STS-130/20A

FD 04 Execute Package

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034A	---	Daily Summary (Electronic only)
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042	32 - 33	ARED Node 3 Relocation and ACO Big Picture Words

Approved by FAO:
L. Knowlton

Last Updated: Feb 10 2010 8:27 PM GMT
JEDI *(**J**oint **E**xecute package **D**evelopment and **I**ntegration), v3.0*

"What's this guy have against us Chickens? Doesn't he know

we're the famous Denny's Superbowl XLIV commercial actors?"

MSG INDEX

MSG NO.	TITLE
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MSG-041	FD04 EMU Resize
MSG-042	ARED Node 3 Relocation and ACO Big Picture Words

1. Post-Sleep Cryo Config

For today's Post-Sleep cryo config, O2 tanks 2,3 & 4 will be active and H2 Tanks 2 and 5 will be active.

R1 O2,H2 MANF VLV TK2 (two) - OP (tb-OP)
O2 TK3 HTRS A,B (two) - AUTO

A11 CRYO TK4 HTRS O2 A,B (two) - AUTO

A15 CRYO TK5 HTRS O2 A,B (two) - 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
HTRS H2 A,B (two) - OFF

A11 CRYO TK4 HTR O2 A,B (two) - OFF
HTRS H2 A,B (two) - AUTO

R1 O2,H2 TK1 HTRS A,B (four) - AUTO
TK2 HTRS A,B (four) - OFF
O2 TK3 HTRS A,B (two) - OFF
O2,H2 MANF VLV TK1 (two) - CL (tb-CL)

2. Pre-Sleep SM CHECKPOINT INITIATE Procedure (ORB OPS Page 4-8) Notes:

   Generally speaking, MMU 2 is left ON during Flight Day 1 to allow INCO time for dumping data to the ground. A real time call is made to power OFF MMU 2 on that day. For the remainder of the mission, with the exception of ENTRY Day, MMU 2 is only required to be ON during the SM CHECKPOINT INITIATE procedure. Power ON MMU 2 in step 1 and power OFF MMU 2 in step 5.

   In step 4, only perform ITEM 23 if there is no asterisk present. The intention is to leave checkpoint retrieve enabled throughout the mission.

3. ISS C&W Reminder:

   We are still assessing the cause of the S211 ISS CW CAB FIRE messages you received last night. As a reminder, all ISS C&W messages (Fire, Depress, Tox Atm) are currently inhibited at the SM. You can still hear ISS C&W tones through the speaker and can monitor ISS C&W using the Caution and Warning (C&W) Summary on the Aft Flight Deck PCS.

4. With regards to the SSRMS FOR OCAS PCS problems you had yesterday: there is a SPN-documented problem with the SSRMS FOR OCAS PCS page that prevents it from displaying the target and error of an FOR OCAS. We have seen this before on-orbit. As you did yesterday, continue to use the RWS overlay to verify all FOR OCAS targets and errors.

5. Pre & Post Sleep O2/N2 Controller Config:

   For the remainder of the docked mission while performing step 4 of the FLIGHT DECK ACTIVITY LIST of PRE-SLEEP ACTIVITY and step 6 of the FLIGHT DECK ACTIVITY LIST of POST-SLEEP ACTIVITY (ORB OPS, CREW SYS), action will be taken for O2/N2 CNTLR VLV SYS 2.

6. Due to the failure of the EMU Power Harness on EMU 3004, you will need to perform a resize of EMU 3018 for Bob to use. This will give you back helmet camera and glove heater power. The procedure for resizing EMU 3018 (MSG 041) is scheduled for Zambo and Soichi today, and it includes a leak check for EMU 3018 after the resize is complete. Zambo and Soichi are also timelined for REBA-INSTL and REBA-PWRD H/W-CK on both suits following the resize.

   On the CONSUMABLES TRACKING CUE CARD & FS CC 10-15,
   In the EMU column, in rows EVA1, EVA2, and EVA3, change 3004 to 3018.
   In the EMU column, Return Config, EV1 row, change 3004 to 3018
   In the EMU column, Return Config, EV2 row, change 3018 to 3004

7. REPLACE PAGES 2-10 THROUGH 2-13 and 3-32 THROUGH 3-39.

FD04 02/10/10 13:58:11 **REPLANNED**

GMT 02/10/10 (041) — 12 13 14 15 16 17 18 19 20 21 22 23 00 01 02 03 04 05 06 07 08 09 — 22 23 02/11 003/00

MET Day 002

STS-130	CDR ZAMKA	LOG	POST SLEEP	N2-I	POST SLEEP				ARED		EMU RESIZE	REBA*	REBA C/O	N2-T	XFER OPS		MEAL	PAO	OFF DUTY					♣
	PLT VIRTS	LOG	POST SLEEP		MPC MUX T/S	POST SLEEP	CWC-I	FILL #3	CWC-I	FILL #4	STS O2 P/B CONFIG		ARED	NLP VAC TERM 1	CWC-I	FILL #5	CWC-I XFER (3)	MEAL	PAO	OFF DUTY				⊕
	MS1 HIRE	POST SLEEP					MCIU*	XFER	UPDATE		EXERCISE		P/TVO6	S/U	XFER OPS			MEAL	PAO	OFF DUTY				♦
	MS2 ROBINSON	POST SLEEP				EXERCISE			GLCR	OCA 48M T/S	XFER OPS			EVA TOOL CONFIG	XFER OPS			MEAL	PAO	OFF DUTY				⊛
	MS3 PATRICK	LOG	POST SLEEP						EVA TOOL CONFIG						TOOL AUDIT	EXERCISE		MEAL	PAO	OFF DUTY				♥
	MS4 BEHNKEN	POST SLEEP							EVA TOOL CONFIG						EXERCISE		TOOL AUDIT	MEAL	PAO	OFF DUTY				△
STS	DAY/NIGHT																							
	ORBIT	40	41			42				43				44			45			46		47		48
	TDRS W E Z																							
	ORB ATT	BIAS -XLV -ZVV																						
ISS	TDRS AVAIL																							
	NOTES	*FILTER CK																						♣EVA 1 PRO ⊕EVA 1 PRO ♦EVA 1 PRO ⊛EVA 1 PRO △EVA 1 PRO

3

FD04

GMT 02/10/10 (041)

MET Day 002

12 13 14 15 16 17 18 19 20 21 22 23 003/00 22 23 02/11 01 02 03 04 05 06 07 08 09

ISS

TDRS AVAIL	
DAY/NIGHT	
DAILY ORBIT	14 15 16 1 2 3 4 5 6
TLM FORMAT	122
ATTITUDE	-XVV +ZLV TEA
ALL VHF	

EXP 22

ISS CDR WILLIAMS	SLEEP; POST SLEEP; DPC; DA INSTL; WRS-FCPA-R&R; WPA-WWT-OFFLOAD; FLT INST; ♣; MEAL; PAO; PAO; OFF DUTY; T2; ARED; ⊕
FE-1 SURAEV	ЭЛКТ; POST SLEEP; PMC; POST SLEEP; ♦; DPC; PW; ТКГ-36P-IMS-XFER1; TVIS; ®; MEAL; ♥; ♠; ϕ; Δ; VELO
FE-4 KOTOV	МБИ-12; МБИ-12; POST SLEEP; PMC; POST SLEEP; DPC; PW; •; ◊; ∇; *; MEAL; ИП-1; ϕ; СОЖ-MNT; TVIS; ARED
FE-5 NOGUCHI	POST SLEEP; DPC; SODI IVIDIL SETUP; EVA CAMERA CNFG; STS O2 P/B CONFIG; EMU RESIZE; REBA*; REBA C/O; ARED; MEAL; OFF DUTY; PMC; T2
FE-6 CREAMER	SLEEP; POST SLEEP; DPC; PW; ABRS REINIT; LOOP; FLOUSH; MWA SU; PHOTO; TAGES REPLANT; TOCA; ANLYS; T2; ♣; CWC; ⊕; ♦; ®; ♥; HD SU; MEAL; PAO; OFF DUTY; ARED; OFF DUTY; ⊕

