

STS-120/10A

FD 11 Execute Package



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Approved by FAO: Roger Smith

Last Updated: Nov 2 2007 4:31AM GMT

JEDI (Joint Execute package Development and Integration), v2.04.0003

MSG 118B - FD11 FLIGHT PLAN REVISION

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127	OBSS Unberth, Handoff, and MNVR to Pre-Grapple at WS8 (16-0180)

1. The table below summarizes the Shuttle and ISS exercise constraints for today. These constraints are also denoted in your timelines for your reference.

Activity	Exercise Constraints	
	Shuttle	ISS
IWIS Exercise test	None	No exercise
OBSS Handoff (while both arms are grappled to OBSS)	No exercise	No exercise

2. Condensate Changeout Details:

At MET 9/16:45 for SHUTTLE CONDENSATE COLLECTION (ORB OPS, ECLS), disconnect CWC s/n 5057 and temp stow. Connect CWC s/n 5104.

3. CWC Fill Details:

Per the Water Ops Cue Card (Ref MSG 029), the second potable CWC is scheduled to be filled today. This CWC, S/N 1004, has not been pregathered. It can be retrieved from NOD1D2.

In addition, we have added a 10th CWC Fill to the flight, to be filled on FD13. Please do not stow or transfer any of the associated hardware until this final fill is complete. Details for this fill will be provided in a future Execute Package.

1
2 4. The previously planned FD 11 ROBO operations have been changed in order to better
3 thermally protect the OBSS. The old sequence consisted of the following:
4

- 5 1. MT Translate to WS 3
- 6 2. Unberth OBSS and maneuver to a translate configuration
- 7 3. MT Translate to WS 8
- 8 4. Maneuver SSRMS to the WS 8 OBSS Handoff position
- 9 5. Handoff OBSS to SRMS

10
11 The new sequence will consist of the following:
12

- 13 1. MT Translate to WS 3
- 14 2. Unberth OBSS and handoff to SRMS
- 15 3. Maneuver SSRMS to a translate configuration
- 16 4. SRMS Maneuver to the Undock position
- 17 5. MT Translate to WS 8
- 18 6. Maneuver SSRMS to the WS 8 OBSS pre-grapple position

19
20 The OBSS unberth and handoff sequence should be similar to what was executed on
21 FD 3. DOUG targets are available on board.
22

23 5. IWIS
24

25 The ISS team will be recording the inputs of Wheel's scheduled ergometer exercise
26 using IWIS today. After completion of the exercise, Pam has an activity to tear down the
27 IWIS equipment in the shuttle. The items removed can be stowed back on station in the
28 IWIS CTB, (S/N 1188), located in LAB1P5_A1.
29

30 6. DCS760 Camera Big Picture
31

32 Photo/TV wanted to pass on some big picture words related to the DCS760 cameras
33 and EVA Camera hardware. With the number of issues that we have had with the EVA
34 cameras, you have probably noticed quite a bit of camera swapping.
35

36 Cameras

37 Both of the cameras that were launched on STS-120 (S/N 1012 and 1014) will be
38 transferred and left on ISS. ISS will transfer 4 cameras to Shuttle; 2 cameras (S/N1013
39 and 1016) will be used for shuttle operations and 2 cameras (S/N 1037 and 1041) will be
40 transferred in the ISS Photo/TV Resupply bag. DCS760 cameras S/N 1013 and 1016
41 were originally scheduled to come home because they are an older configuration of the
42 DCS760 (-302).
43

44 S/N1013 had issues and a firmware page swap during EVA 2, but post EVA checkout
45 showed the camera was operating nominally. S/N 1016 has an internal time/date
46 battery issue that causes it to have trouble tracking GMT. To resolve the issue we will
47 have you reset the cameras time/date and photograph the GMT clock at the beginning of
48 each day. Neither of these issues should affect the cameras' photographic performance.
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S/N 1037 is the camera left outside during EVA3. We don't have any information on how the camera is going to function, so we prefer that you don't use this one. S/N1041 is suspect after the 118 crew had missing images during ET Photography. It has been performing well on ISS since then, but is less preferable to 1013 & 1016.

Batteries

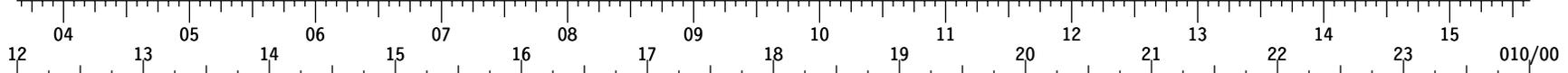
We are asking you to transfer 3 of the DCS760 NIMH batteries to ISS in order to keep their battery inventory where it is needed for RPM procedures.

EVA Camera Accessories

We have already asked that you transfer the shuttle EVA thermal blanket, lens cap, and EVA viewfinder from the Still Camera Bag to ISS in preparation of EVA 4. The EVA thermal blanket, EVA viewfinder, EVA flash, EVA flash cables (4) and batteries that were left outside on EVA 3 will return to Shuttle post EVA 4. A message will be uplinked with procedures for inspection of this hardware.

- 7. Please add the Windecom machine to the PGSC network, so we can update your DOUG files for Flight Days 11 and 12.
- 8. REPLACE PAGES 2-30, 2-40, AND 3-116 THROUGH 3-125.

GMT 11/02/07 (306)
 Day 009
 MET



S T S - 1 2 0	FD11 R2 CDR MELROY	SLEEP	LOG	POST SLEEP	RMS S UP	MH/ NVO	COND C/O	RPRS*	RPRS*	CIN CIT #8	SG RR MA SPL	CT WE CRM #8	CX FER	S R M S *	MEAL	XFER	EXER	
	R1 PLT ZAMKA	SLEEP	LOG	POST SLEEP	RMS S *	MH/ NVO	MCI U	I W I S	P I W I S	P I W I S	M R L	I W I S T/D	SG RR MA SPL	S R M S *	MEAL	XFER		
	MS1 PARAZYNSKI	SLEEP (A/L)	LOG	POST SLEEP			EXERCISE					EVA PROC REVIEW	EVA CONF	MEAL	EVA TOOL CONFIG			
	M2 MS2 WILSON	SLEEP	LOG	POST SLEEP			XFER		SSRMS MNVR PRE GRAP	O G B R A S P	SSRMS MNVR TO H/O		SSRMS RELEASE OBSS	MEAL	EXERCISE	WS8 OBSS PRE GRAPP		
	MS3 WHEELLOCK	SLEEP (A/L)	LOG	POST SLEEP			XFER		IWIS EXERCISE			EVA PROC REVIEW	EVA CONF	MEAL	EVA TOOL CONFIG	TRANSFER		
	MS4 NESPOLI	SLEEP	LOG	POST SLEEP			EXERCISE	FR T L				EVA PROC REVIEW	EVA CONF	MEAL	EVA TOOL CONFIG			
	FE-2 DN ANDERSON	SLEEP (8.5)	LOG	POST SLEEP	PREP WORK	DPC	IWIS XFER	I R E S E T	EXERCISE TVIS	HANDOVER		ISL-ROUTER-INSTL	MIDDAY-MEAL	AMIA REMOVAL	AMIA JMPR	ITCS SAMPLE	EXER TVIS	
E X P 1 6	ISS CDR WHITSON	SLEEP (8.5)	LOG	POST SLEEP	PREP WORK	DPC		EXERCISE RED	UOP6 PIP RCNFG	FDS N1 BF/SD INSP		ISL-ROUTER-INSTL	MIDDAY-MEAL	XFER		PMC		
	FE-1 MALENCHENKO	SLEEP (8.5)	LOG	POST SLEEP	PE A V O E N T	DPC		CM-PO-INSPECT		M P N - 1	ORIENT	EXERCISE VELO+RED	MIDDAY-MEAL	Φ-CB-MNT		CO X		
U P	M1 FE-1 UP TANI	SLEEP (8.5)	LOG	POST SLEEP	PREP WORK	DPC	XFER	EXERCISE CEVIS	HANDOVER		SSRMS MNVR PRE GRAP	O G B R A S P	SSRMS MNVR TO H/O	SSRMS RELEASE OBSS	MIDDAY-MEAL	M E C S A *	XFER	WS8 OBSS PRE GRAPP

DAY/NIGHT ORBIT

TDRS W -171 E -46 Z -275

ORB ATT SSRMS

BIAS -XLV +ZVV

NOTES

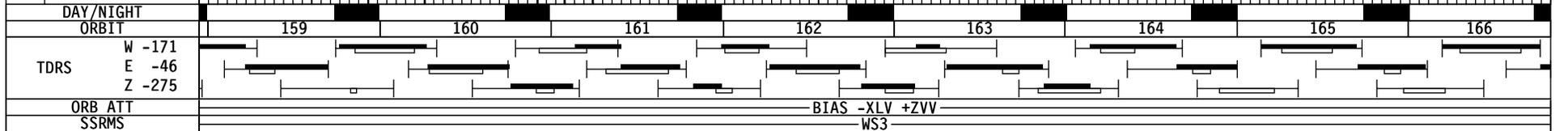
*DEACT *HTR ^VIP *HTR *N2 INIT *N2 TERM *MNVR TO OVERNIGHT POSN *MNVR TO UNDOCK POSN *TERM

