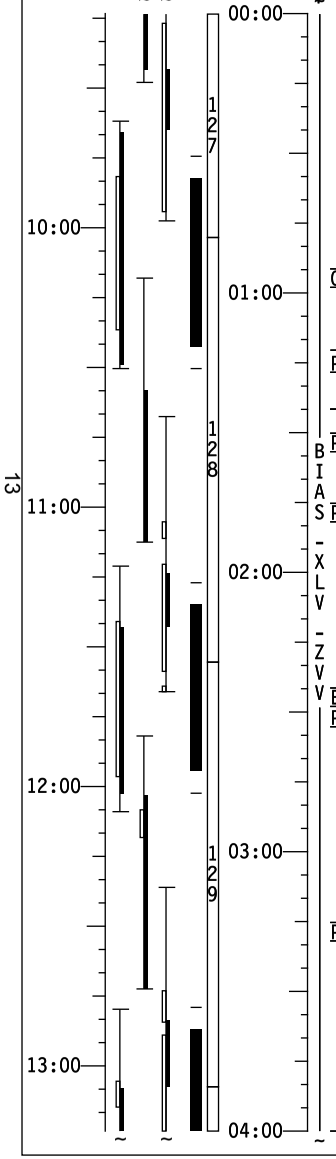
# STS-130 FD09


GMT
Date 02/16 (047)
W
TDRSE
Z
D/N
ORB
MET
Day 007
STS ATI
MS2 ROBINSON
MS3 PATRICK
MS4 BEHNKEN
Notes
20:00
21:00
22:00
23:00
00:00
06:00
07:00
08:00
09:00
124
125
126
127
BIAS - XLV - ZVV
OFF DUTY
EXERCISE
OFF DUTY
OFF DUTY
EXERCISE
OFF DUTY
OFF DUTY
EXERCISE
EVA PROCEDURE REVIEW
See Page 3-99
EVA PROCEDURE REVIEW
See Page 3-99
EVA PROCEDURE REVIEW
See Page 3-99
3-97
0
FLT PLN/130/FLT

# STS-130 FD09

GMT Date 02/16 (047) | W | TDRSE | Z | D/N | ORB | MET Day 008 | STS ATT




## CDR ZAMKA

EVA PROCEDURE REVIEW
Ref. EVA 3 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 100
Ref. MSG 110, Item 4

CSA-02 READINGS
Activate 2 CSA-02s in E/L for Campout. Notify MCC-H of readings for accuracy check. Deactivate both CSA-02s.

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

FLIGHT DIRECTOR CONFERENCE

PRIVATE MEDICAL CONFERENCE
L9 PAYLOAD STATION A/G(two) - OFF
Perform via A/G 2

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE Steps 1-16

Ref. STS-130 Consumables Tracking CC(EVA)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

## PLT VIRTS

EVA PROCEDURE REVIEW
Ref. EVA 3 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 100
Ref. MSG 110, Item 4

WCS COMPACTOR OPS (DUAL-VANE)
(ORB OPS, CUE CARD)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
√ILLUMINATORS OFF - ALL

## MS1 HIRE

1.188 CUPOLA FINE LEAK CHECK ON NODE3 DECK
(ASSY OPS, ACT&C/O)
Steps 1-7.3
VAJ/ISA to remain mated to NOD3 Deck MPEV.

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Notes

**CREW WAKE AT 08/12:00**



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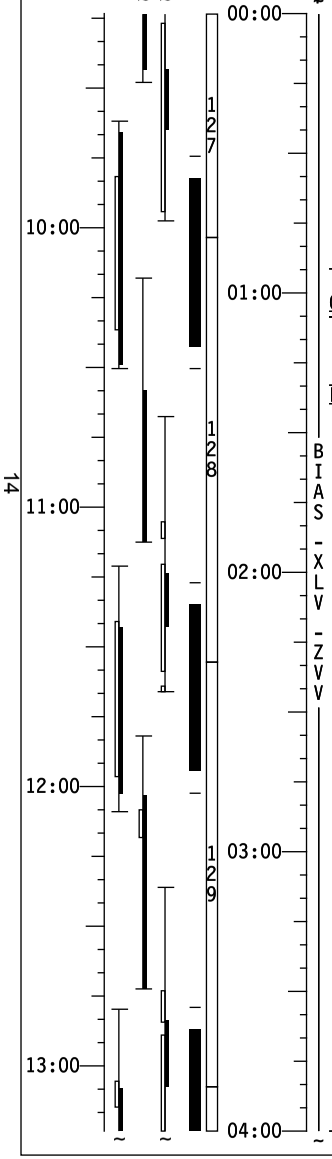
# STS-130 FD09