TDRS W E Z

ISS SSRMS POS

STS ORB ATT — BIAS -XLV -ZVV

NOTES

♦Д33-13-FE1-TL •ТКГ-36P-IMS-XFER1 ∇ТКГ-36P-IMS-XFER1 ♣CNDS TANK DSCNCT ♥Д33-12-FE1-CLSOUT ⊕EVA 1 PRO

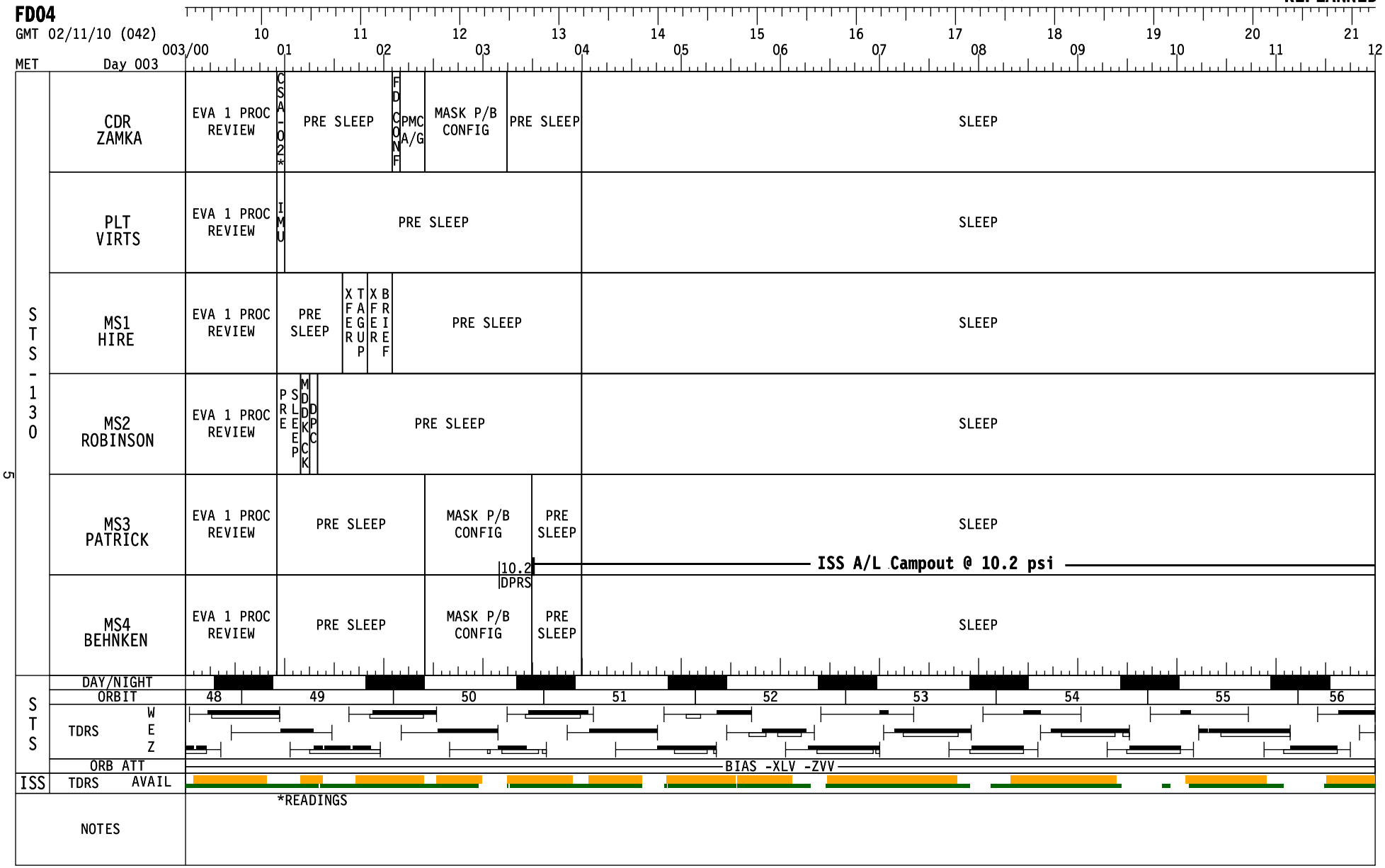
◊Ф-ОБОРУД-DNLK *Ф-ОБОРУД-DNLK ®Д33-12-FE1-PREP-EXE ΔД33-12-FE1-CLSOUT

♣ALTEA-DOSI-DEACT ♠TEX-15-DAKON-CK

⊕P/TV S/U ϕСУБА-БРИ-R&R-PREP

♦P/[illegible]-XFER

FD04
GMT 02/11/10 (042)
MET Day 003



FD04 02/10/10 13:58:11 **REPLANNED**

GMT 02/11/10 (042)

MET Day 003 — 003/00 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: 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14
- TLM FORMAT: 122 | 112 | 122 | 111
- ATTITUDE: -XVV +ZLV TEA
- ALL VHF

EXP 22

ISS CDR WILLIAMS	EVA 1 PROC REVIEW	UPA FILL	DPC	PS	♣	PRE SLEEP-ISS	SLEEP
FE-1 SURAEV	SSKT	PW	DPC	PRE SLEEP-ISS			SLEEP
FE-4 KOTOV	ARED	PW	DPC	PRE SLEEP-ISS			SLEEP
FE-5 NOGUCHI	T2 / EVA 1 PROC REVIEW	PW	DPC	PRE SLEEP-ISS			SLEEP
FE-6 CREAMER	EVA 1 PROC REVIEW	PW / HAM	DPC	PRE SLEEP-ISS			SLEEP

TDRS W E Z

ISS STS SSRMS POS / ORB ATT: BIAS -XLV -ZVV

NOTES

♣MASK P/B CONFIG

STS-130 FD04

GMT Date 02/10 (041) | W | TDRSE | Z | D/N | ORB | MET Day 002 | STS ATT

22:00 | 23:00 | 00:00 | 01:00

40 | 41 | 42 | 43

12:00 | 13:00 | 14:00 | 15:00 | 16:00

BIAS - XLV - ZVV

CDR ZAMKA

SLEEP LOGBOOK (ORB OPS, SDBI)
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)
√ HUM SEP FOR H2O ACCUMULATION

A N2 REPRESS USING P/L N2 VLVS
(ORB OPS, ECLS) Steps 1-6;
MCC will TMBU S/W FDA in Step 1.
On MCC GO, perform Step 7.
Work ()s for all steps performed

M069M LEH 02 8 vlv - CL
N2 REPRESS INIT A
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MED OPS: 2.1.175 ARED - EXERCISE
Login as ARED Guest and refer to MSG 030 how to deviate using the ARED Display. Verify X-Rotation Dashpot Inspection complete.

PLT VIRTS

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

MPC/MUX TROUBLESHOOTING
Ref. MSG 038
KU TDRE: 13:41-14:00 Gimbal Flip: 13:45
POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

CWC-I FILL (ORB OPS, CWC OPS)
Fill #3
Ref. MSG 027

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

JOINT OPS: 3.120 PREBREATHE USING SHUTTLE
02 SETUP Steps 2-6, Ground will perform steps 2.4, 6.14, and 8

MS1 HIRE

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

FD04 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.