2-38 No Exercise Besides IWIS MT TRANS WS 3 No Exercise Both Arms Grappled MT TRANS WS 8

GMT 11/02/07 (306)
 Day 010
 MET



S T S - 1 2 0	FD11	CDR MELROY	EXER	XFER	ROBO EVA CONF	EVA PROC RVW	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP	
		PLT ZAMKA	EXERCISE		ROBO EVA CONF	EVA PROC RVW	PRE SLEEP	CREW CHOICE D/L	PRE SLEEP	SLEEP	
		MS1 PARAZYNSKI	ROBO CONF REVIEW		PRE SLEEP	ROBO EVA CONF	EVA PROC RVW	PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)
		MS2 WILSON	ROBO CONF REVIEW		X B F R I E E F	ROBO EVA CONF	EVA PROC RVW	PRE SLEEP			SLEEP
		MS3 WHEELock	ROBO CONF REVIEW		PRE SLEEP	ROBO EVA CONF	EVA PROC RVW	PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)
		MS4 NESPOLI	ROBO CONF REVIEW		PRE SLEEP	ROBO EVA CONF	EVA PROC RVW	PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP
		FE-2 DN ANDERSON	EXER TVIS	XFER	HAND OVER	IMS EDIT	EVA PROC RVW	DPC	P W R O E R P K	PRE SLEEP	SLEEP (8.5)
E X P 1 6		ISS CDR WHITSON	C O N F	XFER	EXERCISE CEVIS	C E H X R E G R	EVA PROC RVW	DPC	P W R O E R P K	PRE SLEEP	SLEEP (8.5)
		FE-1 MALENCHENKO	COX		EXERCISE TVIS		PREP WORK	DPC	P W R O E R P K	PRE SLEEP	SLEEP (8.5)
U P		FE-2 UP TANI	ROBO CONF REVIEW		HAND OVER	ROBO EVA CONF	EVA PROC RVW	DPC	P W R O E R P K	PRE SLEEP	SLEEP (8.5)