GMT Date 02/16 (047) | W | TDRSE | Z | D/N | ORB | MET Day 008 | STS ATI




## MS2 ROBINSON

EVA PROCEDURE REVIEW
Ref. EVA 3 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 100
Ref. MSG 110, Item 4

GLACIER STATUS CHECK (ASSY OPS,CC)

DAILY PLANNING CONFERENCE

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

## MS3 PATRICK

EVA PROCEDURE REVIEW
Ref. EVA 3 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 100
Ref. MSG 110, Item 4

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE

Ref. STS-130 Consumables Tracking CC(EVA)

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

## MS4 BEHNKEN

EVA PROCEDURE REVIEW
Ref. EVA 3 BRIEFING CARD (EVA, TIMELINES)
Ref. MSG 100
Ref. MSG 110, Item 4

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

EVA SYSTEMS: 1.206 10.2 PSIA CAMPOUT MASK PREBREATHE

Ref. STS-130 Consumables Tracking CC(EVA)

PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)

Notes

**CREW WAKE AT 08/12:00**

Good Morning Endeavour!!!!

Yesterday was such a fantastic moving day! Thanks! It was great to watch Cupola relocate to its proper position!!!!

Be sure and take some time to look out the window today and just marvel at what you see!!!

YOUR CURRENT ORBIT IS: 188 X 181 NM

NOTAMS: NO CHANGE

| | |
|---|---|
| EDW - | TEMP RWY IN USE. PERM RWY CLOSED FOR CONSTRUCTION. |
| EDW - | LAKEBED RWYS RED. |
| NOR - | LAKEBED RWYS USABLE. DRYING OUT. |
| WAL- | CLOSED. |
| ZZA - | ARRESTING NET INSTALLED 40M FROM END OF RWY 30L. |
| ESN - | RWY 03R/21L CLOSED. 03L/21R USABLE. |
| GUA - | RWY 06L/24R RWY END LIGHTS OUT OF SERVICE. |
| PTN - | CLOSED FOR RUNWAY CONSTRUCTION. |
| IKF - | NOT USABLE. NO AGREEMENT. |
| BEN - | NOT RECOMMENDED/NOT SUPPORTED. |

NEXT 2 PLS OPPORTUNITIES:

| | | | | |
|---|---|---|---|---|
| EDT04L | ORB 126 – 7/22:38 | SKC | 7 | 030/3P4 |
| EDT22R | ORB 141 – 8/21:25 | BKN250 | 7 | 270/4P6 |

OMS TANK FAIL CAPABILITY:

L OMS FAILS: NO
R OMS FAILS: NO

LEAKING OMS PRPLT BURN:

L OMS LEAK: ALWAYS BURN RETROGRADE
R OMS LEAK: ALWAYS BURN RETROGRADE

OMS QUANTITIES(%)

L OMS OX = 30.2 R OMS OX = 31.4
FU = 29.9 FU = 31.2

Subtract interconnect counter for current OMS quantities.

DELTA V AVAILABLE:

| | |
|---|---|
| OMS | 321 FPS |
| ARCS (TOTAL ABOVE QTY1) | 44 FPS |
| TOTAL IN THE AFT | 365 FPS |
| ARCS (TOTAL ABOVE QTY2) | 77 FPS |
| FRCS (ABOVE QTY 1) | 32 FPS |
| AFT QTY 1 | 82 % |
| AFT QTY 2 | 44 % |

THERE ARE NO FAILURE/IMPACT/WORK AROUNDS FOR TODAY.

END OF PAGE 2 OF 2

Contents:

**Timeline Procedures:**
** PMA 3 PRESS CHECK
** LT-PPA LR-RMV
WRS-UPA-FILL
WRS-CWCI-FILL-PT1
WRS-CWCI-FILL-PT2
NOD3-AFT-HATCH-COVR
CCAA-AV MOUNT-RMVL
P/TV-ARED ACO-S/U
P/TV-ARED ACO P/B
** CBCS STOW
** CUPOLA FN LK CK INIT

