

# STS-120/10A

## FD 05 Execute Package



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041	23 – 24	<a href="#">RCC PLUG HOUSING REPLACEMENT</a> (pdf)
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Approved by FAO: Roger Smith

Last Updated: Oct 27 2007 4:57AM GMT

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

1 MSG INDEX

2

3 <u>MSG NO.</u>	<u>TITLE</u>
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16 047	10A EVA SARJ Inspection Briefing Package (16-0075)
17 048	10A EVA2 Detail Timeline Deltas (16-0076)
18 049	10A EVA SARJ Cribsheet (16-0077)

19

- 20
- 21 1. During the FD2 OBSS Grapple and Unberth, the ground noticed that the arm digitals  
22 were offset about 4 inches in the starboard direction. To help us better understand the  
23 offset, could you tell us if the OBSS unberth was recorded on Camera C or D during  
24 FD2.

25

26 The time period of interest is:  
27 GMT: 297/09:07:30 - 297/09:39:55

28

- 29 2. Peggy, Yuri, and Paolo,
- 30

31 We would like to remind you about the Node2 Air Sampling Choreography that you'll be  
32 performing today during Node 2 Ingress. Yuri is scheduled to take Russian air samples  
33 using the ИПД-CO & AK-1M, while Peggy and/or Paolo will be taking CSA-CP and GSC  
34 samples. In order to minimize the amount of time crewmembers are in Node 2 prior to  
35 initiating ventilation, Yuri will be setting up the Russian sampling equipment prior to  
36 Ingressing Node 2.

37

38 We have timelined the activities to reflect this sequence, but the intent is that CSA-CP  
39 readings are taken at the same time as the ИПД-CO samples and the GSC samples are  
40 taken concurrent with the AK-1M sample.

41

42 Also, please remember that all crewmembers who ingress Node 2 should don PPE  
43 (surgical masks from the Shuttle LiOH Compartment Lid and goggles from the ISS  
44 CCPK) until 2.5 hours has elapsed after the initiation of ventilation between Node 1  
45 and Node 2. Once the Node 2 ingress is complete, please save your mask to be used  
46 for a future LiOH changeout. Peggy will be saving her mask for a FD7 Node 2 Rack  
47 Rotation activity.

48

- 49 3. Melroy or Zamka: If not worked already, please perform MSG 035 - DCS760 CAMERA  
50 ISSUES.
- 51

MSG 036A - FD05 FLIGHT PLAN REVISION

- 1 4. Since the Node 2 Starboard CBCS flap was unexpectedly open, exposing the hatch  
2 window for a few days, we'd like to get some words on how the window fared. Please  
3 give us a call down today immediately after Node 2 ingress with a brief description of the  
4 condition of the Node 2 Starboard hatch window.  
5  
6 5. The table below summarizes the Shuttle and ISS exercise constraints for today. These  
7 constraints are also denoted in your timelines for your reference.

Activity	Exercise Constraints	
	Shuttle	ISS
OBSS HANDOFF	No exercise while both arms are grappled to OBSS	No exercise while both arms are grappled to OBSS

- 8  
9 6. REPLACE PAGES 2-14, 2-16, AND 3-44 THROUGH 3-53.

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GMT 10/27/07 (300)  
 Day 003  
 MET

04 05 06 07 08 09 10 11 12 13 14 15 004/00

S T S - 1 2 0	FD05 R2 CDR MELROY	SLEEP	LOG	POST SLEEP		MNVR OBSS H/O	UNGLP		BERTH	PC READL	CIN CIT #2	MEAL	CTE CRM #2	CX WFER	EXERCISE	OBSS UNBERTH VIDEO	CIN CIT #3	
	R1 PLT ZAMKA	SLEEP	LOG	POST SLEEP		MNVR OBSS H/O	UNGLP		BERTH	PC READL	MCI U*	MEAL	TRANSFER			FCMS OPS		
	MS1 PARAZYNSKI	SLEEP	LOG	POST SLEEP	TE PGRM*	EMU BATT INIT	EMU SWAP	PGSC TROUBLESHOOTING			ME TX*	MEAL	METX BATT	EXERCISE	PG SC	E/L PREP	EVA TOOL CONFIG	
	M2 MS2 WILSON	SLEEP	LOG	POST SLEEP		MNVR OBSS PRE-G		GR APL	LOW HVR	B ERTH	UG NRA PL		PDGF3 GRPL	MEAL	XFER		EXERCISE	X FER
	M1 MS3 WHEELock	SLEEP	LOG	POST SLEEP		MNVR OBSS PRE-G		GR APL	LOW HVR	B ERTH	UG NRA PL		PDGF3 GRPL	MEAL	RCC PLUG	EXER		XFER
	MS4 NEPOLI	SLEEP	LOG	POST SLEEP		EXERCISE	EMU SWAP	CDM BATT	CM TO BVE	NE DQ UI P	ND2 VEST OUTFIT		MEAL	ΔND2 Hatch Open ND2 INGRS & S/U		E/L PREP	EVA TOOL CONFIG	
	FE-2 DN ANDERSON	SLEEP (8.5)	POST SLEEP	PWDPC PREP WORK	CH RGR	CBM CNTR DISK CVR	N1 CBM CPA RMV			HANDOVER		ER MS UI ZE	MIDDAY-MEAL	METX DCS BATT/A	EVA CAM	J ER N T L Y	EXERCISE TVIS	
E X P 1 6	ISS CDR WHITSON	SLEEP (8.5)	POST SLEEP	PWDPC PREP WORK	CMS-PRE-EVA PFE-SUBJ			SODF-EMER BOOK-DPLY		NE DQ UI P	ND2 VEST OUTFIT		MIDDAY-MEAL	ΔND2 Hatch Open ND2 INGRS & S/U		C R T E B T S D T O R M P C N		
	FE-1 MALENCHENKO	SLEEP (8.5)	POST SLEEP	PWDPC PREP WORK	OR ENT A TION	P F E C M O	МБИ-21-FE1-EXE			П Д 33-2	OR ENT	И П Д А K P R E P	MIDDAY-MEAL	И П Д А K 1 S M P L	И П Н - 1	COX MNT	EXERCISE RED ⊕	
U P	FE-2 UP TANI	SLEEP (8.5)	POST SLEEP	PWDPC ADAPT	CBM CNTR DISK CVR	ADAPTATION			HANDOVER		ER MS UI ZE	MIDDAY-MEAL	D U I P M O N I T O R I N G C K I N G	ADAPT	PM C	R C E / B O A	E/L PREP	EVA TOOL CONFIG

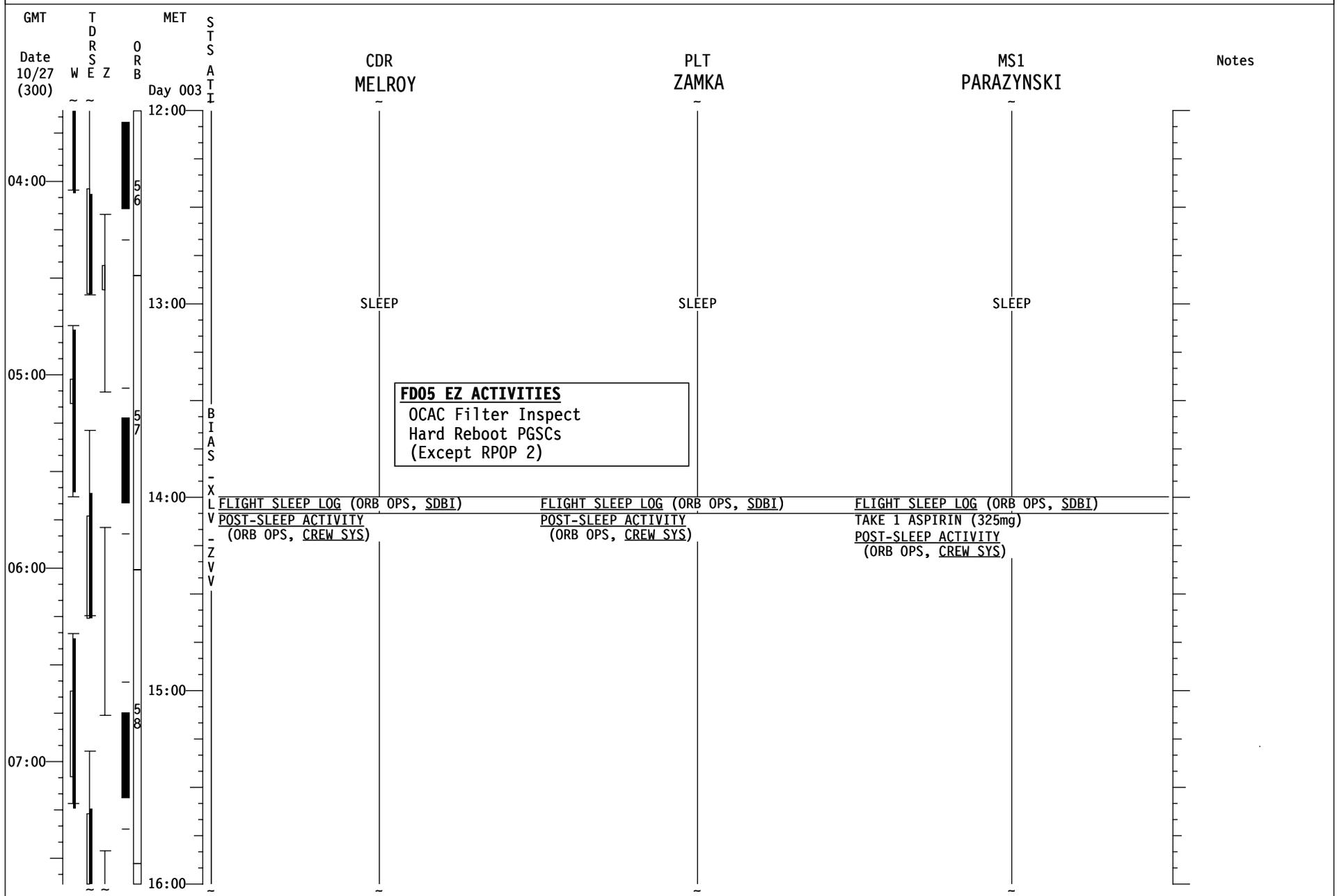
DAY/NIGHT	56		57		58		59		60		61		62		63		64	
ORBIT	56		57		58		59		60		61		62		63		64	
TDRS	W -171	E -46		Z -275														
ORB ATT	BIAS -XLV -ZVV																	
SSRMS	*DEACT Lab *BSA *FILTER CK *SALIVA S/U *EXERCISE ⊕EXERCISE																	
NOTES	2-14 No Exercise while both arms grappled FLT PLN/120/FLIGHT																	