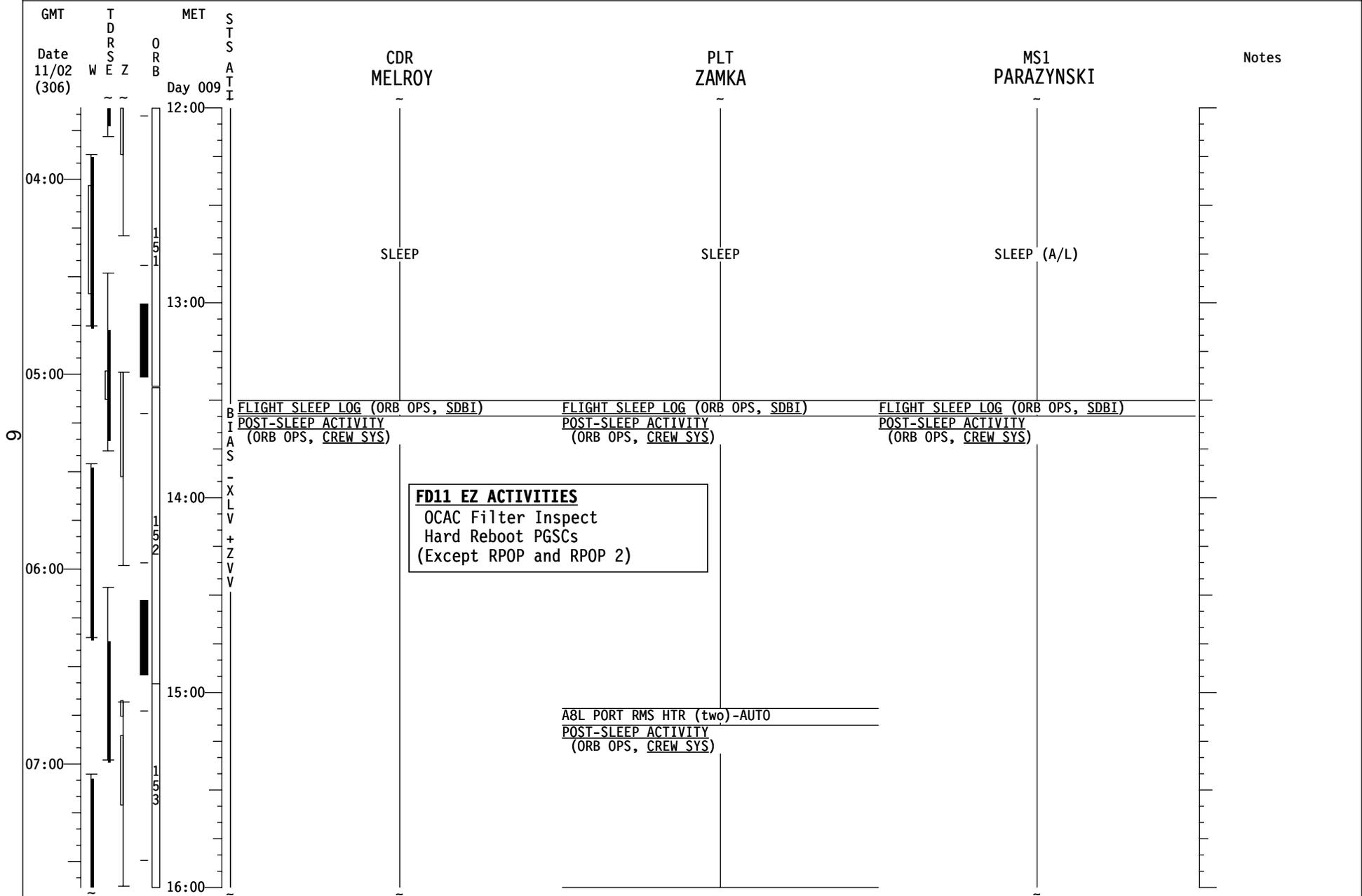
NOTES

2-40

FLT PLN/120/FLIGHT

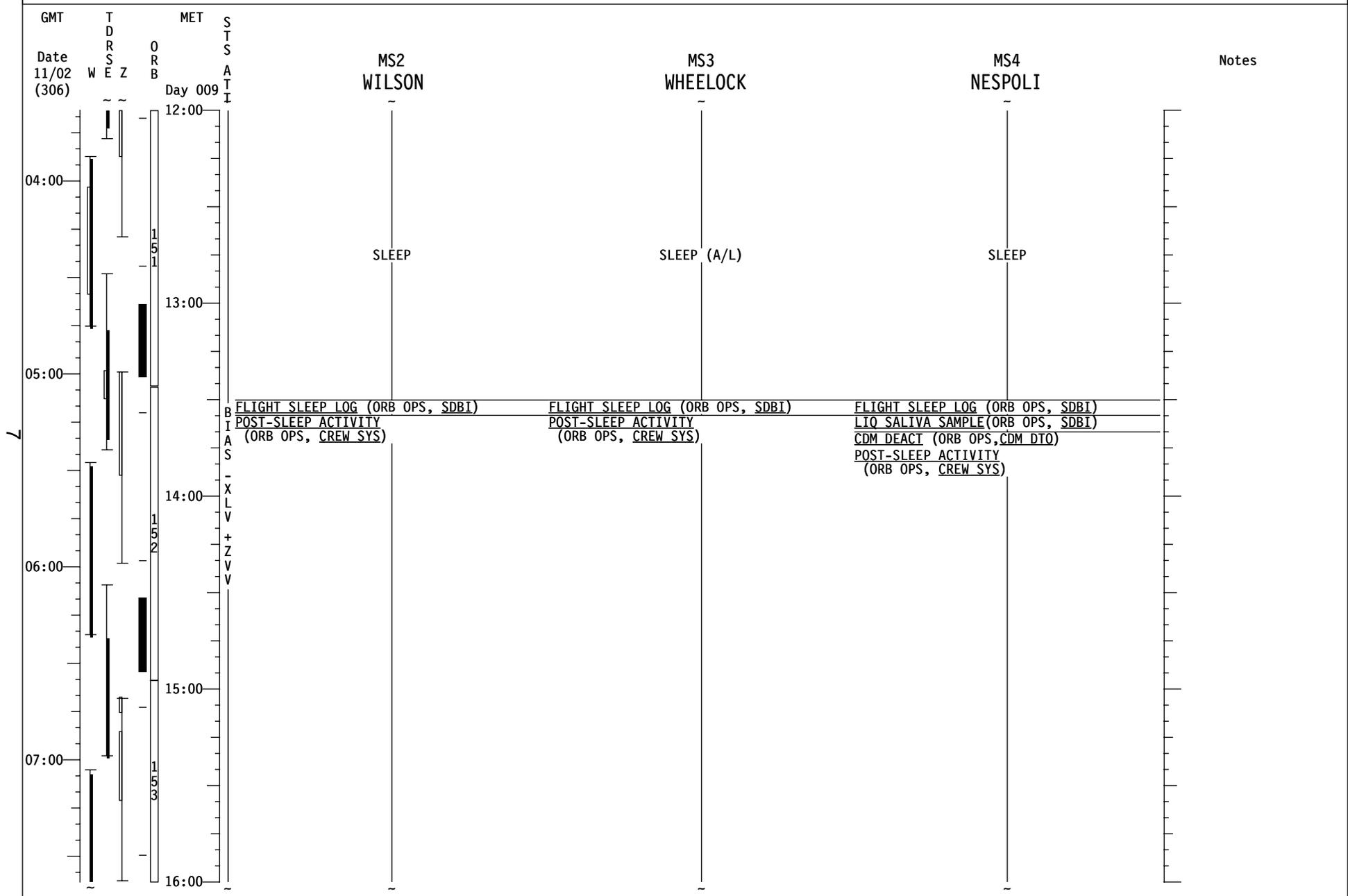
STS-120 FD11

REPLANNED



STS-120 FD 11

REPLANNED



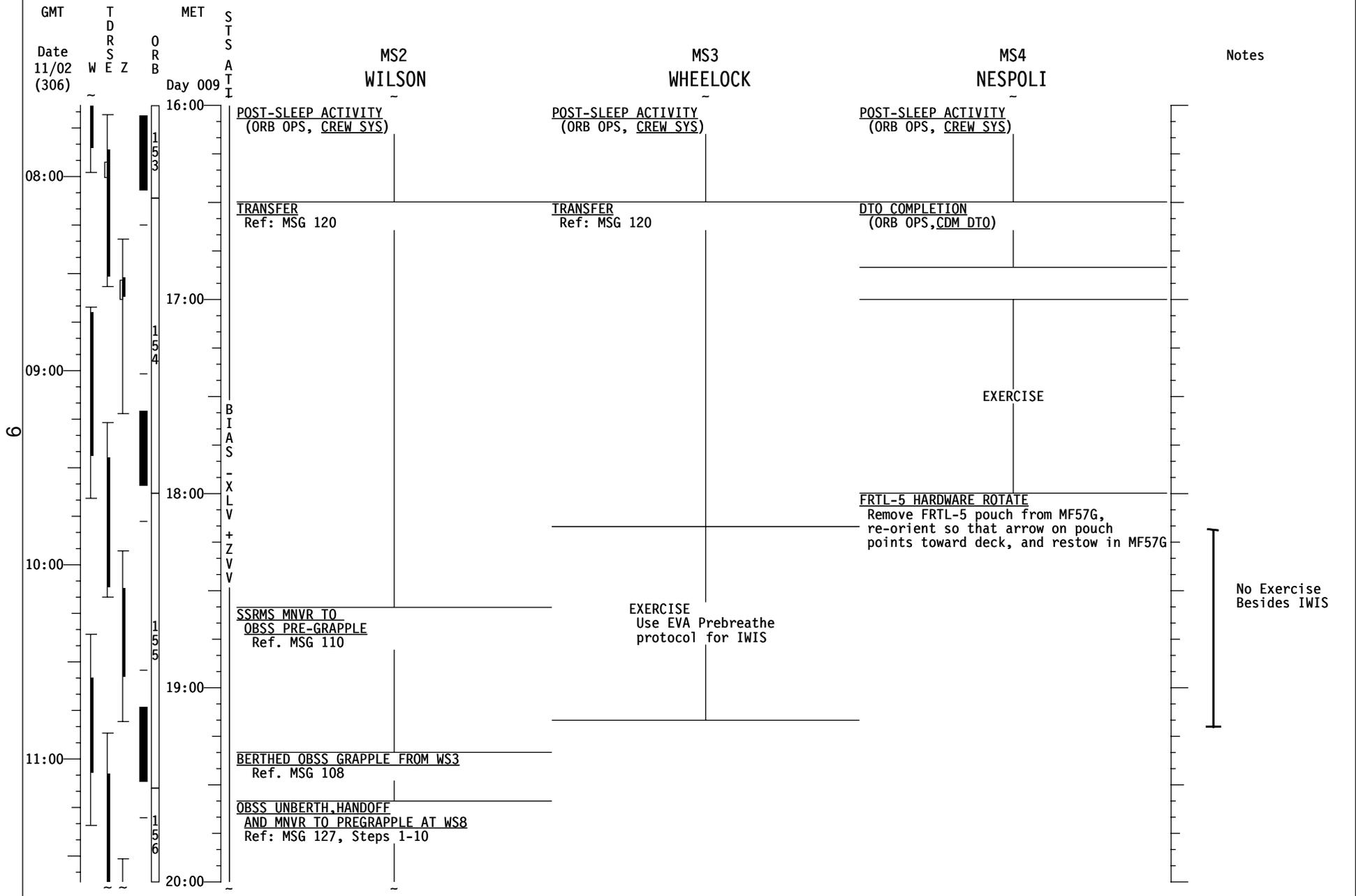
STS-120 FD 11

REPLANNED

GMT	T D R S E Z	MET	S T S A T I	CDR MELROY	PLT ZAMKA	MS1 PARAZYNSKI	Notes
Date 11/02 (306)	W E Z	Day 009	ORB				
08:00				<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS) RMS PWRUP (PDRS, RMS PWRUP)	<u>DATE/TIME SET FOR DCS 760 S/N 1016</u> Ref: MSG 122 RMS PWRUP (PDRS, RMS PWRUP)	<u>POST-SLEEP ACTIVITY</u> (ORB OPS, CREW SYS)	
				<u>FD11 WS3 OBSS HANDOFF TO SRMS</u> Ref: MSG 123, Steps 1 & 2	<u>FD11 WS3 OBSS HANDOFF TO SRMS</u> Ref: MSG 123, Steps 1 & 2		<u>UPLINK</u> β21 + Boxes C4,C2,C3,M3
				<u>SHUTTLE CONDENSATE COLLECTION</u> (ORB OPS, ECLS) Perform Changeout Disconnect CWC s/n 5057 and temp stow. Connect CWC s/n 5104.	L17 Check MCIU filter screen	EXERCISE	
09:00				<u>N2 REPRESS USING PAYLOAD N2 VLVS</u> (ORB OPS, ECLS) Steps 1-6. MCC will TMBU SM FDA			
					<u>IWIS INSTALL NEAR SHUTTLE ERGOMETER</u> Ref: MSG 014, Steps 6-8 <u>ANALOG PAO CC</u> (PHOTO/TV, SONY PD100) Perform AVIU and CC setup only for IWIS		
10:00				<u>N2 REPRESS USING PAYLOAD N2 VLVS</u> (ORB OPS, ECLS) Steps 7-12 MCC will TMBU SM FDA			<u>UPLINK</u> KU to Standby
					<u>ANALOG PAO CC</u> (PHOTO/TV, SONY PD100) Camcorder teardown		No Exercise Besides IWIS
11:00				<u>SHUTTLE/ISS H2O CONTAINER FILL</u> (ORB OPS, ECLS) Fill duration ~50 min Perform CWC FILL #8, Ref. MSG 029 & MSG 118, Item 3			
					<u>FD11 WS3 OBSS HANDOFF TO SRMS</u> Ref: MSG 123, Steps 3-5		
20:00							