**ESA Timeline Procedures:**
None

**JAXA Timeline Procedures:**
None

**Tasklist Procedures:**
BCAT3-CRYSTAL-CHECK
WHC-KTO-REPLACE
WHC-ЕДВ-У-R&R
PWD-BEV ADPTR-R&R

**JAXA Tasklist Procedures:**
None

**ESA Tasklist Procedures:**
None

**Timeline Procedures:**

| ** PMA 3 PRESS CHECK | | | | | | |
|---|---|---|---|---|---|---|
| **2.810 PMA Leak Check** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **Temp Stow NOD3** | MPEV Internal Sampling Adapter (ISA) | 97M55830-1 | 2 | 000002M | |
| 2 | | Scopemeter Pressure Probe | SEG39130244-302 | 004012459472 | 00009692J | |
| 3 | | VAJ-83-1 35ft | 683-17111-2 | - | 00002676J | |
| 4 | | VAJ-78-1 5ft | 683-17111-1 | - | 00002677J | |
| 5 | | Multimeter Kit | 10118-10018-04 | 1017 | - | |
| 6 | | Multimeter | 87 | 1010 | 00088636J | “Happy” |

| ** LT-PPA LR-RMV | | | | | | |
|---|---|---|---|---|---|---|
| **1.134 NODE 3 LTL PUMP PACKAGE ASSEMBLY (PPA) LAUNCH BRACKET REMOVAL** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD1D4** | 5/16" Combination Wrench | SKG33117562-328 | - | - | |
| 2 | | 5/16" Socket, 1/4" Drive | SKG33117562-697 | - | - | |
| 3 | | 1/2" Socket, 1/4" Drive | SKG33117562-702 | - | - | |
| 4 | | 2" Ext, 1/4" Drive | SKG33117562-763 | - | - | |
| 5 | | 10" Ext, 1/4" Drive | SKG33117562-766 | - | - | |
| 6 | | Universal Joint, 1/4" Drive | SKG33117562-010 | - | - | |
| 7 | | Inspection Mirror | SKG33117562-923 | - | - | |
| 8 | **Pregathered Toolset “Jeff” or “TV”** | 5/32" Hex Head, 1/4" Drive | SKG33117562-742 | - | - | |
| 9 | | 4" Ext, 1/4" Drive | SKG33117562-764 | - | - | |
| 10 | | 6" Ext, 1/4" Drive | SKG33117562-765 | - | - | |
| 11 | | Ratchet, 1/4" Drive | SKG33117562-939 | - | - | |
| 12 | | Driver Handle, 1/4" Drive | SKG33117562-941 | - | - | |

| **Type: Restow** | | | | | | |
|---|---|---|---|---|---|---|
| 13 | **NOD1P2** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J | 0.5 CTB: NOD3 Uninstalled Hardware | SEG33111836-303 | 1065 | 003947J | |
| 14 | | Ziplock: Node 3 Closeout Panel Launch Bolts | - | - | - | |
| 15 | | Launch Bolts [QTY: 20] | - | - | - | |
| 16 | | Closeout Panel Launch Bolts [QTY: 31] | - | - | - | Fasteners |
| 17 | | 24” X 24“ Ziplock | - | - | - | **LABEL** “AVM Blocking Spacers” |
| 18 | | U-Shaped AVM Blocking Device Spacer | N2-DR-OHB-01.21.20.013 | - | - | Brackets |
| 19 | | Small AVM Blocking Device Spacer | N2-DR-OHB-01.21.20.012 | - | - | |
| 20 | | Large AVM Blocking Device Spacer | N2-DR-OHB-01.21.20.011 | - | - | |
| 21 | **NOD3D1** | Shear Frame Assembly | 1740ND205 | - | - | |

| **WRS-UPA-FILL** | | | | | | |
|---|---|---|---|---|---|---|
| **21-0223 1.904 UPA ACTIVATION** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **LAB1P2** 0.5 CTB, S/N 1221, B/C 010402J | Regen ECLSS Tox-2 PPE Kit | SEG42103702-302 | 1002 | CHCCPK02J | |
| 2 | | Safety Goggles | 503R | - | - | |
| 3 | | Mess-Up Mitts | RMUM-12 | - | - | |
| 4 | | Silver Shield Gloves | SS104M | - | - | |
| 5 | | Surgical Masks | 8210 | - | - | |
| 6 | **LAB1S1** TeSS Stowage Area | Крышка ЕДВ (EDV Cover) | 11Ф615.8711-180A15-1 | 934 | 00116325J | |
| 7 | | Корпус ЕДВ (EDV Bucket) | 11Ф615.8711-120A15-1 | 458 | 00116318J | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Type: Restow** | | | | | | |
| 8 | **LAB1S1** TeSS Stowage Area | Крышка ЕДВ (EDV Cover) | 11Ф615.8711-180A15-1 | 942 | 00116327J | |
| 9 | | Корпус ЕДВ (EDV Bucket) | 11Ф615.8711-120A15-1 | 424 | 00098519R | |