GMT 10/27/07 (300)  
 Day 004  
 MET

		16	17	18	19	20	21	22	23	10/28	01	02	03	12	
S T S - 1 2 0	FD05 CDR MELROY	RRS*	IMU	CTWC#3	XPFRS*	EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP	PMC A/G	PRE SLEEP	SLEEP				
	PLT ZAMKA	EXERCISE		P/TV 05 S/U	EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP			SLEEP					
	MS1 PARAZYNSKI	PRE SLEEP	EVA PROCEDURE REVIEW		PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)							
	MS2 WILSON	XFER		EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP			SLEEP						
	MS3 WHELOCK	XFER		XBFR REF	EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP			SLEEP					
	MS4 NESPOLI	PRE SLEEP	EVA PROCEDURE REVIEW		PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP							
	FE-2 DN ANDERSON	EXERCISE TVIS		CHRG DPC	EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP			SLEEP (8.5)					
E X P 1 6	ISS CDR WHITSON	EXERCISE RED S/DPC		EVA PROCEDURE REVIEW	PEAVOENT	PRE SLEEP			SLEEP (8.5)						
	FE-1 MALENCHENKO	EXERCISE CEVIS		DPC	EVA PROCEDURE REVIEW	PEAVOENT	EXFR	PRE SLEEP			SLEEP (8.5)				
U P	FE-2 UP TANI	*RED H/O	PRE SLEEP	EVA PROCEDURE REVIEW		PRE SLEEP	MASK PB/TOOL CONFIG	PRE SLEEP	SLEEP (A/L)						
DAY/NIGHT ORBIT															
TDRS															
ORB ATT SSRMS															
NOTES		*EVA TOOL CONFIG @EVA TOOL CONFIG *N2 INIT *N2 TERM 2-16 FLT PLN/120/FLIGHT													

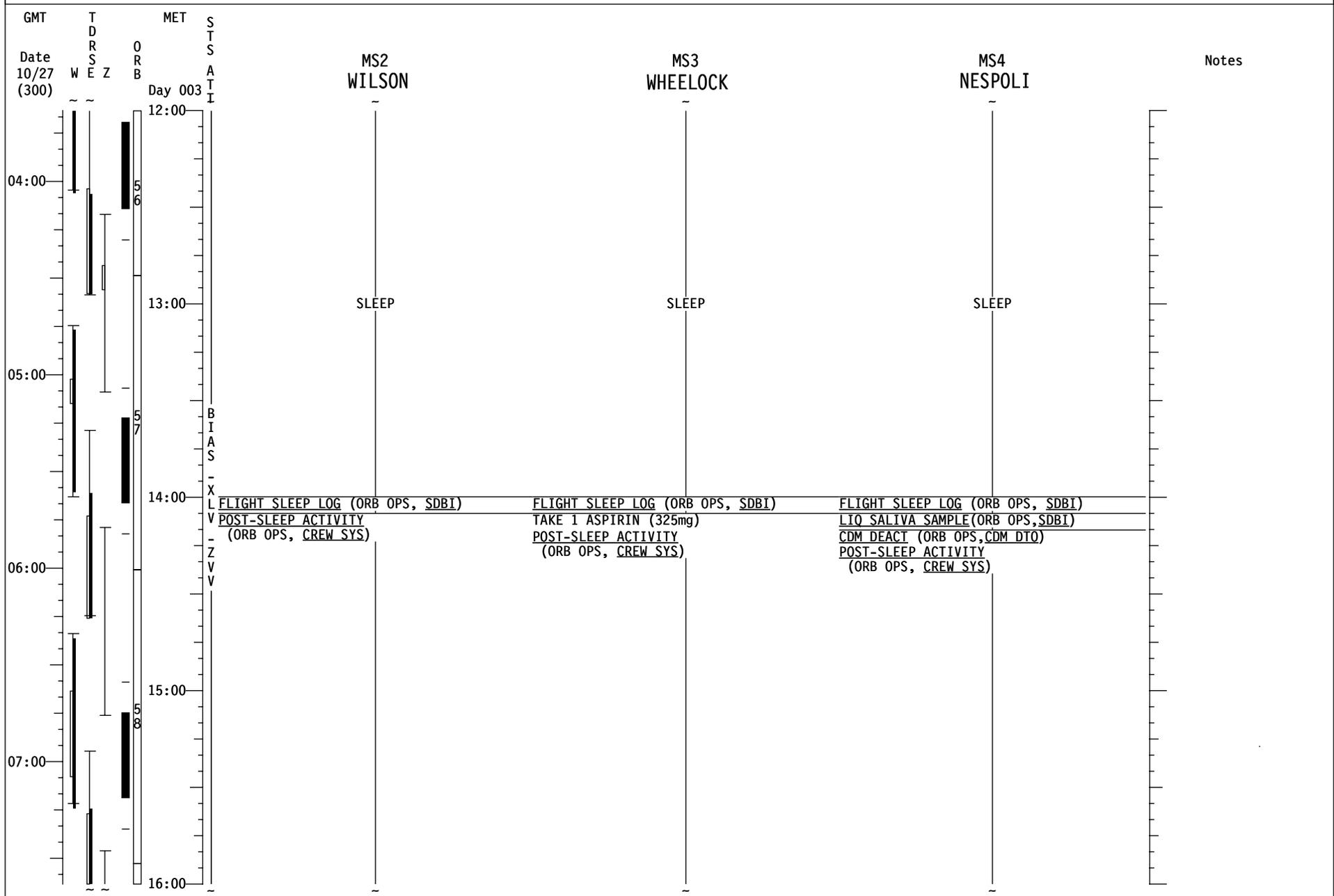
STS-120 FD05

REPLANNED



STS-120 FD05

REPLANNED



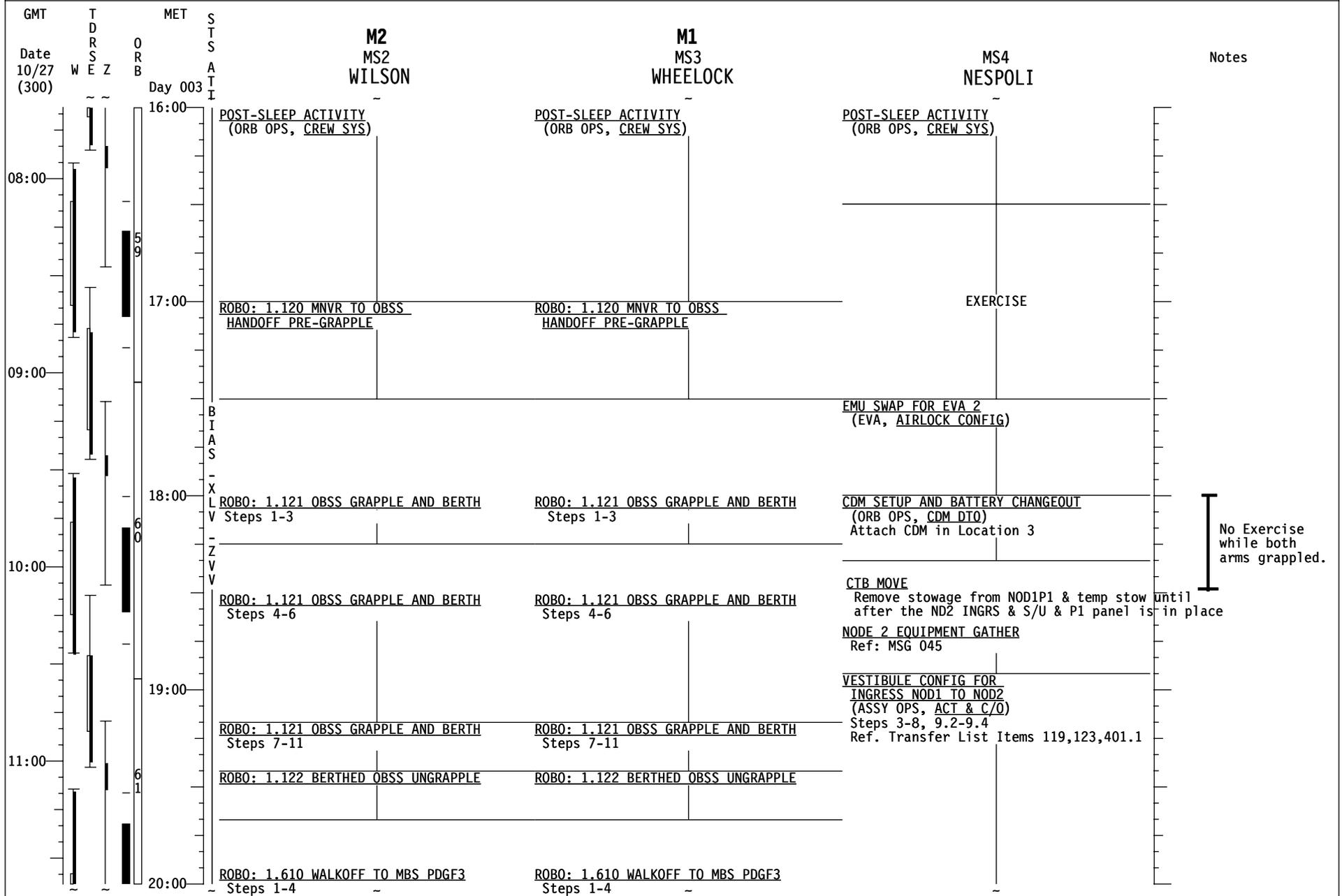
# STS-120 FD05

**REPLANNED**

GMT Date 10/27 (300)	T D R S E Z	MET ORB Day 003	S T S A T I	R2 CDR MELROY	R1 PLT ZAMKA	MS1 PARAZYNSKI	Notes
				POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	POST-SLEEP ACTIVITY (ORB OPS, CREW SYS)	
08:00						PGSC TROUBLESHOOTING Ref: MSG 046 Part 1	
				A14 RCS/OMS HTR L POD - A OFF - B AUTO		EVA SYS: 1.605 BSA BATTERY RECHARGE (TERM)	UPLINK β0 Only + Boxes C1,C2,C3,D2
09:00				OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 1-2	OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 1-2	EMU SWAP FOR EVA2 (EVA, AIRLOCK CONFIG)	
						PGSC TROUBLESHOOTING Ref: MSG 046 Part 2	
10:00				Z OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 3-6	OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 3-6		No Exercise while both arms grappled.
11:00				OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 7-9	OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Steps 7-9		
				OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Perform Step 10	OBSS HANDOFF FROM SRMS TO SSRMS (PDRS, OBSS HANDOFF) Perform Step 10	EVA SYS: 1.510 METOX REGENERATION Perform TERMINATE	UPLINK β21 Only + Boxes C1,C2,C3,W1
20:00							