L17 Check MCIU filter screen
TRANSFER UPDATE
Ref. Transfer List & MSG 035

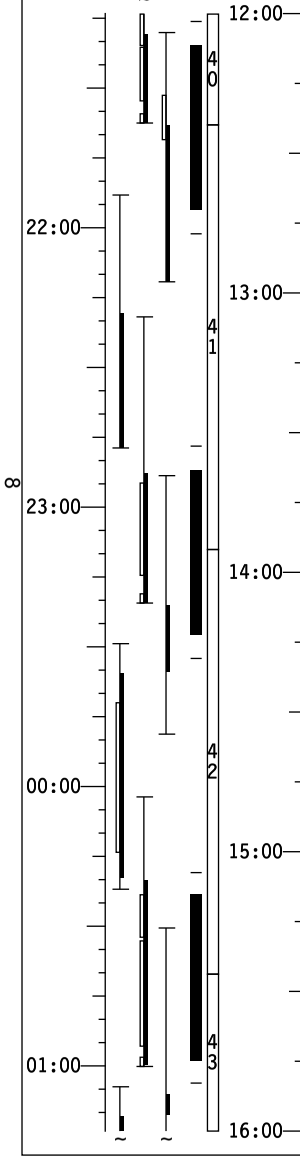
EXERCISE

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

Notes

STS-130 FD04

GMT Date 02/10 (041) | W | TDRSE | Z | D/N | ORB | MET Day 002 | STS ATI



12:00
13:00
14:00
15:00
16:00

BIAS - XLV - ZVV

MS2 ROBINSON

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EXERCISE

GLACIER RECORD QUICK DIAGNOSTICS DATA(NOM)
(ASSY OPS, P/L)

48 MBPS OCA TROUBLESHOOTING Ref. MSG 039
KU TDRE: 15:10-15:18
KU TDRE: 15:20-15:41 Gimbal Flip: 15:32

TRANSFER OPS
Ref. Transfer List & MSG 035

MS3 PATRICK

SLEEP LOGBOOK (ORB OPS, SDBI)

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EVA 1 TOOL CONFIG
(EVA, TIMELINES)

MS4 BEHNKEN

POST-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

EVA 1 TOOL CONFIG
(EVA, TIMELINES)

Notes

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STS-130 FD04

GMT Date 02/11 (042) | W | TDRSE | Z | D/N | ORB | MET Day 002 | STS ATT | CDR ZAMKA | PLT VIRTS | MS1 HIRE | Notes

16:00

MED OPS: 2.1.175 ARED - EXER Ref. Pg 3-32
EMU RESIZE
Ref. MSG 032, Item 6 & MSG 041

JOINT OPS: 3.120 PREBREATHE USING SHUTTLE O2 SETUP Ref. Page 3-32
MED OPS: 2.1.175 ARED - EXERCISE
Login as ARED Guest and refer to MSG 030 how to deviate using the ARED Display. Verify X-Rotation Dashpot Inspection complete.

P/TV06 ROBOTICS OPERATIONS (PHOTO/TV, SCENES) Perform SETUP
TRANSFER OPS
Ref. Transfer List & MSG 035

02:00

17:00

EVA SYS:1.307 REBA INSTLRef.MSG 032,Item 6
Ref. STS-130 Consumables Tracking CC(EVA)
EVA SYSTEMS: 1.403 REBA POWERED HARDWARE CHECKOUT
Perform for both EMU 3018 and 3005
Ref. MSG 032, Item 6

NLP TERMINATION (ASSY OPS, P/L)
Terminate GAPs A-P

03:00

N2 REPRESS TERM (On MCC GO) B
TRANSFER OPS
Ref. Transfer List & MSG 035

CWC-I FILL (ORB OPS, CWC OPS)
Fill #5
Ref. MSG 027

18:00

CWC-I TRANSFER
Transfer 3 CWC-Is to ISS

B N2 REPRESS USING P/L N2 VLVS (ORB OPS, ECLS)
On MCC GO,perform Steps 8-13.
MCC will TMBU S/W FDA in Step 13.
Work ()s for all steps performed

04:00

19:00

MEAL | MEAL | MEAL

05:00

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 19:04-19:46
19:47-20:15
Ref. MSG 036

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 19:04-19:46
19:47-20:15
Ref. MSG 036

PUBLIC AFFAIRS EVENT
ISS KU AVAIL: 19:04-19:46
19:47-20:15
Ref. MSG 036

20:00

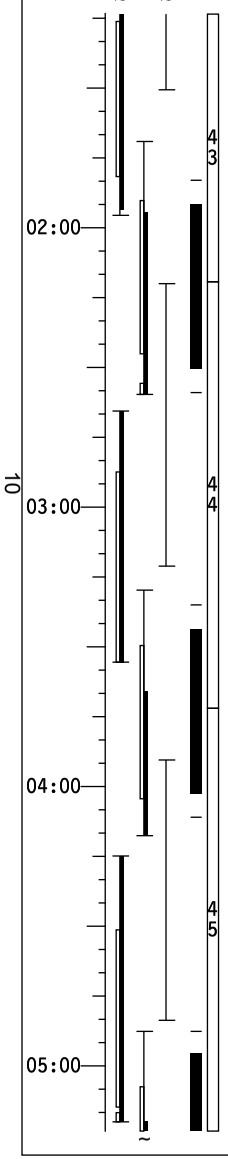
OFF DUTY | OFF DUTY | OFF DUTY

BIAS - XLV - ZVV

6

STS-130 FD04

GMT Date 02/11 (042) | W | TDRSE | Z | D/N | ORB | MET Day 002 | STS ATI



MET	MS2 ROBINSON	MS3 PATRICK	MS4 BEHNKEN	Notes
16:00	TRANSFER OPS Ref. Transfer List & MSG 035	EVA 1 TOOL CONFIG (EVA, TIMELINES)	EVA 1 TOOL CONFIG (EVA, TIMELINES)	
	EVA 1 TOOL CONFIG (EVA, TIMELINES)			
17:00	TRANSFER OPS Ref. Transfer List & MSG 035	EVA TOOL AUDIT Ref. EVA 1 TOOL CONFIG (EVA, TIMELINES)		
			EXERCISE	
18:00		EXERCISE	EVA TOOL AUDIT Ref. EVA 1 TOOL CONFIG (EVA, TIMELINES)	
19:00	MEAL	MEAL	MEAL	
	PUBLIC AFFAIRS EVENT ISS KU AVAIL: 19:04-19:46 19:47-20:15 Ref. MSG 036	PUBLIC AFFAIRS EVENT ISS KU AVAIL: 19:04-19:46 19:47-20:15 Ref. MSG 036	PUBLIC AFFAIRS EVENT ISS KU AVAIL: 19:04-19:46 19:47-20:15 Ref. MSG 036	
20:00	OFF DUTY	OFF DUTY	OFF DUTY	