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|---|---|---|---|---|---|---|
| **WRS-CWCI-FILL-PT1**<br>**WRS-CWCI-FILL-PT2** | | | | | | |
| **20-0021 2.913 CWC - Iodine Fill from WPA with WPA H2O Transfer Common Hose** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD2O2** Mesh Bag | CWC-Iodine | SEG33120607-301 | 2021 | 107922J | |
| 2 | **LAB1O3** | WPA H2O Transfer Common Hose | SEG33119491-302 | 1004 | 00073323J | |
| 3 | **LAB1P4** | Ziplock | - | - | - | |
| 4 | | Ziplock: “Yellow/Yellow Hose-QD Removed on GMT XXX” | - | - | - | |
| 5 | | R/Y QD Adapter | 10108-20175-01 | 5008 | - | |
| **Type: Restow** | | | | | | |
| 6 | **JLP1F1** | CWC-Iodine | SEG33120607-301 | 2021 | 107922J | |

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| | | | | | | |
|---|---|---|---|---|---|---|
| **NOD3-AFT-HATCH-COVR** | | | | | | |
| **18-0989 NODE 1 NADIR HATCH HARDWARE PROTECTION** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD1D2** | 1.0 CTB [QTY: 2] | SEG33111838-307 | 1211<br>Any | 006707J<br>Any | Use CTBs with Soft Goods for Hatch Protection, Retrieve from PMA1 if not at NOD1D2<br>**REPORT** S/Ns to MCC-H |
| 2 | | 0.5 CTB | SEG33111836-301 | **Any** | **Any** | |

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| CCAA-AV MOUNT-RMVL | | | | | | |
|---|---|---|---|---|---|---|
| **1.132 NODE 3 CCAA ANTI-VIBRATION MODULE (AVM) LAUNCH BRACKET REMOVAL** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD2 Deployed** | TOOL PAGE CASE | PERS0033 | - | PERS3302M | |
| 2 | | 6" Long, 3/16" Ball Tip Hex Head, 3/8" Drive | FABL6E | - | - | |
| 3 | **NOD1D4** | 10" Ext, 1/4" Drive | SKG33117562-766 | - | - | |
| 4 | | Universal Joint, 1/4" Drive | SKG33117562-010 | - | - | |
| 5 | **Pregathered Toolset "Jeff" or "TV"** | Ratchet, 1/4" Drive | SKG33117562-939 | - | - | |
| 6 | | 3/16" Hex Head,1/4" Drive | SKG33117562-743 | - | - | |
| 7 | | 5/32" Hex Head, 1/4" Drive | SKG33117562-742 | - | - | |
| 8 | | Driver Handle, 1/4" Drive | SKG33117562-941 | - | - | |
| 9 | | 8-1/4" Long, 2" Cut Scissors | SKG33117562-934 | - | - | |
| 10 | | 1/4" to 3/8" Adapter | TA3 | - | - | |
| **Type: Restow** | | | | | | |
| 11 | **NOD1P2** 3.0 CTB: Node 3 Vestibule Outfitting kit (VOK), S/N 1048, B/C 004233J | 0.5 CTB: NOD3 Uninstalled Hardware | SEG33111836-303 | 1065 | 003947J | |
| 12 | | Ziplock: Node 3 Closeout Panel Launch Bolts | - | - | - | |
| 13 | | CCAA Upper Left AVM Launch Bracket | N2-DR-OHB-01.44.43.037 | - | - | |
| 14 | | CCAA Upper Right AVM Launch Bracket | N2-DR-OHB-01.44.43.037 | - | - | |
| 15 | | CCAA Lower Left AVM Bracket #1 | N2-DR-OHB-01.44.43.020 | - | - | |
| 16 | | CCAA Lower Left AVM Bracket #2 | N2-DR-OHB-01.44.43.047 | - | - | |
| 17 | | CCAA Lower Right AVM Bracket #1 | N2-DR-OHB-01.44.43.017 | - | - | |
| 18 | | CCAA Lower Right AVM Bracket #2 | N2-DR-OHB-01.44.43.047 | - | - | |
| 19 | | Saddle Bracket | 1190ND905 | - | - | |

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| P/TV-ARED ACO-S/U<br>P/TV-ARED ACO P/B | | | | | | |
|---|---|---|---|---|---|---|
| **4.201 G1 CAMCORDER NOMINAL SETUP** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD2P4**<br>0.5 CTB: PhotoTV Consumables, S/N 1360, B/C CTB00265J | Mini DVCAM Tape [QTY: 2] | SED33111489-305 | - | - | |