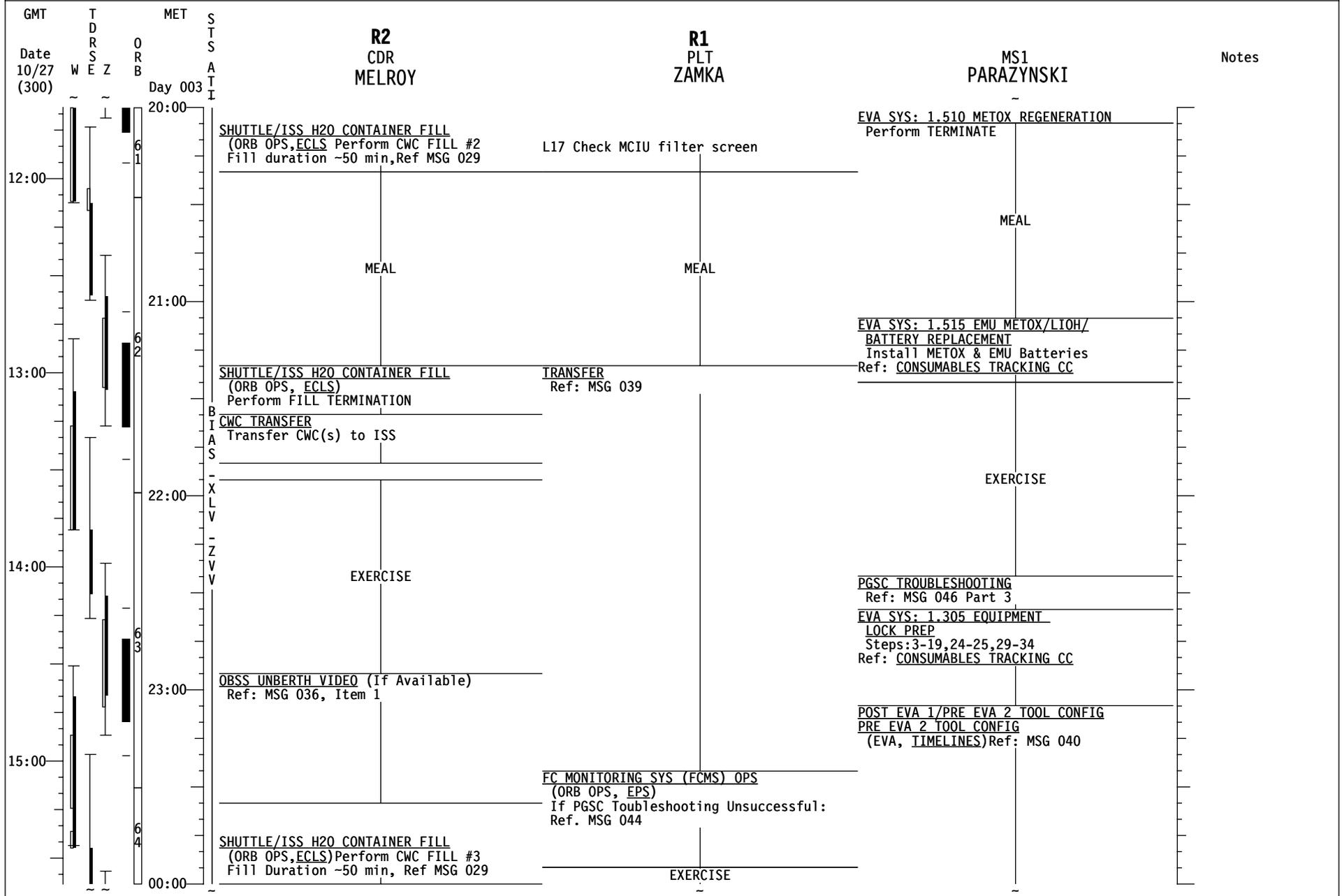
STS-120 FD05

REPLANNED



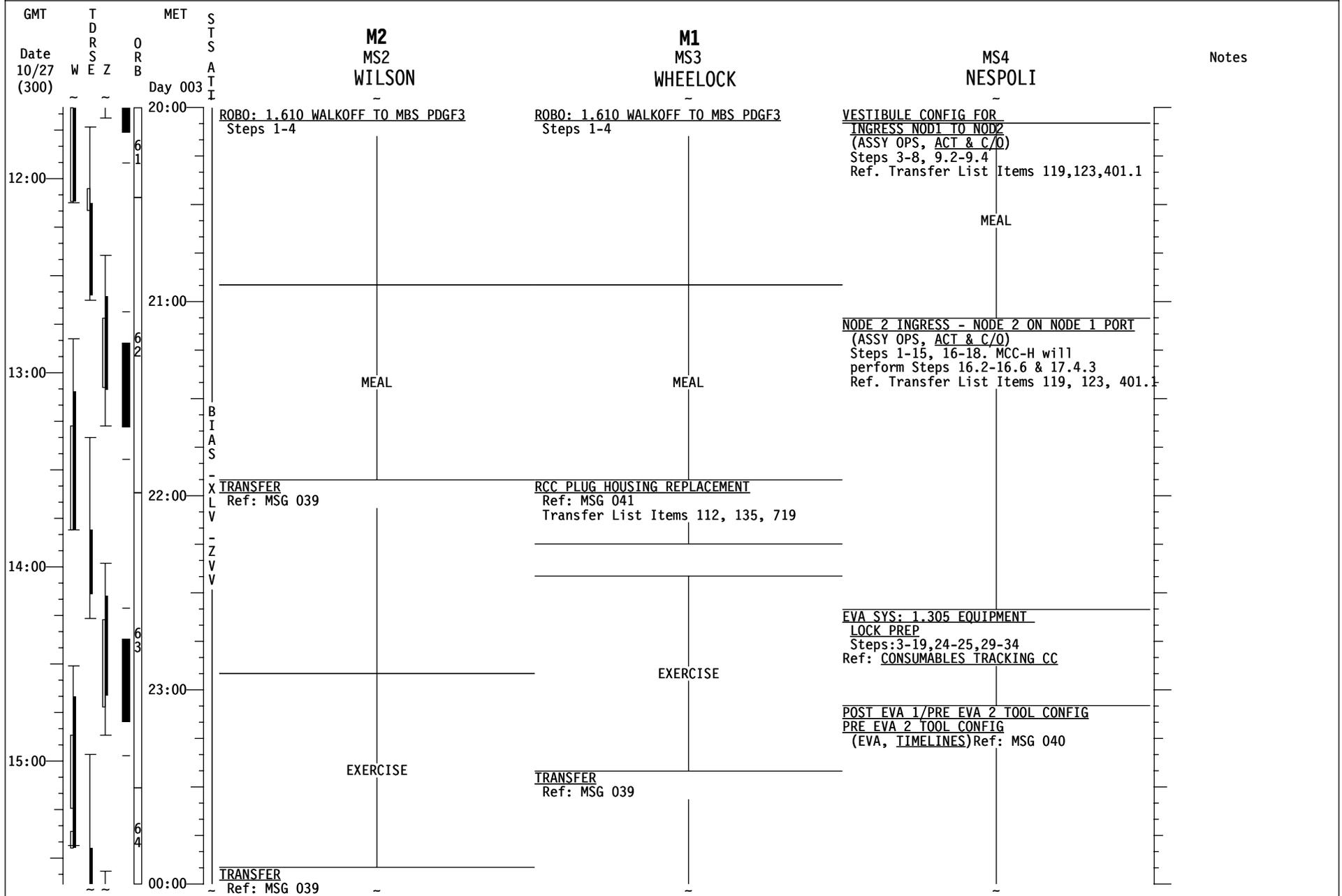
STS-120 FD05

REPLANNED



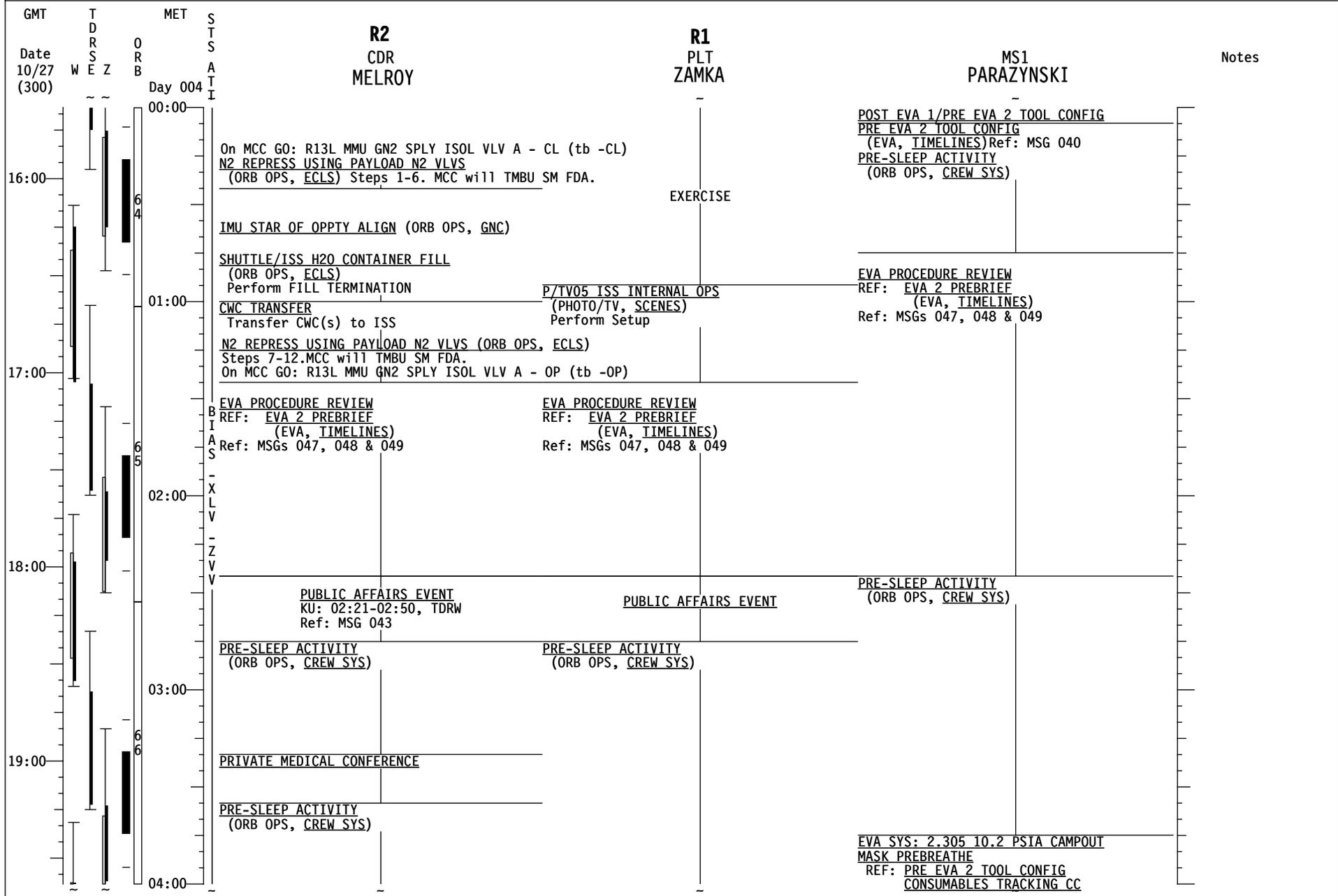
STS-120 FD05

REPLANNED



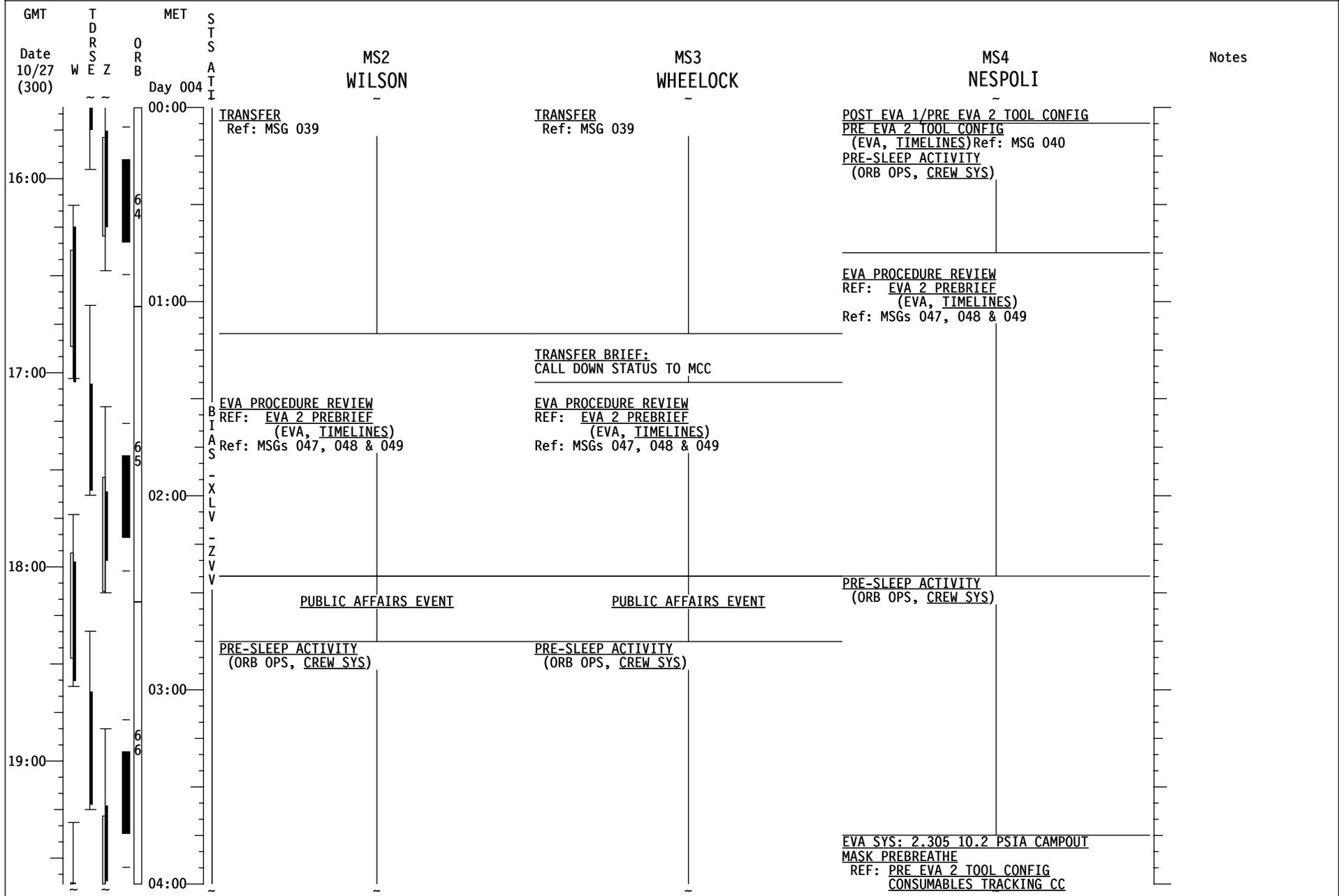
STS-120 FD05

REPLANNED



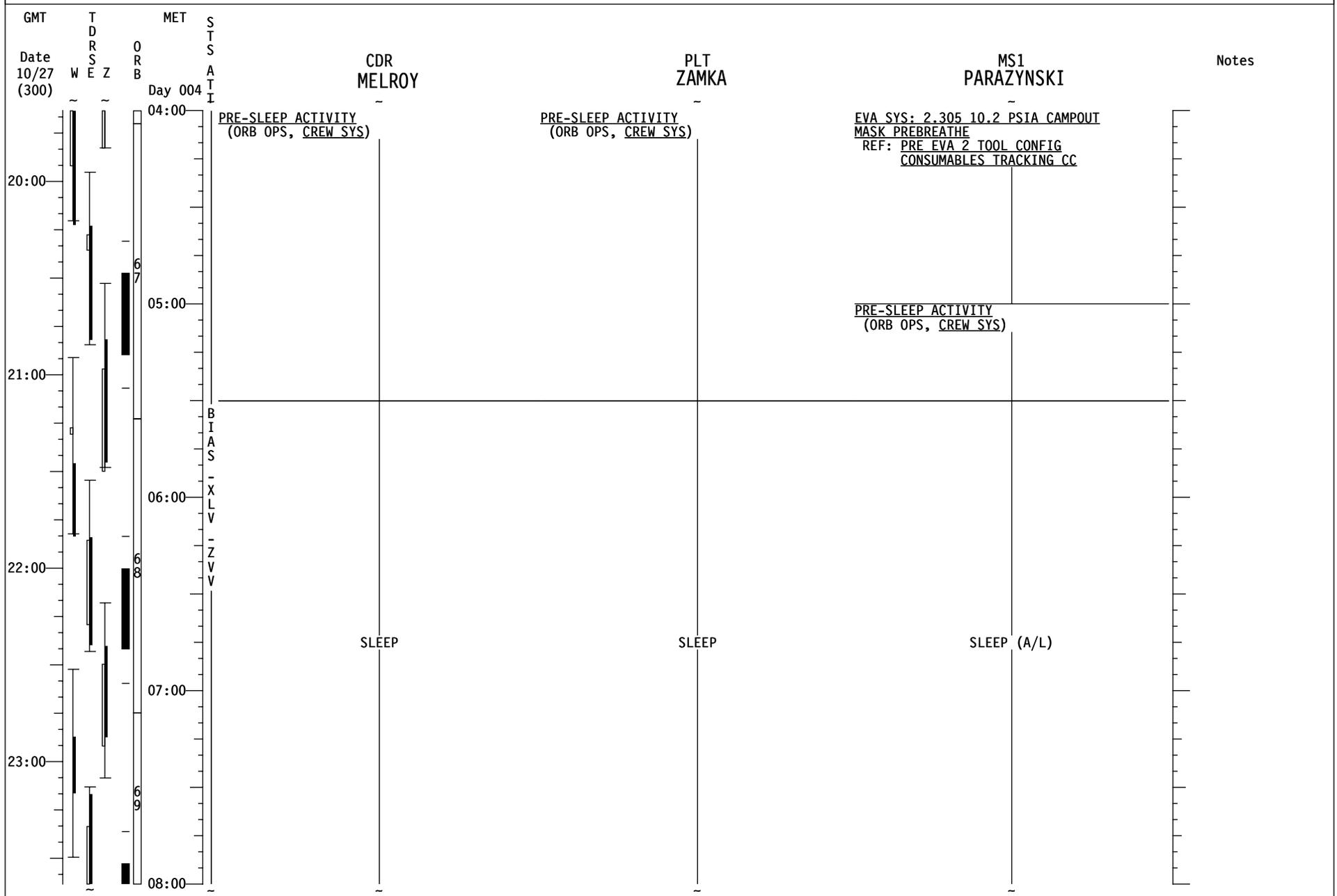
STS-120 FD05

REPLANNED



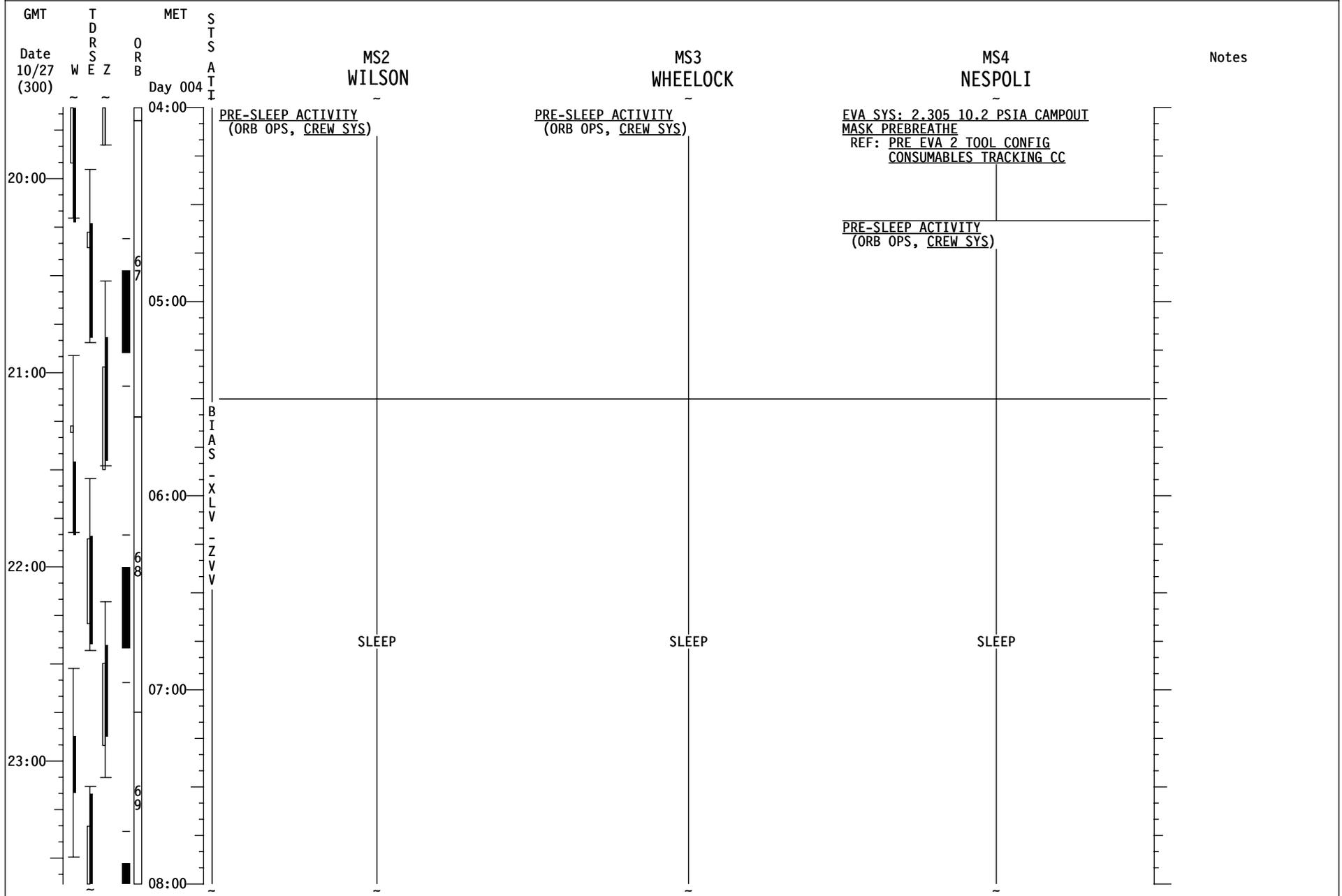
STS-120 FD05

REPLANNED



STS-120 FD05

REPLANNED



**MSG 037A (16-0065A) - FD05 MISSION SUMMARY**

Page 1 of 2

1 Good Morning Discovery!!!

2

3 Yesterday was such a super successful day!!! Who would have predicted that Node 2  
4 would be attached to station, right on schedule, just as planned!!! It is a wonderful feeling  
5 when a plan comes together like it did yesterday!!!! Too bad you could not hear the  
6 cheering that went on down here when Node 2 was secured to Node 1!

7

8 Trouble shooting the PGSCs has been added to today's timeline. Because the network  
9 problems have been intermittent, it is thought that the problem could be caused by bad  
10 network equipment. Because time is constrained the plan is to go ahead and change out all  
11 the cables instead of doing a cable by cable change out. In order to accomplish this, you  
12 will be using some excess station PGSC equipment.

13

14

15 YOUR CURRENT ORBIT IS: 188 X 180 NM

16

17 NOTAMS:

18

19 EDW – RWY 15/33 ELS ONLY. RWY 18L – CLOSED.

20 NOR – GREEN.

21 WAL – RWY 04/22 CLOSED.

22 FFA - ASCENT ONLY.

23 ZZA - FIRST 600M OF RWY 30L NOT AVAILABLE. 10,200' REMAINING.

24 WAK - UNUSABLE

25 AMB - UNUSABLE

26 JDG – DIEGO GARCIA: CLOSED UNTIL 29 OCTOBER 0100Z.

27 IKF – NO AGREEMENT FOR USE

28 AWG – NO AGREEMENT FOR USE.

29 HAO – DME OUT

30 BEN – POLITICALLY NOT RECOMMENDED/NOT SUPPORTED.

31

32 NEXT 2 PLS OPPORTUNITIES:

33

34 EDW04 ORB 64 – 4/00:22 (BKN200 060/04P06)

35 EDW04 ORB 79 – 4/23:10 (SCT250 060/07P12)

36

37 OMS TANK FAIL CAPABILITY:

38

39 L OMS FAIL: NO

R OMS FAIL: NO

40