BIAS - XLV - ZVV

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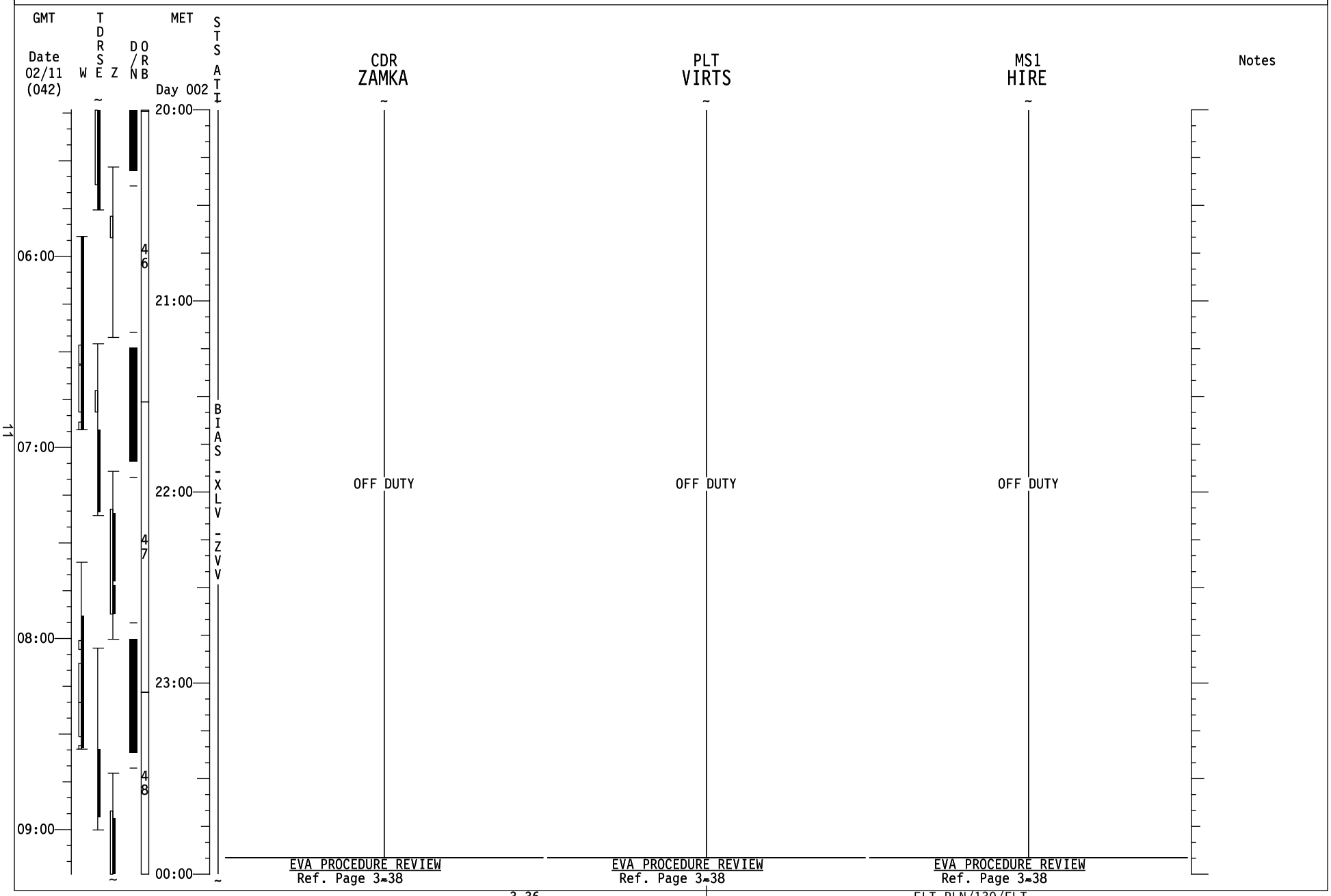
STS-130 FD04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(042)
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CDR
ZAMKA
OFF DUTY
PLT
VIRTS
OFF DUTY
MS1
HIRE
OFF DUTY
Notes
EVA PROCEDURE REVIEW
Ref. Page 3-38
EVA PROCEDURE REVIEW
Ref. Page 3-38
EVA PROCEDURE REVIEW
Ref. Page 3-38

STS-130 FD04

GMT Date 02/11 (042) | W | T D R S E | Z | D / N | O R B | MET Day 002 | 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

46 — 47 — 48

BIAS -XLV -ZVV

OFF DUTY | OFF DUTY | OFF DUTY

EVA PROCEDURE REVIEW
Ref. Page 3-39

EVA PROCEDURE REVIEW
Ref. Page 3-39

EVA PROCEDURE REVIEW
Ref. Page 3-39

STS-130 FD04

GMT Date 02/11 (042) | W | TDRSE | Z | D/N | ORB | MET Day 003 | STS ATT

00:00 01:00 02:00 03:00 04:00

10:00 11:00 12:00 13:00

48 49 50 51

BIAS-XLV-ZVV

CDR ZAMKA

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)

CSA-02 READINGS
Activate 2 CSA-02s in E/L for Campout.
Notify MCC-H of readings for accuracy ck.
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/G2

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 1 BRIEFING CARD
(EVA, TIMELINES)

IMU STAR OF OPPTY ALIGN (ORB OPS, GNC)

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

MS1 HIRE

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

TRANSFER TAGUP
Coordinate with transfer counterpart

TRANSFER BRIEF
Call down status to MCC

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

Notes

CREW WAKE AT 03/12:00

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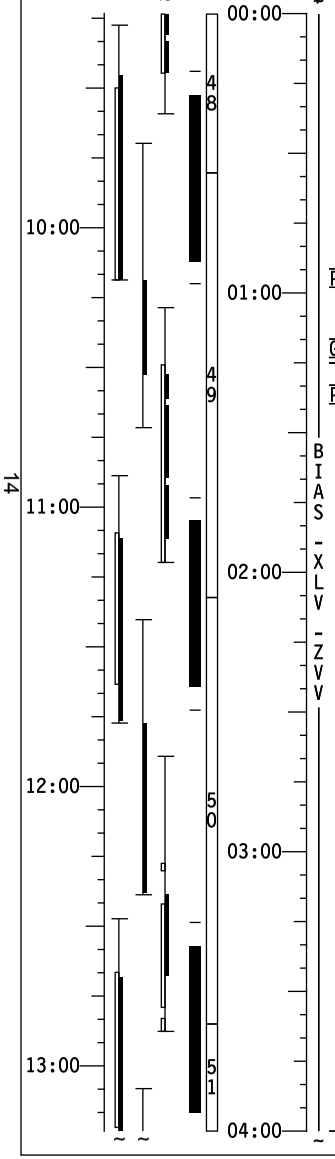
STS-130 FD04

GMT Date 02/11 (042) | W | TDRSE | Z | D/N | ORB | MET Day 003 | STS ATT | MS2 ROBINSON | MS3 PATRICK | MS4 BEHNKEN | Notes



MS2 ROBINSON

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

GLACIER STATUS CHECK (ASSY OPS,CC)

DAILY PLANNING CONFERENCE

PRE-SLEEP ACTIVITY
(ORB OPS, CREW SYS)

MS3 PATRICK

EVA PROCEDURE REVIEW
Ref. EVA 1 BRIEFING CARD
(EVA, TIMELINES)

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 1 BRIEFING CARD
(EVA, TIMELINES)

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)

CREW WAKE AT 03/12:00

Good Morning Endeavour!!!!

Great news!!! No Focused Inspection is required!!!

What a picture perfect rendezvous yesterday!!! Thanks for the flawless execution!!!

In case you are not aware of it, your docking to station yesterday created, for the very first time, a one million pound artificial satellite circling the earth! Congratulations!

Have a great day!!!

YOUR CURRENT ORBIT IS: 187 X 182 NM

NOTAMS: TWO CHANGES (ADDED DOV, FOK)

EDW -	TEMP RWY IN USE. PERM RWY CLOSED FOR CONSTRUCTION.
EDW -	LAKEBED RWYS RED.
NOR -	LAKEBED RWYS USABLE. DRYING OUT.
DOV -	**CLOSED.**
FOK -	**CLOSED.**
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 OTS.
PTN -	CLOSED FOR RUNWAY CONSTRUCTION.
IKF -	NOT USABLE. NO AGREEMENT.
BEN -	NOT RECOMMENDED/NOT SUPPORTED.

NEXT 2 PLS OPPORTUNITIES:

EDT22R	ORB 48 – 2/23:54	SCT120	7	260/5P8
EDT22R	ORB 64 – 4/00:17	BKN250	7	260/4P6

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	275 FPS
ARCS (TOTAL ABOVE QTY1)	38 FPS
TOTAL IN THE AFT	313 FPS
ARCS (TOTAL ABOVE QTY2)	67 FPS
FRCS (ABOVE QTY 1)	28 FPS
AFT QTY 1	82 %
AFT QTY 2	44 %

SYSTEM	FAILURE	IMPACT	WORK AROUND
GNC	TCS CW Laser provided bad data from approach through docking.	TCS currently considered failed. TCS may not be used as the prime sensor for Prox Ops.	HHL will be prime sensor for undock/fly-around. TCS will be powered for undock for evaluation
EVA	During REBA-PWRD H/W-CK (GMT 041/11:39), the Helmet Camera and Glove heaters on EV1 (Be) suit (EMU 3004) did not receive power. Trouble-shooting cleared the REBA battery, indicating the failure is likely with the EMU power harness.	No Glove Heaters or WVS available on EMU 3004.	Resize using backup Suit 3018.