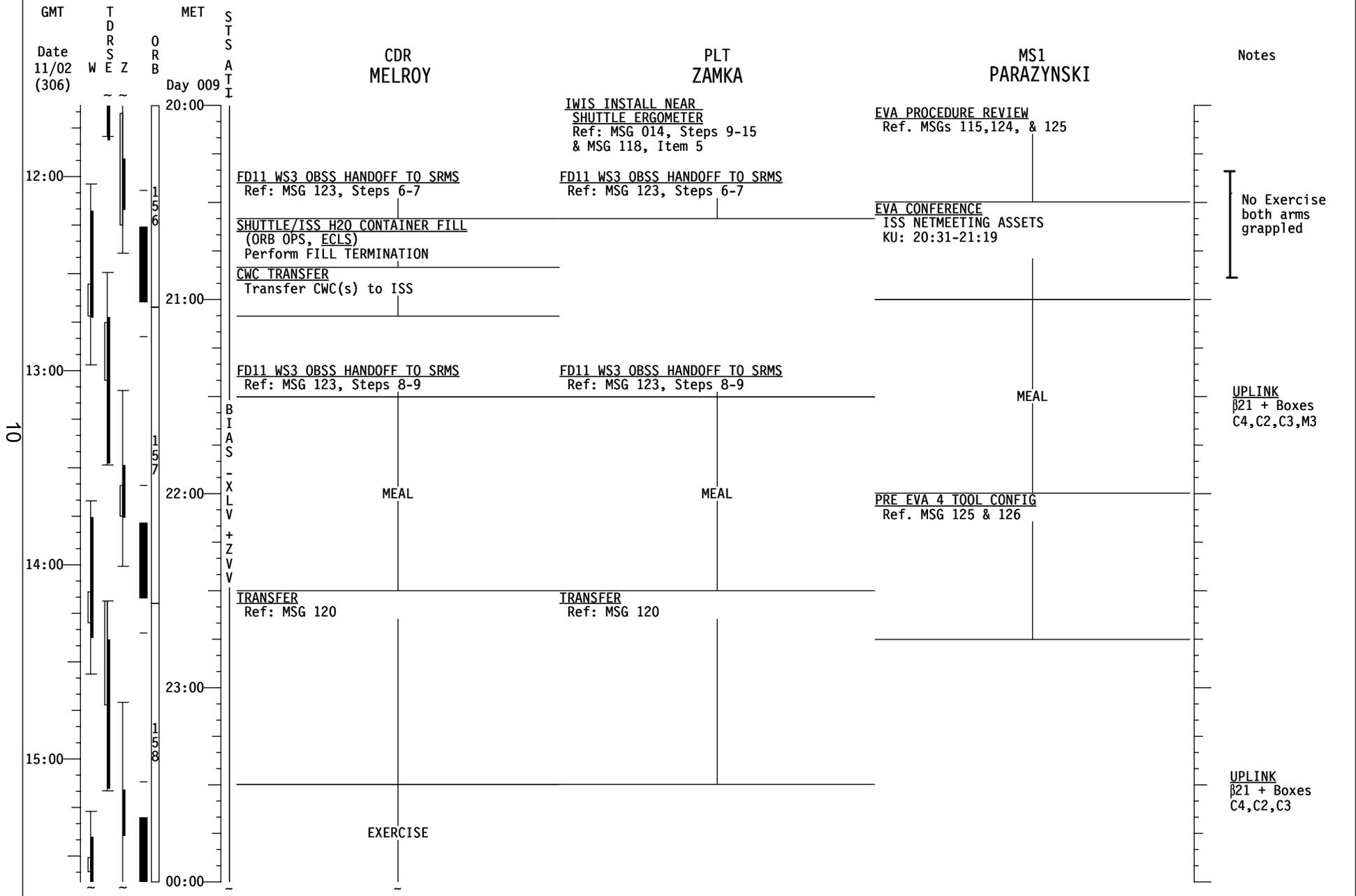
STS-120 FD 11

REPLANNED



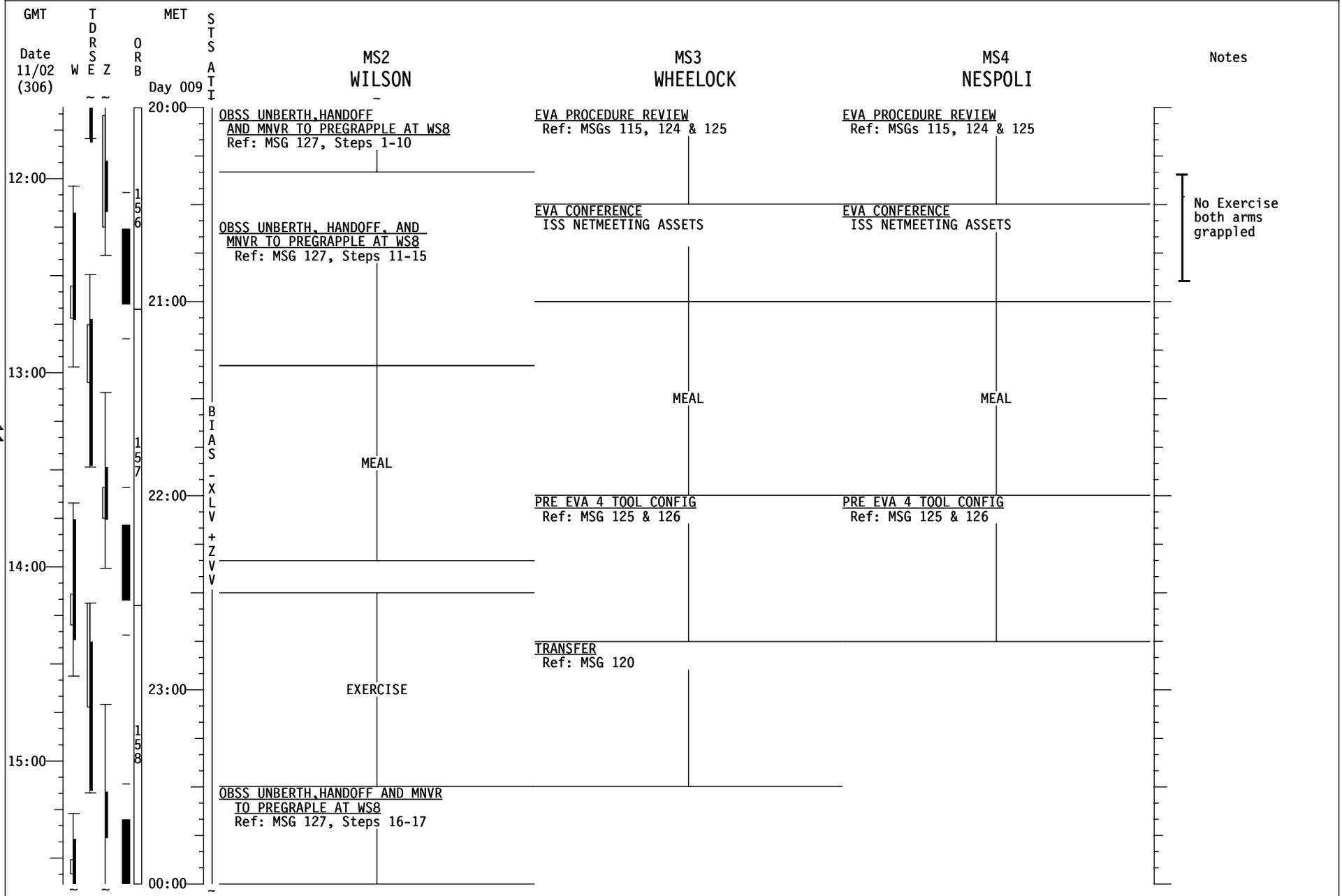
STS-120 FD 11

REPLANNED



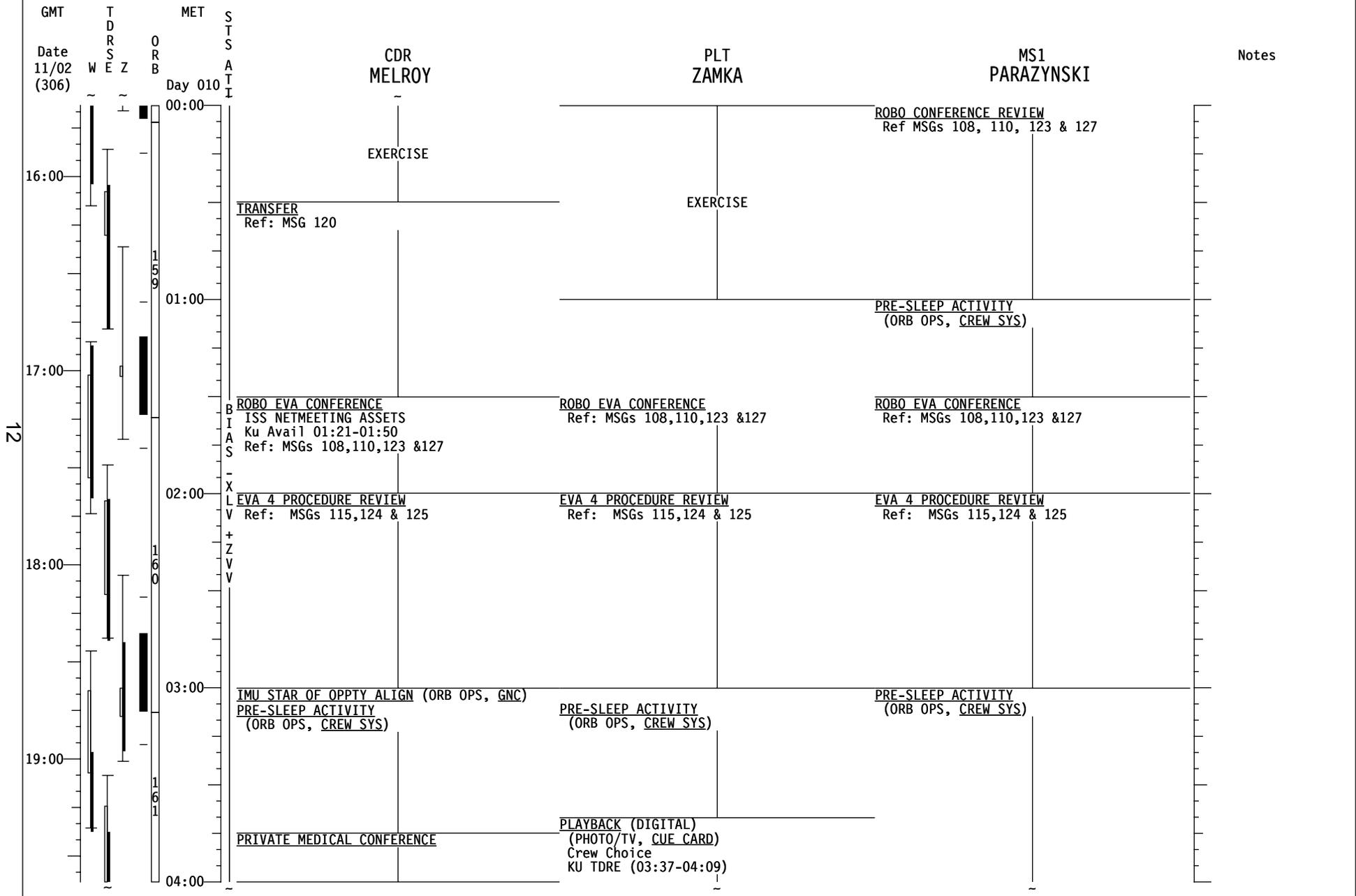
STS-120 FD 11

REPLANNED



STS-120 FD 11

REPLANNED



STS-120 FD 11

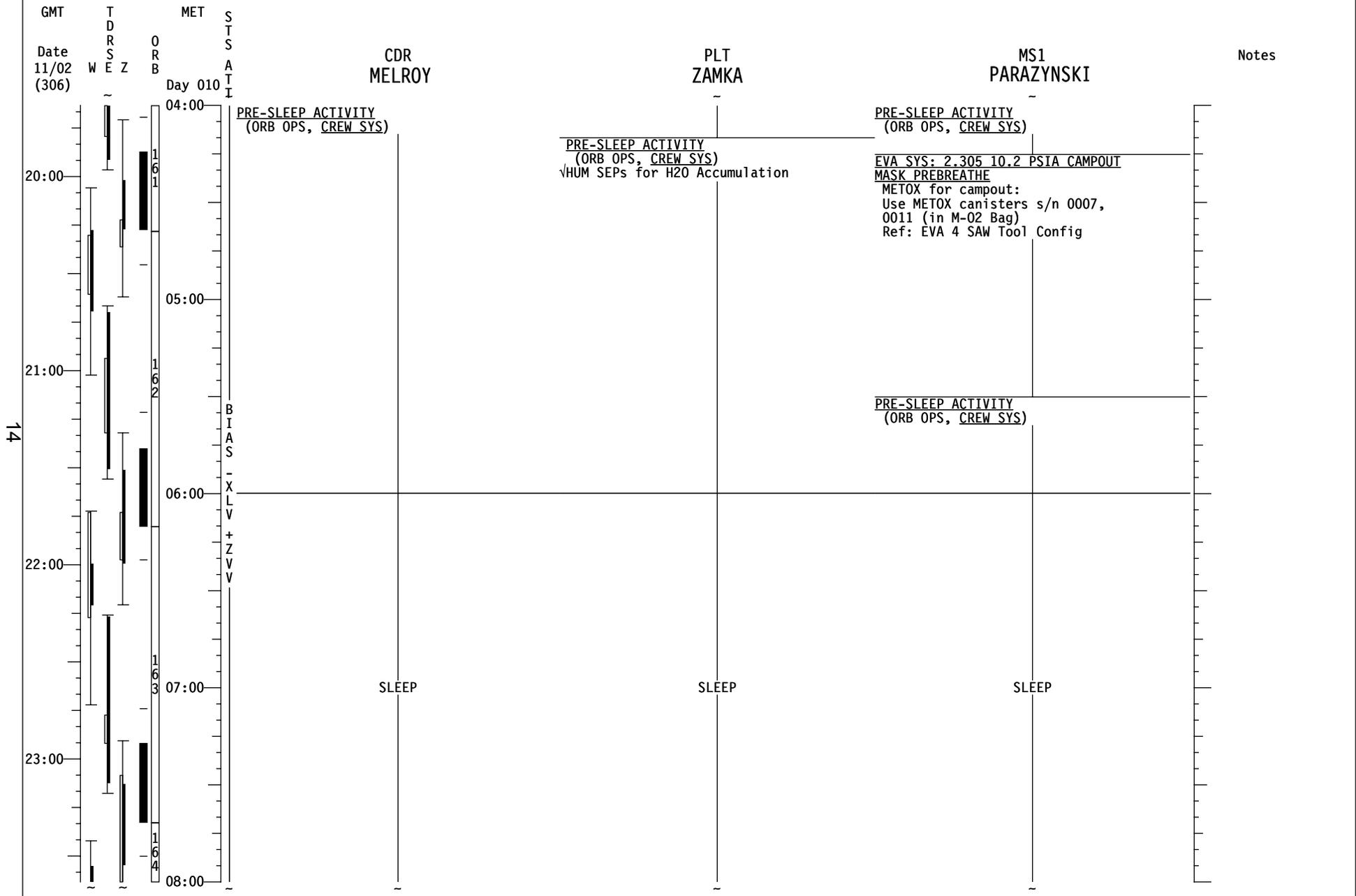
REPLANNED

GMT	T D R S E Z	MET	S T S	MS2	MS3	MS4	Notes
Date	W	Day	A T I	WILSON	WHELOCK	NESPOLI	
11/02		010					
(306)							
00:00				ROBO CONFERENCE REVIEW	ROBO CONFERENCE REVIEW	ROBO CONFERENCE REVIEW	
16:00							
01:00				TRANSFER BRIEF: CALL DOWN STATUS TO MCC	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