41 LEAKING OMS PRPLT BURN:

42

43 L OMS LEAK: ALWAYS BURN RETROGRADE

44 R OMS LEAK: ALWAYS BURN RETROGRADE

45

46 OMS QUANTITIES(%)

47

48 L OMS OX = 33.5 R OMS OX = 33.5

49 FU = 33.1 FU = 33.4

50

51 SUBTRACT I'CNCT COUNTER FOR CURRENT OMS QUANTITIES

**MSG 037A (16-0065A) - FD05 MISSION SUMMARY**

Page 2 of 2

1 DELTA V AVAILABLE:  
 2 OMS 343 FPS  
 3 ARCS (TOTAL ABOVE QTY1) 44 FPS  
 4 TOTAL IN THE AFT 387 FPS  
 5  
 6 ARCS (TOTAL ABOVE QTY2) 77 FPS  
 7 FRCS (ABOVE QTY 1) 27 FPS  
 8  
 9 AFT QTY 1 80 %  
 10 AFT QTY 2 42 %  
 11  
 12  
 13  
 14

<u>SYSTEM</u>	<u>FAILURE</u>	<u>IMPACT</u>	<u>WORK AROUND</u>
GNC 1	GPS YETI : GPS Hardware CH 2 failed to track Y-code (encrypted signal).	Affected channel temporarily unable to track in Y-code (tracks in non-encrypted mode only). GPS unit still functional.	Condition cleared with INIT-NAV transition on SPEC 55. GPS continues to perform well.
GNC 2	IMU 1 Inner Roll Null FL false BITE	None. Known software condition caused by taking IMU to STBY. IMU performance not affected.	BITE masked while IMU in STBY to prevent nuisance messages. Will unmask BITE for 3-level ops.
PRLA	PL SEL 1 LATCH 4 LAT A microswitch was slow to transition to off during PRLA release.	During PRLA release, PL RETEN LAT 4 tb reflected the status of the microswitch. No impact to PRLA close.	None.

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## MSG 038 (16-0066) - FD04 MMT SUMMARY

Page 1 of 1

1 FD 4 MMT Summary

2

3 The MMT met to review mission progress and review the RCC part of the FD2 inspection  
4 results. The independent verification of the tile and thermal blanket analysis was in work at  
5 the time of the MMT, so that piece of the TPS story will be presented at tomorrow's MMT.  
6 Overall, all indications are that the TPS is in great shape. The RCC was formally cleared by  
7 the MMT today, and the initial analysis of the tile and thermal blankets found nothing to be  
8 concerned about. The tile and thermal blankets are expected to be formally cleared by the  