END OF PAGE 2 OF 2, MSG 033A

Good morning Kay, Terry, & Steve,

It was great to talk to all of you yesterday! You have had an excellent start to the transfer portion of your mission, and are 6 percent complete overall – right on target. Today there will be a couple water samples generated by an ISS activity. Other than that, you do have a significant amount of XFER OPS time today. During that time, we recommend starting work on the 5 MLE bags and some of the swaps, as outlined in the choreography below. If you complete the items in the choreography, you will remain on target. Let us know if you have any questions!

The Transfer List Excel file, FD04_Transfer_List_STS130.xls, is located on the KFX machine in **C:\OCA-up\transfer** (and available via the **PGSC homepage**).

For ISS, the Transfer List Excel file, FD04_Transfer_List_STS130.xls, is located in **K:\OCA-up\transfer**.

<u>Change Pages</u>
Please incorporate changes as follows:

In the Transfer List **RESUPPLY** tab
Replace the following pages:
Resupply – 14

In the Transfer List **RETURN** tab
Replace the following pages:
Return – 1, 7

Pen and Ink the following page:
Return – 8:
For items 737 & 740 in the Stowage at Undock field, strikethrough "(in CTB)"

<u>FD04 Choreography</u>

- Jeff: Transfer waste water samples per WPA-WWT-OFFLOAD activity (Item 737)
- XFER OPS:
  - Once Jeff has removed the Distillation Assembly, item 9.1 is complete. The foam (item 9.2) is returning in the shuttle behind the retention net. Bag A can be transferred back to shuttle (Item 700).
  - Once Jeff has removed the old FCPA from its foam, use the foam to pack the old FCPA for return (Item 731)
  - Transfer 5 MLE bags B, F, H to Columbus (Items 6, 8, and 10)
  - Transfer Nanoskeleton h/w (Item 15)
  - Begin unconstrained swaps:
    - Multimeters (Items 1 and 722)
    - Torque wrench (Items 10.3 and 730)
  - Complete unpack of Bag E (Items 4, 4.1, and 5)

Have a great day!

- The 20A Transfer Team

20A Transfer Choreography

FD05

- XFER OPS:
  - Robinson: Prep items needed for N3 vestibule outfitting (Items 6.1, 6.2, and 6.3) Move foam from these items per return items 716 and 717.
  - Complete unpack of Bag B (Items 10.1 and 10.2)
  - Complete unpack of Bag D (Item 13)
  - Unpack Seat 7 bag (Items 30, 31, and 32)
  - Soichi: Transfer items with special packing (Items 610, 611, 711, and 723)
  - Complete unconstrained swaps:
    - CDRA beds (Items 8.1 and 608)
  - Work on unconstrained middeck locker resupply transfers to ISS (Items 2, 21, 22, 26, and 27)

FD06 (no xfer brief)

- Williams: Transfer GSC per EHS-N3 AIR-SAMPLE activity (Item 719)
- Noguchi: Retrieve PEPS items from N3 CTBs per PEPS UNSTOW activity (Items 42.1 and 45.1)
- Creamer: Retrieve NPV and S0 cable from N3 CTB per EVA H/W UNSTOW activity (Items 48.1 and 48.2)
- Patrick: Transfer CGBAs per CGBA UNIT SWAP activity (Items 29 and 706)

FD07

- Virts: Transfer LiOH between Node 3, Middeck, and ISS stockpile per LiOH TRANSFER activity (Items 44, 44.1, 48, 48.3, 802, 803, and 736)
- Virts & Hire: Relocate D4 and D5 ISP CTBs per ISP STOWAGE TRANSFER activity (Items 41, 42, 43, 45, 46, 47, 49, 49.1, and 50)
- XFER OPS:
  - Complete Food Warmer swap (Items 20, 20.1, and 718)

FD08

- Creamer: Transfer Node 3 ITCS sample per N3-LTL-ITCS-SAMPLE activity (Item 740)
- Behnken & Williams: Transfer cold samples from ISS MELFI to shuttle Glacier per MLF GLCR 20A SMP XFR activity (Item 721)
- XFER OPS:
  - Transfer PWR (Items 17 and 725)
  - Complete unconstrained middeck locker resupply transfers (Items 28 and 38)
  - Swap Potable Sample Adapters (Items 801 and 735)
  - Work on return transfers to 5 MLE Bags (Items 600, 602, 603, and 732)

FD09

- Virts: Return old C&W panel per C&W PANEL COVER DEPLOY activity (Item 705)
- XFER OPS:
    - Swap MPCs (Items 40 and 720)

FD10

- XFER OPS:
    - Continue return transfers (Items 400, 401, 402, 403, 403.2, 403.3, 404, 601, 604, and 605)

FD11

- Williams: Transfer returning blood sample per BLD STW activity (Item 704)
- Creamer: Transfer returning saliva sample per SLV STW activity (Item 728)
- Robinson: Transfer AFD PCS per AFT PCS XFER activity (Item 39)
- Robinson: Transfer SSC back to ISS during SSC RETURN activity (Item 804)
- Behnken: Transfer SAFER to shuttle per SAFER XFER activity (Item 714)
- Patrick & Behnken: Transfer EVA items to shuttle per EVA RECONFIG & XFER activity (Items 702, 712, 713, and 715)
- Noguchi: Transfer returning RAMs to shuttle per RAM INSTALL activity (Item 726)
- Noguchi: Transfer DCBs to shuttle per DCB XFR activity (Item 709 and 710)
- XFER OPS:
    - Complete water hardware transfers (Items 24, 25, and 729)
    - Transfer Return to Houston Imagery ziplock (Item 727)
    - Transfer Seat 7 Bag return item (Item 406)
    - Transfer remaining 5 MLE bags (Items 408, 701, and 703)
    - Transfer remaining items (Items 707, 708, and 738)

5 MLE Bag Plan (9 total)

- Bags B & H: to Columbus for temp stow (FD03-11)
- Bag F: to Columbus permanently (return prepacked 5 MLE in its place FD11)
- Bags C, D & E: remain on shuttle for unpacking/repacking
- Bag A: contains UPA DA, temp stow in JEM for FD04
- Bags G & I: handled via EVA procedures (G will be temp stowed in Node 1)

CHNG	☑	FD	Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / **Constraints** / **Comments
X				801	Potable Sample Adapter	1	MF57K (in Sample/ Purge Kit s/n 1001)		NOD2O2 (in Sample/ Purge Kit s/n 1008, in M-02 Bag s/n 1026)	0.63	**Transfer FD05 or later.** **Item has a blue handle. Swaps with return item 735.
				802	LiOH [STS 130/20A # 1-9, USED]	9 cans	Shuttle LiOH Box		NOD3A2 (in CTBs)	85.23	**Transfer on FD07 per LiOH XFER activity.**
				803	LiOH [STS 130/20A # 24-31, NEW]	8 cans	Shuttle LiOH Box		NOD1S4_D2	59.76	**Transfer on FD07 per LiOH XFER activity.**
				804	SSC 20	1		Shuttle Flight Deck	LAB1P6	7.94	**Transfer on FD11 per SSC XFER activity.** **Temp stowed on shuttle for docked mission only. Reference return item 739.