17:00							
02:00				ROBO EVA CONFERENCE Ref: MSGs 108,110,123 &127	ROBO EVA CONFERENCE Ref: MSGs 108,110,123 &127	ROBO EVA CONFERENCE Ref: MSGs 108,110,123 &127	
18:00							
03:00				EVA 4 PROCEDURE REVIEW Ref: MSGs 115,124 & 125	EVA 4 PROCEDURE REVIEW Ref: MSGs 115,124 & 125	EVA 4 PROCEDURE REVIEW Ref: MSGs 115,124 & 125	
19:00							
04:00				PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	PRE-SLEEP ACTIVITY (ORB OPS, CREW SYS)	

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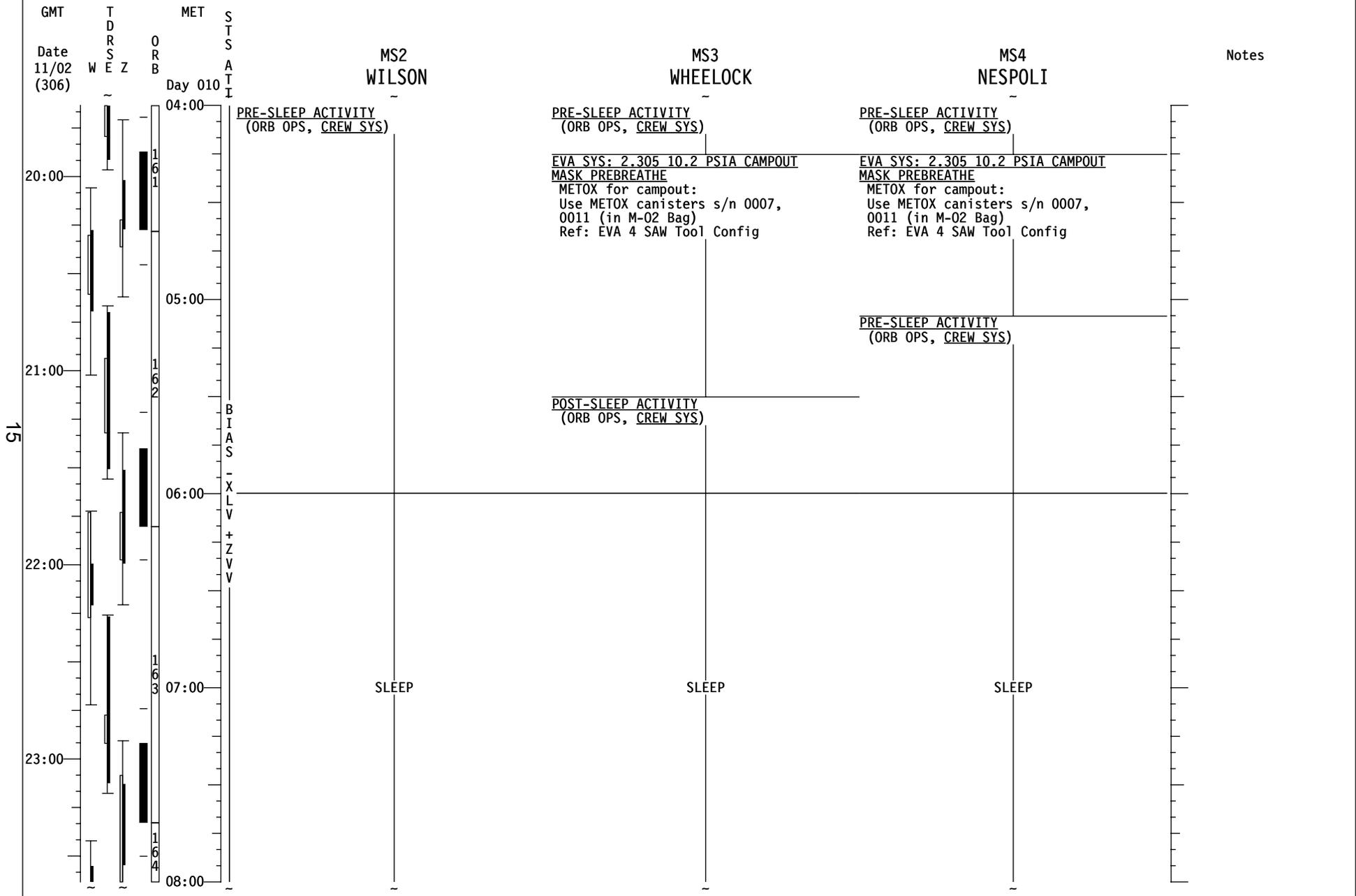
STS-120 FD 11