9 MMT tomorrow. Also, the MMT easily concurred with the recommendation to not perform a  
10 focused inspection on FD 5. EVA 1 ingress was in work at the start of the MMT, and the  
11 MMT was very pleased with the complete success of EVA 1.

12

13 **Starboard SARJ & EVA 2** - The MMT received an informational briefing about the SARJ.  
14 The MMT acknowledged the IMMT direction to add a SARJ inspection to EVA 2 in place of  
15 some of the low priority Node 2 Outfitting tasks.

16

17 **Ascent Imagery Collection and Review** - All of the ascent imagery has been collected,  
18 and except for the SRB video, has been reviewed. The SRB video was being reviewed  
19 during the MMT and will be reported on tomorrow with the final imagery report on FD6. Two  
20 additional debris events were added to the list previously reported to you from the FD2  
21 MMT. The two new debris events occurred at 187 sec and 277 sec. Both of these are well  
22 past the Aerodynamically Sensitive Transport Time (ASTT) and not a concern to the orbiter  
23 TPS. The radar data was also reviewed today and eleven reportable items are being  
24 reviewed to attempt to correlate them to ascent video. None of these items are a concern.

25

26 **RCC Analysis** - The FD2 RCC inspection data was presented. There were no issues  
27 identified and the RCC is cleared. As you know, concentrated imaging efforts and analysis  
28 were performed on the five joggle regions identified pre-flight. All five regions were  
29 confirmed to have no silicon carbide coating loss. A total of 449 regions of interest were  
30 identified and all were cleared by the team. None of these ROIs were in the joggle regions.  
31 This number of ROIs is consistent with previous flights.

32

33 **Wing Leading Edge Sensors** - The WLES is powered off now, but one more indication was  
34 recorded prior to powering down. This indication was 1.0 G and is not a concern.