CHNG	☑	FD	Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / **Constraints** / **Comments
			Middeck Return								
			Prepacked Bags/Items								
				400	20A Return Bag 400	1.0 CTB	NOD2D2		MF43O	24.80	
				401	20A Return Bag 401	0.5 CTB	NOD2D2		MF14G	19.00	
				402	20A Return Bag 402	0.5 CTB	NOD2D2		MF14G	12.30	
				403	20A Return Bag 403	1.0 CTB	NOD2D2		MF14K	22.40	
				403.2	D2Xs Camera [S/N 1108]	1	A/L1_Deployed		MF14K (in CTB)	-	**Remove and temp stow battery, memory card, flash and lens from D2X camera before transfer.**
				403.3	D2Xs Camera [S/N 1106]	1	LAB1_Deployed		MF14K (in CTB)	-	**Remove and temp stow battery, memory card, flash and lens from D2X camera before transfer.**
				403.4	G1 Camcorder [S/N 1010]	1	LAB1_Deployed		MF14K (in CTB)	-	**Remove and temp stow battery, wide angle lens and videotape from G1 Camcorder. If a lens hood is attached, leave it on.**
X				404	20A Return Bag 404	1.0 CTB	NOD2D2		MF43H	27.80	**Location already contains samples. Add samples to this CTB and clamshell the trays around the CTB. If CTB does not fit, all samples can be stowed directly into the trays.**
				406	20A Return Bag 406	3.0 CTB	NOD2D2		Middeck Seat 7 Bag	73.80	
				408	20A Return Bag 408	5 MLE Bag	JLP1S1 rack front		MD CEIL PORT 2	110.33	

STS-130 / 20A Return Transfer List

CHNG	☑	FD	Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / **Constraints** / **Comments
				730	Torque Wrench Bag [s/n 1004] [contains Torque Wrench s/n 1008]	1	A/L1O1 (in M-02 Bag S/N 1038)	COL1D3 (in Bag B)		5.10	**Swap with resupply item #10.3.** **Place this item inside bubble ziplock for return. Remove yellow tag.**
				731	WRS Fluids Control & Pump Assembly [old]	1	LAB1P4 (WRS2 Rack) installed		MD CEIL PORT 1 (in Bag E)	101.50	**Transfer on FD04 after WRS-FCPA-R&R activity. Use foam from resupply FCPA (resupply item #3) to pack for return.** **Tape seam of foam cushion clamshell. Place inside Hefty bag, tie and tape.**
				732	WRS Recycle Filter Tank Assembly [s/n 001]	1	LAB1P4 (WRS2 Rack) installed		MD FLOOR STBD 1 (in Bag C)	148.00	**Transfer after RFTA R&R activity on FD11. Use foam launched in Node 3 for return packing (reference resupply item #49.1).** **Foam cap transfers with item.
X				735	Potable Sample Adapter	1	NOD2O2 (in Sample/ Purge Kit s/n 1008, in M-02 Bag s/n 1026)		MF57K (in Sample/ Purge Kit s/n 1001)	0.63	**Transfer FD05 or later.** **Item has a blue handle. Swaps with resupply item 801.
				736	LiOH [STS-128/17A #48-52 & 70-72]	8 cans	NOD1S4_D2		Shuttle LiOH Box	59.76	**Transfer on FD07 per LiOH XFER activity.**

[ ] - notes included by transfer team, - not on actual label

PAO Event Summary / Sequence of Voice Calls
KXTV-TV, Sacramento, CA / WKRG-TV, Mobile, AL / KMOX Radio, St. Louis, MO

Date: FD 4, Wednesday, February 10, 2010

Start Event: 02/19:35 MET / 8:49pm PST / 10:49pm CST / 04:49 GMT
Orbit 45 / ISS Ku
NOTE: A Ku comm. Dropout of approx. 2 min. in duration is expected at 11:00pm CST / 05:00 GMT; the event will resume after comm. reacquisition.

Duration: 20 minutes (approx. 6 ½ minutes per client)

Location: Harmony Node or crew choice

Participants: *Flight Crew:* STS-130 Commander George Zamka, Pilot Terry Virts, Mission Specialists Kay Hire, Steve Robinson, Nicholas Patrick and Bob Behnken; Expedition 22 Commander Jeff Williams and Flight Engineer T.J. Creamer

Media Clients: KXTV-TV's Dale Schornack; WKRG-TV's Tiffany Craig; and KMOX Radio's Jon Grayson

Anticipated Topics:
1. Mission objectives and events to date
2. Robinson's hometown ties to Sacramento & his mission duties
3. Hire's hometown ties to Mobile & her mission duties
4. Behnken's hometown ties to Missouri & his mission duties, including three upcoming spacewalks
5. Remaining shuttle missions
6. NASA's plans for the future

Notes:
1. Event on U.S. ISS HD MPC video & audio down / S/G-2 up to the crew.
2. Please use the Shure microphone on the MPC; **turn on the mic switch to answer, and <u>turn off the mic switch when you are finished with each answer.</u>**
3. Check Endeavour / ISS location over Earth before event.

ISS Capcom: Endeavour / ISS, this is Houston. Are you ready for the event?

Endeavour / ISS: Houston, this is Endeavour / ISS. We are ready.

ISS Capcom: KXTV-TV, this is Houston. Please call Endeavour / ISS for a voice check.

KXTV-TV: Endeavour / ISS, this is KXTV-TV. How do you hear me?

Endeavour / ISS: (reports voice quality. If acceptable…)
We are ready for questions.

KXTV-TV: (conducts Q&A with crew, then…)

Houston ACR: Endeavour / ISS, this is Houston ACR. That concludes the KXTV-TV portion of the event. Please stand by for a voice check from WKRG-TV.

WKRG-TV: Endeavour / ISS, this is WKRG-TV. How do you hear me?

Endeavour / ISS: (reports voice quality. If acceptable…)
We are ready for questions.

WKRG-TV: (conducts Q&A with crew, then…)

Houston ACR: Endeavour / ISS, this is Houston ACR. That concludes the WKRG-TV portion of the event. Please stand by for a voice check from KMOX Radio.

KMOX Radio: Endeavour / ISS, this is KMOX Radio. How do you hear me?

Endeavour / ISS: (reports voice quality. If acceptable…)
We are ready for questions.

KMOX Radio: (conducts Q&A with crew, then…)

Houston ACR: Endeavour / ISS, this is Houston ACR. That concludes the event.

ISS Capcom: Thank you, KXTV-TV, WKRG-TV and KMOX Radio. Endeavour / ISS, we are now resuming operational audio communications.

Please perform the MPC and MUX troubleshooting steps below:

PWR CYCLE MUX

L10(MUX) MUX/VTR/CC PWR – OFF
VTR/CC PWR – OFF

R1 PL AUX – OFF (wait 10 seconds)
– ON

MUX and MPC STATUS CHECK

Perform:
HD DIGITAL VIA G1
(CUE CARD, DIGITAL PLAYBACK) ACTIVATION, including “If Dnlk” steps.

Delta the G1 steps as follows to give LIVE video:
G1 PWR dial – GREEN BOX

Report the status of the following to MCC:
MPC 5V,3V, HDV and TAXI LEDs (All Green is a good status)
MUX CH2 F/O OK and DATA LEDs (Both Green is a good status)

PLAYBACK VIDEO

If LEDs are all GREEN and Video seen at MCC:
G1 PWR dial - VCR/PLAY

Perform:
HD DIGITAL VIA G1
(CUE CARD, DIGITAL PLAYBACK) OPERATIONS

If no joy, configure for analog playback,

✓MCC (MCC must also reconfigure)

A7 VID OUT DNLK pb – push
VID IN FLT DECK pb – push

G1 PWR dial - VCR/PLAY
PLAY pb - press

POST TEST

VTR CLOCK SET (P/TV, REF PROC)

Perform:
HD DIGITAL VIA G1
(CUE CARD, DIGITAL PLAYBACK) DEACTIVATION

END OF PAGE 1 OF 1, MSG 038B

1 - 48 Mbps Test with Ground

On MCC GO, perform:

RECONFIGURE OCA DOWNLINK RATE (PL MAX)
(ORB OPS, PGSC), Part C (Omit step 4)
Step 1.3 (MUX-ON) will be an action (MUX will be off following MPC troubleshooting)
In step 1.4, pause 2 sec at each position of the BYPASS switch

Notify MCC when setup is complete
When AOS Ku, MCC will attempt to lock on OCA 48 Mbps downlink.