REPLANNED



STS-120 FD 11

REPLANNED



MSG 119 (16-0169) - FD11 MISSION SUMMARY

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OMS QUANTITIES(%)

L OMS OX = 33.5 R OMS OX = 33.5
FU = 33.1 FU = 33.4

SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

DELTA V AVAILABLE:

OMS	334 FPS
<u>ARCS (TOTAL ABOVE QTY1)</u>	<u>47 FPS</u>
TOTAL IN THE AFT	381 FPS
ARCS (TOTAL ABOVE QTY2)	81 FPS
FRCS (ABOVE QTY 1)	18 FPS
AFT QTY 1	77 %
AFT QTY 2	39 %

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

MSG 120 (16-0171) - FD11 TRANSFER MESSAGE

Page 1 of 11

1
2 Good morning Doug, Stephanie, and Dan,
3

4 Transfer is rounding the bend and nearing the home stretch. You make it look so
5 easy though, we bet you haven't even broken a sweat! Keep up the good work and we'll be
6 sure to meet you at the finish line.
7

8 The Transfer List Excel file, FD11_TransferList_STS120.xls, is located on the KFX machine
9 in **C:\OCA-up\transfer**.

10
11 For ISS, the Transfer List Excel file, FD11_TransferList_STS120.xls, is located in **K:\OCA-**
12 **up\transfer**.

13 14 **Transfer Notes**

- 15 • Yesterday you reported item 404.1 through 404.4 as completed. We have a few
16 follow ups for these completed items to verify we're in the intended return
17 configuration.
 - 18 ○ Item 404.3 ISS CDK – The return location for this item has changed to
19 accommodate the addition of new hardware for return. The item will now
20 return in MD CEIL PORT 1 (Bag E).
 - 21 ○ You mentioned the EVA team refers to bag 404 as the "Done" bag. We also
22 understand you found some additional EVA hardware not listed on the
23 transfer list, stowed inside bag 404. EVA does have a "Done" bag they're
24 using, but it's expected to be a different bag other than return bag 404. If
25 these two bags are somehow combined it's fine as long as all items 404.1
26 through 404.4 are stowed per the transfer list, and all other EVA contents
27 remain on ISS.
28

29 **Questions/Answers for the crew**

- 30 • **A:** From your comments on MWS baseplates we thought it would be prudent to list
31 out which MWS baseplates should be where:
 - 32 ○ New Baseplates S/Ns 1003, 1001 should be on the EMUs and remain on ISS
 - 33 ○ Old Baseplates S/Ns 1007 and 1008 should return per the transfer list items
34 404.2 and 404.4
 - 35 ○ Old Baseplate (not discussed) S/N 1023 should remain on ISS
- 36 • **A:** The two MWS T-Bars that launched in the EXT A/L Floor Bag on Shuttle should
37 not transfer. MWS T-bars typically have multiple number markings. We expect
38 these two MWS T-Bars to have a P/N SEG33110493-305, with the S/N's 1002 and
39 1029 listed directly below the part number. MWS T-bars 1002 and 1029 should
40 remain on the Shuttle and, if there are any additional MWS T-bars in the EXT A/L
41 Floor Bag, they should return to ISS.
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MSG 120 (16-0171) - FD11 TRANSFER MESSAGE

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Please incorporate uplink pages as follows:

In **RSPLY REALTIME ADDITIONS** tab

Replace Page(s):
Resupply – 17

Add Page(s):
Resupply - 18

In **RETURN** tab

Replace Page(s):
Return – 3
Return – 4
Return – 5
Return – 6
Return – 8

In **RTN REALTIME ADDITIONS** tab

Replace Page(s):
Return – 16
Add Page(s):
Return – 17

Changes to the Transfer List are detailed below:

In **RSPLY REALTIME ADDITIONS** tab

Item 808: New Item
Item 810: New Item
Item 811: New Item

In **RETURN** tab

Item 403: Updated **Constraints**
Item 403.1: Updated S/N's, Updated QTY
Item 403.6: New Item
Item 404.3: Updated 'Temp Stowage' location, Updated 'Stowage at Undock location, Updated **Comments
Item 405: Updated **Constraints**
Item 405.1: New Item
Item 411: Updated 'Temp Stowage' location
Item 608: Updated 'Temp Stowage' location

In **RTN REALTIME ADDITIONS** tab

Item 806: Updated **Comments
Item 807: New Item
Item 808: New Item
Item 809: New Item

Call us with any questions and have a great day!

- The Transfer Team

MSG 121A (16-0175A) - FD10 MMT SUMMARY

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FD 10 MMT Summary

The MMT met to review mission priorities, mission progress and orbiter status. The MMT and the ground team greatly appreciate your patience with the additional day that is required to prepare and validate the procedures that you will use during EVA 4, now scheduled for FD12. The MMT did not receive a formal briefing on the task content of EVA 4. This detailed review was scheduled to occur just after the MMT meeting.

Robotic Operations for EVA 4: The MMT received a high level overview of the sequence of robotic events, currently planned for FD 11, which set up the initial conditions for EVA4. At the time of the MMT, it was estimated that the OBSS would remain unpowered for a total of 12 hours. The first 4 hours pertain to the timeframe where the MT/SSRMS has grappled the OBSS and is translating from WS 3 to WS 8. The remaining 8 hours pertain to the timeframe associated with EVA 4. Post-MMT, the operations team further refined the plan. OBSS will now be handed off to SRMS prior to MT translation to WS 8, and then handed back to SSRMS on the morning of the EVA. This will minimize the unpowered time to only that required to support EVA 4 (~ 8 hrs).

Attitude Timeline - The MMT reviewed the requirements that the mission operations team should use to determine trade-offs for returning from the current +XVV attitude to a more desirable -XVV attitude for MMOD risk optimization. The current attitude timeline is optimized for the expected lighting associated with EVA 4, which the MMT recognizes and supports as the first priority. There are many integrated constraints that must be balanced and the Mission Operations team will consider all of them before implementing changes to the timeline plan.

OBSS Grapple Position Anomaly: The Orbiter Project Office was able to identify the root cause of the OBSS grapple position anomaly that was initially seen on FD2. The problem was determined to be a blanket at the SRMS elbow joint (Figure 1) that was improperly installed, which affected the position encoder mechanism on that joint. This encoder position issue is exacerbated when the SRMS elbow joint is at an acute angle, which is why this problem appeared when the SRMS initially grappled the OBSS. During the course of the FD2 inspection operations, a data review shows that the improperly installed blanket has relieved and is no longer inducing a bias in the encoder readings. Under worse case assumptions, if this encoder positioning problem re-occurs, this problem will not cause any structural clearance concerns for late inspection.

1



STS-120 – prior to final encoder blanket installation

Figure 1 - KSC closeout photos

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EVA Equipment: The MMT officially concurred with the recommendation from the EVA Project Office to return EMU #3004 with Discovery as a result of its sublimator issues. This EMU may still be used for a contingency EVA if required. Also, the MMT approved the use of LiOH for EV2 and METOX for EV1 during EVA 4.