35

36 **Orbiter Systems Status** - A few very minor items were reported to the MMT with the most  
37 discussion on the troubles experienced with the orbiter local area network. The team will  
38 continue to troubleshoot the LAN as necessary. All are extremely happy that Discovery  
39 continues to perform in such an outstanding manner.

40

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**MSG 039 (16-0067) - FD05 TRANSFER MESSAGE**

Page 1 of 2

1  
2 Good morning Doug, Stephanie, and Dan,

3  
4 Great work yesterday! You've accomplished a lot of transfer in a short amount of time.  
5 Keep up the amazing work!

6  
7 The Transfer List Excel file, FD05\_TransferList\_STS120.xls, is located on the KFX machine  
8 in **C:\OCA-up\transfer**.

9  
10 For ISS, the Transfer List Excel file, FD05\_TransferList\_STS120.xls, is located in **K:\OCA-**  
11 **up\transfer**.

12  
13 **Transfer Notes**

- 14 • The electronic file has been updated with your completed items.
- 15 • We copied that Clay reported the final food containers are now empty and  
16 bundled for return, item 605.
- 17 • There is an error in the 'STS-120 Transfer Choreography' (under the References  
18 Tab, page Choreography - 2) for FD5: ND2 INGRESS & S/U & ND2 VEST  
19 OUTFIT. For this activity, both a Grab Sample and Russian Air Sample will be  
20 taken at Node 2 Ingress, however, only the Grab Sample container (item 401.1  
21 on the Return Tab) is returning on the middeck (the choreography erroneously  
22 states that the Russian Samples also return in bag 401).
- 23 • Item 112 was reported completed yesterday – however because this item is  
24 required for today's RCC Plug Housing Replacement activity, we have not  
25 marked this item as 'completed' yet. After today's activity, we'll show this item as  
26 complete.

27  
28 **Open Transfer List items for today's activities (Choreography)**

- 29 • **Return item 401.1** –GSC from NODE 2 ingress
- 30 • **Return item 412.2** – Defibrillator Resupply kit per timelined activity
- 31 • **Resupply item 112 and Return 719** – RCC tools per timelined activity
- 32 • **Any additional items as time permits**

33  
34 **Please incorporate uplink pages as follows:**

35  
36 In **RESUPPLY** tab  
37 Replace Page(s):  
38 Resupply – 3

39  
40 **Changes to the Transfer List are detailed below:**

41  
42 In **RESUPPLY** tab  
43 **Item 112:** Updated Constraints (referenced correct return item), Added 'temp stow'  
44 location.

45  
46 Call us with any questions and have a great day!

47  
48 - The Transfer Team

STS-120/10A Resupply Transfer List

CHNG	<input checked="" type="checkbox"/>	FD	Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	PROCEDURES/Constraints/ **Comments
<b>Middeck Resupply</b>											
	<input checked="" type="checkbox"/>	3	See Swap Tab - IELK	110	IELK [Tani]	1	MD CEIL STBD 2 (Bag H)		SWAP	79.37	
	<input checked="" type="checkbox"/>	3		111	D. Tani Athletic Shoes	1 Pair	MD CEIL STBD 2 (Bag H)		Crew Pref Tani	2.00	Required for TVIS Exercise Handover on FD04  Reference item 716 on the RETURN Tab
X				112	Drive Bolt - 4 RCC Plug Female Housing - 4 RCC Plug Male Housing - 4 T-Bar Barrel Nut - 4	1 Ziplock (4 Foam Blocks)	MD FLOOR PORT 1 (Bag A)	<u>NOD1P4_C1</u> {1.0 CTB. S/N 1239}	NOD1P4_C1 {1.0 CTB. S/N 1239}	2.00	Required for RCC PLUG on FD05  **Contents modified by EVA Procedure RCC PLUG HOUSING REPLACEMENT (20 min)  Reference item 719 on the RETURN Tab. <del>135 on the RESUPPLY Tab.</del>

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

+ - Indicates weight of item included elsewhere

**16-0070 (MSG 041) – RCC PLUG HOUSING REPLACEMENT (00:20)**

Page 1 of 2

1

**NOTE**

Four (4) sets of Plug attach hardware will be replaced with tighter tolerance hardware and the old cushions and hardware will be returned.

2

3

4

Middeck Floor 1. Retrieve four (4) foam cushions labeled “STS-120 NEW”, each Port 1 (Bag A) containing:

5

6

7

8

9

- 1 - RCC Plug Male Housing
- 1 - RCC Plug Female Housing
- 1 - T-bar Barrel Nut
- 1 - Drive Bolt

10



11

12

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Figure 1 – New foam cushion launching on Shuttle

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21

22

23

2. Transfer all foam cushions with hardware to ISS

24

NOD1P4\_C1 3. Remove four (4) foam cushions from CTB 1239 labeled “RCC Plug Repair Hardware”

25

26

27

28

29

4. Remove T-bars from cushions 3 and 4 (figure 2) and place them in 2 of the new cushions. Stow new cushions in CTB 1239



30

31

32

33

34

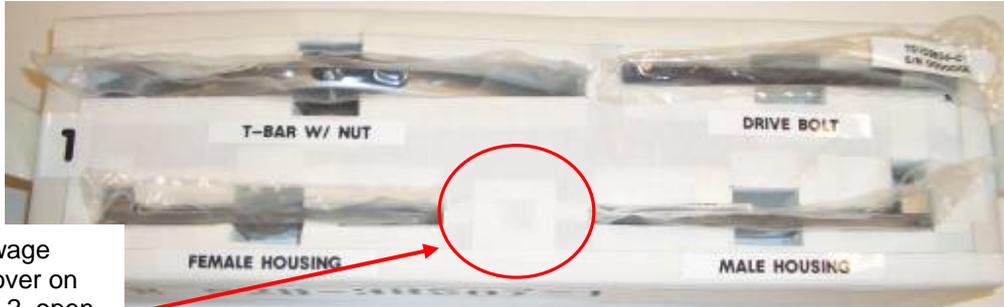
Figure 2 – Current on-orbit foam Cushion 3 (Cushion 4 similar)

**16-0070 (MSG 041) – RCC PLUG HOUSING REPLACEMENT (00:20)**

Page 2 of 2

1  
2  
3

5. Remove or cut the tape covering the barrel nut stowage cutout on Cushion 1 (figure 3)



Barrel Nut Stowage cutout. Taped over on cushions 1 and 2, open on cushions 3 and 4

Figure 3 – Current on-orbit foam Cushion 1 (Cushion 2 similar)

4  
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15  
16

6. Remove T-bar from Cushion 1 and remove from plastic bag
7. Untape barrel nut and stow it in newly opened cutout in Cushion 1
8. Replace T-bar back in plastic bag and stow in new cushion cutout. Replace new cushion in CTB 1239
9. Repeat steps 5 - 8 for Cushion 2 T-bar
10. From CTB 1239, retrieve one (1) Male Bolt Housing and one (1) Female Bolt Housing, each labeled “OPTIMAL” (figure 4)

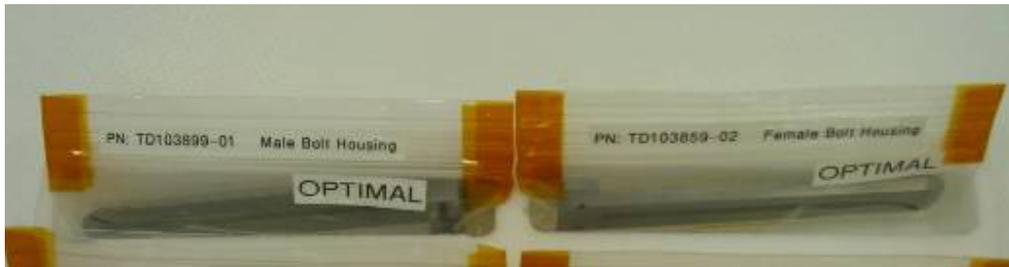


Figure 4 – “OPTIMAL” bolt housings

17  
18  
19  
20  
21  
22  
23  
24

11. Stow bolt housings in an old cushion T-bar cutouts for return
12. Transfer four (4) old cushions to Shuttle, stow in Middeck Floor Port 2 (Bag A)

# 16-0072 (MSG-042) HANDOVER ATTITUDE CONTROL ORBITER TO CMG-ONLY WITHOUT RS SMTC

Page 1 of 6 pages

## OBJECTIVE:

To switch mated stack attitude control responsibility from Orbiter to ISS Control Moment Gyroscopes without RS SMTC computers.

### 1. GNC COMMAND RESPONSE COUNTERS RESET

PCS MCG: GNC Command Response Counters

GNC Command Response Counters

sel Reset

Verify the Since Reset column values are all blank.

Do not close this window until the procedure is complete.

If while executing a command, the Command Accept counter on that display does not increment  
Reselect GNC Command Response Counters to determine if a command was rejected.

√**MCC-H**

### 2. VERIFYING INITIAL ATTITUDE CONTROL CONFIGURATION – FREE DRIFT

PCS MCG: MCS Configuration

MCS Configuration

'MCS Moding'

Verify US GNC Mode – Drift (UDG)

'MCS ORU Status'

Verify Min ORUs Avail – Yes

'Data Source and Quality'

Verify the following information

	<u>US Quality</u>
Attitude	Valid (Valid RS) (Degraded)
Rate	Valid (Valid RS) (Degraded)
State Vector	Valid (Valid RS) (Degraded)

**16-0072 (MSG-042) HANDOVER ATTITUDE CONTROL ORBITER TO CMG-ONLY WITHOUT RS SMTC**

Page 2 of 6 pages

3. DETERMINING REQUIRED CCDB INFORMATION

The following information required for attitude control handover will be determined from OSTP or **MCC-H**.