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| ** CBCS STOW | | | | | | |
|---|---|---|---|---|---|---|
| **1.180 20A CBCS INSTALLATION/REMOVAL - PMA 3 INSTALL** | | | | | | |
| **Type: Restow** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **NOD1S4_A2**<br>1.0 CTB: CBCS String 1, S/N 1030, B/C 002915J | Camera Bag | SEG33112759-301 | - | - | |
| 2 | | CBCS Camera Assembly | SEG33112576-301 | - | - | |
| 3 | | Ku-Band Power Supply | SEG46116711-302 | - | - | |
| 4 | | LED Control Unit | SEG33112643-301 | - | - | |
| 5 | | Video Interface Unit | SEG33112646-301 | - | - | |
| 6 | | CBCS Camera Cable | SEG33112641-301 | - | - | |
| 7 | | CBCS Electronics Cable | SEG33112638-301 | - | - | |
| 8 | | UOP Power PSA Cable, 120VDC | SEG46116745-301 | - | - | |

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| ** CUPOLA FN LK CK INIT | | | | | | |
|---|---|---|---|---|---|---|
| **1.188 CUPOLA FINE LEAK CHECK ON NODE 3 DECK** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **Temp Stow NOD3** | MPEV Internal Sampling Adapter (ISA) | 97M55830-1 | 2 | 000002M | Leave Connected to NOD3 Deck MPEV after activity |
| 2 | | Scopemeter Pressure Probe | SEG39130244-302 | 004012459472 | 00009692J | |
| 3 | | VAJ-83-1 35ft | 683-17111-2 | - | 00002676J | |
| 4 | | VAJ-78-1 5ft | 683-17111-1 | - | 00002677J | |
| 5 | | Multimeter Kit | 10118-10018-04 | 1017 | - | |
| 6 | | Multimeter | 87 | 1010 | 00088636J | “Happy” |
| 7 | **Pregathered Toolset “Jeff” or “TV”** | Ratchet, 1/4" Drive | - | - | - | |
| 8 | | 5/32" Hex Head, 1/4" Drive | - | - | - | |

**ESA Timeline Procedures:**
None

**JAXA Timeline Procedures:**
None

**Tasklist Procedures:**

| BCAT3-CRYSTAL-CHECK | | | | | | |
|---|---|---|---|---|---|---|
| **2.034 BCAT-4 CRYSTAL CHECK FOR SAMPLES 8,9, and 10** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **LAB1O7 Rack Front** | BCAT-3 Slow Growth Sample Module | 67041FSM2200 | - | 00030426L | |
| 2 | **LAB1O4_J1** 0.5 CTB BCAT S/N 1240, B/C 010421J | LED Mini Maglight | 60107MFA2017 | - | 00105256L | |
| 3 | | 1.5V Battery Size AA [QTY:2] | 528-41350-3 | - | - | (if required) |

| **WHC-KTO-REPLACE** | | | | | | |
|---|---|---|---|---|---|---|
| **2.305 WHC [KTO] R&R** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **FGB Panel 220** or **FGB Floor** or **NOD1O2** | Solid Waste Container – Body (aka KTO Body) | 11Φ615.8720A55-20 | 257<br>263<br>264<br>265<br>272<br>275<br>278<br>282<br>304<br>307<br>308<br>309<br>310<br>325 | -<br>00112722J<br>00112724J<br>00112735J<br>00116316J<br>00116313J<br>00116302J<br>00116311J<br>00112744J<br>00112738J<br>-<br>00112746J<br>00112748J<br>00112736J | This is the list of available KTO Bodies. **REPORT S/N and B/C** |
| 2 | | Solid Waste Container – Lid (aka KTO Bottom) | 11Φ615.8720A55-10 | 257<br>258<br>263<br>265<br>272<br>274<br>275<br>278<br>282<br>307<br>308<br>309<br>310<br>325 | 00098427R<br>00098428R<br>00112721J<br>00112733J<br>00098472R<br>00098474R<br>00098475R<br>00098438R<br>00098442R<br>00112737J<br>-<br>00112745J<br>00112747J<br>- | This is the list of available KTO Lids. **REPORT S/N and B/C** |
| 3 | **LAB1D1** | Solid Waste Container – Body (aka KTO Body) | 11Φ615.8720A55-20 | 305 | 00112730J | Prepositioned for Install |
| 4 | | Solid Waste Container – Lid (aka KTO Bottom) | 11Φ615.8720A55-10 | 276 | 00098436R | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | **NOD1D4** | Ratchet, 1/4" Drive | SKG33117562-939 | - | - | |
| 6 | | 10 mm 6 Pt Socket, 1/4" Drive | SKG33117562-657 | - | - | |
| 7 | | (10-50 in-lbs) Trq Wrench, 1/4" Drive | SEG33112395-301 | M206422 | - | |
| **Type: Restow** | | | | | | |
| 8 | **LAB1S1** TeSS | Solid Waste Container – Body (aka KTO Body) | 11Ф615.8720A55-20 | - | - | **REPORT S/N and B/C** |
| 9 | | Solid Waste Container – Lid (aka KTO Bottom) | 11Ф615.8720A55-10 | - | - | |