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MSG 122 - DATE/TIME SET FOR DCS 760 S/N1016

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Please perform the following procedure daily, prior to first use of DCS760 S/N1016:

DATE/TIME SET for DCS 760 S/N1016

1. Take picture of GMT Clock for Reference
2. MENU pb – press
3. Navigate pad – sel Menu icon, then MAIN MENU
4. OK pb – press
5. Navigate pad – sel TIME/DATE
6. OK pb – press

NOTE

Set TIME/DATE to GMT

7. Navigate pad – sel desired field (left,right)
8. Navigate pad – sel desired setting (up,down)
9. OK pb – press

END OF PAGE 1 OF 1, MSG 122

FD11 WS3 OBSS HANDOFF TO SRMS

1. SETUP

SM 94 PDRS CONTROL

√PL ID, ITEM 3: 0

√INIT ID, ITEM 24: 0

MON 1	A
MON 2	P1 LOOB (Elbow)
DNLK	B

2. PRE-GRAPPLE MNVR

RHC

RATE – as reqd (VERN within 10 ft)

BRAKES – OFF (tb-OFF)

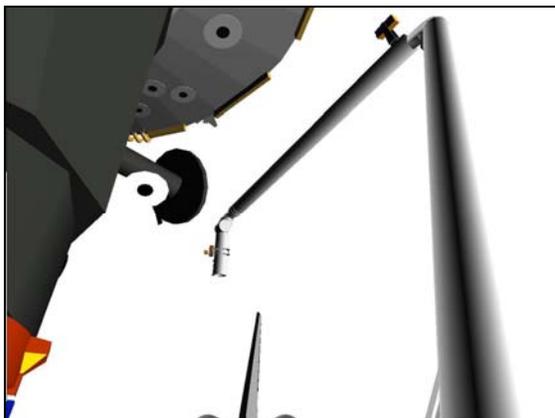
MODE – SINGLE, ENTER

Mnvr to WS3 OBSS PRE-GRAPPLE AT HANDOFF posn:

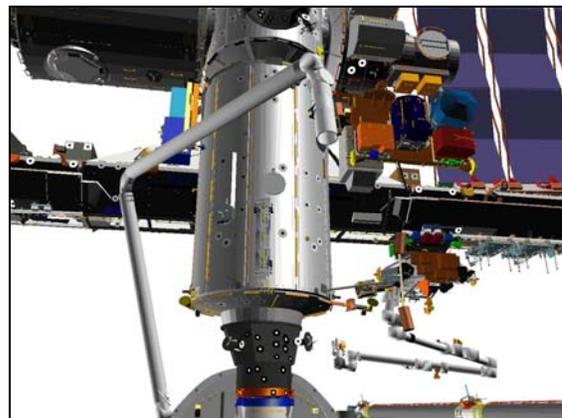
	SY	SP	EP	WP	WY	WR	
Pre-Cradle	0.0	+25.0	-25.0	+5.0	0.0	0.0	
1: SP +		+80.0					
2: EP –			-90.0				
3: WP –				-77.3			
4: WY +					+23.8		
5: WR –						-39.8	
6: SY –	-33.3						
WS3 OBSS Pre-Grapple	-33.3	+80.0	-90.0	-77.3	+23.8	-39.8	
	X	Y	Z	PITCH	YAW	ROLL	PL ID
	-966	-1	-625	285	0	271	0

BRAKES – ON (tb-ON)

Notify SSRMS Operator that SRMS at WS3 OBSS PRE-GRAPPLE AT HANDOFF posn



CCTV A (0,35)



CCTV B (10,20)

3. CONFIGURE POWER

CAUTION
SPEE power must be applied within 90 min
to prevent sensor package damage

On SSRMS Operator GO to release STBD MRLs,
STBD RMS HTR A,B (two) – OFF

- A6U EVENT TIMER MODE – UP
 CNTL – START
- MA73C:C cb MCA PWR AC3 3Φ MID 2 – op
 √AC2 3Φ MID 2 – op
:D √AC3 3Φ MID 4 – op
- R13L PL BAY MECH PWR SYS (two) – ON

4. STBD MRL RELEASE

SM 94 PDRS CONTROL
RMS STBD – ITEM 2 EXEC (*)
√STBD AFT, MID, FWD REL (six) = 0

NOTE
Expect single motor drive time for MRL release

STBD RMS RETEN LAT – REL (tb-REL) (18 sec max)
– OFF

If motor drive time > 18 sec, √MCC

SM 94 PDRS CONTROL
√STBD AFT, MID, FWD REL (six) = 1

5. RECONFIGURE POWER

- R13L PL BAY MECH PWR SYS (two) – OFF
- MA73C:C cb MCA PWR AC3 3Φ MID 2 – cl
 √AC2 3Φ MID 2 – op
:D √AC3 3Φ MID 4 – op

Give SSRMS Operator GO for OBSS Unberth
Monitor RFL Status

After OBSS Unberth,
SM 94 PDRS CONTROL
RMS PORT – ITEM 1 EXEC (*)

6. SETUP FOR GRAPPLE

A7U

- CCTV – config for grapple
- install PDRS TARGET OVERLAY FOR CTVM
- RMS WRIST, ZOOM: 34.0 HFOV
- FOCUS: 5 ft

Maintain eyepoint approx 18 in when using grapple overlay

MON 1	A
MON 2	EE
DNLK	C

R12(OBSS) √SPEE PWR – OFF

A15 √APCU 2 CONV – OFF

SM 179 POWER TRANSFER

√PTU 2 APCU OUT VOLTS: <10V

A15 √APCU 2 OUTPUT – OFF

7. WS3 OBSS GRAPPLE AT HANDOFF POSN

On SSRMS Operator GO for SRMS OBSS Grapple,

RHC

RATE – VERN (RATE MIN tb-ON)

BRAKES – OFF (tb-OFF)

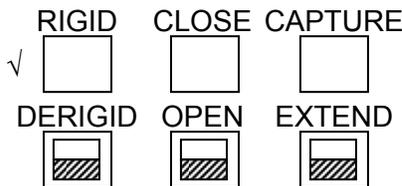
MODE – END EFF, ENTER

Mnvr to grapple envelope

CAUTION
Monitor EE tb timing to prevent EE motor burnout

EE MODE – AUTO

CAPTURE sw – depress (mom)



CRITICAL TIMES (28 sec total):

- CAPTURE tb – gray, then
- CLOSE tb – gray, 3 sec max, then
- RIGID tb – gray, 25 sec max

EE MODE – OFF

MODE – TEST, ENTER

Wait 5 sec

BRAKES – ON (tb-ON)

SM 94 PDRS CONTROL

PL ID – ITEM 3 +2 EXEC

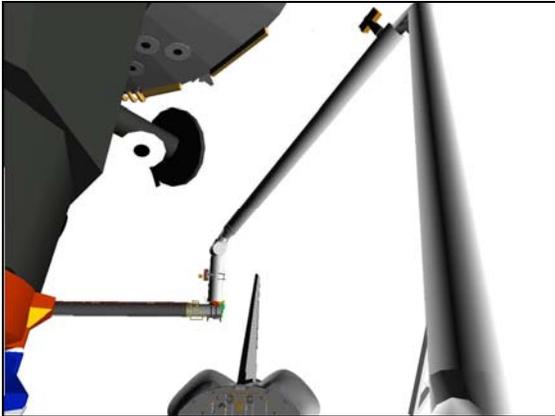
INIT ID – ITEM 24 +2 EXEC

Expected WS3 OBSS HANDOFF posn:

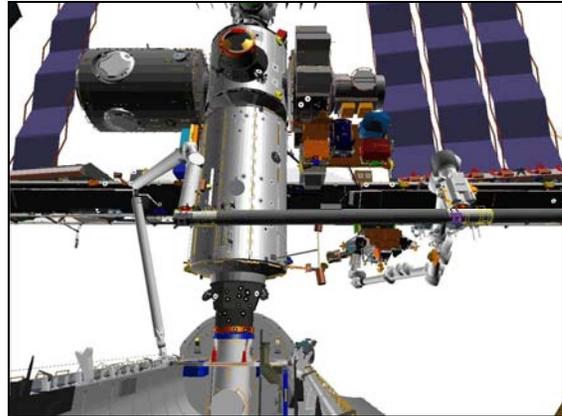
	X	Y	Z	PITCH	YAW	ROLL	PL ID
√	-986	+590	-561	15	270	0	2
	SY	SP	EP	WP	WY	WR	
√	-28.4	+75.5	-98.1	-62.5	+23.6	-45.1	

* display singularity

PARAM – PORT TEMP
JOINT – CRIT TEMP



CCTV A (0,30)



CCTV C (0,20)

- R12(OBSS) RSC PWR – OFF, ON
SPEE PWR – ON
- A6U EVENT TIMER CNTL – STOP
- A15 √PTU 2 tb – ON
APCU 2 OUTPUT – ON
CONV – ON

SM 179 POWER TRANSFER

- √PTU 2 APCU OUT VOLTS: 123V to 126V
- √OUTPUT – ON

Give SSRMS Operator GO for OBSS Ungrapple

Review GENERIC END EFFECTOR CUE CARD – ISS/SHUTTLE DOCKED OPS

8. MNVR TO UNDOCK POSITION
On SSRMS Operator GO for mnvr to UNDOCK posn

NOTE

The Undock position is the same as the Handoff position on PDRS FS 1-10. The Undock nomenclature was used to distinguish it from the WS3 and Port Handoff positions.