Commanded CMG IG/OG Angles

Record CMG 1 IG/OG Angles, deg: \_\_\_\_\_ / \_\_\_\_\_

Record CMG 2 IG/OG Angles, deg: \_\_\_\_\_ / \_\_\_\_\_

Record CMG 3 IG/OG Angles, deg: \_\_\_\_\_ / \_\_\_\_\_

Record CMG 4 IG/OG Angles, deg: \_\_\_\_\_ / \_\_\_\_\_

Record CMG 2 expected IG/OG Current Angle F/W, deg \_\_\_\_\_ / \_\_\_\_\_

If this information is not recorded elsewhere, record it below

	Attitude Hold	Mom Mgmt
US Take Cntl CCDB ID:	[ X ]	[ Y ]
Version ID:		
Cmd Att, deg Y:		
Cmd Att, deg P:		
Cmd Att, deg R:		

Record LVLH Rate limit: \_\_\_\_\_ deg/s

Record Momentum Command for Control: X Axis: \_\_\_\_\_ N-m-s

Record Momentum Command for Control: Y Axis: \_\_\_\_\_ N-m-s

Record Momentum Command for Control: Z Axis: \_\_\_\_\_ N-m-s

## 16-0072 (MSG-042) HANDOVER ATTITUDE CONTROL ORBITER TO CMG-ONLY WITHOUT RS SMTC

Page 3 of 6 pages

### 4. POSITIONING CMG GIMBALS

MCG: CMG Configuration: Gimbal Angles

CMG Gimbal Angles

If CMG 1(3,4) IG,OG Current Angle S/W, deg and CMG 2 expected IG,OG Current Angle F/W, deg are not as recorded in step 3 Perform {2.207 CMG GIMBAL ANGLE POSITIONING}, all (SODF: MCS: NOMINAL: CMGS), then:

### 5. CHECKING USOS SOLAR ARRAYS ARE CONFIGURED

If ground is performing

Coordinate with Phalcon to check that USOS Solar Array Wing configuration is acceptable for the upcoming attitude control configuration.

If crew is performing

√**MCC-H**

### 6. REMOVING INHIBITS TO ENABLE MODING

MCG: MCS Configuration: MCS Inhibits

MCS Inhibits

**cmd** Mode Transition Enable (Verify – Ena)

**cmd** Attitude Maneuver Enable (Verify – Ena)

√ Desat Request – Inh

√ Att Cntl Shutdown – Inh

√ UDG Shutdown – Inh

√ Auto Att Control Handover to RS - Inh

ISS (**MCC-H**) ⇒ Orbiter, “ISS ready for Orbiter rate damping and Free Drift.”



## 16-0072 (MSG-042) HANDOVER ATTITUDE CONTROL ORBITER TO CMG-ONLY WITHOUT RS SMTC

Page 5 of 6 pages

### 8. RECONFIGURE DAP TO NOMINAL

**MCC-H** ⇒ Orbiter, "ISS is attempting to establish attitude control."

Once ISS has attempted to take attitude control:

Reload nominal DAP A:

**GNC 20 DAP CONFIG**

ITEM 1+15 EXEC

PCS

### 9. INITIATING ORBITER TO U.S. ATTITUDE CONTROL HANDOVER

#### NOTE

1. The following commands in this step should be sent as soon as possible following the Orbiter call that they're ready for ISS control (step 7).
2. If the US Take Control Unconditional command is not sent within 60 seconds of verification of US Take Attitude Control Enable, the US Take Attitude Control parameter will be reset back to Inhibit. In this case, this step would need to be repeated (commanding US Take Attitude Control Enable followed by the US Take Control Unconditional command).

The second command in this step (US Take Control Unconditional) must be sent within 60 seconds of US Take Attitude Control Enable verification.

MCG: MCS Configuration: Off Nominal RS to US

**Off Nominal RS to US**

**cmd** US Take Att Cntl Enable – (Verify - Ena)

input Attitude Hold US Take Cntl CCDB ID - (from step 3)

input Attitude Hold US Take Cntl Ref Frame - LVLH

**cmd** Initiate Handover - Set

Verify US Take Cntl Cmd Response – Accepted

Verify Active CCDB Source Slot – as commanded

Verify US GNC Mode – CMG Only

# 16-0072 (MSG-042) HANDOVER ATTITUDE CONTROL ORBITER TO CMG-ONLY WITHOUT RS SMTC

Page 6 of 6 pages

## 10. INITIATING MOMENTUM MANAGEMENT CONTROLLER

MCG: MCS Configuration

MCS Configuration

'CCDB Slots'

For Momentum Management CCDB ID, Slot [Y] from step 3

Sel Make Active [Y]

Make Active [Y]

### NOTE

It may require an orbit or more for attitude error and attitude rate transients to stabilize after the Momentum Management CCDB is incorporated.

**cmd** Incorporate

'Active CCDB'

Verify Active CCDB Source Slot – as commanded

If the Momentum Command for Control is to be sent per step 3

MCG: MCS Configuration: Active CCDB

Active CCDB

'Momentum Command for Control'

input X Axis – \_\_\_\_\_ (from step 3)

input Y Axis – \_\_\_\_\_ (from step 3)

input Z Axis – \_\_\_\_\_ (from step 3)

**cmd** Set Momentum

Verify X Axis – as commanded

Verify Y Axis – as commanded

Verify Z Axis – as commanded

ISS (**MCC-H**) ⇒ Orbiter, "ISS has assumed attitude control."

ISS (**MCC-H**) ⇒ **MCC-M**, "ISS has assumed attitude control."

## 11. REPLACING US GNC INHIBITS TO PREVENT MODING

MCG: MCS Configuration: MCS Inhibits

MCS Inhibits

**cmd** Mode Transition Inhibit (Verify – Inh)

**cmd** Attitude Maneuver Inhibit (Verify – Inh)

**MSG 043A (16-0073A) - FD05 PAO EVENT SUMMARY**

Page 1 of 2

**PAO Event Summary Message / Sequence of Voice Calls  
CBS News / FOX News / WHAM-TV, Rochester, NY**

- 1 Date: FD 05, Saturday, October 27, 2007
- 2
- 3
- 4
- 5
- 6 Start Event: 04/02:25 MET / 1803 GMT / 1:03 PM CDT / 2:03pm EDT
- 7 Orbit 65, TDRW
- 8
- 9 Duration: 20 min. (approx. 6 1/2 min. per media client)
- 10
- 11 Location: Harmony Node 2 or Destiny Laboratory
- 12
- 13 Participants: Flight Crew: STS-120 Commander Pam Melroy, Pilot George Zamka
- 14 and Mission Specialists Stephanie Wilson, Doug Wheelock & Clay
- 15 Anderson, and Expedition 16 Commander Peggy Whitson & Flight
- 16 Engineer Yuri Malenchenko
- 17 Media Clients: CBS News' Peter King and Bill Harwood; FOX News'
- 18 Gregg Jarrett; WHAM-TV's Ginny Ryan
- 19
- 20 Anticipated Topics:
  - 21 1. Mission objectives completed thus far and remaining key events
  - 22 2. Installation of Harmony Node 2 and its significance towards
  - 23 enabling future ISS expansion
  - 24 3. Wheelock's experiences during his first spacewalk on Oct. 26
  - 25 4. Two female commanders working side-by-side for the first time
  - 26 5. Impressions and feelings of living and working in space
  - 27 6. Anderson's thoughts on returning home after more than four
  - 28 months on the space station
- 29 Notes:
  - 30 1. Event on Shuttle analog Ku-band downlink, with audio on A/G-2
  - 31 using the BPSMU.
  - 32 2. Check Discovery / Alpha's geographical location before event
  - 33 3. Check correct mic placement for optimal audio.
  - 34 4. **Simultaneous Russian-to-English interpretation will be**
  - 35 **provided on the ground should Malenchenko wish to reply in**
  - 36 **Russian.**
  - 37 5. **Please expect a possible audio delay of up to five seconds**
  - 38 **between your answers, the media's receipt of your answers,**
  - 39 **and the next question.**

---

40 Shuttle Capcom: Discovery / Alpha, this is Houston. Are you ready for the event?

41

42 Discovery / Alpha: Houston, this is Discovery / Alpha. We are ready.

43

44

45 **(after 2 seconds):**

46

47 Shuttle Capcom: CBS News, this is Houston. Please call Discovery / Alpha for a voice

48 check.

49

50 CBS News: Discovery / Alpha, this is CBS News. How do you hear me?

51

**MSG 043A (16-0073A) - FD05 PAO EVENT SUMMARY**

Page 2 of 2

1  
2 Discovery / Alpha: (reports voice quality. If acceptable,...)  
3 We are ready for questions.  
4  
5 CBS News: (conducts Q&A with crew, then...)  
6  
7  
8 Houston ACR: Discovery / Alpha, this is Houston ACR. That concludes the CBS  
9 News portion of the event. Please stand by for a voice check from  
10 FOX News.  
11  
12 FOX News: Discovery / Alpha, this is FOX News. How do you hear me?  
13  
14 Discovery / Alpha: (reports voice quality. If acceptable,...)  
15 We are ready for questions.  
16  
17 FOX News: (conducts Q&A with crew, then....)  
18  
19 Houston ACR: Discovery / Alpha, this is Houston ACR. That concludes the Fox  
20 News portion of the event. Please stand by for a voice check from  
21 WHAM-TV.  
22  
23 WHAM-TV: Discovery / Alpha, this is WHAM-TV. How do you hear me?  
24  
25 Discovery / Alpha: (reports voice quality. If acceptable,...)  
26 We are ready for questions.  
27  
28 WHAM-TV: (conducts Q&A with crew, then....)  
29  
30 Houston ACR: Discovery / Alpha, this is Houston ACR. That concludes the event.  
31  
32 Shuttle Capcom: Thank you, CBS News, FOX News and WHAM-TV. Discovery /  
33 Alpha, we are now resuming operational Air-to-Ground  
34 communications.  
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MSG 044A - FD05 FCMS TROUBLE SHOOTING

1  
2 This procedure will be used if the PGSC Network Cabling Replacement procedure (msg 46)  
3 is unsuccessful or if the WinDecom PGSC is not on the network during the FCMS ops.  
4

- 5  
6 1. Prior to performing the rescheduled FCMS Ops on PLT, please do the  
7 following.  
8

9 Insert a PCMCIA card into WinDecom and transfer the following files to the card:

- 10  
11 - C:\spocapps\fcms\fcms.LOG  
12 - C:\appslib\TLMSEVER.LOG  
13 - any .zip and .fcv files that are located in C:\spocapps\fcms  
14