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| **WHC-ЕДВ-У-R&R** | | | | | | |
|---|---|---|---|---|---|---|
| **2.302 WHC ЕДВ R&R** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **LAB1P2** 0.5 CTB S/N 1221, B/C 010402J | Regen ECLSS Tox-2 PPE KIT | SEG42103702-302 | 1002 | CHCCPK02J | |
| 2 | | Safety Goggles | 16644-00000 | - | - | |
| 3 | | Silver Shield Gloves | SSG/10 | - | - | |
| 4 | | Dust Mask | 9211 | - | - | |
| 5 | **LAB1D1** | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | 935 | 00125549J | Prepositioned |
| 6 | | ЕДВ Корпус (EDV Bucket) | 11Ф615.8711-120A15-1 | 459 | 00125565J | |
| 7 | **NOD1O2** | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | 902 | 00098592R | |
| 8 | | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | 904 | 00098594R | |
| 9 | | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | 922 | 00047831R | |
| 10 | **FGB** | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | - | - | **REPORT S/N and B/C** |
| 11 | | ЕДВ Корпус (EDV Bucket) | 11Ф615.8711-120A15-1 | - | - | |
| **Type: Restow** | | | | | | |
| 12 | **LAB1S1** | ЕДВ Крышка (EDV Lid) | 11Ф615.8711-180A15-1 | 931 | 00116326J | |
| 13 | | ЕДВ Корпус (EDV Bucket) | 11Ф615.8711-120A15-1 | 455 | 00116319J | |

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| **PWD-BEV ADPTR-R&R** | | | | | | |
|---|---|---|---|---|---|---|
| **22-0309 PWD Beverage Adapter Modification and Install** | | | | | | |
| **Type: Standard** | | | | | | |
| **#** | **LOCATION** | **ITEM NAME** | **P/N** | **S/N** | **B/C** | **Notes** |
| 1 | **LAB1O4_D1** | PWD Beverage Adapter | SEG33120333-302 | 1002 | - | |
| 2 | **NOD1D4** | Ratchet, 1/4” Drive | SKG33117562-939 | - | - | |
| 3 | | 5/32” Hex Head, 1/4” Drive | SKG33117562-742 | - | - | |
| **Type: Restow** | | | | | | |
| 4 | **LAB1O4_D1** | PWD Beverage Adapter | SEG33120333-301 | - | - | |

**JAXA Tasklist Procedures:**
None

**ESA Tasklist Procedures:**
None

STS-130 EMU story

The original plan was to have Bob use EMU 3004 and Nick use EMU 3005 for all 3 docked EVAs. Then EMU 3005 would be swapped with the ISS EMU 3018 for the trip home. The following is a timeline of what occurred and is yet to happen.

<u>FD3: REBA Powered Hardware Checkout</u>
**Bob=EMU 3004 → EMU 3018**
**Nick = EMU 3005**

**Issue:** EMU 3004 was unable to deliver power from the REBA battery to the heated gloves or EMU TV.
**Workaround:** The ground team looked into the power harness R & R and even worked up a preliminary procedure, but ultimately decided that resizing ISS EMU 3018 for Bob was quicker and simpler.
**Result:** EMU 3018 was resized on FD4. EVA1 on FD5 was performed with Bob in EMU 3018 and Nick in EMU 3005.