2 - PWR CYCLE MUX

If MCC cannot lock on OCA 48 Mbps downlink, on MCC GO

L10(MUX)	MUX/VTR/CC PWR - OFF
	VTR/CC PWR - OFF
R1	PL AUX - OFF (wait 10 seconds)
	- ON
L10(MUX)	MUX/VTR/CC PWR - ON
	MUX BYPASS - ACT
	- BYPFR

Notify MCC when steps are complete
When AOS Ku, MCC will attempt to lock on OCA 48 Mbps downlink.

3 - Router Reboot

If MCC cannot lock on OCA 48 Mbps downlink, restart (reboot) the OCA Router.

After reboot, perform Part C, step 3 (only) of RECONFIG OCA DOWNLINK RATE procedure to reset the OCA downlink rate to 48 Mbps.

When AOS Ku, MCC will attempt to lock on OCA 48 Mbps downlink.

4 - Cable Loopback Test

If MCC cannot lock on OCA 48 Mbps downlink, perform

"OCA LOOPBACK TEST (ORB OPS, PGSC), step 4.1" (page 12-23).

Notify MCC of results of loopback test.

If loopback test passes, perform step 4.2 to end the test and reconnect the P3, P4 cables to the MUX. Problem lies downstream of OCA connection to the MUX.

If loopback fails, the P3 or P4 legs of the OCA cable or the hi rate pins in the P1 connector are suspect. Perform the 1st step in 4.2 to end the test. √MCC to determine if spare OCA cable should be installed.

5 - Reconfigure OCA to 2 Mbps

On MCC Go,

RECONFIGURE OCA DOWNLINK RATE
(ORB OPS, PGSC)
Part D then A, (Omit step 4)
Notify MCC when complete

MSG 040 - CREW CHOICE DOWNLINK

TDRS	AOS	LOS	Delta (min)	Notes
E-275	3/01:25	3/01:39	14	Analog only
E-275	3/01:42	3/01:52	10	Gimbal flip at 01:47; Analog only
W-171	3/01:53	3/02:23	30	
E-275	3/03:12	3/03:26	14	Gimbal flip at 03:20; Analog only
W-171	3/03:28	3/03:59	31	

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

END OF PAGE 1 OF 1, MSG 040

OBJECTIVE:
This procedure will swap the components from EMU 3004 to EMU 3018 for Behnken. This should recover the heated gloves and EMU TV for Behnken. EMU 3018 has been checked out prior to Shuttle docking without a battery or leak check. This procedure will complete a leak check on battery power.

Refer to Figure 1 for the final config of EMU 3018 and Figure 2 for the final config for EMU 3004.

NOTE

1. Reference 1.550 EMU RESIZE (SODF: ISS EVA SYS: EMU MAINTENANCE) for component changeout steps.

2. Reference 5.115 EMU BARCODE LOCATION REFERENCE (SODF: ISS EVA SYS: REFERENCE) for barcode and EMU serial number locations.

3. All stowed hardware requires a pouch OR cover installed. You can retrieve/stow any needed/extra pouches from A/L1D0 1.0 CTB S/N 1163, B/C 004157J.

CAUTION
1. Remove rings and other jewelry before exposing EMU bladder.
2. √All seals are clean and free of debris before making connections.

EMU 3018

1. Retrieve EMU 3018 from Columbus
   Install in FWD EDDA
   Temp stow EMU 3005

2. Remove LTA restraint bag and LTA Restraint Strap
   Stow in M-02 bag s/n 1010; A/L1O1

3. Remove LTA s/n 2075 (Waist s/n 029)
   Temp stow

4. Remove Helmet s/n 1072
   Temp stow

5. Lower Arm Power Harness ←|→ Upper Arm Power Cable (both arms) then
   Remove Lower Arms s/n 331/332
   Temp stow

EMU 3004

6. Remove Helmet s/n 1076 (lights and camera stay on helmet)
   Temp stow

7. Remove EMU PLSS id stripes, flight patch, and national flag
   Swap with EMU 3018

8. Remove LTA s/n 2078 (Waist s/n 20)
   Install on EMU 3018

EMU 3004

9. Lower Arm Power Harness ←|→ Upper Arm Power Cable (both arms)

EMU 3004

10. Remove arm sizing rings, lower arms, and gloves assembly (s/n 140/141, s/n 330/329, s/n 6254 respectively)
    Install on EMU 3018. Red ring on lower arm is the right arm, blue ring is the left arm.

EMU 3018

11. Lower Arm Power Harness →|← Upper Arm Power Cable (both arms)

12. Verify all 3 locks are re-engaged on the arms and rings.

EMU 3004

13. Remove comm cap s/n 1172 (Be1)
    Install in EMU 3018

14. Remove DIDB restraint bag w/ DIDB
    Swap with DIDB restraint bag in EMU 3018

15. Remove LiOH s/n 2004 and EMU Battery 2086 from EMU 3004
    Install in EMU 3018
    Install Vent Port Plugs from EMU 3018 in EMU 3004
    Reference 1.515 EMU METOX/LIOH/BATTERY REPLACEMENT (SODF: ISS EVA SYS: EMU MAINTENANCE)

16. ✓REBA battery is removed.

17. Install Lower Arms s/n 331/332 from EMU 3018

18. Install LTA s/n 2075 (Waist s/n 029) from EMU 3018

19. Install Helmet s/n 1072 from EMU 3018, ✓locked

20. Remove EMU 3004 from AFT EDDA
    Temp stow out of Airlock (will be resized after EVA 3 for return home)

EMU 3018

21. Install Helmet s/n 1076 (Be), ✓locked

22. Install EMU 3018 in AFT EDDA, and EMU 3005 in FWD EDDA

Leak Check

23. ✓Helmet Purge vlv – cl, locked

DCM

24. sw POWER → BATT

25. PURGE vlv → cl (dn)

26. O2 ACT → PRESS, expect O2 USE HIGH msg, sw DISP → PRO

27. When SUIT P > 4.0 and stable, check with gauge, continue

28. sw DISP → STATUS, until LEAK CHECK? displayed
    sw DISP → YES (hold for 2 seconds)
    Follow displayed instructions