- 15 2. Perform FCMS Ops at the rescheduled time with the following delta to the procedure:  
16

- 17 - In step 13 on page 6-11 of the Orbit Ops C/L, select NO in the popup window to copy  
18 zip data file.  
19

- 20 3. After FCMS Ops please do the following.  
21

22 Transfer the following file to the PCMCIA card:

- 23  
24 - C:\spocapps\fcms\fcXXXXXX.zip (where XXXXXX is a time stamp)  
25

- 26 4. Finally, transfer the card to the KFX machine and copy the files to C:\Oca-down\fcms.  
27

- 28 5. Report to MCC when complete.  
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MSG 044A - FD05 FCMS TROUBLE SHOOTING

- 1
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- 4

MSG 045B - NODE 2 EQUIPMENT PREP

Gather Items per following tables (grouped by activity), which is an excerpt from ISS Message 16-0068: STOWAGE LOCATIONS FOR SATURDAY PLAN (GMT 300, FD05):

ND2-VEST-OUTFITTING						
Vestibule Outfitting VESTIBULE CONFIG FOR INGRESS NOD1 TO NOD2						
Type: Standard				IMS Plan: No		
#	LOCATION	ITEM NAME	P/N	S/N	B/C	Notes
1	<b>NOD1S1</b> 1.0 CTB: NODE 2 Wire Harness/Jumper S/N 1042, B/C 002927J	Secondary 1A4A Pwr Jumper	1F89713-1	001	00082012J	Harness # W3001
2		Secondary 2A3B Pwr Jumper	1F89715-1	001	00082013J	Harness # W3002
3		Node 2 Vestibule Outfitting Kit	683-22010-1	-	-	Large ziplock inside CTB.
4		→ 1553 Ch B Data Jumper	683-22012-1 683-22014-1 683-22016-1 683-22018-1	AA0876704 AA0876702 AA0876700 AA0876698	00035217K 00035219K 00035221K 00035223K	Harness # W2012 Harness # W2014 Harness # W2016 Harness # W2018 <b>Note:</b> all four jumpers were pre-mated during bench review
5		→ 1553 Ch A Data Jumper	683-22011-1 683-22013-1 683-22015-1 683-22017-1	AA0876705 AA0876703 AA0876701 000001	00035216K 00035218K 00035220K 00035222K	Harness # W2011 Harness # W2013 Harness # W2015 Harness # W2017 <b>Note:</b> all four jumpers were pre-mated during bench review
6		Instrumentation Jumper W3005	1F89721-1	001	00082015J	Harness # W3005
7		Instrumentation Jumper W3006	1F89723-1	001	00082014J	Harness # W3006
8		<b>NOD1P4_A2</b> 1.0 CTB: MPLM Vest Outfitting Bag S/N b/c 1048, B/C 002933J	IMV Return Duct Jumper	683-13870-17	001002	009452J
9	<b>NOD1O4_C1</b> Ziplock Pantry	12" x 12" Ziplock	-	-	-	
10	<b>Crew Pref</b>	Towel	-	-	-	
11		Mini Maglite	-	-	-	

<b>NODE2-INGRESS &amp; S/U</b>						
<b>NODE 2 INGRESS – NODE 2 ON NODE 1 PORT</b>						
<b>NODE 2 VENTILATION DUCT INSTALLATION AND REMOVAL (Referenced procedure)</b>						
<b>Type: Standard</b>				IMS Plan: No		
#	LOCATION	ITEM NAME	P/N	S/N	B/C	Notes
1	LAB1D4_C1	Grab Sample Container (GSC)	SDD46108778-301	Crew Pref	Crew Pref	<b>REPORT S/N to MCC-H</b>
2	<b>NOD101</b> 3.0 CTB: NODE2 VEST OUTFIT/ALIGN GUIDES/LHAs, S/N 1120, B/C 006777J	PPRV Caps [QTY: 2]	PPRV-1-915	-	00083175J 00083176J	
3	<b>CM1PO_2_208</b>	CSA-CP	SED46115801-304	1057	00054281J	Prime
4	<b>NOD1S4</b>	CSA-CP	SED46115801-304	1060	00054284J	B/U
5	<b>Equipment Lock</b>	CSA-O2	SED46115801-305	1041 or 1052	00054319J or 00054330J	Either
6	<b>Crew Support Locker in Shuttle</b>	Crew Preference Hatch Decals	-	-	-	
7	<b>LAB1P5_A1</b>	Velocicalc w probe	8386A	99080374	00033712J	
8	<b>Crew Pref</b>	DCS 760	SEZ33113001-302	Crew Pref	Crew Pref	
9		Earplugs [QTY:2]	28-00-05	-	-	
10	<b>NOD1D1</b>	1.0 CTB	Crew Pref	Crew Pref	Crew Pref	<b>REPORT S/N and B/C</b>  Choose any empty 1.0 CTB.  This bag will be used to store items (restraint bolts, etc.) pulled from Node 2 during outfitting
11	<b>Shuttle LiOH Box</b> (Located on Lid)	Surgical Masks [QTY:2]	1870	-	-	Use new mask.  <b>DO NOT</b> use masks from CCPK -- Use masks located with Shuttle LiOH.
12	<b>LAB1D4_A1</b> <b>Crew Contamination Protection Kit</b> S/N 1002, B/C CHCCPK02J	Safety Goggles [QTY:2]	503R	-	-	

MSG 045B - NODE 2 EQUIPMENT PREP

13	<b>NODE 1 Staged</b>	Initial Ingress and DDCU Rack Prep Ziplocks	-	-	-	Resupply Item #123, transferred on FD4.  One 12x12 ziplock that has 41 individually labelled ziplocks that Dan Tani labeled for the launch restraint bolts from each Node 2 closeout panel.
14		→Ziplocks [QTY: 3]				
15	<b>LAB100</b>	PMA IMV Flex Duct Extension	1F94509-1	-	002717J	
16	<b>NOD2S4</b>	Flexible Ventilation Duct (13 ft)	683-51988-1	1002	00085482J	
17	<b>Crew Pref</b>	Gray Tape	-	-	-	
18		Dry Wipes	-	-	-	
19	<b>LAB1 Deployed</b>	Static Wrist Tether	WS-AM6-4MM	-	-	

Type: Restow			IMS Plan: No			
21	<b>Return Item # 401.1</b>	Grab Sample Container (GSC)	SDD46108778-301	Crew Pref	Crew Pref	<b>REPORT S/N to MCC-H</b>
22	<b>CREW Pref in Node 2</b>	1.0 CTB	SEG33111838-305	Crew Pref	Crew Pref	<b>REPORT S/N and B/C</b> <b>REPORT Temp Stow Location</b>
23		→ Ziplock Bag [QTY: 3]	-	-	-	Each ziplock contains a closeout from Node 2 and associated launch restraints.
24	<b>Temp Stow</b>	Surgical Masks [QTY:2]	1870	-	-	<b>Peggy's Mask</b> - Temp Stow for FD7 ND2 – AV Rack – Outfit Activity. <b>Nespoli's Mask</b> - Temp Stow for LiOH changeout.

## MSG 046 - FD05 PGSC NETWORK CABLING REPLACEMENT

1 There are indications that tell us that your PSGC network problems may be caused by bad  
2 network cables or equipment. The quickest solution is to replace all network cables,  
3 connectors and terminators. In order to do so, you'll have to use some PGSC equipment  
4 that is on the ISS. This procedure guides you through the process. Part 1 should be  
5 completed prior to OBSS Handoff ops (this will keep Part 2 from interfering with the OBSS  
6 ops which will use WinDecom, RPOP, and RPOP2 machines for RSAD and DOUG). Part 2  
7 can occur concurrently with the OBSS handoff.

8  
9 Part 3 adds the WinDecom, RPOP, and RPOP2 machines to the network after the OBSS  
10 ops are complete (when DOUG and RSAD are no longer required).

### 11 Equipment Needed:

#### 12 From Shuttle:

- 13 (3) 3' Ethernet Cables - Location: ML60E (2) and ML60J (1)
- 14 (2) 25' Ethernet Cables - Location: ML60E (2)
- 15 (3) Ethernet T-Connectors - Location: ML60E (2) and ML60J (1)
- 16 (2) BNC Straight Adapters - Location: ML60E (2)
- 17 (1) Ethernet Terminator - Location: Ethernet T-connector at the OCA Router

#### 18 From Station: (ask Clay if you have trouble finding this equipment)

- 19 (2) 3' Ethernet Cables - Location: Russian bag (Мешок) in NOD1D4\_K2
- 20 (3) Ethernet T-Connectors - Location: Russian bag (Мешок) in NOD1D4\_K2
- 21 (1) Ethernet Terminator - Location: Russian bag (Мешок) in NOD1D4\_K2

## 22 **PGSC NETWORK CABLING REPLACEMENT, PART 1**

23 Remove the RF Cards from WinDecom and RPOP2 machines, and remove the 3Com card  
24 from the RPOP machine.

## 25 **PGSC NETWORK CABLING REPLACEMENT, PART 2**

- 26 1. Remove the 3Com cards from the OCA Router, KFX, and WLES machines.
- 27 2. Replace the entire PGSC ethernet hardline cabling all the way from the KFX machine to  
28 the WLES machine. Replace the cables, terminators, BNC straight adaptors, and T-  
29 connectors. Make sure all connections are fully engaged and locked before moving on to  
30 the next piece of cabling.
- 31 3. Re-insert the 3Com ethernet cards into the OCA Router, KFX, and WLES machines only.
- 32 4. Ping the network from either the KFX or WLES machine and report the results to MCC  
33 (should see OCA Router, Access Point, Printer, KFX, and WLES on the network at this  
34 time).
- 35 5. If ping unsuccessful, reboot the OCA Router, KFX, and WLES machines and repeat  
36 Step 4.

**PGSC NETWORK CABLING REPLACEMENT, PART 3**

1. Re-insert the RF cards into the WinDecom and RPOP2 machines, and re-insert the 3Com card into the RPOP machine.
2. Ping the network from any PGSC and report the results to MCC (should see the entire network).
3. If ping unsuccessful, reboot troubled PGSCs and repeat Step 2.