<u>FD5: EVA1 to FD6: EMU Resize and Power Harness R&R</u>
**Bob = EMU 3018**
**Nick = EMU 3005 → EMU 3004**

**Issue1:** Bob's prime Comm Cap developed low volume issues about 4 hours into the EVA and did not recover, even at max volume.
**Workaround1:** Bob's backup Comm Cap was tested Post EVA1 for Comm volume and found to be satisfactory.
**Issue2:** Not a failure, but a combination of signatures that made EMU 3005 suspect. First it was noted during the EVA that EMU 3005 Fan RPMs dropped 400 RPMs, from 19, 300 to 18,900 RPMs. The value of 18, 900 RPM is slightly below the historically seen values. After several hours, the RPMs increased back into the nominally seen range. At all times, the lower RPMs of the motor provided airflow which was well above the minimum required for CO2 control. The other signature was when Nick called down POST EVA that his suit had water droplets in the visor and his feet were wet.
**Workaround2:** Neither of these signatures by themselves is significant enough to call EMU 3005 no-go. We've seen this type of moisture during repress in the past, as Nick has described. The FAN RPM drop could be just variations in the fan circuitry. If these two signatures were related, it would indicate a significant failure in the water processing system within the EMU (excess water in the loop could slow down the fan). While the engineering team was working on resolving these signatures, they declared EMU 3005 no-go for EVA until they could clear it. That meant resizing EMU 3004 for Nick's use and completing the procedure for the power harness R & R so Nick would have heated gloves and EMU TV.
**Result:** EMU 3004 was resized on FD6 and its power harness was successfully replaced as well. EVA2 was performed with Bob in EMU 3018 and Nick in EMU 3004.

FD7: Engineering Analysis Results

EMU 3005 is declared go for EVA. It was determined that the two signatures (slightly low RPMs and water in the suit) were unrelated and the suit is operating nominally. The overall low RPM signature is consistent with the documented pre-flight settings. The moisture Nick reported in the suit was consistent with his reported TCV (Temperature Control Valve) management. Nick's TCV settings would have built up humidity and condensation in his vent loop. Then during repress, the increased density of the suit atmosphere would have pushed any moisture built up from the vent loop out into the helmet. It is typical for an EMU's extremities to be cooler than the rest of the suit, so if humidity were to build up in the suit, water would also condense at the feet, causing wet feet.

We gave Nick additional words for ingress cooling and TCV management during the FD 6 discussion of the water droplets.

FD7: EVA2 PREP

**Bob=EMU 3018**
**Nick = EMU 3004**

**Issue:** Bob's backup comm cap worked fine in the comm check to the ground, but during the EMU display and tones test, he reported not being able to hear any tones.
**Workaround:** Power cycling the EMU did not work, so it was suggested for Bob to go to Nick's backup comm cap. They powered down the Comm circuitry to swap the comm caps, and when they repowered, Bob reported being able to hear the tones.
**Result:** Bob used Nick's backup comm cap for EVA2 and will use it for EVA3.

FD7: POST EVA2 to FD8: EMU Resize

**Bob=EMU 3018 → EMU 3005**
**Nick = EMU 3004**

**Issue:** Not only did Bob have comm issues during EVA1 and EVA 2 Prep, but STS-129 had multiple comm issues too. Initially, the STS-129 comm issues were thought to be related to the comm cap. However, given the currently seen issues, EMU 3018 is also a common denominator. It is undetermined whether power cycling the comm circuitry or switching out the comm cap was what resolved the tones issue Bob had during EVA2 PREP. Preliminary fault tree analysis has not identified a likely root cause. More testing will be done once EMU 3018 is back on the ground.
**Workaround:** Given the history of EMU 3018 with no likely root cause, we had EMU 3005 resized for Bob.
**Result:** For EVA3, Bob will be in EMU 3005 and Nick in EMU 3004, the reverse of what was planned pre-flight. The crew was directed to place Williams' comm caps in the E-Lk to use for backup comm caps for EVA3.

FD10: EVA3
**Bob = EMU 3005**
**Nick = EMU 3004**

FD11 or FD12: EMU RETURN PLAN
One more EMU resize is required to bring EMU 3018 home. Since EMU 3004 is already sized for Nick, we'll resize EMU 3018 back to Bob's configuration for the return.

EMU 3018 is cleared for contingency use because the suit has never experienced a total comm failure and successfully recovered audio function previously by swapping comm caps and power cycling the suit. If EMU CWS tones are lost, MCC will be prime to monitor and inform the crew of any fault messages. In the unlikely event of total comm loss, most contingency EVAs can be completed by a single EV crewmember. The affected crewmember can return to SCU, keep eyes on the other EV, and use hand signals per standard no comm. training.

EMU 3005 will be left on ISS per the original plan. EMU 3005 is certified for use for 6 years, and has been cleared after extensive data review. The other EMUs are only certified for 2-3 years.