MSG 123A - FD11 WS3 OBSS HANDOFF TO SRMS

MON 1	A
MON 2	P1 LOOB
DNLK	C

SM 94 PDRS CONTROL

END POS – ITEM 18 $-1\ 0\ 2\ 9$ $+2\ 2\ 9$ $-6\ 1\ 4$ EXEC
 ATT – ITEM 21 $+1\ 4$ $+2\ 7\ 0$ $+0$ EXEC
 CMD CK – ITEM 25 EXEC (GOOD)

RHC RATE – COARSE (RATE MIN tb-OFF)

BRAKES – OFF (tb-OFF)
 MODE – OPR CMD, ENTER (READY It on)

 After PROCEED, if motion no longer apparent but POR is within
 1 in/1 deg and IN PROG It - on:

 AUTO SEQ – STOP

AUTO SEQ – PROCEED (IN PROG It on)

When AUTO SEQ IN PROG It – off:
 BRAKES – ON (tb-ON)

UNDOCK posn:

√ X	Y	Z	PITCH	YAW	ROLL	PL ID
-1029	+229	-614	14	270	0	2
SY	SP	EP	WP	WY	WR	
+25.8	+66.3	-49.0	-85.9	+10.7	-100.7	

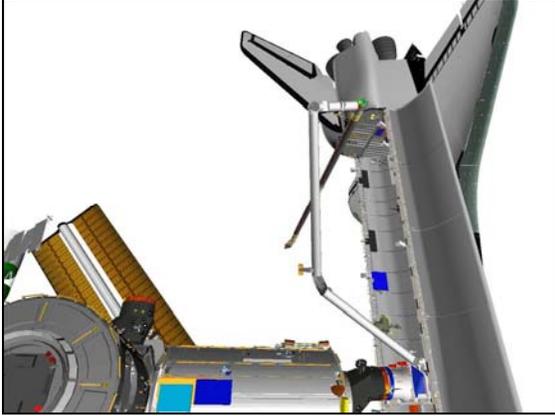
BRAKES – ON (tb-ON)
 √MODE – not DIRECT
 PARAM – PORT TEMP
 JOINT – CRIT TEMP



CCTV A (0,30)



CCTV C (-60,30)



P1 LOOB (100, 30)

9. OBSS HEATERS

Perform ACTIVATION (LDRI/ITVC Cue Card, P/TV), steps 1, 4, and 5

Perform LCC ACTIVATION (LCS Cue Card, P/TV), step 2 only

Perform LCC DEACTIVATION (LCS Cue Card, P/TV), step 1 only

Loop Pin Puller and Vise Grips Taping Procedures

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Loop Pin Pullers (2)

Two taped Loop Pin Pullers are required. Currently only one is taped. Three layers of tape are required on each tool.

1. One Loop Pin Puller should be completely covered in Kapton Tape. Inspect this tool and verify no exposed areas.
2. Apply a single layer of Kapton Tape to completely cover the second Loop Pin Puller.
3. After the first layer, visually inspect to ensure there are no exposed surface areas.
4. Then continue with the second and third layer.
5. A tether point should be made out of a single zip-tie.



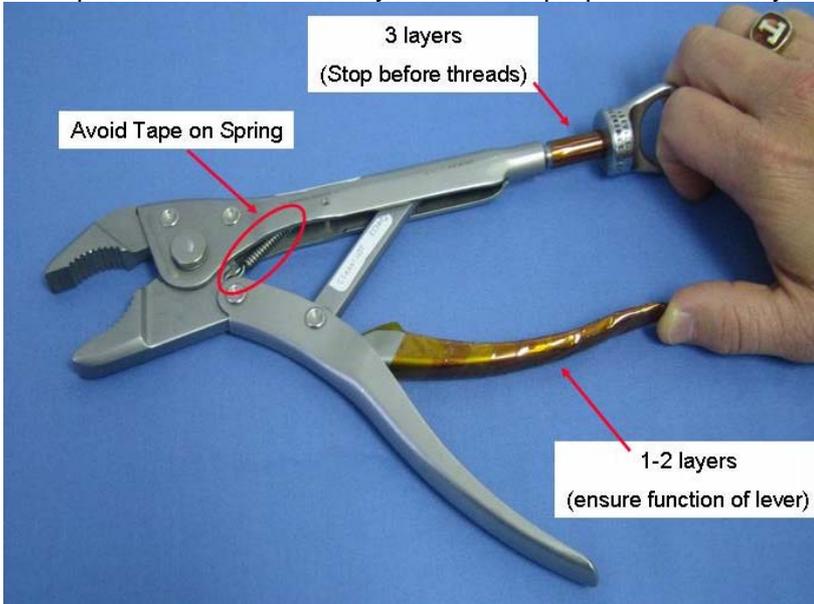
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16-0178 (MSG 126) – EVA Tool Taping Procedures
Page 2 of 3

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Taping of Vise Grips

1. Tape the shaft below the tether point with 3 layers. Avoid the threads.
2. Tape the Lever with 1-2 layers. Ensure proper functionality



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3. Tape the body of the Vise Grips as shown, using 3 layers where possible. Use 1 layer on moving parts. (Tape on the diagonal so part is covered when the handles are closed)



Kapton tape only in area indicated

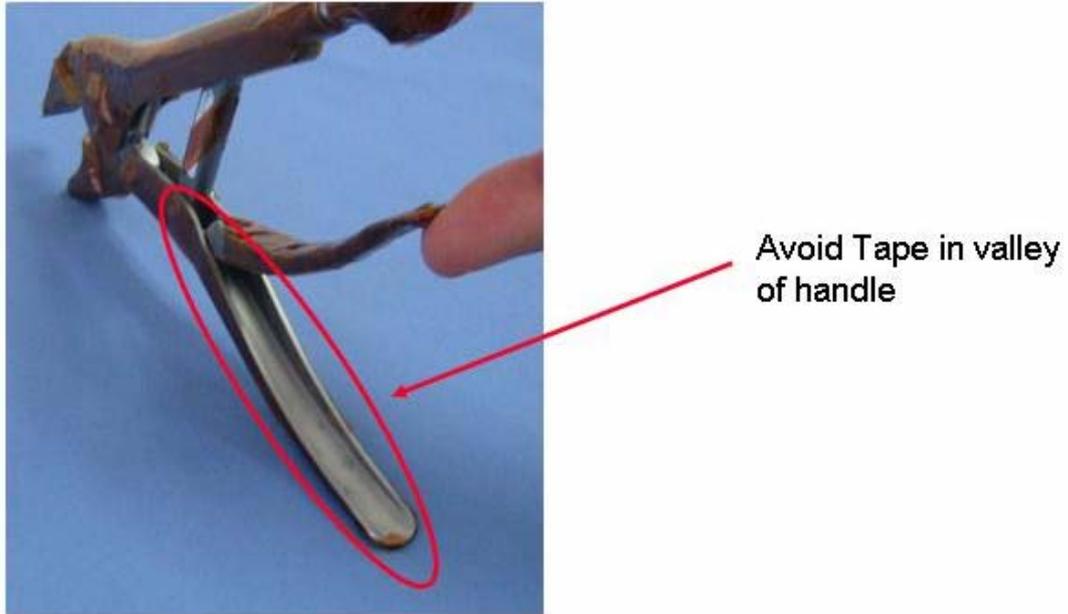
1 layer (Moving parts)



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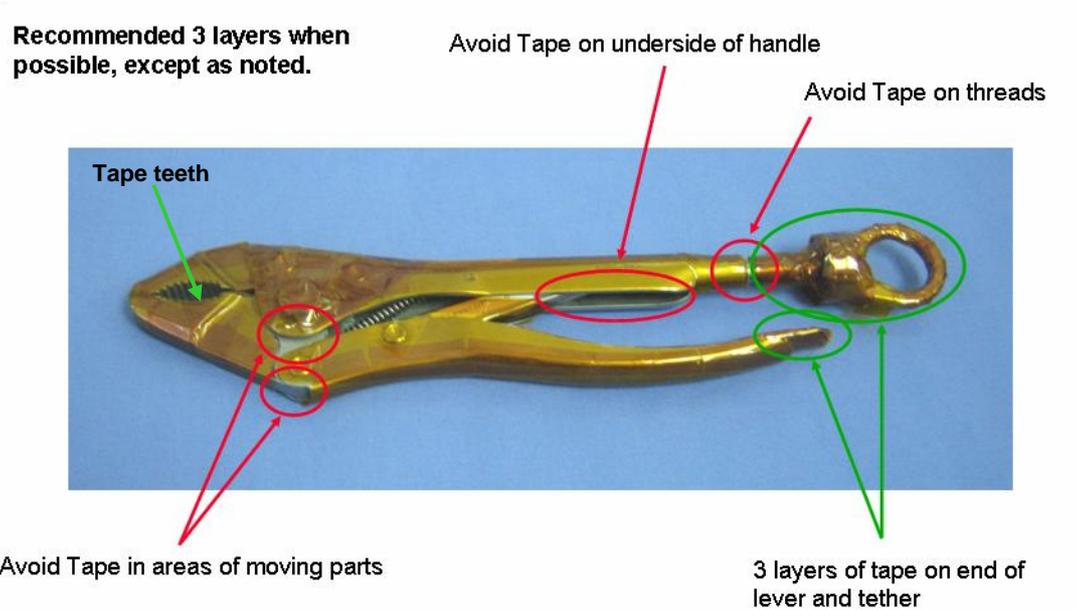
16-0178 (MSG 126) – EVA Tool Taping Procedures
Page 3 of 3

- 1 4. Continue to tape the body of the tool. Avoid moving parts on the lower jaw.
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5. Tape the teeth of the Vise Grips and up jaw, stopping when moving parts reached. Ensure proper function.



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