29. O2 ACT → OFF

30. PURGE vlv → op (up)

31. sw POWER → SCU

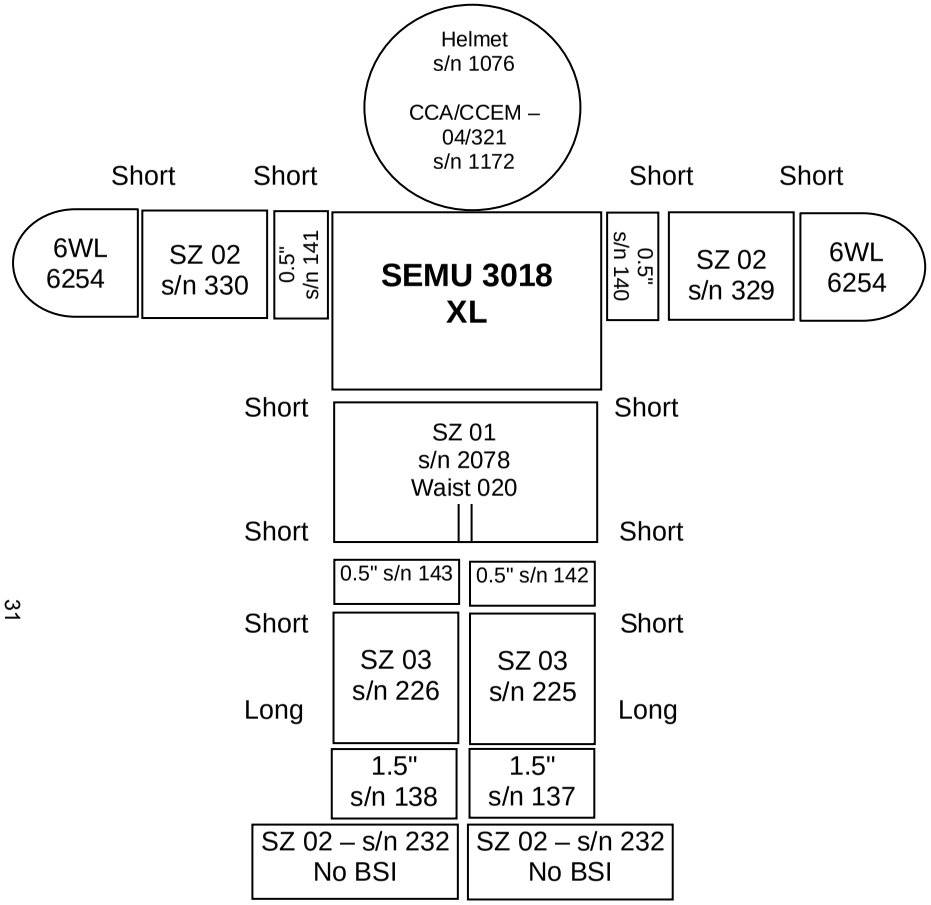


Figure 1 – Behnken (Be) – EMU 3018

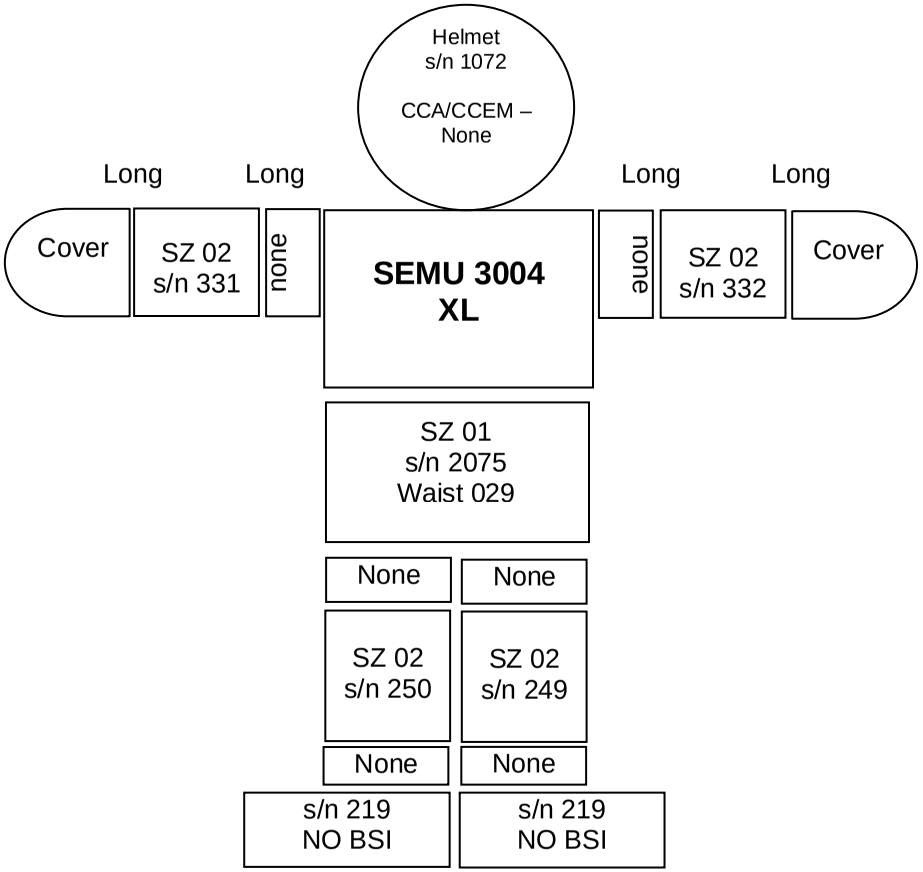


Figure 2 – EMU 3004

22-0616 (MSG 042) – ARED Node 3 Relocation and ACO Big Picture Words
Page 1 of 2

ARED relocation to Node 3 will utilize Med Ops procedure 22-0579 2.1.425 ARED- Node 1 to Node 3 Relocation and will span over 2 days. On FD6, you will uninstall all of ARED from Node 1, temp stow the ARED Exercise Device in Node 3, and reinstall the Vibration Isolation Stabilization (VIS) in Node 3. FD7 will finish the installation of the ARED exercise device. Throughout the activity, if any part of ARED feels like it is binding, notify **MCC-H.**

When translating the ARED VIS and the ARED exercise device, at least two crewmembers are required. Please use caution and slowly transverse through the aisleways and hatch.

The ARED exercise device will be temporarily stowed overnight in the Node 3 Aft hatch. The temp stow configuration is crew discretion as long as the following conditions are met:

1. The VIS Rotation Posts shown in Figures 2 and 5 of the relocation procedure must be protected from damage by taping bubble wrap around each post;
2. Avoid kicking off or impacting both the installed VIS and ARED exercise device as they are not designed to withstand any impacts or kick loads;
3. The Cylinder Flywheels must remain isolated from contact as they are made of an aluminum material with a hollow interior. Any impacts resulting in dinging/denting of the aluminum material (deforming the cylindrical shape) may render the hardware inoperable so please protect them.

Step 13 checks the VIS for binding. If any binding occurs, notify **MCC-H** immediately. However, there may be a slight resistance on the extremes of the VIS due to pushing against a shock absorber. This is normal. The VIS may not come exactly back to center. As long as it is close (± ½" of center), this is sufficient. Take photos to show this position and continue on.

Step 18 installs all ARED cables. To prevent damage, it is important not to force the cables together.

Upon completion of ARED installation, the ground will review the photos and provide a go/no go for the unmanned Activation and Checkout (ACO).

The ARED Unmanned and Manned ACOs will occur on FD 9 and will utilize Med Ops procedure 22-0580 ARED- Node 3 Activation and Checkout. The ground will be watching the unmanned session live in order to give a quicker go/no go call. If given a go, approximately six hours later you will begin your manned ACO session.

For the manned ACO session, it is very important to setup all three cameras per figures 3 through 5. The ground will be reviewing the video after it is downlinked and needs these particular views in order to make their go/no go call. For the full side view and view of the VIS showing all ARED VIS movement, it is important to place the camera to capture the left side of ARED so engineering can verify none of the cables impede the movement of ARED during exercise. The close up of the X-rotation displacement marker may be difficult to capture. Therefore, you may use either the left or right side. Please ensure these markers are visible for the entire dynamic range of ARED exercise.

For the manned ACO session, you will not be using your normal protocol. Spreadsheets have been uplinked for you to use and are referenced in Execute Notes. We will need you to use the Deviate function on the ARED Display to add each exercise as they are listed on your protocol spreadsheet. Please refer to the ACO procedure during exercise as there are session-specific instructions provided on how to complete your protocol. At the end of the session, please leave ARED powered on and the flight software running so the ground can verify the wireless connection is still working. Please notify ground of any differences felt exercising on ARED in Node 3 when compared to Node 1.

Summary of Activities by Flight Day:

FD 6

ARED Xfer Prep:
- Prepares ARED for translation to Node 3.

ARED VIS Rmv:
- ARED will be removed from Node 1, and relocated and temp stowed in the Node 3 Aft hatch.
- The VIS will then be uninstalled from Node 1 and translated to Node 3.

ARED VIS Xfer/Instl:
- The Seat Track Interfaces will be removed from Node 1 and installed in Node 3.
- VIS will be reinstalled in Node 3.
- FD6 must conclude with the VIS installed in Node 3.

FD 7

ARED Install:
- Remove ARED from temp stow configuration.
- Install ARED on the VIS.
- Photo document final configuration of ARED in Node 3.

FD 9

Unmanned ACO:
- Camcorder setup.
- Verifying VIS performance.

Manned ACO:
- Camcorder setup to capture exercise and VIS performance.
- 2 crewmembers will perform exercise sessions.