MSG 117 - FD09 CREW CHOICE DOWNLINK

| TDRS | AOS | LOS | Delta (min) | Notes |
|---|---|---|---|---|
| W-171 | 8/00:35 | 8/01:08 | 33 | |
| E-275 | 8/02:01 | 8/02:11 | 10 | Gimbal flip at 02:08; Analog only |
| W-171 | 8/02:12 | 8/02:43 | 31 | |
| E-275 | 8/03:40 | 8/03:50 | 10 | Analog only |

Note: Please notify MCC-H 10 minutes prior to the event to allow for ground network configuration.

END OF PAGE 1 OF 1, MSG 117

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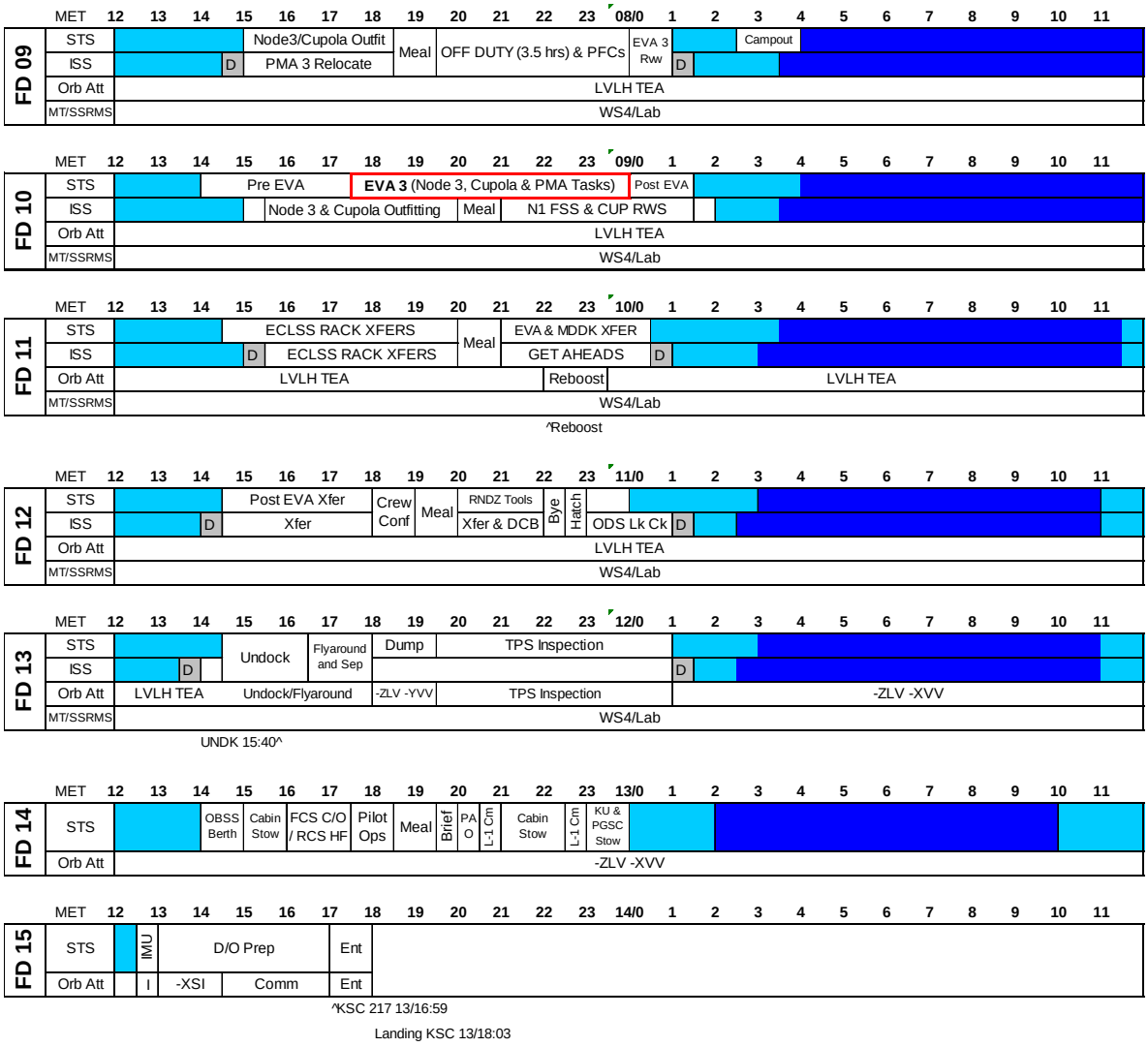
## STS-130/20A Overview Timeline 14+2 (3 EVAs)

## GMTLO 039/09:14:08 Feb 8th, 2010

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